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Child Tax Credit Purchasing Power and Short-Term Changes in Parental Time Allocation: Evidence from American Time Use Data

Yang Jiao

yjiao@tamut.edu

Texas A&M University – Texarkana

Tennecia Dacass

Central Washington University

Elif Dilden

Rockhurst University

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Abstract

The Child Tax Credit (CTC) provides financial relief to families with children, yet little is known about how this policy shapes parental time allocation. This study investigates the effect of the 2017 CTC expansion using a difference-in-differences framework. Because the CTC provides a uniform dollar amount regardless of where families live, its practical value varies geographically: the same credit goes further in counties where childcare is relatively affordable than where it consumes a large share of household income. We exploit this variation in the credit's real purchasing power to identify behavioral responses to the reform. Drawing on the American Time Use Survey (2008–2021), we find that parents in counties where the credit provided greater financial relief reduce their involvement in childcare and household tasks while gaining leisure time. This pattern is especially pronounced among mothers, who show significant reductions in basic caregiving activities such as feeding and bathing, alongside meaningful gains in socializing. Importantly, educational and recreational parent-child interactions remain unaffected, suggesting limited consequences for children's cognitive development. Heterogeneity analyses indicate that the estimated reduction in parent-child time is most prominent among Hispanic parents, those without a college degree, and low-income families, with implications for the design of child-focused transfer programs.

Keywords: Child Tax Credit, Time Use, Child Care, Gender Disparity

JEL Classification Codes: D13, H24, H31, J13, J22

Declaration of interests

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1 Introduction

According to the employee survey conducted by Fuller & Raman (2019), approximately 73% of employees have caregiving responsibilities, with over two-thirds of them being working parents. The ability of these working parents to remain in the workforce is contingent upon access to quality, affordable childcare services. Such childcare not only supports the healthy development of young children but also confers substantial social benefits to families, particularly during a crucial life stage. When examining various demographic factors such as marital status, race, age, education level, or income, it becomes apparent that families paying for childcare are allocating a larger portion of their income than what is considered by the U.S. Department of Health and Human Services (HHS) as affordable.[1] In response to these challenges, federal policymakers have continued to modify child-related tax benefits, including the Child Tax Credit (CTC), as a mechanism to provide financial support to families with children. The CTC reduces families' federal tax liability and increases disposable income, thereby alleviating part of the financial burden associated with raising children.[2]

Prior research has primarily focused on the impact of CTC on parental labor supply, with findings ranging from mixed to negative (Feldman et al. 2016, Lippold 2019, Ananat et al. 2022, Enriquez et al. 2023). Even if the CTC has a limited impact on work away from home, it could still prompt adjustments in how individuals allocate their time at home. This is primarily due to varying income sensitivities across activities. CTC may also affect the amount of time parents spend with their children. However, its overall effect is theoretically ambiguous. The additional financial support from the CTC allows parents to consider reducing their working hours and devoting more time to various activities, including tending to their children. Conversely, with the extra income, parents might decide to delegate childcare duties or engage in more recreational pursuits, potentially resulting in fewer interactions with their children. It is important to consider the CTC's impact on parental time allocation to child-rearing activities, as interactions between parents and children are critical for a child's social, emotional, and cognitive development, which ultimately impact their long-term economic outcomes (Carneiro et al. 2003, Del Boca et al. 2014). Notably, existing research examining the influence of CTC on how parents allocate their time and the amount of time they dedicate to their children is rather limited, resulting in a significant gap in our understanding of this area.

This research addresses the gap by investigating the impact of the 2017 expansion of the CTC on how parents allocate their time, particularly the time they spend with their

[1] According to HHS, childcare is considered affordable if it costs families no more than 7 percent of their income. Nearly two-thirds of parents, including 95% of low-income parents, spend more than that. Therefore, childcare is largely unaffordable. In a recent document released by the Department of Labor, millions of Americans now spend more than 1 in 4 dollars of their income on childcare, reducing their ability to pay for housing, healthcare, or healthy food. The complete report can be obtained at: National Database of Childcare Prices.

[2] Federal tax policy toward children's tax credits has continued to evolve since the 2017 Tax Cuts and Jobs Act (TCJA). In 2025, the One Big Beautiful Bill legislation increased the Child Tax Credit from $2,000 to $2,200 per qualifying child and indexed it to inflation, though the refundable share and phase-in rules remain largely unchanged, meaning not all eligible families realize the full increase.

children. We focus on the 2017 expansion because it offered substantial benefits to families with eligible children compared to other reforms. Central to our approach is the concept of CTC purchasing power, adapted from the purchasing power framework introduced by Bronchetti et al. (2019), who show that the real value of SNAP benefits varies across markets due to differences in local food prices, and that this variation meaningfully affects child health outcomes.

We apply the same logic to the CTC. Although the credit provides a uniform dollar amount to all qualifying families nationwide, its real value differs substantially across counties: the same $2,000 credit covers nearly half of annual childcare costs in affordable counties but just over a tenth in high-cost ones. This means that families in high-purchasing-power counties — where childcare is inexpensive relative to household income — receive meaningfully greater financial relief from the same nominal credit than families in low-purchasing-power counties. We construct a county-level CTC purchasing power measure that captures this variation and use it within a difference-in-differences framework to identify how parents adjust their time allocation in response to the reform. Crucially, this geographic variation in purchasing power is driven by local labor markets and cost conditions rather than federal policy design, making it a credible source of identifying variation. Our findings indicate that parents living in high-purchasing-power counties tend to decrease their involvement in household and childcare responsibilities, leading to an increase in leisure time. This trend is particularly prominent among mothers.

To gain deeper insights into the reduction in time parents allocate for childcare activities, we follow Guryan et al. (2008) and decompose total childcare tasks into basic, educational, and recreational parent-child interactions. For all parents, we find that the propensity to engage in basic childcare activities, such as feeding and bathing, declines after the expansion of CTC. However, time dedicated to educational and recreational interactions with children remains unaffected. Next, we show that the impact of CTC expansion on time spent on childcare varies by race, educational attainment, and income. To be specific, the decrease in childcare time among parents residing in high-exposure regions is most noticeable among Hispanic parents, individuals with a high school diploma or lower, or families with an income ranging from 20 to 50 thousand dollars per year.

Furthermore, we offer several pieces of evidence to substantiate the assertion that the observed pattern is indeed causal. To begin, we assess the validity of the parallel trend assumption. Specifically, we examine whether parents living in regions with varying degrees of exposure to CTC reform would have experienced similar trends had the reform not occurred. The event study results fail to identify any pretrends, hence supporting the parallel trend assumption. Secondly, we explore the possibility that the CTC reform could affect the composition of our sample over time by influencing parental decisions—particularly mothers'—about marriage and fertility, which may be endogenous. However, our findings show no evidence that the CTC reform leads to changes in these decisions. Thirdly, we examine whether individuals might migrate from regions with high childcare costs to those with lower costs to maximize the benefits of CTC credits, which could bias our estimates. Yet, our analysis finds no indication that such migration significantly affects our results.

As another robustness check, we excluded the 2020 time use data to mitigate the influence of school closures on parental time allocation during the pandemic. This test produced results similar to the baseline model. Furthermore, we take an additional step by randomizing exposure to the 2017 CTC reform across different regions and conducting a permutation test. Our results indicate that the intensity of the true treatment significantly influences parental time allocation, as the actual coefficient lies beyond the distribution of the coefficients generated from the falsification tests. This implies that our findings are not incidental. Ultimately, we measure treatment intensity in our model as childcare spending as a fraction of household child-related expenses, derived from the Bureau of Labor Statistics' Consumer Expenditure Survey data. Nonetheless, our findings remain robust.

Our research contributes to three distinct areas of literature. First and foremost, it enhances the ongoing discussions regarding the policy implications of CTC. While previous studies have predominantly concentrated on a wide array of outcomes, such as employment (Enriquez et al. 2023, Goldin, Maag & Michelmore 2022), maternal well-being, child poverty (Han et al. 2022), and parental mental health (Batra et al. 2023), there is a notable gap in our knowledge of how CTC affects how parents allocate their time, especially in terms of adjusting the time they spend with their children. It is crucial to examine these short-term changes in time allocation to gain a deeper understanding of family dynamics, overall well-being, and the effectiveness of anti-poverty policies.

Secondly, our study examines gender disparities in the allocation of parental time within households following an external income shock from policy adjustments. By shedding light on the factors contributing to the gender gap in labor market outcomes and the divergences in parental well-being, our findings build upon existing research explored by scholars such as Bertrand et al. (2010), Angelov et al. (2016), Field et al. (2021), Goldin, Kerr & Olivetti (2022). Our results suggest that expanding the CTC can address gender inequality within households by affording mothers more leisure time. This leisure time, with its rejuvenating effects, holds the potential to improve parental well-being. Therefore, by increasing access to leisure activities through an additional tax credit, we offer a promising avenue for supporting both parents and enhancing their children's well-being.

Lastly, while previous research, as demonstrated by studies conducted by Kalil et al. (2012, 2014), McDonnell et al. (2019), and others, have emphasized the importance of parents' time investment in their children, it has primarily focused on factors such as gender, family structure, and child age. Surprisingly, investigations into how parents allocate their time when household resources are augmented have been scarce, as highlighted by Morrissey (2022). Our findings underscore the need for caution among those advocating an increase in the CTC. They should consider that additional income may lead to reduced parent-child interactions, particularly among Hispanic parents with lower levels of education. Further research is imperative to gauge the extent to which expanded CTC benefits affect essential childcare time and, consequently, how this affects both short- and long-term child outcomes. This information could aid policymakers in efficiently distributing limited financial resources to the children in families who would gain the most from it.

The remainder of this paper is organized as follows. Section 2 discusses the history of the

CTC and reviews the economic literature on parental time allocation. Section 3 outlines the theoretical framework used to analyze our research question and derives the paper's core testable predictions. Section 5 describes the data and discusses the summary statistics. We describe our empirical strategy in Section 6, while Section 7 presents the main results and discusses the implications of our baseline results on parents' leisure and childcare activities. We perform robustness checks in Section 8 and explore the heterogeneous effects of CTC expansion on childcare in Section 9. Finally, we conclude in Section 10.

