Income During Infancy Reduces Criminal Activity of Fathers and Children: Evidence from a Discontinuity in Tax Benefits

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This paper investigates the causal effect of providing income to low-income families just after childbirth on the criminal justice involvement of families. I employ a regression discontinuity design using the fact that children born to low-income families before year-end can be claimed as dependents on that year's tax returns, resulting in significantly larger tax refunds during the child's first year compared to families with January-born children. Utilizing linked administrative data on birth records and criminal justice involvement from a large U.S. metropolitan county, I find that eligibility for additional income during the first year of parenthood reduces the likelihood of a criminal charge for fathers by 1.2 percentage points (57%) within one year after childbirth. The effect persists for up to ten years after childbirth. The immediate decrease in criminal charges for fathers is particularly evident in income-generating offenses such as robbery, theft, as well as drug possession, and driving under the influence. The effect also extends to the criminal activity of children. Male children born before January 1 have a reduced likelihood of having any juvenile justice case during their teenage years and a reduced likelihood of incarceration in their adult years.

JEL: I38, H2, K14, K40

Keywords: Crime, Tax Credit, Parenthood, Early Childhood

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I. Introduction

A large body of research has established that early childhood investments, such as access to nutritional programs (Barr and Smith, 2021), education (Ludwig and Miller, 2007), Kindergarten Classroom quality and teacher (Chetty et al., 2011), health insurance (Goodman-Bacon, 2021), and cash transfers to mothers (Aizer et al., 2016), yield long-term positive effects on children's health, education, and employment prospects. Recent evidence suggests that providing cash assistance during a child's infancy, rather than later, reduces involvement with child protective services (Rittenhouse, 2023) and has positive effects on the long-term education and labor market outcomes of children (Barr, Eggleston and Smith, 2022; Cole, 2021). While there are the largest social returns from investment in early childhood development (Hendren and Sprung-Keyser, 2020), little is known about the channels through which cash transfers during infancy affect parents and whether reduced parental involvement in the criminal justice system is an important mechanism through which cash assistance improves household outcomes.

In this paper, I study the effect of cash transfers to low-income families around childbirth—an important transitional event that increases financial burdens and stress on those with limited resources—on parental interactions with the criminal justice system in the short run and child interactions in the long run. There are several reasons why additional cash after childbirth could influence the criminal justice involvement of families. The arrival of an infant brings about significant economic consequences, affecting parents' employment opportunities and increasing expenses, such as childcare and healthcare costs. Parenthood is linked to a sharp decline in family income around childbirth (Stanczyk, 2020) and is associated with deteriorating mental health (Ahammer et al., 2023). The availability of extra cash after childbirth not only helps meet financial needs, which can be spent on the child (Gennetian et al., 2022), but it can potentially reduce parents' interactions with the criminal justice system that might disrupt the household.

To examine the causal impact, I leverage a specific feature of child-related tax benefits that creates a discontinuity around a January 1 birthdate. Under the U.S. tax code, families can claim children born before December 31 on their tax return for the same year, while families with children born after January 1 must wait until the following year to claim a child on a tax return. Due to this discontinuity, similar families receive markedly different tax refunds because of the Earned Income Tax Credit (EITC) and Child Tax Credit (CTC). In 2015, this variation could represent a sum of as much as $4,359 for a family with one child.

I utilize several datasets to examine the long-term effects on parents and children. Specifically, I use rich administrative data from Allegheny County, a large U.S. metropolitan area covering the city of Pittsburgh, which links children's birth records to their parents and integrates information from various public agencies. This dataset spans birth records from 1999 to 2022 and includes data from Allegheny County's criminal and juvenile courts, jail system, and other county and state government agencies. By leveraging this linked data, I can track each child and their parents over time. I also assess the long-term effects on adult outcomes using data on prison records from the Florida Department of Corrections. As the third-largest state in the U.S. in both total and prison population, Florida offers external validity for examining the relationship between birth dates and incarceration.

I find that eligibility for additional income during the first year of parenthood decreases the likelihood of a criminal charge for fathers by 1.2 percentage points (57%) within one year of childbirth. As a result of the decline in criminal charges, the likelihood of fathers being incarcerated decreases by 27% within 2 years of childbirth. This reduction in criminal charges and incarceration persists for at least a decade after childbirth, which is the maximum period I can track these families for. These results suggest that cash transfers after childbirth help prevent new fathers from committing crimes, reduce the chance of incarceration, and help families stay together. For mothers, I find a non-significant decline in criminal activity in the immediate years after childbirth.

The reduction in criminal charges for new fathers is primarily concentrated in income generating offenses such as robbery, theft, drug possession, and driving under the influence, as well as petty offenses such as driving without a license. These results support the idea that cash transfers can reduce crime by addressing the underlying economic hardships (Deshpande and Mueller-Smith, 2022; Foley, 2011). In contrast to the findings of Riddell and Riddell (2006); Dobkin and Puller (2007); Foley (2011), I find that cash assistance, if provided during the early years of parenthood—a time of need and stress—can actually decrease drug and alcohol consumption, rather than increase it, and make fathers more responsible.

To characterize the effects of additional income on families, I estimate the relationship between eligibility for extra cash in the first year of parenthood and the financial needs of families by studying the effect on safety net program participation. Despite no change in eligibility for safety net participation at the January 1 child birthday cutoff, I observe an immediate decline

in household utilization of SNAP, TANF, and Medicaid among households with children born before January 1, consistent with lower financial needs. I investigate heterogeneity by the size of the transfer using the Tax Cuts and Jobs Act (TCJA), in which the Child Tax Credit (CTC) was expanded both in value (increased to $2,000 per child) and scope (covering families with incomes under $400,000 for married couples). I find that having a December-born child induces a larger decline in criminal activity among families with children born after the TCJA, suggesting that increasing the size of the additional cash in the first year of a child's life results in a greater reduction in criminal activity among fathers. Together, the evidence suggests that the decline in criminal activity within just a few years of parenthood among families with children born before January 1 can be explained by lower financial needs, a decrease in income-generating criminal activity, and fathers not engaging in drug, alcohol, and reckless driving-related crimes.

Using matched birth records of children and Juvenile Justice data from Allegheny County, I find that male teenagers born before January 1 have a reduced likelihood of having any juvenile justice case by age 13 (a decrease of 0.74 percentage points or 67% of the sample mean). Examining incarceration records from Florida, I find that cohorts born just before January 1 have fewer individuals incarcerated by age 25 compared to those born just after the cutoff. This suggests that children exposed to extra cash during infancy have a lower likelihood of engaging in criminal activities during their teenage and adult years. The impact on children could be explained by spillover effects from a decline in parents' criminal activity and various channels, including a lower likelihood of involvement with child protective services (Bullinger, Packham and Raissian, 2023; Rittenhouse, 2023), as well as positive effects on education and earnings (Barr, Eggleston and Smith, 2022; Cole, 2021).

I contribute to two strands of literature. First, there is a growing body of evidence documenting that cash transfers to parents around childbirth (Barr, Eggleston and Smith, 2022; Cole, 2021; Rittenhouse, 2023) reduce involvement with child protective services and have a positive effect on children's education and earnings[1]. I contribute by investigating the underlying mechanisms through which cash transfers around childbirth improve children's lives. My findings suggest that a reduction in criminal involvement and the incarceration of new fathers may be mechanisms that prevent household disruption. Studying the effects on parents is crucial because the long-term outcomes of children are heavily influenced by the parental environment, including factors

[1]Several other studies have examined the effects of other cash transfer programs (Bastian and Michelmore, 2018; Bullinger, Packham and Raissian, 2023; Aizer et al., 2016) and in-kind early childhood interventions (Barr and Smith, 2021; Hoynes, Schanzenbach and Almond, n.d.; Ludwig and Miller, 2007; Goodman-Bacon, 2021) on children's lives.

such as parental alcoholism and substance abuse (Chatterji and Markowitz, 2001; Balsa, 2008; Cunningham and Finlay, 2013), parental job loss (Rege, Telle and Votruba, 2011; Schaller and Zerpa, 2019), parents absence (Lyle, 2006).

Second, I build upon a substantial body of literature that explores the impact of safety nets on crime. Previous studies have examined the effect of various safety net programs, including health insurance (Arenberg, Neller and Stripling, 2020), food stamps (Tuttle, 2019; Yang, 2017; Barr and Smith, 2021; Bailey et al., 2020), TANF ban (Luallen, Edgerton and Rabideau, 2018), minimum wage, and EITC (Agan and Makowsky, 2018), on incarceration and criminal recidivism. These studies have also explored how the timing of benefit receipt influences patterns of criminal activity (Carr and Packham, 2019; Dobkin and Puller, 2007; Foley, 2011). I contribute by studying the previously unexplored early post-childbirth cash assistance. My findings reveal that shifting the cash benefit timing one year earlier—where December-born children become eligible a year earlier but become ineligible at age 18, a year earlier than January-born children—yields greater benefits for parents compared to receiving the cash one year later.

In essence, this policy does not provide additional cash to low-income individuals; instead, it shifts the timing of benefits a year earlier. Based on my findings that this temporal adjustment of cash transfers can reduce parental involvement in the criminal justice system and enhance long-term outcomes for children, the government should consider maintaining the practice of allowing families to receive a portion of the child-related credits in advance, as permitted under the American Rescue Plan Act of 2021. The rest of the paper proceeds as follows: Section II discusses the background of the policy and the conceptual framework through which extra cash in the first year of parenthood could affect criminal activity. Section III describes the data and presents statistics on several datasets I utilize in the study. Section IV presents and discusses the empirical strategy. Section V presents the main results on the effect of extra cash after childbirth on criminal activity. Section VI provides evidence on mechanisms, and Section VII provides robustness checks. Section VIII discusses the results and concludes.

II. Background and Conceptual framework

A. *Tax Credits*

Families with children qualify for various tax credits from both federal and state governments. These include the Earned Income Tax Credit (EITC), the Child Tax Credit (CTC), personal exemptions for dependents, and the Child and Dependent Care Credit for eligible families. According to the U.S. tax regulations, families with children born on or before December 31 are permitted to include those children in their tax filings for that year. In contrast, families whose children were born on January 1st or later must defer claiming their children on their tax returns until the following tax year. All children are eligible to be claimed for the same total number of years irrespective of the date of birth, but childbirth before December 31 results in a temporal shift in the receipt of benefits. This temporal shift could result in up to an additional $4,359 in the first year for a one-child family (using the year 2015 EITC and CTC parameters).

Earned Income Tax Credit

The Earned Income Tax Credit (EITC) was adopted in 1975 with an initial credit of 10 percent of earnings, capped at $400 for taxpayers with children. It was gradually phased out at a rate of 10 cents per dollar of earnings (or adjusted gross income, whichever was higher) for incomes falling between $4,000 and $8,000. In 1993, the Omnibus Budget Reconciliation Act of 1993 (OBRA-93) brought significant changes to the EITC. The credit rate was increased to 40 percent of earnings for families with two or more children and 34 percent for families with one child. Additionally, for the first time, it provided a 7.65 percent credit to childless taxpayers with low incomes. The EITC is refundable, which means that families with little or no income tax liability receive a refund check from the Treasury. In 2015, a low-income family with one child could receive up to $3,359 as the EITC every year [2].

Previous studies have found that the Earned Income Tax Credit (EITC) increased the labor supply of single mothers (Eissa and Liebman, 1996; Meyer and Rosenbaum, 2000, 2001; Eissa, Kleven and Kreiner, 2008; Bastian and Michelmore, 2018; Bastian, 2020), helped reduce poverty (Hoynes and Patel, 2018), increased educational attainment (Manoli and Turner, 2018; Bastian

[2]Source: https://www.taxpolicycenter.org/statistics/eitc-parameters

and Michelmore, 2018; Dahl and Lochner, 2017; Chetty, Friedman and Rockoff, 2011), reduced criminal recidivism (Agan and Makowsky, 2018), and improved children's health (Braga, Blavin and Gangopadhyaya, 2020; Hoynes, Miller and Simon, 2015).

Child Tax Credit

The Child Tax Credit (CTC) was established by the Taxpayer Relief Act of 1997, offering a credit of $500 per child under the age of 17. In 2001, the credit value was raised to $600, and by 2003, it had further increased to $1,000. In addition, the 2001 tax cut made the CTC partially refundable for families with modest earned income and little or no income tax liability. In 2004, the subsidy amount was elevated to 15%, and in 2009, during the Great Recession, the nominal threshold amount was reduced to $3,000 as part of economic stimulus legislation. The 2017 Tax Cuts and Jobs Act (TCJA) made some adjustments to the CTC. It lowered the threshold slightly to $2,500 and increased the total credit available to $1,400 per child, or $2,000 for nonrefundable credits.

B. Conceptual Framework

There are several potential ways that extra cash during a child's infancy could affect the criminal justice outcomes of families. In this section, I discuss a few channels and examine the expected direction and persistence of the effects. I discuss them later in the Mechanism Section VI. It is important to note that families with a December-born child receiving cash transfers (EITC and CTC) a year earlier than families with a January-born child do not experience changes in the price of work or the price of hours supplied. Therefore, there is no change in labor supply due to price changes, and all observed effects result from pure income changes, which can influence a host of variables in both the short and long run.

1) **Income Effect**: The income effect results from an increase in transient income during the first year of parenthood. Income can affect the consumption of various childcare and health-related services (Gennetian et al., 2022). Criminal justice involvement of parents can respond to additional resource availability in various directions, depending on whether these additional resources address economic hardship or increase consumption of temptation goods, thereby exacerbating crime.

Furthermore, income can affect employment, hours, and earnings. In my sample, I do not observe labor market outcomes of parents. However, existing studies examining a similar tax discontinuity found ambiguous effects of the Jan 1 child birthday tax discontinuity on labor market outcomes of parents. Using administrative tax data and restricting the analysis to married couples, Mortenson et al. (2018) found no effect on adjusted gross income, household wages, mother's wages, or father's wages, suggesting no income effect of the tax discontinuity on employment. Using the SIPP data, Shirley (2020) found that unmarried women with children born before Jan 1 had higher earnings and worked more hours in the first year after childbirth than unmarried mothers with children born after Jan 1, suggesting a positive income effect on employment. However, using the American Community Survey data, Wingender and LaLumia (2017) found that mothers with children born before Jan 1 were more likely to be out of the labor force in the third month following birth than mothers with children born after Jan 1, suggesting a negative income effect on employment.

2) **Long-term and Spillover effect**: Long-term effects could persist through various channels, including education, earnings, household structure, and short-term effects on criminal activity. For instance, parents with children born before Jan 1 are more likely to get or stay married and have higher income streams Barr, Eggleston and Smith (2022). Children born before Jan 1 are less likely to be involved with child protective services Rittenhouse (2023) and experience long-term positive effects on education and earnings Barr, Eggleston and Smith (2022); Cole (2021). Furthermore, first-time involvement with the criminal justice system amplifies future criminal activity (Mueller-Smith and T. Schnepel, 2021; Agan, Doleac and Harvey, 2023).

III. Data, Sample Construction, and Descriptive Statistics

A. Allegheny County Data

I leverage an administrative dataset obtained from the Department of Human Services of Allegheny County, a large U.S. metropolitan area, including the city of Pittsburgh, in the state of Pennsylvania. In 2022, Allegheny County had a total population of 1.2 million residents.

The sample for analysis includes all children born in Allegheny County within 90 days of

January 1, covering the period from October 1999 to December 2022. Through the use of birth records, the data links children and their parents. These sample children and parents are then linked to the county data warehouse, allowing me to observe their entire history of interactions with public institutions, such as the use of county public services, participation in safety-net programs, and involvement in the court and criminal justice system. The data warehouse pulls information from multiple sources, covering services from childhood to aging, including data from county jail, court records, public schools, Unemployment Insurance, Public Welfare, and more. It encompasses almost 1 million client records out of the total 1.2 million residents of Allegheny County [3].

