Federal Economic Stimulus Projected to Cut Poverty in 2021, Though Poverty May Rise as Benefits Expire

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Highlights

- Federal support from expanded unemployment compensation and economic impact payments kept the poverty rate low. Counting these benefits in addition to other cash income, we estimate poverty in 2021 was 2.1 percentage points lower than before the pandemic (8.4 percent compared with 10.5 percent).[1]

- We project the combined impact of unemployment compensation, federal and state stimulus payments, the Advance Child Tax Credit (CTC), and back-to-work bonuses reduced poverty in 2021 by 45 percent.

- We project economic impact payments under the American Rescue Plan kept 7.9 million people out of poverty in 2021. In addition, the Advance CTC which began in July, kept 2.9 million people out of poverty, including 1.8 million children, a reduction in child poverty of 23 percent. This aligns with other research finding around a 40 percent reduction with a full year of Advance CTC.

- The projected poverty rate for children in 2021 after the Advance CTC and federal and state stimulus initiatives is 8.3 percent, 42 percent lower than the official poverty rate for 2019. We project child poverty in 2021 was cut by 56 percent compared to what the rate would have been without federal and state initiatives.

- The 2021 poverty reduction was larger among non-Hispanic Black, Hispanic, and American Indian/Alaska Native people, relative to all people. Compared with before the pandemic and exclusive of the Advance Child Tax Credit, the annual poverty rate fell by 6.2 percentage points among American Indian/Alaska Native people, 5.3 percentage points among Black non-Hispanic people, and 5.0 percentage points among Hispanic people.

- We project a rise in poverty during July to December 2021 when economic impact payments had been spent and unemployment benefits were scaled back—whether or not the Advance CTC is included as income.

Overview

To get a clear picture of how federal economic stimulus in 2021 supported people struggling economically, we projected how many people are in poverty in 2021 compared with 2019, before the pandemic. We also project the reduction in poverty related to stimulus efforts in 2021. We used survey data for households and employers, along with the Congressional Budget Office's (CBO) projections of employment, to create a demographic and economic scenario for 2021. Because poverty rates for 2021 will not be released until September 2022, we used "nowcasting" to project poverty (see Box 1 for approaches to nowcasting). Measuring poverty with and without the Advance Child Tax Credit (CTC), we found the net impact of federal action cut poverty levels substantially.

How We Modeled Poverty

Our approach was guided by the unique circumstances of lower income families during the second year of the COVID-19 pandemic as well as federal stimulus focusing on providing families economic stability. We approach poverty measurement

> **Box 1. What is nowcasting?**
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> Nowcasting is predicting the present. Whereas unemployment numbers are released monthly based on the Current Population Survey (CPS), official income data for the U.S. population is released each September for the previous year based on the CPS Annual Social and Economic Supplement (ASEC).
>
> Researchers cannot analyze data on income and poverty in 2021 until September 2022. To fill the gap, our nowcasting approach relies on prior years of the CPS ASEC reweighted to match the U.S. population in 2021. We rely on recent employment data and projections from the CBO.
>
> We used microsimulation modeling to impute changes in employment and simulate impacts on earnings. We did all modeling within the Transfer Income Microsimulation model, version 3 (TRIM3), which also corrects for underreporting of participation in select federal programs. Note that our model does not capture structural changes in the economy since March, nor recent changes in levels of unemployment.
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> For details on nowcasting, see: Bok, Brandyn, Daniele Caratelli, Domenico Giannone, Argia Sbordone, and Andrea Tambalotti. "Macroeconomic Nowcasting and Forecasting with Big Data." Annual Review of Economics, vol. 10, August 2018, pp. 615–643.

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[1]Our 2021 projections include economic impact payments; however, the official poverty rate for 2020 does not include these payments. Data source is the Current Population Survey (2017–2019) projected to 2021 and the Transfer Income Microsimulation model, version 3.

starting with the official measure which counts most sources of income but excludes tax credits and stimulus payments.[2] We added economic impact payments to the official measure. The first section of this brief presents these annual and sub-annual estimates for the total population and select race and ethnic groups. Second, to gauge its potential poverty reduction impact, we included the value of the Advance CTC for which most families with children were eligible. We do not aim to predict or anticipate what the official poverty rate will be when released in September 2022 because the official measure excludes stimulus payments. Rather, our approach estimates the likely antipoverty impact of federal economic stimulus and the new Advance CTC, if these payments were treated as money income. We expect the official poverty estimates for 2021 will differ from our estimates. However, we believe a more timely analysis is critical for policymakers to assess the effect of economic stimulus and the Advance CTC on alleviating poverty.

Box 2. Why measure poverty with and without the Advance Child Tax Credit?

For this analysis we modified the official poverty measure—which excludes tax credits and in-kind benefits and counts only cash or money income—and added first federal and state stimulus payments and then the Advance Child Tax Credit. We measure income in two ways:

1. Cash income (including unemployment compensation) + economic impact payments

2. Cash income (including unemployment compensation) + economic impact payments + the Advance CTC

We proceeded to measure the impact of the new Advance Child Tax Credit given its important impact for families with children during 2021. We believe providing an accurate portrayal of the impact stimulus policies had on poverty—particularly for children—should consider this benefit, otherwise our results would likely overcount the number of people in poverty.

Our modeling incorporates all major federal stimulus efforts supporting families in 2021 and back-to-work bonuses and state stimulus checks paid in seven states and five states, respectively (see Box 2). We measured income to include expansions to unemployment compensation (including an extra $300 weekly federal benefit) and economic impact payments enacted in the Consolidated Appropriations Act (CAA) in late December 2020 (PL 116-260) and the American Rescue Plan Act (ARP) in March 2021 (PL 117-2). Unemployment compensation is included as income just as it would be in the official poverty measure. Tax payments are typically excluded from the official measure. Though federal rules treat economic impact payments as a tax credit,[3] we include this federal stimulus. We believe it is critical to account for economic impact payments when measuring poverty in 2021, and research has found such payments in 2020 had a substantial impact on poverty.[4] Like the official poverty measure, the current analysis *excludes* annual refundable tax credits such as the Earned Income Tax Credit and the smaller, refundable CTC from income year 2020 (see Appendix B). In the second part of the brief we examined the impact on poverty of including the value of the Advance CTC.

Although these measurement decisions make our projections comparable to poverty rates for 2019 and earlier, they make it difficult to compare our results with 2020 data. The Coronavirus Aid, Relief and Economic Security Act of 2020 (PL 116-136; CARES Act) provided $300 billion in direct payments to Americans in the form of economic impact payments. The 2020 official poverty rate excludes these payments (unlike our projections), and as a result, comparisons to our 2021 estimates should be made with caution. Counting economic impact payments as income would certainly reduce the 2020 poverty rate.[5] As such, this brief primarily compares 2021 and 2019, the annual poverty rate before the COVID-19 pandemic and any federal stimulus. We believe this comparison is methodologically sound and policy relevant.

