

How Does the Child Tax Credit Change the Time Allocation of Parents? Evidence from American Time Use Data

Tennecia Dacass[#]

Elif B. Dilden[†]

Yang Jiao^{*}

[#]Department of Economics, College of Business. Central Washington University. Email: tennecia.dacass@cwu.edu. The authors are listed in alphabetic order.

[†]Department of Accounting, Finance, and Economics, College of Business and Technology. Rockhurst University. Email: elif.dilden@rockhurst.edu.

^{*}Department of Accounting, Economics, and Finance, College of Business, Engineering and Technology. Texas A&M University - Texarkana. Email: yjiao@tamut.edu.

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Abstract

The Child Tax Credit (CTC) plays a pivotal role in reducing child poverty rates and ensuring parents remain active in the workforce. However, there is a lack of information regarding how these tax credits influence parental time allocation, specifically regarding the time spent with children. Using a difference-in-differences framework, our study aims to bridge this gap by investigating the effects of the 2017 CTC expansion on parents' time allocation. The findings suggest that following the CTC expansion, parents residing in areas with greater exposure to this policy change tend to reduce their involvement in household and childcare tasks, allowing for more leisure time. This trend is particularly noticeable among mothers. Upon closer examination, it becomes apparent that the CTC reform primarily decreases the likelihood of parents engaging in basic childcare responsibilities while having no significant impact on time spent with children completing educational and recreational activities. We show that the effects of the 2017 CTC vary by parents' gender, thus contributing to a better understanding of how public policies can effectively address gender discrepancies in household responsibilities.

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

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

Highlights

- This study explores how parents adjust their time allocation following the CTC reform.
- In areas with more CTC exposure, parents, especially mothers, reduce work, housework chores, and childcare responsibilities.
- The CTC reform does not decrease time spent on children's educational or recreational activities.
- Notably, reduced parental time with children is seen in Hispanic and lower-educated families.

Submission Declaration

This article is not under consideration for publication elsewhere and will not be submitted to another journal during the review process. The publication of this article has been approved by all authors, and tacit or explicit approval has been obtained from the responsible authorities where the work was carried out. If accepted, this article will not be published elsewhere in the same form, in English or any other language, including electronically, without the written consent of the copyright-holder.

Declaration of interests

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Declaration of generative AI in scientific writing

Generative AI and AI-assisted technologies (ChatGPT) should only be used in the writing process to improve the readability and language of the manuscript.

1 Introduction

According to the employee survey conducted by [Fuller and 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, President Biden issued an executive order on April 18, 2023, aimed at enhancing access to and the affordability of daycare. One notable way in which the government intends to support parents is through the Child Tax Credit (CTC), which mitigates some of the financial burden associated with childcare expenses by offering a tax credit.²

Prior research has primarily centered on the impact of CTC on parental labor supply, with findings showing a range of mixed results ([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 the varying income sensitivities associated with different 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, there is a possibility that with the extra income, parents might decide to delegate childcare duties or partake in more recreational pursuits, which could potentially result in decreased interactions with their children. It is important to consider the CTC's impact on parental

¹According 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](#).

²There is bipartisan agreement on the childcare crisis and its significant financial burden on families. Both 2024 presidential candidates, Donald Trump and Kamala Harris, have proposed policies aimed at alleviating these costs through expansions of the Child Tax Credit. Trump's proposal builds on the increase set by the 2017 Tax Cuts and Jobs Act, which raised the CTC to \$2,000 per child. In contrast, Harris aims to restore the CTC expansion from the 2021 American Rescue Plan Act, increasing the tax credit from \$2,000 to \$3,000 for older children and \$3,600 for younger children.

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 in 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 examining the impact of this reform on the time parents spend with their children. We focus on the 2017 expansion because it offered substantial benefits to families with eligible children compared to other reforms. Our difference-in-differences (DD) research design leverages the impact of the 2017 CTC expansion on parents living in regions with varying levels of exposure to the reform. The degree of exposure relies on the differences in the costs of raising children across regions. Specifically, our identification strategy examines how parents in regions with differing childcare costs relative to family income adjust their time allocation following the CTC reform. Our findings indicate that, following the expansion, parents living in regions with higher exposure to the reform tend to decrease their involvement in household and childcare responsibilities, leading to an increase in their 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 the propensity to engage in basic childcare activities, like 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 the time spent on childcare differs based on 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

those of 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 higher childcare costs to those with lower costs to maximize the benefits of the CTC credits, which could potentially 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 utilize an alternative approach to measure treatment intensity within our model, utilizing 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 and 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 when they face an external income shock due to 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 and 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 extra tax credit, we offer a promising avenue for supporting both parents and enhancing the well-being of their children.