Summary statistics are presented in Table 1. Panel A consists of data from birth records. Panels B and C consist of data from matching court and jail records. Birth records are available from October 1999 to December 2022, court records from December 2007 to December 2022, and prison records from October 1999 to December 2022. To study effect on criminal charges, I employ a sub-sample of parents whose first child is from birth cohorts spanning the years 2007 through 2022. To study effect on incarceration, I employ a sub-sample of parents whose first child is from birth cohorts spanning the years 1999 through 2022. The data also contain demographic information, including race, gender, ethnicity, and family structure. In total, the dataset encompasses records for 172,390 children and 248,314 parents. My primary outcome measures include an indicator for whether an individual has any criminal charge, the number of criminal charges, and whether they are incarcerated within a fixed time horizon from the date of childbirth.

B. Florida Department of Correction

The dataset obtained from the Florida Department of Corrections includes detailed information on incarcerated population, such as their name, race, exact date of birth, and, for stays associated with parole or probation, the years served. The dataset I have constructed integrates offense-level data, prison stay-level incarceration histories, and demographic information to form a comprehensive database wherein each entry corresponds to a distinct prison stay. This dataset includes individuals who have committed a felony, served a corresponding sentence in a Florida prison, and were subsequently released after October 1, 1997. Accordingly, my sample is confined

[3] Among my sample, 93% of the families never migrated out of Allegheny County. I discuss potential migration issues in the Robustness Section VII.

to offenses committed post-October 1, 1997. I then aggregate the incarceration records based on the date of birth, resulting in each observation in the final dataset representing a specific date of birth ranging from the years 1979 to 2000. Considering that our oldest cohort, born in 1979, will be age 17 in the year 1997 when data becomes available, and the youngest cohort (born in 2000) will reach the age of 22 in the year 2022, I investigate the effects across the age range from 18 to 42 to gain a comprehensive understanding of the relationship between eligibility for additional resources during infancy and involvement in the criminal justice system.

Furthermore, for robustness checks, I also calculate the rate of incarceration using the Natality data, which provides the count of births in the state of Florida by day and month of the year. However, there are two limitations with the rate and natality data. First, data specifically categorized by day of birth is only available until 1988. Second, due to high migration rates in Florida (66% of Floridians are not born in Florida), natality data does not count people born out of state and does not provide an accurate rate of incarceration. Nevertheless, to study the effect on the rate of incarceration, I select a sample of individuals from the Florida Department of Corrections who were born between 1979 and 1988.

IV. Empirical Strategy

This section presents my research design, validation exercises, and estimates of the additional cash value in the first years following childbirth.

A. Regression Discontinuity

My identification strategy employs a Regression Discontinuity (RD) design, exploiting the discontinuity in child-related tax benefits around a child's birthdate of January 1. This strategy is based on the idea that families with children born before January 1 benefit from higher tax credits and refunds than those with children born after this date[4]. This discontinuity reveals a temporal adjustment in benefit accessibility, wherein families of children born in December qualify for benefits a year earlier and, conversely, see their eligibility expire a year sooner than families of children born in January.

[4]This source of variation has been previously utilized in studies by LaLumia, Sallee and Turner (2015); Wingender and LaLumia (2017); Meckel (2015); Jones (2013); Cole (2021); Barr, Eggleston and Smith (2022); Rittenhouse (2023)

In particular, I estimate the equation:

$$Y_{it} = \alpha + \beta_0 D_i + \beta_1 Z_i + \beta_2 (D_i \times Z_i) + \theta_t + \epsilon. \tag{1}$$

Here the dependent variable Y_{it} represents the variable under study for the parent of the child i in the adjusted birth year t. Z_i denotes the numerical difference between the first day of January and the birthdate of the child i, with possible values ranging from -60 to 60. The binary variable D_i is assigned a value of one if the birthday of child i falls before the last day of December, and zero otherwise. Fixed effects for the adjusted birth year are denoted by θ_t, with clustering of standard errors at the Z_i level. The key parameter of interest, β_0, captures the intent to treat the effect of additional income during a child's infancy.

B. Instrument Validity

The validity of the regression discontinuity design is based on the presumption that birth dates are randomly distributed near January 1. This premise may be invalidated if parents intentionally plan childbirth around certain dates to gain tax advantages, or if healthcare providers show a tendency to avoid childbirth on significant U.S. holidays, like December 25 and January 1. December 25th and January 1st are also uncommon birthdays in other countries that celebrate Christmas and New Year, such as New Zealand, Australia, England, etc. A visual representation of the distribution of children, their fathers, and mothers with births around the end of the year is depicted in Figure 1. Figure 1 shows that there are fewer births observed on Christmas and New Year's Day; this pattern is also evident in other countries that have holidays on Christmas and New Year. Furthermore, Schulkind and Shapiro (n.d.) and LaLumia, Sallee and Turner (2015) find no effect of tax credits on birth timing manipulation, especially for first births."

To address potential concerns and align with established research methodologies (Barr, Eggleston and Smith, 2022), I use a "donut hole" regression discontinuity design. Specifically, I exclude observations within an eight-day window surrounding the January 1 cutoff, or in other words, $Z_i \in [-60, -8] \cup [8, 60]$ in equation 1. I conduct robustness tests by varying the choice of "donuts" and bandwidths in the Robustness Section VII. I also directly evaluate the assumption that the baseline characteristics of children born immediately before and after the cutoff are similar. In particular, I estimate Equation 1, wherein Y_i represents characteristics of the parents

of child i. The findings of these validity tests are presented in Tables A1, and the corresponding regression discontinuity plots are illustrated in Figure 2.

C. Interpreting Treatment Effect

In order to estimate the effect of birth date on extra cash available during first year of child's, previous research has estimated the average value of extra cash in first years of parenthood using both survey data and administrative tax data. Using the March CPS data, Cole (2021) estimate that the average tax benefit of having a child before January 1 is $2,150 for tax filers from 2000 to 2010. Using the ACS data, Rittenhouse (2023) estimate that the average tax benefit of having a child before January 1 is $2,150 for tax filers from 2000 to 2010. Using the tax data, LaLumia, Sallee and Turner (2015) estimate that the average benefit is $2,567 for the birth cohort of 1999-2018. Using tax data from 1981–82, 1986–87, and 1991–92, Barr, Eggleston and Smith (2022) estimate that the average tax benefit provided by a child is around $1,300.

Using the EITC and CTC parameters, Appendix Figure A1 presents the maximum value of EITC and CTC for childless and one-child families from years 1999-2021. To estimate the maximum credit a family with one child can claim in first year of child's life, I calculate the difference between the maximum value of tax benefits a family with one child can get and the maximum value of EITC that a childless adult family can get. The average amount of extra cash a family with one child can claim from 1999-2021 is up to $3,518, and I use this number to estimate the reduced-form estimates, providing a lower bound for the effect size. Furthermore, I also assume full take-up of the tax benefits. LaLumia, Sallee and Turner (2015) found that 85% to 90% of newborns born before Jan 1 were claimed on a tax return in the 2000s.

V. Results

This section provides the causal effect of being eligible for additional cash during the infancy of a child on criminal justice outcomes. Firstly, I explore the impact on the parents following the birth of their children. Subsequently, I estimate the effects on adult outcomes of individuals who were eligible for the extra cash during their infancy.

A. *Effect on Parents*

Figure 3 and Figure 4 present the primary outcomes for fathers and mothers within one year of their first childbirth. These outcomes are the likelihood of having any criminal case, the total number of criminal charges, and the likelihood of being incarcerated. Notably, Figure 3 reveals a clear increase in both the intensity and number of criminal charges for fathers situated to the right of the cutoff, where families are ineligible for additional cash during the first year of their child's life. However, I do not find any significant increase at the discontinuity for criminal justice outcomes within the first year of childbirth for mothers, as shown in Figure 4.

Table 2 presents point estimates and standard errors of β_0 from estimating Equation 1 on the criminal justice outcomes of fathers and mothers separately within 1 to 3 years of their first childbirth. Columns (1)–(3) show results for fathers, while Columns (4)–(6) show results for mothers. Panel A shows that having a first child born before January 1 decreased the likelihood of any criminal charge by 1.2, 1, and 1.3 percentage points within 1, 2, and 3 years of childbirth, equivalent to 57%, 25%, and 22% of the sample mean, respectively. Additionally, it resulted in a .49 percentage point decline in the logs of expected criminal charges within 1 year of childbirth, accounting for a 39% reduction in the number of criminal charges [5], and a 1.2 percentage point reduction in the likelihood of incarceration within 2 years, equivalent to 27% of the sample mean. Scaling by the average maximum value of the transfer ($3,518) implies a decline in the likelihood of a criminal charge by at least 16.2% per $1,000 provided in the first year of parenthood. Similarly, an extra $1,000 transfer during the first year of parenthood leads to an 11% decline in the number of criminal charges within 1 year of childbirth and any incarceration by 7.6% within 2 years of childbirth. Columns (4) and (5) of Table 2 show that for mothers, having a first child born before January 1 has a negative but statistically insignificant effect on the likelihood of any criminal charge, the number of cases, and the likelihood of incarceration at least within first three years of childbirth.

Additional cash during the first year of a child's infancy may not only affect short-term outcomes but also have long-lasting effects that persist for years. Therefore, I study the cumulative effect up to ten years after birth. In Figure 5 and Figure 6, I present point estimates of β_0 from estimating Equation 1 on cumulative outcome variables defined in years relative to childbirth

[5] Number of Criminal charge is a Poisson regression and percent change is calculated as $e^{-0.496} - 1$

at t=0. The time period on the X-axis to the left of time=0 represents cumulative years before childbirth, while to the right represents cumulative years after childbirth. Figure 5 shows that for fathers, having a first child after January 1 reduces the likelihood of criminal justice involvement in year 1, and this effect persists for a decade after childbirth. The number of criminal charges significantly declines in year 1 after childbirth, and the likelihood of incarceration significantly decreases in year 2 after childbirth. The effect of incarceration also persists for up to a decade after childbirth. This persistence can be attributed to the recurring nature of involvement in the criminal justice system and the high recidivism rate associated with criminal involvement. Early reduction in criminal justice involvement, especially during childbirth—a time of stress—may decrease the likelihood of long-term involvement. I will explore these issues in detail in the Mechaism Section VI

Figure 6 shows that for mothers, having a first child after January 1 reduces the long-term, likelihood of criminal justice involvement, with effects starting at 6 years after childbirth. For mothers, there is no significant effect on the number of criminal charges within the first eight years and incarceration within a decade after childbirth. Appendix figure A2 and figure A3 presents point estimates and a 95% confidence interval of β_0 from estimating Equation 1 on contemporaneous outcome variables for father and mother defined in years relative to childbirth.

Table 3 and Table 4 present the point estimates and standard errors from Figure 5 and Figure 6. Columns (1)–(5) report results for cumulative years -1 to -5 before childbirth, and Columns (6)–(15) report results for cumulative years 1 to 10 after childbirth. Panels A, B, and C show results for any criminal case, the number of criminal charges, and any incarceration. Across all the analyzed outcomes and for both fathers and mothers, I find no statistically significant effect on any criminal justice outcome during the five years preceding the birth of their first child. This absence of an effect suggests that there are no evident pre-existing trends in the criminal justice outcomes of parents who have a child born before and after January 1.

Furthermore, in Table A2, I present results while keeping the sample constant across time periods. I use birth cohorts from recentered years 1999 through 2022, for whom I observe the effects on parents' criminal justice outcomes from time period -3 to +5 after childbirth.

Heterogeneous Effects on Parents

I investigate variations in outcomes by examining heterogeneity across several dimensions: racial background, family structure, criminal charges prior to childbirth, and participation in safety net programs before childbirth. The outcome variables considered are any criminal case, the number of criminal cases, and any incarceration within 1 and within 2 years of childbirth.

Table 5 presents separate regression discontinuity estimates for different subsamples of fathers. I do not have information on the marital status of the father, as marital status is obtained from the birth record, which only reports the marital status of the mother. The first row, labeled "Main effect," presents the estimate for the full sample. In Panel A, I provide heterogeneity by race, where I conduct the analysis on two subsamples: White non-Hispanic parents and non-white races, with most of the latter being Black. I observed a larger decline in criminal charges for non-whites, with a reduction in the likelihood of any criminal charge by 2.4 percentage points for non-whites and 0.7 percentage points for Whites. The Coefficient of "White $\times$ belowcutoff" tests for differences in coefficients among white and non-white fathers. I find evidence of a larger decline among non-white fathers.

In Panel B, I restrict the sample to observe the five-year criminal case history of parents prior to childbirth, which reduces the sample size for all outcome variables. I then conduct a subsample analysis based on whether the parent had any criminal case within the five years preceding childbirth. I observed a larger decline in criminal charges for parents who had at least one criminal case within this five-year pre-childbirth window. In Panel C, I restrict the sample to observe the two-year safety net participation history of households prior to childbirth. Safety net participation is coded as 1 if the father belongs to a family that participated in SNAP, TANF, or Medicaid in the two years preceding childbirth, which serves as a proxy for very low-income families. I observed a larger decline in criminal charges for fathers who belong to very low-income households.

In Appendix Table A3, I conduct a similar heterogeneity analysis on mothers in my data. When comparing point estimates, I do observe a larger decline for non-white mothers compared to white mothers, for married women compared to single women, for mothers with a criminal history in the five years preceding childbirth compared to those with no history, and for women in very poor families. However, the effect is statistically insignificant for all the subgroups of

the population considered.

B. Effect on Children

I utilize Allegheny County birth records and Juvenile Justice data to examine how eligibility for additional resources during the first year of life affects the likelihood of involvement in juvenile justice outcomes. My analysis begins with children born between 1999 and 2010, adjusts the sample size by age, and tracks children from ages 10 to 21. I exploit the fact that, due to the discontinuity in tax policy, children born before January 1 have larger after-tax income during their infancy compared to children born after January 1.

Figure 7 displays point estimates and a 95% confidence interval for β_0 when estimating Equation 1 for cumulative juvenile justice outcomes among male and female children aged 10 to 21. The X-axis represents the age of the child. In Panel (a) of Figure 7, I observe that male teenagers born before January 1 have a lower likelihood of having any juvenile justice case by age 13, and this effect persists until at least age 20. Table 6 provides point estimates, standard errors, and mean outcomes for male and female children separately. The findings suggest that the provision of additional resources during the first year of life reduces the probability of male children having any juvenile court case by age 13 by 0.74 percentage points (67% of the sample mean). In Panel (b) of Figure 7 and Table 6, no significant effect is found for female teenagers at any age.

Does the decline in juvenile justice involvement also persist in the adult criminal system? Since there is insufficient data to observe their long-term outcomes in the Allegheny County dataset, I investigate the impact on adult criminal justice outcomes using data from the Florida Department of Corrections. The approach involves categorizing incarceration records by date of birth, ensuring each data point corresponds to a unique birth date. Figure 8 illustrates the incarceration rates by age 20 for individuals born within a 60-day span around January 1, covering births from 1979 to 2000 in Florida. Notably, a birth date falling to the left of the dotted line indicates potential eligibility for increased child-related tax benefits in the subsequent year. Figure 8 clearly demonstrates a significant increase as we cross the eligibility threshold.

