

Family Formation and Crime

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Abstract

We use administrative data from Washington State to perform a large-scale analysis of family formation and crime. Our event studies indicate that pregnancy triggers sharp declines in arrests rivaling any known intervention, providing support for the view that childbirth is a “turning point” that reduces deviant behavior through social bonds. For mothers, criminal arrests drop precipitously in the first few months of pregnancy, stabilizing at half of pre-pregnancy levels three years after the birth. Men show a sustained 25 percent decline in crime that begins at pregnancy, although arrests for domestic violence spike at birth. Men’s employment increases during pregnancy and peaks at birth. These effects are concentrated among first-time parents and persist despite deteriorating rates of cohabitation and employment, suggesting that a permanent change in preferences—rather than transitory time and budget shocks—may drive the results. A separate design using stillbirths confirms the causal role of having children on crime declines. Marriage, in contrast, is not associated with any sudden changes and marks the completion of a gradual 50 percent decline in arrests for both men and women.

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[A]fter I got caught up in the bad life, as far as jail, the kids helped me keep my head up, look forward. I got something to live for. Kids give you something to live for.

—Twenty-seven-year-old father quoted in [Edin and Nelson \(2013\)](#)

1 Introduction

Social dynamics are a fundamental determinant of crime ([Glaeser et al., 1996](#)). Interactions within neighborhoods ([Damm and Dustmann, 2014](#)), with potential criminal peers ([Bayer et al., 2009](#)), and with schoolmates ([Billings et al., 2013](#)) can meaningfully alter criminal trajectories, especially compared to traditional mechanisms that focus on the severity and immediacy of punishments ([Becker, 1968](#); [Chalfin and McCrary, 2017](#)). Understanding the social drivers of crime is critical for designing a broad set of policies, from the cell assignments of the incarcerated to the spatial distribution of law enforcement.

In economics, research has emphasized the importance of social interactions with romantic partners, spouses, and children for decisions such as work and retirement ([Becker, 1991](#); [Blundell and MaCurdy, 1999](#); [Voena, 2015](#); [Blundell et al., 2016](#)). Yet interactions within the family have the potential to shape preferences and constraints critical for criminal behavior as well. Indeed, an influential strand of sociology argues that family formation is central to criminal desistance, with marriage and childbirth serving as “turning points” with the power to reduce criminal behavior and spur employment through the added responsibility that comes with new social bonds ([Laub and Sampson, 2001](#); [Sampson et al., 2006](#)). Parents with previous criminal justice involvement frequently report in interviews that, without their children or spouse, they would be in prison or on drugs ([Edin and Kefalas, 2011](#); [Edin and Nelson, 2013](#); [Sampson and Laub, 2009](#)).

Previous studies on the impact of family formation on criminal activity have focused on qualitative evidence or relatively small survey samples, leaving open the possibility that criminal desistance caused marriage and childbearing, not the other way around. And despite the ubiquity and importance of family formation events—indeed, most people eventually have children or get married—empirical research in economics on the effects of family formation has focused on related but different questions such as the impact of child sex ([Dahl and Moretti, 2008](#); [Dustmann and](#)

Landersø, 2021) or effects on gender inequality (Kleven et al., 2019), with a few notable exceptions that focus on teen pregnancy (e.g. Hotz et al., 2005).

This paper uses administrative data on over a million births to take an unprecedentedly close look at how criminal behavior changes when men and women have children. We implement a novel match between Washington State administrative records covering the universe of criminal arrests, births, marriages, divorces, and a sample of quarterly wage records, the largest such study ever conducted in the United States. Our comprehensive data allow us to highlight sharp changes in both the timing and types of arrests—distinguishing between desistance that occurs well before a child is conceived and changes after conception—and control flexibly for key confounds such as age, while wage records allow us to study how these events affects substitution between licit and illicit activity. We complement the main analysis with a separate design contrasting the criminal activity of parents of live- and still-born children that allows us to further establish that children are central to changing behavior, not the opposite.

We begin our investigation with mothers. An event study analysis shows that pregnancy triggers enormous positive changes: drug, alcohol, and economic arrests decline precipitously at the start of the pregnancy, bottoming out in the months just before birth. Shortly after birth, criminal arrests recover, ultimately stabilizing at about 50 percent below pre-pregnancy levels. These effects are large compared to other commonly studied interventions. Helland and Tabarrok (2007) find that the threat of nearly 20 years of additional prison time decreases annual felony offenses by 15-20 percent, an elasticity of 0.05; Lee and McCrary (2005) calculate a similar deterrence elasticity for juveniles reaching the age of majority. Based on the summary assessment in Chalfin and McCrary (2017), this 50 percent drop in crime would correspond to a more than doubling of the police budget or prison population.

The sharpness of the response suggests that these declines reflect the impact of pregnancy rather than the onset of a romantic relationship or other coincident life events. There is no evidence of any anticipatory decline in arrest rates. We also find similar positive long-term impacts on teen mothers, for whom the vast majority of pregnancies are unanticipated (Mosher et al., 2012).¹ Still,

¹Several previous studies have found no or negative effects of teen childbearing on conventional economic outcomes such as income and education (Hotz et al., 2005, 1997; Fletcher and Wolfe, 2009; Kearney and Levine, 2012),

our results apply only to mothers who carry their child to term and therefore appear in the birth records; offending patterns for parents who terminate their pregnancy may differ. If the timing of pregnancy itself is unconfounded, our event study specification captures the causal effects of pregnancy on couples who elect to have the child. Recent evidence suggests that even among women who experience an unintended pregnancy, the majority do not receive an abortion (Finer and Zolna, 2014), suggesting this group accounts for a large share of all pregnancies. And unless mothers who do not carry their child to term have the *opposite* reaction to mothers who do, overall effects of pregnancy would likely still entail large decreases in crime.

Mothers, however, experience many physical effects of pregnancy that may change their propensity to engage in criminal activity independent of social interactions with their partners and children. Penalties for some criminal activities, including drug and excessive alcohol use, are also heightened while pregnant, and after a child is born mothers may also be more likely to be held legally responsible for the child's welfare. This leaves it unclear how various competing effects of childbearing may explain changes in mother's criminal behavior.

Fathers experience none of these changes and are typically less involved in childcare (Drago, 2009), making their outcomes a stronger test of how the social ties forged by family formation influence behavior. Our data provides a unique opportunity to study fathers because birth records in Washington have unusually high coverage of fathers, with 85% of births to unmarried mothers in our data containing the father's name and date of birth. In nationally representative data, such births are twice as likely to be missing father information (Mincy et al., 2005).

We find that new fathers also exhibit also substantial changes in criminal activity as a result of having children. Male arrests decrease sharply at the start of the pregnancy and remain at lower levels following the birth, with reductions around 25 percent for economic and drug crimes. The timing of the fathers' response suggests that pregnancy, not childbirth, is the primary inducement to decrease criminal behavior. As with patterns for mothers, there is no evidence of any anticipatory response both overall and in sub-populations where large fractions of pregnancies are unanticipated.

but have not studied crime.

The positive changes during pregnancy are mirrored in fathers' labor market outcomes, which we observe in quarterly unemployment insurance wage records provided by the Washington State Department of Corrections for a smaller sample of men sentenced to state probation or incarceration between 1992 and the present. We find that first-time fathers show an increase in employment that coincides with the onset of pregnancy. This result is consonant with survey research suggesting that many low-income men respond to pregnancy positively and often take steps to secure conventional employment: “[M]en such as Byron are suddenly transformed. This part-time cab driver and sometime weed dealer almost immediately secured a city job in the sanitation department” (Edin and Nelson, 2013). However, the increase is not sustained. One year after the birth, male employment is back at its pre-pregnancy levels. These mixed findings echo the results on summer jobs programs (Gelber et al., 2015), where a short-term increase in employment led to no long-run improvements in labor market attachment but decreased criminal involvement.

Not all changes brought on by family formation are positive, however. We find that men exhibit a large spike in domestic violence arrests at birth, from a low of 11 per 10,000 men in the months just before birth to a high of 24 per 10,000 just after. This represents a 50-110% increase, depending on whether the change is compared to the low point before birth or the high point before pregnancy. By contrast, other research shows that COVID-induced lockdowns increased domestic violence calls for service by 7.5% (Leslie and Wilson, 2020). Our effects account for a large number of offenses: 7 percent of unmarried first-time fathers in our data are arrested for domestic violence some time in the two years following birth. These effects reverse half of the overall decline in arrests from drugs, alcohol, and property offenses.

A portion of this increase may reflect increases in reporting rather than changes in behavior. Even if this result were solely driven by reporting, criminal justice interaction, itself a consequential outcome, unambiguously increases. Evidence from surveys and our own data, however, suggest that much of the spike corresponds to actual behavioral changes. Victimization surveys, which provide a more direct measure of behavior than calls to the police, also show evidence of a spike in violence after birth (Charles and Perreira, 2007). In addition, post-birth domestic violence offenses are strongly related to our administrative information on divorces. Within married

parents, domestic violence is much more common among those who eventually divorce, and, using the exact divorce date from our data, we find that divorce filings clearly coincide with increases in arrests for these offenses.

Changes in offending after childbirth could result from a shift in preferences—a shift in time discounting to be more forward-looking, for example—or a temporary change arising from the time demands of raising young children. That men’s changes persist over several years points to an important role for preferences, since unmarried parents are highly likely to separate; five years after childbirth, only 18 percent are co-residing (Tach et al., 2010). In addition, a heterogeneity analysis of first- vs. second-time parents supports the preferences channel, as the large permanent drops in crime are concentrated among first-time parents. In particular, there are no long-run effects for mothers giving birth a second time, and for fathers having their second child, the negative impacts on crime are half as large.

