

# The Effects of the 2021 Child Tax Credit on Housing Affordability and the Living Arrangements of Families With Low Incomes

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**ABSTRACT** Access to safe and stable housing is important for child and adult well-being. Yet many low-income households face severe challenges in maintaining stable housing. In this article, we examine the impact of the 2021 temporary expansion to the Child Tax Credit (CTC) on housing affordability and the living arrangements of families with low incomes. We employ a parameterized difference-in-differences method and leverage national data from a sample of parents who are receiving or recently received Supplemental Nutrition Assistance Program benefits ( $N = \sim 20,500$ ), many of whom became newly eligible for the CTC. We find that the monthly CTC reduced parents' past-due rent/mortgages (both amounts and incidence) and their reports of potential moves due to difficulties affording rent/mortgages. The CTC increased the likelihood that parents reported a change in their living arrangements and reduced their household size, both effects driven by fewer mothers living with a partner (and not a reduction in doubling up). We find some differences in effects by race and ethnicity and earnings. Our findings illustrate that the monthly credit improved low-income parents' ability to afford housing, gain residential independence from partners, and reduce the number of people residing in their household.

**KEYWORDS** Child Tax Credit • Living arrangements • Doubling up • Housing affordability • Low-income families

## Introduction

Access to safe and stable housing is important for child and adult well-being (e.g., Desmond and Gershenson 2016; Jelleyman and Spencer 2008; Perkins 2017, 2019; Ziolo-Guest and McKenna 2014). Yet many low-income households face severe challenges maintaining stable housing (Desmond 2012). As housing affordability has declined, housing instability has increased, especially for lower income households (Joint Center for Housing Studies [JCHS] 2022). The COVID-19 pandemic intensified concerns about housing instability, with the ensuing lockdowns and extensive closures of businesses (Wheelock 2020) pushing many households to extreme economic hardships (Cooney and Shaefer 2021). Although the federal government implemented several policies to stem the pandemic's adverse impacts (e.g., stimulus

**ELECTRONIC SUPPLEMENTARY MATERIAL** The online version of this article (<https://doi.org/10.1215/00703370-11458327>) contains supplementary material.

checks, extended unemployment insurance, larger Supplemental Nutrition Assistance Program [SNAP] payments), including housing-specific policies (eviction moratoria, emergency rental assistance, mortgage forbearances, suspended foreclosures), high rates of housing insecurity persisted, especially among low-income families. Estimates from early 2021 suggest that nearly a quarter of those with earnings below \$25,000 were behind on rent, with Black, Hispanic, and Asian renters far more likely to report back-owed rent than White renters (JCHS 2021).

In March 2021, Congress passed a temporary expansion of the Child Tax Credit (CTC) to address the adverse impacts of the COVID-19 pandemic on families with children. The CTC benefit was increased from \$2,000 to \$3,600 per child under age 6 and to \$3,000 per child aged 6–17, and eligibility was extended to families with no earnings. Additionally, rather than providing the full transfer at tax time, the temporary expansion delivered half the benefit in monthly installments from July to December 2021 (the other half came when families filed their taxes in early 2022). These reforms resulted in roughly 26 million children gaining CTC eligibility or receiving higher benefits, nearly all of whom lived in low-income households, the focus of our study (Collyer et al. 2019; Goldin and Michelmore 2022).

Although an emerging body of research has found that the monthly CTC payments improved some aspects of material well-being, such as food insecurity (Collyer et al. 2022; Parolin et al. 2023; Pilkauskas et al. 2022; Shafer et al. 2022), we know relatively little about how the CTC affected housing affordability and living arrangements, especially among families with low incomes. To date, three studies have examined the effects of the CTC on a single measure of housing affordability (Collyer et al. 2022; Hamilton et al. 2022; Parolin et al. 2023),<sup>1</sup> and no studies have estimated the effects of the CTC on living arrangements, despite research demonstrating how economic need and housing affordability can shape living arrangements (Carlson et al. 2012; Engelhardt et al. 2005; Pilkauskas and Michelmore 2019).

In this article, we extend the literature by examining the effects of the monthly CTC on a wider array of housing affordability measures than previously studied: moves driven by difficulties affording rent/mortgages, whether families have back-owed rent/mortgages, and (if so) the amount they owe. Our study is the first to consider the effects of the CTC on living arrangements, changes in families' living situations, coresidential partnerships, doubling up,<sup>2</sup> and household size—measures that are linked with family and child well-being (e.g., Desmond and Gershenson 2016; Desmond and Kimbro 2015; Perkins 2019; Raley et al. 2019; Ziol-Guest and McKenna 2014). We use a unique, large ( $N = \sim 20,500$ ), national, repeated cross-sectional sample of economically disadvantaged families who were receiving or had recently received SNAP (or food stamps). Because families in our study had average

<sup>1</sup> One study, focused on New York City residents, examined whether families could pay their full rent/mortgage (Collyer et al. 2022). A second national study examined the likelihood of being caught up on rent/mortgage (Parolin et al. 2023). A third study, documented in a Brookings Institution working paper, examined the likelihood of skipping rent/mortgage in a national sample (Hamilton et al. 2022). Two other studies considered extreme housing hardships—eviction and homelessness—which could be considered indicators of housing affordability (Hamilton et al. 2022; Pilkauskas et al. 2022).

<sup>2</sup> *Doubling up* refers to households with additional adults who are not the parent(s) or the parent's partner, which can include adult relatives and nonrelatives.

annual incomes of approximately \$10,000, many were ineligible or only partially eligible for the CTC before the expansion. Thus, unlike earlier work, our study focuses on a population of families most likely affected by the CTC reforms—those with very low incomes—who are of particular interest to policymakers.

Using a parameterized difference-in-differences approach, we exploit variation in the size of the credit over time (by number and age composition of children in households) to estimate the causal effects of the monthly 2021 CTC on housing and household instability. Because of important racial inequalities in the tax (Brown 2021) and housing systems (JCHS 2021) and improved access to the CTC for Black and Hispanic families under the 2021 reforms (Collyer et al. 2019; Goldin and Micheltore 2022), we consider heterogeneity in the effects of the CTC by race and ethnicity. Similarly, because families with very low or no earnings disproportionately gained eligibility for the CTC in 2021, we also examine differences in effects by household income (above/below median income in our sample).

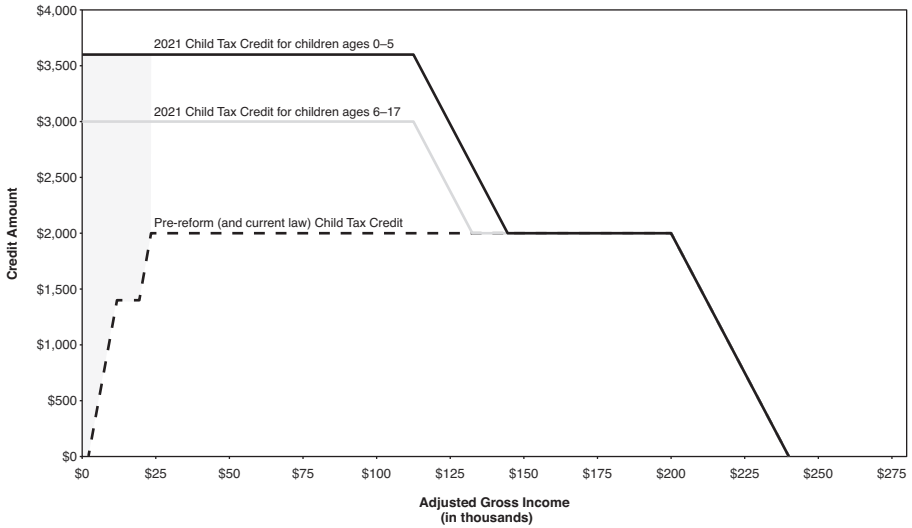
We find that the monthly CTC reduced back-owed rent/mortgages (both incidence and amount) and the share of families reporting potential moves due to difficulties affording current rent/mortgages. We also find that the CTC increased the likelihood that families reported a change in their living arrangements and reduced household size, likely decreasing household crowding,<sup>3</sup> which is associated with poorer child outcomes (Johnson et al. 2008). The reduction in household size is driven by fewer mothers living with a partner, not by a reduction in doubling up. The finding that the CTC allowed parents to gain residential independence from partners is consistent with research on cohabitation among low-income households showing that romantic partners move in for financial reasons or that former partners cannot move out because of financial constraints (Cross-Barnet et al. 2011; Rault and Régnier-Loilier 2020). Finally, we observe some differences in these effects by race, ethnicity, and earnings. Our results are robust to several model specifications and reweighting approaches. These findings contribute to a growing literature on the effects of unconditional cash transfers in the United States and to debates over whether a permanent monthly CTC would improve the well-being of families with low incomes.