2 Brief History of Child Tax Credit

In 1997, Congress enacted the CTC and initially provided a $400 per child non-refundable credit.[3] Unlike the Earned Income Tax Credit (EITC) - which specifically targets lower-income households with children- the CTC largely targets middle- and upper-middle-income families. Since it was largely nonrefundable, the credit could only help offset federal tax liabilities. The Economic Growth and Relief Reconciliation Act of 2001 gradually raised the tax credit to $1000 per child and made it partially refundable (Crandall-Hollick 2018). The refundable portion, which is the amount of credit a family receives after their federal tax has been completely offset is referred to as the additional CTC.[4]

At the end of 2017, Congress significantly expanded the CTC as part of the Tax Cuts and Jobs Act (TCJA). TCJA introduced several key changes that could affect families with children: (1) an increase in the standard deduction, (2) the elimination of personal exemptions, (3) a doubling of the maximum Child Tax Credit from $1,000 to $2,000 per child under age 17, and (4) the creation of a $500 nonrefundable credit for children who don't qualify for the full $2,000 credit, (5) reducing the earnings threshold for refunding the CTC to $2,500 from $3,000. Overall, the TCJA increased tax benefits for most families with children.[5] The expansion increased the maximum credit amount and broadened eligibility, thereby increasing disposable income for many low- and middle-income families. This paper explores the policy changes of CTC expansion in 2017. It's important to note that the expansion of the CTC cannot be viewed in isolation from the other changes. However, our analysis focuses on estimating the overall impact on families with children, reflecting how the population as a whole was affected, while accounting for

[3]Several countries operate different versions of the program. In most countries, child benefit is means-tested, and the amount paid is usually dependent on the number of children one has. The difference between the current version of CTC and other child allowances, such as child and dependent care credit, is that CTC is directly related to having children, regardless of childcare expenses or employment status. More details can be found Policy Considerations for Child Allowances.

[4]Because of the additional CTC, taxpayers owing taxes less than their maximum CTC could claim the remaining CTC amount up to 10% of earnings above $10,000 (the refundability threshold), with the threshold adjusted for inflation.

[5]The Tax Cuts and Jobs Act of 2017 (TCJA) of 2017 introduced higher phase-out thresholds and expanded eligibility for middle-income taxpayers. These provisions applied to taxable years 2018 through 2025. Although the TCJA expansion was originally scheduled to expire after 2025, legislation enacted in 2025 increased the maximum Child Tax Credit to $2,200 per qualifying child and indexed it to inflation, while largely maintaining the existing refundability and phase-in structure.

differences in which groups were most affected. Additionally, in Section 8, we conducted several robustness checks to verify the consistency of our results.

The TCJA expansion applied to taxable years 2018 through 2025. Subsequent legislation enacted in 2025 modified the nominal credit amount, but these changes occurred outside our study period and do not affect our empirical identification.

3 Theoretical Analysis of CTC and Time Allocation

We ground our analysis in Becker (1965)'s model of household time allocation. In Becker's framework, individuals derive utility not from goods and time directly, but from *commodities* — outputs produced by combining market goods, household time, and market services. Parents face two binding constraints simultaneously: a money budget constraint and a time budget constraint. The full price of any activity, therefore, reflects both its monetary cost and its opportunity cost in time, evaluated at the individual's market wage.

Within this framework, the CTC functions as a pure positive income shock. Because the credit is a fixed lump-sum payment per qualifying child — independent of how much parents work or how they allocate their time — it shifts the household's money budget constraint outward without altering its slope. Unlike the Earned Income Tax Credit (EITC) or the Child and Dependent Care Credit, the CTC does not change the marginal return to market work or the relative price of any time use category. The substitution effect is therefore zero, and the behavioral response operates exclusively through the income effect.

Standard theory predicts that when income rises without a change in relative prices, individuals increase consumption of all normal goods. In the time allocation context, this implies that parents may reduce time devoted to income-generating activities and reallocate it toward preferred uses — including leisure, childcare, and home production. However, the direction of these adjustments is not uniformly predictable. The income elasticity of each activity determines how strongly it responds to the financial shock, and these elasticities are likely to differ across activities and across households.

We consider four channels through which the income effect of the CTC may manifest:

- *Effects on market work:* Because the CTC raises full income without increasing the marginal return to work, it creates an incentive to reduce labor supply at the extensive or intensive margin. The magnitude of this effect depends on the income elasticity of leisure relative to work. Empirical evidence on this channel is mixed: some studies find small negative employment effects while others find no significant response (Feldman et al. 2016, Lippold 2019, Ananat et al. 2022, Enriquez et al. 2023).[6]

- *Effects on childcare:* In Becker's framework, parental time with children is an input

[6] Ananat et al. (2022) and Enriquez et al. (2023) find very small, inconsistently signed, and statistically insignificant impacts of the 2021 CTC expansion on employment. Feldman et al. (2016) and Lippold (2019) use the loss of CTC when children turn 17 as a source of exogenous variation and find that a loss of CTC reduces earned income and the probability of employment.

into a household commodity — child quality — whose full price includes both monetary expenditures and the opportunity cost of parental time. A positive income shock, holding wages fixed, reduces the shadow cost of time-intensive activities. This could lead parents to increase direct involvement with their children. At the same time, higher income enables parents to substitute market-provided childcare for their own time, potentially reducing direct parent-child interactions while improving the quality of inputs into child development through purchased goods and services (Carneiro et al. 2003, Del Boca et al. 2014).

- *Effects on housework:* Home production activities such as cooking, cleaning, and household management are also time-intensive commodities in Becker's framework. A positive income shock may induce parents to outsource these tasks — for example, by hiring domestic help — thereby freeing time for other activities. Alternatively, if home production is a normal good with a positive income elasticity, parents may choose to invest more time in it.

- *Effects on leisure:* In Becker's framework, leisure is primarily a time-intensive good whose consumption is constrained by the availability of discretionary time. A positive income shock shifts the household's budget constraint outward without altering relative prices. If leisure is a normal good, the income effect increases its demand. Moreover, if the income shock induces a reduction in market work at the intensive or extensive margin, the time constraint is further relaxed. Together, these forces predict an increase in leisure time, particularly for activities that require both time and financial resources, such as socializing, sports, and recreation.

4 Constructing Treatment: CTC Purchasing Power

The construction of our key treatment variable builds on the purchasing power framework developed by Bronchetti et al. (2019) in their analysis of SNAP benefits and child health. A central challenge in evaluating large federal transfer programs is that statutory benefit levels are set uniformly nationwide, leaving limited cross-sectional variation in policy. Bronchetti et al. (2019) overcome this constraint by exploiting geographic differences in the *real* value of SNAP benefits. Although SNAP payments are fixed in nominal terms, their purchasing power varies across markets because local food prices differ. They operationalize this idea using the Thrifty Food Plan (TFP), the standardized food basket used to determine SNAP benefits. By combining uniform nominal benefits with regional variation in TFP costs, they construct a purchasing power index defined as the ratio of benefits to local food prices. Because TFP costs vary by roughly 20 percent across markets, identical nominal benefits translate into meaningful differences in real generosity. This geographically driven variation—arising from local price conditions rather than federal policy design—provides quasi-experimental identifying variation. Bronchetti et al. (2019) show that lower SNAP purchasing power leads to worse child health outcomes and reduced preventive care utilization.

We adapt this logic to study the Child Tax Credit (CTC). Like SNAP, the CTC provides a uniform nominal benefit per qualifying child across states, however, its *real* value depends on local economic conditions. Whereas food prices determine SNAP purchasing power, in similar spirit, we use local childcare cost burdens as a proxy for the cost environment facing families with children and, therefore, for the effective real income shock generated by the CTC. Unlike SNAP, the CTC is a lump-sum transfer and is not restricted to specific expenditures. Accordingly, our approach does not assume that CTC funds are directly spent on childcare. Instead, variation in childcare cost burdens captures heterogeneity in how strongly the fixed nominal credit relaxes household financial constraints across counties. Using childcare prices as the relevant price index parallels the role of the TFP in three respects. First, center-based childcare is a relatively standardized input into child-rearing, and its prices are driven by local wages, real estate costs, and regulatory environments rather than federal tax policy. Second, childcare prices capture the opportunity cost of parental time: even families that do not purchase formal care confront the prevailing market price when evaluating the trade-off between home production and market labor supply, since paid childcare constitutes the closest market substitute for parental time. Third, childcare costs are strongly correlated with broader child-rearing expenses, making them a reasonable proxy for the overall cost environment facing families.

Importantly, we rely on market childcare prices rather than observed household childcare expenditures. This distinction prevents us from conflating purchasing power with endogenous behavioral responses to the CTC and ensures that our measure captures variation in the real generosity of the credit rather than differences in consumption choices.

We therefore construct a county-level measure of CTC purchasing power (or *intensity*) based on childcare costs relative to income. Let

$$Childcare\ Share_c = \frac{Childcare\ Cost_c}{Median\ Household\ Income_c}, \tag{1}$$

which captures the childcare cost burden in county c. We define CTC purchasing power as

$$CTC\ Purchasing\ Power_c \equiv Intensity_c = 1 - \frac{Childcare\ Share_c}{\max(Childcare\ Share_c)}, \tag{2}$$

so that higher values of $Intensity_c$ correspond to counties where the fixed \$2,000 CTC represents a larger proportional relaxation of the local childcare cost burden relative to income.

Figure 1 illustrates geographic variation in childcare costs relative to median household income between 2008 and 2017 (in 2019 CPI- adjusted dollars). Childcare costs range from approximately 5 to 25 percent of median household income across counties. For a median-income family receiving the \$2,000 CTC, this implies that the credit covers roughly 11 percent of annual childcare expenses in low-purchasing-power counties and up to 46 percent in high-purchasing-power counties—a more than four-fold difference in real generosity.

As in the SNAP context, this variation arises from local economic conditions—such as

labor costs and regulatory environments—that are orthogonal to federal policy design. We therefore exploit cross-county differences in real CTC generosity to identify variation. If the CTC generates a larger effective real income shock in counties with lower childcare burdens, behavioral responses should be strongest in those counties.

Although childcare prices based on purchasing power might be viewed as an incomplete measure of the actual childcare burden faced by households, we demonstrate that this concern is limited. We validate our approach by linking childcare expenditures from the Consumer Expenditure Survey (CEX) to market-based childcare prices, normalizing both by family income and reporting the resulting correlation in Appendix Table A1. As expected, the two measures are positively correlated, though the correlation is moderate. This result is unsurprising for two reasons. First, the CEX records expenditures for all families, including those reporting zero spending because they rely on unpaid care, have a stay-at-home parent, or receive government subsidies that fully cover childcare expenses—groups not captured by market prices, which reflect costs for families using paid care. These structural zeros introduce noise unrelated to price variation, mechanically reducing the correlation. Second, the measures differ in geographic resolution: our price data are at the county level, capturing local variation, whereas CEX expenditures are only available at the state level, averaging substantial within-state variation. These factors suggest that the modest correlation understates the true relationship and highlight why market prices offer a cleaner and more exogenous source of variation for our analysis.

5 Data: American Time Use

Beginning in 2003, 2-5 months after the final (eighth) Current Population Survey (CPS) interview, respondents were interviewed about how they spent their time the previous day. This cross-sectional, annual American Time Use Data, administered by the Bureau of Labor Statistics, collects a 24-hour retrospective time diary from one individual age 15 or older per household. Data are collected on respondents' primary activity, where they were, and with whom. There are also accessible detailed activity categories for this time diary.