For 2021 we tabulated income over three time periods, January to March, April to June, and July to December. Our analysis is premised on federal economic impact payments (enacted in late December 2020 and March 2021) being dispersed and spent during the first 6 months of 2021, and earnings and unemployment compensation being distributed consistently with projected months of employment. Benefits reflect expanded unemployment eligibility, extended weeks of unemployment, and the extra $300 per week in federal benefits. Compensation was added to income for eligible unemployed workers until either the first week of September or until states opted out. For analysis including the Advance CTC, we counted Advance CTC payments as income for the period from July to December.

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[2] See How the Census Bureau Measures Poverty.

[3] See Coronavirus Tax Relief at www.irs.gov/coronavirus-tax-relief-and-economic-impact-payments.

[4] Giannarelli, Linda, Laura Wheaton, and Gregory Acs. 2020. "Initial US Policy Response to the COVID-19 Pandemic's Economic Effects Is Projected to Blunt the Rise in Annual Poverty." Urban Institute; Parolin, Zachary, Megan Curran, Jordan Matsudaira, Jane Waldfogel, and Christopher Wimer. 2021. "Monthly Poverty Rates in the United States During the COVID-19 Pandemic." Center on Poverty & Social Policy, Columbia University; Macartney, Suzanne, Robin Ghertner, Linda Giannarelli, Laura Wheaton, Joyce Morton, and Kathryn Shantz. 2020. "Projections of Poverty and Program Eligibility During the COVID-19 Pandemic." U.S. Department of Health and Human Services.

[5] While the official poverty rate in 2020 was 11.4 percent; we projected a rate of 10.9 percent including stimulus checks.

Projected Reduction in Poverty From 2019 to 2021 Without the Advance CTC

In 2021 the annual poverty rate is projected to decline below pre-pandemic levels. Following federal stimulus and without the Advance CTC, we project that the annual poverty rate for 2021 will be 8.4 percent, representing 27.4 million people. As Figure 1 shows, from 2015 to 2019 poverty trended downward from 13.5 percent to the historically low rate of 10.5 percent, before rising in 2020 with the onset of the COVID-19 pandemic and associated recession.

Figure 1. Percentage of People With Income Below Poverty, Official Estimates for 2011-2020 and Projection for 2021, With Economic Impact Payments and Without Advance CTC
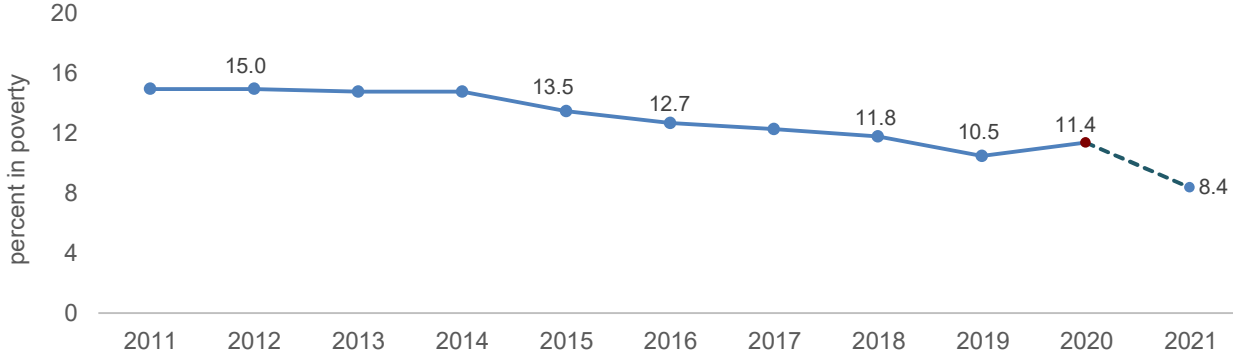

Source: Published Census Bureau estimates for 2011 to 2020 and Transfer Income Microsimulation model, version 3 for 2021.
*Official poverty in 2020 does not include economic impact payments and as a result is not directly comparable to our projection for 2021.

Figure 2 presents our sub-annual projections of poverty for 2021, as well as the official poverty rate for 2019, the pre-pandemic point of comparison. With economic impact payments applied directly to personal income within weeks of congressional enactment, we project the greatest poverty reductions in the January to March period. Compared with the 2019 rate of 10.5 percent, poverty was 5.7 percentage points lower in January to March 2021, reaching a level of 4.8 percent. Such low levels are unprecedented since the poverty measure was first applied to the 1960 decennial census. Poverty ticked upward in the spring months (April to June), but the disbursement of remaining economic impact payments and the continuation of expanded unemployment benefits that started under the CARES Act kept the rate relatively low [6] during the April to June period at 9.2 percent.

Figure 2. U.S. Poverty Rates, Official Estimate for 2019 and Sub-Annual Projections for 2021, with Economic Impact Payments
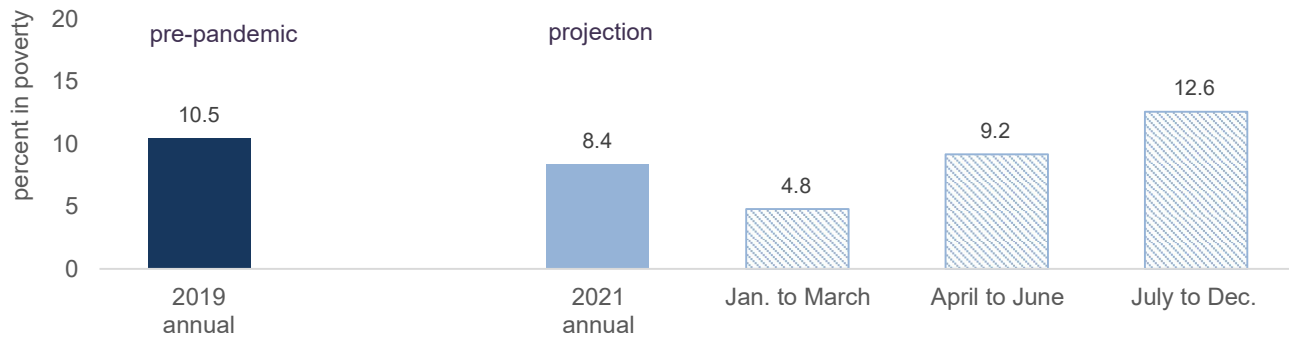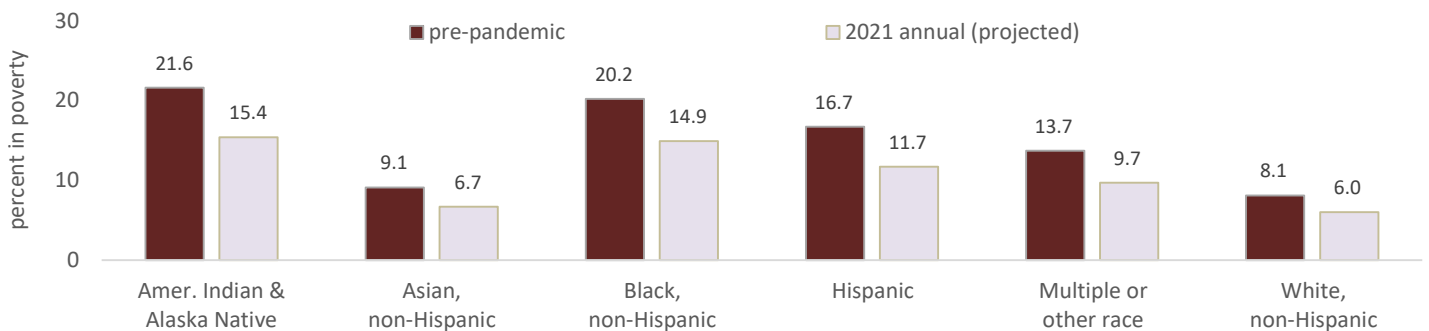

Source: 2019 is from the 2020 CPS ASEC. Projections are from and CPS ASEC (2017-2019) projected to 2021 with microsimulation model TRIM3.