Though we find a similar qualitative pattern of results for unmarried vs. married parents, the overall decreases in crime are driven primarily by unmarried couples, who have substantially higher pre-pregnancy offending rates. This suggests that married couples, and those who have at least one child, have already settled down. Some research suggests that these effects should depend on whether the baby is male or female (Dahl and Moretti, 2008; Dustmann and Landersø, 2021). But when we split the sample based on infant sex, we find no differences in patterns of desistance for either mothers or fathers. Results change little when we restrict to high-risk subgroups.

We contrast the event-study evidence with results from an alternative strategy that isolates the effect of having a child by building a control group using records of stillbirths, which are reported if gestation exceeds 20 weeks. Difference-in-differences analyses reinforce the main findings: fathers of liveborn children have increased domestic violence following the birth, and mothers and fathers of liveborn children show decreased rates of drug and property crime arrests. As in the main analysis, unmarried parents drive these findings. This suggests that having a child, and not just making the decisions that produce one, decreases criminal behavior while increasing domestic violence.

We next turn to robustness. An important concern is whether unobservable sample attrition

may be responsible for some of the observed decreases in arrests around turning point events, as we observe administrative outcomes only within the state of Washington. One piece of evidence against such sample attrition for fathers is the earlier observation that despite the declines in other crime categories, domestic violence arrests increase substantially. We also address this concern explicitly in two ways. First, we use traffic arrests as a proxy for presence in the state and find that they are stable after births. Second, we find similar crime declines when we restrict to two subsamples with greater attachment to Washington: men who eventually have a second child and men for whom we observe a ticket for a traffic arrest in Washington state 4-5 years after birth.

An additional concern is that the decrease in arrests for women may reflect a decreased likelihood of apprehension among pregnant women. While all analyses use the recorded date of the alleged offense, not the date of the arrest, this channel could explain some of the decrease during pregnancy. However, it does not explain its persistence in the years following childbirth. A separate concern for women is that all activity, including drug use and other crimes, may shift indoors following birth. Yet, we find that driving-related arrests gradually increase for mothers following birth, which is inconsistent with a broad decrease in activities outside of the home.

In a final analysis, we turn to marriage, a focus of the turning points literature ([Sampson et al., 2006](#)). The married parents in our sample are consistently less likely to be arrested for any offense, including domestic violence. Does marriage have a causal effect on crime? We estimate similar event studies and find that for both men and women, crime decreases dramatically in the three years prior to marriage. However, this trend stops at the marriage date, and offending is flat thereafter. Marriage, on average, marks the completion of a decrease in crime, in line with the mothers quoted in [Edin and Kefalas \(2011\)](#) who want to settle down *before* marrying. Still, this analysis leaves open the possibility that romantic relationships more broadly construed can temper criminal behavior.

These empirical findings help clarify a large literature based primarily on smaller, selected (i.e., at-risk) samples with conflicting findings, which we review in Appendix [Table A.1](#). Most papers find no or minimal effects of motherhood on crime, and results for fathers have been

similarly mixed.² Further, the marriage results qualify a large literature that argues for a negative causal effect of marriage on crime.³ Also novel to our context is the ability to separate out key types of offenses and study the precise timing of the arrest reductions, which helps rule out the possibility that coincident changes beyond family formation explain the observed desistance. The two most comparable studies, on the effects of marriage and childbirth on arrest for men and women (Skardhamar et al., 2014; Skarhamar and Lyngstad, 2009), use Norwegian register data and find broadly similar trends at an annual level, but lack these advantages.

Taken together, the results show that pregnancy is a strong inducement to reduce crime and drug use for both mothers and fathers. In contrast, marriage itself not have any immediate effects on crime despite its strong association with the levels of offending. While teen and out-of-wedlock births correlate with higher baseline levels of offending among parents and worse outcomes for children, policies exclusively focused on reducing these forms of childbearing may undervalue the large desistance effects for new parents. The documented spike in domestic violence arrests may be important for informing policy interventions targeting new parents. More generally, the results support the growing evidence the social and family ties are a key factor in determining criminal behavior.

2 Related literature

Sociologists have long studied the role of spousal attachment and family formation in criminal careers. This emphasis can be traced back to Durkheim’s (1950) foundational study of suicide, which finds a protective effect of family: “Facts thus are far from confirming the current idea that suicide is due especially to life’s burdens, since, on the contrary, it diminishes as these burdens increase” (p. 201). Sampson and Laub (1990) extend these ideas, arguing that key life events can serve as “turning points” that cause desistance by increasing social bonds. Their influential work reexamined data from Glueck and Glueck (1950), a longitudinal study of 500 delinquents in Boston, finding that spousal attachment, job stability, and economic aspiration were all associated

²For another recent review on mothers, see Giordano et al. (2011); for fathers, see Mitchell et al. (2018).

³For a critique and detailed review of the marriage effect, see Skardhamar et al. (2015).

with desistance. A large literature builds on these findings, using survey data to study the broad turning points hypotheses around marriage and childbirth; we review them in the Appendix.

Qualitative research provides additional color on the power of social bonds to change criminal incentives. Parents often attest to the life-changing effects of having children. Unmarried mothers interviewed by [Edin and Kefalas \(2011\)](#) say that children changed their lives for good. “My kids, they’ve matured me a lot...I’ve always stayed off of drugs for them” (p. 130). Fathers interviewed by [Edin and Nelson \(2013\)](#) say they would “probably be in jail” or “out getting high” without their children (p. 74). As for spousal attachment, similar approaches highlight the difficulty in isolating its causal effects, as many subjects view marriage as an outcome of financial success and relationship stability. In a representative comment, one subject says she would get married “[a]fter I have a house and a car and everything, and I’m financially stable” ([Edin and Kefalas, 2011](#), p. 93). Surveys using larger samples find that stringent financial “prerequisites” for marriage are set by unwed couples ([Gibson-Davis et al., 2005](#)).

In several ways, economists have been skeptical of the claim that childbearing can positively impact behavior. Teen pregnancy, which is uniquely high in the United States ([Kearney and Levine, 2012](#)), is often used as a negative summary outcome to track impacts of different social programs on girls (e.g., [Chetty et al., 2016](#)). While perhaps useful as a marker for worse socioeconomic conditions, studies attempting to isolate a causal effect of early pregnancy using miscarriage as an instrument have found mixed results ([Hotz et al., 1997, 2005](#)). Theoretical family formation models, meanwhile, have typically focused on the economic implications of endogenizing fertility decisions ([Becker, 1960](#); [Hotz and Miller, 1988](#)).

Our study contributes new evidence on the effects of childbearing and marriage to these literatures. The granular timing and still births sample allows us to plausibly isolate the effects of pregnancy and childbearing, rather than a broader process of settling down. We are also able to study arrests for domestic violence, which is difficult to measure without either arrest or hospital records; separating domestic violence from other crimes is essential to understanding the influence of family formation on crime. The findings support the idea that childbearing results in permanent changes, with a caveat for family violence. The patterns of offending around marriage, however,

supports the “prerequisites” model emphasized in the qualitative literature.

3 Data

Our core analysis is based on two administrative data sources from Washington state: the Washington State Institute for Public Policy’s criminal history database, a synthesis of data from the Administrative Office of the Courts (AOC) and the Department of Corrections (DOC); and still- and live-birth certificates from the Department of Health (DOH). We augment these the Washington marriage and divorce indexes, acquired from the Washington State Archives.

The criminal history data covers every criminal charge made from 1992 to 2015, including the date of the alleged offense, the criminal code, and the name and date of birth of the defendant.⁴ We refer to a record in this data as an “arrest” for concision, although some events may not involve apprehension by a police officer and jail booking (e.g., a citation for reckless driving). For people who were ever incarcerated or on probation (4% of our sample of parents), the data also includes quarterly wage records.

The birth certificates span 1980 to 2009. We restrict to births after 1996 so that all parents are visible in the arrest data five years before and after the birth, a dataset we refer to as the “fully-balanced sample.” The data includes the names and dates of birth of the mother and father, their races, the residential zip code of mother, and an indicator for whether the mother was married at birth. An average of 80 thousand births happen every year in the sample period, for about 1 million births in total.

We drop 5 percent of the birth certificates in the sample with the father missing. Washington is unusually good at recording fathers as it was one of the first states to implement in-hospital voluntary paternity establishment for unmarried mothers (Rossin-Slater, 2017). Similar data in Michigan is missing the father in 16.5% of birth certificates (Almond and Rossin-Slater, 2013).

We match arrest records to birth certificates by implementing a fuzzy name match across

⁴We attain similar results using a dataset covering all arrests from the Washington State Patrol Computerized Criminal History Database.

parents and arrestees with the same date of birth. We drop parents who are strongly matched to multiple people in the arrest data, but we include parents who have no matches at all in the arrest data. The never-arrested sample is kept to help identify age controls in the regression analysis, and so that the count results presented below can be interpreted as population averages. The drops of ambiguously matched names constitute 5 percent of the birth certificates with fathers listed.

The crime categories in the data range from traffic infractions to murder. In most analyses, we group arrests based on three mutually exclusive categories constructed by the Washington State Institute for Public Policy: domestic violence crimes, driving-related offenses not related to DUIs, and everything else. We analyze domestic violence separately because these offenses have distinct patterns around childbirth which we explore below. These arrests are most commonly fourth degree assaults, which is the least severe assault charge.

