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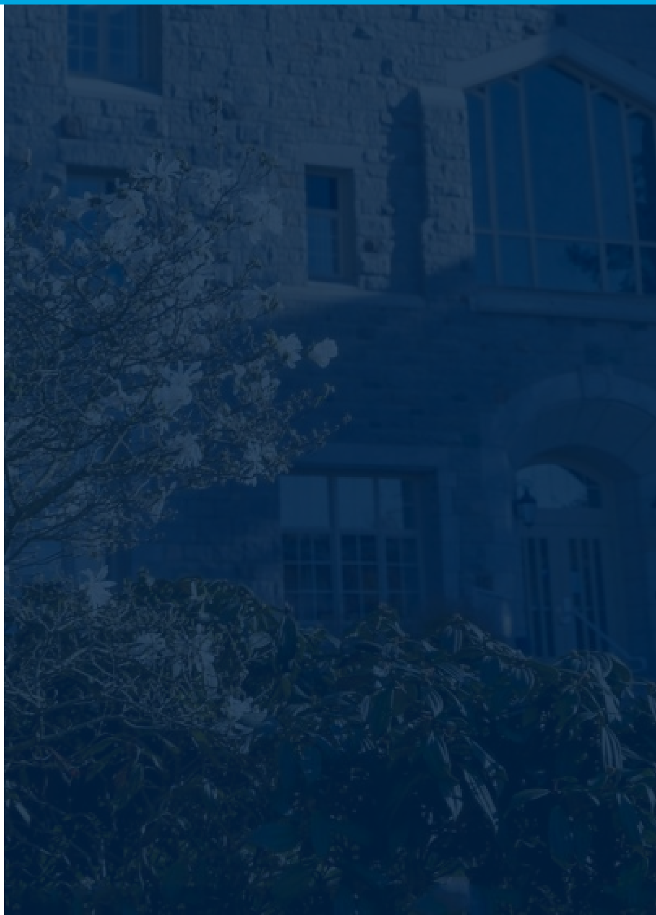

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Parental Incarceration, Its Timing, and the Effects on Child Homelessness in America

By Jerry Eiswerth*

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Parental incarceration and child homelessness rates both exploded in the United States from the 1980's to the early 2000's. Given that roughly half of all state and federal inmates in 2016 were parents of minor children, it may be that increases in parental incarceration are a primary cause of the rise in child homelessness. Therefore, understanding the link between parental incarceration and child homelessness is crucial for improving child well-being. This study uses panel data and a series of econometric techniques to estimate the relationship between parental incarceration and child homelessness, and finds that paternal incarceration is associated with higher rates of child homelessness in general, but finds no evidence that maternal incarceration has any effect. Further, it provides suggestive evidence that paternal incarceration may only have adverse effects if the father is incarcerated during early childhood, but provide a protective effect in middle adolescence.

(JEL Codes: I30, K14, K40)

By the early 2000's, incarceration rates in the United States exploded exponentially, reaching levels more than seven times higher compared to 1972 (Ghandnoosh, 2021). Consequently, parental incarceration rates also rose to new heights, so much that by 2007, roughly 2.3% of children

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in the U.S had at least one incarcerated parent in state or federal prison (Glaze & Maruschak, 2010). Likewise, in 2016, nearly 47% of state inmates and 57% of federal inmates were the parents of minor children (The Sentencing Project, 2025), which highlights the sheer number of families affected by parental incarceration. While rates of incarceration were increasing in the late 20th century, so too were the rates of families experiencing homelessness. In the 1980's, families accounted for less than 1% of the homeless population in the US, but by 2009 they made up roughly 32% (Bassuk, 2010). As of 2010, approximately 1.5 million children in America experienced periods of homelessness every year. Given that parental incarceration can be a source of instability within families via financial strain and limiting access to social support systems (Wildeman, 2014), it is unlikely that rising incarceration and child homelessness rates occured in isolation. However, very little research has explored the relationship between parental incarceration (PI) and child homelessness, and existing work (e.g., Casey et al., 2015; Norris et al., 2021; Sykes & Pettit, 2014, Wildeman, 2014) has found conflicting results. Existing empirical work shows that early harms can compound in children, leading to cascading future problems such as the school-to-prison-pipeline (Redfield & Nance, 2016). Thus, addressing harms at an early stage can prevent further harm and its associated costs to social welfare, health care, criminal justice, and other publicly funded systems. However, there is little research studying the *timing* of incarceration and how PI affects children's outcomes differently depending on the age of the child when the parent is incarcerated. Thus, this study will attempt to understand: (1) *What is the effect of parental incarceration on child homelessness in America in the 21st century?* (2) *Does the timing of parental incarceration matter for their children's outcomes?*

Much of the existing literature that arose since the early 2000's tried to understand how children were affected by parental incarceration by looking at many different childhood outcomes. In general, most studies find that parental incarceration acts as a negative shock to family stability, and is associated with adverse behavioural and psychological child outcomes (e.g., Bradshaw et al., 2024; Casey et al., 2015; Haskins, 2018; Murray et al., 2012; Murray & Murray, 2010; Turney & Goodsell, 2018). For instance, early exposure to parental incarceration before the age of one has the strongest effects on eventual adult depression (Gaston, 2016). Parental incarceration has also been linked to physical conditions including chronic stress, allostatic load, increased child mortality, and higher body-mass index (Austin et al., 2021; Wildeman et al., 2014; Nino & Cai, 2020; Roettger & Boardman, 2011). Nino and Cai (2020) specifically found that when parental incarceration in the family was experienced before the age of 10, it was associated with a higher risk of increased allostatic load (a measure of stress regulation) than for older children. Criminal outcomes in adulthood are also linked to parental incarceration during childhood, and earlier spells of parental incarceration seem to have a more harmful effect (TenEyck et al., 2023; Young et al., 2020). However, studies examining the effect of parental incarceration on economic outcomes have found conflicting results. Generally findings show that parental incarceration has a negative effect on educational attainment (Dobbie et al., 2019; Fox et al., 2023; Mears & Siennick, 2016) and future earnings (Foster & Hagan, 2007; Mears & Siennick, 2016). But recent economic research has also uncovered positive relationships between parental incarceration and education, possibly due to the creation of more stable environments via the removal of abusive parents or parents with substance use problems (Arteaga, 2019; Norris et al., 2021).

The few studies that have explored the relationship between parental incarceration and child homelessness have found conflicting results. Wildeman (2014) explored how children's outcomes are affected by the imprisonment of their parents by using four waves of the Future of Families and Child Wellbeing Study (FFCWS). He found that paternal incarceration increased child homelessness risk, and these effects were greatest for African American children. He found no significant results for maternal incarceration and speculated that maternal incarceration led to increased foster care placement, rather than homelessness, because the incarcerated mothers were the primary caregivers. Sykes & Pettit (2014) found higher residential instability (a related measure of less extreme homelessness) among the children of incarcerated parents. However, Norris et al. (2021) found no statistically significant evidence that there is any effect of parental incarceration on housing stability (evictions), a measure that is highly related to homelessness, using longitudinal administrative panel data and a very convincing instrumental variables method. Thus, there is still no consensus on the direction of the relationship. Furthermore, there is little research on the *timing* of parental incarceration on children's outcomes, depending on the age of the child at the time the parent is incarcerated. Life course theory suggests that the timing of *turning point*s, major events which change one's life trajectory such as the incarceration of a parent, are important because they can trigger cumulative advantages or disadvantages (Elder, 1998). The few studies researching timing effects tend to find that earlier exposure to parental incarceration leads to worse outcomes (Gaston, 2016; Nino & Cai, 2020; TenEyck et al., 2023; Young et al., 2020), but this has not been studied with a focus on child homelessness specifically.

The existing research on this topic also has largely failed to account properly for endogeneity issues, using basic ordinary least squares and logistic regression, which brings into question the validity of the current findings on the relationship between parental incarceration and child outcomes. However, even studies using similar methodologies to account for selection bias, such as instrumental variables methods, find opposing results (Arteaga, 2019; Dobbie et al., 2019; Norris et al., 2021). Thus, more studies using rigorous statistical techniques are needed to provide a clearer picture of the relationship between parental incarceration and children's outcomes such as homelessness.

I. Methodology

This study advances Wildeman's (2014) work by adding newer waves of the same dataset and incorporating more rigorous methodologies to answer additional questions regarding timing effects. His study used the baseline and child at age 1 waves to establish a set of controls, and ran cross-sectional logistic regressions for the child at age 5. I instead use the baseline wave (at child birth) to establish a set of control variables and propensity scores, and use a longitudinal approach, estimating regressions using child age 1, 3, 5, 9, and 15. Therefore, I test whether Wildeman's (2014) original findings on child homelessness change as the children age further into adolescence. Furthermore, evictions may be an important mediator variable between parental incarceration and child homelessness because homelessness is essentially a more extreme variant of housing instability. Therefore, I run the same set of models with evictions as a secondary outcome to also understand if the effect of parental incarceration on child homelessness may be due to the eviction of the non-incarcerated parent. I also empirically test his hypothesis that insignificant effects for maternal incarceration and child homelessness are due to increased foster care placement, using a new set of variables in the child-age 22 surveys. Lastly, I look specifically at the timing effects of parental incarceration to see whether children are more vulnerable to parental incarceration shocks at certain ages.