In the remaining months of 2021, we project a sizable poverty increase. Beginning in July, we modeled income without economic impact payments and with decreasing amounts of unemployment benefits. By July half the states ended the additional $300 per week in unemployment compensation and other federal unemployment expansions. For the other half of states benefits ended in early September. With economic impact payments spent and unemployment compensation scaled back, we project a poverty increase of 3.4 percentage points to 12.6 percent for the period from July to December compared with April to June. This equates to a projected 40.9 million people in poverty.

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[6] See Congressional Research Service. 2021. "Current Status of Unemployment Insurance (UI) Benefits: Permanent-Law Programs and COVID-19 Pandemic Response." Report R46687.

Poverty was projected to decrease most for non-Hispanic Black, Hispanic, and American Indian/Alaskan Native people. We project the annual poverty rate to decline for all major race and ethnic groups. To increase sample size for the smaller population groups, we compare the 2021 projections by race and ethnicity to average poverty levels for 2017 to 2019. The largest decreases—from 5.0 to 6.2 percentage points—are for American Indians/Alaska Natives, Black non-Hispanic people, and Hispanic people, groups with historically higher poverty rates than White and Asian non-Hispanic people. We project the 2021 annual poverty rate to be 6.7 and 6.0 percentage points among Asian and White non-Hispanic people compared with 9.1 and 8.1 percentage points, respectively, prior to the pandemic (see Figure 3).

Figure 3. Percentage of People with Income Below Poverty by Race and Ethnic Origin Group, Pre-Pandemic and 2021 Projected

Source: Pre-pandemic estimates are from 2020 CPS ASEC (all people) and the CPS ASEC (2018-2020) corrected for underreporting of income benefits in TRIM3. 2021 projections are from the CPS ASEC (2017 to 2019) projected to 2021 in TRIM3 and include economic impact payments.

Poverty is projected to be higher among all the racial and ethnic groups identified in this report during the second half of 2021 (see Appendix Table A1). Some people of color are projected to be the most impacted by the end of economic impact payments and reduced benefits from unemployment compensation. Between the April to June period and the July to December period, we project a 2.0 percentage point increase in the poverty rate for Asian non-Hispanic people, and a 2.4 percentage point increase for White non-Hispanic people. Over that same period, the poverty rate is projected to increase by 4.0 percentage points among Hispanic persons, 6.5 points for American Indian or Alaska Native people, and 7.1 points for Black non-Hispanic people.

Projected Reduction in Poverty from 2019 to 2021 With the Advance CTC

Income from Advance CTC payments, in combination with expanded unemployment compensation and economic impact payments, is projected to reduce child poverty to a historic low. In this section, we include income from monthly Advance CTC payments from the Internal Revenue Service disbursed from July through December. Under the ARP, Congress increased the child tax credit, made it fully refundable, and authorized one-half of the annual value of the credit to be paid in monthly installments from July to December, before families file their 2021 tax returns.

Counting these payments as income (one-half the maximum credit is $1,800 for each child under age 6 and $1,500 for each child age 6 through 17), we project the annual poverty rate for all people to be 7.5 percent in 2021, reflecting 24.4 million people in poverty (Figure 4 and Table A2). The addition of the Advance CTC to income lowered the projected the poverty rate by 0.9 percentage points or 2.950 million people compared with projections without the Advance CTC shown in Figure 1.

We project an even greater antipoverty impact for children. Prior to the pandemic, the child poverty rate was 14.4 percent (10.5 million children)—the lowest rate of poverty among children for decades.[7] After adding the Advance CTC, expanded unemployment compensation, and federal and state stimulus checks, we project the child poverty rate for 2021 to be 8.3 percent, a 42 percent reduction from the official child poverty rate in 2019. The projected annual rate represents a historically low number of children in poverty, 6.0 million. Compared with the year before the pandemic, the projection indicates 4.4 million fewer children in poverty in 2021.

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[7] The Census Bureau last estimated a poverty rate for people under 18 at or below 14.4 percent in 1973.

Considering family income from all sources in 2021 with and without the Advance CTC, the child poverty rate is estimated to be 2.5 percentage points lower (8.3 percent compared to 10.8 percent) with 1.8 million fewer children in poverty when counting six months of payments from the Advance CTC. For this estimate we counted only income received in 2021. We would expect a greater poverty reduction if we counted the full value of the expanded CTC, including the half received in advance in 2021 and the remaining amount received when 2021 tax returns are filed in the spring of 2022.