## Background

### The Child Tax Credit

The Child Tax Credit was implemented in 1997 to help defray the costs of raising children (see Crandall-Hollick 2018 for a more extensive history). Originally, the credit primarily went to middle-income tax filers and was nonrefundable, thereby excluding households with no tax liability (i.e., most low-income filers). Over the years, the size of the credit was increased (reaching \$2,000 in 2017), the minimum earnings threshold was lowered, and the credit was made partially refundable, allowing lower income households to claim a partial benefit. However, until the temporary

<sup>3</sup> We cannot observe household crowding, typically measured as the number of people in a household relative to the number of rooms in the home, because we lack information on the number of rooms.



**Fig. 1** Child Tax Credit schedule, prior/current law and 2021 reform, for one child with a single parent. The shaded area indicates the gain in CTC credit during the 2021 reform among families with incomes below \$25,000, those represented in the Providers study sample. The figure illustrates that before the 2021 reform (and under current law), the size of the credit phased in with earnings. Those with earnings below \$2,500 did (do) not qualify for any credit. For a family with one child, those with earnings below roughly \$25,000 were (are) not eligible for the full credit, and those with earnings below approximately \$10,000 were (are) not eligible for the full refundable portion of the credit. During the 2021 reform, the minimum earnings requirement and the phase-in were removed, such that all single-parent households with incomes below \$112,500 (\$150,000 for married couples) were eligible for the full benefit of \$3,000 for a child aged 6–17 and \$3,600 for a child under age 6.

2021 reforms, families still had to earn a minimum of \$2,500 to claim any benefit, with the credit amount phasing in at 15% for each additional dollar of income above \$2,500. These restrictions meant that the poorest one third of U.S. children were ineligible for the full credit.

In March 2021, Congress passed the American Rescue Plan Act, temporarily expanding the CTC. The credit was increased from \$2,000 to \$3,000 per child aged 6–17 (17-year-olds were previously excluded) and to \$3,600 per child under age 6. For the families in our study, the earnings minimum was removed, and those earning less than \$2,500 became eligible for the credit. Additionally, the credit was made fully refundable, eliminating the phase-in structure. Lastly, and key to our study, half the credit was distributed in monthly payments. These payments began on July 15, 2021, with the final payment distributed on December 15, 2021. Families received the other half of the credit in a single payment at tax time (February–April 2022). Despite discussions of making the reforms permanent, Congress failed to garner enough support, and the credit returned to its pre-2021 version in January 2022. Our study examines the impact of the 2021 monthly payments.

Figure 1 illustrates the 2021 CTC benefit structure for a head of household filer with one child, as well as the current (and prior) CTC schedule. The shaded area shows how the 2021 reform impacted the credit size for families in our study. Overall,

the per-child benefit gain between 2020 and the 2021 reform ranged from roughly \$1,000 to \$3,600. In 2020, a single parent with one child would have to earn approximately \$10,000 to receive the full \$1,400 refundable portion of the CTC and earn nearly \$25,000 to take advantage of the full \$2,000 tax credit. Given the low incomes of families in our sample (average annual income of approximately \$10,000), many parents not only gained new access to the credit but gained a benefit representing a substantial share of their household income (on average, a 60% increase in monthly income) under the 2021 reform.

## Theory and Prior Research

### *Housing Affordability*

Given the well-documented link between income and housing affordability (e.g., Chun et al. 2023; Cohen and Wardrip 2011; Desmond 2012; Heflin 2017; Kang 2019; Pilkauskas et al. 2014), we anticipate that the 2021 CTC will improve housing affordability by increasing household income. Evidence suggests that families with children had higher checking account balances at the end of 2021 than prepandemic (Greig and Deadman 2022) and that the 2021 CTC improved families' economic well-being (for a review, see Curran 2021) and reduced child poverty (Burns et al. 2022; Parolin, Collyer et al. 2021).

Studies of spending show that parents used the monthly CTC to pay for housing and bills (which might also include housing) (Hamilton et al. 2022; Michelmore and Pilkauskas 2023; Pilkauskas and Cooney 2021; Pilkauskas and Michelmore 2021). One study found that for each additional \$100 in the monthly CTC, parents spent \$31 on housing, with even larger spending responses among lower income and Hispanic households (Schild et al. 2023). Thus, given evidence that families spent a significant share of their monthly CTC payments on housing, we would expect the CTC to affect housing affordability.

To date, only three studies have examined the effects of the 2021 CTC on any measures of housing affordability. One study of New York City residents analyzed whether the monthly CTC reduced the number of parents who reported being unable to "pay the full amount of rent or mortgage." Although most point estimates suggested improved housing affordability while the CTC was in place, none were significant. A second study, a national two-period panel survey, found no evidence of effects of the monthly CTC on whether respondents skipped a housing payment because of cost in the last six months (Hamilton et al. 2022).<sup>4</sup> Lastly, using data from the Census Household Pulse survey, a nationally representative repeated cross-sectional dataset, Parolin and colleagues (Parolin, Ananat et al. 2021; Parolin et al. 2023) examined whether households were "currently caught up on rent or mortgage payments." They found no effects of the monthly payments but significant declines in past-due rent/mortgages

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<sup>4</sup> This working paper estimated entry into skipping a payment and exit from skipping a payment separately (rather than the experience more broadly). Unfortunately, the researchers lacked data to illustrate parallel trends, a key assumption in a difference-in-differences analysis.

during tax time (the lump-sum period), although this finding was not robust to parameterization of the lump-sum CTC for treatment intensity.<sup>5</sup>

Our study builds on these prior studies in a few ways. First, unlike earlier studies, we can measure the *amount* of families' past-due rent or mortgage. Importantly, this measure allows us to consider whether families paid down some of their back-owed debt, even if they could not fully eliminate it—a scenario that might be more likely for families with high debt levels (Pilkauskas et al. 2023). Unlike earlier work, we limit our sample to individuals who report paying rent/mortgage, given that CTC payments are unlikely to have an effect on those without these expenses. Second, we also examine whether respondents “expect to have to move because of difficulty affording their rent or mortgage,” providing further insight into the effects of the CTC on housing affordability and stability. Third, we use a large national sample of families with low incomes (average income of approximately \$10,000/year), improving our ability to detect associations and more fully explore heterogeneity by race and ethnicity and by income (extremely low earnings vs. low earnings), unlike earlier work.

### *Living Arrangements*

In addition to examining housing affordability, we study living arrangements: doubling up, living with a partner, changes in living situations, and household size. To our knowledge, no research has examined the effects of the monthly CTC on living arrangements. However, an extensive literature has documented how living arrangements affect the social and economic resources available for children, which can affect child outcomes (e.g., Augustine and Raley 2013; Harvey 2020; McLanahan and Sandefur 1994; Perkins 2019; Pilkauskas 2014). By examining whether the monthly CTC affected children's living arrangements, we can better understand how cash might affect child well-being.

*Doubling up.* Doubling up refers to living with adults beyond the child's parent(s) or a parent's partner. This arrangement is a common experience for children, especially for those in lower income and minority households (Harvey et al. 2021). Although doubling up (and, in particular, multigenerational coresidence) increased in 2020 among households with children, coresidence rates had returned to pre-COVID levels by 2021 (Amorim and Pilkauskas 2023).