I plot these regression discontinuity estimates for all individuals aged 18-30 in Figure 9. It is evident that there are fewer individuals born before January 1 who are incarcerated by the

age of 18, and this effect persists up to the age of 25. Table 7 presents point estimates and standard errors of β_0 obtained through the estimation of Equation 1 for incarceration rates among individuals aged 18-30. In Panels A and B, the sample comprises individuals born between 1979 and 2000 who were incarcerated in the state of Florida. Panel A involves a Poisson regression analysis of the number of individuals incarcerated by age 18-30, while Panel B employs linear probability regression on the logarithm of the number of individuals incarcerated by age 18-30. By combining this with Natality data, I compute the percentage of individuals born on a given day who have been incarcerated. Panel C shows point estimates for the incarceration rate with the sample limited to individuals born between 1979 and 1988. Across all specifications, I find that being born before January 1 reduces the likelihood of being incarcerated by age 20 by 0.67 percentage points (19%), and this effect persists until age 25.

VI. Evidence on Mechanism

My finding that the criminal justice involvement of fathers with a child born before Jan 1 sharply decreases in the first year of childbirth suggests an immediate effect of the increase in transient family income via tax credits. The long-term effect on the criminal justice involvement of parents and adult children can result from both the transient income effect and the spillover effect through pathways such as education, earnings, household structure, and first-time effects on criminal activity. In this section, I focus on other intermediary outcomes related to the income effect that have not been studied before. These short-run intermediary effects could also potentially serve as further mechanisms to explain the effects on long-term and persistent outcomes for both parents and children.

A. Financial Need of the household

To measure the financial need of the household after childbirth, I study the effect on participation in safety net programs such as TANF, Medicaid, SNAP, and SSI. TANF provides short-term cash assistance to low-income parents of dependent children, SNAP provides vouchers used to purchase food, SSI provides monthly cash payments to people who are 65 or older and individuals of any age (including children) who are disabled, and Medicaid provides free or low-cost health insurance to low-income individuals. The safety net programs I study are independent of the Jan 1 child birthday cutoff, and the additional income via child tax credits

does not affect eligibility of these safety nets. Therefore, any change in safety net participation for families having a child before or after Jan 1 suggests a change in needs rather than eligibility.

Table 8 shows the effects on extensive margin and intensive margin participation (Months of participation) of families in the means-tested safety net programs from year 1 to 3 years after childbirth [6]. Families with children born before January 1 have a significant reduction in participation in TANF, Medicaid, and SNAP within one year of childbirth. I do not find an effect on SSI, which is consistent with the fact that SSI is not a program for parents with children but for disabled and older age individuals. While parenthood among low-income families is associated with increased use of government assistance programs (Eichmeyer and Kent, 2022), the immediacy of the decline for households having childbirth before Jan 1 supports the notion that the decline in safety net use is due to lower financial needs among families with childbirth before Jan 1.

B. Heterogeneity by type of Crime

I examine the impact on the nature of criminal charges within the first to third years following childbirth, positing that if the immediate influence on criminal justice outcomes is largely driven by an increase in income, eligibility for additional financial support just after childbirth should result in a more pronounced decrease in charges primarily motivated by the need for income.

For the sample period from 2013 to 2022, I can observe the types of criminal charges and incarceration. I study the effects on various offenses, including robbery, drug distribution, theft, fraud/forgery, prostitution, non-robbery violence, drug possession, driving under the influence (DUI), and motor vehicle-related offenses such as reckless driving and failure to follow driving rules. Due to data availability, the sample size is smaller than in the main effect table, which reduces the statistical power for studying the persistence of effects on the types of criminal activity.

Table 9 shows the effect of having a child born before Jan 1 on different crime categories, both at the extensive and intensive margins, within 1 to 3 years of childbirth for fathers. It demonstrates that the decline in criminal charges is significant and substantial for robbery. The effect on robbery operates both at the extensive margin (any robbery charge) and intensive

[6] I analyze participation in the safety net programs at the household level because the additional income effects affect households, and TANF and SNAP are household-level programs.

margin (the number of robbery charges). Additionally, I find a significant effect on the number of theft charges. I also find a negative significant effect on drug possession, driving under the influence, and motor vehicle-related charges for fathers, suggesting that as fathers become more responsible after childbirth (Dustmann and Landersø, 2021), providing extra cash keeps them away from drugs and alcohol.

A general argument against cash transfers is that the additional cash may be spent on drugs and alcohol. My findings suggest that additional cash during the first year of parenthood deters fathers from engaging in drug and alcohol-related criminal activity. The negative effect on motor vehicle-related charges, which include reckless driving, being uninsured, and driving without a license, suggests that extra cash helps fathers become more responsible after parenthood.

In the appendix, Table A4 presents the study's effects on the type of charges during incarceration. I find a similarly significant negative effect on robbery, drug possession, and motor vehicle-related incarcerations. This pattern suggests that the decline in fathers' criminal justice involvement within 1-3 years after childbirth is mainly driven by income-generation motives. The long-term decline in both children and parents can be explained by other channels as well. For example, parents' incarceration may lead to children becoming involved with child protective services, adversely affecting their human capital development and increasing the propensity to commit crimes in adulthood.

C. Effect of Child Credit Tax Expansion after 2017 Tax Cuts and Jobs Act (TCJA)

The Tax Cuts and Jobs Act (TCJA), enacted in December 2017, introduced comprehensive modifications to the U.S. individual income tax framework. These modifications includes changes to itemized deductions and the alternative minimum tax, an augmentation of the standard deduction and child tax credit (CTC), along with a reduction in marginal tax rates across all brackets. Specifically regarding the CTC, the TCJA implemented several key expansions: the maximum credit amount per child was increased from $1,000 to $2,000. Concurrently, the refundable portion of the credit saw an increase, albeit with a cap at $1,400 per child. Additionally, the TCJA made the CTC accessible to higher-income families by significantly raising the income thresholds for the credit's phase-out. Post-TCJA, the credit begins to diminish at a rate of 5 percent of the adjusted gross income exceeding $200,000 for single parents and $400,000 for married parents, compared to the previous thresholds of $75,000 for single parents and $110,000

for married parents, both subject to the same 5 percent reduction rate. As a consequence of these changes, the average tax benefit for most families witnessed an increase under the TCJA.

TCJA policy variation aids in studying the impact of increasing child-related tax benefits on criminal justice involvement. As the Child Tax Credit (CTC) expanded in terms of credit size and coverage under the Tax Cuts and Jobs Act (TCJA), and if the financial channel explains the income effect on criminal activity, we would anticipate observing a larger reduction in criminal activity among individuals who receive larger child-related tax benefits in the first year of a child's life. To test this hypothesis, I redefine the study population based on whether families were covered by the TCJA or not during the first year of a child's life. The rationale behind this approach is to analyze the effect on subgroups of the population that experience a greater increase in income during the early years of parenthood.

The TCJA became effective in the year 2018, and the first tax-related effects became noticeable in 2019 when families received refunds for their 2018 tax returns. I examine the impact on two subgroups: families that had their first childbirth from January 2013 to March 2018 and families that had childbirth from October 2018 to December 2022. In the former subgroup (childbirth from January 2013 to March 2018), families with childbirth before January 1 receive additional cash in the first year of the child's life but are not affected by the TCJA during that period. In contrast, in the latter subgroup (childbirth between October 2018 and December 2022), families with childbirth before January 1 receive a larger refund in the first year of the child's life, which is further amplified by the expanded Child Tax Credit (CTC) under the TCJA. Table 10 presents the effect on criminal charges and various categories of criminal charges at the extensive and intensive margin. The outcome variable is shown in the first column, the effect before the TCJA is shown in columns (1)–(3), and the effect after the TCJA is shown in columns (4)–(6). Note that the sample size is reduced due to further restrictions on the birth dates of children.

For our main outcome variable of having any criminal charge and the number of criminal charges, I find a larger and statistically significant effect for families with children born after the TCJA became effective. For the other outcomes considered, I find a similar decrease in robbery charges and a more substantial reduction in drug possession, DUI charges, and motor vehicle-related charges for fathers eligible for extra cash during their child's infancy after the TCJA compared to those eligible for extra cash during their child's infancy before the TCJA. This evidence suggests that the decline in criminal justice involvement is indeed due to the income

effect, where increasing the size of the additional cash in the first year of a child's life results in a larger decline in the criminal justice involvement of fathers.

VII. Robustness

A. Robustness

To validate the stability of my main findings, I employ various methodologies. First, I examine robustness to alternative bandwidths and donut sizes. Second, I estimate effects separately for parents after the third or higher-order childbirth. Third, to address the concern that longer-term effects may be driven by differences in migration of parents around the Jan 1 child birthday cutoff, I show evidence of low migration, no selective migration, and estimate effects on parents who never migrate. Finally, I discuss other Jan 1 cutoffs.

Alternative Bandwidth and Donut Size

In order to test robustness of the results, I re-estimate Equation 1 with alternative bandwidths and donut sizes. Panels (a), (b), and (c) in Figure A4 depict these outcomes. In Panel (a) of Figure A4, I present point estimates and a 95% confidence interval for β_0 when estimating Equation 1, which examines the likelihood of a father having any criminal case relative to childbirth at t=0. The bandwidth used is 35 days, and the donut size is 7 days. Panels (b) and (c) display the regression discontinuity coefficients along with 95% confidence intervals for the considered outcome, which is having any criminal case within one year of childbirth. Panel (a) varies the bandwidth from 30 to 90 days with a fixed 7-day donut size, while Panel (b) varies the donut sizes from 0 to 10 for a fixed 60-day bandwidth. The results demonstrate consistency across different bandwidths and donut sizes, suggesting the stability of the estimated effects.

Effect after third on higher order born Children

Table A2 presents the results obtained by estimating Equation 1 for parents' involvement in the criminal justice system within 1-3 years following the birth of their third or higher-order child. The effects observed for higher-order births are statistically insignificant. Up until 2010, the Earned Income Tax Credit (EITC) and Child Tax Credit (CTC) increased in value for

the first two-born children and remained constant for the third or higher-order child. This observation aligns with the lower average tax benefits for third or higher-order-born children, as the additional income may be divided among more family members. It is also plausible that the impact of additional income is more pronounced during the critical transition period to parenthood compared to the births of higher-order children.

Controlling for Migration

Two potential issues with the analysis could be selective out-migration and in-migration of families with children born before Jan 1. If that is the case, I may be observing the effect of migration (i.e., not counting those people in the court and prison records) rather than the effect on criminal justice involvement. First, my dataset only includes families with children born in Allegheny County. Therefore, I do not take into account people who moved into Allegheny County after childbirth and control for in-migration.

Second, to address the potential issue of out-migration, I match the parents in the birth records with the data warehouse created by Allegheny County. The data warehouse pulls data from multiple sources, covering services from childhood to aging, as well as county jail, court, school, Unemployment Insurance, Public Welfare, etc. Moreover, these data sources cover only people residing in Allegheny County. The data warehouse includes almost 1 million client records out of the total 1.2 million residents of Allegheny County. For all the analyses, I restrict the sample to people who can be found in the data warehouse (indicating Allegheny County residency).

Furthermore, in my sample, 93% of people in the birth records never exit the data warehouse through the end of 2022 (remaining Allegheny County residents until the end of 2022). I test for discontinuity in the families leaving Allegheny County by estimating Equation 1 on the likelihood of families never moving out of Allegheny County. In Panel A of Figure A5, I present a regression discontinuity plot showing no change in the likelihood of moving out of Allegheny County for parents at either side of the Jan 1 child birthday cutoff. In Panel B of Figure A5, I restrict the sample to fathers who always reside in Allegheny County and present point estimates of β_0 from estimating Equation 1 on cumulative outcome variables defined in years relative to childbirth at t=0. The results are similar to the main effects in Panel A of Figure 5, suggesting robustness to migrating out of Allegheny County.

Other cutoff around Jan 1

Parents' decisions are not affected by the child's birthday; therefore, it is unlikely that parents with children born before and after Jan 1 will be affected in any other way except for the additional tax credit during the first year of parenthood.

Children can be affected by school cutoffs. However, in Allegheny County and the state of Florida, the age cutoff for school admission is September 1st during my sample period. In Pennsylvania, the age cutoff for kindergarten admission varies by school district, but the state generally recommends that children entering kindergarten should be at least five years old by September 1st of the school year. The majority of school districts adhere to a September 1st cutoff, while a few have alternative cutoff dates such as August 15th or August 31st. Notably, no school district employs a January 1st cutoff. This indicates that there is no other discontinuity associated with a January 1st birthday for children, except for tax credit eligibility. In the state of Florida, since the 1983 school year, the cutoff date for Kindergarten eligibility has been September 1st. Children must be five years old by September 1st to be allowed to enroll, which means that September 1st was the school-age cutoff applicable to children born in 1978 or later, the birth cohort I use in my analysis.

VIII. Discussion and Conclusion

This paper examines the immediate and long-run impact of augmenting the income of economically disadvantaged parents shortly after childbirth—when financial needs are acute and stress levels are high—on their criminal activity. I leverage a discontinuity in eligibility for US child-related tax benefits around the January 1 birthdate, resulting in significantly different tax refunds for otherwise similar families during the first year of parenthood. Using administrative data from Allegheny County in Pennsylvania, I find that this income transfer during infancy sharply reduces parents' engagement with the criminal justice system post-childbirth. Specifically, it decreases the likelihood of a criminal charge for fathers by 1.2 percentage points (57%) and reduces the number of criminal charges by 39% as early as one year after childbirth. Importantly, these effects persist for up to a decade post-childbirth. Additionally, children benefiting from this financial windfall during infancy are less likely to have juvenile justice involvement in their teenage years and have decreased involvement with the adult justice system as well.

The immediate decline in criminal charges for fathers is concentrated in robbery, theft, drug possession, and driving under the influence charges. Furthermore, despite no change in eligibility for safety net participation at the January 1 child birthday cutoff, I observe an immediate decline in household utilization of SNAP, TANF, and Medicaid among households with children born before January 1, suggesting lower financial needs. Investigating the heterogeneity by the size of the transfer after the 2017 CTC expansion, I observe a larger decline in criminal activity among families with children born after the CTC expansion, suggesting that increasing the size of the additional cash in the first year of a child's life results in a greater reduction in criminal activity among fathers. Together, the evidence suggests that the decline in criminal activity within just a few years of parenthood among families with children born before January 1 can be explained by lower financial needs, a decrease in income-generating criminal activity, and fathers not engaging in drug, alcohol, and reckless driving-related crimes. Contrary to the argument that cash transfers can increase the use of temptation goods, I provide evidence that providing extra cash promotes responsible behavior among fathers by decreasing drug and alcohol use.