A. Data and Descriptive Statistics

The Future of Families & Child Wellbeing Study (FFCWS), formerly known as the Fragile Families and Child Wellbeing Study is a publicly available dataset that is uniquely suited to study this specific research question because it specifically recruited families from socially disadvantaged backgrounds. The baseline survey was conducted with approximately 5000 mothers in 75 hospitals across 20 US cities during their post-birth hospital stays (Reichman, 2001). 80% of the children's biological fathers were also interviewed shortly after. The initial interviews took place between 1998 and 2000, with subsequent interview waves at set age intervals. Unmarried parents were purposely oversampled to better understand child well-being in this specific type of family that is typically hard to study because unwed fathers are difficult to survey. Unmarried fathers are typically younger, less educated, earn less, and are more likely to have substance abuse problems (Garfinkel et al., 1998). These characteristics are also correlates of incarcerated individuals, and more than 40% of the sample (for the first 3 waves) had been incarcerated or jailed at some point (Geller & Curtis, 2011) which makes the study well-suited to answer my research questions.

All waves of the public use data are available to download through Princeton University's FFCWS online portal. The data observes a cohort of children from birth to adulthood, with surveys conducted with the mother and father in earlier years, and the primary caregiver at ages 15 and 22. Currently, seven waves of data are accessible including the child's birth year as well as ages 1, 3, 5, 9, 15, and 22. An extensive set of demographic information on the parents and child are available including health, housing, employment, education, and finance related variables. The parent interviews also cover a series of topics about their attitudes toward parenting, mental and physical health, and participation in the FFCWS program. This study aggregates all waves of the FFCWS data to create a panel dataset spanning from birth to child age 15. Although child age 22 is available, the primary focus of this study is to understand child well-being, and thus I have excluded this age from the analysis. However, a series of variables in the child-age 22 survey are used to construct a set of foster care outcomes.

For my primary outcome variable, I construct the same measure of homelessness as Wildeman

(2014): (1) If either biological parent had reported living in on the street, in a shelter, a car, or in temporary housing in the last year and (2) the same parent reported living with the child for the majority of the time, the child is considered homeless. I also use the same method to construct alternative outcomes for recent evictions. I construct a third outcome for whether the child was living in foster care in a given wave, however this variable uses questions from the child-age 22 wave: the child was considered to be in foster care if the child at age 22 or the primary caregiver at child age 22 reported the child having been in foster care during particular age periods. The caveat here is that given the attrition rates, foster care reporting is much lower than the other outcome variables. Because I will be looking at parental incarceration longitudinally, I extend Wildeman's definition of parental incarceration to include both cumulative measures and yearly measures, but exclude the baseline year as no mothers were incarcerated during this wave. Children in a given wave are considered to be experiencing recent paternal or maternal incarceration (i.e., the key explanatory variables), if the mother or father respectively was reported (by either parent) as having been incarcerated at any time since the previous wave. Cumulative measures called "mother and father ever incarcerated" track how many waves in total mothers and fathers have been flagged as incarcerated up to and including the current wave.

Figure 1 provides a visual overview of the cumulative measures of paternal incarceration, maternal incarceration, and child homelessness (excluding the baseline year) for the entire baseline sample (not adjusted for attrition rates). By age 1, roughly 30% of the children have a father that had been incarcerated at some point, but very few mothers had been incarcerated. By age 15, almost half of the children had a father with a history of incarceration and approximately 16% had mothers who were ever incarcerated. Roughly 3.1% of children had experienced homelessness by age 1, but by age 15 almost 10% had been homeless at some point in their lives. This figure likely underestimates the true rates because it holds the sample constant to keep all baseline children, so children who are not present in later waves can only have zero values for these variables in those years. In reality, there is likely attrition that is related to parental incarceration and homelessness, meaning that we are more likely to be missing values for the children who are experiencing these conditions.

FIGURE 1.

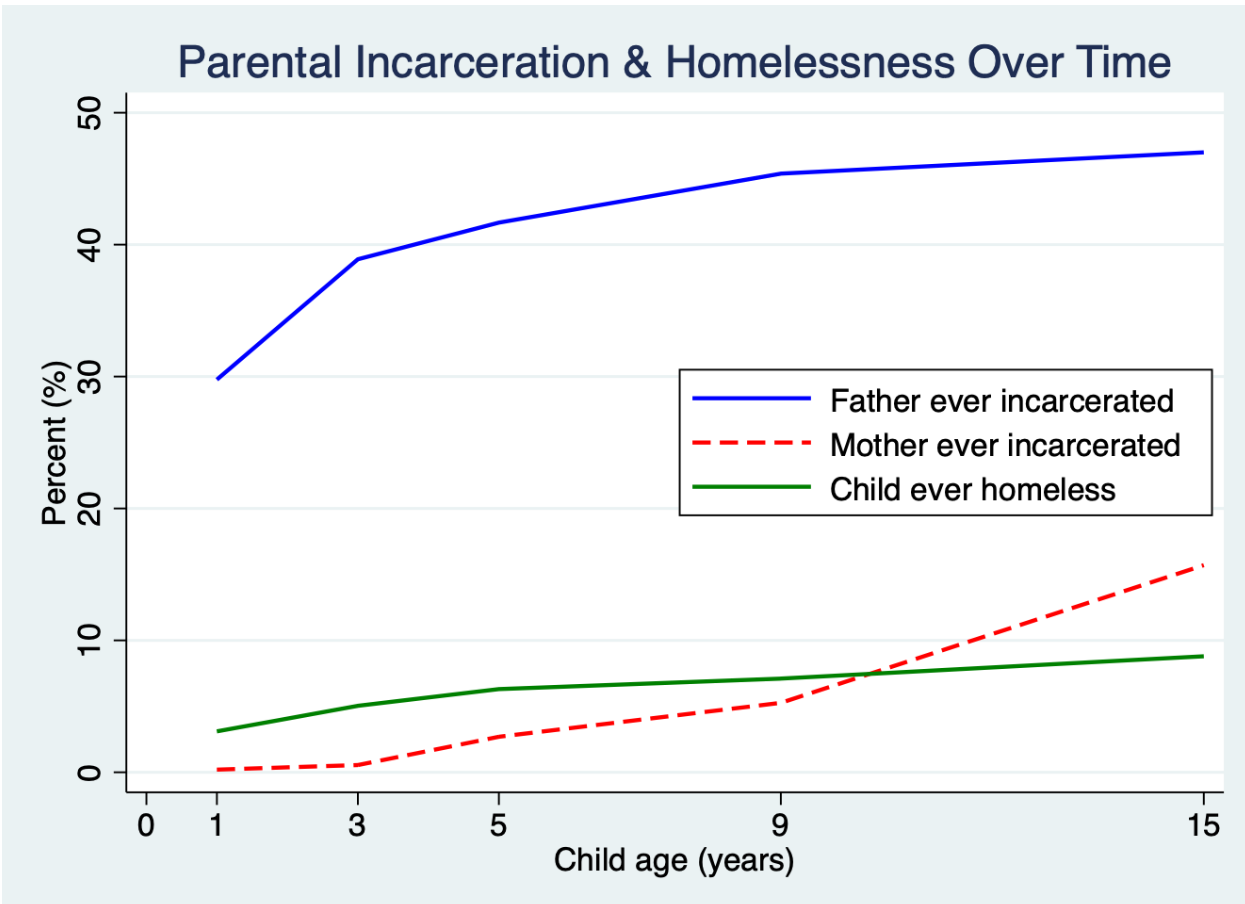

Table 1 contains summary statistics for the sample in each wave. Panel (A) reports time-varying variables at each child-age wave, and panel (B) reports time-invariant variables taken from the birth year survey. Although the full sample size from the baseline survey include 4,898 children and their parents, missing values are a primary concern in the FFCWS dataset. We observe a loss of roughly 200-300 observations for most variables at each subsequent wave. Note the marginalized

TABLE 1—DESCRIPTIVE STATISTICS: FIXED AND BY CHILD AGE

Panel (A)

Child Age	Birth	Age 1	Age 3
Variable	Mean (SD) N	Mean (SD) N	Mean (SD) N
# Adults in HH	2.32 (1.02) N=4858	2.20 (0.99) N=4338	2.05 (0.92) N=4211
Mother Age	25.28 (6.04) N=4894	26.43 (6.06) N=4364	28.21 (6.06) N=4230
Father Age	27.92 (7.16) N=3830	29.17 (7.18) N=3374	31.07 (7.33) N=3273
Cohabitating	0.36 (0.48) N=4896	0.31 (0.46) N=4364	0.22 (0.41) N=4231
Mother Education	2.11 (1.00) N=4892	2.20 (1.00) N=4360	2.28 (1.01) N=4228
Mother HH Inc.	31994 (31567) N=4897	32020 (35660) N=4364	35624 (44041) N=4231
# Kids in HH	1.26 (1.31) N=4858	2.30 (1.33) N=4343	2.30 (1.34) N=4211
Married	0.24 (0.43) N=4897	0.30 (0.46) N=4360	0.32 (0.47) N=4227
Child Homeless		0.031 (0.17) N=4457	0.026 (0.16) N=4365
Evicted		0.034 (0.18) N=4457	0.026 (0.16) N=4365
Foster Care		0.186 (0.390) N=494	0.132 (0.338) N=494
Father New Incarc.		0.323 (0.47) N=4457	0.415 (0.49) N=4365
Mother New Incarc.		0.002 (0.05) N=4457	0.004 (0.06) N=4365