Doubling up is often a response to poverty or severe housing needs (Clampet-Lundquist 2003; Skobba and Goetz 2013), and many families double up to lower housing costs (Harvey and Dunifon 2023; Pilkauskas et al. 2014). However, doubling up can also occur for other reasons, such as family care needs (Harvey and

<sup>5</sup> We do not include the period after the monthly CTC benefits ended because we cannot observe when tax filing and refund receipt occurred in our sample. Nearly 20% of families reported that they had already filed their taxes by January, and 33% had filed taxes and many reported receiving refund advances from tax preparers by February. Furthermore, our goal was to isolate the effects of the CTC, a task challenged with the tax time analyses. In addition to the Earned Income Tax Credit (EITC), which many families in our study should have received, the Child and Dependent Care Credit (CDCC) was made temporarily refundable, and families could also claim missed stimulus checks. Thus, we determined that distinguishing the lump-sum portion of the expanded CTC from these other tax credits would not be feasible.

Dunifon 2023). For instance, families might double up to provide assistance with childcare for young children (Amorim et al. 2017; Harvey et al. 2021) or health care assistance for a family member with a health need. Families also double up because of cultural or community norms or preferences for living together (Angel and Tienda 1982; Pilkauskas 2012).

Because of the myriad reasons for doubling up, it is not clear whether or how the monthly CTC might impact these decisions. If mothers double up for economic reasons, we might expect that the monthly credit would reduce doubling up. Research on doubling up in 2020 found that both economic and caregiving needs likely contributed to the temporary increase in doubling up during the COVID-19 pandemic (Amorim and Pilkauskas 2023), and qualitative research suggests that mothers who double up for these reasons generally prefer to live independently (Harvey 2022). Research on expansions to the EITC, a refundable tax credit, shows that increases in the credit reduced doubling up among families with children (Pilkauskas and Micheltore 2019). Studies have also found that Social Security expansions increased independent living among older adults (Carlson et al. 2012; Engelhardt et al. 2005). Thus, additional cash from the CTC might also reduce doubling up.

However, because families also double up to address family care needs and preferences, it is possible that the monthly CTC did not impact these decisions. Although the CTC might offset childcare costs and reduce reliance on coresident friends or family for caregiving, preferences for caregiving, costs of care, and availability of high-quality childcare could offset these effects. For instance, for families doubling up to care for an aging parent or another family member with a health concern, the additional money is unlikely to affect these arrangements.

Lastly, because the CTC improved families' economic standing, we might observe an increase in the share of parents who serve as "hosts" to others (Harvey and Dunifon 2023). Because low-income families are usually embedded in networks of other low-income families (Smith et al. 2014), economic support from the CTC might lead parents to invite other friends or relatives into their homes. Studies suggest that those who host others in doubled-up households are better off economically than guests (Clampet-Lundquist 2003; Skobba and Goetz 2013), but we know little about how changes in economic status (such as an influx of income) might affect the likelihood of hosting. In sum, we are unsure whether the monthly CTC will influence doubling up, given the various reasons underlying these living arrangements.

*Living with a partner.* The effect of the monthly CTC on coresidential partnership is also ambiguous. Many studies found that economic strain can lead to the dissolution of partnerships (e.g., Conger et al. 1990) and that economic well-being is positively associated with marriage. Thus, if the CTC improved economic well-being and reduced housing insecurity, we might expect to find that partnering increased. Alternatively, the additional income from the CTC may have enabled parents to leave coresidential partnerships that they were otherwise unable to because of financial constraints. Although responses to the CTC might differ between married and cohabiting partners (income is a far less robust predictor of cohabitation than marriage; Schneider et al. 2019), we cannot differentiate these two relationships in our data.

Even though we cannot distinguish between married and cohabiting partners, given the low incomes of the families that constitute our sample, many of the partnerships we observe are likely to be unmarried (Smock and Schwartz 2020). Cohabiting unions

are often short-lived, and serial cohabitation is relatively common among lower income households (Eickmeyer and Manning 2018; Lichter and Qian 2008; Lichter et al. 2010), partly because cohabitation can be a way to make ends meet (Sassler and Lichter 2020; Sassler et al. 2018) and thus driven by convenience, finances, or housing needs (Sassler 2004) rather than a signal of relationship commitment. Other research has shown that in low-income households, partners who might no longer be romantically involved may remain coresident so long as they contribute financially (Edin 2000) or may remain “living together apart” (staying in the same home after separation or the end of a romantic relationship) for shared parenting, housing, or economic needs (Cross-Barnett et al. 2011). For these couples, the increased income from the CTC might have provided the income necessary to move out of these arrangements. Overall, the expected effect of the CTC on coresidential partnerships is unclear: the income from the benefit might have enhanced stability and improved relationships or provided the means for individuals to exit shared living arrangements.

*Changes in living situations and household size.* Although our theoretical expectations for both doubling up and partner coresidence are unclear, if either living arrangement were to change, it should follow that respondents’ living situations and household sizes would also change. The additional economic security gained from the CTC might have even encouraged parents to use it to relocate to a new home or neighborhood, potentially influencing their household composition. In addition, rather than inducing moves, the CTC payments might have reduced the need to move (because parents could afford rent or avoid evictions), resulting in a null or negative effect on changes in living situations.

### *Other Considerations*

Although we anticipate that the monthly CTC improved housing affordability and possibly affected living arrangements through its effect on household finances, a few additional considerations might impact our results. First, if parents exited doubled-up or partnered living arrangements, increasing their housing costs, the net effect on housing affordability might be null. Second, the size of the transfer might also matter. Although a prior study showed that a large lump-sum cash transfer reduced doubling up (Pilkauskas and Michelmore 2019), it is less clear whether a smaller monthly cash transfer would yield similar results. However, research suggests that families dedicated a large portion of their monthly CTC to housing (Schild et al. 2023), and our study population is quite poor, such that the average CTC benefit (\$500 per month) is akin to a 60% increase in monthly income. Thus, we might find larger impacts than previous studies.

The credit’s temporary nature might also matter. If families were aware that the expansions were temporary, they might not have adjusted their living arrangements in response. However, it is unclear whether families knew the expansion was temporary, given that debates in Congress about the permanence of the CTC continued through December 2021. Thus, many respondents in our sample might not have been aware that the monthly benefits were ending (and might not have known they were temporary) when making decisions about housing and living arrangements in the summer and fall of 2021.



Additionally, research suggests that doubled-up and cohabiting living arrangements, especially among lower income families, are often short-lived (Harvey et al. 2021; Pilkauskas 2012). In general, the high prevalence of dynamic or fluid living arrangements among families with low incomes suggests that even short-term increases in income might impact household composition.

Finally, another key issue to consider is the meaning of an additional \$500 to our study population. The average income in our sample is approximately \$10,000 per year, equating to a monthly income of roughly \$830. An additional \$500 (the average CTC respondents reported receiving) equals a 60% increase in monthly income. Thus, the transfer was quite large for these households, and decisions (such as asking a partner to move out or being able to stay in one's home because they can afford it) might be different in this context, as compared with someone earning even \$35,000 per year. As we discuss in more detail in the Results section, we compared household incomes between those with a partner and those without a partner, finding the average difference to be \$543 per month. This amount suggests that the average CTC of \$500 was an almost perfect substitute for income from partners in our sample. It may have also influenced decisions about asking partners to move out.

### *Heterogeneity by Race, Ethnicity, and Household Income*

Lastly, we might expect to find differences by race and ethnicity and by income. During the study period, low-income, Black, and Hispanic families were more likely to report owing back-owed rent (JCHS 2022) and housing hardships (Chun et al. 2023). Studies also found that Black and Hispanic families disproportionately gained access to the expanded CTC, as did those with no or very low earnings (Collyer et al. 2019; Goldin and Michelmore 2022). Thus, we anticipate that the CTC effects will be larger for these groups than for those with slightly higher incomes and for White families.

## **Methods**

### **Data**

Our data mainly come from a monthly, repeated cross-sectional survey of individuals currently (or recently) receiving SNAP benefits. These data were collected in partnership with Propel, the makers of the Providers application (app) designed as a private service to assist individuals in tracking and managing their monthly SNAP benefits, offer coupons, and provide information about accessing other services. Following the passage of the expanded CTC, we partnered with Propel to add questions to their monthly survey of a random sample of their app users asking about topics related to families' economic well-being, including housing and living arrangements.<sup>6</sup> The Providers app

<sup>6</sup> Randomization has been verified in another study (Pilkauskas et al. 2023). Propel opens the banner/survey to a different random set of users each month to ensure that they are reaching different users.

is free and was used by roughly 5 million SNAP participants across all 50 states, Washington, D.C., and the U.S. territories at the time of this study (approximately 25% of all SNAP beneficiaries). These data have been used in several studies and policy briefs on the 2021 CTC (Kovski et al. 2023; Michelmore and Pilkauskas 2023; Pilkauskas and Cooney 2021; Pilkauskas and Michelmore 2021; Pilkauskas et al. 2022). Because the respondents are all current or recent SNAP users, the sample is composed of low-income families—those who received the largest relative increase in the CTC—providing us with unique insights on the living arrangement responses to the CTC among economically disadvantaged families.

