

How Long Does the Association Between Higher Cash Assistance Eligibility and Financial Hardship Last? Evidence from the Household Pulse Survey

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September 15, 2023

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Abstract

This exploratory study investigates the temporal heterogeneity in the association between higher cash assistance eligibility and financial hardship for lower-income households. I use data from the United States Census Bureau's Household Pulse Survey, which has regularly gathered data on self-reported financial hardship since August 2020. I utilize four contexts created by the differential eligibility in cash assistance provided through the tax system between 2021 and 2022 for households with and without children. Findings of the models estimated using an event study approach suggest that the negative association between higher cash assistance eligibility and financial hardship lasts between a couple of weeks to several months, depending on both the generosity and the frequency of payments. The association seems to persist over a more extended period in relation to smaller monthly payments than larger yearly lump-sum payments. These findings have implications for the design of cash assistance programs and theoretical understanding of financial hardship.

Keywords: Cash Assistance, Financial Hardship, Household Pulse Survey, Earned Income Tax Credit, Child Tax Credit, Economic Impact Payment

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1. Introduction

In the United States, lower-income households, especially those with children, often experience financial hardship – a condition characterized by difficulty paying for usual household expenses. The economic turmoil engendered by the COVID-19 pandemic further worsened the situation for these households. In the early weeks of the pandemic, lower-income parents were twice more likely to cut back on food expenditure and two-and-a-half times more likely to reduce savings or increase credit card debt than higher-income parents (Karpman et al., 2020). Literature shows that financial hardship is positively associated with health risk behaviors (Sampson et al., 2021), mental health problems (Frankham et al., 2020; Ryu et al., 2023), self-harm behavior (Barnes et al., 2016), and marital instability (Gudmunson et al., 2007) and negatively associated with political participation (Schaub, 2021). Because financial hardship can have far-reaching consequences for societal well-being, it is crucial to understand how long higher cash assistance provides financial relief to lower-income households.

Similar to previous years, in early March 2021, lower-income households started receiving yearly lump-sum cash assistance from Earned Income Tax Credit (EITC) and Child Tax Credit (CTC)¹, two large anti-poverty programs in the United States. From EITC, households with children received substantially more cash assistance than identical households without children, and only the earlier group received CTC payments. Additionally, in early January and mid-March 2021, both groups received cash assistance through the Economic Impact Payments (EIP) 2 and 3 programs as part of the Coronavirus Response and Relief Supplemental Appropriations Act of 2021 and American Rescue Plan Act (ARPA) of 2021, respectively (U.S. Government Accountability Office, 2022). Furthermore, the ARPA increased the generosity of the CTC program for the 2021 tax year and made households with children eligible for receiving up to 50% of their estimated CTC benefits in advanced monthly periodic payments between July and December 2021 (Crandall-Hollick, 2022). Although there were no EIP payments in 2022, the ARPA made the Child and Dependent Care Tax Credit (CDCTC) fully refundable for the 2021 tax year, through which many households with dependent care expenses became eligible to receive cash assistance in addition to their yearly lump-sum EITC and CTC benefits after filing their taxes (Crandall-Hollick, 2021b). The across-group and across-time variation in the eligibility of cash assistance from these programs created four quasi-experimental contexts, which can be utilized to explore how long the association between higher cash assistance eligibility and financial hardship lasts.

This study uses the United States Census Bureau’s Household Pulse Survey, which has regularly gathered data on self-reported financial hardship since August 2020, to investigate the longevity of the association

¹ The refundable part of the CTC is referred to as the Additional Child Tax Credit or ACTC (Crandall-Hollick, 2021c).

between higher cash assistance eligibility and financial hardship experienced by lower-income households. I employ an event-study design, which utilizes four contexts between 2021-2022 with across-time variation in cash assistance eligibility from the EITC, CTC, EIP, and CDCTC programs for households with and without children. In general, findings suggest that the longevity of the association ranges from a couple of weeks to several months, depending on both the generosity and the frequency of payments. The key finding of this paper is that smaller monthly payments remain negatively associated with financial hardship over a more extended period than larger yearly lump-sum payments.

This exploratory study makes two contributions to the literature on the role of cash assistance programs in mitigating the financial hardship experienced by lower-income households in the United States. First, by using a unique high-frequency dataset, it elucidates how the financial hardship experienced by these households evolves over time, especially before and after disbursement of cash assistance. Second, it investigates how the design features of cash assistance programs (e.g., generosity and frequency of payments) relate to the longevity of the association between higher cash assistance eligibility and households' perceived financial hardship. From a policy perspective, findings suggest that the permanent availability of a program that provides periodic cash assistance (similar to 2021 advance CTC payments) may reduce the financial hardship experienced by lower-income households with children over a more extended period, especially in the latter half of a year.

2. Background

2.1 Financial hardship among lower-income households in the United States

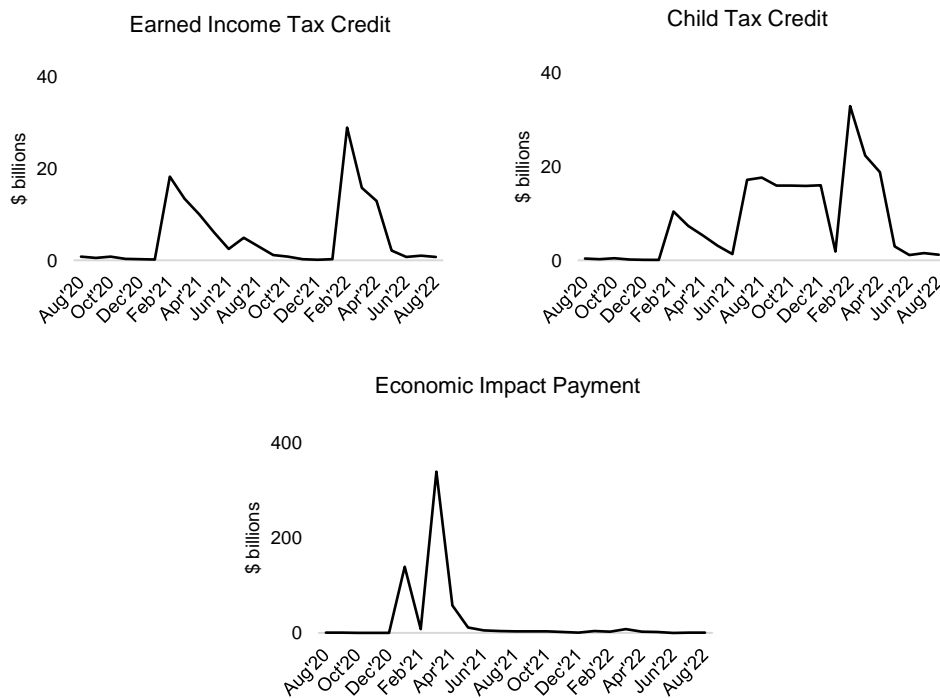
Lower-income households often experience financial hardship due to several reasons, such as income volatility, medical illness and other emergencies, changes in family composition, and lack of access to mainstream financial services (Barr, 2012). Literature suggests that many of these households find a much-needed financial boost after receiving their tax refunds (Halpern-MeeKin et al., 2018). Regarding how recipients use these refunds, Despard et al., 2015 found that EITC recipients used the refunds to pay down their debt (mostly unsecured debt) and to meet essential needs (e.g., food, housing, clothing, shoes, school supplies, furniture, car, etc.). In another study, Jones & Michelsmore, 2019 reported that EITC-eligible households had the lowest levels of credit card and unsecured debt holding around tax time (February-April) relative to other months. In terms of recipients' perceptions, based on in-depth interviews of 115 EITC recipients, Sykes et al., 2015 found that EITC recipients valued the debt relief brought by the assistance received from the program and saw it as a "springboard for upward mobility." Taken together,

existing literature suggests that the typical tax-credit-eligible lower-income household incurs debt throughout the year and uses tax refunds to pay it down.

2.2 Cash assistance through the tax system in 2021-2022

In 2021 and 2022, lower-income households received cash assistance through the tax system from EITC, CTC, EIP, and CDCTC programs. Figure 1 shows the monthly spending by the federal government between August 2020 to August 2022 in EITC, CTC, and EIP programs². As expected, given the yearly lump-sum nature of EITC and CTC payments, we observe spikes in spending in these programs between February and May of each year. Also, we observe increased spending in CTC between July and December 2021 as advance CTC payments were disbursed over this period. Lastly, for EIP, we observe two spikes: one in January 2021 and then in March 2021. As a simplified summary, Table 1 shows the maximum cash assistance eligibility from these programs for households with and without children. The following paragraphs succinctly describe these programs.