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 have been scarce into how parents allocate their time when household resources are augmented, 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 result in reduced parent-child interactions, particularly among Hispanic parents with lower educational levels. Further research is imperative to gauge the extent to which expanded CTC benefits impact essential childcare time and subsequently, how this affects both short-term 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 4 describes the data and discusses the summary statistics. We describe our empirical strategy in Section 5, while Section 6 presents the main results and discusses the implications of our baseline results on parents' leisure and childcare activities. We perform robustness checks in Section 7 and explore the heterogeneous effects of CTC expansion on childcare in Section 8. Finally, we conclude in Section 9.

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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

³Several countries operate different versions of the program. In most countries, child benefit is means-tested, and the amount of child benefit 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](#).

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 primary goal of this CTC expansion was to provide increased financial support to improve the well-being of children in 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, with differences in which groups were most impacted. Additionally, in Section 7, we conducted several robustness checks to verify the consistency of our results.

3 Theoretical Analysis of CTC and Time Allocation

The financial constraints faced by parents are influenced by the CTC. Although the current legislation makes the CTC non-refundable, most families (excluding those with extremely low incomes) can claim the full credit for each child under 17. Consequently, the CTC effectively changes the overall budget of a household without altering its slope (unlike the impact of other tax credits, such as EITC and the Child and Dependent Care Credit). This implies that the marginal utility between market work and other activities, such as leisure, household chores, and childcare, remains consistent. According to established labor economic theory, the expansion of the CTC only affects the allocation of time through the income effect. This implies that individuals will maintain their current distribution of time across various activities. Nevertheless, it is challenging to predict how parents will modify their time allocation due to time constraints. Below, we elucidate the effects of

⁴Because 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.

⁵Adjustment to the refundability threshold represents a reduction from its 2009 level. In 2009, the American Recovery and Reinvestment Act expanded the credit eligibility to more low-income families by reducing the threshold to \$3000 from \$8500. [The Tax Cuts and Jobs Act of 2017](#) also introduced phase-out thresholds and rates for high-income taxpayers. It is important to note that the 2017 amendment is temporary and applicable only for the taxable years 2018 through 2025.

CTC expansion on the distribution of resources among different activities and examine these effects through empirical analysis.

- *Effects on market work:* Because CTC is a fixed amount of money that parents could receive, it will change the labor supply through the income effect. Consequently, parents may opt to decrease their engagement in paid work or reduce their working hours. However, the empirical data present a blend of outcomes, as some researchers have noted positive impacts, whereas others have witnessed minimal negative effects (Feldman et al., 2016; Lippold, 2019; Ananat et al., 2022; Enriquez et al., 2023).⁶
- *Effects on childcare:* Parents may have more time available to spend with their children, which could involve increased engagement in activities directly related to their children’s well-being and development. Conversely, families with greater financial resources may be able to source childcare services, and afford enriching experiences, educational materials, and extracurricular activities for their children, potentially resulting in less time spent directly with them.
- *Effects on housework:* Parents may opt to dedicate more time to household chores such as cooking, cleaning, or maintenance. Alternatively, they may choose to delegate or outsource certain tasks or responsibilities, such as hiring help for housekeeping, to free up their own time for other activities.
- *Effects on leisure:* A higher CTC can provide parents with more financial freedom, enabling them to allocate more time to leisure activities, hobbies, personal interests, or self-care.

4 Data

The analysis primarily utilizes two main sources of data: data on center-based childcare costs acquired from the Department of Labor. Moreover, an individual’s time allocation is sourced from the American Time Use Survey (ATUS).

⁶Ananat et al. (2022) and Enriquez et al. (2023) find very small, inconsistently signed, and statistically insignificant impacts of the 2021 CTC expansion on employment in the prior week and on active participation in the labor force among adults living in households with children. Feldman et al. (2016) and Lippold (2019) use the loss of the CTC when children turn 17 as a source of exogenous variation to test the effect of CTC on parent’s labor supply. Both papers provide evidence that a loss in CTC reduces earned income and the probability of being employed.

4.1 Childcare Costs and Measuring Treatment Intensity

Parents in different regions may experience varying levels of benefit from the extra income provided by the CTC due to differences in the relative costs of raising a child, even though the credit amounts are primarily based on the number of children and family income. These disparities arise from factors such as regional variations in childcare expenses, housing, and the overall cost of living. Childcare expenses, which make up a significant portion of family income, heavily influence decisions around childbearing. For instance, families in areas with higher childcare costs or more expensive living conditions, such as the West Coast, may find that financial assistance covers a smaller portion of their expenses. In contrast, for families in lower-cost regions, such as the Midwest, the same CTC amount can cover a larger share of childcare expenses, offering more substantial financial relief. As a result, families in lower-cost regions benefit more from the credit, while those in higher-cost areas receive less financial support, despite the uniform structure of the CTC. Furthermore, factors such as access to affordable child care, flexible work arrangements, or extended family support can impact how much assistance benefits each household.