Each month, Propel invites a random sample of individuals using their app to participate in a survey via an in-app banner. Clicking on the banner redirects respondents to a survey hosted on another website, offered in both English and Spanish.<sup>7</sup> Respondents are not compensated for responding, but they are informed that the data will improve services and inform advocates on how to better support their communities. The survey takes approximately 11 minutes to complete. Each month, 4,000 to 6,000 users took the survey, and roughly 65% were parents living with children.<sup>8</sup>

We use data from eight monthly surveys from June 2021 to January 2022. This period captures housing and living arrangements for two months before the first CTC payments were issued and for all six months of the recurring monthly CTC payments.<sup>9</sup> We restrict the sample to parents with coresidential children under age 18 ( $n = 20,545$ ). In Table 1, we assess the representativeness of the Providers sample by comparing some of our sample characteristics with those in two nationally representative surveys: the 2019 Current Population Survey Annual Social and Economic Supplement (CPS ASEC) and the 2019 American Community Survey (ACS). Because SNAP receipt is often underreported in national surveys (Meyer et al. 2009), we also compare our sample with a sample of SNAP users from administrative data files obtained from the 2019 SNAP Quality Control Database (SNAP QC). We find that Providers respondents are similar to ACS respondents (for both those living in poverty and those receiving SNAP) and CPS ASEC respondents, with a few differences. The Providers data have more Black and female respondents than the ACS or the CPS ASEC but look more similar to the SNAP QC data on those characteristics. (We also test the robustness of our findings to reweighting our sample to reflect the different samples; see Tables A7 and A8, online appendix.) Table A1 (online appendix) shows that respondents' demographic characteristics were similar before and after the CTC payment distributions.

<sup>7</sup> Approximately 5% took the survey in Spanish, although many of these respondents are excluded from our analytic sample because they live in Puerto Rico, where the monthly CTC was not implemented. We similarly excluded other U.S. territories where the monthly CTC was not available.

<sup>8</sup> Roughly three quarters (73% to 75%, depending on the month) of respondents completed the survey. Those who completed the survey might differ from those who did not, but analyses comparing our sample with other nationally representative datasets suggest that our analytic study population is similar to the broader populations of SNAP recipients and low-income families. Monthly analytic sample sizes are as follows: June (2,988), July (2,277), August (1,836), September (3,394), October (2,250), November (3,118), December (2,811), and January (1,871).

<sup>9</sup> Each monthly survey is fielded from the 1st to the 14th of the month. Monthly CTC payments were issued on the 15th of the month from July 2021 through December 2021. Thus, respondents in the June and July surveys had not yet received their first CTC payment.

**Table 1** Comparing Providers survey data with the American Community Survey (ACS), SNAP Quality Control (QC) data, and the Current Population Survey March ASEC (CPS ASEC)

	ACS 2019				
	Providers	Households Below 100% of Poverty	SNAP Recipients	SNAP QC Data 2019, SNAP Recipients	CPS ASEC 2019, SNAP Recipients
<b>Age</b>					
18–24	7	7	6	9	8
25–34	40	37	38	41	38
35–44	35	37	38	32	35
45–54	12	15	15	12	15
55+	5	3	3	5	5
<b>Household Structure</b>					
Household size	4.30	4.04	4.19	3.56	4.11
Number of children	2.53	2.30	2.31	2.03	2.18
Partner/spouse	30	46	47	—	50
<b>Race and Ethnicity</b>					
Black	35	24	27	31	27
White	35	37	37	41	37
Hispanic	21	31	29	22	27
Other	9	8	7	7	9
<b>Education</b>					
<high school	23	21	18	25	23
High school	39	44	45	55	37
Some college	27	25	27	15	31
Associates degree or more	10	10	9	5	10
Female	94	74	72	89	73
Receive Food Stamps	85	56	100	—	100
<i>N</i>	20,545	34,648	38,322	15,735	2,816

*Notes:* SNAP recipients are those who reported receiving the Supplemental Nutrition Assistance Program in the last 12 months (SNAP QC data also include those who are pending SNAP receipt). Poverty is calculated using the Census Bureau’s official poverty thresholds. All samples are restricted to households with at least one coresident child under age 18. The ACS and CPS ASEC samples are further restricted to the reference person, and estimates are weighted (sample sizes are unweighted). SNAP QC data are also further restricted to the reference person, and estimates are weighted (sample sizes are unweighted). SNAP QC data have high levels of missingness for race, ethnicity, and education, so these estimates should be interpreted with caution. For more information, see <https://snapqcdata.net/sites/default/files/2022-12/FY%202020%20SNAP%20QC%20Technical%20Documentation.pdf>.

*Sources:* American Community Survey (ACS), 2019; Current Population Survey Annual Social and Economic Supplement (CPS ASEC), 2019; SNAP Quality Control (QC) data, 2019; Providers survey data, June 2021–January 2022.

## Outcome Measures

### *Housing Instability*

To ascertain whether respondents were at risk of moving because of affordability concerns, we create an indicator for those who said they would not (or probably would not) be able to remain in their current living situation because they could no longer

afford their rent or mortgage. We also use a question about the amount owed in past-due rent/mortgages to create (1) an indicator for owing any past-due rent/mortgage (for respondents reporting a value greater than zero) and (2) the amount of past-due rent/mortgage (logged to reduce skewness in the distribution). We restrict our analyses to the 82% of respondents who reported paying rent or mortgage, distinguishing our study from research lacking this information (Parolin et al. 2023).<sup>10</sup>

### *Living Arrangements/Household Composition*

Our analyses focus on four living arrangement measures. The first is an indicator of whether the respondent experienced a change in living arrangements in the last 30 days (e.g., permanent or temporary moves, household members moving in or out). The second is an indicator of whether the respondent lives with a partner (husband/boyfriend or wife/girlfriend). The third is an indicator of whether the respondent lives in a doubled-up household, which includes living with anyone beyond the respondent's child(ren) or romantic partner. This indicator could include parents, siblings, other family, friends, roommates, or any other unrelated individual (our measure of doubling up follows prior work in this area; Harvey et al. 2021; Pilkauskas et al. 2014). Lastly, we measure the number of people in the household (top-coded at 7 or more).

### **Empirical Strategy**

Using a parameterized difference-in-differences approach, we identify the effects of the 2021 CTC by exploiting variation in the generosity of benefits by the number and ages of children in respondents' households before and after the expanded CTC rolled out, using models of the following form:

$$Y_{it} = \beta_0 + \beta_1 CTC_{itc} + \beta_2 \mathbf{X}_{it} + \alpha_t + \delta_s + \gamma_{st} + \theta_c + \varepsilon_{it}, \quad (1)$$

with the subscripts  $i$ ,  $t$ ,  $s$ , and  $c$  referring to the individual, month, state, and number of children, respectively. The housing/living arrangement outcome of interest is represented by  $Y_{it}$ .  $\beta_1$  is our primary coefficient of interest, scaled to represent the effect of an additional \$100 in CTC payments. We construct a measure of CTC exposure ( $CTC_{itc}$ ) using a simulated instrument, following prior policy-impact studies (e.g., Currie and Gruber 1996; Micheltore and Pilkauskas 2021). Specifically, we calculate CTC exposure as the sum of two products: (1) the monthly benefit amount for children under age 6 (\$300)  $\times$  the number of children under age 6, and (2) the monthly benefit amount for children aged 6–17 (\$250)  $\times$  the number of children aged 6–17. We assign \$0 to all respondents in months before the expanded CTC was distributed. This measure leverages variation from two sources: (1) differences between respondents in the number and ages of their coresidential children (under age 6 vs.