Figure 4. U.S. Poverty Level, Pre-Pandemic and Projections With and Without the Advance CTC, 2021
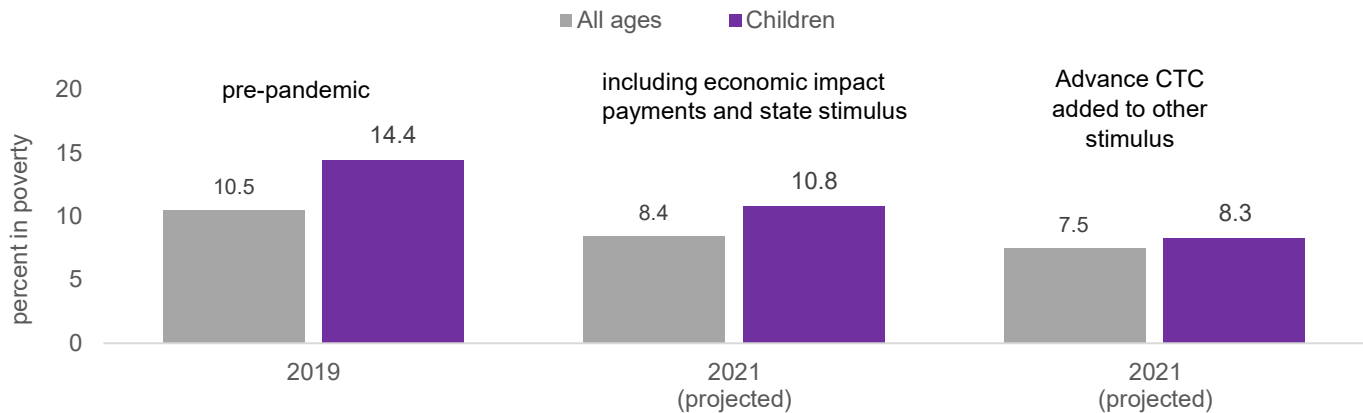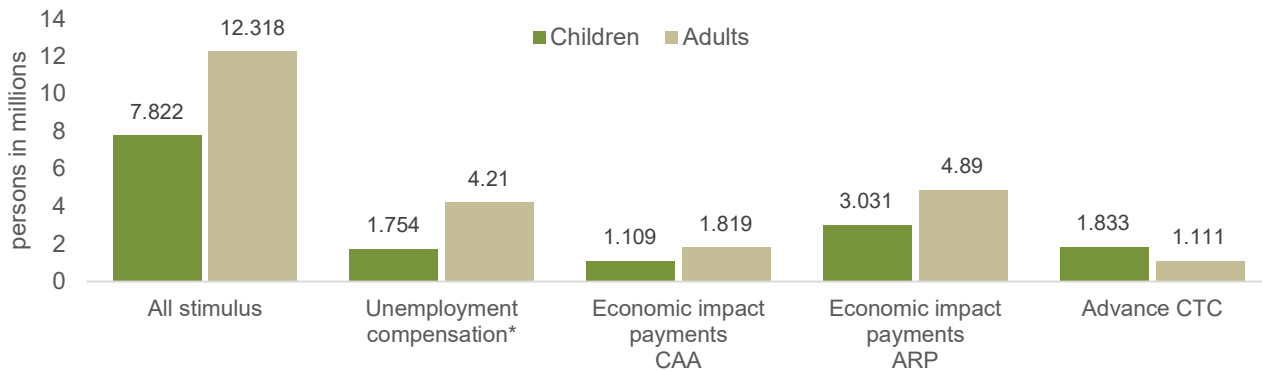

Source: Current Population Survey, Annual Social and Economic Supplements and microsimulation model TRIM3.

The Advance CTC is projected to have a greater antipoverty impact for children of color with historically higher poverty rates. Compared with the effect on projected poverty rates among White, non-Hispanic children, the magnitude of the antipoverty effect of the Advance CTC is estimated to be double among American Indian/Alaska Native children and Hispanic children with rates estimated to be reduced by 3.5 and 3.8 percentage points, respectively. A reduction of this size indicates 30,000 fewer American Indian/Alaska Native children and 720,000 fewer Hispanic children in poverty. The projected impact of the Advance CTC is similar and sizable for Black non-Hispanic children with a projected reduction of 4.5 percentage points compared to the poverty rate in 2021 without the credit (19.4 percent to 14.9 percent). For groups with lower than average child poverty rates, including Asian, non-Hispanic and White, non-Hispanic children, the impact of the Advance CTC is to reduce the projected poverty rate by 1.2 to 1.4 percentage points. As non-Hispanic White children are the largest group, the reduction of 1.4 percentage points is a sizeable difference with 500,000 fewer non-Hispanic White children projected to be in poverty.

Projected Number Kept Out of Poverty by Federal Stimulus in 2021

Federal stimulus kept millions of Americans out of poverty in 2021. We project that economic impact payments, the Advance CTC, and unemployment compensation each contributed significantly to alleviating poverty in 2021. For the share of people whose income was projected to be below poverty in 2021 without federal and state benefits, we estimate the impact of government spending on closing the poverty gap—the dollar value between family income and the official poverty threshold. To estimate the impact of each benefit, we modeled income by adding benefits cumulatively in the order available to families—benefits are presented in Figure 5 from left to right, starting with unemployment compensation. We project the total effect of stimulus benefits along with the Advance CTC kept 20.1 million people out of poverty, a projected reduction of 45 percent. We project the child poverty rate was 8.3 percent in 2021, compared to 19.0 percent without those benefits. This reflects 7.8 million children kept out of poverty, a 56 percent reduction in the child poverty rate compared to what the poverty rate would be without federal and state initiatives for 2021 (see Table A3).

The most impactful programs for alleviating poverty were economic impact payments under the ARP and unemployment compensation. For people whose income was projected to fall below poverty without federal and state benefits, we project unemployment compensation raised income above the poverty threshold for 6.0 million people in 2021 and we project economic impact payments from the CAA and ARP kept 2.9 million and 7.9 million people out of poverty, respectively. Six months of the Advance CTC is projected to have kept an additional 2.9 million people out of poverty.

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Figure 5. Number of People Kept Out of Poverty in 2021 by Type of Federal Economic Stimulus (Projected in Millions)

Source: Current Population Survey ASEC 2017-2019 projected to 2021 and microsimulation model TRIM3.
*Note that unemployment compensation includes regular state payments and expanded benefits during the pandemic (FPUC, PUA, and PEUC).

Discussion

This brief uses nowcasting to estimate the impact of stimulus and unemployment benefits on the number of people with income below the poverty threshold in 2021. We projected the level of poverty in 2021 counting these benefits, and compared the results to official poverty estimates for 2019. We also compared the poverty rate in 2021 with and without the additional benefits. Despite the intervening recession, we project that between 2019 and 2021, annual poverty rates will fall by 2.1 percentage points, with 6.7 million fewer people in poverty, after considering stimulus from economic impact payments, expanded unemployment compensation, and state bonuses. Looking only at 2021, we project the poverty rate with federal and state stimulus and the Advance CTC was 45 percent lower than what it would be without those benefits. Altogether we project 20.1 million people were kept out of poverty in 2021 by economic stimulus, unemployment compensation, and the Advance CTC.

The analysis also shows that federal and state efforts to counteract the economic effects of the pandemic in 2021 had the most impact for groups with higher poverty rates historically, such as American Indian/Alaska Native people, Black non-Hispanic people, and Hispanic people. Our model projects poverty would have been much higher for these groups in 2021 in the absence of expanded unemployment compensation and federal stimulus.

Our analysis demonstrates the particular effect of stimulus, unemployment compensation, and the Advance CTC for children. We project that the child poverty rate in 2021 was 42 percent lower than the official poverty rate in 2019. When looking at the role of benefits specifically in 2021, we project that the child poverty rate was 56 percent lower compared to what it would have been without these benefits. In particular, we project the Advance CTC kept 1.8 million children out of poverty, who otherwise would have been in poverty without this benefit, a poverty reduction of 23 percent.

Lastly, we projected poverty given unchanged levels of employment among lower-income workers from July to December without expanded unemployment compensation, additional stimulus, or payments from the Advance CTC. Based on this scenario we projected a poverty increase of 3.4 percentage points compared with the April to June period. Such a rise in poverty would likely lead to more Americans in need of and ultimately applying for safety net benefits such as Medicaid.