Figure 1: Monthly spending by the federal government in EITC, CTC, and EIP programs between August 2020 and August 2022



Note: Author’s calculations based on the monthly treasury statements published by the Bureau of the Fiscal Service (Bureau of the Fiscal Service, 2023).

² The monthly treasury statements published by the Bureau of the Fiscal Service, the source from which this Figure 1 is created, do not separately mention the spending on the CDCTC program.

EITC provides a tax break to lower-income workers, especially to those with children (Crandall-Hollick et al., 2021). Recipient households receive tax refunds as yearly lump-sum payments after filing their taxes if their tax credits are higher than their tax liabilities. The amount of credit depends mostly on three factors: pre-tax annual household income, filing status, and number of children under 19. Keeping other factors constant, EITC eligibility initially increases with income (phase-in), reaches a maximum amount and stays there over an income range (plateau), then starts decreasing as income increases (phase-out), and finally becomes 0 above a threshold income. For households with three or more children and filing as “Married Filing Jointly,” the maximum adjusted gross income was \$56,844 and \$57,414 in 2021 and 2022, respectively. The average recipient households received \$2,331 and \$1,973 in 2021 and 2022, respectively.

Table 1: Maximum cash assistance eligibility from different programs through the tax system for lower-income households with and without children

Context	Program	Year	Beginning of disbursement	Households with children	Households without children
1	EIP 2	2021	December 29, 2020	Household size * \$600	
2	EITC	2021	The first week of March 2021	\$3,584 (1 child aged <19) \$5,920 (2 qualifying children aged <19) \$6,660 (3 or more qualifying children aged <19)	\$538
	CTC	2021	The first week of March 2021	\$1400 per child aged <17	0
	EIP 3	2021	March 12, 2021	Household size * \$1400	
3	Advance CTC	2021	July 15, 2021 (ended on December 15, 2021)	Monthly payments of \$300 per child aged <6 Monthly payments of \$250 per child aged 6-17	0
4	EITC	2022	The first week of March 2022	\$3,618 (1 child aged <19) \$5,980 (2 children aged <19) \$6,728 (3 or more children aged <19)	\$1,502
	CTC	2022	The first week of March 2022	\$1800 per child aged <6 \$1500 per child aged 6-17	0
	CDCTC	2022	The first week of March 2022	\$4000 for 1 qualifying individual \$8000 for 2 or more qualifying individuals	

Source: Internal Revenue Service. Note: For CTC 2022, the amount mentioned in the table assumes that the household received 50% of their CTC benefits as advanced monthly payments between July and December 2021.

Similar to EITC, CTC provides yearly lump-sum tax refunds to lower-income households with children (Crandall-Hollick, 2021d). For the tax year 2020, taxpayers could claim 15% of the family's earned income above \$2500, up to \$1400 per qualifying child (Crandall-Hollick, 2021c). The ARPA 2021 expanded the generosity and frequency of CTC payments for the tax year 2021. Eligible households, even those with little or no income, could receive up to \$3600 per child aged 6 or below and \$3000 per child aged between 6 and 17. Households had the option to receive 50% of their CTC benefits as monthly payments between July and December 2021. The benefits reduced by \$50 for every \$1,000 above \$112,500 for single heads of households and \$150,000 for couples.

CDCTC is another tax credit program that allows eligible taxpayers to reduce their tax liability (Crandall-Hollick, 2021b). The ARPA 2021 made this program refundable for the 2021 tax year. Taxpayers with income between \$0 and \$125,000 were eligible to receive up to \$4000 and \$8000 for 1 and 2 or more qualifying individuals, respectively. For CDCTC, a qualifying individual refers to a child under 13 years old or other dependent who is unable to care for themselves.

EIP programs, also known as stimulus payments, were implemented as part of the federal government's efforts to reduce financial hardship caused by the COVID-19 pandemic (Crandall-Hollick, 2021a). These payments were structured as one-time refundable tax credits and automatically sent to households by the IRS. From EIP 2 and 3 programs, households were eligible to receive \$600 and \$1400 per eligible individual. As households with children, on average, have larger household sizes, they would have received more cash assistance than households without children. Generally, taxpayers qualified for the total amount if they had an adjusted gross income of up to \$75,000 for individuals and up to \$150,000 for married couples filing joint returns and surviving spouses (Internal Revenue Service, 2020).

2.3 Relationship between cash assistance and financial hardship

In the extant literature, several studies investigated the relationship between cash assistance and financial hardship in the United States context. These studies utilize interventions that differ along multiple dimensions, such as conditionality (conditional vs. unconditional cash transfer), generosity, frequency (one-time vs. yearly lump-sum vs. monthly payments), expectation (expected vs. unexpected payments), experimental nature (experimental vs. quasi-experimental), and spatial scale (federal vs. local). The following paragraphs summarize the findings of the existing studies based on the type of variation in cash assistance eligibility (experimental, quasi-experimental with across-year variation, and quasi-experimental with across-month variation) they utilized.

Miller et al., 2015 used experimental data from Family Rewards, a conditional cash transfer program in New York City. They found a substantial reduction in financial strain during the three years in which cash

rewards were offered through the program (from late 2007 to late 2010). Courtin et al., 2018 analyzed data from the same program and suggested that it improved parents' perception of their health and levels of hope by reducing financial hardship. In 2020, as an attempt to help mitigate the financial distress engendered by the COVID-19 pandemic, there was a renewed interest in cash transfer programs in the United States. Pilkauskas et al., 2023 used data from a randomized control trial conducted by GiveDirectly, a charitable organization. The experiment provided a one-time \$1000 unconditional cash in May 2020 to low-income households in 12 states. According to the authors, although there was no effect of the program on material hardship³ for the full sample, there was a reduction in hardship for families with less than \$500 income in the previous month. In another study, Jacob et al., 2022 used data from a similar experiment by the same organization that provided a one-time \$1000 unconditional cash assistance in October 2020 to lower-income households living in high-poverty zip codes across the country. The authors did not find any effect on material hardship measures either for the full sample or any subgroups. These null findings seem surprising given that the reception of \$1000 cash, keeping all else constant, makes households objectively better off.

Several studies investigated the effect of EITC on specific aspects of financial hardship, such as food and housing hardships, using quasi-experimental contexts created by the across-year variations in EITC eligibility. Lenhart, 2022 utilized across-year (2001-2017) variations in EITC generosity created by the 2019 expansion of the program for households with three or more children and found that the expansion reduced food insecurity among the eligible. Pilkauskas & Michelmores, 2019 exploited the federal, state, and family size variations in EITC generosity over the last three decades to investigate the effect of EITC on the housing and living arrangements of single mothers. They found that increased EITC benefits reduced housing cost burdens.

In terms of exploring the longevity of the association between cash assistance eligibility and hardship, several studies utilized quasi-experimental contexts created by the across-month variation of tax credit payments. Rehkopf et al., 2014 and Batra & Hamad, 2021 found that yearly lump-sum EITC eligibility reduced household food insecurity and child food insecurity in the months (February-April) when most eligible households received the benefits. Kramer et al., 2019 used data from the EITC Periodic Payment Pilot conducted in Chicago in 2014–2015 and found that advance periodic payments were associated with lower levels of perceived financial stress over the months. The authors suggest that the potential mediators of the relationship include a lower need for borrowing, lower food insecurity, and fewer unpaid bills. Overall, these studies suggest two things: 1) the association between cash assistance eligibility and financial hardship fades away after a certain period and 2) the frequency of payments affects the longevity of the

³ operationalized as a 9-item index that incorporated measures of difficulties paying for usual household expenses

association. This study contributes to the literature by investigating both phenomena using a larger nationally-representative survey that gathered data on households' perceived financial hardship at regular intervals during the COVID-19 pandemic. Unlike existing studies, this study uses an event study design, which is, arguably, more suited to detect the temporal heterogeneity in the association.