Child Age	Age 5	Age 9	Age 15
Variable	Mean (SD) N	Mean (SD) N	Mean (SD) N
# Adults in HH	1.96 (0.85) N=4115	1.98 (0.87) N=3493	2.13 (0.98) N=3576
Mother Age	30.31 (6.04) N=4137	34.44 (6.01) N=3512	41.05 (6.26) N=3400
Father Age	33.10 (6.98) N=3134	37.39 (7.18) N=2593	
Cohabitating	0.14 (0.35) N=4139	0.09 (0.29) N=3501	0.05 (0.22) N=3403
Mother Education	2.35 (1.01) N=4136	2.49 (0.99) N=3514	2.64 (0.98) N=3553
Mother HH Inc.	37509 (43869) N=4139	44999 (50116) N=3508	60644 (63371) N=3576
# Kids in HH	2.49 (1.35) N=4115	2.65 (1.35) N=3493	2.60 (1.55) N=3579
Married	0.31 (0.46) N=4134	0.29 (0.45) N=3501	0.25 (0.43) N=3403
Child Homeless	0.020 (0.14) N=4295	0.012 (0.11) N=3808	0.026 (0.16) N=4301
Evicted	0.034 (0.18) N=4295	0.036 (0.19) N=3808	0.059 (0.24) N=3580
Foster Care	0.075 (0.263) N=494	0.136 (0.343) N=494	0.132 (0.338) N=494
Father New Incarc.	0.442 (0.50) N=4295	0.473 (0.50) N=3808	0.608 (0.49) N=3580
Mother New Incarc.	0.027 (0.16) N=4295	0.038 (0.19) N=3808	0.070 (0.26) N=3580

Panel (B)

Variable	Mean (SD) N	Variable	Mean (SD) N
Male Child	0.52 (0.50) N=4898	Mother Smoked in Pregnancy	0.17 (0.38) N=4886
Black Child	0.36 (0.48) N=4898	White Child	0.14 (0.34) N=4898
Hispanic Child	0.20 (0.40) N=4898	Other Race Child	0.30 (0.46) N=4898

Note: HH refers to the mother's household. Outcomes not generated or reported for baseline year. As child age 15 only surveyed one parent, most statistics are reported by the mother as the primary caregiver only. Cohabitating & Married measure whether the biological parents are living together or married, as reported by the mother. # Adults in HH and # Kids in HH are reported by the mother, for the mother's household. Mother's education reported as categorical where 1 = less than high school, 2 = high school or equivalent, 3 = some college or technical schooling, and 4 = college or university graduate. Cohabitating, Married, Child Homeless, Evicted, Foster Care, Father New Incarceration, and Mother New Incarceration are binary variables.

sample with relatively low household income of $31,994 in the birth year (the median in 1998 was $38,885 (US Census Bureau, 2021)). The majority of mothers already had at least one child under the age of 18 in the house (mean 1.26 in birth year), and the mean mother's age at birth was 25.28. The majority of children are persons of color, and roughly half boys and half girls. The primary outcome, child homelessness, ranges from 1.2% at child age 9 to 3.1% at child age 1, and eviction rates hover around 3-3.5% across most years before jumping to 5.9% at child age 15.

The surveying methods used to gather data for the FFCWS study create a unique challenge for panel data modeling. There are few survey questions that are consistently asked at each wave, meaning there is not a rich set of control variables available to examine long-run trends using this dataset. Furthermore, many of the identification strategies used in this study employ fixed effects, meaning that any time-invariant controls will cancel out for these model specifications. There is also relatively high attrition for responses from fathers, and many variables in later years have missing values, so including these variables as controls significantly diminishes the sample size of my panel analysis. As such, finding an appropriate selection of controls is not straightforward. Lastly and most importantly, given that only the primary caregiver is surveyed at year 15, there is no way to control for both the mother and father's responses across the entire panel because one of them is not surveyed in the last wave. Because 3,146 mothers responded as the primary caregiver at child age 15 (compared to 257 fathers), and the attrition rate and missing values for fathers is much higher, only the mother's controls have been included in the models. Another important note is that if both parents are not interviewed in a year, I will not explicitly know whether they are still incarcerated or not. However, the child of these parents will be excluded from the regressions for the time periods in which neither parent responds to the survey.

Also concerning is the amount of missing data and that the fathers who are nonresponsive may be missing systematically, which could contaminate the interpretation of my findings. Therefore, I take steps to investigate whether non-responsiveness is correlated with the outcomes or key regressors. I first examine the patterns in missing data to evaluate whether the fathers with lower response rates are missing at random. The first step is to choose a subset of variables in each year and calculate how many missing values of this subset each father has. Given that variables are categorized into major topics, one to four variables are selected from each of the following major topics in each year: Attitudes and Expectations, Education and School, Employment, Family and Social Ties, Finances, Health and Health Behavior, Housing and Neighborhood, Legal System, Parenting, and Romantic Relationships. Variables that are more likely to be answered by the father regardless of incarceration status were chosen. Appendix Tables A1, A2, and A3 contain a full list of these variables, which are not the same in each wave. I then calculate the number of missing values per father per year, and construct a measure called the nonresponse rate that represents the fraction of these variables that contained missing values in a given year. Appendix Table A4 presents the correlation matrix of the nonresponse rate and the primary outcome variables at each child age, excluding the baseline. The nonresponse rate varies by outcome, year, and significance. At child age 3, only evictions are statistically significant with a correlation coefficient of -0.04, and at child age 5 nothing is significant. At child at 1 and 9, correlations for evictions and new father incarceration are statistically significant at the 5% confidence level. However, the correlation coefficients are still relatively small, ranging from -0.15 to -0.05. Lastly, child homelessness was only correlated with the nonresponse rate at child age 9, and only at the 10% significance level with a coefficient of -0.02. Obviously it is somewhat problematic given that the nonresponse rate is correlated with one of the primary outcomes and primary independent variables, but overall I do not believe the results pose a major threat to the identification strategy or the validity of my results because the coefficients are not large in magnitude.

Income is a useful control variable for this analysis, but there is a concern that it could be highly correlated with parental incarceration. When a parent is incarcerated they receive massive negative income shocks because they cannot earn income, so including this as a control may be a cause for concern. Given there are few good controls available in the dataset, it's worth ensuring that income is sensible to include. Appendix Table A5 shows correlation matrices between a constructed poverty binary based on the mother's household income and both the mother and father's cumulative incarceration in each wave. Appendix Table A6 uses the mother and father's new incarceration at each wave instead of the cumulative measure. This exercise gives a rough idea of whether the parents who are incarcerated are overwhelmingly in poverty meaning that income and incarceration are highly correlated. Fortunately the distribution of poverty across incarceration status seems to be fairly even. Likewise, correlation coefficients between the mother's income and incarceration status range from -0.095 to -0.078 (and the father's respective correlations are even smaller) so although they are correlated, the magnitudes are small. An additional check of the mother's and father's income against incarceration status is presented graphically in Appendix Figures A1 and A2. The figures show the kernel density of income by incarceration status. There is a higher density at the lowest income levels, especially for the fathers, however, there is sufficient variation among both incarcerated and non-incarcerated parents across the distribution to warrant including income as a control.

B. Empirical Framework

Given the longitudinal structure of the FFCWS, many possible models can be used to answer my basic research question in different ways. I use three primary modeling strategies for each outcome as a way to provide robust results, but each produces coefficients that have different interpretations. A secondary set of fixed effects models were also included in the appendix, but given the small sample size they are likely underpowered.

The first primary specification uses a modified version of the proportional intensity survival analysis model proposed by Anderson & Gill (1982), called the AG Model. This model estimates the time to child homelessness, while allowing for multiple homeless occurrences which answers the question (1) *What is the effect of parental incarceration on child homelessness in America in the 21st century?* by looking at the effects of parental incarceration over time. I estimate the following:

$$\lambda_{it} = \lambda_{0t} * exp(\beta_1 NewInc_{it}^{f} + \beta_2 NewInc_{it}^{m} + \beta_3 X_{it} + \beta_4 \alpha_i)$$

where i is an individual child with superscript x taking two values: father denoted by superscript f and mother by superscript m, and $NewInc_{it}^{x}$ indicates the child's parent was incarcerated at time t or since $t-1$. X_i is a vector of time-varying controls, α_i is a set of time-invariant controls, λ_{it}, the outcome variable, is a nonparametric baseline intensity function that measures the hazard of homelessness, eviction, or foster care for child i at time t, and λ_{0t} is the baseline hazard function. This specification will analyze the effects of parental incarceration on children's outcomes by looking at the separate effects of paternal and maternal incarceration on the baseline intensity function.

The second specification uses a pooled linear probability model with dummies for each child-age wave. I estimate the following:

$$Y_{it} = \beta_0 + \beta_1 NewInc_{it}^{f} + \beta_2 NewInc_{it}^{m} + \beta_3 X_{it} + \beta_4 \eta_i + \sum_t \gamma_t D_t + \epsilon_{it}$$

where Y_{it} is the outcome, t indicates each child-age wave, D_t indicates a dummy for age-specific effects at time t, and η_i is a set of time-invariant controls for child i. This model explains how the incarceration of the mother or father in a wave relates to the average change in probability of the outcome by β_2 or β_3 percentage points respectively.