We expect our projections to differ from other researchers due to differences in assumptions on macroeconomic circumstances, data sources, and the approach to measuring poverty. For example, we project how money income and tax payments compare to the official poverty threshold. Other researchers have used the supplemental poverty measure (SPM), which counts program benefits such as SNAP and subtracts the cost of some necessities including child care when counting income.[8] Importantly, our results align with studies that use different methods and make different assumptions, which lends support to the benefit that federal stimulus had for low income people in 2021. Two studies used microsimulation to project SPM poverty in 2021 to assess the combined, cumulative impact of broad federal policy initiatives and economic change. The first compared poverty rates in 2021 with no federal initiatives to SPM poverty rates in 2021 under ARP initiatives (similar to our approach) and found unemployment compensation and ARP policies reduced

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[8] See Fox, Liana E. and Kalee Burns. 2021. "The Supplemental Poverty Measure: 2020." U.S. Census Bureau, Report P60-275.

poverty by 36 percent [9]—consistent with our finding of a 45 percent reduction in poverty as we also counted economic impact payments from the CAA and state stimulus. The second study compared 2021 projections to SPM estimates for 2018. The researchers found improvements in the economy combined with federal and state stimulus and program benefits reduced the projected SPM poverty rate by 45 percent.[10] Our analysis comparing poverty projections for 2021 to 2019 found a poverty reduction of 28 percent, a more modest estimate in part because of the different year of comparison (the poverty rate declined from 2018 and 2019).

Researchers have also assessed the poverty alleviation impact of particular tax policies and our findings are in line with this body of work. The Census Bureau found that economic impact payments during 2020 reduced SPM poverty by 28 percent, and though the time period and policies are not the same, the magnitude of the effect is comparable to our analysis. Research on the effect on child poverty rates of the full 12 months of ARP CTC payments estimates that the expanded CTC including advanced payments would reduce child poverty rates by around 40 percent.[11] This aligns well with our estimate, which finds six months of Advance CTC payments would reduce child poverty by 23 percent.

Our analysis has limitations that should be considered when interpreting the results. We modeled eligibility for unemployment compensation and the potential weekly benefits based on federal and state policies and individuals' pre-pandemic earnings. We modeled which eligible people would receive unemployment benefits based primarily on administrative data covering the first quarter of 2021, and the process produced an overall annual participation rate of 78 percent (see Appendix B). We relied on reasonable assumptions to calculate probabilities for program participation but the closeness of the modeled unemployment benefits to actual payments during 2021 will not be known until final data are available at some point in 2022. In this analysis our outcomes depend on assumptions being correct.

In addition, the model does not capture structural changes in the economy since March. Increased employment throughout the year incorporated into the data is based on the information and projections available as of the start of the year. The national level of unemployment declined by 0.4 percentage points in July and again in September 2021; and important for poverty projections, recent job gains were significant in industries with large numbers of low wage workers—retail, leisure, and hospitality. To the extent that unemployed and previously low-wage workers find jobs and gain employment at a different rate than predicted in our data, our projected rise in poverty may be overstated or understated. Overall, the 2021 unemployment rate of 5.4 percent estimated by the Bureau of Labor Statistics is comparable to the projection from the Congressional Budget Office (5.7 percent), which we used in our model.

Modeling the number of U.S. jobs and workers in early 2021 using prior year data is not as precise as measuring the labor force together with jobs, as the annual Current Population Survey will do in 2022. The lack of precision means we are unable to identify, for example, people who left better paying jobs in 2020 for lower wage jobs in 2021. Finally, the model provides a static snapshot of 2021, built with data known or projected when it was created, and does not reflect shifting trends in the U.S. economy.

In light of these limitations, the results indicate the likely magnitude and extent of poverty reduction resulting from the federal and state measures discussed here, and are not intended as precise estimates of the actual poverty rate for 2021. We expect that when they are released in 2022, the official poverty rates for 2021 will differ from our projections—not only because we include economic impact payments and the Advance CTC, but also because we rely on projected income and demographic data. However, given the importance of timely analysis and the rigor of our approach, we believe these estimates can provide policymakers with valuable insight on the anti-poverty impact of federal action in 2021. More research is needed to explore how critical federal support kept millions of people out of poverty during the economic downturn, particularly for racial and ethnic groups most affected by the downturn and the pandemic.

[9] Wheaton, Laura, Sarah Minton, Linda Giannarelli, and Kelly Dwyer. 2021. "2021 Poverty Projections: Assessing Four American Rescue Plan Policies." Urban Institute.

[10] Wheaton, Laura, Linda Giannarelli, and Ilham Dehry. 2021. "2021 Poverty Projections: Assessing the Impact of Benefits and Stimulus Measures." Urban Institute

[11] See National Academies of Sciences, Engineering, and Medicine. 2019. "A Roadmap to Reducing Child Poverty." DC: The National Academies Press; Cox, Kris, Chuck Marr, Arloc Sherman, and Stephanie Hingtgen. 2021. "If Congress Fails to Act, Monthly Child Tax Credit Payments Will Stop, Child Poverty Reductions Will Be Lost." Center on Budget and Policy Priorities; Acs, Gregory and Kevin Werner. 2021. "How a Permanent Expansion of the Child Tax Credit Could Affect Poverty." Urban Institute.

Appendix A. Detailed Tables

Table A1. People in poverty by race and ethnic origin, pre-pandemic and projected 2021 (including economic impact payments, excluding the Advance CTC)

(pct.) (number in 1000s)	2019	2021				Annual comparison
		January to March	April to June	July to December	Annual	diff. +/- pre-pandemic
All people	10.5	4.8	9.2	12.6	8.4	-2.1
	33,980	15,750	30,000	40,920	27,380	-6,600
children	14.4	4.0	13.9	17.5	10.8	-3.6
	10,470	2,920	10,200	12,770	7,920	-2,550
All people (TRIM3 rate, 2019)	10.5	4.8	9.2	12.6	8.4	-2.1
	34,100	15,750	30,000	40,920	27,380	-6,720
children	13.8	4.0	13.9	17.5	10.8	-3.0
	10,100	2,920	10,200	12,770	7,920	-2,180
Amer Indian/Alaska Native	21.6	8.3	16.6	23.1	15.4	-6.2
	530	250	500	700	460	-70
children	26.9	6.0	24.5	28.7	19.0	-7.9
	170	50	190	220	150	-20
Asian non-Hispanic	9.1	4.9	7.9	9.9	6.7	-2.4
	1,760	920	1,490	1,870	1,270	-490
children	9.8	3.1	8.7	10.9	6.0	-3.8
	380	110	310	390	210	-170
Black non-Hispanic	20.2	8.2	14.8	21.9	14.9	-5.3
	8,090	3,290	5,910	8,750	5,950	-2,140
children	27.8	6.5	22.6	30.1	19.4	-8.4
	2,800	630	2,190	2,920	1,880	-920
Hispanic	16.7	6.4	14.2	18.2	11.7	-5.0
	10,000	3,900	8,710	11,200	7,160	-2,840
children	22.3	6.2	20.6	24.8	15.3	-7.0
	4,190	1,180	3,890	4,680	2,890	-1,300
Multiple or other race	13.7	4.1	11.0	14.6	9.7	-4.0
	1,040	370	980	1,290	860	-180
children	16.4	2.8	14.1	17.6	11.0	-5.4
	540	110	560	690	430	-110
White non-Hispanic	8.1	3.6	6.4	8.8	6.0	-2.1
	15,740	7,020	12,400	17,110	11,760	-3,980
children	9.2	2.3	8.4	10.6	6.5	-2.7
	3,390	850	3,060	3,870	2,350	-1,040