<sup>10</sup> In a supplemental analysis, we examined whether the CTC predicted paying rent/mortgage and found no effects, suggesting that this sample exclusion is not endogenous.

6–17 years) and (2) the onset of the monthly CTC payments (before vs. after payments were issued to families).

Our models control for respondent characteristics ( $\mathbf{X}_{it}$ ), including age, race and ethnicity, gender, education (less than high school, high school, some college, or associate's degree or higher), and place of residence (urban, rural, or suburban). To minimize the influence of other potentially confounding policy changes, we adjust for the following state- and month-specific policies ( $\gamma_{st}$ ): the presence of SNAP emergency allotments (waivers to provide eligible households with maximum SNAP benefits), the presence of Pandemic Electronic Benefit Transfers (P-EBT; additional food assistance for school-age children), and the presence of extended federal Unemployment Insurance. We also include fixed effects for (1) state of residence ( $\delta_s$ ) and (2) survey month ( $\alpha_t$ ). Last, because the number of children likely affects living arrangements and housing outcomes and determines the CTC size, we also include fixed effects for the number of children younger than 18 ( $\theta_c$ ).

We estimate both intent-to-treat (ITT) and local average treatment effects (LATE) of the monthly CTC payments on outcomes of interest. ITT estimates, which we produce using the reduced-form Eq. (1), indicate the average effects of the CTC policy change over all parents living with children. As we show in Table 2, only two thirds of parents in our sample reported receiving the monthly CTC payments, and parents' characteristics differ by whether they received the monthly CTC payments (Pilkaukas and Micheltore 2021). Thus, to estimate the LATE effects (or treatment-on-the-treated) we use our simulated CTC measure as an instrument for self-reported CTC receipt. We produce the LATE estimates using two-stage least-squares regression, where the first stage regresses self-reported CTC benefits (the endogenous variable) on the simulated measure of CTC benefits (the exogenous variable). However, receipt might be underreported, given estimates suggesting that closer to 80% of lower income households ever received the credit (Micheltore and Pilkaukas 2023). Thus, the LATE estimates might overstate the true effects, which likely lie between the LATE and ITT estimates.

Finally, we consider heterogeneity in the effects of the CTC by race, ethnicity, and monthly earnings. We separately examine Hispanic, non-Hispanic Black, and non-Hispanic White households.<sup>11</sup> Additionally, we study differences by household earnings level in the last month. This measure serves as a recent proxy for income, given the high income volatility often found in populations with very low income.<sup>12</sup> We divide the sample into those with monthly earnings above and below the median of \$500.

With all the controls in the model, variation in the simulated benefit comes from differences in household size and age structure of households with children before and after the 2021 CTC expansion. This strategy allows us to compare families with the same number of children but different age structures before and after the monthly

<sup>11</sup> When race and ethnicity are included as a control variable, we include a category encompassing all other racial and ethnic groups; this group is too small to explore separately.

<sup>12</sup> Prior work has found little employment response to the expanded CTC (e.g., Ananat et al. 2022; Enriquez et al. 2023; Pac and Berger 2024; Pilkaukas et al. 2022). We therefore do not expect that the 2021 reform impacted household earnings, reducing concerns that this subgroup analysis splits the data on an endogenous variable.

**Table 2** Descriptive statistics for the Child Tax Credit (CTC) and outcome measures

	Overall	Race and Ethnicity			Earnings	
		Black	Hispanic	White	<\$500	\$500+
<b>CTC</b>						
Self-reported CTC receipt (%)	0.66	0.69	0.61	0.68	0.58	0.73
Self-reported monthly CTC payment (\$)	325 (314)	338 (305)	303 (314)	334 (319)	271 (298)	373 (319)
Self-reported monthly CTC payment among receivers (\$)	494 (257)	490 (246)	495 (257)	495 (266)	467 (248)	512 (262)
Predicted monthly CTC payment (\$)	712 (425)	743 (436)	744 (440)	644 (373)	702 (433)	717 (412)
<b>Housing Affordability</b>						
Might move because of difficulty affording rent/mortgage (%)	0.06	0.09	0.06	0.05	0.09	0.06
Any past-due rent/mortgage (%) <sup>a</sup>	0.57	0.63	0.57	0.52	0.62	0.56
Amount of past-due rent/mortgage (\$)	832	864	909	751	952	791
Amount of past-due rent/mortgage (\$, among those with debt)	1,461	1,381	1,582	1,421	1,537	1,416
Log amount of past-due rent/mortgage (among those with debt)	6.84	6.79	6.94	6.81	6.86	6.83
Log amount of past-due rent/mortgage <sup>a</sup>	3.89 (3.47)	4.25 (3.37)	3.98 (3.50)	3.54 (3.47)	4.25 (3.43)	3.81 (3.46)
<b>Living Arrangements</b>						
Living situation changed (%)	0.11	0.11	0.12	0.10	0.12	0.10
Living with a partner (%)	0.30	0.14	0.35	0.43	0.21	0.35
Doubled up (%)	0.14	0.10	0.15	0.17	0.15	0.13
Multigenerational	0.06	0.04	0.06	0.07	0.06	0.06
Any kin	0.11	0.08	0.12	0.12	0.11	0.10
Nonkin	0.03	0.02	0.03	0.05	0.04	0.03
Number of people in the household (mean)	4.30 (1.64)	4.14 (1.63)	4.57 (1.62)	4.25 (1.62)	4.11 (1.63)	4.42 (1.64)
<i>N</i>	20,545	6,430	3,985	6,146	7,040	10,390

*Notes:* The sample is restricted to households with at least one child under age 18. Standard deviations are shown in parentheses.

<sup>a</sup> *N* = 16,989 overall; *N* = 5,765 Black respondents; *N* = 3,576 Hispanic respondents; *N* = 5,324 White respondents; *N* = 5,906 with monthly income of <\$500; *N* = 9,543 with monthly income of \$500+.

*Source:* Providers survey data, June 2021–January 2022.

CTC payments were initiated, taking advantage of the larger benefits to households with more and younger children relative to households with fewer and older children. For example, we compare families with two children under age 6 (\$600/month) with those with one child under age 6 and one child over age 6 (\$550/month) or with those with two children over age 6 (\$500/month), before and after the expansion.

Our approach differs from some studies that have used childless adults as a counterfactual for parents, many of which have employed dummy variable coding (with childless adults as a reference for parents) and have not considered variation in CTC benefit size. Instead, we focus on parents, relying on variation in families’ potential

CTC benefits (following several recent studies; Collyer et al. 2022<sup>13</sup>; Glasner et al. 2022; Schild et al. 2023) for several reasons. Living arrangements and housing needs are likely very different for families with children than for those without. We also found that for many of our outcomes, the trends for parents and childless adults were not parallel before the monthly CTC payments were issued (i.e., violating the parallel trends assumption; plotted trends are shown in Figure A1, online appendix). In contrast, we find no evidence of differential pretrends when we limit our sample to households with children and compare those with different numbers of children or different age structures of children in an event-study context (see Figure A2, online appendix).

Furthermore, when we compare the demographic characteristics of households with versus without children (see Table A2, online appendix), we find notable compositional differences: childless households were much older, were more likely to be male (18% vs. 6%), were more likely to be White (45% vs. 35%), and had lower earnings than households with children. Lastly, difference-in-differences models rely on the assumption that no policy changes or events occurring at the same time as the CTC payments might have differentially affected the treatment and control groups. That assumption is likely too strong in comparisons of families with children and childless households, given the timing of the CTC payments and the overlap with the return to schools in fall 2021 amid the COVID-19 pandemic and related policy responses (e.g., the Emergency Allotments in SNAP or rounds of stimulus payments).<sup>14</sup>

Table 2 displays the means of the key study variables. The average individual in our sample reported receiving \$325 per month in CTC benefits. Conditional on self-reported receipt of the benefit (66%), the average CTC benefit was approximately \$500 per month (the average respondent had roughly 2 children;  $\$250 \times 2$ ).<sup>15</sup> Only a small share of the sample (6%) reported potential moves because of difficulties affording their rent/mortgage, with higher rates among Black respondents and those earning less than \$500 per month. More than half the sample (57%) reported owing

<sup>13</sup> Collyer and colleagues (2022) employed difference-in-differences models comparing families with children to childless individuals, as well as another model focused exclusively on families with children. They noted that they prefer the models focused on families with children. Another recent study also noted that childless adults are an imperfect counterfactual for households with children (Pac and Berger 2024).