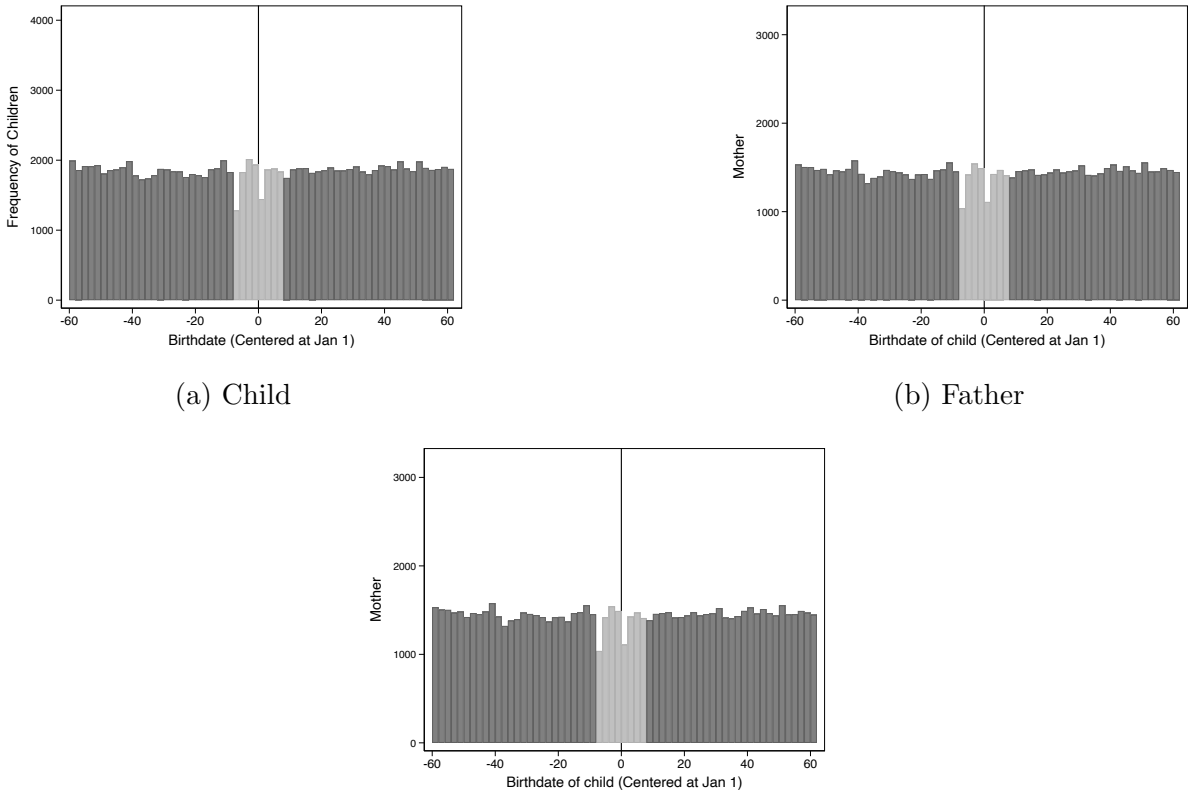
Using Hendren and Sprung-Keyser (2020), Barr, Eggleston and Smith (2022) calculate the Marginal Value of Public Funds (MVPF), a ratio of the benefits to net government costs. Barr, Eggleston and Smith (2022) calculates a discounted stream of future tax receipts attributable to heightened earnings in adulthood and finds that these receipts are larger than the initial transfer's value, suggesting a net negative cost and an infinite marginal value of public funds. I find additional evidence that the net savings from the policy are observed in the first year as well by lowering the incarceration and judiciary costs associated with the criminal charges of fathers, decreasing the time frame in which the policy pays for itself.

In principle, the policy is not providing extra cash to low-income people but rather shifting the timing of the benefits a year earlier. Regardless of their date of birth, all children are eligible to be claimed for the same cumulative number of years. However, children born before Jan 1 can be claimed from age 0 to age 18, whereas children born after Jan 1 can be claimed from age 1 to age 19. This paper, along with Barr, Eggleston and Smith (2022), Cole (2021), and Rittenhouse (2023), suggests that providing cash transfers immediately after childbirth, rather than later, can substantially improve family outcomes both in the immediate years (1-2 years after childbirth) as well as in the long term. Given that the poverty rate for children more than doubled from 2021 to 2022, the American Rescue Plan's Child Tax Credit increase is set to expire, and childcare costs are rising, my findings have significant policy implications for low-

income parents. Under the American Rescue Plan Act, families were able to receive half of the money available to them sooner through monthly advances. My paper suggests that regardless of whether the child tax credit expansion becomes permanent, the government should consider continuing the practice of allowing families to receive a portion of the child-related credits in advance.

Figures and Tables

Figures



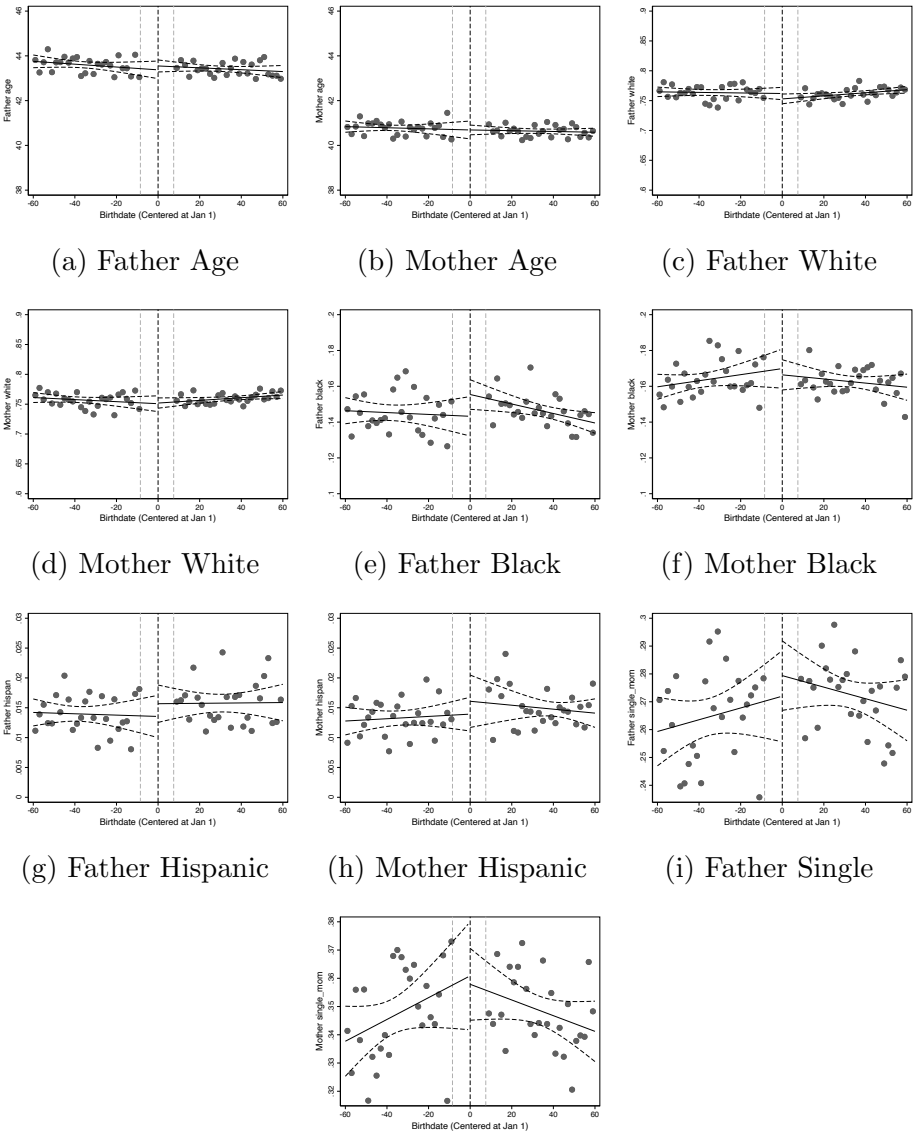
(a) Child

(b) Father

(c) Mother

Figure 1. : Distribution of Number of Children, Father, and Mother by Birthdates of Child

Note: Panel A presents the distribution of birthdates, adjusted to their proximity to January 1, for children born within a 60-day window surrounding January 1. Panels B and C display the distribution of fathers and mothers who have their child's birthdates (relative to January 1) within 60 days of January 1. The sample consists of children born between November 1999 and December 2022 in Allegheny County, along with their parents. Days within eight days of January 1 are represented in grey.



(a) Father Age (b) Mother Age (c) Father White

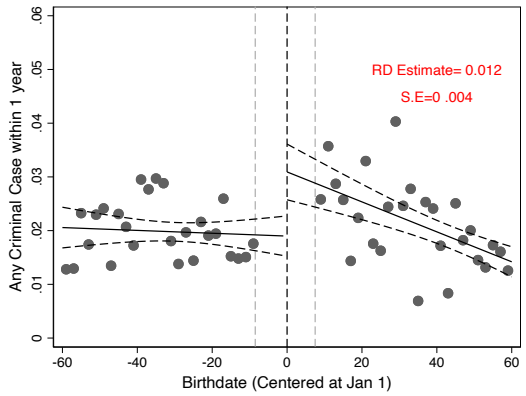
(d) Mother White (e) Father Black (f) Mother Black

(g) Father Hispanic (h) Mother Hispanic (i) Father Single

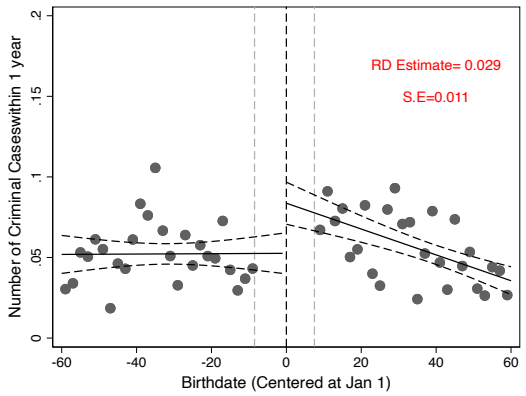
(j) Mother Single

Figure 2. : Regression Discontinuity Balance Plots

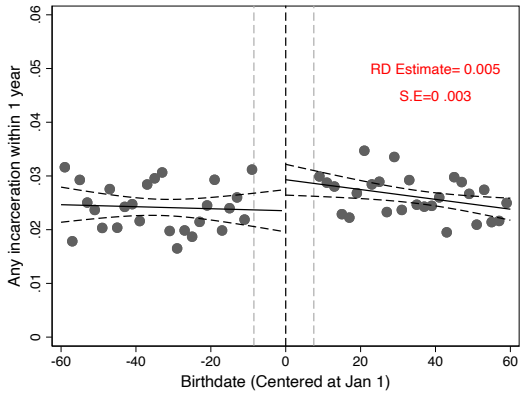
Note: The figure displays the average values of baseline covariates for fathers and mothers, corresponding to the child's birthdate relative to January 1, within a 60 bandwidth and excluding an 8 day donut. The sample consists of children born between November 1999 and December 2022 in Allegheny County. Birthdates located to the left of zero indicate instances where the families of the children might have been eligible for extra cash in the first year of the child's life.



(a) Any Criminal Case



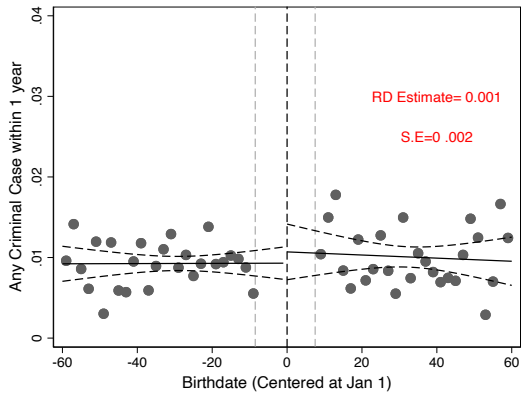
(b) # Criminal Cases



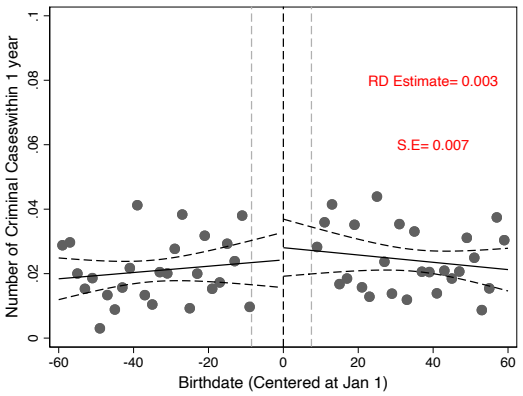
(c) Any Incarceration

Figure 3. : Father- Criminal Justice Involvement within 1 year of Childbirth

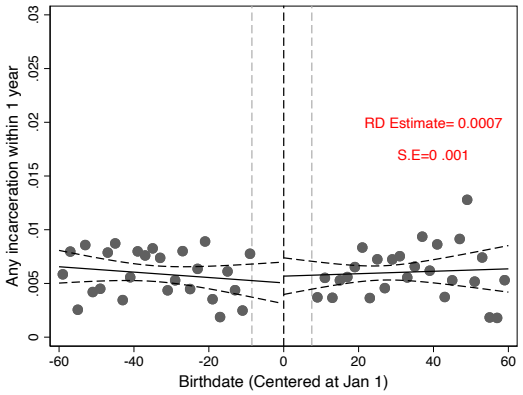
Note: The figure displays the mean outcome variable for fathers relative to the January 1 birthday of a child, within a 60 bandwidth and excluding an 8-day donut. The sample consists of children born between November 1999 and December 2022 in Allegheny County, along with their parents. Birthdates located to the left of zero indicate instances where the families of the children might have been eligible for extra cash in the first year of the child's life.



(a) Any Criminal Case



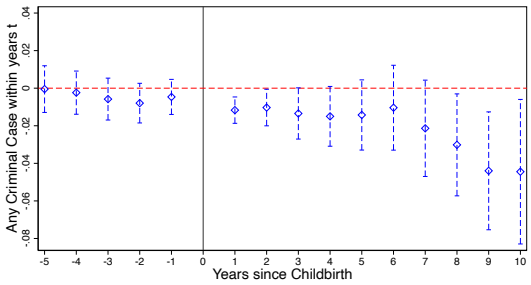
(b) # Criminal Cases



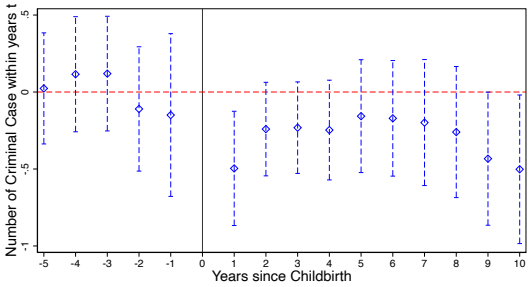
(c) Any Incarceration

Figure 4. : Mother- Criminal Justice Involvement within 1 year of Childbirth

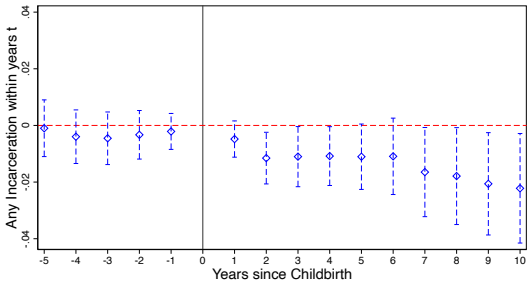
Note: The figure displays the mean outcome variable for mothers relative to the January 1 birthday of a child, within a 60 bandwidth and excluding an 8-day donut. The sample consists of children born between November 1999 and December 2022 in Allegheny County, along with their parents. Refer to Table 1 and the accompanying text for a more detailed discussion on the criteria for sample selection. Birthdates located to the left of zero indicate instances where the families of the children might have been eligible for extra cash in the first year of the child's life.