Non-DUI driving offenses consist primarily of reckless driving or driving with a suspended license. We omit these from the main analyses because they are tightly linked to driving activity, which increases around family formation events.

In the final crime category, there are four broad types of offenses. Arrests that we call economic consist primarily of 3rd degree theft, 2nd degree burglary, trespassing, and forgery. Drug crime categories include furnishing liquor to minors and possessing a controlled substance. Driving under the influence, the most common arrest in the data, is treated as its own category. Finally, destruction includes vandalism and property damage more broadly. These offenses serve as our main outcomes in the results below. The two large offense types that we omit from this residual category are assaults coded as not related to domestic violence, since the coding appears to be unreliable, and obstruction of a police officer because it is difficult to categorize. In [Figure A.1](#), we show that these restrictions do not affect the main results.

In the primary analyses, we restrict to the parent's first birth as measured by matching parents within the birth records using the father's full name and date of birth and the mother's full (maiden) name and date of birth as reported on the birth certificates. Since the birth certificates begin in 1980, this means we will mislabel births as firsts if someone in our sample had their first

child in 1979 or earlier.

We combine state marriage and divorce records with our sample by merging them to birth certificates using a fuzzy string match of the combined names of the spouses. This match comes with the caveat that only couples who at some point have a child together will be included. Since the marriage certificates do not contain birth dates, married couples could not be linked to the arrest data without first linking to the birth certificates.

In [Table 1](#), we show how the sample characteristics change as we impose the restrictions mentioned above, starting with the entire sample of DOH births in column (1). Column (2) restricts to births where the mothers are clearly matched (or not matched) to the arrest data; column (3) adds the restriction that the birth is the mother’s first child; and column (4) shows the characteristics for our sample of stillbirths, including the restrictions made in (2)-(3). Analogous descriptive statistics with the father as the focal parent are shown in [Table A.2](#).

4 Effects on mothers

We start by showing the raw 30-day arrest rates of mothers in the three years before and after the birth of their first child, using the main analysis sample of 480,111 mothers described above. Importantly, all of the analyses are constructed using the date of the alleged offense, not the date of arrest. This partially addresses the concern that the offending patterns could be confounded if law enforcement officers are less likely to make an arrest in the case of a visible pregnancy. In this setup, $t=0$ marks the 30-day period beginning with the date of birth.

[Figure 1\(a\)](#) shows these arrest rates for mothers for four different categories of crimes. All series drop sharply during pregnancy and rebound slightly after birth. More specifically, they depict three consistent patterns: flat or slight positive trends leading up to the approximate date of the pregnancy (i.e., nine months before birth), large declines concentrated in the first few months of pregnancy, and a sharp rebound in arrests following the birth. Property and non-DUI drug arrests are lower than the pre-pregnancy averages three years after the birth, while DUI and property destruction arrests show less of a long-term decline.

The measures related to alcohol and drugs show little evidence of anticipation ahead of the

pregnancy. There are small declines in $t=-8$, when many mothers learn they are pregnant, and the largest decline in $t=-7$, by which time almost all mothers know (Branum and Ahrens, 2017). One reason could be that, based on self-report, pregnancy intention itself does not predict alcohol cessation (Terplan et al., 2014). However, another explanation is that not all pregnancies are intended and, as we explore below, these pregnancies likely drive our results.

These simple averages provide clear evidence that pregnancy causes sharp changes in crime, but it is difficult to determine the long run effects without accounting for the fact that women may be maturing independent of childbirth. We next move to an event study specification to remove any effects of age. We estimate regressions of the following form:

$$\mathbb{1}(arrest)_{it} = \alpha_i + \sum_{k \in S} \delta_k \mathbb{1}(t = k) + \mathbf{X}'_{it} \beta + \epsilon_{it} \quad (1)$$

where $\mathbb{1}(arrest)_{it}$ is equal to 1 if person i was arrested in month t , α_i denotes person fixed effects and \mathbf{X}_{it} includes a 4th-order polynomial in age and dummies for being above ages 18 and 21. The set S runs three years in either direction from the birth, or -36 to 36. We bin up periods before -36 or after 36 into two separate dummy variables (i.e., $\mathbb{1}(t < -36)$ and $\mathbb{1}(t > 36)$), which allows us to estimate age effects, person fixed effects, and the event-time dummies without introducing collinearity. Standard errors are clustered at the person level, and in some specifications, we group event time indicators at the quarterly level to smooth out noisy monthly arrest patterns for rare outcomes.

In this event study setup, the effects of childbirth δ_k are identified by changes in arrests controlling for time-varying covariates. Effectively, the specification compares two women of the same age who have children at different times. Differences in their arrest rates are measured by the event-time indicators. These differences will capture the causal effects of pregnancy and childbirth if the onset of pregnancy does not coincide with other time varying-shocks (e.g., the beginning of a romantic relationship) that also affect arrests.

As we show below, we find limited evidence that pregnancy coincides with other arrest-reducing life changes for the mothers and fathers in our sample. Most importantly, we find no evidence for anticipation of the pregnancy. We might have expected a decrease in crime ahead of

pregnancy, reflecting the impact of mothers meeting potential fathers and reducing their criminal activity as a result. Instead, decreases in arrests coincide exactly with the onset of pregnancy.

This result implies that it is also unlikely that the effects reflect the *decision* to try to become pregnant rather than pregnancy itself. If decisions were an important time-varying omitted factor, we would expect at least some decided couples to fail to become pregnant immediately, generating dips in arrests before $t=-9$. Moreover, survey evidence suggests that the majority of births to unwed mothers, who drive our results, are unplanned (Mosher et al., 2012). And we obtain very similar results among teen mothers, for whom 78% of pregnancies are unintended (Mosher et al., 2012).

Pregnancy termination Our findings, and the survey evidence described in Mosher et al. (2012), only apply to pregnancies that are carried to term. However, many pregnancies result in abortion. During our sample period, around 20 percent of pregnancies are estimated to have ended in abortion (Finer and Henshaw, 2006). This share is higher for younger, low-income women and for unintended pregnancies. However, recent evidence suggests that even among women who experience an unintended pregnancy, the majority do not receive an abortion: In 2008, 51% of pregnancies were unintended and 41% of those resulted in termination (Finer and Zolna, 2014).

Criminal offending patterns for couples who elect to terminate their pregnancy may differ from the mothers and fathers in our sample. Although the decision to carry a pregnancy to term is endogenous, we view timing of the pregnancy itself as plausibly exogenous given the lack of anticipation in the event studies and the survey evidence on intendedness. Removing age effects, the before-after comparison implicit in our event studies therefore identifies the causal effect of childbearing for couples who elect not to terminate a pregnancy. While the overall effects of pregnancy are also interesting, we view these effects as likely to be attenuated versions of those measured here unless couples who terminate exhibit substantially *opposite* patterns.

4.1 Main results

We present results for the event study specification with the outcome, $\mathbb{1}(arrest)_{it}$, equal to one in any month that the mother was arrested for any of the four crime categories. These estimates, shown in [Figure 1\(b\)](#), closely match the simple averages given in the raw figure, suggesting a sustained 50 percent decrease in 30-day arrest rates. We report a subset of the event-time coefficients for the four different crime categories in [Table 3](#). The decline during pregnancy is substantial, with the four crime categories decreasing by 70-95 percent relative to pre-pregnancy levels. These effects also capture the considerable rebound following pregnancy, with, for example, DUI arrests going from practically zero in the month of birth to only 48 percent lower than pre-pregnancy levels in the third month following birth.

These magnitudes are large compared to any known policy intervention. Causal evidence has rarely estimated effects for men and women separately ([Loeffler and Nagin, 2022](#)). In combined samples, [Rose and Shem-Tov \(2021\)](#) find that an additional year of incarceration decreases the likelihood of any new offense within 5 years by 13% and cumulative new offenses by 14%. [Chalfin and McCrary \(2017\)](#) estimate the elasticity of property crime with respect to police manpower at -0.2, although estimates vary. In some of the largest effects in the literature, [Heller \(2014\)](#) find a 28-35% decrease in arrests for disadvantaged youth participating in a cognitive behavioral therapy program. A successful pregnancy appears to rival all of these interventions.

4.2 Alcohol offenses

Unlike the other three categories of crime, the raw averages of DUI arrests in [Figure 1\(a\)](#) show an eventual increase after birth. This appears to be due to the fact that women are more likely to be driving after birth. Partial evidence for this is that more innocuous arrests related to driving, such as driving without a license, increase steadily over the sample period (see [Figure A.2](#)).

What can we say about drinking behavior independent of the propensity to drive? For more insight on this, we turn to the most common alcohol-related arrests for people under the age of 21: alcohol possession. We perform this analysis for women who become mothers at or before the age of 20, which brings the sample size down to 67,899 mothers. The plot of these alcohol arrests

is given in [Figure A.3](#). Similar to the non-alcohol drug arrests in the previous plot, the figure suggests a sharp, largely sustained desistance at the beginning of pregnancy. Thus, at least for this subgroup where we have a measure of drinking that is unconfounded with driving, there is a clear decline.

4.3 Teen mothers

Economists still debate the consequences of teen pregnancy, which is uniquely high in the United States compared to peer countries in Europe ([Hoffman, 2008](#)). Influential research using miscarriage as an instrument finds minor negative and even some positive effects of teen childbearing ([Hotz et al., 2005, 1997](#); [Ashcraft et al., 2013](#)).⁵ However, [Fletcher and Wolfe \(2009\)](#) use a similar empirical design with different data and find strictly negative effects on education and income, leading to a recent summary that the “[n]egative consequences of teen childbearing are well documented” ([Yakusheva and Fletcher, 2015](#)).