2.4 Hypothesis and Research Questions

In light of the existing literature, for resource-constrained households, a higher cash assistance eligibility can reduce perceived financial hardship in the weeks immediately after cash assistance reception through two primary channels. First, a higher cash assistance eligibility increases the probability that households have sufficient money to pay for usual expenses. Second, a higher cash assistance eligibility can reduce perceived financial hardship by reducing debt. Literature suggests that indebtedness has a psychological cost as it is negatively associated with people's perceived psychological well-being (Brown et al., 2005) and life satisfaction (Ruberton et al., 2016). Assuming that well-being and hardship measures are negatively correlated, reduced debt can decrease households' perceived financial hardship in the weeks immediately after cash assistance reception. Consequently, this study builds on the hypothesis that a higher cash assistance eligibility is negatively associated with perceived financial hardship among lower-income households. However, based on the literature, it is not clear how the association evolves over time and whether the longevity varies depending on the payment frequency. Therefore, this study attempts to investigate the following questions:

1. How long does the association between higher cash assistance eligibility and financial hardship last?
2. How do generosity and frequency of payments relate to the aforementioned association?

3. Data

3.1 Household Pulse Survey

This paper uses data from the Household Pulse Survey (HPS). The United States Census Bureau, in collaboration with several other federal agencies, has conducted this survey regularly since April 23, 2020. The goal of the survey is to track how the pandemic and other temporal events affected people's lived experiences. The HPS started asking a question about the difficulty in paying for usual expenses from wave 13 (August 19-August 31, 2020) onward. I use data from HPS waves 13 to 48, which capture the period between August 2020 and August 2022. Within this period, household units were interviewed only once, which makes the HPS a repeated cross-sectional survey. Table A1 in the Appendix shows the start and end dates of data collection, sample size, and response rate for each HPS wave. Given that the HPS gathered

data at regular intervals, these data are uniquely suited to investigate the temporal heterogeneity in the effect of cash assistance on households' perceived financial hardship.

3.2 Main Analytical Sample

The main analytical sample of this study (N=604,922) is composed of the HPS respondents who meet two conditions: 1) responded to the questions on difficulty paying for usual expenses, pre-tax annual household income, and marital status and 2) lived in a household with pre-tax annual income less than \$50,000. I analyze data for households with less than \$50,000 annual income because this segment includes the common beneficiaries of all the programs of interest (i.e., EIP, EITC, CTC, Advance CTC, and CDCTC). A detailed description of the procedure for selecting the main analytical sample is provided in the Appendix.

Table A2 in the Appendix presents the weighted summary statistics of the respondents in each HPS wave. Unsurprisingly, on average, households with (panel A) and without (panel B) children have different socio-economic characteristics. For example, households with children tend to have larger household sizes and are more likely to live in a house either rented or owned with a mortgage. Also, respondents from households with children are more likely to be married, employed, Black, Hispanic, female, and younger and less likely to have a college degree or above. These differences imply that along with differential eligibility to receive cash assistance from the tax system, the average households with and without children in the main analytical sample are quite different. However, as this paper employs an event study design to estimate the association between higher cash assistance eligibility and financial hardship, the similarity in the characteristics of the average households within each group (i.e., with and without children) across HPS waves is more important. Based on the findings in Table A3, the average within-group characteristics across HPS waves seem quite similar. Nevertheless, I control for the socio-economic variables in the empirical models to account for the small within-group differences across waves.

3.3 Operationalizing Financial Hardship

Regarding financial hardship, the HPS asks, "In the last 7 days, how difficult has it been for your household to pay for usual household expenses, including but not limited to food, rent or mortgage, car payments, medical expenses, student loans, and so on? Select only one answer." The response options are: 1) not at all difficult, 2) a little difficult, 3) somewhat difficult, and 4) very difficult. Following existing literature (Carey et al., 2021; Friedman, 2022; Perez-Lopez & Monte, 2021; Sherman et al., 2020), I create a binary financial hardship dummy which takes a value of 1 if the respondent selected either *somewhat difficult* or *very difficult* and 0 otherwise.

Note that the one-item financial hardship measure used in this paper is different from related measures used in the literature, such as multi-item financial hardship and single-item financial difficulty (Butterworth et al., 2009), multi-item financial strain (Kahn & Pearlin, 2006), multi-item financial stress (Cardona-Montoya et al., 2022), multi-item financial well-being (Consumer Financial Protection Bureau, 2017), and single-item financial satisfaction (Xiao et al., 2014). Therefore, I estimate a linear probability model to explore whether the socio-economic predictors of related measures are also associated with the one-item financial hardship measure. The eleven predictors are pre-tax annual household income, marital status, gender assigned at birth, educational attainment, generation, race, Hispanic origin, number of children under 18, homeownership status, SNAP reception, and employment status in the last 7 days. Based on the results shown in Table 2, it appears that all the variables are statistically significantly associated with financial hardship. Also, the directions of these associations are in the expected directions. For example, the literature suggests that age cohort and household income are positively associated with financial well-being (Collins & Urban, 2020), and the findings in Table 2 suggest that the two variables are negatively associated with financial hardship. Also, some other predictors of financial well-being, for example, race, educational attainment, marital status, and homeownership (Consumer Financial Protection Bureau, 2017), are correlated with financial hardship. Additionally, financial hardship shares many of the predictors of material hardship, such as age cohort, race, and employment status (Beverly, 2001). Everything considered, the one-item financial hardship appears to be a valid measure of the difficulties households face in paying their usual household expenses.

Table 2: Socio-economic predictors of financial hardship

	Coefficient (Standard error)
Constant	36.1*** (1.06)
Pre-tax annual household income (Reference: Less than \$25,000)	
\$25,000 - \$34,999	-6.82*** (0.303)
\$35,000 - \$49,999	-13.4*** (0.301)
Marital status (Reference: Now married)	
Widowed	-3.98*** (0.426)
Divorced	1.46*** (0.319)
Separated	7.69*** (0.685)
Never married	-2.08*** (0.334)
Gender assigned at birth (Reference: Male)	
Female	0.490* (0.247)
Educational attainment (Reference: Less than high school)	
Some high school	1.78 (1.11)
High school graduate	-1.26 (0.950)
Some college	0.976 (0.946)

Associate's degree	0.362 (0.966)
Bachelor's degree	-7.08*** (0.958)
Graduate degree	-7.99*** (0.974)
Generation	
(Reference: Boomers and others)	
Gen Z	12.5*** (0.542)
Millennials	16.5*** (0.388)
Gen X	17.5*** (0.330)
Race	
(Reference: White)	
Black	5.97*** (0.354)
Asian	-2.07** (0.660)
Other or in combination	6.76*** (0.483)
Hispanic origin	
(Reference: non-Hispanic)	
Hispanic	2.45*** (0.372)
Number of people under 18	
(Reference: 0)	
1	6.22*** (0.357)
2	7.34*** (0.461)
3	8.40*** (0.648)
4	8.80*** (0.961)
5	11.5*** (1.18)
Housing owned or rented	
(Reference: Owned free and clear)	
Owned with a mortgage/loan	10.9*** (0.316)
Rented	13.3*** (0.320)
Occupied without payment of rent	16.0*** (0.757)
SNAP receipt	
(Reference: Yes)	
No	-9.91*** (0.328)
Employed in the last 7 days	
(Reference: Yes)	
No	7.19*** (0.261)
Adj. R ²	0.13