According to recent findings from the U.S. Census Bureau's Household Pulse Survey, one in four families with young children used their Child Tax Credit payments to cover childcare costs, while three in ten families spent the payments on school-related expenses.⁷ To account for the varying impact of the CTC across different regions, given the disparities in child-rearing costs, we incorporate newly released data on center-based childcare expenses along with average household incomes in each region to better capture the regional variation in childcare costs. Center-based childcare costs are a strong indicator of the overall cost of raising a child because they represent a significant and recurring expense, particularly for working families. These costs often correlate with other child-related expenses, such as education, housing, and healthcare, further highlighting their relevance in assessing the financial burden of raising children. These costs vary widely across regions due to differences in labor, demand, and local regulations, making them a useful measure for capturing geographic disparities in child-rearing expenses.

County-level weekly full-time childcare price data for four different types of center-based childcare (namely, infant, toddler, pre-school, and school-age childcare) from 2008 to 2017 was obtained from the Women's Bureau National Database of Childcare Prices.⁸ This

⁷Source of report: [Parents With Young Children Used Child Tax Credit Payments for Child Care](#).

⁸For the first time, the Department of Labor released county-by-county data on childcare spending in January 2023. This new brief drawing on available data across 47 states shows that annual childcare prices for a single child ranged from \$4,810 for school-age home care in small counties to \$15,417 for center-based care for infants in very large counties. Adjusted for inflation, this is equal to \$5,357 and \$17,171 in 2022 dollars. The complete report can be obtained at: [National Database of Childcare Prices](#).

database contains public use data from state childcare market price surveys. Market price surveys typically collect data on regulated childcare centers, often located in commercial buildings, and serve multiple groups or classrooms of similarly aged children. This database also includes information from regulated family childcare homes that care for small groups of children in a residential building, such as a house, apartment, or condo unit.

We take an additional step to calculate the proportion of childcare costs relative to the median household income in a given county for a specific year by following a structured approach. First, we convert the weekly median childcare price into an annual cost by multiplying it by 52 weeks. Next, we apply different weights to each category of childcare costs, reflecting the expected time a child spends in each age group. Specifically, we assign weights of 2/12, 1/12, 3/12, and 6/12 to the costs associated with infants, toddlers, preschoolers, and school-aged children, respectively.⁹ Finally, we divide the annual childcare expenses by the median household income for the same year, which is sourced from the Small Area Income and Poverty Estimates Program. This method estimates the relative financial burden that parents encounter when enrolling a child in a childcare center, comparing it to the median family income in their county of residence.

Figure 1 illustrates the geographic variation in the proportion of childcare prices relative to the median household income from 2008 to 2017. All values are presented in 2019 dollars, adjusted for by the Consumer Price Index. On average, annual childcare costs for a single child ranged from \$4,329 to \$19,633, depending on factors such as type of provider, age of the children, and the population size of the county. These price ranges correspond to approximately 4.9% to 25% of the median family income.

[Insert Figure 1 Here]

A higher ratio of average childcare costs to median household income for each county indicates that a typical family in that county faces greater financial constraints when raising children. Using county-level variation also helps mitigate concerns about endogeneity, which can be more prevalent in household-level data. We then inverted the relative childcare cost for each county, based on its value compared to the maximum relative cost of childcare to household income in the dataset, to create our treatment intensity measure, $Intensity_c$. The county with the highest share of childcare costs is assumed to be the least affected by the reform.¹⁰ A higher intensity value indicates greater exposure to the 2017

⁹According to the Childcare Price Report, center-based care for infants covers children aged 0 to 23 months; toddlers, 24 to 35 months; and preschoolers, 36 to 59 months.

¹⁰Chaves County, New Mexico, has the highest childcare cost as a share of median household income at 0.249, meaning childcare expenses account for nearly a quarter of a typical family's income.

CTC reform, relative to the least exposed county, where childcare costs represent the largest share of household income. The formula for calculating this intensity index is as follows:

$$Intensity_c = 1 - \frac{[Childcare\ Cost\ per\ Household\ Income]_c}{\max([Childcare\ Cost\ per\ Household\ Income]_c)} \quad (1)$$

4.2 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 since childcare prices were only gathered from that point onward, and the study duration concludes in 2021 to avoid accounting for the influence of the 2021 CTC expansion. To ensure a precise matching of the ATUS sample with childcare cost data, we include only individuals who have identifiable county information and exclude those whose county code is missing or unknown. Our primary analysis sample includes individuals between the ages of 18 and 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 8,999 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 and Connolly \(2007\)](#), we separate parents' time allocation into four main categories, paid market work, leisure, time with children, time spent on home production, and time spent on other activities.¹¹ 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](#).

¹¹We categorize activities like government services, civic obligations, and volunteering services under the "Others" category group because it's challenging to place them into a distinct classification.

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 (which includes time spent sleeping), 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 consists of a slightly larger 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 constitutes the largest group among the respondents. Approximately 43.8% of the parents have attained at least a college degree.