We next turn our attention to these women, defined as those who give birth before turning 20. We plot the coefficients from the event study specification for the four main crime categories in [Figure A.4](#), where the coefficients are normalized by the pre-pregnancy average to give the fractional change in arrest rates. Motherhood remains a large driver of desistance for this subgroup. As in the full sample, drug and property crimes show a sharp and largely sustained decrease to half of the pre-pregnancy levels. These plots are also meaningful because 78% of teen mothers report that their births resulted from unintended pregnancies ([Mosher et al., 2012](#)). The results provide perhaps the clearest evidence to date that childbearing is a turning point for even very young women.

4.4 Married vs. unmarried mothers

Marital status at birth has long been a focal metric of policy makers, and the descriptives in [Table 2](#) show clear differences in the probability of arrest and incarceration across the two samples.

⁵For an overview of the causal effects of teen childbearing, see [Kearney and Levine \(2012\)](#), who conclude that “most rigorous studies on the topic find that teen childbearing has very little, if any, direct negative economic consequence.”

Unmarried fathers are twice as likely to have ever been arrested, and seven times as likely to have had an incarceration spell. Since married couples are already less prone to crime, the additional effect of childbirth may have a less stabilizing effect. On the other hand, single and cohabiting mothers experience a large negative shock to their income-to-needs ratio (Stanczyk, 2020), which could increase economic offenses similar to effects found for individuals who have exhausted food stamps (e.g. Carr and Packham, 2019).

Figure 2 presents similar event study plots by the mother’s marital status as reported on the birth certificate, showing effects on the monthly arrest rate for any of the four main crime categories. In these plots, we add the omitted-period average in order to display the stark level differences in arrest rates between the two groups. Both unmarried and married mothers exhibit a large “incapacitation” effect during the pregnancy. However, childbirth presents less of a permanent change for married mothers. By the end of our sample window, they are arrested at similar levels to before the pregnancy.

Similar to the main results, there are no signs of anticipation ahead of the pregnancy for either group. This might be expected for unmarried women, where more than half of all births are unintended. However, for married women only 23 percent of births are unintended (Mosher et al., 2012, Table 2), and many couples spend months trying to conceive (Keiding et al., 2002). This could be further evidence that the decision to have a child does not influence criminal activity. However, it could also be that the criminally-active married women who drive the estimates are much more likely to have unintended pregnancies.

5 Effects on fathers

So far, we have focused on mothers, where the measured effects on crime may be due to the physical and legal changes associated with pregnancy. Fathers thus present an especially interesting test of the turning points ideas, since their responses might better isolate the social or psychological changes that result from parenthood.

Figure 3(a) shows the average monthly arrest rate of first-time fathers for the same four crime categories as mothers. While less sharp than the effects for mothers, large drops are visible in these

raw averages, especially for drug arrests. Between pregnancy and three years after birth, monthly drug arrests fall from 17 to 11 for every 10,000 men. These effects change little when measured using the event study specification. As with the analysis for mothers, we estimate the event study specification combining these four categories of arrests and plot the results in [Figure 3\(b\)](#). The results show clear evidence of a steep decline, stabilizing at 30 percent less than the arrest rates at the start of the pregnancy. Point estimates for a subset of the event-time coefficients are reported in [Table 4](#).

As with mothers, the results show little evidence of any anticipatory responses. There are small declines in $t=-8$ and larger declines in $t=-7$ and $t=-6$, when many men may learn from their partners that they are expecting. It appears that men respond to this news by sharply altering their activities. These results are consistent with an observation in [Edin and Nelson \(2013\)](#): even in the case of unplanned pregnancies, men respond to the news with happiness. The researchers asked young, low-income fathers how they responded to the news of the pregnancy. “Unadulterated happiness—even joy—was by far the most common reaction...” (p. 68).

Men’s declines in arrests compare favorably to the deterrent effects of exceptionally harsh punishments. For example, under California’s three-strikes law, offenders with two strikes faced almost 20 years of additional prison time and exhibited a decrease in annual felony offenses of 15 to 20 percent ([Helland and Tabarrok, 2007](#)). In Italy, [Drago et al. \(2009\)](#) find that an increase in expected sentences among recently released prisoners by 25 percent would decrease re-arrests in 7 months by 18 percent. Our results on arrest rates are not directly comparable to estimates of recidivism for people recently released from prison. However, the probability of any arrest in a longer period shows the same large decline: among all of the first-time fathers in our sample, the share arrested for any drug offense goes from 1.7 percent in the year before pregnancy to 1.2 percent in the year after birth.

5.1 Employment

We next turn to employment. We estimate a similar event study specification as in [Equation 1](#), with key changes to the sample and the controls \mathbf{X}_{it} . The sample is restricted to men who were

ever on state probation or incarcerated, since labor market outcomes are only observed for this group. We further restrict to first-time fathers who ended their initial probation or incarceration spell in the four years before the pregnancy in order to not implicitly condition on a crime outcome that occurs after the pregnancy. To account for recidivism patterns inherent in the sample and that differ across offense type due to differential supervision by the Department of Corrections post-release, we include in \mathbf{X}_{it} fixed effects for year of admission by offense type by time since release.

The event study specification for criminal offenses in this group replicates the patterns for all fathers. In [Figure 4\(a\)](#), we plot the coefficients for event study specification with an indicator for any economic, drug, DUI, or destruction offense as the outcome. Next, we measure formal employment as having quarterly wages over \$1000, about equal to minimum wage earnings. The results for this employment outcome are given in [Figure 4\(b\)](#). They show an increase in the probability of employment of 5 percentage points, an increase in 14 percent from a base of 36 percent. This peaks at birth and decreases sharply in the years after.

While these results show an eventual decrease in employment for fathers, some of this may be due the fact that we only observe outcomes in Washington state, an issue that we explore more fully in [Section 10](#). As evidence of this, we restrict the sample further to fathers who are at any point recorded as having a second child in the birth certificate sample in [Figure A.5](#), grouping event time indicators every three months to increase precision. This plot shows the same spike at birth but a less pronounced decline in the three years following.

Taken together, the results for first-time fathers suggest large positive changes concentrated during pregnancy, despite the fact that men do not directly experience any of the physical effects of pregnancy. While new to the quantitative literature, this response is consistent with qualitative research asking at-risk fathers how they reacted when they learned about a partner’s pregnancy. [Edin and Nelson \(2013\)](#) note that, “Men are drawn in—usually after the fact of conception...[and] usually work hard to forge a stronger bond around the impending birth” ([Edin and Nelson, 2013](#), p. 203).

However, increases in work are not sustained. One year after the birth, male employment

is back at its pre-pregnancy levels. This could be due to the fact that unmarried parents are highly likely to separate; five years after childbirth, only 18 percent are co-residing (Tach et al., 2010). As co-residence declines, fathers may also be less motivated to provide financial support. Despite the reversion of earnings, however, the arrest declines noted earlier are sustained long after birth. Family formation thus appears to be a temporary “turning point” for labor market activity, but a persistent one for crime. This finding further supports the view that having a child shifts preferences over criminal activity, since fathers’ non-crime activities appear to show limited long-run changes in response, at least as measured by earnings.

5.2 Married vs. unmmarried fathers

Figure 5 plots the same event study estimates for married and unmarried fathers. Similar to mothers, unmarried fathers have much higher arrest rates, but this discrepancy shrinks somewhat following the birth. Unmarried fathers show some increase in arrests leading up to the birth, which could be due an increased level of activity in Washington correlated with the timing of their relationship with the mother. As a robustness check, we show in Figure A.6 that, among unmarried fathers, two groups with stronger attachment to the state display flat pre-trends leading up to the pregnancy but similar sharp declines in arrests at pregnancy: those born in Washington state and those with at least one juvenile criminal charge.

6 First vs. second births

The results for childbirth are consistent with two broad explanations. First, childbirth could initiate a permanent change in preferences. For instance, having a child could cause people to derive less utility from drug use or crime, or make them more future-regarding. However, an alternative explanation is that childbearing affects crime purely through its effect on the time budget. The presence of a young child could create a temporary incapacitation effect due to childcare or housework. We can attempt an analysis of these two theories by comparing the first to the second birth. The first theory predicts that most changes should be concentrated in the

first birth, while the incapacitation channel suggests similar effects regardless of birth order.

In [Figure 6](#), we show the same event study coefficients split by birth order. In order to use a consistent sample, the underlying data retains all mothers and fathers whose first and second children are both born in the fully-balanced sample period. The plots show that, for both mothers and fathers, the bulk of the desistance happens at the first birth. Three years after their second birth, mothers are arrested at levels similar to before the pregnancy. Fathers experience a 10 percent decrease in arrests compared to 30 percent for the first birth. That second births could still spur a sustained decrease for fathers could be due to the fact that some men only start investing in children for later births, while this is less common for women ([Edin and Nelson, 2013](#)). These results are more consistent with the preferences explanation: “When I found out she was pregnant, everything changed” (p. 69).

7 Boys vs. girls

Do these effects depend on the sex of the child? Previous studies have shown the importance of son preference for fathers ([Dahl and Moretti, 2008](#)), including in the degree of criminal desistance ([Dustmann and Landersø, 2021](#)). Following [Dustmann and Landersø \(2021\)](#), we study the cumulative offending rates of fathers and mothers split by sex in [Figure 8](#). We focus on unmarried parents since they showed the largest response in the preceding heterogeneity analyses; the results are very similar across groups.