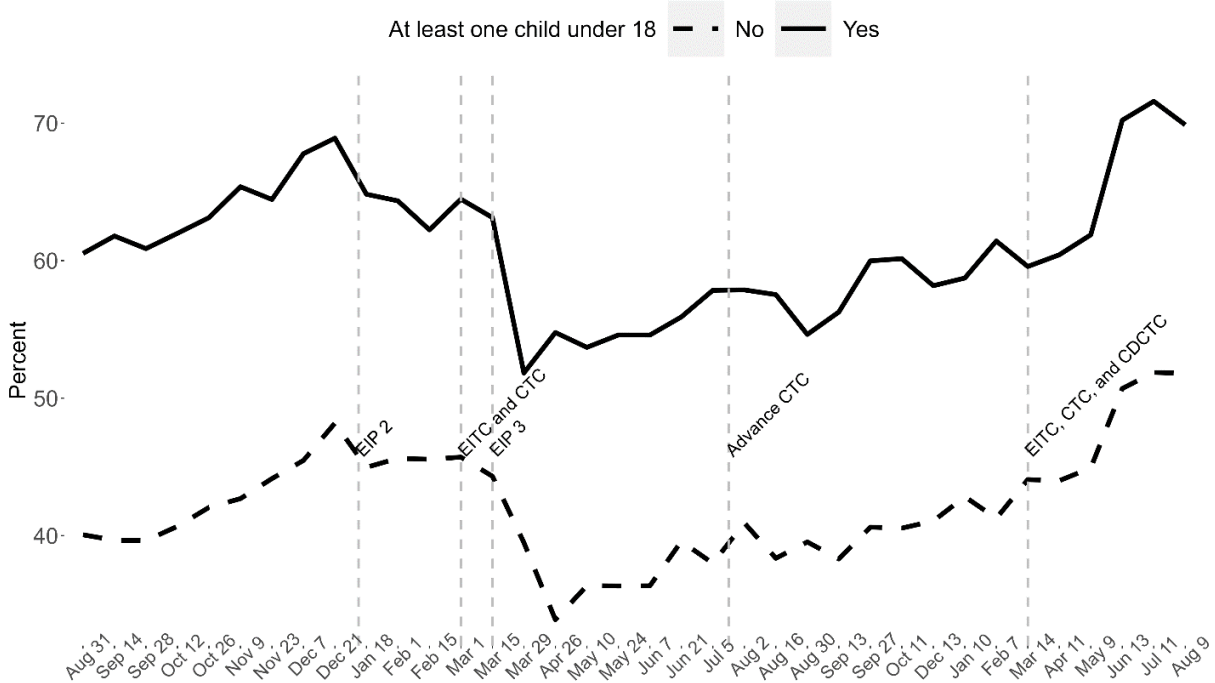
Notes: Author's calculation based on data from the United States Census Bureau's Household Pulse Survey waves 13 to 48. Sample (N= 596,150) consists of respondents from households with less than \$50,000 pre-tax annual income for whom there are no missing data on the variables of interest. Household-level weights and heteroskedasticity-robust standard errors are used in the analysis.

3.4 Trends in Financial Hardship

Figure 2 shows the trends in financial hardship between August 2020 and August 2022 for the average lower-income households with and without children. In the last half of 2020, financial hardship experienced by both groups gradually increased and fell in January 2021 when the IRS started disbursing the EIP 2 payments. Descriptively, it appears that the decrease in hardship in January was greater for households with children who were eligible to receive more cash assistance through EIP 2 as they have larger household sizes. Next, we observe another instance of a decrease in hardship for both groups around mid-March 2021 when households started receiving lump-sum cash assistance from EITC, CTC, and EIP 3 payments. Again,

it appears that the decrease in hardship was steeper for households with children, who were eligible to receive substantially more cash assistance combinedly from these programs in March. However, hardship started increasing for both groups in early May 2021. Between July and December 2020, households with children were eligible to receive monthly cash assistance from the advance CTC program. Over this period, they experienced phases of decrease and increase in hardship, whereas the trends remained relatively smooth, although upward trending, for households without children. In January 2022, when the advance CTC payments stopped, the proportion of households with children reporting financial hardship reached higher than in early July 2021 (i.e., immediately before the beginning of advance CTC payments). Finally, in March 2022, households became eligible to receive lump-sum cash assistance from EITC, CTC, and CDCTC programs. Around mid-March 2022, relative to the earlier two months, we observe a reduction in financial hardship for households with children but not for households without children. From April 2022 onward, as inflation kept soaring (U.S. Bureau of Labor Statistics, 2023), financial hardship for both groups continued to increase.

Figure 2: Trends in financial hardship for households with and without children between August 2020 and August 2022



Notes: Author’s calculation based on data from United States Census Bureau’s Household Pulse Survey weeks 13 to 48. Sample (N=604,922) consists of respondents from households with less than \$50,000 pre-tax annual income who answered questions on household income, marital status, and difficulty paying for usual expenses. X axis labels show the last dates of each HPS wave. Household-level weights are used in the analysis.

4. Empirical Strategy

4.1 Main empirical model

I estimate the following model to investigate the longevity of association between higher cash assistance eligibility and financial hardship:

$$Y_{it} = \gamma_t + \gamma_s + \gamma_{st} + \beta Child_i + \sum_{\tau=-8}^{-1} \delta_{\tau} Child_i * Week_{\tau} + \sum_{\tau=1}^{27} \delta_{\tau} Child_i * Week_{\tau} + X_{it} + \epsilon_{it} \quad (1)$$

where Y_{it} refers to financial hardship reported by respondent i in HPS wave t . γ_t is a vector of temporal fixed effects which account for the events that identically affected the financial hardship experienced by every household in wave t . γ_s is a vector of state fixed effects which account for the time-invariant factors that identically affected the financial hardship experienced by every household living in state s . γ_{st} is a vector of state and wave interaction effects⁴ which account for all the events that identically affected the financial hardship experienced by every household living in state s in wave t . $Child_i$ is a dummy variable that takes a value of 1 if respondent i lived in a household with at least one child under 18 and 0 otherwise. X_{it} is a vector of socio-economic control variables⁵. $\tau = 0$ corresponds to HPS wave 21 (reference period), conducted between December 9 and December 21, 2020. ϵ_{it} is the error term. The coefficient of interest in equation (1) is δ_{τ} , which can be interpreted as an estimator of the association between higher cash assistance eligibility and financial hardship in period τ . If the main hypothesis of this paper (i.e., higher cash assistance eligibility is negatively associated with financial hardship) is correct, I expect δ_{τ} for the periods $\tau = -8$ to -1 to be zero as these estimates are for the periods between August and December 2020 when there was no differential cash assistance eligibility for lower-income households with and without children. Also, I expect δ_{τ} to be negative at least for some of the periods between $\tau = 1$ and 24 (especially those immediately after the beginning of the four contexts) as these are the periods when lower-income households with children became eligible to receive more cash assistance relative to those without children.

4.2 Robustness

I conduct additional analyses to explore the robustness of the main analysis to alternative operationalizations of the outcome and the treatment variables. I create a different financial hardship

⁴ Incorporating state and wave interaction effects (γ_{st}) in the model serves the same purpose as adding state-level wave-specific factors, such as state-level COVID cases, unemployment rate, eviction policies, etc. for different waves.

⁵ The control variables are: employment status in the last 7 days, homeownership status, educational attainment, age, pre-tax annual household income category, marital status, interactions between income category and marital status, household size, gender assigned at birth, race, Hispanic origin, and SNAP reception.

dummy which takes a value of 1 if the respondent selected *very difficult* while responding to the question on difficulty with usual household expenses and 0 otherwise. This operationalization, arguably, captures extreme financial hardship experienced by households and can be more indicative of their material deprivation. Regarding the treatment (i.e., higher cash assistance eligibility), keeping other factors constant, households with more children, on average, were eligible to receive more assistance from the programs considered in this study. Therefore, I estimate another model in which the binary $Child_i$ dummy in equation (1) is replaced by a $Num. Child_i$ variable, which refers to the number of children under 18 in the respondent i 's household.

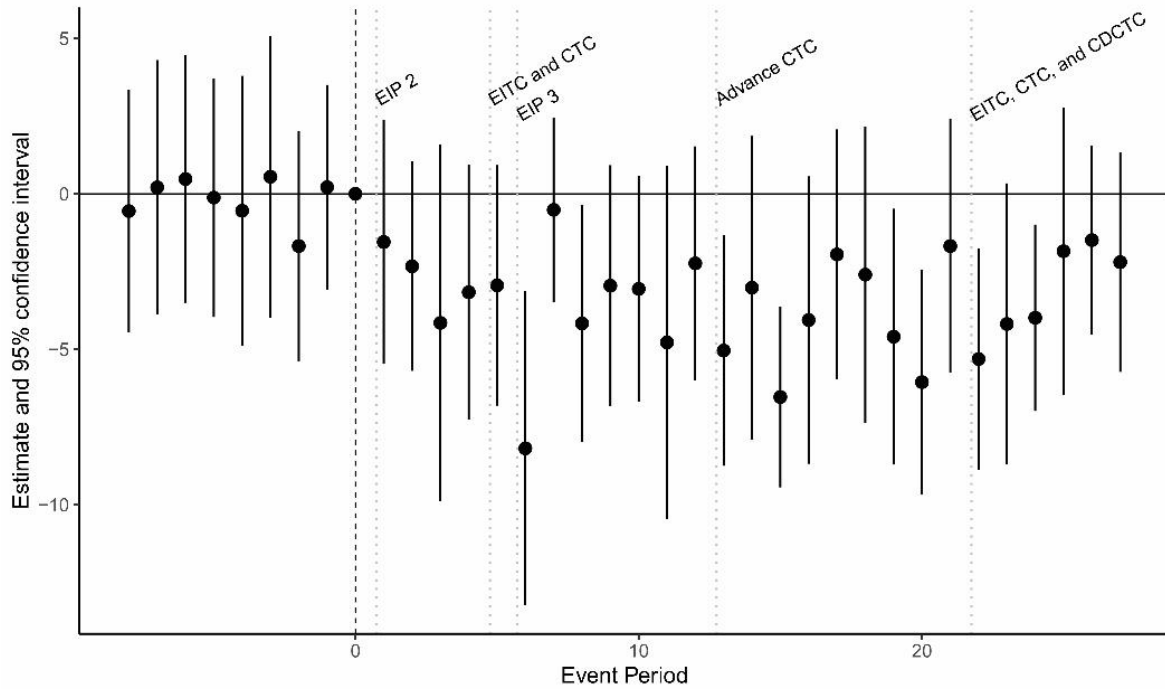
I estimate all the models in R using the `fixest` package (Berge, 2018). For estimation, I use the weighted least squares (WLS) procedure using the household-level weights provided in the HPS and cluster the standard errors at the state level.