Our ATUS dataset was drawn from IPUMS and includes pooled data from survey years 2008 through 2021. The initial year is limited to 2008 because childcare prices were collected only from that point onward, and the study duration ends in 2021 to avoid accounting for the influence of the 2021 CTC expansion. To ensure precise matching between the ATUS sample and childcare cost data, we include only individuals with identifiable county information and exclude those with missing or unknown county codes. Our primary analysis sample includes individuals aged 18-65 with at least one child under 17, and only those with a complete 24-hour time diary. Of the total 42,017 respondents in the ATUS-CPS from 2008 to 2021, a total of 15,782 respondents (6,816 fathers and 8,899 mothers) lived with one or more of his/her children under age 17 and had non-missing data on independent and dependent variables. This subsample served as the primary estimation sample.

In the spirit of Kimmel & Connelly (2007), we separate parents' time allocation into

five main categories: paid market work, leisure, time with children, time spent on home production, and time spent on other activities.[7] To further classify parental time with children, we adopt the classification outlined in Guryan et al. (2008) and break down childcare activities into three subcategories: basic childcare (such as breastfeeding, putting a child to sleep, changing diapers, providing medical care, etc.), educational childcare (including reading to children and assisting with homework), and recreational childcare (like playing, attending sports events, engaging in outdoor activities with children, etc.). For a comprehensive overview of our time use classification, please refer to Table A1.

Table A2 in the Appendix presents the summary statistics for the dependent variables (in probability and minutes) and individual characteristics used in the regression analysis. On average, the probability a parent engages in childcare, home production, and work is 65.6%, 88.0%, and 50.0%, respectively. In terms of daily time allocation, parents spend an average of 912.1 minutes on leisure activities (including sleep), 237.4 minutes on work, 186.7 minutes on home production, and 95.4 minutes on childcare. In our sample, around 50.5% of respondents were surveyed on weekdays. The sample includes a slightly higher percentage of mothers. On average, parents have about two children and are 40 years old. Among the parents, 73.0% are married, with 71.3% having their spouse present. Additionally, 78.5% of parents are currently employed. The typical household consists of 4 members, with the youngest child typically being 6.8 years old. The non-Hispanic white population is the largest among respondents. Approximately 43.8% of the parents have attained at least a college degree.

6 Empirical Specification

To evaluate the CTC's impact on parental time investment, we consider two sources of variation. First, the 2017 CTC expansion under TCJA serves as an exogenous shock. Second, while the CTC offers a flat-rate credit per child, its impact varies by region. Although the CTC is not earmarked for childcare, variation in local childcare cost burdens provides a meaningful measure of the effective generosity of the transfer for families with children. Varying childcare costs across regions allow us to assess families' exposure to the CTC reform. The identification strategy employed is a difference-in-differences estimator, specified below.

$$Y_{icdy} = \gamma Intensity_c \times Post_y + \theta X_{icdy} + Weekend_{icdy} + Month_{icdy} + \lambda_y + \lambda_c + \lambda_{sy} + \varepsilon_{icdy}. \quad (3)$$

Where Y_{icdy} corresponds to both the participation (or likelihood) and the amount of time spent (in minutes) in an activity (including paid work, leisure, housework, childcare, and others) for individual i living in county c, on the survey date d of year y.

$Post_y$ equals 1 if an individual is surveyed after 2017. $Intensity_c$ is a continuous treatment indicating the exposure intensity to the CTC payments received by an individual

[7] We categorize activities such as government services, civic obligations, and volunteering under the "Others" category because it's challenging to place them in a distinct classification.

residing in county c as described earlier. It's worth noting that we do not observe program participation, so the main parameter of interest, γ, captures intent-to-treat (ITT) effects using all parents in our sample, not just those who participated in the program. To enhance the clarity of our interpretation, we convert our estimate of γ into the percentage change in each dependent variable caused by exposure to the 2017 CTC expansion. In particular, we first multiply γ by the mean of the intensity variable and subsequently divide by the pre-treatment mean of the outcome variable. X_{icdy} includes individual characteristics like gender, age, race, marital status, educational attainment, labor force participation rate/status, age of the youngest child, presence of the spouse, and family size. $Weekend_{icdy}$ is a dummy variable indicating whether the respondent was surveyed on the weekend. We also include month-fixed effects $Month_{icdy}$. Finally, λ_y, λ_c represent the year and county-fixed effects capturing the common shocks to all counties and time-invariant county shocks, respectively. Considering that state-level policy (such as EITC and other welfare programs) may have confounding effects, we also include state-year fixed effects, λ_{sy}. The standard errors are clustered by county, and the ATUS sampling weights are applied in the analyses.

7 Results

7.1 Baseline Results

Table 1 presents the baseline results. The first five columns show the probability of participating in various activities, including housework, recreational activities, paid work, childcare, and others. The findings in Panel A indicate that increasing parents' exposure to the CTC expansion from the bottom 1st percentile to the top 1st percentile is associated with a 10.99 percent decrease in the likelihood of participating in childcare activities, a 10.52 percent decrease in the likelihood of working, and a 6.09 percent decrease in the likelihood of doing household chores.[8] Our findings also suggest that the 2017 CTC reform has a minimal adverse effect on parental employment[household chores]. The correlation between our results, which highlight the small negative impact of CTC expansion on parental employment, and the conclusions reached by Ananat et al. (2022) in their study on the expanded CTC reform in 2021, is apparent. Columns (6) through (10) present the effect of CTC expansion on alterations in the duration of engagement in these activities. The policy reform had little impact on the time allocated to housework, leisure, work, childcare, and other activities.

While the gender gap in time allocation has decreased in recent years (Guryan et al. 2008, Jiao et al. 2021), it remains essential to investigate the impact of CTC expansion by gender. This analysis is crucial given the demanding nature of childcare, in which women generally spend considerably more time on these tasks than men. This time disparity underscores

[8]The treatment intensity rises by 0.6 points, or 60 percentage points, when shifting from the bottom 1st percentile to the top 1st percentile. The calculation for childcare is $0.6 \times (-0.2996 \times 0.4025) / 0.6581$, for work is $0.6 \times (-0.2178 \times 0.4025) / 0.5$, and for household chores is $0.6 \times (-0.2216 \times 0.4025) / 0.8782$.

broader gender imbalances in caregiving roles. As a result, we explore how our baseline findings on parental involvement and time allocation across different activities may vary by gender. Panel B presents the outcomes for fathers, while Panel C illustrates those for mothers.

As illustrated in Panel B, the CTC reform appears to have little impact on fathers' time allocation. Nonetheless, fathers with greater exposure to the reform show a slightly reduced likelihood of employment and of engaging in household and childcare tasks compared to those with less exposure, though these differences lack statistical significance. In Panel C, for mothers who reside in regions with higher exposure to the reform, there's a decreased probability of their engagement in childcare. Moreover, they work less and perform fewer household chores. Regarding the duration of activities, the CTC reform results in a 3.84 percent increase in leisure time and a 13.67 percent decrease in time spent performing household chores for mothers residing in the top 1 percentile of exposed regions compared to those in the bottom 1 percentile of exposed regions.[9] The gender inequality observed can be attributed to the greater role women undertake in childcare and household chores. Overall, our findings indicate that the expansion of the CTC reform significantly reduces mothers' household obligations, while allowing them additional free time.

[Insert Table 1 Here]

7.2 Time allocated to Recreational Activities

As the baseline results show, the expansion of CTC reduces parents' engagement in paid work, home production, and childcare, enabling them to allocate more time to entertainment. Although several studies suggest that having children comes with drawbacks, such as reduced leisure time and increased financial stress (Claxton & Perry-Jenkins 2008, Craig & Bittman 2008, Roeters et al. 2016), limited research has examined leisure time allocation following an upswing in financial resources. As a next step, we explore the probability of parents being involved in leisure activities in response to CTC expansion, breaking it down into the following: personal care, eating and drinking, socializing, sports and exercise, shopping, religious services, and phone. The results are presented in Table 2. Panel A in Table 2 presents results for all parents, while Panels B and C display results by fathers and mothers, respectively.

As shown in Panel A, the expansion of CTC results in an increase in parents' time spent socializing, participating in sports and exercise, and eating and drinking, while it reduces their time allocated to shopping and personal care. However, none of the estimates associated with defined leisure categories are statistically significant at conventional levels. So, we move forward by examining in more detail how the expansion of CTC affects the amount of time mothers and fathers separately allocate to various leisure activities. Following the CTC reform, there is a noticeable trend of mothers in areas with higher

[9] These figures are calculated as $0.6 \times (144.863 \times 0.4025) / 909.711$ and $0.6 \times (114.509 \times 0.4025) / 220.289$, respectively.

exposure levels increasing their engagement in social activities. In contrast, the impact on fathers is relatively modest and not statistically significant. The disparity in CTC's influence on recreational activities between genders remains apparent.

[Insert Table 2 Here]

7.3 Time allocated to Different Childcare Activities

Given the well-documented advantages of parental involvement in child rearing, it is crucial to understand how the expansion of the CTC may affect child development. This impact hinges on the specific childcare activities that may be adversely affected by reduced parental time (Kalil et al. 2023). To address this concern, we categorize childcare activities into basic, educational, and recreational. Given that children of different ages impose different time constraints on their parents as required investment levels vary across childhood (Cunha & Heckman 2007, Milkie et al. 2015, Attanasio et al. 2020), we also explore this idea by dividing parents into groups based on the age of the youngest child in the household. The results are shown in Table 3. Panel A displays the estimated impacts on the likelihood of participating in different childcare activities for all parents, and Panels B through D present the findings categorized by the age of the youngest child.

In Panel A of Table 3, it is evident that the main reason for the negative impact of CTC expansion on parents' time spent with their children is a significant reduction in their involvement in basic childcare activities such as feeding, bathing, and addressing health needs. The impact on the time parents dedicate to educational childcare is negative but small, while the effect on recreational childcare is positive. Both estimates lack statistical significance, indicating no substantial change in their likelihood of engaging in activities such as reading to children, assisting with homework, playing, or attending sports events. In summary, our results suggest that CTC does not significantly reduce the quality of parent-child interactions. Consequently, the adverse effect of CTC expansion on the total time parents spend with their children, as presented in Table 1, may have limited implications for children's development. This is because the likelihood of investing time in educational and recreational activities remains unaffected. A similar finding was reported by Bastian & Lochner (2022) in their study, which explored the impact of additional resources resulting from EITC expansion on mothers' time spent with their children.