(a) Any Criminal Case



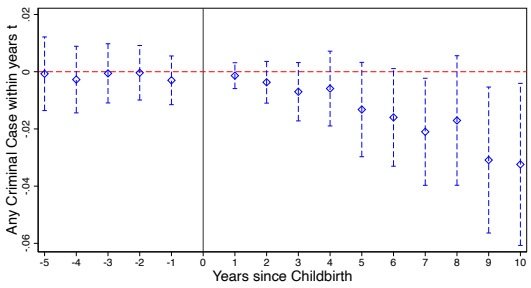
(b) # Criminal Cases



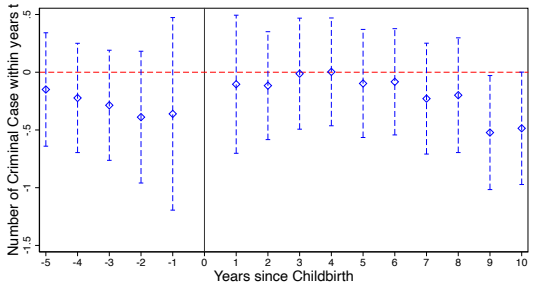
(c) Any Incarceration

Figure 5. : Father- Cumulative Effect relative to the year of Childbirth

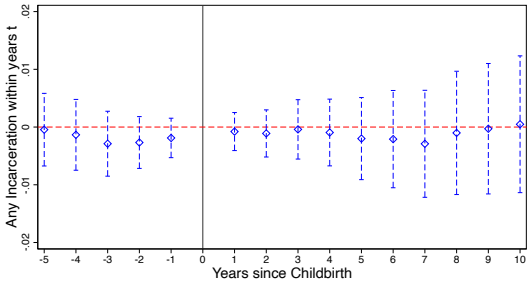
Note: This figure presents point estimates and a 95% confidence interval fof β_0 from estimating Equation 1 on cumulative outcome variables defined in years relative to childbirth at t=0. The time period on the X-axis to the left of time=0 represents cumulative years from the time of childbirth, while to the right represents cumulative years after childbirth. The sample is restricted to parents who have a child within 60 days of January 1 from October 1999 to December 2022. See Table 1 and text for further discussion on sample restriction.



(a) Any Criminal Case



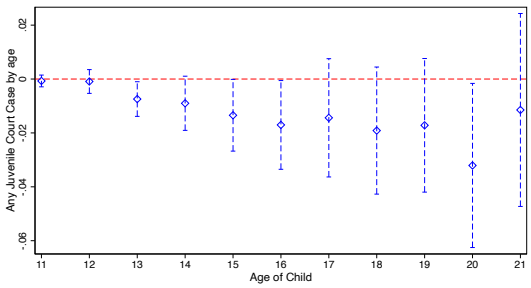
(b) # Criminal Cases



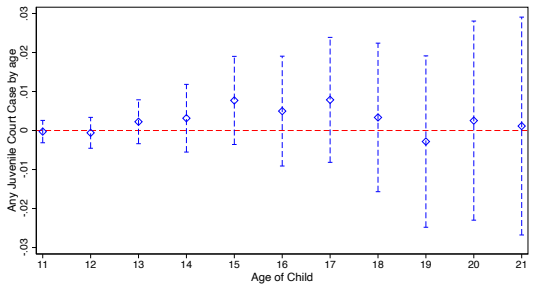
(c) Any Incarceration

Figure 6. : Mother- Cumulative Effect relative to the year of Childbirth

Note: This figure presents point estimates and a 95% confidence interval of β_0 from estimating Equation 1 on cumulative outcome variables defined in years relative to childbirth at t=0. The time period on the X-axis to the left of time=0 represents cumulative years from the time of childbirth, while to the right represents cumulative years after childbirth. The sample is restricted to parents who have a child within 60 days of January 1 from October 1999 to December 2022. See Table 1 and text for further discussion on sample restriction.



(a) Any Juvenile Justice Case- Male Child



(b) Any Juvenile Justice Case- Female child

Figure 7. : Children- Cumulative Effect on Juvenile Justice Involvement by age

Note: This figure presents point estimates and a 95% confidence interval of β_0 from estimating Equation 1 on cumulative outcome variables defined in years relative to the date of birth. The time period on the X-axis represents the cumulative age of a child. The sample is restricted to children born within 60 days of January 1 from October 1999 to December 2022.

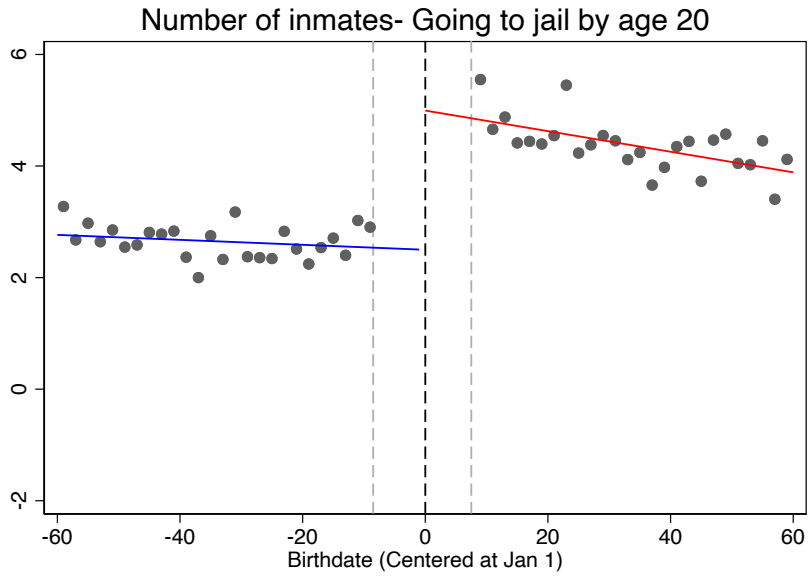


Figure 8. : Number of people incarcerated by age 20

Note: The figure displays the number of people incarcerated by age 20 relative to the January 1 birthday, within a 60 bandwidth and excluding an 8-day donut. The sample consists of people born between 1979-2000 and who were incarcerated in the state of Florida. Birthdates located to the left of zero indicate instances where the families of the children might have been eligible for extra cash in the first year of the child's life.

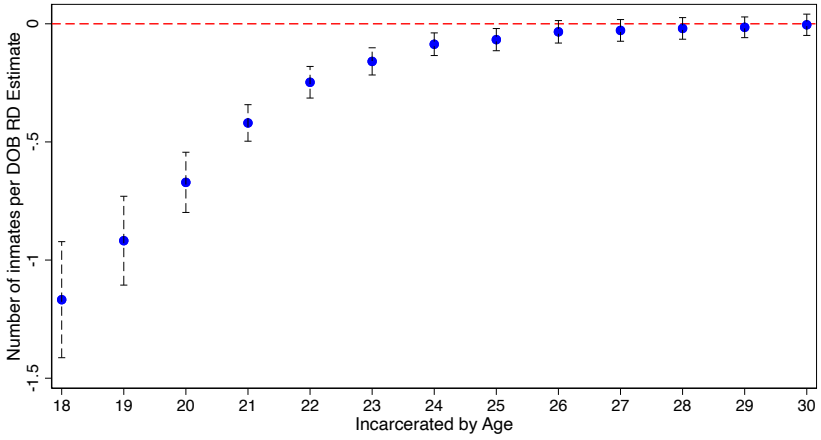


Figure 9. : Cumulative Effect on Incarceration

Note: This figure presents point estimates and a 95% confidence interval of β_0 from estimating Equation 1 on the cumulative number of people incarcerated by different ages. The time period on the X-axis represents the cumulative age of a child. The sample consists of people born between 1979-2000 and who were incarcerated in the state of Florida.

Tables

Table 1—: Summary Statistics

Panel A: Baseline from Birth Records (Oct 1999- Dec 2022)	
Male Child	0.51
Male Parent (Father)	0.46
Age of parent in 2022	42.04
Race of parent = White	0.78
Race of parent = Black	0.16
Ethnicity of Parent = Hispanic	0.01
Birth associated with Single Mom	0.31
Total Number of Parents	248,314
Panel B: Outcome from Court Records (Dec 2007- Dec 2019)	
Criminal Case within 1 year of childbirth	0.02
Criminal Case within 2 years of childbirth	0.03
Criminal Case within 3 years of childbirth	0.05
Number of Criminal Cases within 1 year of childbirth	0.04
Number of Criminal Cases within 2 years of childbirth	0.09
Number of Criminal Cases within 3 years of childbirth	0.13
Total Number of Parents	129,383
Panel C: Outcome from Prison Records (Oct 1999- Dec 2019)	
Incarceration within 1 year of childbirth	0.02
Incarceration within 2 years of childbirth	0.03
Incarceration within 3 years of childbirth	0.04
Total Number of Parents	219,097

Note: This table presents average baseline characteristics and criminal justice outcomes. Panel A consists of data from the birth records. Panel B and C consist of data from matching court and jail records. The sample is restricted to parents who have a child within 90 days of January 1. Birth records are available from October 1999 to December 2022, court records from December 2007 to December 2022, and prison records from October 1999 to December 2022.

Table 2—: Criminal Justice Outcomes of Parents

	(1)	(2)	(3)	(4)	(5)	(6)
	Father			**Mother**		
	Within 1 year	Within 2 year	Within 3 year	Within 1 year	Within 2 year	Within 3 year
Panel A: Any Criminal Case						
Any Criminal Case	-0.012***	-0.010**	-0.013*	-0.001	-0.004	-0.007
	(0.004)	(0.005)	(0.007)	(0.002)	(0.004)	(0.005)
Mean Outcome	0.021	0.040	0.058	0.010	0.020	0.021
Observations	31,653	29,308	26,917	36,184	33,449	30,688
Panel B: Number of Criminal Cases						
Number of Cases (Poisson)	-0.496***	-0.241	-0.231	-0.104	-0.116	-0.012
	(0.189)	(0.155)	(0.152)	(0.305)	(0.238)	(0.245)
Number of Cases (OLS)	-0.029**	-0.028	-0.042	-0.003	-0.007	-0.003
	(0.011)	(0.019)	(0.028)	(0.007)	(0.012)	(0.021)
Mean Outcome	0.054	0.114	0.179	0.022	0.048	0.080
Observations	31,653	29,308	26,917	36,184	33,449	30,688
Panel C: Any Incarceration						
Any Incarceration	-0.005	-0.012**	-0.011**	-0.001	-0.001	-0.000
	(0.003)	(0.005)	(0.005)	(0.002)	(0.002)	(0.003)
Mean Outcome	0.025	0.044	0.059	0.006	0.012	0.017
Observations	51,909	49,564	47,173	58,845	56,110	53,349

Note: This table presents point estimates and standard errors of β_0 from estimating Equation 1 on the criminal justice outcomes of parents. The specific outcome variable is described in the first column. Columns (1)–(3) show results for fathers, and Columns (4)–(6) show results for mothers. Column (1) and (4) report results for criminal cases within 1 year of childbirth; Column (2) and (5) report results for criminal cases within 2 years of childbirth; Column (3) and (6) report results for criminal cases within 3 years of childbirth. The sample is restricted to parents who have a child within 60 days of January 1 from October 1999 to December 2022. Bandwidth is 60 days. Statistical significance is denoted by *** p<0.01, ** p<0.05, * p<0.1.

Table 3—: Father Cumulative: Criminal Justice Outcomes within t relative to the year of Childbirth

	(1) t=-1	(2) t=-2	(3) t=-3	(4) t=-4	(5) t=-5	(6) t=1	(7) t=2	(8) t=3	(9) t=4	(10) t=5	(11) t=6	(12) t=7	(13) t=8	(14) t=9	(15) t=10
Father															
Panel A: Any Criminal Charge for Father															
Any Criminal Case	-0.00843	-0.00894	-0.00307	0.00219	0.00453	-0.0117***	-0.0103**	-0.0135*	-0.0150*	-0.0143	-0.0104	-0.0214	-0.0302**	-0.0440***	-0.0444**
	(0.00602)	(0.00719)	(0.00773)	(0.00807)	(0.00885)	(0.00358)	(0.00496)	(0.00696)	(0.00812)	(0.00953)	(0.0115)	(0.0131)	(0.0138)	(0.0160)	(0.0196)
Mean Outcome	0.018	0.035	0.048	0.057	0.065	0.021	0.040	0.058	0.070	0.082	0.094	0.105	0.116	0.131	0.139
Observations	30,061	28,316	26,642	24,998	23,159	31,653	29,308	26,917	24,393	21,849	19,184	16,572	13,875	11,413	9,650
Panel B: Number of Criminal Charges for Father															
Number of Cases (Poisson)	-0.149	-0.110	0.120	0.116	0.0234	-0.496***	-0.241	-0.231	-0.247	-0.157	-0.171	-0.198	-0.260	-0.433**	-0.502**
	(0.270)	(0.206)	(0.190)	(0.191)	(0.184)	(0.189)	(0.155)	(0.152)	(0.165)	(0.187)	(0.192)	(0.209)	(0.217)	(0.220)	(0.246)
Mean Outcome	0.049	0.098	0.145	0.177	0.205	0.054	0.114	0.179	0.240	0.299	0.361	0.424	0.507	0.620	0.667
Observations	30,061	28,316	26,642	24,998	23,159	31,653	29,308	26,917	24,393	21,849	19,184	16,572	13,875	11,413	9,650
Panel C: Any Incarceration for Father															
Any Incarceration	-0.00212	-0.00331	-0.00453	-0.00398	-0.000992	-0.00481	-0.0115**	-0.0110**	-0.0108**	-0.0111*	-0.0109	-0.0165**	-0.0179**	-0.0206**	-0.0222**
	(0.00324)	(0.00437)	(0.00474)	(0.00483)	(0.00511)	(0.00327)	(0.00465)	(0.00542)	(0.00530)	(0.00589)	(0.00688)	(0.00803)	(0.00873)	(0.00922)	(0.00986)
Mean	0.022	0.037	0.046	0.052	0.057	0.025	0.044	0.059	0.070	0.079	0.088	0.096	0.104	0.113	0.119
Observations	49,543	46,703	44,626	42,523	40,449	51,909	49,564	47,173	44,649	42,105	39,440	36,828	34,131	31,669	29,906

Note: This table presents point estimates and standard errors of β_0 from estimating Equation 1 on the criminal justice outcomes of fathers, defined in years relative to childbirth at t=0. Columns (1)–(5) report results for cumulative years -1 to -5 before childbirth, and Columns (6)–(15) report results for cumulative years 1 to 10 after childbirth. The sample is restricted to parents who have a child within 60 days of January 1 from October 1999 to December 2022. See Table 1 and text for further discussion on sample restriction. Bandwidth is 60 days. Statistical significance is denoted by *** p<0.01, ** p<0.05, * p<0.1.