<sup>14</sup> Although our preferred specification focuses on families living with children, we provide estimates from a difference-in-differences model comparing households with versus without children in Table A3 (online appendix). We show both a pre–post binary indicator and a parameterized approach. The parameterized (continuous) version exploits the variation in the CTC amount by the number and ages of children rather than the blunter pre–post measure, which measures only the presence of children. Some point estimates change direction between the binary and parameterized measures for some outcomes, whereas the parameterized version looks more like the analyses of only families with children (although not all coefficients are significant, the direction is similar to our main model specification). Further, those outcomes with the poorest parallel trends (e.g., owe past-due rent/mortgage) are where we see large differences between the binary and continuous versions (signs flip) and with our main model specification. The sign flipping and poor parallel trends provide further evidence that childless adults are likely a poor counterfactual in our study.

<sup>15</sup> Our simulated CTC is closer to \$700 per month. The discrepancy between our estimated and the reported CTC amount can arise for a few reasons. We cannot directly observe tax filing units, and the actual payments were based on 2019/2020 tax filing (and household structure), whereas we observe living arrangements in 2021. If children moved in 2021 or if the respondent cannot claim some of the children in the household, we may overestimate the average CTC. Respondents could also elect to receive their CTC payments as a lump sum at tax filing, in early 2022. Lastly, some CTC payments could be withheld if respondents owed back taxes or were in child support arrears.

past-due rent/mortgages, also with higher rates among Black and lower-earning respondents. The average household size was just over 4 people (4.30 people). Higher-earning parents (with more than \$500 in monthly earnings) and Hispanic respondents had slightly larger households. Roughly 1 in 10 respondents (11%) reported a change in their living situation in the prior month, roughly one third (30%) lived with a partner or spouse, and 14% were doubled up (11% with kin and 3% with nonkin; 6% did so in multigenerational households). White (43%) and Hispanic (35%) respondents were much more likely than Black (14%) respondents to report living with a partner. The pattern was similar for doubling up: 17% of White, 15% of Hispanic, and 10% of Black respondents were doubled up, most commonly in multigenerational households. Higher-earning respondents were more likely to live with a partner than those with lower earnings (35% vs. 21%), although doubling-up rates were quite similar across the earnings distribution (ranging from 13% to 15%).

## Results

### CTC Effects on Housing Affordability

We begin by considering whether the monthly CTC benefits impacted housing affordability. As shown in [Table 3](#), an additional \$100 in CTC benefits marginally reduced the likelihood that parents reported needing to move because of difficulties affording rent/mortgages by approximately 1 percentage point in the LATE (0.1 percentage points in the ITT), reflecting a 13% decline. An additional \$100 in CTC benefits also reduced the likelihood of owing past-due rent/mortgages by 1.7 percentage points in the LATE (0.3 percentage points in the ITT), a decrease of roughly 3%. Last, the amount of back-owed rent also decreased by approximately 13% (LATE) following an additional \$100 in monthly CTC benefits. In sum, despite being only marginally significant, the estimates suggest that the CTC improved housing affordability.

### CTC Effects on Living Arrangements and Household Composition

Having established that the CTC modestly improved housing affordability, we next examine whether the CTC impacted living arrangements. We find that the CTC increased the likelihood that families reported a change in their living situation relative to the prior month ([Table 4](#)). An additional \$100 in monthly CTC payments led to a significant increase of 0.2 percentage points for the ITT estimate, or 1.4 percentage points for the LATE estimate (representing an 11% change). Recall that this measure captures both changes in household composition and moves to new households. Although we do not have specific information on household moves, we have information on household composition.

When examining household composition, we find that an additional \$100 in monthly CTC payments decreased the likelihood that parents reported living with a partner by 0.2 percentage points for the ITT, or 1.4 percentage points for the LATE. This effect size is similar in magnitude (but in opposite directions) to that of changes in living arrangements. Taken together, these results suggest that the income from



**Table 3** Effects of the 2021 monthly Child Tax Credit (CTC) on housing affordability

	ITT	LATE
Might Move Because of Difficulty Affording Rent/Mortgage	-0.001 <sup>†</sup> (0.001)	-0.008 <sup>†</sup> (0.005)
Any Past-Due Rent/Mortgage <sup>a</sup>	-0.003 <sup>†</sup> (0.002)	-0.017 <sup>†</sup> (0.010)
Log Amount of Past-Due Rent/Mortgage <sup>a</sup>	-0.023 <sup>†</sup> (0.013)	-0.127 <sup>†</sup> (0.071)
<i>F</i> Statistic		420.41
First-Stage Coefficient		17.26
<i>N</i>	20,545	

*Notes:* The coefficients represent the response to an additional \$100 in monthly 2021 CTC benefits. ITT = intent to treat. Local average treatment effects (LATE) are obtained by instrumenting respondent-reported CTC. Standard errors are shown in parentheses. The sample is restricted to households with at least one child under age 18. Models include demographic controls (age, gender, education, race and ethnicity, and urbanicity); fixed effects for state, month, and number of children; and state-level controls for SNAP, P-EBT, and Unemployment Insurance benefits.

<sup>a</sup> *N* = 16,989.

*Source:* Providers survey data, June 2021–January 2022.

<sup>†</sup> *p* < .10

**Table 4** Effects of the 2021 monthly Child Tax Credit (CTC) on living arrangements

	ITT	LATE
Living Situation Changed	0.002* (0.001)	0.014* (0.006)
Living With a Partner	-0.002 <sup>†</sup> (0.001)	-0.014 <sup>†</sup> (0.009)
Doubled Up	0.001 (0.001)	0.004 (0.007)
Number of People in the Household	-0.024** (0.004)	-0.139** (0.023)
<i>F</i> Statistic		420.41
First-Stage Coefficient		17.26
<i>N</i>	20,545	

*Notes:* Coefficients represent the response of an additional \$100 in monthly 2021 CTC benefits. ITT = intent to treat. Local average treatment effects (LATE) are obtained by instrumenting respondent-reported CTC receipt. Standard errors are shown in parentheses. The sample is restricted to households with at least one child under age 18. Models include demographic controls (age, gender, education, race and ethnicity, and urbanicity); fixed effects for state, month, and number of children; and state-level controls for SNAP, P-EBT, and Unemployment Insurance benefits.

*Source:* Providers survey data, June 2021–January 2022.

<sup>†</sup> *p* < .10; \**p* < .05; \*\**p* < .01

the CTC might have reduced coresidential relationships by providing parents with the means to exit shared living arrangements. In a supplemental analysis, we examined the household incomes of respondents living with a partner versus those who were not and found that average household income differed by \$543, almost exactly the average monthly CTC payment size. This finding suggests that the CTC income played an important role in offsetting the average partner's income.

We had no clear prediction for how the CTC would affect doubling up, and we observe no significant effects of the CTC on doubling up. In an extension (see Table A4, online appendix), we examined differences between types of doubled-up households (multigenerational, doubling up with relatives, and doubling up with nonrelatives) and found no significant results. Finally, we find a significant reduction in household size as a function of the CTC. The LATE estimates show a significant decrease of 0.14 people in the household (0.024 people in the ITT), corresponding to a 3% decline in household size. These effects are likely driven by fewer partners (and associated kin) living in the household.

### Heterogeneity by Race or Ethnicity and Earnings

We examine heterogeneity by race and ethnicity, given differences in the prevalence of housing hardships and eligibility gains due to the 2021 CTC reforms. Here, we focus our discussion of the results on the LATE estimates (reported in Table 5), but the ITT estimates are also provided. We also provide the percentage changes, given differences in the base rates for each outcome by demographic group. Starting with the housing affordability measures, we find null effects for both Hispanic and White families but significant improvements in housing affordability for Black parents. With an additional \$100 in CTC benefits, Black families were 2.4 percentage points less likely to report potential future moves due to difficulties affording rent/mortgages (26% decline), were 3.7 percentage points less likely to owe any past-due rent/mortgage (6% decline), and experienced a 30% decrease in rent/mortgage owed. Possibly because of the smaller sample, results for Hispanic families are not significant, but they are similar in magnitude to those for Black families: a 9% decline in owing past-due rent/mortgage and a 28% decline in the amount owed. The pattern of results by race and ethnicity suggests differences in the impact of the CTC, but most of the confidence intervals overlap.