Across panels B through D, in Table 3, the estimates of parental time on basic childcare suggest that parents whose youngest child is between 6 and 12 years old (elementary schooler) are more responsive to the CTC expansion, while parents whose youngest child is less than six years old (preschooler) or older than 12 years (teen) are less responsive to the policy. This result is consistent with the arguments outlined in Jiang et al. (2020). Specifically, parents with elementary school-aged children may experience the effects of CTC expansion. On the other hand, parents of preschoolers will not be affected, because the same childcare subsidy yields a relatively larger benefit for those with older children than for those with younger ones. As a consequence, the statistically significant decrease in the likelihood of parents spending time on fundamental childcare activities, as shown

in Panel C of Table 3, might be attributed to a choice to delegate or outsource the time that parents would otherwise allocate to these passive tasks. The imprecise estimate for parents of teens is not surprising, given that children 13 to 17 years old spend considerable time away from home, and at this stage of childhood, parents may focus more on planning and monitoring academic and social networks and less on basic childcare.

[Insert Table 3 Here]

7.4 Event Study Estimation

The validity of difference-in-differences estimation relies on the assumption that parents residing in regions with varying levels of exposure to CTC reform would have experienced similar trends in the absence of the reform. Our key assumption is that the changes in the likelihood of engaging in different activities should be comparable for these parents before the reform. Therefore, any observed effects can be attributed to differences in the growth of childcare expenses and household income across regions with varying exposure to the reform. We show the plausibility of the common trend assumption using the event study in the spirit of Granger (1969). In particular, we use two-way fixed-effect regressions with leads and lags of treatment, as shown in the following equation:

$$Y_{icdy} = \sum_{t=2008}^{2016} \gamma_t Intensity_c \times Lead_t + \sum_{t=2018}^{2021} \gamma_t Intensity_c \times Lag_t + \theta X_{icdy} + Weekend_{icdy} + Month_{icdy} + \lambda_y + \lambda_c + \lambda_{sy} + \varepsilon_{icdy}. \quad (4)$$

The test sample contains nine pre-reform (2008 – 2016) and four post-reform (2018 – 2021) years, and sets the year before CTC reform (2017) to be zero. The interaction terms between a specific year and *Intensity* test for differences between regions with varying treatment intensity, conditional on a full set of county and time effects, and include all covariates. This experiment not only provides compelling evidence in support of our DD estimation but also enhances our understanding of how time allocations to childcare vary over time.

Figure 2 displays the year-specific difference coefficients for trends in childcare engagement, household tasks, and work, separately. During the pre-treatment period, no significant differences were observed in these trends, supporting the parallel trend assumption. Table A3 in the Appendix provides estimates from each regression, indicating that the pre-reform interaction coefficients are not statistically significant at conventional levels. Almost all of these coefficients are very close to zero in magnitude, suggesting that parents residing in regions with varying exposure levels followed similar trajectories before the CTC reform. Starting in 2018, we observed a significant decline in the likelihood of participating in childcare, and this negative trend persisted for 4 years following the introduction of the scheme. Similarly, the effect on housework was also consistently negative after the implementation of the CTC reform, showing stability throughout the post-reform period. However, in contrast, the CTC reform had only an immediate negative impact on work in

2018, which rebounded in 2019 and remained close to zero thereafter.

[Insert Figure 2 Here]

8 Robustness Checks

This section presents estimates from two robustness tests of our baseline results. These tests aim to examine whether and to what extent spurious correlations between parental treatment status and underlying unobservable factors may drive our baseline results. We also use alternative measures of treatment intensity to validate the initial measurement, and the results are consistent with our baseline findings.

8.1 Impact on Fertility and Marriage

The extent of the child tax credit generosity correlates with the number of eligible children, meaning families with more children typically receive higher credits. Nonetheless, they also incur higher childcare expenses. To ensure that we are comparing parents with the same number of children living in areas with differential exposure to the CTC expansion, our main specification includes a control for the number of children. A potential concern regarding the validity of the estimation is the possibility that the CTC expansion could change individuals' fertility decisions. Therefore, it's also important to assume that the reform should have a minimal influence on household composition, and the 2017 CTC reform had a negligible impact on an individual's fertility choices and did not incentivize increased childbirth. As a next step, we conduct robustness checks to test whether these assumptions hold.

First, we examine the reform's impact on individuals' decisions regarding fertility and marriage. To test this assumption, we expanded the sample used in the baseline results, which previously focused only on parents, to include individuals both with and without children, regardless of their marital status. The results of this analysis are reported in Appendix Table A4. Panel A of Table A4 shows the results for all years, while Panel B excludes the post-pandemic year (2021) from the sample to exclude pandemic babies.[10] Results in Panel A show that the CTC reform does not affect the likelihood of having children, the number of children, or decisions regarding marriage. Breaking down our results by gender, men tend to have more children. However, this marginally significant effect disappears when we include 2021 in our analysis in Panel B, suggesting that the estimated increase in Panel A may have been due to the COVID-related surge in birth rates.

[10] According to Kearney & Levine (2023) there was a surge in birth rates during the period between March and September 2021, resulting in approximately 30,000 more births than anticipated.

8.2 Impact on Migration

CTC expansion could also incentivize individuals to relocate, thereby altering household compositions and leading to different levels of exposure to the policy. For example, parents might opt to leave California, a state with comparatively lower exposure, for Kansas, which has a higher exposure, to benefit from reduced childcare expenses. In the second experiment, we examine whether the household's geographic location remains unchanged after the 2017 CTC reform. Specifically, we investigate whether the reform encourages parents to relocate from places with higher childcare expenses to those with lower costs to maximize the associated benefits. To establish this association, we link ATUS respondents to the CPS and collect data on their migration status in the preceding year. The responses are categorized into three groups: individuals who relocated within the same county, those who moved across counties within the same state, and those who moved across state boundaries. Similar to the analyses in Section 8.1, we included individuals with and without children, regardless of marital status, in the sample.

The findings from Table A5 indicate that the CTC reform does not have a significant impact on the migration behavior of all individuals. When the sample is divided by gender, we observe that, for men, the CTC reform reduces the likelihood of moving within the same county, increases the likelihood of moving within the same state, and has no significant effect on interstate migration. However, CTC has not statistically influenced mothers' decisions to relocate.

8.3 Excluding Impact of School Closure due to Pandemic

A third concern arises when incorporating data from 2020 and 2021 into the sample, as it was collected during and after the onset of the COVID-19 pandemic. To reduce the impact of annual changes in socioeconomic conditions, we include year-fixed effects in all models, ensuring that our comparisons of regions with varying exposure to the reforms are within the same year. In addition, our state-year fixed effects account for state-level shocks. A related concern is that many pandemic-related policies, such as mask mandates and vaccination requirements, are implemented at the state level and are controlled for through the state-year fixed effects. To test the robustness of our results, we conducted an analysis, excluding 2020.

The findings are presented in Table A6. Panel A shows the estimated impacts for all parents, while Panels B and C break down the results specifically for fathers and mothers. The results indicate that, following the expansion of the CTC (prior to the pandemic), mothers are less likely to engage in both work and childcare, whereas fathers reduce their involvement in household tasks. In summary, by excluding data from the pandemic period to control for the impact of school closures on parental time allocation, our conclusions about the 2017 CTC reform remain robust.

8.4 Permutation Test

To further test whether the 2017 CTC expansion changed parental time allocation, we employed a permutation test. The rationale guiding our falsification test is straightforward: if the change in CTC expansion fails to influence parental time allocation, reorganizing the treatment intensity across counties and reassessing our findings should yield negligible changes - we should observe comparable estimates for counties with varying degrees of exposure to the policy adjustment. The results of childcare and housework for the falsification test under 500 permutations are displayed in Figure A2. Our findings suggest that treatment intensity has a significant impact on the outcome variable, as the true coefficient lies outside the distribution. This indicates that our results are not spurious.

8.5 Alternative Intensity Measure: Share of Child-related Expenditure

Since the intensity measure is based on the assumption that CTC credits alleviate financial constraints related to childcare. Some may argue that it may not precisely reflect the expenses associated with raising children, as not all families utilize center-based childcare services. Consequently, we explore an alternative measure to improve our estimates and comprehensively account for the costs of raising children. This alternate measure depends on the financial expenditures families allocate to their children's needs. Our rationale stems from the observation that, on average, families allocate approximately 16 percent of their annual income, ranging between 12,350 and 13,900, to childcare-related costs.[11] Thus, we re-estimate our sample using the following equation:

$$Y_{isdy} = \gamma ChildExp_s \times Post_y + \theta X_{isdy} + Weekend_{isdy} + Month_{isdy} + \lambda_y + \lambda_s + \varepsilon_{isdy}. \quad (5)$$

where Y_{isdy} corresponds to both the likelihood and the amount of time (spent in minutes) on an activity (i.e., work, leisure, housework, childcare) for an individual i living in state s on date d in year y. Similar to the specification in Equation 3, $Post_y$ is equal to 1 if surveyed after 2017. $ChildExp_s$ is a continuous treatment that captures childcare spending as a proportion of all childcare-related expenses (total expenditure) at the state level.

To determine the percentage of expenditure allocated to childcare, we modify the overall spending figures from the Consumer Expenditure Survey (CES) spanning 2008 to 2016 by omitting expenses in categories unrelated to childcare, such as alcohol, tobacco, and personal care.[12] Next, we divide the total childcare spending by the total expenditure at the state level. Similar to our initial intensity measure in Equation 2, we compute this relative childcare expenditure by inverting its percentile position relative to the maximum childcare expenditure. This yields a new intensity measurement, denoted $ChildExp_s$, that

[11] Refer to Lino et al. (2017) for an in-depth analysis of parental expenditures on children in the U.S.

[12] CES defines total expenditure as the sum of spending on housing, education, food, apparel, transportation, health, entertainment, personal care, reading, tobacco, miscellaneous spending, cash count, personal insurance, and childcare. Since the CES reports data quarterly, we aggregate the data into an annual measure to align with our baseline estimates.

reflects childcare spending as a proportion of all childcare-related expenses at the state level. Higher values of $ChildExp_s$ indicate greater exposure to changes in the CTC policy.

The results presented in Table A7 indicate that when parents, particularly mothers, relocate from regions with minimal exposure to the reform (linked to a greater portion of family spending dedicated to childcare-related expenses) to regions with significant exposure, they tend to reduce their involvement in household chores, work-related tasks, and childcare activities. Consistent with our baseline findings based on county-level data, we find no statistically significant effect of the CTC expansion on fathers' time allocation. Overall, the results from the alternative measure of treatment intensity align with our initial baseline measure, although with less precision due to reduced variation at the state level.

9 Heterogeneity

In this section, we extend our results to examine how CTC's effect on time dedicated to childcare varies by educational attainment, race, and family income.

9.1 By Education

Numerous studies have shown a positive correlation between parental education, primarily maternal, and the time invested in childcare (for example Guryan et al. 2008, Altintas 2016). This correlation can be attributed to various factors, such as socioeconomic status and work opportunities. Well-educated parents might have access to more flexible work arrangements or higher-paying jobs that allow them to balance work and childcare responsibilities effectively. On the other hand, less educated parents may have limited employment options, leading them to allocate more time to work and less time to childcare.