5. Results

5.1 Main Findings

Figure 3 presents the findings of equation (1) in which differential cash assistance eligibility is captured by the presence of children under 18 in the household. The error bars show the 95% confidence intervals of the estimated coefficients (δ_τ). In the periods before the reference period (period 0), the estimated coefficients are not significantly different from 0 at the 5% significance level. These suggest that between August 2020 and December 2020, when there were no differential cash assistance eligibility for households with and without children, the trends in average financial hardship for the two groups were moving in parallel. For the five periods after the disbursement of the less generous EIP 2 payments, the estimated coefficients are not significantly different from 0. These findings imply that the disbursement of EIP 2 payments did not have any differential association with the financial hardship experienced by households with and without children, at least in the short-run.

Figure 3: Association between higher cash assistance eligibility and perceived financial hardship for lower-income households



Notes: Author’s calculation based on data from United States Census Bureau’s Household Pulse Survey weeks 13 to 48. Sample (N=604,922) consists of respondents from households with less than \$50,000 pre-tax annual income who answered questions on household income, marital status, and difficulty paying for usual expenses. All models include these variables: state fixed effects, period fixed effects, state and period interaction effects, pre-tax annual household income category, marital status, interaction between income category and marital status, household size, employment status in the last 7 days, homeownership status, educational attainment, race, Hispanic origin, gender assigned at birth, age, and SNAP reception. Household-level weights are used in the analysis and standard errors are clustered at the state level. Error bars show 95% confidence intervals for the estimated associations.

Next, in early March 2021, lower-income households started receiving yearly lump-sum EITC and CTC payments, which provided substantially more benefits to households with children. Additionally, households started receiving EIP 3 payments in mid-March 2021. For event period 6 (March 17 – March 29, 2021), the estimated coefficient is -8.19 (95% confidence interval [-13.36, -3.01]). This finding suggests that higher cash assistance eligibility from the three programs was associated with a 8.19 percentage points reduction in financial hardship. Given that in the pre-January-2021 periods, on average, 60.77% of respondents from lower-income households with children reported financial hardship, the estimated coefficient implies a 13.48% reduction in financial hardship among them. However, the association appears to be short-term as the estimated coefficients for the periods between mid-April and early July, except for period 8 (April 28 - May 10), are not significantly different from 0. This finding aligns with existing

literature (Batra & Hamad, 2021; Rehkopf et al., 2014) which suggests that lump-sum tax credit payments reduce hardship over a short period.

Between July and December, households with children were eligible to receive monthly advance CTC payments. For the last six months of 2021, the estimated coefficients are significantly different from 0 in event periods 13 ($\delta_{13} = -5.04$, 95% CI [-8.84, -1.24]), 15 ($\delta_{15} = -6.54$, 95% CI [-9.51, -3.56]), 19 ($\delta_{19} = -4.60$, 95% CI [-8.81, -0.38]), and 20 ($\delta_{20} = -6.05$, 95% CI [-9.76, -2.36]). These findings suggest that the smaller monthly periodic payments were associated with a reduction in financial hardship over a relatively longer period in 2021 than the larger lump-sum payments disbursed earlier in the year. This finding provides evidence in support of a growing body of literature (Batra et al., 2023; Hamilton et al., 2022; Parolin et al., 2021), which suggests that the disbursement of advance CTC payments reduced the hardship experienced by lower-income households with children in the last half of 2021.

Finally, in March 2022, lower-income households started receiving yearly lump-sum tax credit payments. The estimated coefficients for the event periods 22 to 24 are: $\delta_{22} = -5.31$, 95% CI [-8.97, -1.66]; $\delta_{23} = -4.19$, 95% CI [-8.82, 0.45]; and $\delta_{24} = -3.99$, 95% CI [-7.06, -0.92]. The coefficients for periods 22 and 24 are statistically significant at the 5% significance level, and the one for period 23 is significant at the 10% significance level. However, the coefficients for periods 25 and later are statistically insignificant. These estimates imply that the higher cash assistance eligibility through the tax system was associated with a reduction in financial hardship among lower-income households with children between March and early May 2022 but faded out afterward. Again, this finding implies a short-term impact of lump-sum tax credit payments on financial hardship.

5.2 Robustness

Figure A1 shows the findings of re-estimating equation (1) in which cash assistance eligibility is operationalized based on the number of children under 18 (as opposed to the binary categorization based on the presence of children under 18 in the main analysis). Although the magnitudes of the estimated coefficients differ from the main analysis, the directions and statistical significance of the estimates are quite similar. Figure A2 shows the findings of re-estimating equation (1) with alternative operationalization of the outcome (i.e., extreme financial hardship as explained in section 4.2). For the post-January-2021 periods, we observe a statistically significant negative coefficient in event period 2 (January 20-February 1, 2020). Although negative, the estimated coefficients for the subsequent three periods are not significantly different from 0. These findings imply that the higher cash assistance eligibility from EIP 2 was associated with a reduction in extreme financial hardship for about a couple of weeks. The estimated coefficients for event periods 6 to 12 (March 17-July 5) are negative and statistically significant for event periods 6, 7, 8,

10, and 11. These findings imply that the eligibility to receive more generous tax credit payments from EITC, CTC, and EIP 3 payments in 2021 was linked to a reduction in extreme financial hardship between March and June 2021. Based on the alternative operationalization of the outcome, these findings indicate that the association lasted longer than the longevity suggested by the main findings. Next, for the periods between July and December, estimated coefficients are negative and statistically significant in event periods 13, 15, 16, 17, 19, and 20. These estimates suggest that advance CTC payments were linked to reductions in extreme financial hardship over an extended period in the last half of 2021. Again, the longevity of the association based on this analysis is higher than the one suggested by the main analysis. Finally, the estimated coefficients are negative and significantly different from 0 for the event periods 22 and 23 but statistically insignificant for the remaining periods. These estimates imply that the association between higher cash assistance eligibility from the lump-sum tax credit payments and extreme financial hardship lasted between March and April and faded out afterward.

6. Conclusion and Discussion

This study used data from the Household Pulse Survey – a unique repeated cross-sectional survey that gathered data regularly throughout the COVID-19 pandemic – to investigate the longevity of the association between higher cash assistance eligibility and financial hardship for lower-income households. I estimated models using an event study approach which utilized four contexts created by the differential cash assistance eligibility for households with and without children from 1) EIP 2 payments in early January 2021, 2) EITC, CTC, and EIP 3 payments in early March 2021, 3) advance CTC payments between July and December 2021, and 4) EITC, CTC, and CDCTC payments in early March 2022. For the first context, results suggest that higher cash assistance eligibility from the less-generous EIP 2 payments was associated with a reduction in extreme financial hardship for about a couple of weeks. For the second, third, and fourth contexts, overall, results indicate that the smaller advance monthly CTC payments, disbursed between July and December 2021, on average, were associated with reductions in financial hardship over a more extended period than the larger lump-sum cash assistance provided through EITC, CTC, and EIP 3 programs in March 2021 and through EITC, CTC, and CDCTC payments in March 2022. Everything considered, the findings of this study suggest that along with generosity, the frequency of payments plays a vital role in determining the longevity of the impact of higher cash assistance eligibility.