My third primary specification is a pooled logit model with dummies for each child-age wave. I estimate this regression:

$$log\left(\frac{P(Y_{it}=1)}{1-P(Y_{it}=1)}\right) = \beta_0 + \beta_1 NewInc_{it}^{f} + \beta_2 NewInc_{it}^{m} + \beta_3 X_{it} + \beta_4 \eta_i + \sum_t \gamma_t D_t + \epsilon_{it}$$

This model estimates the change in the log odds of the outcome occurring given a paternal or maternal incarceration in a given child-age wave.

My secondary analysis looks at the timing of parental incarceration and whether it matters for child homelessness. The following fixed effects linear probability model is estimated:

$$\begin{aligned} CH_{it} = \beta_0 + \sum_t \gamma_t D_t + \beta_1 NewInc_{it}^{f} + \beta_2 NewInc_{it}^{m} + \sum_t \beta_3 (NewInc_{it}^{f} \cdot D_t) \\ + \sum_t \beta_4 (NewInc_{it}^{m} \cdot D_t) + \beta_5 X_{it} + \alpha_i + \epsilon_{it} \end{aligned}$$

Where CH indicates child i was considered homeless at time t. By using interaction terms for paternal and maternal incarceration and the wave dummies, I can see how the relationship between parental incarceration and child homelessness differs across child ages.

In an attempt to overcome selection bias, I also create a set of propensity scores. I use a set of 27 variables for each of the father and mother to calculate a propensity score for the probability of ever being incarcerated. All variables are selected from the baseline survey to roughly model the potential outcomes for each observation. Variables are chosen based on how likely they are to explain parental incarceration and to minimize missing values. I also construct a propensity score for the probability of either parent being incarcerated using the set of both mother and father variables. Lastly, I create quintile bands using the both parent propensity score to be used for matching. Any variable used in creating propensity scores is not included in my regressions.

II. Results and Discussion

Table 2 presents the results for the relationship between parental incarceration and child homelessness. Panels A, B, and C report the three primary model specifications, and columns (1), (2), and (3) separate the baseline model from the propensity score models. Column (2) uses the mother and father's propensity scores and propensity scores squared as controls, whereas column (3) performs matching on the quintile bands of the propensity score for either parent being incarcerated. There is a clear positive and statistically significant relationship between paternal incarceration and child homelessness across all model specifications. In contrast, maternal incarceration has no statistically significant effect in any of the regressions. Panel A suggests a roughly 61% to 79% higher risk of child homelessness on average when the father is incarcerated. Panel B estimates that having a newly incarcerated father is related to a 0.9 to 1 percentage point increase in child homelessness, relative to a mean of roughly 2.2%. Panel C reports two interpretations of the same regressions which relate to a roughly 60% increase in child homelessness when a father is newly incarcerated. Despite the smaller sample sizes for the propensity models, the results are robust to the different model specifications.

Evictions may play a large role in understanding the relationship between parental incarceration

TABLE 2—PARENTAL INCARCERATION AND CHILD HOMELESSNESS

	(1) Baseline	(2) PS as Control	(3) PS Match
Panel A: Cox (AG):			
Coefficient: *Hazard ratio of child homelessness*			
Father New Incarceration	1.61*** (0.20)	1.65*** (0.31)	1.79*** (0.30)
Mother New Incarceration	1.19 (0.41)	1.27 (0.67)	1.55 (0.61)
N	13,941	6,802	8,911
Clusters	4,072	1,816	2,421
Prob $> \chi^2$	0.0000	0.0000	0.0000
Panel B: Pooled LPM:			
Coefficient: *% pt. change in probability of child homelessness*			
Father New Incarceration	0.010*** (0.003)	0.009* (0.005)	0.009** (0.004)
Mother New Incarceration	0.001 (0.011)	0.005 (0.016)	0.011 (0.015)
Mean Child Homelessness	0.023 (0.151)	0.022 (0.145)	0.021 (0.144)
N	14,404	6,995	9,182
Clusters	4,083	1,815	2,430
R^2	0.0153	0.0159	0.0174
Panel C: Pooled Logit:			
Coefficient: *Log-odds of child homelessness*			
Father New Incarceration	0.48*** (0.13)	0.45** (0.19)	0.51*** (0.17)
Mother New Incarceration	-0.01 (0.35)	0.18 (0.50)	0.28 (0.40)
Coefficient: *Odds-ratio of child homelessness*			
Father New Incarceration	1.61*** (3.82)	1.57** (2.37)	1.66*** (3.01)
Mother New Incarceration	0.97 (0.04)	1.20 (0.37)	1.33 (0.71)
N	14,404	6,995	9,182
Clusters	4,083	1,815	2,430
Pseudo R^2	0.0811	0.0858	0.0915

Note:

Standard Errors in parentheses and clustered by child ID. Coefficients with *** significant at 1% significance level, ** significant at 5% level, and * significant at 10% level. Controls included: Dummies for Mother smoking while pregnant, and child race (Black, White, Hispanic, Other). Time-varying controls include number of adults and children living in the household, if parents were living together or married, mother and father age, mother's education and reported household income. Models in column (1) report regressions including the above controls. Models in column (2) additionally include four propensity scores for the probability of incarceration: mother's score, mother's score squared, father's score, and father's score squared. Models in column (3) additionally include propensity score matching on quintile bands of the probability of either parent ever being incarcerated. Pooled models include dummies for waves at child-ages 3, 5, 9, and 15 where child-age 1 is the left-out category. Panel A reports the hazard ratio which corresponds to the increase in the probability of child homelessness given a 1-unit change in the independent variable. Panel B includes a row reporting the regression sample specific means of child homelessness, with standard errors in parentheses. Panel C includes two interpretations of the coefficients, where the exponent of the log-odds gives the odds-ratio. The odds-ratios correspond to the increased probability of child homelessness given a one-unit change in the independent variable.

and child homelessness, so Appendix Table A1 reports the findings for the same set of regressions but using evictions as the outcome. Overall, we see roughly the same magnitudes, directions, and statistical significance as the homelessness outcomes. These additional analyses suggest that evictions are important and may be a primary mechanism for understanding this relationship, although a mediation analysis would be required to confirm this. Fixed effects conditional logit and fixed effects linear probability models were also run and reported in Appendix Table A2 for both child homelessness and evictions. However, neither showed any significant results, which may be because they are underpowered. It could also be that the time invariant fixed effects are necessary as controls for explaining these relationships and so fixed effects models are not appropriate for this analysis. There is the possibility that there is no effect of parental incarceration on child homelessness or evictions, but given the existing literature I find this unlikely. Thus, I include this discussion to say that for this dataset and specific question, fixed effects models may be inadequate.

Wildeman (2014) argues that the reason why only paternal incarceration is significant and not maternal incarceration is because of state intervention leading to foster care placement. Descriptively, there does seem to be some relation between incarceration and foster care for both paternal and maternal incarceration (see Appendix Figures A3 and A4). I test Wildeman's hypothesis using the same set of regression models, reported in Table 3, with foster care as the outcome variable. Panel A shows a strong positive relationship for both paternal and maternal incarceration on foster care in the baseline, but the father's incarceration becomes less significant in the propensity score models. This trend holds in both other panels where maternal incarceration has roughly twice the coefficient size of paternal incarceration and the effect becomes less significant when including propensity score controls and matching. The diminishing significance may be due to the much smaller sample size, especially column (2), or it could be that selection effects are driving the results in the baseline

TABLE 3—PARENTAL INCARCERATION AND FOSTER CARE

	(1) Baseline	(2) PS as Control	(3) PS Match
Panel A: Cox (AG):			
Coefficient: *Hazard ratio of foster care placement*			
Father New Incarceration	1.88*** (0.39)	1.53 (0.47)	1.77** (0.51)
Mother New Incarceration	5.11*** (1.67)	3.92*** (2.09)	4.58*** (2.09)
N	14,227	6,926	9,100
Clusters	4,078	1,816	2,433
Prob $> \chi^2$	0.0000	0.0000	0.0000
Panel B: Pooled LPM:			
Coefficient: *% pt. change in probability of foster care placement*			
Father New Incarceration	0.061*** (0.022)	0.031 (0.030)	0.056** (0.027)
Mother New Incarceration	0.146*** (0.051)	0.136 (0.085)	0.135 (0.071)
Mean Foster Care	0.134 (0.341)	0.125 (0.331)	0.124 (0.329)
N	1,619	743	968
Clusters	439	181	244
R^2	0.0638	0.0768	0.0704
Panel C: Pooled Logit:			
Coefficient: *Log-odds of foster care placement*			
Father New Incarceration	0.55*** (0.20)	0.28 (0.28)	0.56** (0.26)
Mother New Incarceration	1.08*** (0.31)	1.02* (0.53)	1.06** (0.46)
Coefficient: *Odds-ratio of foster care placement*			
Father New Incarceration	1.73*** (2.69)	1.32 (0.99)	1.74** (2.12)
Mother New Incarceration	2.95*** (3.45)	2.78* (1.92)	2.89** (2.32)
N	1,619	743	968
Clusters	439	181	244
Pseudo R^2	0.0876	0.1045	0.1025

Note:

Standard Errors in parentheses and clustered by child ID. Coefficients with *** significant at 1% significance level, ** significant at 5% level, and * significant at 10% level. Controls included: Dummies for Mother smoking while pregnant, and child race (Black, White, Hispanic, Other). Time-varying controls include number of adults and children living in the household, if parents were living together or married, mother and father age, mother's education and reported household income. Models in column (1) report regressions including the above controls. Models in column (2) additionally include four propensity scores for the probability of incarceration: mother's score, mother's score squared, father's score, and father's score squared. Models in column (3) additionally include propensity score matching on quintile bands of the probability of either parent ever being incarcerated. Pooled models include dummies for waves at child-ages 3, 5, 9, and 15 where child-age 1 is the left-out category. Panel A reports the hazard ratio which corresponds to the increase in the probability of foster care given a 1-unit change in the independent variable. Panel B includes a row reporting the regression sample specific means of child foster care, with standard errors in parentheses. Panel C includes two interpretations of the coefficients, where the exponent of the log-odds gives the odds-ratio. The odds-ratios correspond to the increased probability of foster care given a one-unit change in the independent variable.

model. The results of this table should be accepted only with caution as the sample size is relatively small, the variables used to construct the foster care outcome had very low reporting rates, and the survey questions were asked only during the child-age 22 survey. However, if the results are to be believed, Wildeman (2014) was partially correct that maternal incarceration can lead to increased foster care. However, this likely does not explain why maternal incarceration was insignificant in his regressions because the father's incarceration also leads to increased foster placement, albeit at a lower level.