In Figure 3, we investigate the heterogeneous impact of CTC on childcare, taking into account parents' educational attainment. Our results confirm that, compared to parents with limited exposure to CTC reform, parents with greater exposure across almost all education groups generally reduced the time they spent in childcare. Notably, this reduction in childcare time was statistically significant, primarily among parents with lower levels of education, specifically those with a high school diploma or less. However, an exception to this trend was observed among parents who have postgraduate degrees. One plausible explanation for the relatively limited impact of CTC on parents with higher levels of education is that the CTC primarily targets and reduces the time spent on basic childcare activities. Parents with higher levels of education may be more inclined to engage in more substantial, high-quality interactions with their children and may also have the means to outsource basic childcare tasks. Consequently, their overall time spent with their children is less likely to be significantly affected by the expansion of the CTC program.

[Insert Figure 3 Here]

9.2 By Race

Previous studies have shown disparities in CTC recipients by race and ethnicity (Pilkauskas & Cooney 2021). To examine potential disparities in the time parents dedicate to childcare by racial background, we perform a heterogeneity analysis and present the results in Figure 4. The results suggest that in regions with greater exposure to the CTC reform, Hispanic parents dedicated significantly less time to childcare-related tasks. A similar pattern was observed among black, white, and Asian parents. However, the effects observed among these groups were minimal in magnitude and lacked statistical significance. Hispanic parents are comparatively less likely than parents of other races/ethnicities to receive the full CTC benefits (Pilkauskas & Cooney 2021). This disparity in receiving the full CTC can result in financial difficulties, potentially pushing Hispanic parents to work more than their counterparts and allocate less time to childcare responsibilities due to the need for increased economic engagement.

[Insert Figure 4 Here]

9.3 By Family Income

Because CTC refundability is tied to earnings and tax liability, we expect differences in childcare investment responses to CTC expansion across the income distribution. To illustrate this, we divide the sample of parents by family total annual income and estimate the effect of CTC expansion on parental time spent on childcare within each group.[13] Figure 5 presents the estimated effect of exposure to CTC reform on how much time parents across the income distribution dedicate to childcare.

CTC expansion causes all parents to cut back on their total time with children. Notably, the estimated decline is strongest for the 20k to 50k income categories and is significant at conventional levels. More generally, the heterogeneity suggests that middle-income families exposed to CTC reform are more likely to shift their time away from childcare. The relatively weak and imprecise effect among low- and high-income families who are more exposed to CTC reform relative to their less-exposed counterparts could reflect several factors. First, a more generous CTC has a less noticeable impact on low-income families' childcare decisions because their income may be too low to qualify for the full credit or, in some cases, to qualify for any credit at all (Greenstein et al. 2018). Second, high-income households with fewer financial limitations can achieve optimal childcare choices regardless of additional income from the CTC expansion.

[Insert Figure 5 Here]

[13] Family income includes money from jobs, net income from business, farm, or rent, pensions, dividends, interest, Social Security payments, and any other monetary income family members receive.

10 Conclusion

The Child Tax Credit provides financial assistance to families with children, helping alleviate the costs of raising and caring for them. Despite interest in understanding the CTC's impact on low-income families' incomes, college enrollment, maternal labor supply, and wages in the childcare industry, little is known about the recent expansion of the CTC and its effects on parental time allocation. This study contributes to the ongoing discussion by investigating the causal effect of the 2017 expansion on parents' time allocation, with a specific emphasis on how the CTC reform influenced the time parents spend with their children.

Leveraging data from the 2008-2021 ATUS and employing a differences-in-differences methodology, our findings indicate that after the CTC expansion, parents living in areas with high exposure to the policy change tend to be less involved in paid work, household, and childcare activities, leaving them with more time for leisure. Further investigation into the types of leisure activities affected reveals that parents, primarily mothers, spend more time socializing. The estimated fall in childcare activities is not expected to adversely affect cognitive child development, as the CTC reform had no statistically significant effect on the time devoted to educational and recreational activities with children. Notably, the estimated reduction in time devoted to basic childcare is consistent with prior literature on the effects of tax policies that encourage work, such as the EITC. Heterogeneity analyses of the time spent on childcare activities by education, race, and family income suggest that the estimated decline in parent-child interactions due to living in areas more exposed to CTC reform was most prominent among Hispanic parents, those with a high school diploma or less, and families earning between 20 and 50 thousand dollars per year.

As federal child tax policy continues to evolve, these findings highlight the importance of considering how income transfers affect not only labor supply and poverty outcomes, but also the allocation of parental time. However, several limitations should be noted when interpreting our results. First, due to the lack of knowledge about the precise number of CTC credits allocated to each family, it is prudent to view our results as indicative of the intention-to-treat (ITT) effects rather than the treatment-on-the-treat (TOT) effects. This is predicated on the assumption that all parents living within a given locality are exposed to the same level of treatment. It is important to note that the intensity of the treatment exclusively varies by county.[14] Next, we lack measures to assess the quality of social interactions during leisure activities, which prevents us from observing the extent to which parents' well-being improves as a result of enhanced socialization. Future research is needed to quantify how reduced time devoted to basic childcare resulting from exposure to CTC expansion influences children's short- and long-term outcomes. This could help policymakers pinpoint where limited financial resources can be allocated to children in families who would benefit most.

[14] Whether the object of interest should be ITT or TOT depends on the goal of the study. If the goal is to understand the impact of CTC on all parents, the effects of ITT are more relevant. Conversely, if the goal is to estimate parents that may be externally valid for counterfactual policy experiments, TOT effects are more relevant.

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Tables and Figures

Table 1: CTC Expansion's Impact on Parental Time Allocation

	Probability					Minutes Per Day				
	Housework (1)	Leisure (2)	Work (3)	Childcare (4)	Others (5)	Housework (6)	Leisure (7)	Work (8)	Childcare (9)	Others (10)
Panel A: All Parents										
intensity × post	-0.2216*		-0.2178**	-0.2996**	0.1199	-65.228	76.657	-12.553	-18.140	19.264
	(0.1152)		(0.1065)	(0.1457)	(0.0946)	(43.885)	(54.591)	(75.472)	(31.667)	(13.343)
Observations	15,782	15,782	15,782	15,782	15,782	15,782	15,782	15,782	15,782	15,782
R-squared	0.1407		0.4608	0.2902	0.0865	0.236	0.304	0.440	0.280	0.077
Panel B: Fathers										
intensity × post	-0.294		-0.163	-0.103	0.066	-33.825	-9.340	54.515	-1.786	-9.565
	(0.219)		(0.138)	(0.214)	(0.141)	(76.307)	(95.640)	(107.599)	(54.187)	(11.579)
Observations	6,816	6,816	6,816	6,816	6,816	6,816	6,816	6,816	6,816	6,816
R-squared	0.170		0.457	0.306	0.167	0.227	0.377	0.451	0.238	0.127
Panel C: Mothers										
intensity × post	-0.132		-0.224	-0.397**	0.103	-123.907**	144.863**	-39.648	-10.876	29.567
	(0.090)		(0.157)	(0.185)	(0.160)	(58.367)	(71.929)	(87.725)	(40.765)	(32.091)
Observations	8,899	8,899	8,899	8,899	8,899	8,899	8,899	8,899	8,899	8,899
R-squared	0.117		0.485	0.310	0.134	0.247	0.337	0.449	0.341	0.122
Individual Controls	✓		✓	✓	✓	✓	✓	✓	✓	✓
Year FE	✓		✓	✓	✓	✓	✓	✓	✓	✓
Weekend FE	✓		✓	✓	✓	✓	✓	✓	✓	✓
Month FE	✓		✓	✓	✓	✓	✓	✓	✓	✓
County FE	✓		✓	✓	✓	✓	✓	✓	✓	✓
State-Year FE	✓		✓	✓	✓	✓	✓	✓	✓	✓

Notes: The outcome variable in Columns 1 to 5 is the probability of engaging in a specific activity. Since leisure is a universal activity, it is impossible to estimate the probability of participation in Column (2). In contrast, the dependent variable in Columns 6 to 10 is the amount of time spent on each activity. Individual controls include gender, age, race, marital status, educational attainment, labor force participation status, age of the youngest child, presence of a spouse, family size, and weekend, year, county, and state-year fixed effects. ATUS weights are included in all regressions, and standard errors in parentheses are clustered on the county level. Source: ATUS 2008 to 2021. *significant at 10%; **significant at 5%; ***significant at 1%.

Table 2: Impact of CTC Reform on Time Allocated to Different Recreational Activities (Minutes)

	Personal Care (1)	Eating and Drinking (2)	Socializing (3)	Sports and Exercise (4)	Shopping (5)	Religious Service (6)	Phone (7)
Panel A: All parents							
intensity × post	-42.3758	3.5385	94.6936*	8.6479	-11.5701	-0.0787	8.1071
	(41.2110)	(13.8091)	(54.6269)	(10.9420)	(11.8973)	(4.2399)	(7.1937)
Observations	15,782	15,782	15,782	15,782	15,782	15,782	15,782
R-squared	0.1841	0.1208	0.2317	0.0969	0.1155	0.0698	0.0969
Panel B: Fathers							
intensity × post	22.8691	3.4132	2.5686	20.9105	-1.9858	-1.1150	-0.7879
	(64.7606)	(25.5487)	(82.1851)	(19.2225)	(14.9374)	(11.1949)	(8.4713)
Observations	6,816	6,816	6,816	6,816	6,816	6,816	6,816
R-squared	0.1567	0.1492	0.1523	0.1226	0.1358	0.1179	0.1523
Panel C: Mothers							
intensity × post	-48.4622	-3.5973	271.7564***	12.1081	-16.3492	-3.4990	11.5262
	(53.4499)	(15.2015)	(75.4688)	(13.4897)	(18.3022)	(5.1793)	(8.2649)
Observations	8,899	8,899	8,899	8,899	8,899	8,899	8,899
R-squared	0.1312	0.1201	0.1315	0.1047	0.1126	0.1066	0.1383
Individual Controls	✓	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓
Month FE	✓	✓	✓	✓	✓	✓	✓
Weekend FE	✓	✓	✓	✓	✓	✓	✓
County FE	✓	✓	✓	✓	✓	✓	✓
State-Year FE	✓	✓	✓	✓	✓	✓	✓

Notes: The outcome is the parental time spent on personal care, eating and drinking, sports and exercise, shopping, religious service, and socializing, interchangeably. Individual controls include gender, age, race, marital status, educational attainment, labor force participation, age of the youngest child, presence of a spouse, family size, and weekend, year, county, and state-year fixed effects. All regressions are weighted by ATUS weights, and standard errors in parentheses are clustered on the county level. Source: ATUS 2008 to 2021. *significant at 10%; **significant at 5%; ***significant at 1%.