From a policy perspective, in terms of designing cash assistance programs, one critical question is: How frequently should cash assistance be disbursed to maximize the well-being of the recipients? Conceptually, the payment frequency enhancing households' well-being depends on their financial health. For example,

households that are able to pay for usual expenses from their regular earnings may prefer a larger lump-sum tax credit payment as it enables them to purchase big-ticket items. On the contrary, households that struggle to pay for their usual expenses with their regular earnings may prefer advanced periodic payments because the intervention helps them smooth consumption without having to incur debt. The findings of this study indicate that for the typical lower-income household with children, periodic cash assistance may reduce financial hardship over a more extended period than a lump-sum payment. This aligns with the finding by Kramer et al., 2019 suggesting that people who received four advanced periodic EITC payments reported lower financial stress over the months than those who received EITC payments as a yearly lump sum. Given the growing evidence in favor of the efficacy of periodic payments in reducing hardship, policymakers should consider making permanent changes to the existing lump-sum tax credit programs so that lower-income households have the option to receive cash assistance more frequently.

From a measurement perspective, the one-item 7-day financial hardship measure appears to be valid for tracking households' difficulties in paying for usual expenses. As shown in Table 2, socio-economic characteristics – e.g., household income, marital status, homeownership, etc. – known to be associated with other outcomes related to households' financial health, such as material hardship and financial well-being, are also predictive of the financial hardship measure. Additionally, the average value of financial hardship changes longitudinally with relevant policy events (e.g., cash assistance payments, increase in inflation, etc.). Two key advantages of this parsimonious measure are 1) potentially lower recall bias given the shorter reference period and 2) decreased survey completion time. Consequently, including this question in other surveys can be helpful in terms of tracking how people's perceived financial hardship varies over the months of a calendar year. Future research should investigate the association between this measure and other validated measures of financial health, such as the Consumer Financial Protection Bureau's financial well-being score. Such an investigation will delineate to what extent this one-item measure is informative about a household's overall financial health.

The findings of this study should be interpreted in light of its limitations. First, similar to many existing studies on the impact of tax credit programs, this study could not identify which households received cash assistance and exactly when they received these benefits because the HPS did not consistently ask questions about receiving benefits from all the programs considered in this study. Some HPS waves asked whether households received EIP and advance CTC payments; however, because the HPS is not a panel survey, the information on EIP and advance CTC reception is not directly applicable to the empirical strategy used in this study. Also, about one in five eligible households do not claim EITC benefits (Internal Revenue Service, 2021). Consequently, the treatment of interest in this paper was the *eligibility to receive* higher cash assistance rather than the *reception* of higher cash assistance. Second, the HPS waves considered in

this study do not consistently provide information on children's ages. Given that the amount of cash assistance households were eligible to receive depended on both the number of children in the household and their ages, there might have been some misclassifications. For example, this study considered every household in the main analytical sample with at least one child under 18 eligible for lump-sum CTC benefits in March 2021. However, households with children under 17 were eligible to receive benefits from the programs, which implies that some households with 17 years old children were erroneously classified as eligible for CTC benefits. Third, despite controlling for state and period interaction effects, the estimated models may not have accounted for all the temporal events that differentially affected the financial hardship experienced by respondents with and without children over the studied period. This limitation complicates the causal interpretations of the findings. Fourth, this study cannot isolate the impact of each program; rather, it explores the association between higher cash assistance eligibility from multiple programs and financial hardship at four different points in time. Fifth, the analytical samples used in this study are composed of people who responded to the question on pre-tax annual household income, marital status, and difficulty paying for usual expenses. Although the number of non-respondents to the latter two questions is negligible, more than one in five HPS respondents did not respond to the question on household income. If the respondents to the question on household income are systematically different from the non-respondents, the estimates are biased.

Although this study finds some evidence to suggest that a higher cash assistance eligibility from different programs through the tax system was associated with a reduction in financial hardship between 2021 and 2022, it did not investigate the underlying mechanisms driving these associations due to a lack of data on financial behaviors (i.e., consumption, debt, and savings) in the HPS. Future studies should combine longitudinal data from multiple sources, such as credit bureau and consumer expenditure data, to investigate the underlying financial behaviors mediating the relationship between cash assistance and perceived financial hardship.

Appendix

Table A1: Description of HPS waves

Year	HPS wave	Event Period	Data collection period	Number of respondents	Response rate (percent)
2020	13	-8	August 19 – August 31	109,051	10.3
	14	-7	September 2 – September 14	110,019	10.3
	15	-6	September 16 – September 28	99,302	9.2
	16	-5	September 30 – October 12	95,604	8.8
	17	-4	October 14 – October 26	88,716	8.1
	18	-3	October 28 – November 9	58,729	5.3
	19	-2	November 11 – November 23	71,939	6.6
	20	-1	November 25 – December 7	72,484	6.7
	21	0	December 9 – December 21	69,944	6.5
	2021	22	1	January 6 – January 18	68,348
23		2	January 20 – February 1	80,567	7.5
24		3	February 3 – February 15	77,122	7.3
25		4	February 17 – March 1	77,788	7.3
26		5	March 3 – March 15	78,306	7.4
27		6	March 17 – March 29	77,104	7.2
28		7	April 14 – April 26	68,913	6.6
29		8	April 28 – May 10	78,467	7.4
30		9	May 12 – May 24	72,897	6.8
31		10	May 26 – June 7	70,854	6.7
32		11	June 9 – June 21	68,067	6.4
33		12	June 23 – July 5	66,262	6.3
34		13	July 21 – August 2	64,562	6.1
35		14	August 4 – August 16	68,799	6.5
36		15	August 18 – August 30	69,114	6.5
37		16	September 1 - September 13	63,536	6.0
38		17	September 15 – September 27	59,833	5.6
39		18	September 29 - October 11	57,064	5.4
40		19	December 1 – December 13	60,826	5.8
2022		41	20	December 29, 2021 – January 10	74,995
	42	21	January 26 – February 7	75,482	7.2
	43	22	March 2 – March 14	84,158	7.9
	44	23	March 30 – April 11	63,769	6.0
	45	24	April 27 – May 9	61,767	5.8
	46	25	June 1 - June 13	62,826	6.2
	47	26	June 29 - July 11	58,304	5.7
	48	27	July 27 - August 8	46,801	4.4

Source: Household Pulse Survey (United States Census Bureau, 2023c)

Selecting the main analytical sample

To select the main analytical sample, I apply the following steps:

- 1) I merge HPS waves 13 to 48, which combinedly have a total of 2,632,319 respondents.
- 2) Excluding the respondents with missing responses to the question on pre-tax annual household income (INCOME variable), I get a sample of 2,045,557 respondents (22.29% missing response rate).
- 3) Then, I exclude respondents with missing responses to the question on marital status (MS variable). This reduces the sample to 2,036,752 respondents.
- 4) Next, exclusion of respondents with missing responses to the question on difficulty paying for usual expenses (EXPNS_DIF variable) reduces the sample to 2,034,398 respondents.
- 5) Finally, I narrow the sample down to respondents living in households with pre-tax annual income below \$50,000. The main analytical sample consists of 604,922 respondents.