Panel (a) shows average cumulative offending for mothers, split by infant sex and using a monthly indicator for any of the four main offending categories from [Figure 1](#) as the crime outcome. A small visual difference is present between mothers to daughters compared to sons: at 36 months after the birth, mothers to male infants have 0.006 fewer cumulative months with offenses, a 4.7% decrease compared to the average of 0.13 for mothers to daughters. However, this difference is insignificant and arises in in the months *before* the birth.

Panel (b) shows the same series for fathers to sons compared to daughters. The trends are nearly identical. At 36 months, fathers to sons have 0.828 cumulative months with offenses compared to 0.824 among fathers to daughters. These similarities persist when we study more

at-risk subsamples such as fathers under the age of 20 (as in [Dustmann and Landersø \(2021\)](#)), and with other outcomes such as domestic violence.

Taken together, this suggests that the infant’s sex has no bearing on the mother’s or, perhaps more surprisingly, father’s criminal desistance.

8 Domestic violence

We next turn to a critical caveat to the turning points findings that, to our knowledge, has not received any explicit mention in the host of quantitative studies on crime and family formation. The results for men around marriage and childbirth coincide with a large increase in domestic violence arrests.

[Figure 7\(a\)](#) shows raw averages for domestic violence arrests among fathers in the full first birth sample. Domestic violence arrests increase up until the start of the pregnancy, decrease sharply, and then markedly spike in the month of the birth. The increase leading up to $t=-9$ may reflect conditioning on childbirth at $t=0$, as relationships and hence opportunities for domestic violence increasingly form ahead of the pregnancy. The decrease during pregnancy appears consistent with norms against assaulting pregnant women, when violence may also harm the developing fetus ([Currie et al., 2018](#)). Finally, the spike at birth might help explain why recent studies found ambiguous effects of fatherhood on overall arrest rates (e.g. [Mitchell et al., 2018](#)). In [Figure 7\(b\)](#), we show, also using the raw averages, that a similar spike is visible around marriage.

Our data measure arrests with a high degree of accuracy, but the connection between arrests and violent behavior over the sample period is less certain if the propensity to report domestic violence changes around pregnancy and childbirth. Victimization surveys, which may more accurately track changes in behavior compared to measures based on law enforcement involvement, confirm the qualitative finding that domestic violence is more likely after the pregnancy than during: in a nationally representative survey, 1.7 percent of mothers reported physical violence during the pregnancy compared to 3.1 percent in the first post-partum year ([Charles and Perreira,](#)

2007).⁶ Even if some share of the arrest spike is driven by changes in reporting, the results clearly show that pregnancy generates large increases in criminal justice contact due to domestic violence complaints, itself an important policy outcome.

Other results suggest changes in behavior and not simply reporting drive these estimates, however. In particular, domestic violence is strongly linked to the likelihood of subsequent divorce. [Figure A.7\(a\)](#) shows father’s domestic violence arrests split by divorce status five years later, normalized by pre-pregnancy means to account for large level differences between the two groups. Despite similar pre-trends, men destined for divorce show a much larger spike in domestic violence arrests following the birth. [Figure A.7\(b\)](#) focuses on these divorced men, grouping them based on whether they divorced 1, 2, 3 or 4 years after the birth. The plot shows clearly that domestic violence spikes ahead of the divorce decree.

9 Evidence from stillbirths

The preceding sections provide evidence on the causal impact of a pregnancy assuming the onset of pregnancy does not coincide with other time-varying confounds. In this section we use an alternative design to study the effects of family formation by constructing a sample of couples who experience a pregnancy that ends in a late-stage miscarriage. If the outcome of the pregnancy has a causal effect on arrests, in line with the previous results, parents to stillborn infants should show relatively higher rates of arrests post-pregnancy.

A stillbirth is the delivery, at some point after the 20th week of pregnancy, of a baby who has died. Hospitals are legally required to report stillbirths if the gestation period is 20 weeks or more. Importantly for our purposes, there is still comparable coverage of the fathers’ name and date of birth, which are only missing from 9 percent of the stillbirths.

Existing work using miscarriages as an instrument (e.g. [Hotz et al., 2005](#)) includes all reported miscarriages, not just those occurring after 20 weeks of gestation. This could lead to some atten-

⁶Further, in an interview, a Seattle police officer said that the presence of children would not affect the likelihood of an arrest due to Washington’s strict mandatory arrest law. However, the evidence here is indirect, and a recent meta-analysis concluded that “the research community still does not know for sure whether pregnant women are at higher or lower risk of being physically abused” ([DeKeseredy et al., 2017](#)).

uation if some of the early miscarriage sample would have gotten an abortion, and since, among pregnant teens, those who receive abortions are positively selected with respect to economic outcomes (see [Hoffman, 2008](#)). An advantage of our sample is that it does not have this censoring issue since over 90 percent of abortions occur before the 13th week of gestation ([Jatlaoui et al., 2018](#)). Our estimates in this section thus attempt to capture a similar parameter to those in the main estimates: the effect of having a child on the sample of couples who do not terminate the pregnancy.

On the other hand, stillbirths are far less common than miscarriages and often have distinct causes affecting the health of the mother such as pre-eclampsia, bacterial and viral infections, other medical conditions, and possibly domestic violence ([Lawn et al., 2016](#)). Further, the experience of a stillbirth is often followed by a pronounced period of bereavement ([Heazell et al., 2016](#)). Some of the differences in arrests between parents to still- and live-born children may thus capture the effects of losing a child rather than having one. We find similar effects looking at periods 6 months or more beyond birth, when such effects may be attenuated, however.

The last column in [Table 1](#) shows descriptive statistics for the stillbirths in our sample, restricting to those having a clear match in the arrest data and that are the mother's first birth. Mothers to stillborn babies are 10 percentage points less likely to be married but are otherwise positively selected based on receipt of WIC and arrest probabilities. Also, mothers in our data who experience stillbirths exhibit greater variance in age than mothers to liveborn children, and the infants are likely to be male and twins, in line with medical studies on risk factors ([Lawn et al., 2016](#)).

As a reduced-form exercise similar to the preceding figures, we plot arrest rates for parents to liveborn and stillborn infants for fathers in [Figure 9](#), aggregating offenses to the six-month level to reduce noise in the smaller stillbirth sample. The outcome is an averaged indicator for whether any arrest for the specified offense occurred in the given six-month period. To remove level differences between the two groups, we show differences relative to the pre-pregnancy average. We split by marital status following the previous analysis, which show that effects were concentrated among unmarried parents.

Panel (a) in [Figure 9](#) shows that fathers to liveborn children have relatively more domestic violence arrests in the month after pregnancy, although this difference is not seen among the married fathers in Panel (b). In Panel (c), both unmarried and married fathers show a decrease in offending rates in the four main crime categories, although the drop is more pronounced for unmarried fathers. The difference is not visually obvious in Panel (d), which depicts married fathers. Finally, in Panels (e) and (f), we show arrests of mothers for the four main crime categories, finding similar differences in desistance for the unmarried mothers.⁷

Since arrests are rare and our stillbirths sample is relatively small, we quantify these gaps in a simple difference-in-differences specification to increase power. The specification includes person fixed effects, fixed effects for each month of pregnancy, and an indicator for post-birth interacted with an indicator for live birth:

$$Crime_{it} = \alpha_i + \sum_{k \in \{-9, -1\}} \delta_k \mathbb{1}(t = k) + \delta_1 AfterBirth_{it} + \delta_2 AfterBirth_{it} Live_i + \mathbf{X}'_{it} \beta + \epsilon_{it} \quad (2)$$

where α_i indicates person fixed effects and the series δ_k for $k \in \{-9, -1\}$ flexibly control for crime trends in the months preceding birth. $AfterBirth_{it}$ is an indicator for $t \geq 0$, and the indicator $Live_i$ is 1 for normal births and 0 for stillbirths. There is no main effect for $Live_i$ because we include only first-time parents, so this would be colinear with the person fixed effects. The vector \mathbf{X}_{it} includes a polynomial in age and dummies for being above age 18 and 21.

The results are shown in [Table 6](#) for fathers and [Table 7](#) for mothers. Across panels, columns (1) and (3) report results for all first-time fathers in the sample and columns (2) and (4) restrict to unmarried fathers. The outcome in columns (1) and (2) is a count of charges. In columns (3) and (4), the outcome is a binary indicator for having any of those charges in the six-month period.

The two panels in [Table 6](#) capture the same divergence in offending found in the main results. Panel (a) suggests that fathers to liveborn children have a relatively larger decrease in offending following birth, and that this difference may be especially pronounced among unmarried fathers. For instance, Column (4) suggests that unmarried fathers to liveborn children have a roughly 1

⁷Domestic violence was too rare in the stillbirth sample for meaningful comparisons.

p.p. decrease in the probability of committing an offense in a six-month period, compared to an insignificant 0.2 p.p. drop among unmarried fathers to stillborns. In Panel (b), in analogous regressions using domestic violence as the crime outcome, both groups show a significant increase in domestic violence after birth with the effect roughly twice as large for fathers to healthy infants.

Next, [Table 7](#) shows crime outcomes for first-time mothers. The results indicate that the decreases in crime are consistently larger for mothers to liveborn infants. However, in all specifications, both groups show a significant decline. For instance, Column (3) shows that mothers to stillborn infants show a 0.1 p.p. decrease in the chance of any offense over six months. The effect for mothers to liveborn infants is roughly twice as large.

Taken together, the results from this exercise mirror the findings from the main analysis: parent to liveborn infants exhibit a larger drop in offending compared to parents of stillborn infants, and fathers to liveborn infants show an increase in domestic violence. As in the previous heterogeneity analysis, these effects are driven by unmarried parents.