Table 3: CTC Expansion's Impact on Parental Time With Children by Age of the Child (Probability)

	Total Child Care (1)	Basic Child Care (2)	Educational Child Care (3)	Recreational Child Care (4)
Panel A: All Parents				
intensity × post	–0.2892**	-0.3366***	-0.0362	0.1882*
	(0.1449)	(0.1266)	(0.1293)	(0.1101)
Observations	15,782	15,782	15,782	15,782
R-squared	0.2930	0.2938	0.1679	0.2080
Panel B: Parents with at least one preschooler				
intensity × post	-0.1574	-0.2040	-0.1390	0.2002
	(0.1831)	(0.1789)	(0.2079)	(0.2071)
Observations	7,411	7,411	7,411	7,411
R-squared	0.2726	0.2989	0.2455	0.2131
Panel C: Parents with at least one Elementary Schooler				
intensity × post	–0.6058***	-0.6911***	-0.2420	-0.1061
	(0.2327)	(0.2349)	(0.2182)	(0.1738)
Observations	4,805	4,805	4,805	4,805
R-squared	0.3208	0.3190	0.2986	0.2027
Panel D: Parents with at least one Teenagers				
intensity × post	-0.1078	-0.0790	0.2478	0.0736
	(0.2757)	(0.2559)	(0.1616)	(0.1144)
Observations	3,366	3,366	3,366	3,366
R-squared	0.3701	0.3736	0.3145	0.2829
Individual Controls	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Month FE	✓	✓	✓	✓
Weekend FE	✓	✓	✓	✓
County FE	✓	✓	✓	✓
State-Year FE	✓	✓	✓	✓

Notes: The dependent variable is binary and equals one if the parent spends time on childcare (total, basic, educational, or recreational), and zero otherwise. Thus, if a parent spent time feeding, bathing, physically attending to health needs, or putting a child to sleep, they were coded as engaging in basic care. Educational care includes reading to or with children or any other educational activity directly related to children. Recreational care includes playing with children, arts and crafts, or attending children's events. Parents of preschoolers include those whose youngest child is less than 6 years, while parents whose youngest child is 6 to 12 years or 13 to 17 years are identified as those with an elementary schooler or teen, respectively. Individual controls include gender, age, race, marital status, educational attainment, labor force participation, age of the youngest child, presence of a spouse, family size, and year, county, and state-year fixed effects. All regressions are weighted by ATUS weights, and standard errors in parentheses are clustered on the county level. Source: ATUS 2008 to 2021. *significant at 10%; **significant at 5%; ***significant at 1%.

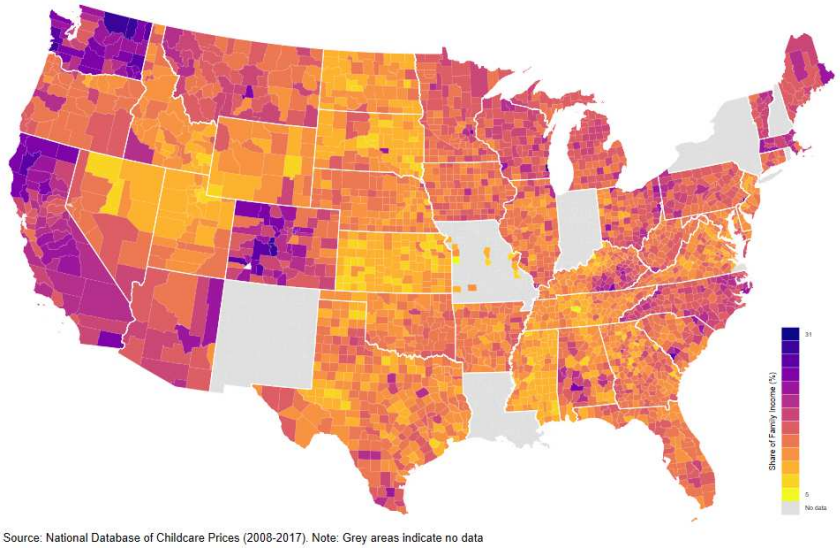


Figure 1: Percentage of Childcare Cost in Family Income

Note: The intensity of the purple color indicates the extent to which the percentage of the median household income allocated to childcare expenses per child increases.

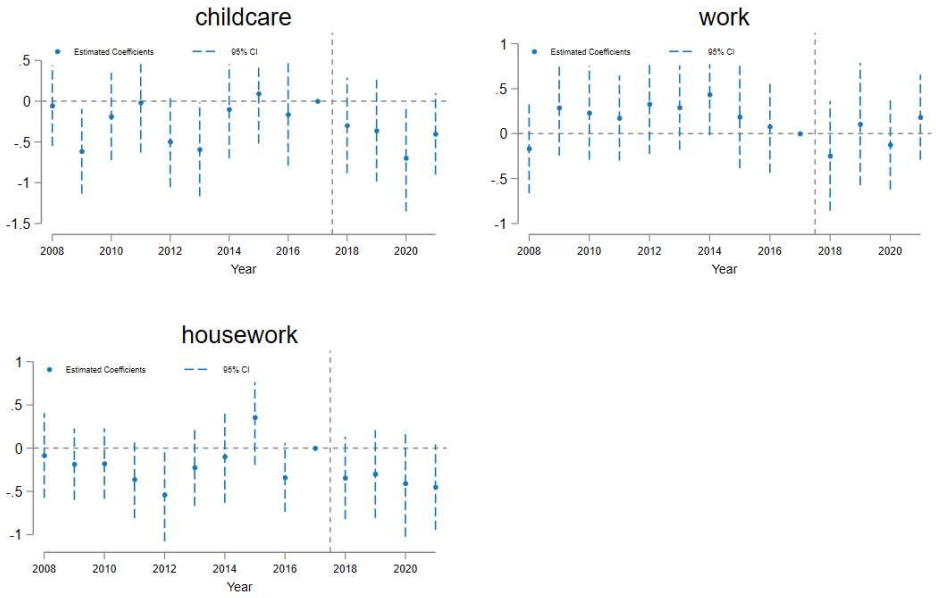


Figure 2: Event Study and Dynamic DD Results

Note: Time Use diary is from ATUS. The dependent variables are the probability of engaging in childcare, housework, and paid work related activities. Eq. (3) is estimated for various activities and the coefficients γ_t for 9 periods before reform and 4 periods after reform are reported. We also report the 95% confidence interval.

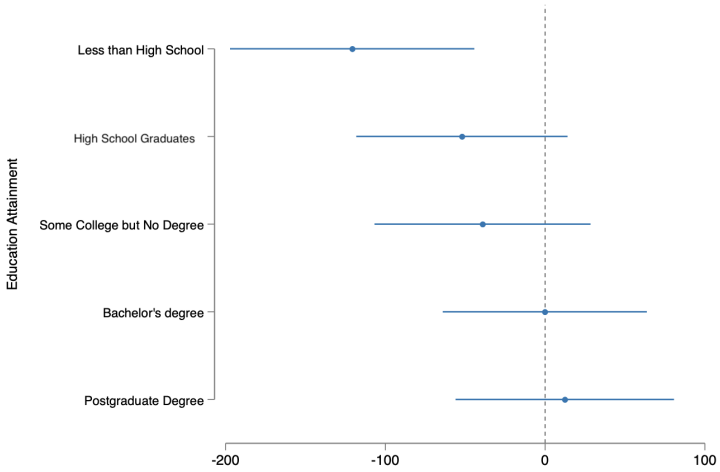


Figure 3: Impact of CTC on Time Allocated to Childcare by Parental Education

Note: The blue dots represent the regression coefficients from OLS regressions of time allocated to child care on our county-level CTC treatment variable by parental education. We report point estimates with 95% Confidence Intervals. All regressions control for gender, age, race, marital status, educational attainment, number of children under 17, labor force participation, age of the youngest child, family size, as well as year, county, and state-year fixed effects. Source: ATUS 2008 to 2021.

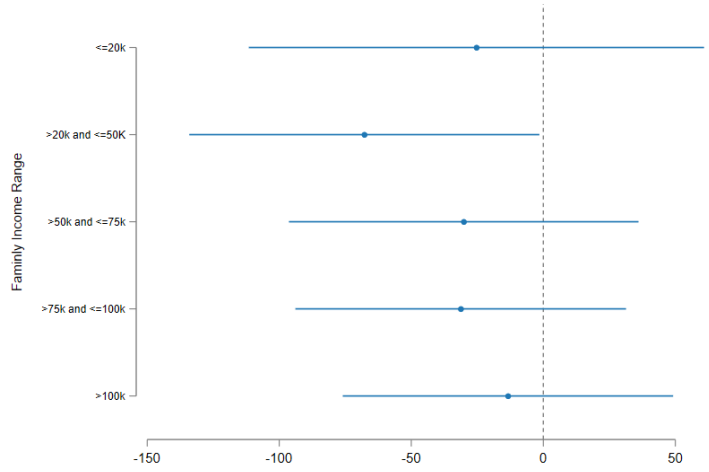


Figure 4: CTC's Impact on Time Allocated Childcare Activity by Race/Ethnicity

Note: The blue dots represent the regression coefficients from OLS regressions of time allocated to child care on our county-level CTC treatment variable by the race of the parent. We report point estimates with 95% Confidence Intervals. All regressions control for gender, age, marital status, educational attainment, age of the youngest child, number of children under 17, labor force participation, family size as well as year, county, state- year fixed effects. Source: ATUS 2008- 2021 data.

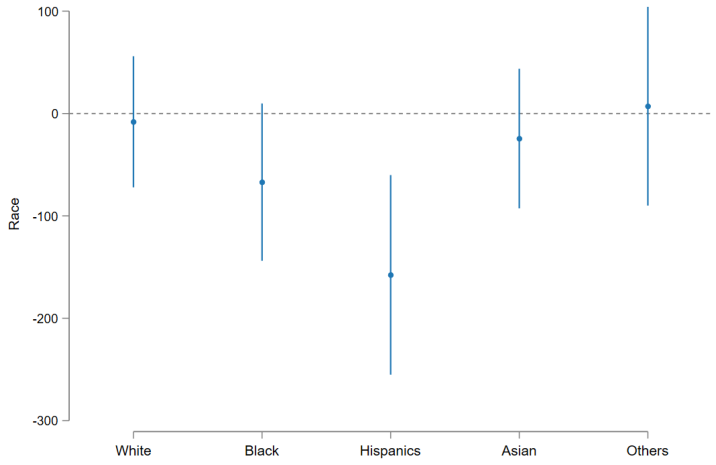


Figure 5: CTC's Impact on Time Allocated to Childcare Activity by Family Income

Note: The blue dots represent the regression coefficients from OLS regressions of time allocated to child care on our county-level CTC treatment variable by annual family income. We report point estimates with 95% Confidence Intervals. All regressions control for gender, age, race, marital status, educational attainment, number of children under 17, labor force participation, age of the youngest child, family size, as well as year, county, and state-year fixed effects. Source: ATUS 2008 to 2021.