Table 4—: Mother Cumulative: Criminal Justice Outcomes within t relative to the year of Childbirth

	(1) t=-1	(2) t=-2	(3) t=-3	(4) t=-4	(5) t=-5	(6) t=1	(7) t=2	(8) t=3	(9) t=4	(10) t=5	(11) t=6	(12) t=7	(13) t=8	(14) t=9	(15) t=10
Mother															
Panel A: Any Criminal Charge for Mother															
Any Criminal Case	-0.000866	0.000661	0.00182	-0.00135	-0.00164	-0.00138	-0.00369	-0.00699	-0.00589	-0.0132	-0.0160*	-0.0210**	-0.0170	-0.0309**	-0.0324**
	(0.00296)	(0.00423)	(0.00478)	(0.00557)	(0.00631)	(0.00231)	(0.00372)	(0.00520)	(0.00667)	(0.00841)	(0.00870)	(0.00954)	(0.0116)	(0.0130)	(0.0145)
Mean	0.009	0.019	0.027	0.033	0.037	0.010	0.020	0.031	0.041	0.050	0.058	0.067	0.077	0.091	0.097
Observations	34,312	32,367	30,484	28,619	26,669	36,184	33,449	30,688	27,924	25,133	22,199	19,241	15,999	12,728	10,815
Panel B: Number of Criminal Charges for Mother															
Number of Cases (Poisson)	-0.360	-0.389	-0.286	-0.223	-0.149	-0.104	-0.116	-0.0125	0.00318	-0.0973	-0.0828	-0.229	-0.199	-0.523**	-0.486*
	(0.426)	(0.291)	(0.243)	(0.241)	(0.251)	(0.305)	(0.238)	(0.245)	(0.238)	(0.239)	(0.235)	(0.245)	(0.253)	(0.252)	(0.248)
Mean Outcome	0.018	0.039	0.060	0.077	0.090	0.022	0.048	0.080	0.115	0.153	0.188	0.229	0.284	0.347	0.388
Observations	34,312	32,367	30,484	28,619	26,669	36,184	33,449	30,688	27,924	25,133	22,199	19,241	15,999	12,728	10,815
Panel C: Any Incarceration for Mother															
Any Incarceration	-0.00189	-0.00268	-0.00289	-0.00135	-0.000454	-0.000782	-0.00111	-0.000404	-0.000944	-0.00200	-0.00209	-0.00290	-0.00101	-0.000288	0.000484
	(0.00174)	(0.00229)	(0.00287)	(0.00313)	(0.00321)	(0.00168)	(0.00208)	(0.00262)	(0.00295)	(0.00363)	(0.00430)	(0.00473)	(0.00545)	(0.00576)	(0.00604)
Mean	0.005	0.010	0.013	0.015	0.017	0.004	0.008	0.011	0.015	0.019	0.022	0.026	0.030	0.035	0.038
Observations	56,363	53,025	50,355	48,004	45,830	58,845	56,110	53,349	50,585	47,794	44,860	41,902	38,660	35,389	33,476

Note: This table presents point estimates and standard errors of β_0 from estimating Equation 1 on the criminal justice outcomes of mothers, defined in years relative to childbirth at t=0. Columns (1)–(5) report results for cumulative years -1 to -5 before childbirth, and Columns (6)–(15) report results for cumulative years 1 to 10 after childbirth. The sample is restricted to parents who have a child within 60 days of January 1 from October 1999 to December 2022. See Table 1 and text for further discussion on sample restriction. Bandwidth is 60 days. Statistical significance is denoted by *** p<0.01, ** p<0.05, * p<0.1.

Table 5—: Heterogeneous Treatment Effects: Father

	(1)	(2)	(3)	(4)	(5)	(6)
	Any Case		**# Cases**		**Any Jail**	
	within 1	within 2	within 1	within 2	within 1	within 2
Main Effect	-0.012***	-0.010**	-0.496***	-0.241	-0.005	-0.012**
	(0.004)	(0.005)	(0.189)	(0.155)	(0.003)	(0.005)
N	31,653	29,308	31,653	29,308	51,909	49,564
Panel A: Heterogeneity by Race						
White	-0.007*	-0.008*	-0.495	-0.380	-0.004	-0.007**
	(0.004)	(0.005)	(0.343)	(0.245)	(0.002)	(0.004)
N	23,661	21,868	23,661	21,868	39,029	37,236
Non White	-0.024**	-0.011	-0.455**	-0.098	-0.004	-0.019
	(0.010)	(0.012)	(0.228)	(0.219)	(0.011)	(0.015)
N	7,992	7,440	7,992	7,440	12,880	12,328
White × belowcutoff	0.010**	0.004	0.337	0.095	0.002	0.002
	(0.005)	(0.007)	(0.207)	(0.162)	(0.004)	(0.006)
N	31,653	29,308	31,653	29,308	51,909	49,564
Panel B: Heterogeneity by criminal history						
Any criminal case in previous 5 years	-0.011	-0.017	-0.182	-0.034	-0.034	-0.024
	(0.040)	(0.049)	(0.359)	(0.276)	(0.044)	(0.052)
N	1,456	1,359	1,456	1,359	1,456	1,359
No criminal case in previous 5 years	-0.007**	0.001	-0.437	0.185	-0.003	-0.001
	(0.003)	(0.005)	(0.383)	(0.335)	(0.003)	(0.004)
N	20,547	18,299	20,547	18,299	20,547	18,299
Case in previous 5 years × belowcutoff	-0.004	-0.021	-0.008	-0.008	0.001	0.005
	(0.018)	(0.022)	(0.240)	(0.189)	(0.017)	(0.021)
N	22,003	19,658	22,003	19,658	22,003	19,658
Panel C: Heterogeneity by Safety Net						
Safety net in previous 2 years	-0.045**	-0.037	-0.427	-0.099	-0.025	-0.027
	(0.022)	(0.029)	(0.260)	(0.210)	(0.018)	(0.027)
Observations	4,083	3,679	4,083	3,679	4,083	3,679
No Safety net in previous 2 years	-0.006	-0.004	-0.436	-0.274	-0.002	-0.003
	(0.003)	(0.005)	(0.335)	(0.245)	(0.003)	(0.003)
Observations	24,822	22,881	24,822	22,881	24,822	22,881
Safety net previous 2 years × belowcutoff	-0.011	-0.013	-0.191	-0.059	-0.015*	-0.023**
	(0.009)	(0.013)	(0.180)	(0.138)	(0.008)	(0.011)
N	28,905	26,560	28,905	26,560	28,905	26,560

Note: This table presents point estimates and standard errors of β_0 from estimating Equation 1 on the criminal justice outcomes of fathers. Each panel reports results for a separate sub-sample of the data, and the sub-sample is described in the panel titles. The specific outcome variable is described in the column titles. Panel A subsamples parents based on race, distinguishing between White and non-White individuals. Panel B subsamples the data based on whether the father had any involvement with the criminal justice system in the five years preceding childbirth. Panel C subsamples the data based on whether the household in which the father lives had any participation in the safety net program in the two years preceding childbirth. The sample is restricted to fathers who have a child within 60 days of January 1 from October 1999 to December 2022. Bandwidth is 60 days. Statistical significance is denoted by *** p<0.01, ** p<0.05, * p<0.1.

Table 6—: Juvenile Justice Outcomes of Children

	(1) age=11	(2) age=12	(3) age=13	(4) age=14	(5) age=15	(6) age=16	(7) age=17	(8) age=18	(9) age=19	(10) age=20	(11) age=21	(12) age=22
Male Child												
Panel A: Any Juvenile Justice Case												
Any Case	-0.000712	-0.000910	-0.00743**	-0.00900*	-0.0134*	-0.0170**	-0.0144	-0.0191	-0.0172	-0.0321**	-0.0115	0.00413
	(0.00111)	(0.00225)	(0.00328)	(0.00513)	(0.00679)	(0.00840)	(0.0112)	(0.0120)	(0.0126)	(0.0155)	(0.0183)	(0.0239)
Mean Outcome	0.002	0.005	0.011	0.019	0.031	0.048	0.065	0.081	0.085	0.092	0.093	0.097
Observations	23,979	22,267	20,510	18,782	16,303	13,810	12,029	10,216	8,441	6,633	4,863	2,984
Female Child												
Panel B: Any Juvenile Justice Case												
Any Case	-0.000275	-0.000591	0.00224	0.00315	0.00771	0.00498	0.00786	0.00335	-0.00283	0.00254	0.00115	-0.0239
	(0.00146)	(0.00202)	(0.00287)	(0.00443)	(0.00576)	(0.00718)	(0.00817)	(0.00972)	(0.0112)	(0.0130)	(0.0142)	(0.0200)
Mean Outcome	0.001	0.002	0.005	0.010	0.017	0.026	0.034	0.042	0.043	0.045	0.043	0.044
Observations	23,001	21,311	19,655	17,995	15,577	13,150	11,411	9,733	8,090	6,363	4,633	2,778

Note: This table presents point estimates and standard errors of β_0 from estimating Equation 1 on the Juvenile justice outcomes of children defined at age 10-22. The sample is restricted to children born within 60 days of January 1 from October 1999 to December 2022. Bandwidth is 60 days. Statistical significance is denoted by *** p<0.01, ** p<0.05, * p<0.1.

Table 7—: Adult Criminal Justice Outcomes of Children

(14)	(1) (15) age=18	(2) (16) age=19	(3) (17) age=20	(4) age=21	(5) age=22	(6) age=23	(7) age=24	(8) age=25	(9) age=26	(10) age=27	(11) age=28	(12) age=29	(13) age=30
Panel A: Poisson- Number of people incarcerated													
Born before Jan 1	-1.168***	-0.918***	-0.671***	-0.420***	-0.247***	-0.159***	-0.086***	-0.067***	-0.034	-0.028	-0.020	-0.015	-0.004
	(0.125)	(0.096)	(0.065)	(0.039)	(0.034)	(0.029)	(0.024)	(0.024)	(0.024)	(0.023)	(0.023)	(0.022)	(0.023)
Mean Outcome	0.685	1.691	3.517	5.892	8.310	10.527	12.543	14.295	15.886	17.243	18.409	19.389	20.203
N	2,181	2,181	2,181	2,181	2,181	2,181	2,181	2,181	2,181	2,181	2,181	2,181	2,181
Panel B: OLS- Log number of people incarcerated													
Born before Jan 1	-0.427***	-0.588***	-0.644***	-0.399***	-0.222***	-0.137***	-0.069**	-0.048	-0.015	-0.012	-0.003	0.002	0.010
	(0.052)	(0.063)	(0.060)	(0.045)	(0.038)	(0.035)	(0.030)	(0.029)	(0.030)	(0.030)	(0.029)	(0.028)	(0.028)
Mean Outcome	0.289	0.613	1.111	1.607	1.948	2.172	2.330	2.445	2.532	2.598	2.650	2.689	2.719
N	1,013	1,683	2,070	2,165	2,177	2,180	2,181	2,181	2,181	2,181	2,181	2,181	2,181
Panel C: Rate of incarceration													
Born before Jan 1	-1.144***	-0.929***	-0.665***	-0.505***	-0.315***	-0.222***	-0.143***	-0.140***	-0.098***	-0.089***	-0.078***	-0.071**	-0.055*
	(0.162)	(0.114)	(0.075)	(0.054)	(0.046)	(0.038)	(0.034)	(0.032)	(0.032)	(0.030)	(0.030)	(0.030)	(0.030)
Mean Outcome	0.207	0.486	0.972	1.626	2.324	3.038	3.720	4.341	4.935	5.473	5.965	6.412	6.807
N	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050

Note: This table presents point estimates and standard errors of β_0 obtained through the estimation of Equation 1 for the incarceration among individuals aged 18-30. In Panels A and B, the sample comprises individuals born between 1979 and 2000 who were incarcerated in the state of Florida. Panel A involves a Poisson regression analysis of the number of people incarcerated by age 18-30, while Panel B employs linear probability regression on the logarithm of the number of individuals incarcerated by age 18-30. In Panel C, the outcome variable is the incarceration rate calculated using natality data based on the day of birth, with the sample limited to individuals born between 1979 and 1988. Bandwidth is 60 days. Statistical significance is denoted by *** p<0.01, ** p<0.05, * p<0.1.

Table 8—: Participation of Household in Safety-Net Program at time t

	(1)	(2)	(3)	(4)	(5)	(6)
	Extensive Margin			**Intensive Margin (months)**		
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
TANF	-0.00946**	-0.00148	0.00135	-0.161	-0.0669	-0.0207
	(0.00458)	(0.00414)	(0.00519)	(0.130)	(0.137)	(0.146)
Mean Outcome	0.038	0.028	0.025	0.374	0.323	0.301
Medicaid	-0.0153*	-0.0145	0.00188	-0.0848**	-0.101**	-0.114**
	(0.00880)	(0.00902)	(0.00681)	(0.0417)	(0.0474)	(0.0529)
Mean Outcome	0.130	0.109	0.106	2.337	2.496	2.581
SNAP	-0.0172**	-0.00748	-0.00473	-0.0887	-0.0643	-0.118**
	(0.00806)	(0.0100)	(0.00868)	(0.0577)	(0.0568)	(0.0569)
Mean Outcome	0.146	0.133	0.131	1.524	1.596	1.642
SSI	0.00164	0.00427	-0.00257	-0.0486	0.0141	0.130
	(0.00216)	(0.00258)	(0.00212)	(0.175)	(0.185)	(0.199)
Mean Outcome	0.009	0.007	0.006	0.225	0.222	0.210
Observations	38,532	35,617	32,695	38,532	35,617	32,695

Note: This table presents point estimates and standard errors of β_0 for estimating Equation 1 on the contemporaneous safety net participation of the household, including TANF, Medicaid, SNAP, and SSI. Columns (1) to (3) show the effect on the extensive margin (whether households are participating in the safety net), while columns (4) to (6) show the effect on the intensive margin (months of participation) in means-tested safety net programs from year +1 to +3 years after childbirth. The specific outcome variable is described in the first column. The contemporaneous years relative to childbirth are reported in the second column. The sample is restricted to parents who have a child within 60 days of January 1 from 2007-202. Bandwidth is 60 days. Statistical significance is denoted by *** p<0.01, ** p<0.05, * p<0.1.

Table 9—: Father: Type of crime within time t

	(1)	(2)	(3)	(4)	(5)	(6)
	Extensive Margin			**Intensive Margin (Number of Charges)**		
	within 1 year	within 2 year	within 3 year	within 1 year	within 2 year	within 3 year
Robbery	-0.00280	-0.00349**	-0.00564***	-1.500***	-1.443***	-2.312***
	(0.00180)	(0.00165)	(0.00206)	(0.528)	(0.512)	(0.520)
Mean Outcome	0.003	0.004	0.004	0.007	0.007	0.009
Drug Distribution	-0.000125	-0.00184	0.00106	-0.350	-0.293	-0.180
	(0.00358)	(0.00364)	(0.00410)	(0.352)	(0.329)	(0.398)
Mean Outcome	0.011	0.012	0.013	0.024	0.028	0.032
Theft	-0.000742	-0.00288	-0.00579	-0.318	-0.393	-0.699**
	(0.00379)	(0.00405)	(0.00462)	(0.261)	(0.254)	(0.276)
Mean Outcome	0.015	0.018	0.020	0.031	0.036	0.040
Burglary	-0.00154	-0.00275	-0.00351	-0.0934	-0.148	-0.720
	(0.00191)	(0.00210)	(0.00243)	(0.628)	(0.589)	(0.619)
Mean Outcome	0.004	0.004	0.005	0.007	0.009	0.010
Fraud & Forgery	-0.00107	-0.000194	-0.000629	-0.495	-0.327	-0.284
	(0.00141)	(0.00174)	(0.00238)	(0.661)	(0.714)	(0.798)
Mean Outcome	0.002	0.003	0.003	0.005	0.005	0.007
Prostitution	-9.57e-05	-0.000253	0.000348	-0.529	-0.569	0.678
	(0.000618)	(0.00108)	(0.00141)	(1.241)	(1.315)	(1.564)
Mean Outcome	0.000	0.001	0.001	0.001	0.001	0.001
Non-Robbery Violent	0.000548	0.00189	0.00334	-0.206	-0.0586	-0.0331
	(0.00352)	(0.00460)	(0.00499)	(0.291)	(0.328)	(0.298)
Mean Outcome	0.014	0.017	0.020	0.029	0.037	0.044
Drug Possessions	-0.0107*	-0.00955	-0.00469	-0.349*	-0.278	-0.257
	(0.00571)	(0.00670)	(0.00718)	(0.204)	(0.194)	(0.227)
Mean Outcome	0.030	0.035	0.036	0.062	0.073	0.081
DUI	-0.00250	-0.00411	0.00175	-0.373	-0.718**	-0.142
	(0.00277)	(0.00329)	(0.00388)	(0.380)	(0.348)	(0.345)
Mean Outcome	0.010	0.012	0.014	0.018	0.022	0.025
MV related	-0.00746	-0.00894	-0.00612	-0.309	-0.456*	-0.428*
	(0.00469)	(0.00574)	(0.00686)	(0.227)	(0.239)	(0.258)
Mean Outcome	0.024	0.027	0.031	0.048	0.055	0.063
Observations	23,457	20,918	18,353	23,457	20,918	18,353

Note: This table presents point estimates and standard errors of β_0 for estimating Equation 1 on the cumulative criminal justice involvement of fathers within 1 to 3 years of childbirth. Columns (1) to (3) show the effect on the extensive margin (likelihood of a charge), while columns (4) to (6) show the effect on the intensive margin (number of charges). The specific outcome variable is described in the first column. The sample is restricted to fathers who have a child within 60 days of January 1, from 2013 to 2022. Bandwidth is 60 days. Statistical significance is denoted by *** p<0.01, ** p<0.05, * p<0.1.