Lastly, Table 4 reports the effects of the timing of parental incarceration on child homelessness. Column (1) displays the results of a pooled linear probability model (LPM) which estimates the percentage change in the probability of child homelessness given a parental incarceration. Column (2) reports the results of a pooled logit model in terms of odds-ratios, which represent the change in probability of child homelessness given a parental incarceration. The main effects for both models are for parental incarceration at child age 1 (the reference year), and interaction terms are included for subsequent years. For fathers, we see similar trends in both models: The baseline year shows a statistically significant effect of paternal incarceration on child homelessness. Child age 3 and 5 show no significant results, and child age 9 is significant at the 10% significance level for the pooled LPM model only. Both models show strong and significant effects for child age 15. I interpret the coefficients in column (1) and by adding the base year coefficient to the interaction terms, which gives the effect of incarceration in the given year. For column (2) I multiply the base year odds-ratio with the interaction term odd-ratios, which gives me the effects of incarceration in the given years. I focus on child age 1 and 15 because both models find significant coefficients: At child age 1, the models predict the effect of a paternal incarceration on child homelessness is a +2.1 percentage point increase (pooled LPM) or +74% increase (pooled logit) relative to children with no paternal

TABLE 4—TIMING OF PARENTAL INCARCERATION ON CHILD HOMELESSNESS

	(1) Pooled LPM	(2) Pooled Logit
Coefficient	% pt. Change in Probability	Odds-Ratio
Child Age		
Child Age 3	-0.008^{*} (0.004)	0.64 (0.25)
Child Age 5	-0.010^{**} (0.004)	0.55^{*} (0.29)
Child Age 9	-0.019^{***} (0.004)	0.15^{***} (0.53)
Child Age 15	0.017^{*} (0.009)	1.79^{*} (0.26)
Father New Incarceration		
Main effect (Child Age 1)	0.021^{***} (0.007)	1.74^{**} (0.20)
$\times$ Child Age 3	-0.001 (0.009)	1.25 (0.31)
$\times$ Child Age 5	-0.010 (0.009)	1.08 (0.36)
$\times$ Child Age 9	-0.015^{*} (0.008)	2.51 (0.58)
$\times$ Child Age 15	-0.037^{***} (0.011)	0.42^{**} (0.33)
Mother New Incarceration		
Main effect (Child Age 1)	0.198 (0.154)	5.60^{*} (0.88)
$\times$ Child Age 3	-0.248 (0.154)	
$\times$ Child Age 5	-0.186 (0.156)	0.26 (1.07)
$\times$ Child Age 9	-0.205 (0.155)	0.14 (1.36)
$\times$ Child Age 15	-0.213 (0.155)	0.11^{*} (1.04)
Mean Child Homelessness	0.023	0.023
N	14,404	14,394
Clusters	4,083	4,083
R^2 (Pseudo for logit)	0.018	0.087

Note:

Standard Errors in parentheses and clustered by child ID. Coefficients with *** significant at 1% significance level, ** significant at 5% level, and * significant at 10% level. Controls included: Dummies for Mother smoking while pregnant, and child race (Black, White, Hispanic, Other). Time-varying controls include number of adults and children living in the household, if parents were living together or married, mother and father age, mother's education and reported household income. Reference category for Child Age wave, Father New Incarceration and Mother New Incarceration and associated interaction effects is Child Age 1. Column (1) coefficients report the estimated percentage change in the probability of child homelessness when the mother or father becomes incarcerated in a wave. Mean child homelessness in the sample is included for comparison. Column 2 reports the odds-ratios which correspond to the change in probability of child homelessness given a one-unit change in the independent variable. Effects for the mother at ages 3 omitted due to perfect prediction, due to only 18 mothers reported as incarcerated in this wave.

incarceration. Compared to the mean child homelessness rate in the sample of 2.3%, this effect has a large magnitude. The effect at of paternal incarceration at child age 15 is -1.6 percentage points (pooled LPM) or 27% lower (pooled logit) than children at age 1 who do not have a newly incarcerated father [1].

For mothers, nothing seems to be significant except possibly at child age 1 and 15 in the pooled logit model, but only at the 10% significance level. Given that so few mothers report being newly incarcerated at child age 1 (only 10 mothers), the results of the mothers effects are likely unreliable, so I focus on the fathers. Clearly, paternal incarceration seems to have a strong effect on the probability of child homelessness at child age 1. This could be due to the negative economic shock to the family from having an incarcerated father. However, at child age 15, these results suggest a protective effect of paternal incarceration that leads to lower average child homelessness. Although the mechanisms could be hard to untangle, this could be explained by Norris et al.'s (2021) hypothesis that incarceration may increase stability in the home through the removal of deviant fathers whose behaviours negatively impact their children. For example, if fathers have substance abuse problems, they may drain family resources rather than contribute to them.

III. Summary and Concluding Remarks

This study used a series of longitudinal modeling techniques to better understand how parental incarceration affects child homelessness. The findings suggest that having a father incarcerated increases the probability of the child becoming homeless by roughly 60%. Additional analyses indicate that evictions may play an important role. However, this study gives no insight into the effect of maternal incarceration on child homelessness. This could be due to the small number

[1] I add the child age 15 interaction to the base year to get $0.021 - 0.037 = -0.016$. I multiply the odds ratios for the same years to get $1.74 * 0.42 = 0.73$, which is an odd-ratio less than 1 lower odds of the outcome occurring

of incarcerated mothers in the sample, the fact that maternal incarceration may increase foster placement rather than child homelessness, or some other combination of factors. Both of these findings are consistent with Wildeman (2014), suggesting that the impact of paternal incarceration on child homelessness is not simply a short-term outcome, but may have longer-term impacts, remaining well into childhood and adolescence (i.e., age 9 and 15). The primary contribution of this paper is the analysis on the effects of the timing of parental incarceration on child homelessness. I find that for children at age 1 with a newly incarcerated father, they are roughly 74% more likely to become homeless compared to children without newly incarcerated fathers. Surprisingly, new paternal incarceration at age 15 has the opposite effect, reducing the probability of child homelessness by 27% compared to children at age 1 with a newly incarcerated father. Thus, the conflicting results in the literature may be reflecting differences in age effects. Children with incarcerated fathers at an early age may be adversely impacted by the loss of an additional parent through financial stability, ultimately resulting in homelessness. Conversely, children's living situations may be less impacted by their fathers in adolescence, as they and their mothers may have a broader support system by then.

Despite the amount of effort taken to rigorously model and interpret these results, there are many limitations that present challenges to my findings. First, the attrition rates previously discussed made it very difficult to use a robust set of controls while still maintaining a healthy sample size. This means that there is likely some amount of bias that I could not account for in my models. Another issue stems from the survey design as only the primary caregiver was surveyed at child age 15. Because most primary caregivers were mothers (87.9%) during this wave, most of the father data is reported by the mothers. Although I tested for correlations between father nonresponse and child homelessness, eviction, and new father incarceration, I could not perform this analysis at child-age

15. It is likely that the fathers whose whereabouts are unknown to the mother could be more likely to be incarcerated, but we cannot track them. This problem may be influencing my results, including the protective effects found in my timing models. I also used propensity scores to try to address selection bias, but given the number of missing values, I could only select a moderate number of variables in the baseline year. Lastly, some of my models may be underpowered, especially the fixed effects and foster care regressions.

Researching homelessness is inherently difficult because unhoused individuals are notoriously hard to locate. Data is sparse, lacking, and hard to obtain because of confidentiality and the fact that many of the unhoused may not want to be tracked. When considering child homelessness, this problem is exacerbated because the researcher needs data that follows both parent and child and can track homeless spells. The FFCWS is not perfect, but it may be one of the best available datasets to answer questions related to child homelessness because of its cohort-based panel structure and many waves of data. The findings of this research provide more evidence on the effect of parental incarceration on child homelessness, which so far is relatively under-researched. Additionally, it provides some of the first suggestive evidence and insight into how the timing of parental incarceration may play an important role in child homelessness. This could suggest the need for increased supports for children whose parents become incarcerated, especially at younger ages. Ultimately, the hope is that this work provides a springboard for future researchers on the path to finding a sound causal study on this topic. The effect of parental incarceration on child homelessness should be studied further because children should not have to pay the price for their parents' crimes.