Table A2: Summary statistics of the main analytical sample

Panel A: Households with children

Week	Sample size	Income <\$25k	Income \$25k-\$35k	Income \$35k-\$50k	Married	Employed	House hold size	White	Black	Hispanic	Female	Age	Rent/ Mortgage	College
13	7,576	39.69	29.81	30.5	37.94	49.3	4.07	64.28	23.81	27.87	65.69	42.88	80.65	9.86
14	7,696	39.08	29.17	31.76	38.96	52.74	4.13	60.7	25.02	26.22	66.44	42.66	83.24	9.98
15	6,811	39.15	28.27	32.58	38.24	50.16	4.1	64.6	22	27.8	66.05	43.51	81.95	9.5
16	6,361	39.96	30.12	29.92	36.77	53.12	4.06	62.33	22.33	26.77	67.33	42.86	82	10.19
17	5,885	39.29	30.79	29.92	40.09	50.17	4.18	61.92	23.17	27.38	64.91	43.21	83.17	10.29
18	3,730	38.63	28.32	33.05	40.21	48.37	4.21	63.15	23.95	24.87	66.37	43.12	80.5	9.59
19	4,882	38.55	29.29	32.16	40.62	51.87	4.12	64.65	22.09	28.59	65.31	42.92	84.51	10.78
20	4,876	40.25	29.09	30.66	40.82	46.25	4.17	64.67	23.01	25.56	66.29	42.83	82.3	9.9
21	4,757	39.54	28.34	32.12	39.47	47.37	4.15	66.11	20.96	27.19	65.95	43.59	82.12	10.22
22	4,458	38.71	30.08	31.21	39.07	47.78	4.22	63.06	23.6	28.3	65.75	43.02	82.07	10.53
23	5,087	39.17	28.16	32.67	41.8	47.24	4.15	61.93	23.15	26.24	67.27	42.62	80.55	10.92
24	4,761	40.11	29.1	30.79	39.41	49.08	4.12	67.19	22.11	27.72	64.13	42.96	82.11	10.43
25	4,735	39.32	30.97	29.71	39.84	45.39	4.15	62.42	23.42	25.83	64.84	42.7	82.13	9.94
26	4,654	39.19	29.97	30.84	41.2	47.03	4.26	64.19	22.82	29.04	66.06	42.17	80.83	10.77
27	4,391	39.58	28.58	31.85	40.02	52.38	4.08	65.57	20.95	25.91	65.14	42.52	82.49	11.27
28	3,762	40.02	29.89	30.08	40.53	49.83	4.12	67.52	19.89	27.65	65.15	43.36	80.77	10.36
29	4,563	38.62	30.22	31.16	39.44	51.15	4.14	66.04	22.02	26.79	65.55	43	81.46	10.92
30	4,407	39.49	33	27.51	38.45	50.6	4.11	66	23.21	26.61	65.81	42.97	81.83	10.92
31	4,161	37.29	31.63	31.09	38.05	50.59	4.07	64.42	23.29	25.33	66.91	43.02	81.45	11.32
32	4,128	38.86	30.14	31	40.21	51.25	4.14	65.83	22.09	28.32	67.02	42.6	81.87	11.13
33	3,873	41.12	27.89	30.99	41.25	51.15	4.2	63.61	23.43	25.88	66.43	43.04	81.14	10.6
34	4,008	42.42	29.44	28.14	38.72	44.55	4.15	65.96	21.4	28.4	65.8	43.42	79.13	10.6
35	4,222	41.8	30.12	28.08	40.42	47.25	4.2	66.53	21.46	26.09	65.67	43.31	82.14	11.3

36	4,239	40.89	27.62	31.49	37.49	47.32	4.19	65.29	22.87	27.96	64.98	43.01	80.79	11.95
37	3,839	41.08	28.54	30.38	40.66	49.43	4.21	65.09	23.19	26.34	66.05	42.73	80.28	11.52
38	3,606	43.12	28.61	28.26	39.37	48.39	4.08	62.97	23.06	26.06	67.97	43.03	80.67	12.23
39	3,391	43.75	26.76	29.49	39.81	47.33	4.14	65.39	23.07	27.45	65.82	44.01	79.53	11.03
40	4,177	42.83	27.93	29.24	39.23	51.84	4.09	64.58	22.78	28.18	66.11	41.93	81.63	9.42
41	5,756	42.6	27.16	30.24	37.43	47.2	4.2	64	24.28	27.58	67.31	41.11	82.91	10.39
42	5,574	40.45	28.97	30.58	40.48	48.84	4.14	66.58	22.43	26.67	65.09	41.77	80.36	10.13
43	5,764	39.34	29.95	30.71	39.26	53.78	4.13	65.14	22.64	28.59	64.3	41.66	79.5	10.01
44	3,875	41.8	27.82	30.37	41.09	52.46	4.12	67.27	20.13	26.65	67.08	42.23	78.84	9.99
45	3,718	42.69	28.34	28.97	37.77	50.41	4.12	63.72	22.9	27.76	72.47	43.08	80.51	11.51
46	3,768	41.66	27.46	30.89	38.08	51.25	4.12	62.79	23.96	25.66	67.29	41.96	80.31	9.43
47	3,516	40.41	28.61	30.99	38.85	47.17	4.17	65.65	24.23	26.41	68.71	42.15	78.97	10.76
48	3,163	39.55	28.66	31.8	37.26	51.87	4.1	64.71	21.17	26.46	69.19	41.61	80.04	9.39

Notes: Author's calculation based on data from United States Census Bureau's Household Pulse Survey weeks 13 to 48. Sample consists of Household Pulse Survey respondents living in households with at least one child under 18 and less than \$50,000 pre-tax annual income who answered questions on household income, marital status, and difficulty paying for usual expenses. Household-level weights are used in the analysis. Numbers are rounded to two decimal places.