5 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 effect varies regionally. We assume much of the CTC is used for childcare expenses, aligning with the policy's goal of supporting child-rearing costs. Varying childcare costs across regions allow us to assess families' exposure to the CTC reform. The identification strategy employed is a difference-in-differences estimation, which is specified below.

$$Y_{icdy} = \gamma \text{Intensity}_c \times \text{Post}_y + \theta X_{icdy} + \text{Weekend}_{icdy} + \text{Month}_{icdy} + \lambda_y + \lambda_c + \lambda_{sy} + \varepsilon_{icdy}. \quad (2)$$

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 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 and not just those participating 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 indicating if the respondent was surveyed during 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.

6 Results

6.1 Baseline Results

Table 1 presents the baseline results. The first five columns show the results of 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.¹² 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 there has been a decrease in the gender gap in time allocation 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 due to the demanding nature of childcare, with women generally spending considerably more time on these tasks than men. This

¹²The 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 $0.6 \times (-0.2216 \times 0.4025) / 0.8782$.

time disparity underscores 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 higher exposure to the reform demonstrate a slightly reduced likelihood of employment and engagement in household and childcare tasks compared to those with less exposure, although 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 less 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.¹³ 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]

6.2 Time allocated to Recreational Activities

As the baseline results show, the expansion of CTC reduces parents' engagement in paid work, home production, and childcare tasks, enabling them to allocate additional time to entertainment. Although several studies suggest that having children comes with the drawbacks of reducing leisure time and increasing financial stress (Claxton and Perry-Jenkins, 2008; Craig and Bittman, 2008; Roeters et al., 2016), limited research has delved into the examination of leisure time allocation following an upswing in financial resources. As a next step, we explore the probability of parents being involved in leisure as a response to CTC expansion by breaking it down into several leisure activities: personal care, eating and drinking, socializing, sports and exercise, shopping, religious service, 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

¹³These 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.

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 where mothers residing in areas with higher exposure levels tend to increase their engagement in social activities. In contrast, the impact on fathers is relatively modest and lacks statistical significance. The disparity in the influence of CTC on recreational activities between genders remains apparent.

[Insert Table 2 Here]

6.3 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 a reduction in parental time (Kalil et al., 2023). To address this concern, we categorize the main childcare activities as basic, educational, and recreational child care. Given that children of different ages impose different time constraints on their parents as required investment levels vary across childhood (Cunha and 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 changes in their likelihood of engaging in activities like 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 presented by [Bastian and Lochner \(2022\)](#) in their study, where they 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 amount of childcare subsidy results in a relatively larger benefit for those with older children compared to 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]

6.4 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 the differing 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:

$$Y_{icdy} = \sum_{t=2008}^{2016} \gamma_t Intensity_c \times Lead_t + \sum_{t=2018}^{2021} \gamma_t Intensity_c \times Lag_t + \theta X_{icdy} + Weekend_{icdy} + Month_{icdy} + \lambda_y + \lambda_c + \lambda_{sy} + \varepsilon_{icdy}. \quad (3)$$

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 the trends related to childcare engagement, household tasks, and work, individually. During the pre-treatment period, there were no significant differences observed in these trends, which supports 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, implying that parents residing in regions with varying exposures followed similar trajectories before the CTC reform. Starting in 2018, we noticed a noteworthy decline in the likelihood of participating in childcare, and this negative trend continued for four 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, remaining close to zero thereafter.

[Insert Figure 2 Here]

7 Robustness Checks

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

7.1 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 increased expenses for childcare. 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 possible concern regarding the validity of estimation lies in the potential for the CTC expansion to 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 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.¹⁴ Results in Panel A show that the CTC reform does not affect the likelihood of individuals having children, does not alter the number of children they have and does not impact their 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 from 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.

7.2 Impact on Migration

CTC expansion could also incentivize individuals to relocate, thereby altering household compositions with 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 connect the respondents from the ATUS to the CPS and gather data on their migration status in the preceding year. The responses are categorized into three groups: whether individuals relocated within the same county, moved across counties within the same state, or moved across state

¹⁴According to [Kearney and 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.

boundaries. Similar to the analyses in Section 7.1, we added individuals with and without children, irrespective of their marital status, to 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.

7.3 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 ensure our results suffer less from the annual changes in socioeconomic conditions, we include year-fixed effects in all models so that our comparisons of regions with varying exposure to the reforms occur within the same year. In addition, our state-year fixed effects are used to account for variations in shocks at the state level. 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.

7.4 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 A1. Our findings suggest that the treatment intensity has a significant impact on the outcome variable, as the true coefficient is outside of the distribution. This indicates that our results are not spurious.