For living arrangements, we observe a different pattern. The most pronounced changes in living situations occurred among Hispanic parents, followed by White parents; we find no significant effects for Black parents. Examining the percentage changes based on the LATE estimates, we find that the likelihood of living with a partner declined by 45% for Hispanic parents and 26% for White parents. With an additional \$100 in CTC benefits, Hispanic parents were 42% more likely to experience a change in their living situation and saw a 13% decline in their household size. The pattern was similar for White parents: a 16% increase in the likelihood of changed living arrangements and a 1% decrease in household size.

In Table 6, we consider heterogeneity by monthly household earnings to assess whether those at the lower end of the distribution, who received a proportionately larger income influx, were disproportionately impacted. We find larger effects on housing affordability for those earning less than \$500 and no significant associations

**Table 5** Effects of the 2021 Child Tax Credit (CTC) on living arrangements and housing affordability, by race and ethnicity

	Black		Hispanic		White	
	ITT	LATE	ITT	LATE	ITT	LATE
<b>Housing Affordability</b>						
Might move because of difficulty affording rent/mortgage	-0.004*	-0.024*	0.000	-0.002	0.000	-0.001
	(0.002)	(0.011)	(0.002)	(0.022)	(0.002)	(0.005)
% change	-4.9	-25.8	-0.3	-4.1	-0.8	-2.8
Any past-due rent/mortgage <sup>a</sup>	-0.006 <sup>†</sup>	-0.037 <sup>†</sup>	-0.004	-0.049	-0.002	-0.005
	(0.003)	(0.019)	(0.004)	(0.044)	(0.004)	(0.012)
% change	-1.0	-5.8	-0.8	-8.6	-0.2	-0.9
Log amount of past-due rent/mortgage <sup>a</sup>	-0.049*	-0.302*	-0.025	-0.277	-0.014	-0.044
	(0.021)	(0.136)	(0.027)	(0.304)	(0.027)	(0.086)
<b>Living Arrangements</b>						
Living situation changed	0.000	-0.003	0.004 <sup>†</sup>	0.051 <sup>†</sup>	0.005*	0.016*
	(0.002)	(0.011)	(0.002)	(0.032)	(0.002)	(0.007)
% change	0.0	-2.6	3.3	41.5	4.9	16.1
Living with a partner	0.001	0.004	-0.004	-0.055	-0.007*	-0.025*
	(0.002)	(0.013)	(0.003)	(0.044)	(0.003)	(0.012)
% change	0.9	3.6	-3.6	-44.8	-7.8	-25.5
Doubled up	-0.003	-0.017	0.001	0.011	0.003	0.010
	(0.002)	(0.011)	(0.003)	(0.032)	(0.003)	(0.009)
% change	-2.9	-16.0	0.6	7.3	1.7	5.6
Number of people in the household	-0.009	-0.056	-0.046**	-0.578**	-0.014 <sup>†</sup>	-0.046 <sup>†</sup>
	(0.006)	(0.034)	(0.009)	(0.174)	(0.008)	(0.026)
% change	-0.2	-1.3	-1.0	-12.6	-0.3	-1.1
F Statistic		119.35		19.13		299.64
First-Stage Coefficient		16.63		7.97		30.17
N	6,430		3,985		6,146	

Notes: Coefficients represent the response of an additional \$100 in monthly 2021 CTC benefits. ITT = intent to treat. Local average treatment effects (LATE) are obtained by instrumenting respondent-reported CTC receipt. Standard errors are shown in parentheses. The sample is restricted to households with at least one child under age 18. Models include demographic controls (age, gender, education, and urbanicity); fixed effects for state, month, and number of children; and state-level controls for SNAP, P-EBT, and Unemployment Insurance benefits.

<sup>a</sup> N = 5,765 Black respondents; N = 3,576 Hispanic respondents; N = 5,324 = White respondents.

Source: Providers survey data, June 2021–January 2022.

<sup>†</sup>p < .10; \*p < .05; \*\*p < .01

for the higher earnings group (and point estimates are close to zero). Point estimates for changes in living situations across the two earnings groups are similar, although estimates for the higher earnings group were more likely to be significant. Household size declined significantly only for the lower earnings group.

Although the point estimates are only marginally significant, the higher earnings group experienced a 10% increase in doubling up for households with larger CTC

**Table 6** Effects of the 2021 Child Tax Credit (CTC) on living arrangements and housing affordability, by monthly household earnings

	Monthly Earnings <\$500		Monthly Earnings \$500+	
	ITT	LATE	ITT	LATE
<b>Housing Affordability</b>				
Might move because of difficulty affording rent/mortgage	-0.002 (0.002)	-0.018 (0.013)	-0.001 (0.001)	-0.004 (0.005)
% change	-2.7	-19.8	-1.8	-7.3
Any past-due rent/mortgage <sup>a</sup>	-0.008* (0.003)	-0.060* (0.025)	0.000 (0.003)	0.000 (0.011)
% change	-1.3	-9.7	0.0	0.0
Log amount of past-due rent/mortgage <sup>a</sup>	-0.054* (0.021)	-0.423* (0.172)	-0.003 (-0.018)	-0.012 (0.076)
<b>Living Arrangements</b>				
Living situation changed	0.001 (0.002)	0.011 (0.014)	0.003 <sup>†</sup> (0.001)	0.012 <sup>†</sup> (0.006)
% change	1.2	9.3	3.0	12.0
Living with a partner	-0.002 (0.002)	-0.015 (0.017)	-0.005* (0.002)	-0.020* (0.007)
% change	-0.9	-7.0	-1.4	-5.7
Doubled up	-0.002 (0.002)	-0.013 (0.015)	0.003 <sup>†</sup> (0.002)	0.013 <sup>†</sup> (0.007)
% change	-1.2	-8.9	2.2	9.7
Number of people in the household	-0.034** (0.006)	-0.257** (0.057)	-0.003 (0.005)	-0.015 (0.023)
% change	-0.8	-6.3	-0.1	-0.3
<i>F</i> Statistic		88.76		365.06
First-Stage Coefficient		13.22		23.40
<i>N</i>	7,040		10,390	

*Notes:* Coefficients represent the response of an additional \$100 in monthly 2021 CTC benefits. ITT = intent to treat. Local average treatment effects (LATE) are obtained by instrumenting respondent-reported CTC receipt. Standard errors are shown in parentheses. The sample is restricted to households with at least one child under age 18. Models include demographic controls (age, gender, education, race and ethnicity, and urbanicity); fixed effects for state, month, and number of children; and state-level controls for SNAP, P-EBT, and Unemployment Insurance benefits.

<sup>a</sup> *N*=5,906 for monthly earnings of <\$500; *N*=9,543 for monthly earnings of \$500+.

*Source:* Providers survey data, June 2021–January 2022.

<sup>†</sup>*p*<.10; \**p*<.05; \*\**p*<.01

benefits, whereas the opposite was true for the lower earnings group (a 9% decline). This pattern aligns with our hypothesis that the monthly CTC benefits allowed some parents to help support other family and friends. These differences are suggestive, but most confidence intervals overlap between the high- and low-income groups.<sup>16</sup>

<sup>16</sup> In an extension, we used data from the ACS to estimate the share of housing cost–burdened households (30% / 50%) at the state level (and the predicted individual-level cost burden). We found larger CTC effects

## Robustness Checks and Extensions

### *Alternate Specifications*

We test the robustness of our main specification to the inclusion of additional controls in Table A5 in the online appendix (we present LATE estimates; ITT estimates are available upon request). First, we test several alternate specifications to account for children in the household: (1) separate controls for the number of children under age 6 and aged 6–17, (2) an indicator for the presence of any children under age 6, and (3) interaction terms between the number of children fixed effects and demographic controls. Second, we control for state-level COVID-19 rates alongside state-year contextual variables. Last, we add a control for the timing of the survey response relative to the CTC disbursement to account for potential differences in the response to the CTC based on the time elapsed between the date the respondent received the credit and when they completed the survey. The results are generally robust to the model specification, with slight changes in point estimates and/or statistical significance across models.<sup>17</sup>

### *Sample Specification*

In Table A6 (online appendix), we test several alternative sample specifications. First, we exclude the first month of CTC payment (our August survey) because the IRS had difficulties issuing the first payments, which may have dampened effects. The results are robust to this exclusion. Second, we exclude the last month of the CTC payment (our January survey, which asked about the December payment) because Congress failed to reauthorize the CTC, and some respondents likely knew it was ending, potentially impacting their responses. Again, the results are robust. Finally, we exclude male respondents, who represent only 5% of our sample. We find stronger effects on both living arrangements and housing affordability after this exclusion, suggesting that our findings are largely driven by mothers.