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V. Appendix

TABLE A1—FATHER'S NONRESPONSE CHECK: VARIABLES BY YEAR

Variable Label	**Year**
Attitudes and Expectations	
Did you suggest that she have an abortion?	1
How important is it to provide direct care to child?	1
What would the hourly wage have to be for you to take a job?	2
Overall, how satisfied are you with your life?	3
How important is money for your happiness?	3
In general, how satisfied are you with your life overall?	4
How important that fathers teach children about life	5
How important that fathers serve as an authority figure	5
How satisfied you are with your life overall	5
How close you feel to child	5
Education and School	
Highest grade of regular school that you completed?	1
What is highest grade of school bio. mother completed?	2
What is highest grade of school biological father completed?	2
Did you talk to child's child care provider about child?	3
Talk to care provider about how child's doing?	4
How many friends met through child's school?	4
Talked to child's teachers about progress	5
Checked to make sure child had completed homework	5
Family and Social Ties	
Living with both biological parents at age 15?	1
How involved was your biological father in raising you?	1
Would someone in your family loan you $200?	1
Was your biological father involved while growing up?	2
Did you know biological father growing up?	2
Could you trust anyone else to look after child?	3
Could you count on someone to loan $200?	3
Did biological father ever experience 2+ weeks of depression?	3
Did biological mother ever experience 2+ weeks of depression?	3
Living with both biological parents at age 15?	4
Are both of your parents living?	4
Could you count on someone for a loan in next year?	4
Father could count on someone to loan him $200	5
Grade father's biological mother completed	5
Grade father's biological father completed	5

TABLE A2—FATHER'S NONRESPONSE CHECK: VARIABLES BY YEAR

Variable Label	Year
Health and Health Behavior	
Do you have other biological children?	1
How is your health?	1
Are you very satisfied with yourself?	1
How is the child's health?	2
Was child ever breastfed?	2
In general, how is your child's health?	2
In general, how is your health?	2
How is child's health in general?	3
In general, how is your health?	3
What is your height? (feet)	3
How many children do you have altogether (including child)?	4
In general, how is child's health?	4
In general, how is your health?	4
Housing and Neighborhood	
During bio mom's pregnancy did you receive a place to live?	1
What is current living situation?	2
No. of mo. ago he/she stop living with you most of the time?	3
What is your current housing situation?	3
Who does child usually live with?	4
Who does child live with when not with you?	4
What is your current housing situation?	4
Ever lived with child most of the time	5
Your current housing situation	5
Legal System	
Will your name be on the birth certificate?	1
Can blood test prove if a man is really the child's father?	1
Did anyone at the hospital talk about establishing paternity?	1
Has legal paternity been established?	2
Ever been booked or charged with breaking the law?	2
Ever been convicted of any charges (not minor traffic)?	2
Is mother currently working, in school, or unemployed?	3
Has mother ever spent any time in jail?	3
Ever been convicted of any charges (not traffic violations)?	3
Has your legal paternity been established?	4
Has mother spent any time in jail in last 2 yrs?	4
Ever required to do community service or been on probation?	4
Current partner spent any time in jail or prison	5

TABLE A3—FATHER'S NONRESPONSE CHECK: VARIABLES BY YEAR

Variable Label	Year
Parenting	
Were you present at the birth?	1
Do you want to be involved in raising your child(ren) in upcoming years?	1
How many days did you see the child in the past 30 days?	2
Taking care of children is more work than pleasure	2
Since child's birth, has mother seen child?	2
About how many days did you see child in past 30 days?	3
How do you feel about yourself as a father to child?	3
How many days did you see child in past month?	4
What kind of father do you think you are?	4
Have you ever asked mother to spend more time with child?	4
Number of days child lived with you out of past 30 days	5
Father not a good parent / Father a bad influence	5
How you feel about yourself as a father	5
Amount of influence you have in making decisions about child's health care	5
Romantic Relationships	
How many years did you know each other before (baby's mother) got pregnant?	1
Is respondent married to baby's mother?	1
How often did bio mom insult/criticize you or ideas?	1
What is your relationship with mother now?	2
Are you and mother currently living together?	2
What is your relationship with child's mother now?	3
Are you and mother currently living together?	3
How often do you and mother see or talk to each other?	3
What is your relationship with mother now?	4
Are you and mother currently living together?	4
How do you handle your money?	4
Relationship with child's biological mother now	5
I don't get along well with child's mother	5

TABLE A4—CORRELATIONS BETWEEN FATHER NONRESPONSE & OUTCOMES

	Father Nonresponse Rate			
Age	(1)	(3)	(5)	(9)
	ρ	ρ	ρ	ρ
Age 1				
Child Homelessness	–0.01			
Child Evicted	–0.05***			
Father New Incarceration	–0.08***			
Age 3				
Child Homelessness		–0.01		
Child Evicted		–0.04***		
Father New Incarceration		0.01		
Age 5				
Child Homelessness			0.00	
Child Evicted			–0.02	
Father New Incarceration			0.02	
Age 9				
Child Homelessness				–0.02*
Child Evicted				–0.10***
Father New Incarceration				–0.15***
Avg. Nonresponse Rate	0.61	0.50	0.61	0.68
Observations		4898		

Note:

Observations are for reference children whom are recorded each wave regardless of the father's responsiveness. Avg. Nonresponse rate take values between 0 and 1 where 0 denotes that for every selected variable in each year a father has no missing values. Coefficients with *** significant at 1% significance level, ** significant at 5% level, and * significant at 10% level.

FIGURE A1.

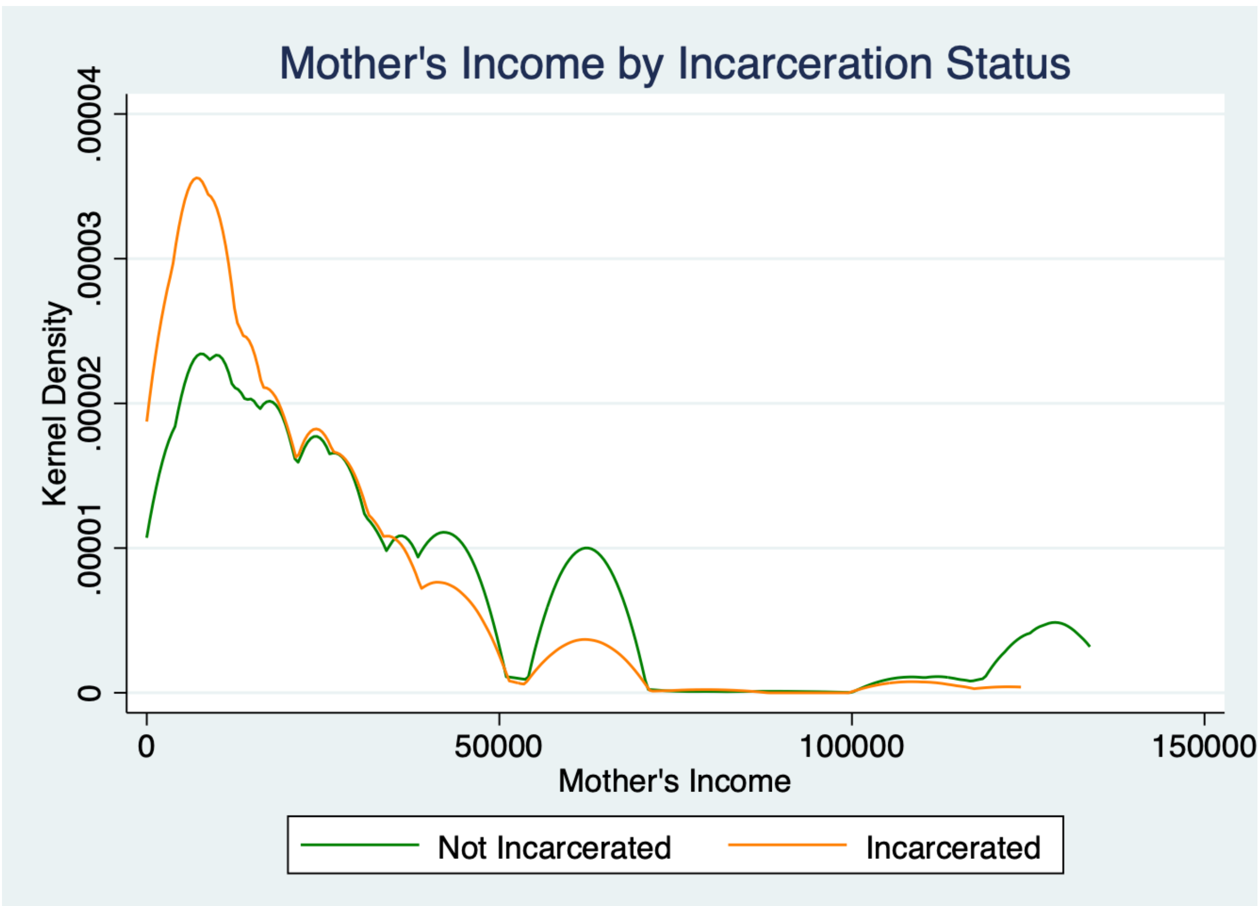

Mother's Income by Incarceration Status
Kernel Density
0
.00001
.00002
.00003
.00004
0
50000
100000
150000
Mother's Income
Not Incarcerated
Incarcerated

FIGURE A2.