7.5 Alternative Intensity Measure: Share of Child-related Expenditure

Some may argue that our measure of intensity in Equation 1 may not precisely reflect the expenses associated with raising children, as not all families utilize center-based childcare services. Consequently, we explore a different measure to enhance our estimations and comprehensively account for the expenses associated with raising children. This alternate measure depends on the financial expenditures families allocate towards the needs of their children. 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.¹⁵ Thus, we re-estimate our sample using the following equation:

$$Y_{isd y} = \gamma ChildExp_s \times Post_y + \theta X_{isd y} + Weekend_{isd y} + Month_{isd y} + \lambda_y + \lambda_s + \varepsilon_{isd y}. \quad (4)$$

where $Y_{isd y}$ 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 2, $Post_y$ 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.¹⁶ Next, we divide the total childcare spending by the total expenditure at the state level. Similar to our initial intensity measure in Equation 1, we inversely compute this relative childcare expenditure, based on its percentile position compared to the maximum childcare expenditure. This results in a new intensity measurement, denoted by $ChildExp_s$, which 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.

¹⁵Refer to Lino et al. (2017) for an in-depth analysis of parental expenditures on children in the U.S.

¹⁶CES 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 on a quarterly basis, we aggregate data into an annual measure to align with our baseline estimations.

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' allocation of time. 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.

8 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.

8.1 By Education

Numerous studies have shown a positive correlation between parental, primarily maternal, education and 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 of almost all education groups with greater exposure generally reduced the amount of time they spent in childcare. Notably, this reduction in childcare time was found to be 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 education levels may be more inclined to engage in more substantial, 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]

8.2 By Race

Previous studies have indicated disparities in CTC recipients based on race and ethnicity (Pilkauskas and Cooney, 2021). To examine potential disparities in the amount of time parents dedicate to childcare based on their racial background, we perform a heterogeneity analysis and show 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 and 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]

8.3 By Family Income

Because CTC refundability is tied to earnings and tax liability, we expect a difference in childcare investment response to CTC expansion across the income distribution. To illustrate this, we divide the sample of parents according to the family's total annual income and estimate the effect of CTC expansion on parental time spent on childcare for each group.¹⁷ 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 away from time devoted to childcare. The relatively weak and imprecise effect among low- and high-income families

¹⁷Family 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.

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]

9 Conclusion

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

Several limitations are worth noting when interpreting our results. First, due to the lack of knowledge regarding the precise quantity of CTC credits allocated to each family, it is prudent to view our result as indicative of the intention-to-treat (ITT) effects, rather than

the treatment-on-the-treat (TOT) effects. This is predicated on our assumption that all parents living within a given locality are subjected to the same level of treatment exposure. It is important to note that the intensity of the treatment exclusively varies by county.¹⁸ Next, we lack measures for assessing the quality of social interactions during leisure activities, which prevents us from making observations about the extent to which parents' well-being improves as a result of enhanced socialization. Future research is needed to quantify how decreased time devoted to basic childcare due to exposure to CTC expansion influences children's short- and long-term outcomes. This could help policymakers better pinpoint where limited financial resources could be allocated to children in families who would benefit the most.

¹⁸Whether 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 as a whole, 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 $\times$ post	-0.2216* (0.1152)		-0.2178** (0.1065)	-0.2996** (0.1457)	0.1199 (0.0946)	-65.228 (43.885)	76.657 (54.591)	-12.553 (75.472)	-18.140 (31.667)	19.264 (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 $\times$ post	-0.294 (0.219)		-0.163 (0.138)	-0.103 (0.214)	0.066 (0.141)	-33.825 (76.307)	-9.340 (95.640)	54.515 (107.599)	-1.786 (54.187)	-9.565 (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 $\times$ post	-0.132 (0.090)		-0.224 (0.157)	-0.397** (0.185)	0.103 (0.160)	-123.907** (58.367)	144.863** (71.929)	-39.648 (87.725)	-10.876 (40.765)	29.567 (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 $\times$ post	-42.3758 (41.2110)	3.5385 (13.8091)	94.6936* (54.6269)	8.6479 (10.9420)	-11.5701 (11.8973)	-0.0787 (4.2399)	8.1071 (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 $\times$ post	22.8691 (64.7606)	3.4132 (25.5487)	2.5686 (82.1851)	20.9105 (19.2225)	-1.9858 (14.9374)	-1.1150 (11.1949)	-0.7879 (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 $\times$ post	-48.4622 (53.4499)	-3.5973 (15.2015)	271.7564*** (75.4688)	12.1081 (13.4897)	-16.3492 (18.3022)	-3.4990 (5.1793)	11.5262 (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 $\times$ post	-0.2892** (0.1449)	-0.3366*** (0.1266)	-0.0362 (0.1293)	0.1882* (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 $\times$ post	-0.1574 (0.1831)	-0.2040 (0.1789)	-0.1390 (0.2079)	0.2002 (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 $\times$ post	-0.6058*** (0.2327)	-0.6911*** (0.2349)	-0.2420 (0.2182)	-0.1061 (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 $\times$ post	-0.1078 (0.2757)	-0.0790 (0.2559)	0.2478 (0.1616)	0.0736 (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%.