Table 10—: Father: Type of crime charge Before and after the 2017 TCJA

	(1)	(2)	(3)	(4)	(5)	(6)
	Before TCJA: Childbirth between Jan 2013- March 2018			**After TCJA: Childbirth between Oct 2018- Dec 2022**		
	within 1 year	within 2 year	within 3 year	within 1 year	within 2 year	within 3 year
Any Criminal Case	-0.0111	-0.000733	0.00334	-0.0130	-0.0258**	-0.0160
	(0.00965)	(0.0110)	(0.0115)	(0.0113)	(0.0126)	(0.0198)
Mean Outcome	0.050	0.063	0.073	0.077	0.086	0.092
Number of Criminal Cases	-0.288	-0.157	-0.158	-0.227	-0.456**	-0.602**
	(0.181)	(0.175)	(0.171)	(0.206)	(0.221)	(0.283)
Mean Outcome	-2.426	-2.129	-1.910	-1.847	-1.693	-1.632
Any Robbery charge	-0.00349*	-0.00332	-0.00444*	-0.00260	-0.00479	-0.0135*
	(0.00206)	(0.00212)	(0.00225)	(0.00355)	(0.00397)	(0.00706)
Mean Outcome	0.002	0.003	0.003	0.005	0.006	0.008
Number of Robbery charges	-1.911*	-1.718*	-2.413***	-1.431**	-1.466**	-2.725***
	(0.997)	(0.951)	(0.859)	(0.657)	(0.738)	(0.784)
Mean Outcome	-5.414	-5.268	-5.008	-4.424	-4.645	-4.164
Any Drug Possessions	-0.00739	-0.00303	-0.00191	-0.0121	-0.0168	0.00191
	(0.00686)	(0.00810)	(0.00844)	(0.00990)	(0.0114)	(0.0148)
Mean Outcome	0.023	0.029	0.034	0.041	0.046	0.045
Number of Drug Possessions Charges	-0.000259	0.000662	0.00441	-0.00484	-0.0132**	-0.00329
	(0.00319)	(0.00410)	(0.00471)	(0.00529)	(0.00646)	(0.0105)
Mean Outcome	-3.167	-2.843	-2.606	-2.384	-2.261	-2.249
Any DUI charge	-0.000259	0.000662	0.00441	-0.00484	-0.0132**	-0.00329
	(0.00319)	(0.00410)	(0.00471)	(0.00529)	(0.00646)	(0.0105)
Mean Outcome	0.008	0.011	0.013	0.013	0.014	0.015
Number of DUI charges	0.358	-0.105	0.211	-1.027*	-1.880***	-1.158
	(0.499)	(0.461)	(0.406)	(0.563)	(0.560)	(0.749)
Mean Outcome	-4.289	-3.934	-3.712	-3.695	-3.623	-3.600
Any MV related charge	-0.00570	-0.00429	-0.00475	-0.00904	-0.0178*	-0.00268
	(0.00601)	(0.00713)	(0.00769)	(0.00769)	(0.00977)	(0.0158)
Mean Outcome	0.018	0.024	0.029	0.033	0.035	0.038
Number of MV related charge	-0.220	-0.229	-0.272	-0.358	-0.761**	-0.723
	(0.334)	(0.309)	(0.285)	(0.315)	(0.356)	(0.468)
Mean Outcome	-3.420	-3.096	-2.844	-2.629	-2.559	-2.520
Observations	14364	14364	14364	9093	6554	3989

Note: This table presents point estimates and standard errors of β_0 for estimating Equation 1 on the cumulative criminal justice involvement of fathers within 1 to 3 years of childbirth. The specific outcome variable is described in the first column. Columns (1) to (3) show the effect within 1 to 3 years after childbirth on a sample of fathers who had their first childbirth from January 2013 to March 2018, while columns (4) to (6) show the effect on a sample of fathers who had their first childbirth from October 2018 to December 2022. In Columns (1) to (3) (childbirth from January 2013 to March 2018), families with childbirth before January 1 receive additional cash in the first year of the child's life but are not affected by the TCJA during that period. In contrast, in columns (4) to (6) (childbirth between October 2018 and December 2022), families with childbirth before January 1 receive a larger refund in the first year of the child's life, which is further amplified by the expanded Child Tax Credit (CTC) under the TCJA. Bandwidth is 60 days. Statistical significance is denoted by *** p<0.01, ** p<0.05, * p<0.1.

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Appendix

A- Supplementary Figures and Tables

Figures

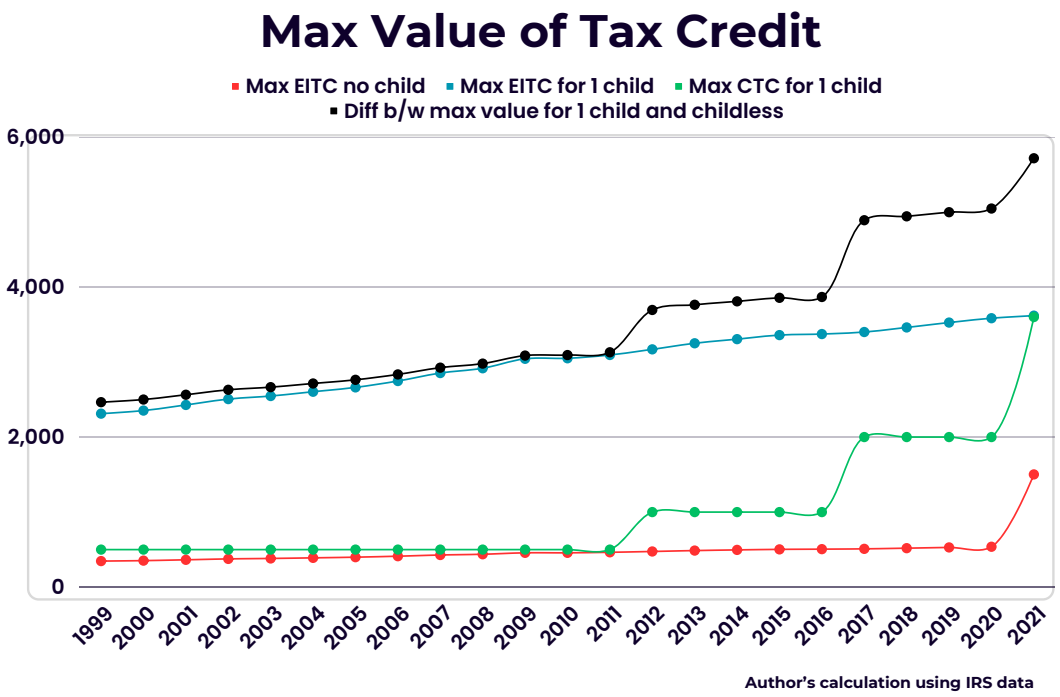
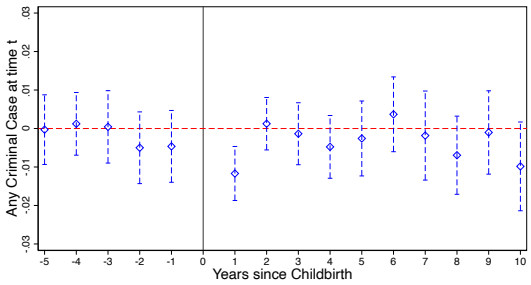
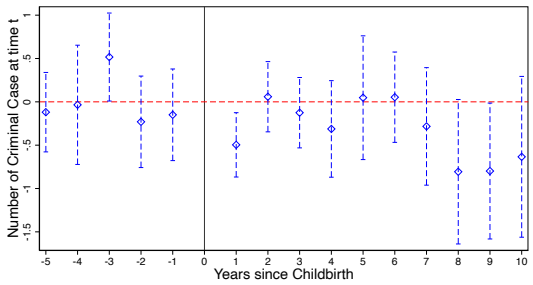


Figure A1. : Maximum value of EITC and CTC for childless and one child families

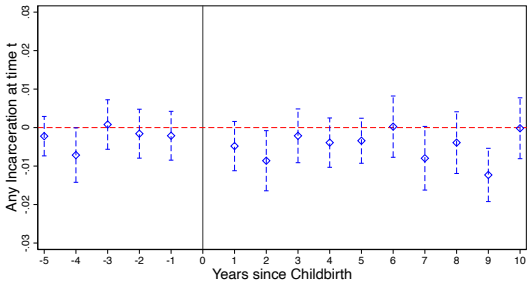
Note: This figure presents the maximum value of EITC and CTC for childless and one-child families from years 1999-2021. The difference between the maximum value of a one-child and childless family is calculated as the difference between the maximum value of EITC and CTC that a family with one child can get and the maximum value of EITC that a childless adult family can get.



(a) Any Criminal Case



(b) # Criminal Cases



(c) Any Incarceration

Figure A2. : Father- Contemporaneous Effect relative to the year of Childbirth

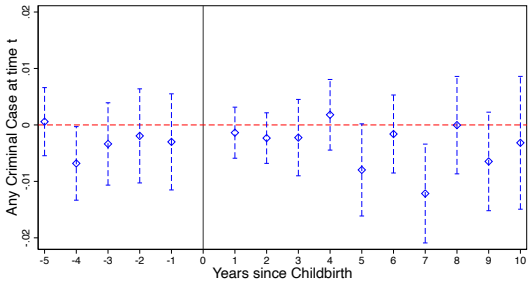
Note: This figure presents point estimates and a 95% confidence interval of β_0 from estimating Equation 1 on contemporaneous outcome variables defined in years relative to childbirth. The time period on the X-axis to the left of time=0 represents years before childbirth, and to the right represents years after childbirth. The sample is restricted to parents who have a child within 60 days of January 1 from October 1999 to December 2022. See Table 1 and text for further discussion on sample restriction.

Table A1—: Balance of Baseline Characteristics

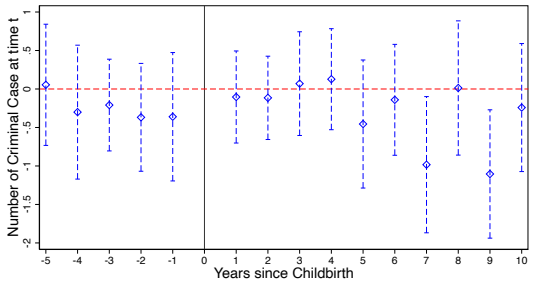
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Father					**Mother**		
VARIABLES	Max age	white	black	hispan	single	Max age	white	black	hispan	single
Born Before Jan 1	-0.013	0.009	-0.011	-0.003	-0.007	0.046	-0.002	0.004	-0.002	0.005
	(0.111)	(0.008)	(0.007)	(0.002)	(0.009)	(0.098)	(0.008)	(0.007)	(0.002)	(0.009)
Mean	43.494	0.763	0.146	0.015	0.059	40.700	0.758	0.163	0.014	0.348
Observations	65542	66002	66002	66002	66002	76455	76469	76469	76469	76469

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

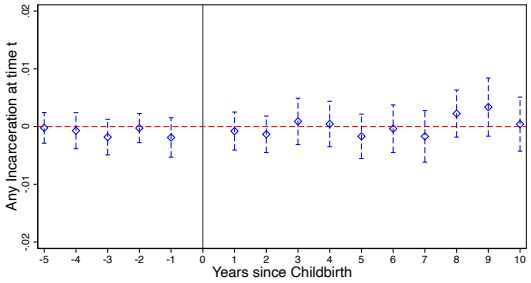
Note: This table presents point estimates and standard errors of β_0 from estimating Equation 1 on baseline characteristics. The outcome variable under consideration is detailed in the first column. The analysis is confined to parents of children born within a 60-day span surrounding January 1, during the period from October 1999 to December 2022. The selected bandwidth for this study is 60 days. Statistical significance is denoted by *** p<0.01, ** p<0.05, * p<0.1.



(a) Any Criminal Case



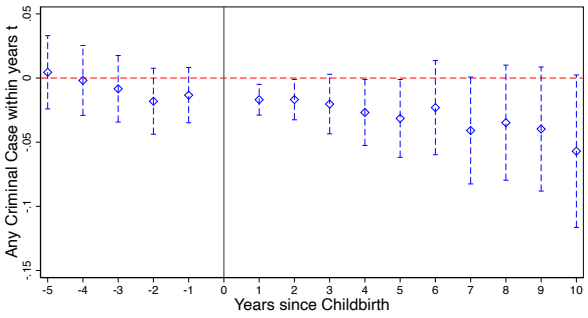
(b) # Criminal Cases



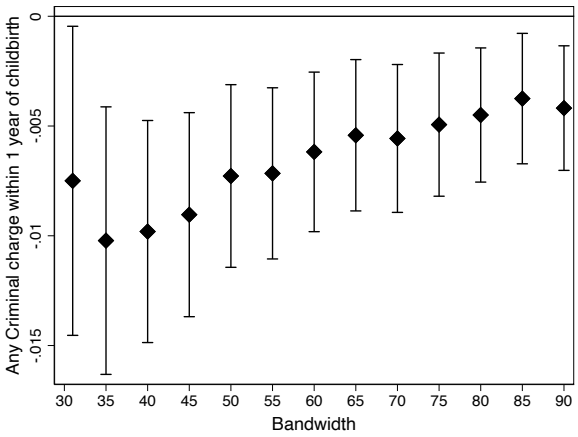
(c) Any Incarceration

Figure A3. : Mother- Contemporaneous Effect relative to the year of Childbirth

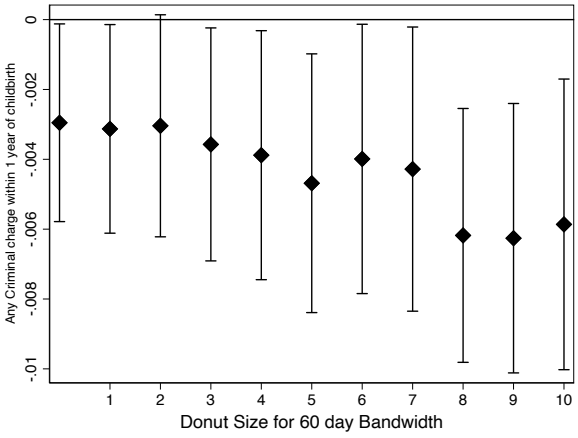
Note: This figure presents point estimates and a 95% confidence interval of β_0 from estimating Equation 1 on contemporaneous outcome variables defined in years relative to childbirth. The time period on the X-axis to the left of time=0 represents years before childbirth, and to the right represents years after childbirth. The sample is restricted to parents who have a child within 60 days of January 1 from October 1999 to December 2022. See Table 1 and text for further discussion on sample restriction.