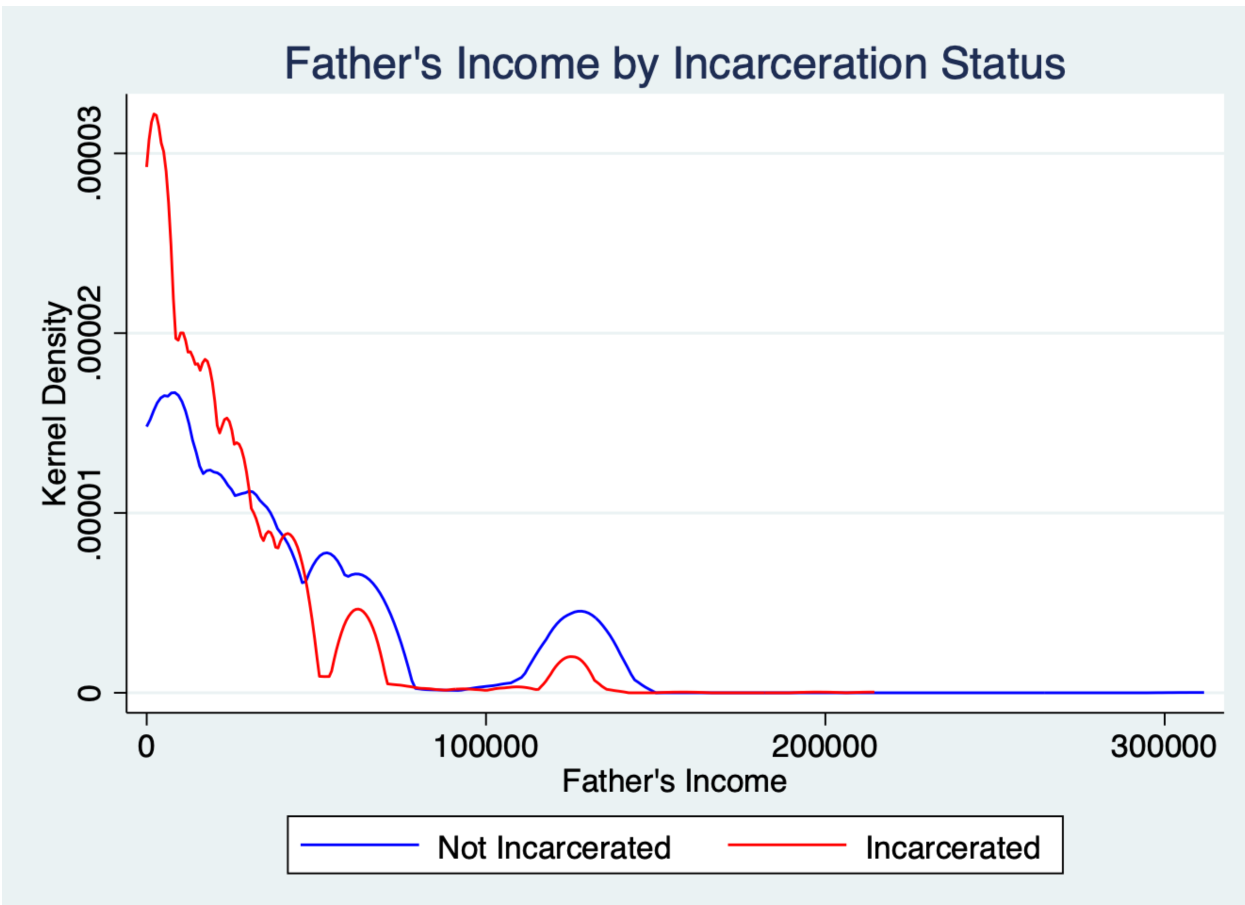

Father's Income by Incarceration Status
Kernel Density
.00003
.00002
.00001
0
0
100000
200000
300000
Father's Income
Not Incarcerated
Incarcerated

TABLE A5—POVERTY STATUS AND PARENTAL INCARCERATION, BY CHILD AGE

		Father's Cumulative Incarceration			Mother's Cumulative Incarceration		
Child Age		Not Incarc.	Incarc.	Total	Not Incarc.	Incarc.	Total
	Poverty = 0	1,110	2,457	3,567	2,726	246	2,972
1	Poverty = 1	251	686	937	1,380	217	1,597
	Total	1,361	3,143	4,504	4,106	463	4,569
	Poverty = 0	1,065	2,389	3,454	2,407	228	2,635
3	Poverty = 1	227	724	951	1,611	226	1,837
	Total	1,292	3,113	4,405	4,018	454	4,472
	Poverty = 0	1,062	2,452	3,514	2,470	225	2,695
5	Poverty = 1	179	638	817	1,483	223	1,706
	Total	1,241	3,090	4,331	3,953	448	4,401
	Poverty = 0	802	2,355	3,157	2,200	246	2,446
9	Poverty = 1	161	607	768	1,411	207	1,618
	Total	963	2,962	3,925	3,611	453	4,064
	Poverty = 0	660	2,383	3,043	2,139	261	2,400
15	Poverty = 1	119	489	608	1,126	177	1,303
	Total	779	2,872	3,651	3,265	438	3,703

TABLE A6—POVERTY STATUS AND *NEW* PARENTAL INCARCERATION BY CHILD AGE

		Father New Incarceration			**Mother New Incarceration**		
Child Age		Not Incarc.	Incarc.	Total	Not Incarc.	Incarc.	Total
1	Poverty = 0	2,527	1,040	3,567	2,967	5	2,972
	Poverty = 1	492	398	890	1,480	5	1,485
	Total	3,019	1,438	4,457	4,447	10	4,457
3	Poverty = 0	2,050	1,281	3,331	2,794	5	2,799
	Poverty = 1	397	482	879	1,439	13	1,452
	Total	2,447	1,763	4,210	4,233	18	4,251
5	Poverty = 0	1,904	1,334	3,238	2,661	56	2,717
	Poverty = 1	367	506	873	1,387	56	1,443
	Total	2,271	1,840	4,111	4,048	112	4,160
9	Poverty = 0	1,610	1,266	2,876	2,344	69	2,413
	Poverty = 1	295	474	769	1,203	74	1,277
	Total	1,905	1,740	3,645	3,547	143	3,690
15	Poverty = 0	1,052	1,681	2,733	2,158	145	2,303
	Poverty = 1	296	410	706	1,067	104	1,171
	Total	1,348	2,091	3,439	3,225	249	3,474

TABLE A7—PARENTAL INCARCERATION AND EVICTION

	(1) Baseline	(2) PS as Control	(3) PS Match
Panel A: Cox (AG):			
Coefficient: *Hazard ratio of recent eviction*			
Father New Incarceration	1.61*** (0.17)	1.52*** (0.23)	1.60*** (0.22)
Mother New Incarceration	1.20 (0.33)	0.87 (0.37)	1.02 (0.38)
N	13,749	6,647	8,772
Clusters	4,065	1,816	2,434
Prob > χ^2	0.0000	0.0000	0.0000
Panel B: Pooled LPM:			
Coefficient: *% pt. change in probability of recent eviction*			
Father New Incarceration	0.017*** (0.004)	0.017** (0.006)	0.018*** (0.005)
Mother New Incarceration	0.014 (0.015)	-0.007 (0.021)	0.016 (0.020)
Mean Child Eviction	0.035 (0.194)	0.039 (0.19)	0.036 (0.186)
N	14,464	7,022	9,221
Clusters	4,091	1,816	2,434
R^2	0.0183	0.0269	0.0260
Panel C: Pooled Logit:			
Coefficient: *Log-odds of recent eviction*			
Father New Incarceration	0.54*** (0.10)	0.49*** (0.15)	0.56*** (0.13)
Mother New Incarceration	0.19 (0.24)	-0.21 (0.38)	0.17 (0.30)
Coefficient: *Odds-ratio of recent eviction*			
Father New Incarceration	1.72*** (5.23)	1.63*** (3.33)	1.75*** (4.28)
Mother New Incarceration	1.21 (0.80)	0.81 (0.57)	1.19 (0.58)
N	14,464	7,022	9,221
Clusters	4,091	1,816	2,434
Pseudo R^2	0.0621	0.0836	0.0862

Note:

Standard Errors in parentheses and clustered by child ID. Coefficients with *** significant at 1% significance level, ** significant at 5% level, and * significant at 10% level. Controls included: Dummies for Mother smoking while pregnant, and child race (Black, White, Hispanic, Other). Time-varying controls include number of adults and children living in the household, if parents were living together or married, mother and father age, mother's education and reported household income. Models in column (1) report regressions including the above controls. Models in column (2) additionally include four propensity scores for the probability of incarceration: mother's score, mother's score squared, father's score, and father's score squared. Models in column (3) additionally include propensity score matching on quintile bands of the probability of either parent ever being incarcerated. Pooled models include dummies for waves at child-ages 3, 5, 9, and 15 where child-age 1 is the left-out category. Panel A reports the hazard ratio which corresponds to the increase in the probability of child eviction given a 1-unit change in the independent variable. Panel B includes a row reporting the regression sample specific means of child eviction, with standard errors in parentheses. Panel C includes two interpretations of the coefficients, where the exponent of the log-odds gives the odds-ratio. The odds-ratios correspond to the increased probability of child eviction given a one-unit change in the independent variable.