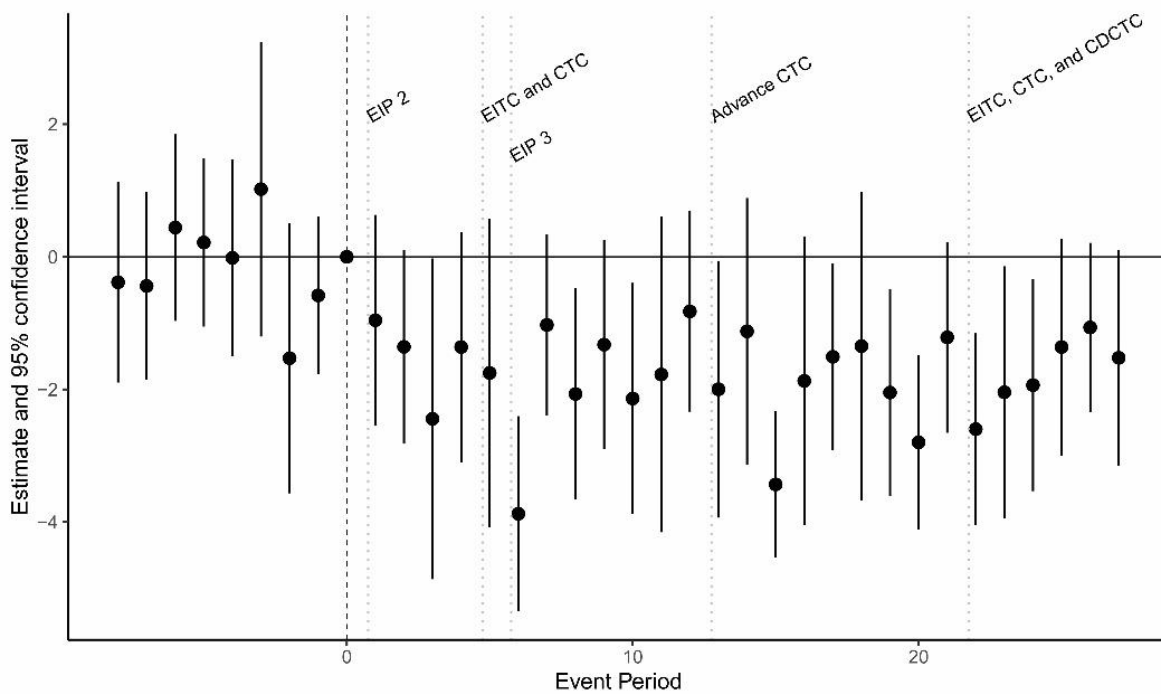
Panel B: Households without children

Week	Sample size	Income <\$25k	Income \$25k-\$35k	Income \$35k-\$50k	Married	Employed	Household size	White	Black	Hispanic	Female	Age	Rent/Mortgage	College
13	16,872	38.78	28.16	33.06	28.37	40.89	1.82	77.22	13.89	14.18	54.66	54.96	68.52	18.14
14	17,410	37.46	29.6	32.94	27.32	42.68	1.85	77.33	13.53	13.88	55.47	54.52	69.48	18.14
15	15,803	38.46	28.75	32.79	27.83	42.05	1.84	76.25	14.41	13.87	54.42	54.51	68.95	16.81
16	15,245	37.79	29.33	32.88	28.35	42.25	1.84	76.37	14.25	12.83	54.83	54.39	68.68	18.15
17	13,878	39.03	28.89	32.08	28.01	40.52	1.84	77.16	13.64	13.81	53.86	54.68	67.29	18.05
18	9,362	36.45	29.13	34.41	28.89	38.55	1.84	78.87	11.67	13.28	55.08	55.26	66.82	18.32
19	11,270	36.97	29.36	33.68	29.47	40.58	1.85	78.36	12.49	12.96	54.95	55.83	69.27	18.04
20	11,584	38.32	28.33	33.36	30.04	38.11	1.88	78.71	13.11	13.41	55.45	55.11	68.56	18.84
21	11,533	40.09	28.02	31.89	27.77	38.9	1.86	76.94	13.16	14.3	55.54	54.88	68.47	18.67
22	10,892	37.59	28.38	34.03	30.08	39.34	1.91	78.35	12.54	14.26	53.47	54.19	68.81	18.92
23	13,268	37.42	28.28	34.29	28.6	41.26	1.92	77.72	13.31	13.08	53.8	53.12	69.52	17.75
24	12,939	39.04	28	32.96	28.97	41.54	1.91	77.31	13.65	13.76	54.09	53.7	68.28	19.12
25	12,878	39.82	27.95	32.23	30.2	39.61	1.92	78.21	12.18	14.55	54.73	54.26	67.46	18.08
26	12,567	37.56	29.56	32.88	28.6	41.89	1.91	77.71	13.6	13.14	54.1	53.48	68.9	18.91
27	12,314	38.68	29.25	32.07	27.73	41.39	1.86	78.37	13.05	13.86	54.18	53.43	68.88	18.65
28	10,266	37.96	29.14	32.9	28.91	40.29	1.85	77.74	13.96	13.2	54.96	54.93	65.51	18.87
29	12,074	39.13	28.4	32.47	29.15	41.42	1.88	78.2	13.08	13.93	55.7	54.88	67.59	19.25
30	11,064	38.67	30.49	30.83	28.3	40.86	1.87	77.12	13.2	14.95	55.38	54.96	68.14	18.77
31	10,702	38.31	28.58	33.11	29.64	43.39	1.88	78.21	12.44	13.21	54.46	54.55	68.68	19.14
32	10,343	39.13	30.48	30.39	27.09	41.39	1.85	77.1	14.62	12.89	54.28	54.53	68.59	18.56
33	10,122	38.81	29.32	31.87	28.15	40.97	1.88	78	12.74	14.74	55.87	54.88	66.79	19.38
34	11,246	40.63	29.03	30.34	29.06	41.31	1.88	77.31	14.33	12.76	54.42	54.55	68.48	17.58
35	11,779	38.55	28.33	33.13	30.16	41.47	1.89	78.64	13.69	14.24	54.82	54.29	68.62	18.79
36	11,753	39.97	28.5	31.53	30.29	40.26	1.89	78.85	12.79	13.85	55.34	54.6	67.01	18.63
37	11,054	38.54	29.04	32.42	29.43	39.18	1.92	78.43	13.37	13.64	53.8	54.48	66.1	18.49
38	10,518	39.85	28.54	31.61	28.22	39.52	1.89	77.11	14.09	13.77	54.03	54.27	68.13	17.45
39	10,049	39.47	29.33	31.2	29.07	41.13	1.86	77.85	13.8	13.39	56.4	54.69	67.38	18.37
40	11,703	40.41	28.89	30.7	27.97	42.38	1.83	78.76	13.06	12.48	54.68	53.49	68	19.33
41	14,082	41.84	28.9	29.26	27.2	39.84	1.83	77.93	13.5	13.33	54.1	53.56	68.78	17.78
42	14,436	40.02	27.63	32.36	27.07	42.34	1.83	78.48	12.99	13.6	54.19	53.26	68.61	18.79
43	15,616	39.73	30.32	29.95	27.25	43.68	1.82	78.02	13.28	14.52	54.11	53.52	68.92	19.17
44	11,875	40.6	29.16	30.23	26.76	42.92	1.83	77.26	13.61	14.51	53.21	53.74	67.84	18.38

45	11,216	40.51	28.33	31.15	28.64	42.63	1.87	78.54	13.01	14.71	54.21	53.04	69.13	18.79
46	10,980	39.8	29.42	30.79	26.46	41.39	1.8	76.81	13.97	15.33	52.96	53.52	66.18	17.2
47	10,085	40.15	28.3	31.55	26.64	40.23	1.82	74.84	15.29	14.95	53.21	53.96	66.08	17.54
48	7,974	39.49	28.62	31.9	24.75	44.65	1.84	78.23	11.95	14.88	54.24	52.27	69.32	16.86

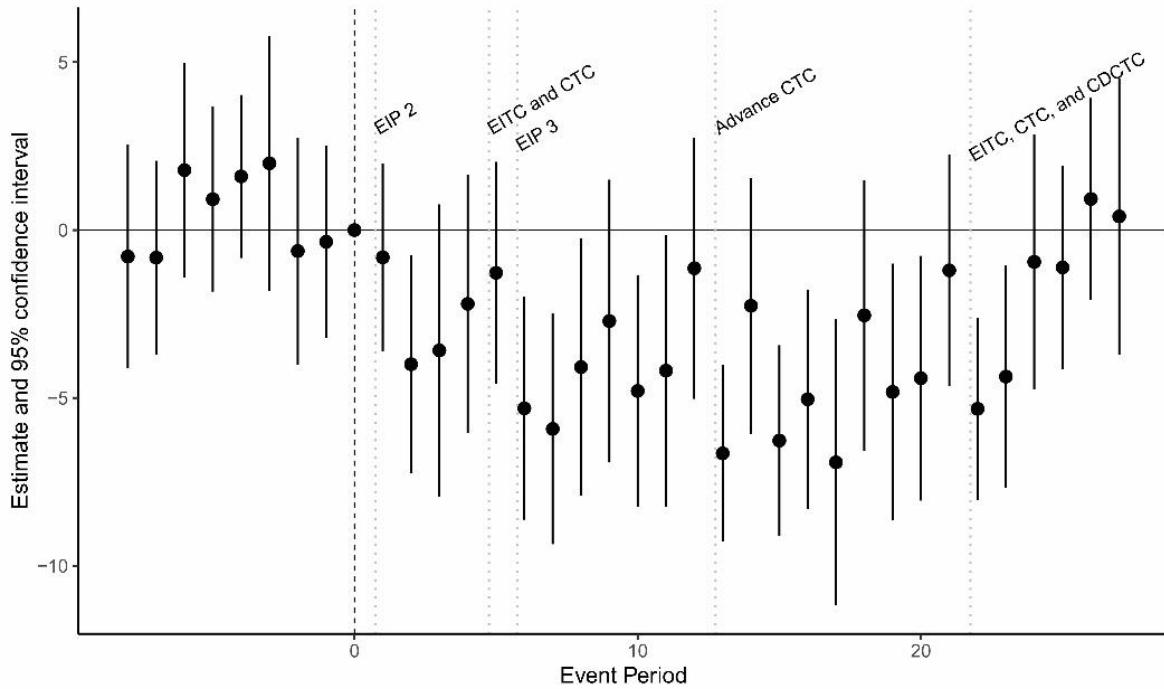
Notes: Author's calculation based on data from United States Census Bureau's Household Pulse Survey weeks 13 to 48. Sample consists of Household Pulse Survey respondents living in households with no children under 18 and less than \$50,000 pre-tax annual income who answered questions on household income, marital status, and difficulty paying for usual expenses. Household-level weights are used in the analysis. Numbers are rounded to two decimal places.

Figure A1: Association between higher cash assistance eligibility and perceived financial hardship for lower-income households



Notes: Author's calculation based on data from United States Census Bureau's Household Pulse Survey weeks 13 to 48. Sample (N=604,922) consists of respondents from households with less than \$50,000 pre-tax annual income who answered questions on household income, marital status, and difficulty paying for usual expenses. All models include these variables: state fixed effects, period fixed effects, state and period interaction effects, pre-tax annual household income category, marital status, interaction between income category and marital status, household size, employment status in the last 7 days, homeownership status, educational attainment, race, Hispanic origin, gender assigned at birth, age, and SNAP reception. Household-level weights are used in the analysis and standard errors are clustered at the state level. Error bars show 95% confidence intervals for the estimated associations.

Figure A2: Association between higher cash assistance eligibility and perceived extreme financial hardship for lower-income households



Notes: Author's calculation based on data from United States Census Bureau's Household Pulse Survey weeks 13 to 48. Sample (N=604,922) consists of respondents from households with less than \$50,000 pre-tax annual income who answered questions on household income, marital status, and difficulty paying for usual expenses. All models include these variables: state fixed effects, period fixed effects, state and period interaction effects, pre-tax annual household income category, marital status, interaction between income category and marital status, household size, employment status in the last 7 days, homeownership status, educational attainment, race, Hispanic origin, gender assigned at birth, age, and SNAP reception. Household-level weights are used in the analysis and standard errors are clustered at the state level. Error bars show 95% confidence intervals for the estimated associations.

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