Source: Census Bureau. Income and Poverty in the United States: 2019, released September 15, 2020. Report no. P60-270; CPS ASEC pooled estimates 2018-2020; pooled estimates for data years 2017-2019 projected to 2021; and TRIM3.
For ease of comparison, 2019 estimates for all people and children are the Census Bureau's published estimates. For comparison, we also show 2019 estimates from TRIM3. The 2019 TRIM estimates use alternative weights to correct for differential nonresponse to the 2020 ASEC and are adjusted for underreporting of program benefits. To increase sample size for detailed racial and ethnic groups, pre-pandemic estimates are pooled and averaged poverty rates for 2017 to 2019 from TRIM3.

Table A2. People and children in poverty by race and ethnic origin, pre-pandemic and projected 2021 (including economic impact payments and the Advance CTC)

(pct.) (number in 1000s)	2019	2021				Annual comparison
		January to March	April to June	July to December	Annual	diff. +/- pre-pandemic
All people	10.5	4.8	9.2	10.3	7.5	-3.0
	33,980	15,750	30,000	33,710	24,430	-9,670
children	14.4	4.0	13.9	11.6	8.3	-6.1
	10,470	2,920	10,200	8,450	6,080	-4,390
Amer Indian/Alaska Native	21.6	8.3	16.6	19.9	14.0	-7.6
	530	250	500	600	420	-110
children	26.9	6.0	24.5	21.7	15.5	-11.4
	170	50	190	170	120	-50
Asian non-Hispanic	9.1	4.9	7.9	8.3	6.3	-2.8
	1,760	920	1,490	1,570	1,190	-570
children	9.8	3.1	8.7	6.9	4.8	-5.0
	380	110	310	250	170	-210
Black non-Hispanic	20.2	8.2	14.8	18.4	13.2	-7.0
	8,090	3,290	5,910	7,350	5,280	-2,810
children	27.8	6.5	22.6	21.3	14.9	-12.9
	2,800	630	2,190	2,070	1,450	-1,350
Hispanic	16.7	6.4	14.2	13.6	9.8	-6.9
	10,000	3,900	8,710	8,330	6,000	-4,000
children	22.3	6.2	20.6	15.6	11.5	-10.8
	4,190	1,180	3,890	2,930	2,170	-2,020
Multiple or other race	13.7	4.1	11.0	11.0	8.1	-5.6
	1,040	370	980	980	720	-320
children	16.4	2.8	14.1	11.2	8.3	-8.1
	540	110	560	440	330	-210
White non-Hispanic	8.1	3.6	6.4	7.7	5.6	-2.5
	15,740	7,020	12,400	14,880	10,830	-4,910
children	9.2	2.3	8.4	7.2	5.1	-4.1
	3,390	850	3,060	2,600	1,850	-1,540

Source: Census Bureau. Income and Poverty in the United States: 2019, released September 15, 2020. Report no. P60-270; CPS ASEC pooled estimates 2018-2020; CPS ASEC pooled estimates 2017-2019 projected to 2021; and TRIM3.
For ease of comparison, 2019 estimates for all people and children are the Census Bureau's published estimates. To increase sample size for racial and ethnic groups, pre-pandemic estimates are pooled, averaged poverty rates for 2017 to 2019 from TRIM3.

Table A3. Poverty impact from federal and state benefits, 2021 (projected)

	Children age 0-17		All ages	
	(in 1000s) 73,159	percent 100.0%	(in 1000s) 325,926	percent 100.0%
Above Poverty (before UC, economic impact payments, Advance CTC)	59,246	81.0%	281,343	86.3%
Below Poverty (before UC, economic impact payments, Advance CTC)	13,913	19.0%	44,583	13.7%
total gap reduction[+]	7,822	10.7%	20,139	6.2%
Kept out of poverty by unemployment compensation[++]	1,754	2.4%	5,965	1.8%
Kept out of poverty by 2nd Economic Impact Payment (Dec 2020)	1,109	1.5%	2,928	0.9%
Kept out of poverty by 3rd Economic Impact Payment (ARP)	3,031	4.1%	7,931	2.4%
Kept out of poverty by state stimulus and back-to-work bonus	95	0.1%	372	0.1%
Kept out of poverty by Advance Child Tax Credit	1,833	2.5%	2,944	0.9%
In poverty	6,083	8.3%	24,430	7.5%

Source: Current Population Survey ASEC 2017-2019 projected to 2021 and microsimulation model TRIM3.
[+]We estimate poverty impacts by applying program resources cumulatively in the order presented.
[++]Unemployment compensation includes FPUC, PUA, and PEUC and is included in the measure of official poverty.

Appendix B. Methodological Details

This appendix outlines the methodological approach and decisions we made in producing our nowcasts. These decisions have a direct effect on our results; different decisions about how to count specific benefits as income, and how to incorporate unemployment estimates and projections, would lead to different nowcasts. Although we believe our decisions are reasonable, other analysts might make different decisions.

To project employment and income in 2021 we set employment to actual levels in February 2021 and model CBO's projections for returns to employment during the last three quarters of the year.

Data sources and preparation.
Our analysis relied on a combination of data sources. The main underlying data comes from the Transfer Income Microsimulation model, version 3 (TRIM3), sponsored by ASPE and maintained by the Urban Institute. TRIM3 is based on the Current Population Survey Annual Social and Economic Supplement (CPS ASEC), with data collection every March for the prior year and typically released in September. TRIM3 makes a number of adjustments to the CPS data to model income during the year and correct for the underreporting or misreporting of public benefits. To develop the 2021 projections, we combined data from the 2017, 2018, and 2019 ASEC, representing income in 2016 to 2018 (more recent CPS data had not yet been integrated into the TRIM3 model) and adjusted the weights to reflect the U.S. population in 2021.

Demographic shifts.
Starting with the Census Bureau's population weights for each data file, we adjusted the weights to match the Census Bureau's 2021 projections, considering age, sex, race, Hispanic origin, citizenship status, and state of residence.

Modeling employment.
We constructed data to support economic projections for 2021 using two additional data sources. First, from the monthly CPS survey for February 2021, we obtained the share of adults employed with earnings by demographic characteristics (sex, age, citizenship status, race-ethnicity, marital status, and presence of young children). For people 16 and older, we computed the percentage who were at work during the month or absent from work but being paid. In this way, we defined employment as having earnings from work and modeled employment rather than unemployment to avoid having to distinguish persons actively looking for work from discouraged workers. The monthly CPS data does not collect detailed earnings for the full sample and for this reason we used educational attainment as a proxy for wages in calculating the likelihood of job loss. Based on person-level characteristics, we calculated the probability of job loss by February 2021. Second, we relied on the U.S. Bureau of Labor Statistics (BLS) survey data from Current Employment Statistics to calculate the percentage of jobs lost by industry and by state between February 2020 and February 2021.