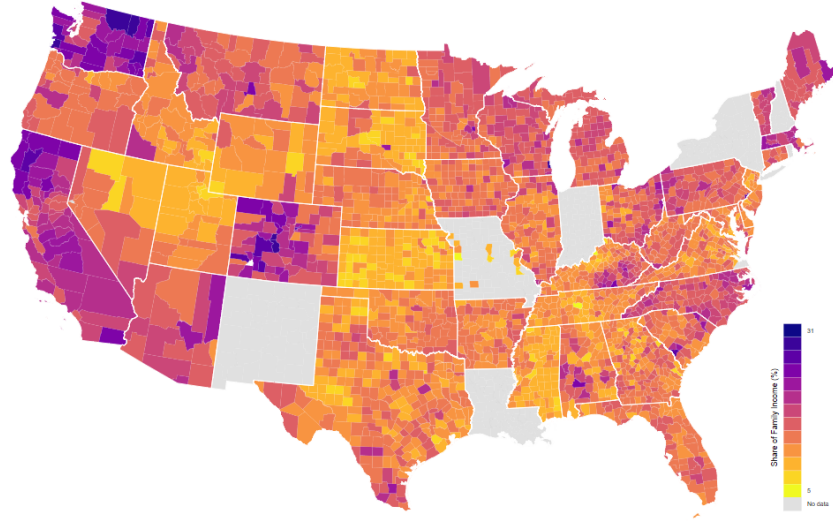


Figure 1: Percentage of Childcare Cost in Family Income

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.

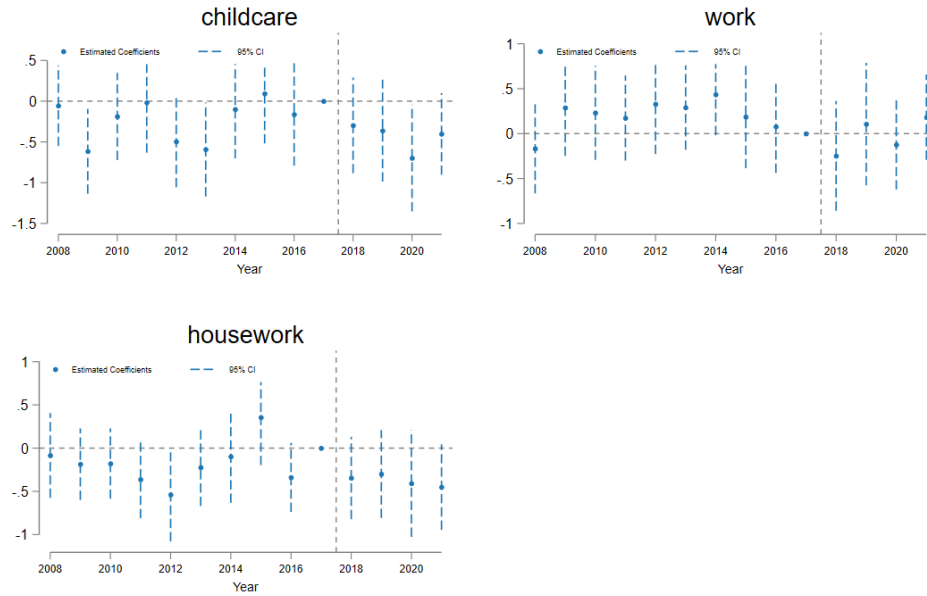


Figure 2: Event Study and Dynamic DD Results

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.

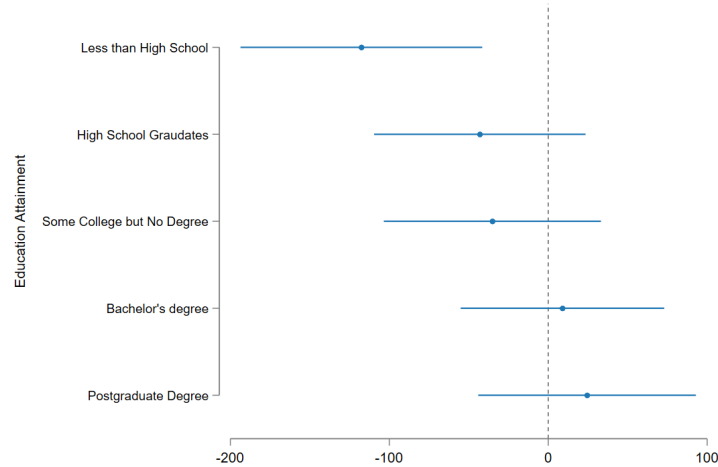


Figure 3: Impact of CTC on Time Allocated to Childcare by Parental Education

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.