Appendix. Figures and Tables

Table A1: Activity Categories

Category	Subcategory	Activity	ATUS Activity Code
		Work, the main job	05.XXXX
Work and Work-related Activity		Travel related to working	18.05.XX
		Physical care for household children	03.01.01
		Talking with or listening to household children	03.01.06
		Helping or teaching household children (not related to education) (2003)	03.01.07
		Organization and planning for household children	03.01.08
		Looking after household children (as a primary activity)	03.01.09
		Waiting for or with household children	03.01.11
		Picking up or dropping off household children	03.01.12
		Caring for and helping household children, n.e.c.	03.01.99
		Activities related to Children's Health	03.03.XX
		Physical care for non-household children	04.01.01
		Talking with or listening to non-household children	04.01.06
	Basic Child Care	Helping or teaching non-household children (not related to education) (2003)	04.01.07
		Organization and planning for non-household children	04.01.08
		Looking after non-household children (as primary activity)	04.01.09
		Waiting for or with non-household children	04.01.11
		Dropping off or picking up non-household children	04.01.12
		Caring for and helping non-household children, n.e.c.	04.01.99
		Activities Related to Nonhousehold Children's Health	04.03.XX
		Childcare services (Paid)	08.01.XX
		Travel related to caring for & helping hh children, inclusive	18.03.01
Child Care		Travel related to caring for & helping hh children	18.03.02
		Travel related to hh children's health	18.03.04
		Travel related to using childcare services	18.08.01
		Reading to or with household children	03.01.02
		Activities related to Household Children's education	03.02.XX
	Educational Child Care	Reading to or with non-household children	04.01.02
		Activities Related to Non-household Children's Education	04.02.XX
		Travel related to household children's education	18.03.03
		Playing with household children, not sports	03.01.03
		Arts and crafts with household children	03.01.04
		Playing sports with household children	03.01.04
		Attending household children's events	03.01.10
	Recreational Child Care	Playing with non-household children, not sports	04.01.03
		Arts and crafts with non-household children	04.01.04
		Playing sports with non-household children	04.01.05
		Attending non-household children's events	04.01.10
		Housework	02.01.XX
		Food & Drink Preparation, Presentation, & Clean-up	02.02.XX
		Interior Maintenance, Repair & Decoration	02.03.XX
		Exterior Maintenance, Repair & Decoration	02.04.XX
		Lawn, Garden, and Houseplants	02.05.XX
		Vehicles	02.07.XX
		Appliances, Tools, and Toys	02.08.XX
		Household Management	02.09.XX
		Household activities, n.e.c.	02.99.XX
Housework		Caring for Household Adults	03.04.XX
		Helping Household Adults	03.05.XX
		Caring For & Helping HH Members, n.e.c.	03.99.XX
		Caring For Nonhousehold Adults	04.04.XX
		Helping Nonhousehold Adults	04.05.X
		Caring for and Helping Nonhousehold Members	04.99.X
		Grocery shopping	07.01.XX
		Comparison shopping	07.02.XX
		Security Procedures Related to Consumer Purchases	07.03.XX
		Government Services and Civic Obligations	10.XXXX
		Religious and Spiritual Activities	14.XXXX
		Volunteer Activities	15.XXXX

Category	Subcategory	Activity	ATUS Activity Code
		Medical and Care Services	08.04.XX
		Financial Services and Banking	08.02.XX
		Legal Services	08.03.XX
		Medical and Care Services	08.04.XX
		Personal Care Services	08.05.XX
		Real Estate	08.06.XX
		Veterinary Services (excluding grooming)	08.07.XX
		Security Procedures Related to Professional/Personal Services	08.08.XX
		Professional and Personal Services, not elsewhere classified	08.99.XX
		Household Services	09.XXXX
Housework		Travel related to housework	18.02.XX
		Travel related to caring for hh adults	18.03.05
		Travel related to helping hh adults	18.03.06
		Travel related to caring for and helping household adults (2003, 2004)	18.03.07
		Travel rel. to caring for & helping hh members, n.e.c.	18.03.99
		Travel Related to Caring For and Helping Nonhousehold Members	18.04.XX
		Travel related to grocery shopping	18.07.XX
		Travel related to using financial services and banking	18.08.02
		Travel related to using legal services	18.08.03
		Travel related to using medical services	18.08.04
		Travel related to using real estate services	18.08.06
		Travel related to using veterinary services	18.08.07
		Travel related to using household services	18.09.XX
		Personal Care Activities	01.XXXX
		Animals and Pets	02.06.XX
		Eating and Drinking	11.XXXX
		Socializing and Communicating	12.XXXX
		Sports, Exercise, and Recreation	13.XXXX
		Telephone Calls	16.XXXX
Leisure		Travel related to personal care	18.01.XX
		Travel related to using personal care services	18.08.05
		Travel rel. to using professional. & personal care services.	18.08.99
		Travel related to eating and drinking	18.11.XX
		Travel Related to Socializing, Relaxing, and Leisure	18.12.XX
		Travel Related to Sports, Exercise, & Recreation	18.13.XX
		Travel Related to Phone Calls	18.16.XX

Table A2: Summary Statistics

	Observations	Mean	Std. Dev.	Min.	Max.
Dependent Variables					
Probability of Engaging in a Specific Activity					
Prob_Housework	15782	0.880	0.325	0	1
Prob_Leisure	15782	1.000	0.000	1	1
Prob_Work	15782	0.500	0.500	0	1
Prob_Childcare	15782	0.656	0.475	0	1
Prob_Others	15782	0.080	0.271	0	1
Amount of Time Spent in a Specific Activity					
Home Production	15782	186.732	171.647	0	1320
Leisure	15782	912.119	242.256	15	1440
Work	15782	237.398	283.595	0	1350
Childcare	15782	95.352	125.558	0	1140
Others	15782	8.399	45.967	0	955
Independent Variables					
Female	15782	0.566	0.496	0	1
Age	15782	40.015	8.896	18	65
Married	15782	0.730	0.444	0	1
Spouse Present	15782	0.713	0.452	0	1
Number of Children	15782	1.931	0.953	1	9
Age of the Youngest Child	15782	6.765	5.081	0	17
Household Size	15782	3.946	1.230	2	15
Whether in Labor Force	15782	0.834	0.372	0	1
Weekend	15782	0.495	0.500	0	1
Race Indicator					
White	15782	0.796	0.403	0	1
Black	15782	0.100	0.300	0	1
Hispanics	15782	0.007	0.085	0	1
Asian	15782	0.079	0.270	0	1
Other Race	15782	0.017	0.131	0	1
Education Levels					
Less than High School	15782	0.095	0.294	0	1
High School Graduate	15782	0.208	0.406	0	1
Some College	15782	0.259	0.438	0	1
Bachelor's Degree	15782	0.268	0.443	0	1
Postgraduate	15782	0.170	0.376	0	1

Data Source: American Time Use from 2008 to 2021.

Table A3: Event Study and Dynamic DD Estimation

	Prob_Childcare	Prob_Housework	Prob_Work
	(1)	(2)	(3)
intensity × 2008	0.2221	-0.0002	-0.0460
	(0.2784)	(0.2424)	(0.2565)
intensity × 2009	-0.3353	-0.0841	0.3558
	(0.2826)	(0.2112)	(0.2854)
intensity × 2010	0.0401	-0.1721	0.1727
	(0.2753)	(0.2074)	(0.2551)
intensity × 2011	0.2094	-0.3524	0.2505
	(0.3199)	(0.2261)	(0.2446)
intensity × 2012	-0.3360	-0.4593*	0.3788
	(0.3016)	(0.2639)	(0.2876)
intensity × 2013	-0.5352*	-0.1934	0.2536
	(0.2912)	(0.2203)	(0.2747)
intensity ×2014	0.0852	0.0300	0.3586
	(0.3060)	(0.2633)	(0.2373)
intensity × 2015	0.2723	0.3795	0.1129
	(0.3374)	(0.2675)	(0.2623)
intensity × 2016	0.0236	-0.2754	0.0386
	(0.3139)	(0.1996)	(0.2489)
intensity × 2017	.	.	.
	(.)	(.)	(.)
intensity × 2018	-0.2846	-0.3301	-0.3589
	(0.3069)	(0.2358)	(0.2997)
intensity × 2019	-0.2911	-0.1549	0.0740
	(0.3189)	(0.2612)	(0.3201)
intensity × 2020	-0.4968	-0.3417	-0.1096
	(0.3318)	(0.3161)	(0.2833)
intensity × 2021	-0.2480	-0.4510*	0.1263
	(0.2893)	(0.2498)	(0.2213)
Individual Controls	✓	✓	✓
Year FE	✓	✓	✓
Month FE	✓	✓	✓
Weekend FE	✓	✓	✓
County FE	✓	✓	✓
State-Year FE	✓	✓	✓
Observations	15,782	15,782	15,782
R-squared	0.2943	0.1429	0.4617
Joint test for pre-trend (P-value)	0.8415	0.1830	0.3045

Notes: All regressions are weighted by ATUS weights, and standard errors in parentheses are clustered on the county level. Individual controls include gender, age, race, marital status, number of children under 17, labor force participation, age of the youngest child, family size, as well as weekend, year, county, and state-year fixed effects. ATUS weights are included in all regressions, and standard errors in parentheses are clustered on the county level. Source: ATUS 2008 to 2021. *significant at 10%; **significant at 5%; ***significant at 1%.

Table A4: Robustness Checks: Impact of CTC Reform on Fertility and Marriage Decision

	Probability of Having Children			Number of Children			Probability of Getting Married		
	All	Men	Women	All	Men	Women	All	Men	Women
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: All Years									
intensity × post	0.0492	0.0854	-0.0073	0.1885	0.3653*	-0.0785	-0.0575	0.1002	-0.1487
	(0.0566)	(0.0779)	(0.0759)	(0.1618)	(0.2158)	(0.2264)	(0.0993)	(0.1405)	(0.1237)
Observations	32,939	15,666	17,240	32,939	15,666	17,240	32,939	15,666	17,240
R-squared	0.6774	0.6973	0.6937	0.5812	0.6116	0.6023	0.2711	0.3438	0.2615
Panel B: Excluding 2021 (Pandemic Baby)									
intensity × post	0.0106	0.0207	0.0058	-0.0045	0.1574	-0.1616	-0.0329	0.1574	-0.0832
	(0.0646)	(0.0952)	(0.0847)	(0.1647)	(0.2577)	(0.2120)	(0.1027)	(0.1362)	(0.1387)
Observations	31,038	14,737	16,267	31,038	14,737	16,267	31,038	14,737	16,267
R-squared	0.6753	0.6967	0.6912	0.5811	0.6137	0.6012	0.2707	0.3458	0.2599
Individual Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Month FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Weekend FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
County FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
State-Year FE	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes: All regressions are weighted by ATUS weights, and standard errors in parentheses are clustered on the county level. Individual controls include gender, age, race, marital status, number of children under 17, labor force participation, age of the youngest child, family size, as well as year, county, and state-year fixed effects. Source: ATUS 2008 to 2021. *significant at 10%; **significant at 5%; ***significant at 1%.