10 Robustness

10.1 Outmigration

An important potential confound in our setting is migration out of Washington State. Defining our sample around birth imposes selection: men are most likely to be physically present in Washington at the time of conception. Since our data only cover arrests in Washington, it is possible that the arrest patterns reflect migrations out of the state—and therefore unobservable attrition—following pregnancy or birth.⁸ The most immediate argument against this threat is the clear increase in domestic violence following the birth. For migration to explain the decrease in drug arrests, the men accounting for the spike in domestic violence would need to have a much lower propensity to be arrested for drug offenses. However, arrests are correlated across offense types: men with more drug arrests tend to have more domestic violence arrests.

⁸Incarceration poses an analogous attrition problem as men in our sample are least likely to be in prison ten months before the birth; results using only never-incarcerated fathers are identical.

To have a proxy of residence less correlated with drug use and criminal propensity, we look at the most innocuous offense in our data: traffic arrests, consisting primarily of driving with a suspended license and not displaying a license on command. [Figure A.9](#) shows that in both the raw averages and event study specification controlling for age men do not exhibit a decreased risk of arrest for these offenses after the pregnancy or birth, so any explanation centered on outmigration would hinge on higher-risk men selectively leaving the state.

Finally, we focus on men with greater attachment to the state in the post-birth period by restricting the sample to the 69,900 fathers who commit a DUI or traffic offense in the endpoints of our sample, i.e., 4-5 years after the birth. In [Figure A.10](#), we show that this sample, which should be much less contaminated by migration attrition, shows a similar 25 percent decrease in drug arrests. If migration were affecting the results and fathers physically present in Washington had stable levels of arrest rates, we would expect the decrease for this group to be much smaller.

11 The role of marriage

11.1 Arrests around marriage

A clear finding of the previous section is that there are large level differences in criminal arrests by the parents' marital status at birth. Marriage itself is a prominent feature of the turning points framework ([Laub et al., 1998](#)). In qualitative studies, formerly delinquent men often attribute considerable weight to marriage: "If I hadn't met my wife at the time I did, I'd probably be dead. It just changed my whole life...that's my turning point right there" ([Sampson and Laub, 2009](#), p. 41). Married men also earn more: in economics, a long literature debates the content of the male marriage wage premium (e.g. [Antonovics and Town, 2004](#)).

To analyze criminal arrests around marriage, we produce plots of the event study coefficients in specifications analogous to [Equation 1](#) in [Figure 10](#), where $t = 0$ corresponds the 30 day period starting with the date of marriage. Marriage is preceded by a long decline in arrests; for male drug and economic arrests, the decrease amounts to a more than 50 percent decrease from three years before the marriage. The decline continues until the month of marriage, where all crime categories

either stabilize or increase slightly. These event study plots closely match the raw averages, shown in [Figure A.8](#).

These figures add nuance to the qualitative literature, which has largely interpreted the marriage effect as causal.⁹ For instance, in recent work, [Sampson and Laub \(2009\)](#) write: “Selection into marriage appears to be less systematic than many think...[m]any men cannot articulate why they got married or how they began relationships, which often just seemed to happen by chance.” The plots suggest clearly that romantic partnerships are important, demarcating a large decrease in arrests, but the association could be either because of the relationship or other factors simultaneously decreasing crime and increasing the probability of marriage. In support of the relationship mechanism, [Sampson and Laub \(2009\)](#) note that some women condition marriage on men’s social behaviors: “Before marriage, Leonard’s wife also told him directly, ‘Your friends or me.’”

11.2 Good marriages, bad marriages

Economic models going back to [Becker et al. \(1977\)](#) posit that divorces happen in response to negative information about the expected gains from the union (for a more recent example see [Charles and Stephens, 2004](#)). In sociology a core tenet of turning points theory is that marriage itself does not guarantee desistance—relationships are salutary to the extent that they are characterized by high attachment ([Sampson and Laub, 1992](#)). The turning points theory plainly predicts that desistance should be less pronounced for bad marriages. The model in [Becker et al. \(1977\)](#) implies that divorce should be preceded by some negative surprise.

In order to probe these ideas, we combine our data with statewide divorce data from Washington. We plot descriptive statistics for married and eventually divorced couples in [Table 5](#). This sample includes all births where the parents were married and it was a first birth for either the mother or father. Parents who get divorced are younger, reside in poorer zipcodes, and are more likely to be white or black (and less likely to be Hispanic or Asian). Perhaps most importantly, men and women who are headed for divorce are both about twice as likely to have any arrest.

We show the raw averages in [Figure 11](#), but to account for these level differences we subtract

⁹However, see [Skardhamar et al. \(2015\)](#) for a critical assessment.

and divide by the pre-pregnancy averages in the raw plots. We compare couples still married in five years to those who have divorced by that time. The outcome is an indicator for any of the four main categories of arrest (results look similar for any of these categories separately). Compared to their past levels of arrest rates, women headed for divorce have slightly higher rates of arrests post-birth, despite broadly similar trends leading up to the pregnancy. These same effects are present and much more pronounced for men.¹⁰

These results are consistent with the idea that “spousal attachment” is pivotal to maintaining desistance, although the parallel trends leading up to the birth suggest that preparation for a child can be just as impactful for couples who will eventually divorce (Laub and Sampson, 2001). The results are also broadly consistent with economic conceptions of marital dissolution as in Becker et al. (1977) arguing that divorce occurs in reaction to unexpected changes to the gains from the union. Of course, unobserved variables—for example, income—related to crime and divorce could be driving these results. Still, the figures show clearly that, relative to past levels, increases in arrests precede dissolution.

12 Conclusion

How does someone change when they wed or become a parent? The previous sections uncover several novel patterns in criminal arrests around childbirth and marriage, leveraging a detailed administrative sample and providing clear evidence on the size and nature of “turning points.” For mothers, childbirth is transformative, even with the large rebound in arrests that occurs after pregnancy. A significant decrease occurs in the same offenses occurs for fathers as well. However, the increase in domestic violence around both births and marriage is a significant qualifier. Marriage, meanwhile, is in the words of Edin and Kefalas (2011) reserved for couples who have “made it.”

Parenthood is not a policy, although governments take a wide range of actions in order to prevent teen pregnancy, support marriage, and encourage father involvement. Our findings on teen

¹⁰The results are very similar using marriages as the focal event, and controlling for age effects in the event study specification.

mothers provide some of the strongest evidence to date against the conventional wisdom around its consequences. Further, the novel findings on the timing of desistance for fathers suggest that pregnancy could be a uniquely potent time for interventions promoting additional positive changes. Finally, the stark patterns in domestic violence arrests may argue for expanding the purview of home visitation programs in the postnatal period, typically directed at child welfare (Bilukha et al., 2005; Turnbull and Osborn, 2012).

The findings on drug arrests in particular have two implications about incentive-based approaches to treatment: first, that drug use can respond to incentives; second, that incentives built around social bonds could be powerful. The first point challenges definitions of addiction which assert that drug use is the outcome of involuntary impulses.¹¹ And while the experience of childbearing cannot be synthesized in an intervention, addiction experts observe that some successful treatments, such as Alcoholics Anonymous, are based on promoting social cohesion and interdependence (Heyman, 2009).

¹¹For example, the National Institute on Alcohol Abuse and Alcoholism (NIAAA), defines drug abuse as a disease: “Addiction is a chronic, often relapsing brain disease...[s]imilar to other chronic, relapsing diseases, such as diabetes, asthma, or heart disease.”

References

- Almond, Douglas and Maya Rossin-Slater**, “Paternity acknowledgment in 2 million birth records from Michigan,” *PloS one*, 2013, *8* (7), e70042.
- Antonovics, Kate and Robert Town**, “Are all the good men married? Uncovering the sources of the marital wage premium,” *American Economic Review*, 2004, *94* (2), 317–321.
- Ashcraft, Adam, Iván Fernández-Val, and Kevin Lang**, “The consequences of teenage childbearing: Consistent estimates when abortion makes miscarriage non-random,” *The Economic Journal*, 2013, *123* (571), 875–905.
- Barnes, JC and Kevin M Beaver**, “Marriage and desistance from crime: A consideration of gene–environment correlation,” *Journal of Marriage and Family*, 2012, *74* (1), 19–33.
- , **Kristin Golden, Christina Mancini, Brian B Boutwell, Kevin M Beaver, and Brie Diamond**, “Marriage and involvement in crime: A consideration of reciprocal effects in a nationally representative sample,” *Justice Quarterly*, 2014, *31* (2), 229–256.
- Bayer, Patrick, Randi Hjalmarsson, and David Pozen**, “Building criminal capital behind bars: Peer effects in juvenile corrections,” *The Quarterly Journal of Economics*, 2009, *124* (1), 105–147.
- Beaver, Kevin M, John Paul Wright, Matt DeLisi, and Michael G Vaughn**, “Desistance from delinquency: The marriage effect revisited and extended,” *Social science research*, 2008, *37* (3), 736–752.
- Becker, G**, “Crime and punishment: an economic approach,” *Journal of Political Economy*, 1968, *75* (2), 169–217.
- Becker, Gary S**, “An economic analysis of fertility,” in “Demographic and economic change in developed countries,” Columbia University Press, 1960, pp. 209–240.
- , *A treatise on the family: Enlarged edition*, Harvard university press, 1991.
- , **Elisabeth M Landes, and Robert T Michael**, “An economic analysis of marital instability,” *Journal of political Economy*, 1977, *85* (6), 1141–1187.
- Beijers, Joris, Catrien Bijleveld, and Frans van Poppel**, “‘Man’s best possession’: Period effects in the association between marriage and offending,” *European Journal of Criminology*,

2012, *9* (4), 425–441.