We mapped the 2021 employment scenario onto the three-year data by estimating each employed person's likelihood of experiencing job loss (that is, changing from having earnings to not having earnings) by state and industry. We then aligned the initial probabilities with demographic and occupation characteristics from the monthly CPS for February 2021. In the final three-year dataset we considered a person to be unemployed if he or she had no earnings because either (a) the person was randomly selected by state and industry for job loss, having had earnings in the original CPS ASEC data, or (b) the person was unemployed in the original data. In this way we modeled unemployment based on the number of jobs recorded in early 2020 and not found in early 2021. For each job lost we also probabilistically assigned a *duration* of unemployment reflecting the Congressional Budget Office's (CBO's) projections of increasing employment for the last three quarters of 2021. We referred to the CBO's employment projections for 2021.[12] The CBO projected unemployment at 5.7 percent in 2021. This compares to the rate of 8.1 percent reported for 2020.

Our data captured, for example, the increase identified in the monthly CPS in the share of employed men who worked part-time, particularly for men with lower educational attainment, who were not native citizens and who were Hispanic, Asian, or another race.

Comparisons to official estimates of unemployment.
BLS reported unemployment near 6.0 percent from January to June in 2021, declining to 5.4 percent in July and 4.8 percent in September. Our model projects unemployment in 2021 at 8.0 percent for January to March, at 7.2 percent for April to June, and 6.4 percent for July to December. For the period July to December , our 2021 projections are consistent with monthly unemployment at or near 6.4 percent *including* workers who left the labor force in 2020 and stopped looking for work. Official estimates of unemployment exclude

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[12] See the Congressional Budget Office's report, "An Overview of the Economic Outlook: 2021 to 2031."

unemployed persons no longer looking for work. Parents without child care who left the workforce and discouraged workers who stopped looking for work during the pandemic are not classified as part of the labor force and for this reason do not impact the official unemployment rate. In our economic scenario these groups are counted as unemployed, and as such, the model's projected unemployment rates are best compared with unemployment including marginally attached and discouraged workers. BLS estimates this broader unemployed population at 8.0 percent in January, 6.9 percent in June and 5.8 percent in September. See Table A-15 *Alternative measures of labor underutilization*.

Changes in public benefit program rules. Each benefit program was simulated using the most recent information available on the rules for eligibility and benefits. For an example of data sources, see the Welfare Rules Databook: State TANF Policies as of July 2018. Reference year 2018 was the most recently completed when this model was created.

Accounting for unemployment compensation and stimulus. Federal and state governments implemented a number of stimulus efforts to address the economic slowdown caused by the pandemic. We incorporated some of these into the model and our projections reflect the following: federal stimulus payments enacted in the American Rescue Plan Act in March 2021 and the Consolidated Appropriations Act enacted in late December 2020; retroactive payments to mixed-immigrant status families included in the CARES Act enacted in March 2020; Pandemic Unemployment Assistance (PUA); Pandemic Emergency Unemployment Compensation (PEUC); and Federal Pandemic Unemployment Compensation (FPUC). The model accounts for about half of the states opting out of expanded unemployment benefits in June or July.

Modeling unemployment compensation. A person was counted as eligible for unemployment benefits in a particular month if the person a) had weeks of benefits available, and b) appeared to satisfy monetary and categorical eligibility rules (relaxed substantially by federal expansions). Benefits were based on pre-pandemic earnings and state rules, and also included the additional $300 in weekly benefits when that policy was in effect. The approach we used does not distinguish between regular state unemployment payments and expanded benefits during the pandemic including FPUC, PUA, and PEUC. All payments were added to income as unemployment compensation.

Our 2021 projections of unemployment benefits accounted for as much real-world detail as was feasible, including capturing variation in the availability of benefits following the expiration of the extended federal unemployment benefits—which occurred in early September in about half the states and as early as June among the states opting out early. Whether a person could still receive benefits was modeled based on 1) the number of weeks of regular state unemployment benefits. 2) extended benefits (EB) in their state of residence, and 3) weeks of compensation used to date. Among the states for which EB was triggered when modeling was conducted, we assumed states with high unemployment would still have EB triggered when additional pandemic unemployment benefits ended. With federal policies in place, we added $300 per week to the state benefit under FPUC. We accounted for the fact that about half the states opted out of federal pandemic programs prior to September. Our approach also captures that some states only opted out of the extra $300 per week.

Additionally, under pandemic rules we did not require that unemployed people were looking for work. Non-workers in the baseline data who reported being "discouraged" were considered eligible for unemployment compensation, along with people modeled for job loss. Under the pandemic rules, the monetary requirement of a certain amount of earnings over a base period (usually a year) were loosened. We treated each person as passing monetary requirements except for casual earnings (less than $1,000) that might not have been reported. We modeled self-employed people as eligible for unemployment compensation under expanded categorical eligibility.

To calculate the rate of participation in unemployment compensation (UC), we used the U.S. Department of Labor's (DOL) administrative data for actual weeks compensated during the first quarter of 2021. We calculated 213 million weeks or 71,000 weeks per month when summed across states. For each state we selected sufficient recipients from among the people estimated as eligible to come as close as possible to the DOL first-quarter administrative data. The selection of participants also incorporated differentials by age group based on pre-pandemic patterns.

Overall, we assigned a number of unemployment benefit weeks across January to March equal to 74 percent of the administrative records. We were not able to reach 100 percent of the target in all states and set a ceiling. The states with the greatest difference between the target and the simulated first-quarter weeks of unemployment benefits were New York, where we reached only 46 percent of the target, and California, where we reached only 62 percent of the weeks compensated benchmark. On an annual per-person basis, we modeled the UC participation rate at about 78 percent among those eligible to receive benefits with a higher percentage among those who were receiving wage or salary income and a lower percentage among those who were students or self-employed.

Economic impact payments. We simulated rules for each economic impact payment including phase-outs for higher income households, the Social Security Number requirement, and treatment of dependents. All eligible tax filers and recipients of Social Security, Supplemental Security Income (SSI), and Veterans Benefits were assumed to receive checks, as were 78 percent of other eligible families and individuals who did not file taxes. We assumed 10 percent of non-filers who received a stimulus check based on their receipt of Social Security, SSI, or Veterans Benefits would take the steps necessary to obtain the additional payment for a dependent or spouse.