Table A5: Robustness Checks: Impact of CTC Reform on Migration Decision

	Moving Within Same County			Moving Within Same State			Moving Across States		
	All	Fathers	Mothers	All	Fathers	Mothers	All	Fathers	Mothers
Panel A: All Years									
intensity × post	-0.0649	-0.1804***	0.0557	0.0049	0.0336*	-0.0183	0.0084	0.0062	-0.0091
	(0.0558)	(0.0691)	(0.0470)	(0.0160)	(0.0195)	(0.0284)	(0.0112)	(0.0154)	(0.0167)
Observations	15,782	6,816	8,899	15,782	6,816	8,899	15,782	6,816	8,899
R-squared	0.1427	0.2139	0.1860	0.0996	0.1630	0.1867	0.1054	0.1712	0.1608
Panel B: Excluding 2020 & 2021 (Pandemic Moving)									
intensity × post	-0.0821	-0.2216**	0.0407	0.0030	0.0425*	-0.0237	-0.0002	-0.0061	-0.0147
	(0.0782)	(0.0943)	(0.0658)	(0.0290)	(0.0240)	(0.0584)	(0.0110)	(0.0164)	(0.0147)
Observations	14,238	6,132	8,044	14,238	6,132	8,044	14,238	6,132	8,044
R-squared	0.1471	0.2181	0.1978	0.1080	0.1761	0.1987	0.1145	0.1769	0.1700
Individual controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Month FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Weekend FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
County FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
State-Year FE	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes: All regressions are weighted by ATUS weights, and standard errors in parentheses are clustered on the county level. Individual controls include gender, age, race, marital status, number of children under 17, labor force participation, age of the youngest child, family size, as well as year, county, and state-year fixed effects. Source: ATUS 2008 to 2021. *significant at 10%; **significant at 5%; ***significant at 1%.

Table A6: CTC's Impact on Parental Time Allocation (Excluding Impact of School Closure)

	Probability					Minutes Per Day				
	Housework (1)	Leisure (2)	Work (3)	Childcare (4)	Others (5)	Housework (6)	Leisure (7)	Work (8)	Childcare (9)	Others (10)
Panel A: All Parents										
intensity × post	-0.2429**		-0.1460	-0.2147	0.0784	-70.882	67.481	14.494	-15.938	4.844
	(0.1068)		(0.1096)	(0.1589)	(0.1132)	(44.814)	(64.011)	(76.608)	(30.768)	(9.588)
Observations	15,047		15,047	15,047	15,047	15,047	15,047	15,047	15,047	15,047
R-squared	0.1449		0.4956	0.2890	0.0870	0.253	0.326	0.488	0.284	0.063
Panel B: Fathers										
intensity × post	-0.454**		-0.031	-0.001	0.024	-106.060	-24.735	117.889	20.457	-7.550
	(0.196)		(0.159)	(0.218)	(0.155)	(74.419)	(109.868)	(125.621)	(58.595)	(11.255)
Observations	6,498	6,498	6,498	6,498	6,498	6,498	6,498	6,498	6,498	6,498
R-squared	0.173		0.460	0.304	0.170	0.230	0.380	0.453	0.240	0.132
Panel C: Mothers										
intensity × post	-0.067		-0.287*	-0.352*	0.073	-56.767	172.925**	-85.399	-33.314	2.554
	(0.101)		(0.163)	(0.202)	(0.137)	(58.394)	(80.740)	(89.331)	(43.650)	(17.944)
Observations	8,484	8,484	8,484	8,484	8,484	8,484	8,484	8,484	8,484	8,484
R-squared	0.116		0.488	0.308	0.130	0.245	0.342	0.453	0.339	0.088
Individual Controls	✓		✓	✓	✓	✓	✓	✓	✓	✓
Year FE	✓		✓	✓	✓	✓	✓	✓	✓	✓
Weekend FE	✓		✓	✓	✓	✓	✓	✓	✓	✓
Month FE	✓		✓	✓	✓	✓	✓	✓	✓	✓
County FE	✓		✓	✓	✓	✓	✓	✓	✓	✓
State-Year FE	✓		✓	✓	✓	✓	✓	✓	✓	✓

Notes: The outcome variable in Columns 1 to 5 is the probability of engaging in a specific activity. Since leisure is a universal activity, it is impossible to estimate the probability of participation in Column (2). In contrast, the dependent variable in Columns 6 to 10 is the amount of time spent on each activity. Individual controls include gender, age, race, marital status, educational attainment, labor force participation, age of the youngest child, presence of a spouse, family size, and weekend, year, county, and state-year fixed effects. ATUS weights are included in all regressions, and standard errors in parentheses are clustered on the county level. Source: ATUS 2008 to 2021. *significant at 10%; **significant at 5%; ***significant at 1%.

Table A7: CTC's Impact on Parental Time Allocation - Alternative Measurement (Probability)

	Housework (1)	Leisure (2)	Work (3)	Childcare (4)	Others (5)
Panel A: All Parents					
intensity × post	-0.0202		-0.0532	0.0188	0.0127
	(0.0271)		(0.0383)	(0.0254)	(0.0278)
Observations	33,886	33,886	33,886	33,886	33,886
R-squared	0.0697		0.3433	0.2297	0.0273
Panel B: Fathers					
intensity × post	-0.0001		0.0411	0.0508	0.0010
	(0.0486)		(0.0812)	(0.0616)	(0.0301)
Observations	14,832	14,832	14,832	14,832	14,832
R-squared	0.0263		0.2553	0.1785	0.0317
Panel C: Mothers					
intensity × post	-0.0296*		-0.1251***	-0.0170	0.0261
	(0.0172)		(0.0268)	(0.0485)	(0.0302)
Observations	19,054	19,054	19,054	19,054	19,054
R-squared	0.0227		0.3654	0.2205	0.0276
Individual Controls	✓		✓	✓	✓
Year FE	✓		✓	✓	✓
Month FE	✓		✓	✓	✓
Weekend FE	✓		✓	✓	✓
State FE	✓		✓	✓	✓

Notes: The outcome variable in this table measures the probability of engaging in a specific activity. Since leisure is a universal activity, it is impossible to estimate the probability of participation in Column (2). The treatment intensity represents the childcare expenditure relative to the total childcare-related expenses within a state. Individual controls include gender, age, race, marital status, educational attainment, labor force participation, age of the youngest child, presence of a spouse, family size and year, and state-fixed effects. ATUS weights are included in all regressions, and standard errors in parentheses are clustered on the state level. Data Source: 2008 - 2016 Consumer Expenditure Survey. *significant at 10%; **significant at 5%; ***significant at 1%.

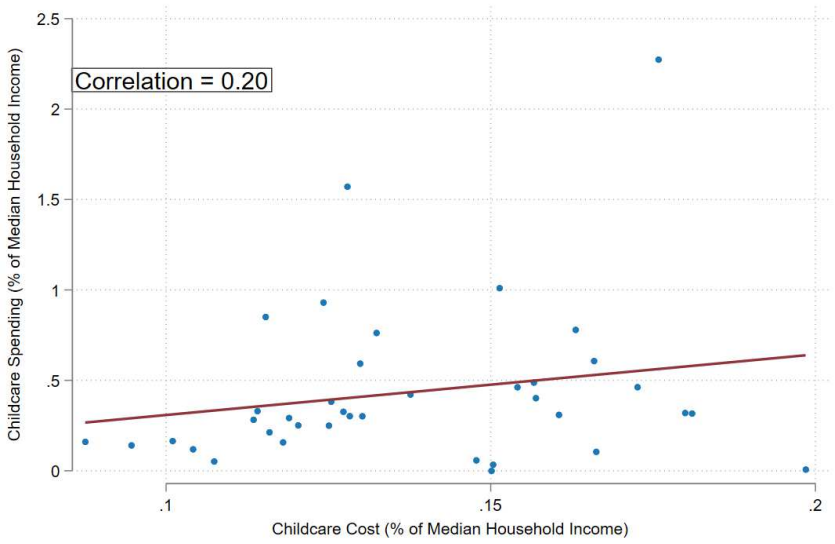
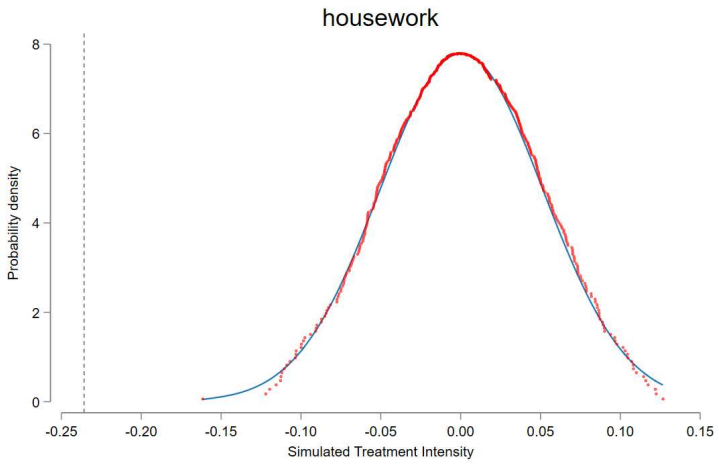
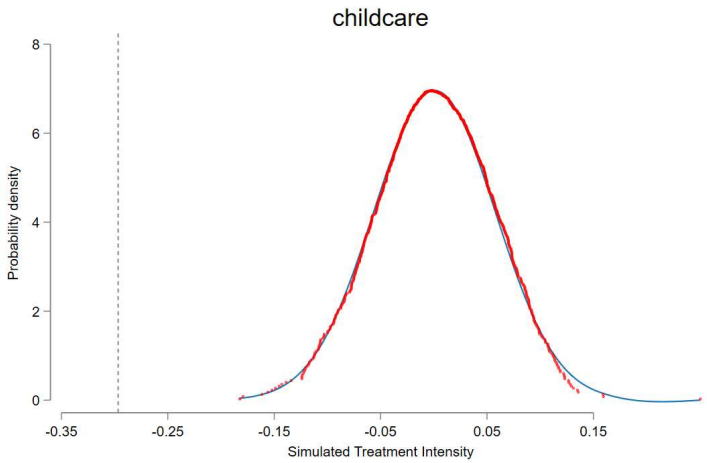


Figure A1: Correlation between Childcare Price and Childcare Expenditure

Note: Childcare price data come from the Women's Bureau, and childcare expenditure data come from the Consumer Expenditure Survey. Both measures are normalized by household income.



(a) Housework



(b) Childcare

Figure A2: Placebo Treatment Intensity: Distribution of Estimation Coefficients

Note: The density of the estimated coefficients from 500 simulations using false date of randomizing assignment of treatment intensity for all counties.