Bersani, Bianca E and Elaine Eggleston Doherty, “When the ties that bind unwind: Examining the enduring and situational processes of change behind the marriage effect,” *Criminology*, 2013, *51* (2), 399–433.

– , **John H Laub, and Paul Nieuwbeerta**, “Marriage and desistance from crime in the Netherlands: Do gender and socio-historical context matter?,” *Journal of Quantitative Criminology*, 2009, *25* (1), 3–24.

Billings, Stephen B., David J. Deming, and Jonah Rockoff, “School Segregation, Educational Attainment, and Crime: Evidence from the End of Busing in Charlotte-Mecklenburg,” *The Quarterly Journal of Economics*, 09 2013, *129* (1), 435–476.

Bilukha, Oleg, Robert A Hahn, Alex Crosby, Mindy T Fullilove, Akiva Liberman, Eve Moscicki, Susan Snyder, Farris Tuma, Phaedra Corso, Amanda Schofield et al., “The effectiveness of early childhood home visitation in preventing violence: a systematic review,” *American journal of preventive medicine*, 2005, *28* (2), 11–39.

Blundell, Richard and Thomas MaCurdy, “Labor supply: A review of alternative approaches,” *Handbook of labor economics*, 1999, *3*, 1559–1695.

– , **Luigi Pistaferri, and Itay Saporta-Eksten**, “Consumption Inequality and Family Labor Supply,” *American Economic Review*, February 2016, *106* (2), 387–435.

Branum, Amy M and Katherine A Ahrens, “Trends in timing of pregnancy awareness among US women,” *Maternal and child health journal*, 2017, *21* (4), 715–726.

Carr, Jillian B and Analisa Packham, “SNAP benefits and crime: Evidence from changing disbursement schedules,” *Review of Economics and Statistics*, 2019, *101* (2), 310–325.

Chalfin, Aaron and Justin McCrary, “Criminal deterrence: A review of the literature,” *Journal of Economic Literature*, 2017, *55* (1), 5–48.

Charles, Kerwin Kofi and Melvin Stephens Jr, “Job displacement, disability, and divorce,” *Journal of Labor Economics*, 2004, *22* (2), 489–522.

Charles, Pajarita and Krista M Perreira, “Intimate partner violence during pregnancy and 1-year post-partum,” *Journal of Family Violence*, 2007, *22* (7), 609–619.

- Chetty, Raj, Nathaniel Hendren, and Lawrence F Katz**, “The effects of exposure to better neighborhoods on children: New evidence from the Moving to Opportunity experiment,” *American Economic Review*, 2016, *106* (4), 855–902.
- Craig, Jessica and Holly Foster**, “Desistance in the transition to adulthood: The roles of marriage, military, and gender,” *Deviant Behavior*, 2013, *34* (3), 208–223.
- Craig, Jessica M**, “The effects of marriage and parenthood on offending levels over time among juvenile offenders across race and ethnicity,” *Journal of Crime and Justice*, 2015, *38* (2), 163–182.
- Currie, Janet, Michael Mueller-Smith, and Maya Rossin-Slater**, “Violence while in utero: The impact of assaults during pregnancy on birth outcomes,” Technical Report, National Bureau of Economic Research 2018.
- Dahl, Gordon B and Enrico Moretti**, “The demand for sons,” *The Review of Economic Studies*, 2008, *75* (4), 1085–1120.
- Damm, Anna Piil and Christian Dustmann**, “Does Growing Up in a High Crime Neighborhood Affect Youth Criminal Behavior?,” *American Economic Review*, June 2014, *104* (6), 1806–32.
- DeKeseredy, Walter S, Molly Dragiewicz, and Martin D Schwartz**, *Abusive endings: Separation and divorce violence against women*, Vol. 4, Univ of California Press, 2017.
- Doherty, Elaine Eggleston and Margaret E Ensminger**, “Marriage and offending among a cohort of disadvantaged African Americans,” *Journal of Research in Crime and Delinquency*, 2013, *50* (1), 104–131.
- Drago, Francesco, Roberto Galbiati, and Pietro Vertova**, “The deterrent effects of prison: Evidence from a natural experiment,” *Journal of political Economy*, 2009, *117* (2), 257–280.
- Drago, Robert**, “The parenting of infants: A time-use study,” *Monthly Lab. Rev.*, 2009, *132*, 33.
- Durkheim, Emile**, *Suicide: A study in sociology*, Routledge, 1950.
- Dustmann, Christian and Rasmus Landersø**, “Child’s Gender, Young Fathers’ Crime, and Spillover Effects in Criminal Behavior,” *Journal of Political Economy*, 2021, *129* (12).
- Edin, Kathryn and Maria Kefalas**, *Promises I can keep: Why poor women put motherhood*

- before marriage*, Univ of California Press, 2011.
- **and Timothy J Nelson**, *Doing the best I can: Fatherhood in the inner city*, Univ of California Press, 2013.
- Finer, Lawrence B and Mia R Zolna**, “Shifts in intended and unintended pregnancies in the United States, 2001–2008,” *American journal of public health*, 2014, *104* (S1), S43–S48.
- **and Stanley K Henshaw**, “Estimates of US abortion incidence, 2001–2003,” *Alan Guttmacher Institute*, 2006.
- Fletcher, Jason M and Barbara L Wolfe**, “Education and labor market consequences of teenage childbearing evidence using the timing of pregnancy outcomes and community fixed effects,” *Journal of Human Resources*, 2009, *44* (2), 303–325.
- Forrest, Walter and Carter Hay**, “Life-course transitions, self-control and desistance from crime,” *Criminology & Criminal Justice*, 2011, *11* (5), 487–513.
- Gelber, Alexander, Adam Isen, and Judd B. Kessler**, “The Effects of Youth Employment: Evidence from New York City Lotteries *,” *The Quarterly Journal of Economics*, 09 2015, *131* (1), 423–460.
- Gibson-Davis, Christina M, Kathryn Edin, and Sara McLanahan**, “High hopes but even higher expectations: The retreat from marriage among low-income couples,” *Journal of marriage and family*, 2005, *67* (5), 1301–1312.
- Giordano, Peggy C, Patrick M Seffrin, Wendy D Manning, and Monica A Longmore**, “Parenthood and crime: The role of wantedness, relationships with partners, and SES,” *Journal of Criminal Justice*, 2011, *39* (5), 405–416.
- Glaeser, Edward L, Bruce Sacerdote, and Jose A Scheinkman**, “Crime and social interactions,” *The Quarterly Journal of Economics*, 1996, *111* (2), 507–548.
- Glueck, Sheldon and Eleanor Glueck**, “Unraveling juvenile delinquency,” 1950.
- Gottlieb, Aaron and Naomi F Sugie**, “Marriage, cohabitation, and crime: Differentiating associations by partnership stage,” *Justice Quarterly*, 2019, *36* (3), 503–531.
- Graham, John and Benjamin Bowling**, “Young people and crime,” 1995.
- Heazell, Alexander EP, Dimitrios Siassakos, Hannah Blencowe, Christy Burden, Zul-**

- fiqar A Bhutta, Joanne Cacciatore, Nghia Dang, Jai Das, Vicki Flenady, Katherine J Gold et al.**, “Stillbirths: economic and psychosocial consequences,” *The Lancet*, 2016, 387 (10018), 604–616.
- Helland, Eric and Alexander Tabarrok**, “Does Three Strikes Deter? A Nonparametric Estimation,” *Journal of Human Resources*, 2007, 42, 309–330.
- Heller, Sara B.**, “Summer jobs reduce violence among disadvantaged youth,” *Science*, 2014, 346 (6214), 1219–1223.
- Herrera, Veronica M, Jacquelyn D Wiersma, and H Harrington Cleveland**, “Romantic partners’ contribution to the continuity of male and female delinquent and violent behavior,” *Journal of Research on Adolescence*, 2011, 21 (3), 608–618.
- Heyman, Gene M**, *Addiction: A disorder of choice*, Harvard University Press, 2009.
- Hoffman, Saul D**, “Updated estimates of the consequences of teen childbearing for mothers,” *Kids having kids: Economic costs and social consequences of teen pregnancy*, 2008, pp. 74–118.
- Hope, Trina L, Esther I Wilder, and Toni Terling Watt**, “The relationships among adolescent pregnancy, pregnancy resolution, and juvenile delinquency,” *The Sociological Quarterly*, 2003, 44 (4), 555–576.
- Hotz, V Joseph and Robert A Miller**, “An empirical analysis of life cycle fertility and female labor supply,” *Econometrica: Journal of the Econometric Society*, 1988, pp. 91–118.
- , **Charles H Mullin, and Seth G Sanders**, “Bounding causal effects using data from a contaminated natural experiment: Analysing the effects of teenage childbearing,” *The Review of Economic Studies*, 1997, 64 (4), 575–603.
- , **Susan Williams McElroy, and Seth G Sanders**, “Teenage childbearing and its life cycle consequences exploiting a natural experiment,” *Journal of Human Resources*, 2005, 40 (3), 683–715.
- Jaffee, Sara R, Caitlin McPherran Lombardi, and Rebekah Levine Coley**, “Using complementary methods to test whether marriage limits men’s antisocial behavior,” *Development and Psychopathology*, 2013, 25 (1), 65–77.
- Jatlaoui, Tara C, Jill Shah, Michele G Mandel, Jamie W Krashin, Danielle B Suchdev,**