TABLE A8—FIXED EFFECTS ESTIMATES FOR PRIMARY OUTCOMES

	(1) FE Cond. Logit	(2) FE LPM
Panel A: Eviction		
Father new-incarceration	0.26 (0.17)	0.006 (0.006)
Mother new-incarceration	-0.17 (0.29)	-0.005 (0.016)
N	1,693	14,464
Clusters		4,091
Pseudo R^2 / R^2	0.0261	0.0030 (within)
Panel B: Child Homelessness		
Father new-incarceration	0.21 (0.23)	0.005 (0.005)
Mother new-incarceration	-0.22 (0.44)	-0.007 (0.014)
N	1,096	14,404
Clusters		4,083
Pseudo R^2 / R^2	0.0128	0.0011 (within)

Note:

Standard errors in parentheses. Coefficients with *** significant at 1% significance level, ** significant at 5% level, and * significant at 10% level. Models include time-varying controls: number of adults and children in the household, if parents lived together or were married, mother/father age and education, and mother's reported household income. Column (1): Log-odds. Column (2): Percentage point change in outcome probability.

FIGURE A3.

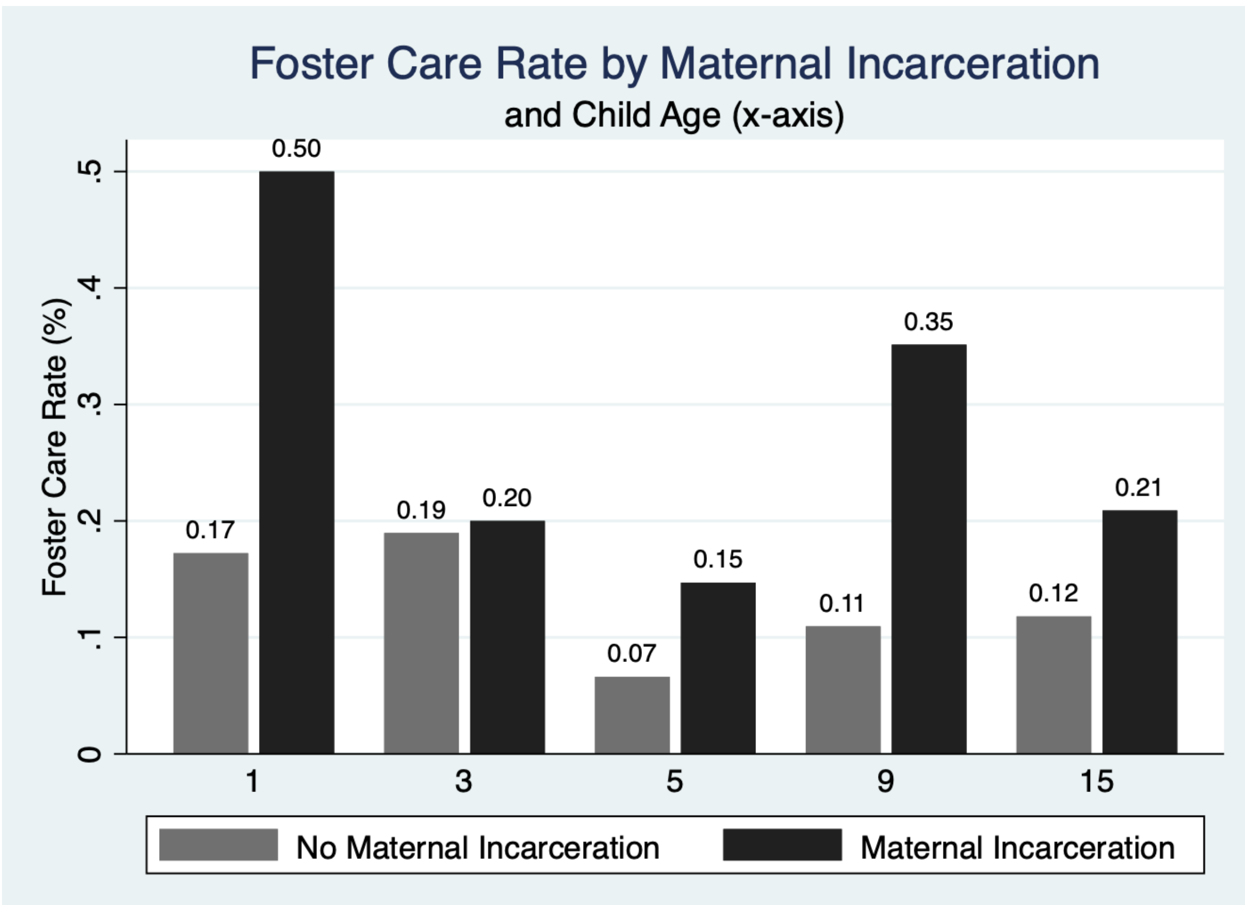
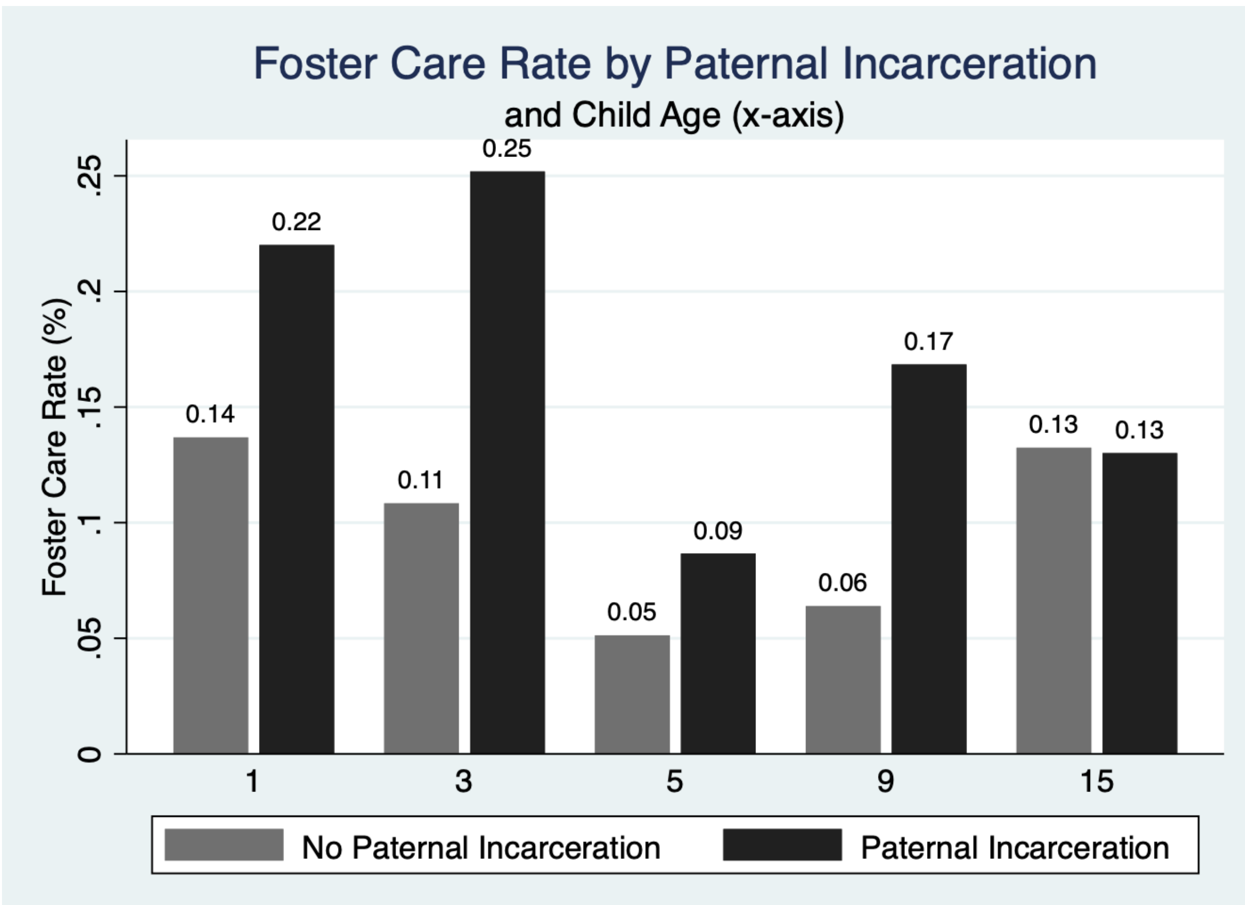

Foster Care Rate by Maternal Incarceration
and Child Age (x-axis)
Foster Care Rate (%)
0
.1
.2
.3
.4
.5
0.17
0.50
0.19
0.20
0.07
0.15
0.11
0.35
0.12
0.21
1
3
5
9
15
No Maternal Incarceration
Maternal Incarceration

FIGURE A4.


Foster Care Rate by Paternal Incarceration
and Child Age (x-axis)
Foster Care Rate (%)
0
.05
.1
.15
.2
.25
0.14
0.22
0.11
0.25
0.05
0.09
0.06
0.17
0.13
0.13
1
3
5
9
15
No Paternal Incarceration
Paternal Incarceration