In this brief we projected poverty for 2021 counting economic impact payments as income. Our model is consistent with economic research reflecting stimulus payments were available to individuals as personal income predominately in January to March.[13] Conceptually we approached stimulus payments as immediate relief for lower income people struggling with fewer work hours and less income during an uneven economic recovery. Although some recipients saved their payments, we designed the model based on research showing people with low income who receive government assistance tend to spend most assistance shortly after receiving it.[14] Our premise for this model is that for people in poverty or at risk of falling into poverty, saving stimulus checks for six months or longer was most likely a luxury. ASPE research on the unequal impacts of the pandemic highlighted challenges faced by many low-income workers including lack of paid leave or sick leave as well as broader increases in delayed rent payments and food insecurity.[15] For these reasons we approached federal stimulus as helping millions of low-income people meet their immediate needs while unemployment remained at or near 6 percent through June 2021.

The Department of the Treasury reports a small number of economic impact payments were issued during the second half the year, however, we did not model these exceptions to the payment schedule. We modeled income over three time periods, adding economic impact payments to income closest to the month payments were disbursed. We distributed stimulus payments for the January to March period in the following instances: retroactive payments to mixed immigrant status families under the CARES Act; payments enacted in late December 2020; and 88 percent of payments for tax filers enacted by the American Rescue Plan Act. Based on Internal Revenue Service announcements about the timing of distributions, we assumed 12 percent of tax filers and all nonfilers simulated to receive the ARP payment received their payments between April and June.[16] Among tax filers, we randomly assigned the month of payment for economic stimulus payments. In our model, economic impact payments dramatically reduced poverty in the January to March period. The smaller share of payments in the period April to June also reduced poverty but to a lesser extent. Because we assigned all federal economic impact payments to income in the first half of the year, there was no effect on projected poverty for the July to December period.

State Stimulus Payments and Back to Work Bonuses. In addition to modeling federal stimulus checks, we modeled state stimulus checks issued in five states and the District of Columbia and distributed the checks based on the months in which they were distributed. We also modeled state back to work bonuses paid in seven states to previously unemployed workers who return to work and meet their state's eligibility criteria.

Advance Child Tax Credit (CTC). With the American Rescue Plan Act of 2021, Congress increased the value of the child tax credit for qualifying families, made it fully refundable, and directed the IRS to pay one-half the annual value as advanced monthly payments starting in July.[17] One half the value of the 2021 credit is a maximum of $1,800 for each child under age 6 ($300 monthly) and $1,500 for each child age 6 through 17 ($250 monthly). The method reflects that taxpayers should have received half of the child tax credit in 2021 before filing their 2021 tax return. We assumed that all eligible tax filers and 78 percent of eligible nonfilers received the Advance CTC.

We applied the Advance CTC to income without impacts on employment other than what was projected for 2021. Though Corinth et al. (2021) recommend applying employment substitution effects to most employed parents,[18] thereby reducing

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[13] Bureau of Economic Analysis. 2021. "Effects of Selected Federal Pandemic Response Programs on Personal Income."

[14] Canning, Patrick and Brian Stacy. 2019. "Quantifying the Impact of SNAP Benefits on the U.S. Economy and Jobs." U.S. Department of Agriculture, Economic Research Service. *Amber Waves*. July 18th.

[15] Winston, Pamela. 2021. "COVID-19 and Economic Opportunity: Unequal Effects of Economic Need and Program Response." U.S. Department of Health and Human Services; Meade, Erica. 2021. "COVID-19 and Economic Opportunity: Inequities in the Employment Crisis." U.S. Department of Health and Human Services; Congressional Research Service. 2021. "COVID-19: Government Resources for Real-Time Economic Indictors." Report IN11521.

[16] The IRS sent 169 million economic impact payments enacted by the ARP. The total value of payments disbursed from March to June was $395 billion. See: Internal Revenue Service. June 9, 2021. "More than 2.3 million additional Economic Impact Payments disbursed under the American Rescue Plan; total payments top 169 million." News Release IR-2021-127.

[17] For details see Internal Revenue Service publication 5549, IRS User Guide and Child Tax Credit Update Portal. October 2021.

[18] Corinth, Kevin, Bruce D. Meyer, Matthew Stadnicki, and Derek Wu. (2021). "The Anti-Poverty, Targeting, and Labor Supply Effects of the Proposed Child Tax Credit Expansion." Working paper, University of Chicago. Retrieved November 8, 2021.

employment, this analysis does not model that type of change. To the extent that some parents may have reduced their employment due to receiving a larger amount of tax credit, our estimates of poverty rates for the affected families could be somewhat understated. For details on the impact of employment substitution effects on child poverty, see the National Academies of Sciences report, *A Roadmap to Reducing Child Poverty*.[19]

Estimating people kept out of poverty. To project the number of people kept out of poverty by the federal and state stimulus programs listed in Table A3 and shown in Figures 4-6, we used an incremental approach. We measured family income starting from earnings and other money sources *except* unemployment compensation, economic impact payments, state stimulus payments, and the Advance CTC. Without these benefits, we projected poverty in 2021 at 13.7 percent and 19.0 percent among all persons and children, respectively. We added program benefits cumulatively. We started with unemployment compensation, including expanded unemployment benefits, adding compensation to income and then recalculated the gap between income and the official poverty threshold. Adding UC brought income up to the threshold or "kept" 5.965 million people out of poverty. We estimate UC reduced the poverty level from 13.7 percent to 11.9 percent for all persons and from 19.0 percent to 16.6 percent among children. Note that these tabulations do not distinguish regular state unemployment compensation from the extra $300 a week (PEUC) or other benefits or eligibility under FPUC or PUA. For people with income below poverty after the first calculation, we added the economic impact payment under the Consolidated Appropriations Act (PL 116-260) paid in January 2021. With this benefit added to income we recalculated poverty and found 2.928 million fewer people including 1.109 million fewer children in poverty. We continued the process adding benefits chronologically according to when a benefit became available, next adding the value of the the economic impact payment under the American Rescue Plan Act (PL 117-2) and recalculated poverty. The last benefit we added to income was the Advance CTC disbursed from July to December 2021.

For these projections, we completed a sensitivity analysis and estimated the impact of each program benefit on the projected poverty rate by subtracting only one benefit from annual income and re-estimating the level of poverty. That is, the method sums income from all sources and then subtracts exactly one program benefit to gauge its antipoverty impact. Counting income from all programs listed in Table A3 except economic impact payments under the ARP, 7.1 million more people would have been in poverty in 2021. Because the Advance CTC was calculated last in the original analysis, its individual impact on the poverty rate is the same—the rate would be higher by 2.9 million people including 1.8 million children in 2021 without the Advance CTC.

The Urban Institute maintains and operates the Transfer Income Microsimulation model, version 3 (TRIM3). Private and public organizations may contract for specific analyses. Access to detailed programmatic decisions, inputs, and algorithms are shared with the Office of the Assistant Secretary for Planning and Evaluation's permission. The Urban Institute also offers a public use version of TRIM3 data: http://trim3.urban.org/T3Welcome.php

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[19] In their analysis of the potential antipoverty impacts of various policy changes, the National Academies of Sciences Committee on Building an Agenda to Reduce the Number of Children in Poverty by Half in 10 Years found that simulating employment effects for a policy similar to the fully expanded CTC reduced the effect on child poverty by a tenth of a percentage point (see NAS, 2019).