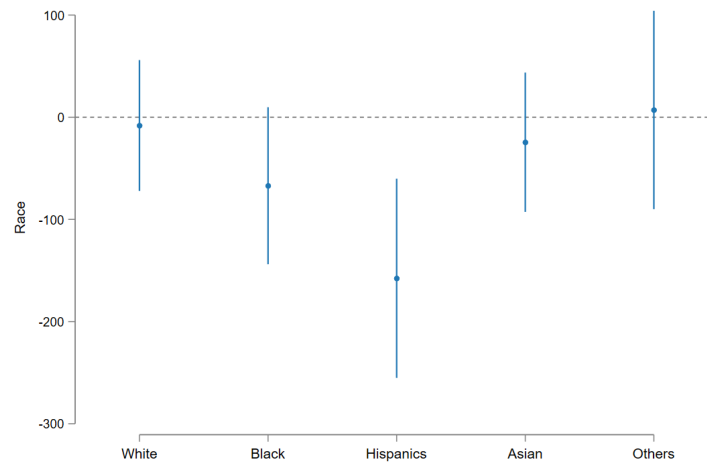


Figure 4: CTC's Impact on Time Allocated Childcare Activity by Race/Ethnicity

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.

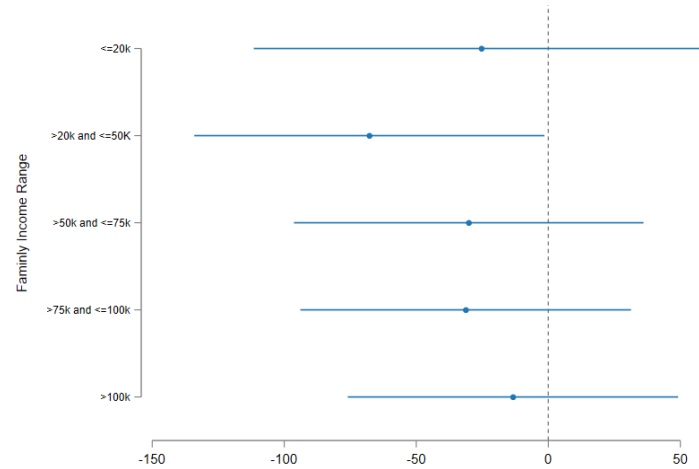


Figure 5: CTC's Impact on Time Allocated to Childcare Activity by Family Income

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 and Work-related Activity		Work, the main job	05.XXXX
		Travel related to working	18.05.XX
Child Care	Basic Child Care	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
		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
	Educational Child Care	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
		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
		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
	Recreational Child Care	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
		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		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
		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
Housework		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
		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
Leisure		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
		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					
<i>Probability of Engaging in a Specific Activity</i>					
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
<i>Amount of Time Spent in a Specific Activity</i>					
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
<i>Race Indicator</i>					
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
<i>Education Levels</i>					
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 (1)	Prob_Housework (2)	Prob_Work (3)
intensity $\times$ 2008	0.2221 (0.2784)	-0.0002 (0.2424)	-0.0460 (0.2565)
intensity $\times$ 2009	-0.3353 (0.2826)	-0.0841 (0.2112)	0.3558 (0.2854)
intensity $\times$ 2010	0.0401 (0.2753)	-0.1721 (0.2074)	0.1727 (0.2551)
intensity $\times$ 2011	0.2094 (0.3199)	-0.3524 (0.2261)	0.2505 (0.2446)
intensity $\times$ 2012	-0.3360 (0.3016)	-0.4593* (0.2639)	0.3788 (0.2876)
intensity $\times$ 2013	-0.5352* (0.2912)	-0.1934 (0.2203)	0.2536 (0.2747)
intensity $\times$ 2014	0.0852 (0.3060)	0.0300 (0.2633)	0.3586 (0.2373)
intensity $\times$ 2015	0.2723 (0.3374)	0.3795 (0.2675)	0.1129 (0.2623)
intensity $\times$ 2016	0.0236 (0.3139)	-0.2754 (0.1996)	0.0386 (0.2489)
intensity $\times$ 2017	.	.	.
intensity $\times$ 2018	-0.2846 (0.3069)	-0.3301 (0.2358)	-0.3589 (0.2997)
intensity $\times$ 2019	-0.2911 (0.3189)	-0.1549 (0.2612)	0.0740 (0.3201)
intensity $\times$ 2020	-0.4968 (0.3318)	-0.3417 (0.3161)	-0.1096 (0.2833)
intensity $\times$ 2021	-0.2480 (0.2893)	-0.4510* (0.2498)	0.1263 (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 (1)	Men (2)	Women (3)	All (4)	Men (5)	Women (6)	All (7)	Men (8)	Women (9)
Panel A: All Years									
intensity $\times$ post	0.0492 (0.0566)	0.0854 (0.0779)	-0.0073 (0.0759)	0.1885 (0.1618)	0.3653* (0.2158)	-0.0785 (0.2264)	-0.0575 (0.0993)	0.1002 (0.1405)	-0.1487 (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 $\times$ post	0.0106 (0.0646)	0.0207 (0.0952)	0.0058 (0.0847)	-0.0045 (0.1647)	0.1574 (0.2577)	-0.1616 (0.2120)	-0.0329 (0.1027)	0.1574 (0.1362)	-0.0832 (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 $\times$ post	-0.0649 (0.0558)	-0.1804*** (0.0691)	0.0557 (0.0470)	0.0049 (0.0160)	0.0336* (0.0195)	-0.0183 (0.0284)	0.0084 (0.0112)	0.0062 (0.0154)	-0.0091 (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 $\times$ post	-0.0821 (0.0782)	-0.2216** (0.0943)	0.0407 (0.0658)	0.0030 (0.0290)	0.0425* (0.0240)	-0.0237 (0.0584)	-0.0002 (0.0110)	-0.0061 (0.0164)	-0.0147 (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)