(a) Any Criminal Case within t years- 35 day bandwidth with 7-day Donut



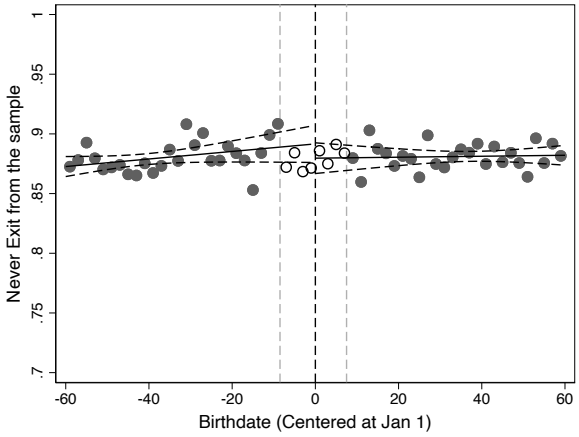
(b) Any Criminal Case within 1 year of Childbirth- Varying bandwidth with 7-day Donut



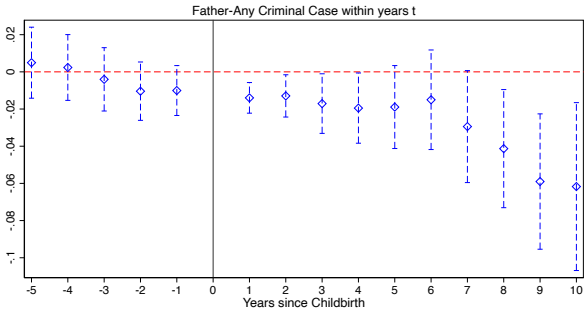
(c) Any Criminal Case within 1 year of Childbirth- Varying Donut for 60 Day bandwith

Figure A4. : Any Criminal Charge of Father

Note: Panel (a) of the figure presents point estimates and a 95% confidence interval for β_0 from estimating Equation 1 on the likelihood of a father having any criminal case relative to childbirth at t=0. The time period on the X-axis to the left of time=0 represents cumulative years from the time of childbirth, while to the right represents cumulative years after childbirth. The sample is restricted to parents who have a child within 35 days of January 1 from October 1999 to December 2022. Panel (b) and (c) display the point estimate and a 95% confidence interval of β_0 from estimating Equation 1 with alternative bandwidths and donut sizes for the likelihood of a father having any criminal case within one year of childbirth. Panel (a) varies the bandwidth from 30 to 90 days with a 7-day donut, while Panel (b) varies the donut sizes from 0 to 10 for a fixed 60-day bandwidth.



(a) Always stay in Allegheny County



(b) Sample of parents who never exit- Any Criminal Charge for father within t year of childbirth

Figure A5. : Controlling for migrating out of the Allegheny county

Note: Panel (a) displays the likelihood of parents moving out of Allegheny County relative to the January 1 birthday of a child within a 60-day bandwidth, excluding an 8-day donut. The sample consists of children born between November 1999 and December 2022 in Allegheny County, along with their parents. Birthdates to the left of the dotted line represent those where the child's family could have received additional resources from child-related tax benefits in the following year. Panel (b) restricts the sample to fathers who always reside in Allegheny County and presents point estimates and a 95% confidence interval for β_0 obtained by estimating Equation 1 on cumulative outcome variables defined in years relative to childbirth at t=0. The outcome variable is the likelihood of a father having any criminal case. The time period on the X-axis to the left of time=0 represents cumulative years from the time of childbirth, while to the right represents cumulative years after childbirth.

Table A2—: Criminal Justice Outcomes within t years relative to childbirth- Constant Sample

	(1) t=-1	(2) t=-2	(3) t=-3	(4) t=1	(5) t=2	(6) t=3	(7) t=4	(8) t=5
Father								
Panel A: Any Criminal Charge for Father								
Any Criminal Case	-0.00338	-0.00758	0.000383	-0.0133**	-0.00706	0.00152	0.000641	0.000615
	(0.00612)	(0.00863)	(0.00973)	(0.00633)	(0.00727)	(0.00927)	(0.00990)	(0.0112)
Mean Outcome	0.020	0.038	0.053	0.023	0.042	0.058	0.069	0.078
Observations	15,682	15,682	15,682	15,682	15,682	15,682	15,682	15,682
Panel B: Number of Criminal Charges for Father								
Number of Cases	0.279	0.0705	0.291	-0.497*	-0.0918	0.0372	0.0658	0.124
	(0.345)	(0.267)	(0.247)	(0.274)	(0.219)	(0.208)	(0.205)	(0.219)
Mean Outcome	0.054	0.113	0.165	0.060	0.121	0.185	0.233	0.281
Observations	15,682	15,682	15,682	15,682	15,682	15,682	15,682	15,682
Panel C: Any Incarceration for Father								
Any Incarceration	-0.00135	-0.00454	-0.00679	-0.00769*	-0.0126**	-0.0109*	-0.00948	-0.0129**
	(0.00435)	(0.00550)	(0.00564)	(0.00448)	(0.00561)	(0.00616)	(0.00620)	(0.00614)
Mean Outcome	0.027	0.043	0.053	0.029	0.046	0.058	0.066	0.072
Observations	33,666	33,666	33,666	33,666	33,666	33,666	33,666	33,666
Mother								
Panel A: Any Criminal Charge for Mother								
Any Criminal Case	-0.00219	-0.000784	-0.000357	0.00172	-0.00499	-0.00712	-0.00549	-0.0115
	(0.00454)	(0.00597)	(0.00692)	(0.00338)	(0.00592)	(0.00721)	(0.00771)	(0.00818)
Mean Outcome	0.009	0.020	0.028	0.011	0.020	0.030	0.038	0.046
Observations	18,133	18,133	18,133	18,133	18,133	18,133	18,133	18,133
Panel B: Number of Criminal Charges for Mother								
Number of Cases	-0.434	-0.428	-0.364	0.0649	-0.0384	0.0868	0.179	0.129
	(0.559)	(0.364)	(0.302)	(0.402)	(0.330)	(0.301)	(0.287)	(0.267)
Mean Outcome	0.020	0.044	0.065	0.025	0.048	0.076	0.102	0.130
Observations	18,133	18,133	18,133	18,133	18,133	18,133	18,133	18,133
Panel B: Any Incarceration for Mother								
Any Incarceration	-0.00260	-0.00313	-0.00214	-0.00104	-0.000187	-0.000464	-0.000280	-0.00213
	(0.00197)	(0.00270)	(0.00351)	(0.00183)	(0.00258)	(0.00322)	(0.00346)	(0.00391)
Mean Outcome	0.006	0.011	0.015	0.006	0.011	0.016	0.020	0.024
Observations	38,004	38,004	38,004	38,004	38,004	38,004	38,004	38,004

Note: This table presents point estimates and standard errors of β_0 from estimating Equation 1 on the criminal justice outcomes of parents. The specific outcome variable is described in the first column. Columns (1)–(3) show results for fathers, and Columns (4)–(6) show results for mothers. Column (1) and (4) report results for criminal cases within 1 year of childbirth; Column (2) and (5) report results for criminal cases within 2 years of childbirth; Column (3) and (6) report results for criminal cases within 3 years of childbirth. The sample is restricted to parents who have a child within 60 days of January 1 from October 1999 to December 2022, and it includes families that have participated in any service provided by the Department of Human Services of Allegheny County. Bandwidth is 60 days. Statistical significance is denoted by *** p<0.01, ** p<0.05, * p<0.1.

Table A3—: Heterogeneous Treatment Effects: Mother

	(1)	(2)	(3)	(4)	(5)	(6)
	Any Case		**# Cases**		**Any Jail**	
	within 1	within 2	within 1	within 2	within 1	within 2
Main Effect	-0.001	-0.004	-0.104	-0.116	-0.001	-0.001
	(0.002)	(0.004)	(0.305)	(0.238)	(0.002)	(0.002)
N	36,184	33,449	36,184	33,449	58,845	56,110
Panel A: Heterogeneity by Race						
White	0.000	-0.004	0.373	0.192	-0.001	-0.002
	(0.002)	(0.003)	(0.456)	(0.390)	(0.001)	(0.002)
N	27,422	25,309	27,422	25,309	44,592	42,479
Non White	-0.006	-0.001	-0.424	-0.282	0.002	0.001
	(0.007)	(0.011)	(0.352)	(0.280)	(0.005)	(0.006)
N	8,762	8,140	8,762	8,140	14,253	13,631
White × belowcutoff	-0.002	-0.001	-0.085	0.041	-0.003	-0.002
	(0.003)	(0.005)	(0.240)	(0.194)	(0.002)	(0.003)
N	36,184	33,449	36,184	33,449	58,845	56,110
Panel B: Marital status						
Single	-0.001	-0.004	-0.037	-0.050	-0.003	-0.006
	(0.006)	(0.009)	(0.297)	(0.239)	(0.004)	(0.005)
N	13,005	12,073	13,005	12,073	21,089	20,157
Married	-0.001	-0.003*	-2.968	-1.457	0.000	0.001
	(0.001)	(0.001)	(2.328)	(0.948)	(0.001)	(0.001)
N	23,179	21,376	18,200	19,417	37,756	35,953
Single Parent × belowcutoff	0.001	-0.002	1.174**	0.394	0.001	-0.001
	(0.002)	(0.004)	(0.534)	(0.385)	(0.002)	(0.002)
N	36,184	33,449	36,184	33,449	58,845	56,110
Panel C: Heterogeneity by criminal history						
Any criminal case in previous 5 years	-0.010	-0.019	-0.021	-0.065	0.021	0.029
	(0.043)	(0.061)	(0.557)	(0.419)	(0.042)	(0.043)
N	953	872	953	872	953	872
No criminal case in previous 5 years	0.000	-0.003	0.152	0.088	-0.001	-0.001
	(0.002)	(0.004)	(0.410)	(0.366)	(0.001)	(0.002)
N	24,416	21,762	24,416	21,762	24,416	21,762
Case in previous 5 years × belowcutoff	-0.021	-0.030	-0.450*	-0.212	0.009	0.006
	(0.018)	(0.025)	(0.270)	(0.225)	(0.019)	(0.020)
N	25,369	22,634	25,369	22,634	25,369	22,634
Panel D: Heterogeneity by Safety Net						
Safety net in previous 2 years	-0.012	-0.015	-0.247	-0.079	-0.003	0.001
	(0.012)	(0.019)	(0.341)	(0.294)	(0.008)	(0.010)
Observations	6,255	5,520	6,255	5,520	6,255	5,520
No Safety net in previous 2 years	0.003	0.002	1.560	0.587	-0.000	-0.001
	(0.001)	(0.003)	(0.685)	(0.478)	(0.001)	(0.001)
Observations	26,757	24,757	26,757	24,757	26,757	24,757
Safety net previous 2 years × belowcutoff	-0.003	-0.014*	-0.140	-0.148	0.000	-0.001
	(0.005)	(0.008)	(0.315)	(0.233)	(0.003)	(0.004)
N	33,012	30,277	33,012	30,277	33,012	30,277

Note: This table presents point estimates and standard errors of β_0 from estimating Equation 1 on the criminal justice outcomes of mothers. Each panel reports results for a separate sub-sample of the data, and the sub-sample is described in the panel titles. The specific outcome variable is described in the column titles. Panel A subsamples mothers based on race, distinguishing between White and non-white individuals. Panel B subsamples the data based on marital status, and Panel C subsamples the data depending on whether the mothers had any involvement with the criminal justice system in the five years preceding childbirth. Panel D subsamples the data based on whether the household in which the mother lives had any participation in the safety net program in the two years preceding childbirth. The sample is restricted to mothers who have a child within 60 days of January 1 from October 1999 to December 2022. Bandwidth is 60 days. Statistical significance is denoted by *** p<0.01, ** p<0.05, * p<0.1.

Table A4—: Father: Type of Incarceration within time t

	Extensive Margin		
	within 1 year	within 2 year	within 3 year
Robbery	-0.000894	-0.00219*	-0.00452***
	(0.00110)	(0.00120)	(0.00146)
Mean Outcome	0.002	0.002	0.002
Drug Distribution	0.000838	0.000717	0.00192
	(0.00115)	(0.00146)	(0.00170)
Mean Outcome	0.002	0.003	0.003
Theft	0.00351	0.00337	0.00114
	(0.00203)	(0.00234)	(0.00278)
Mean Outcome	0.004	0.004	0.004
Burglary	-0.000674	-0.000661	-0.00243
	(0.00138)	(0.00164)	(0.00199)
Mean Outcome	0.003	0.003	0.003
Fraud & Forgery	0.000381	0.000748	0.00129
	(0.000655)	(0.000751)	(0.000756)
Mean Outcome	0.000	0.000	0.000
Prostitution	0	-0.000116	0.000251
	0	(0.000120)	(0.000397)
Mean Outcome	0.000	0.000	0.000
Non-Robbery Violent	-0.00246	-0.00310	-0.00328
	(0.00247)	(0.00296)	(0.00310)
Mean Outcome	0.006	0.008	0.008
Drug Possessions	-0.00245	-0.00246*	-0.00301*
	(0.00151)	(0.00145)	(0.00158)
Mean Outcome	0.002	0.002	0.002
DUI	0.00154	0.00220	0.00138
	(0.000973)	(0.00137)	(0.00169)
Mean Outcome	0.001	0.001	0.002
MV related	-4.12e-05	-0.000945	-0.00114*
	(4.84e-05)	(0.000586)	(0.000685)
Mean Outcome	0.000	0.000	0.000
Observations	23,457	20,918	18,353

Note: This table presents point estimates and standard errors of β_0 for estimating Equation 1 on the cumulative likelihood of incarceration of fathers within 1 to 3 years of childbirth. The specific outcome variable is described in the first column. The sample is restricted to fathers who have a child within 60 days of January 1, from 2013 to 2022. Bandwidth is 60 days. Statistical significance is denoted by *** p<0.01, ** p<0.05, * p<0.1.

Table A5—: Criminal Justice Outcomes of Parents after third of higher order born child

	(1)	(2)	(3)	(4)	(5)	(6)
	Father			**Mother**		
	Within 1 year	Within 2 year	Within 3 year	Within 1 year	Within 2 year	Within 3 year
Panel A: Any Criminal Case						
Any Criminal Case	0.026	0.015	0.014	0.012	0.021	0.032
	(0.030)	(0.036)	(0.041)	(0.022)	(0.025)	(0.036)
Mean Outcome	0.070	0.092	0.110	0.051	0.074	0.079
Observations	1379	1245	1123	2017	1844	1655
Panel B: Number of Criminal Cases						
Number of Cases	-0.069	-0.115	-0.119	0.007	0.082	0.007
	(0.067)	(0.125)	(0.160)	(0.067)	(0.092)	(0.109)
Mean Outcome	0.086	0.168	0.236	0.054	0.122	0.183
Observations	1,379	1,245	1,123	2,017	1,844	1,655
Panel C: Any Incarceration						
Any Incarceration	0.006	-0.019	-0.006	0.000	0.012	0.005
	(0.020)	(0.030)	(0.035)	(0.010)	(0.017)	(0.021)
Mean Outcome	0.034	0.052	0.073	0.012	0.022	0.031
Observations	1771	1637	1515	2560	2387	2198

Note: This table presents point estimates and standard errors of β_0 from estimating Equation 1 on the criminal justice outcomes for parents following the birth of a third or subsequent child. The specific outcome variable is described in the first column. Columns (1)–(3) show results for fathers, and Columns (4)–(6) show results for mothers. Column (1) and (4) report results for criminal cases within 1 year of childbirth; Column (2) and (5) report results for criminal cases within 2 years of childbirth; Column (3) and (6) report results for criminal cases within 3 years of childbirth. The sample is restricted to parents who have a child within 60 days of January 1 from October 1999 to December 2022, and it includes families that have participated in any service provided by the Department of Human Services of Allegheny County. Bandwidth is 60 days. Statistical significance is denoted by *** p<0.01, ** p<0.05, * p<0.1.