### *Reweighting the Data*

Table A7 (online appendix) displays the results of reweighting the Providers sample to reflect the demographic distributions of the ACS, CPS, and SNAP QC samples following Schneider and Harknett (2022). We construct weights that align the Providers sample more closely with each of these national samples in terms of age, race and ethnicity, highest level of education, and sex. The reweighting results (shown in Table A8, online appendix) remain generally consistent with our main models but reveal stronger reductions in not moving and weaker effects on back-owed rent/mortgages and

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on housing affordability in lower cost-burdened states (and for lower cost-burdened individuals), but cost burden did not impact changes in living arrangements.

<sup>17</sup> In a supplemental analysis, we tested for dose–response or whether there is a critical level of treatment (e.g., three or more months) by interacting each month with CTC and found no evidence of a dose–response or a critical level.

partnership reductions. In general, this procedure places more weight on the male, White, and Hispanic respondents and slightly less weight on Black respondents, which likely explains some of these small differences.

## Discussion

In this article, we investigated how the 2021 CTC reforms, which temporarily created a monthly universal child benefit, impacted housing instability and the living arrangements of low-income families, a particularly vulnerable population that was most likely to experience a large increase in benefits from the 2021 expansions and most likely to experience housing instability. Our results suggest that the monthly CTC benefits improved housing-related outcomes for these families. Parents receiving larger monthly CTC payments owed less in past-due rent/mortgages, were less likely to report moving due to affordability concerns, were less likely to live with partners, and had fewer people residing in their households.

Our finding of improvements in housing affordability diverges from previous work in this small but growing literature. Two studies found no CTC effects on housing-related outcomes (Collyer et al. 2022; Hamilton et al. 2022). Another study found that the CTC reduced the likelihood of being behind on rent or mortgage payments (a measure similar to ours) but only in response to the lump sum CTC payment, and those results were not robust across model specifications (Parolin et al. 2023). Several factors might explain why we find significant effects but previous research has not. Unlike previous work, we can exclude the 17% of low-income respondents who reported not paying rent/mortgages. Additionally, we focus on a significantly lower income study population than previous work. For example, Parolin and colleagues (2023) found that 20% of lower income households were not caught up on rent/mortgage, whereas we find that 57% of respondents had some past-due rent/mortgage. These differences likely explain the larger impacts we observe relative to previous research. Because most families in our sample were previously ineligible for the CTC, they experienced a larger income shock (on average, a 60% increase in monthly income); these families might have been especially responsive to the cash transfer. Relative to these earlier studies, we also study a wider array of housing affordability measures, studying not only the existence of past-due rent/mortgage but also the amount due and whether families anticipated moving for affordability concerns.

Reductions in overall household size were likely driven by fewer partners residing in the household, given that we found no change in doubling-up rates. Although prior research has found that cash transfers reduce doubling up (e.g., Carlson et al. 2012; Pilkauskas and Michelmore 2019), families double up for reasons beyond economic considerations, such as preferences or caregiving needs, potentially explaining the null effects found here. The declines in household size also suggest less household crowding (a measure we do not have), which might have positive downstream effects for children (e.g., Johnson et al. 2008).

Our finding of a reduction in coresident partnership is consistent with research on the economic determinants of cohabitation among low-income families, which shows that partners often expedite shared living to help make ends meet (Edin 2000; Sasser et al. 2018). Thus, the CTC likely made it more feasible to live without a partner

(through reduced moves into the household, increased moves out, or both). Because we cannot observe marital status, we cannot distinguish between cohabitation dissolution or separation/divorce, nor do we observe whether these partners are the parents of the children in the household (i.e., a social parent or biological/adoptive parent). Future research should distinguish between these household types and investigate the underlying reasons for coresidence to better understand the implications of these changes for children's well-being.

Analyses by race and ethnicity showed that the CTC improved housing affordability more for Black and Hispanic households than for White households. Although many point estimates for Hispanic households were not significant (likely because of limited power), they were similar in magnitude to those for Black families. For changes in living arrangements, the CTC effect was largely driven by changes for White and Hispanic households. Although the explanation for these differences is not entirely clear, some might be driven by differences in the prevalence of these outcomes (e.g., partnership varies greatly by race and ethnicity).

Although our entire sample is economically disadvantaged, when we differentiate those at the top from those at the bottom of the earnings distribution, we observe differences in CTC effects. We find larger effects of the monthly CTC on housing affordability for lower earners than for higher earners. In contrast, results are similar across the two earnings groups for changes in living arrangements. We also find some evidence that CTC payments increased doubling up among higher earners but decreased doubling up for lower earners, suggesting variation in responses to cash and reasons for doubling up even in a low-income sample.

Several factors limit our ability to draw conclusions about the role of monthly cash transfers, more broadly, on housing instability. First, although the 2021 CTC reforms essentially (but temporarily) turned the credit into a universal child benefit, implementation issues affected the distribution of benefits. Survey evidence suggests that some seemingly eligible families did not receive benefits (Parolin, Ananat et al. 2021; Pilkauskas and Cooney 2021), and some payments were delayed (U.S. Department of the Treasury 2021). Still, evidence indicates that most low-income families (nearly 80%) received at least one payment (Micheltmore and Pilkauskas 2023).

Second, the monthly CTC was provided for only six months. Impacts on housing and household instability might have been more pronounced if the credit had been in place longer. Families who thought the benefit was temporary might have been less likely to adjust their living arrangements, suggesting the effects found here are probably lower-bound estimates. Unfortunately, we do not know whether families thought the expansion would be extended or whether they considered it temporary. Additionally, the 2021 CTC was distributed during a time of high inflation, a continuing global pandemic, and shortly after the federal government implemented many other policies (e.g., expanded SNAP benefits, eviction moratoria,<sup>18</sup> and stimulus payments)—factors that limit the generalizability of our results. Although the variation we exploit encompasses families with a mix of older and younger children, other policies enacted (such as school reopenings) might have affected families with

<sup>18</sup> The federal eviction moratoria ended on October 3, 2021, but many states and localities continued to have moratoria in place long after the CTC payment ended. However, if the ending of the moratoria led to more evictions, our results would underestimate the impacts of the CTC on housing instability.

older children differently than those with younger children. Even though we cannot rule out this possibility, our robustness checks show that different controls for children's ages (e.g., an indicator for the presence of any children under age 6) produced similar results.

Finally, our sample might generalize only to families who receive SNAP. Although the sample characteristics align with those of families in poverty, estimates suggest that roughly 82% of eligible families (those with incomes below 130% of the poverty line) receive SNAP (U.S. Department of Agriculture 2019). Thus, we might primarily capture families more connected to the social safety net. Additionally, our study participants are users of the Propel mobile application, who could differ somewhat from all families with low incomes.

Nonetheless, our results suggest that the 2021 CTC reforms improved housing affordability for families with low incomes. Our findings illustrate how the monthly credit allowed parents to gain residential independence from partners, reduce the number of people residing in households, and reduce past-due rent/mortgages. These results illustrate how a monthly cash transfer can reduce housing instability. Future work should focus on the implications of these housing stability changes for other aspects of child and parent well-being. ■

**Acknowledgments** We thank Propel for access to their Providers data. We thank Samiul Jubaed for his excellent data assistance and Luke Shaefer for his support. We also thank the Charles and Lynn Schusterman Family Philanthropies and the Washington Center for Equitable Growth for their generous support of our research.

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