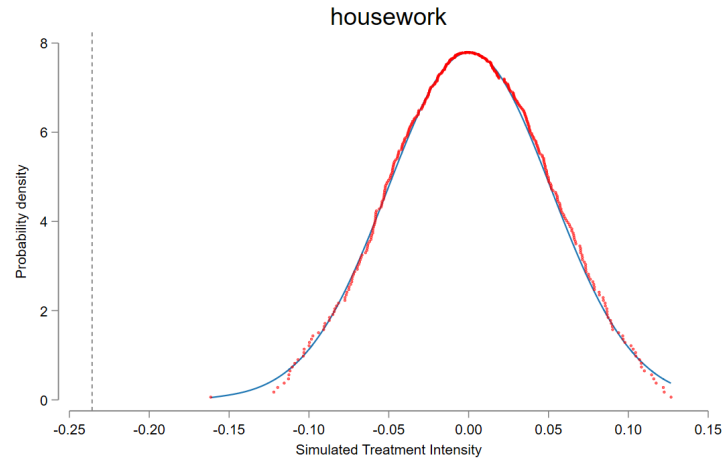
	Probability					Minutes Per Day				
	Housework (1)	Leisure (2)	Work (3)	Childcare (4)	Others (5)	Housework (6)	Leisure (7)	Work (8)	Childcare (9)	Others (10)
Panel A: All Parents										
intensity $\times$ post	-0.2429** (0.1068)		-0.1460 (0.1096)	-0.2147 (0.1589)	0.0784 (0.1132)	-70.882 (44.814)	67.481 (64.011)	14.494 (76.608)	-15.938 (30.768)	4.844 (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 $\times$ post	-0.454** (0.196)		-0.031 (0.159)	-0.001 (0.218)	0.024 (0.155)	-106.060 (74.419)	-24.735 (109.868)	117.889 (125.621)	20.457 (58.595)	-7.550 (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 $\times$ post	-0.067 (0.101)		-0.287* (0.163)	-0.352* (0.202)	0.073 (0.137)	-56.767 (58.394)	172.925** (80.740)	-85.399 (89.331)	-33.314 (43.650)	2.554 (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%.

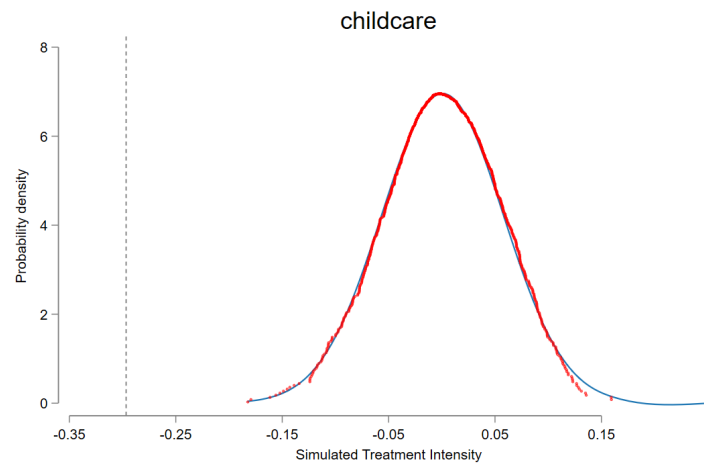
Table A7: CTC's Impact on Parental Time Allocation - Alternative Measurement (Probability)

	Housework (1)	Leisure (2)	Work (3)	Childcare (4)	Others (5)
Panel A: All Parents					
intensity $\times$ post	-0.0202 (0.0271)		-0.0532 (0.0383)	0.0188 (0.0254)	0.0127 (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 $\times$ post	-0.0001 (0.0486)		0.0411 (0.0812)	0.0508 (0.0616)	0.0010 (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 $\times$ post	-0.0296* (0.0172)		-0.1251*** (0.0268)	-0.0170 (0.0485)	0.0261 (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%.



(a) Housework



(b) Childcare

Figure A1: 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.