- Denise J Jamieson, and Karen Pazol**, “Abortion surveillance—United States, 2014,” *MMWR Surveillance Summaries*, 2018, *66* (25), 1.
- Kearney, Melissa S and Phillip B Levine**, “Why is the teen birth rate in the United States so high and why does it matter?,” *Journal of Economic Perspectives*, 2012, *26* (2), 141–63.
- Keiding, Niels, Kajsa Kvist, Helle Hartvig, Mads Tvede, and Svend Juul**, “Estimating time to pregnancy from current durations in a cross-sectional sample,” *Biostatistics*, 2002, *3* (4), 565–578.
- Kerr, David CR, Deborah M Capaldi, Lee D Owen, Margit Wiesner, and Katherine C Pears**, “Changes in at-risk American men’s crime and substance use trajectories following fatherhood,” *Journal of marriage and family*, 2011, *73* (5), 1101–1116.
- King, Ryan D, Michael Massoglia, and Ross MacMillan**, “The context of marriage and crime: Gender, the propensity to marry, and offending in early adulthood,” *Criminology*, 2007, *45* (1), 33–65.
- Kleven, Henrik, Camille Landais, and Jakob Egholt Søgaaard**, “Children and gender inequality: Evidence from Denmark,” *American Economic Journal: Applied Economics*, 2019, *11* (4), 181–209.
- Kreager, Derek A, Ross L Matsueda, and Elena A Erosheva**, “Motherhood and criminal desistance in disadvantaged neighborhoods,” *Criminology*, 2010, *48* (1), 221–258.
- Landers, Monica D, Ojmarrh Mitchell, and Erica E Coates**, “Teenage fatherhood as a potential turning point in the lives of delinquent youth,” *Journal of Child and Family Studies*, 2015, *24* (6), 1685–1696.
- Laub, John H and Robert J Sampson**, “Understanding desistance from crime,” *Crime and justice*, 2001, *28*, 1–69.
- , **Daniel S Nagin, and Robert J Sampson**, “Trajectories of change in criminal offending: Good marriages and the desistance process,” *American sociological review*, 1998, pp. 225–238.
- Lawn, Joy E, Hannah Blencowe, Peter Waiswa, Agbessi Amouzou, Colin Mathers, Dan Hogan, Vicki Flenady, J Frederik Frøen, Zeshan U Qureshi, Claire Calderwood et al.**, “Stillbirths: rates, risk factors, and acceleration towards 2030,” *The Lancet*, 2016, *387*

(10018), 587–603.

Lee, David S and Justin McCrary, “Crime, punishment, and myopia,” Technical Report, National Bureau of Economic Research 2005.

Leslie, Emily and Riley Wilson, “Sheltering in place and domestic violence: Evidence from calls for service during COVID-19,” *Journal of Public Economics*, 2020, 189, 104241.

Loeffler, Charles E and Daniel S Nagin, “The impact of incarceration on recidivism,” *Annual Review of Criminology*, 2022, 5.

Massoglia, Michael and Christopher Uggen, “Subjective desistance and the transition to adulthood,” *Journal of Contemporary Criminal Justice*, 2007, 23 (1), 90–103.

Maume, Michael O, Graham C Ousey, and Kevin Beaver, “Cutting the grass: A reexamination of the link between marital attachment, delinquent peers and desistance from marijuana use,” *Journal of Quantitative Criminology*, 2005, 21 (1), 27–53.

McGloin, Jean Marie, Christopher J Sullivan, Alex R Piquero, Arjan Blokland, and Paul Nieuwebeerta, “Marriage and offending specialization: Expanding the impact of turning points and the process of desistance,” *European Journal of Criminology*, 2011, 8 (5), 361–376.

Mercer, Natalie, Maria Vasilica Zoutewelle-Terovan, and Victor van der Geest, “Marriage and transitions between types of serious offending for high-risk men and women,” *European journal of criminology*, 2013, 10 (5), 534–554.

Mincy, Ronald, Irwin Garfinkel, and Lenna Nepomnyaschy, “In-hospital paternity establishment and father involvement in fragile families,” *Journal of Marriage and Family*, 2005, 67 (3), 611–626.

Mitchell, Ojmarrh, Monica Landers, and Melissa Morales, “The Contingent Effects of Fatherhood on Offending,” *American Journal of Criminal Justice*, 2018, 43 (3), 603–626.

Monsbakken, Christian Weisæth, Torkild Hovde Lyngstad, and Torbjørn Skardhamar, “Crime and the transition to parenthood: The role of sex and relationship context,” *British Journal of Criminology*, 2012, 53 (1), 129–148.

Mosher, William, Jo Jones, and Joyce C Abma, “Intended and unintended births in the United States: 1982-2010,” *National health statistics reports*, 2012, (55), 1–28. ([link](#)).

- Na, Chongmin**, “The consequences of fatherhood transition among disadvantaged male offenders: Does timing matter?,” *Journal of Developmental and Life-Course Criminology*, 2016, 2 (2), 182–208.
- Petras, Hanno, Paul Nieuwebeerta, and Alex R Piquero**, “Participation and frequency during criminal careers across the life span,” *Criminology*, 2010, 48 (2), 607–637.
- Piquero, Alex R, John M MacDonald, and Karen F Parker**, “Race, local life circumstances, and criminal activity,” *Social Science Quarterly*, 2002, 83 (3), 654–670.
- Pyrooz, David C, Jean Marie McGloin, and Scott H Decker**, “Parenthood as a turning point in the life course for male and female gang members: a study of within-individual changes in gang membership and criminal behavior,” *Criminology*, 2017, 55 (4), 869–899.
- Ragan, Daniel T and Kevin M Beaver**, “Chronic offenders: A life-course analysis of marijuana users,” *Youth & Society*, 2010, 42 (2), 174–198.
- Rose, Evan K and Yotam Shem-Tov**, “How does incarceration affect reoffending? Estimating the dose-response function,” *Journal of Political Economy*, 2021, 129 (12), 3302–3356.
- Rossin-Slater, Maya**, “Signing Up New Fathers: Do Paternity Establishment Initiatives Increase Marriage, Parental Investment, and Child Well-Being?,” *American Economic Journal: Applied Economics*, 2017, 9 (2), 93–130.
- Salvatore, Christopher and Travis A Taniguchi**, “Do social bonds matter for emerging adults?,” *Deviant behavior*, 2012, 33 (9), 738–756.
- Sampson, Robert J and John H Laub**, “Crime and deviance over the life course: The salience of adult social bonds,” *American sociological review*, 1990, pp. 609–627.
- **and** –, “Crime and deviance in the life course,” *Annual review of sociology*, 1992, 18 (1), 63–84.
- **and John H. Laub**, *Shared beginnings, divergent lives*, Harvard University Press, 2009.
- **, John H Laub, and Christopher Wimer**, “Does marriage reduce crime? A counterfactual approach to within-individual causal effects,” *Criminology*, 2006, 44 (3), 465–508.
- Savolainen, Jukka**, “Work, family and criminal desistance: Adult social bonds in a Nordic welfare state,” *The British Journal of Criminology*, 2009, 49 (3), 285–304.

- Schellen, Marieke Van, Robert Apel, and Paul Nieuwbeerta**, ““Because you’re mine, I walk the line”? Marriage, spousal criminality, and criminal offending over the life course,” *Journal of Quantitative Criminology*, 2012, 28 (4), 701–723.
- Skardhamar, Torbjørn, Christian W Monsbakken, and Torkild H Lyngstad**, “Crime and the transition to marriage: The role of the spouse’s criminal involvement,” *British Journal of Criminology*, 2014, 54 (3), 411–427.
- , **Jukka Savolainen, Kjersti N Aase, and Torkild H Lyngstad**, “Does marriage reduce crime?,” *Crime and justice*, 2015, 44 (1), 385–446.
- Skarhamar, Torbjørn and Torkild Hovde Lyngstad**, “Family formation, fatherhood and crime: an invitation to a broader perspectives on crime and family transitions,” 2009.
- Stanczyk, Alexandra B**, “The Dynamics of US Household Economic Circumstances Around a Birth,” *Demography*, 2020, 57 (4), 1271–1296.
- Tach, Laura, Ronald Mincy, and Kathryn Edin**, “Parenting as a “package deal”: Relationships, fertility, and nonresident father involvement among unmarried parents,” *Demography*, 2010, 47 (1), 181–204.
- Terplan, Mishka, Diana Cheng, and Margaret S Chisolm**, “The relationship between pregnancy intention and alcohol use behavior: an analysis of PRAMS data,” *Journal of substance abuse treatment*, 2014, 46 (4), 506–510.
- Theobald, Delphine, David P Farrington, and Alex R Piquero**, “Does the birth of a first child reduce the father’s offending?,” *Australian & New Zealand Journal of Criminology*, 2015, 48 (1), 3–23.
- Thompson, Melissa and Milena Petrovic**, “Gendered transitions: Within-person changes in employment, family, and illicit drug use,” *Journal of research in crime and delinquency*, 2009, 46 (3), 377–408.
- Tremblay, Monique D, Jessica E Sutherland, and David M Day**, “Fatherhood and delinquency: an examination of risk factors and offending patterns associated with fatherhood status among serious juvenile offenders,” *Journal of child and family studies*, 2017, 26 (3), 677–689.
- Turnbull, Catherine and David A Osborn**, “Home visits during pregnancy and after birth

for women with an alcohol or drug problem,” *Cochrane Database of Systematic Reviews*, 2012, (1).

Voena, Alessandra, “Yours, mine, and ours: Do divorce laws affect the intertemporal behavior of married couples?,” *American Economic Review*, 2015, *105* (8), 2295–2332.

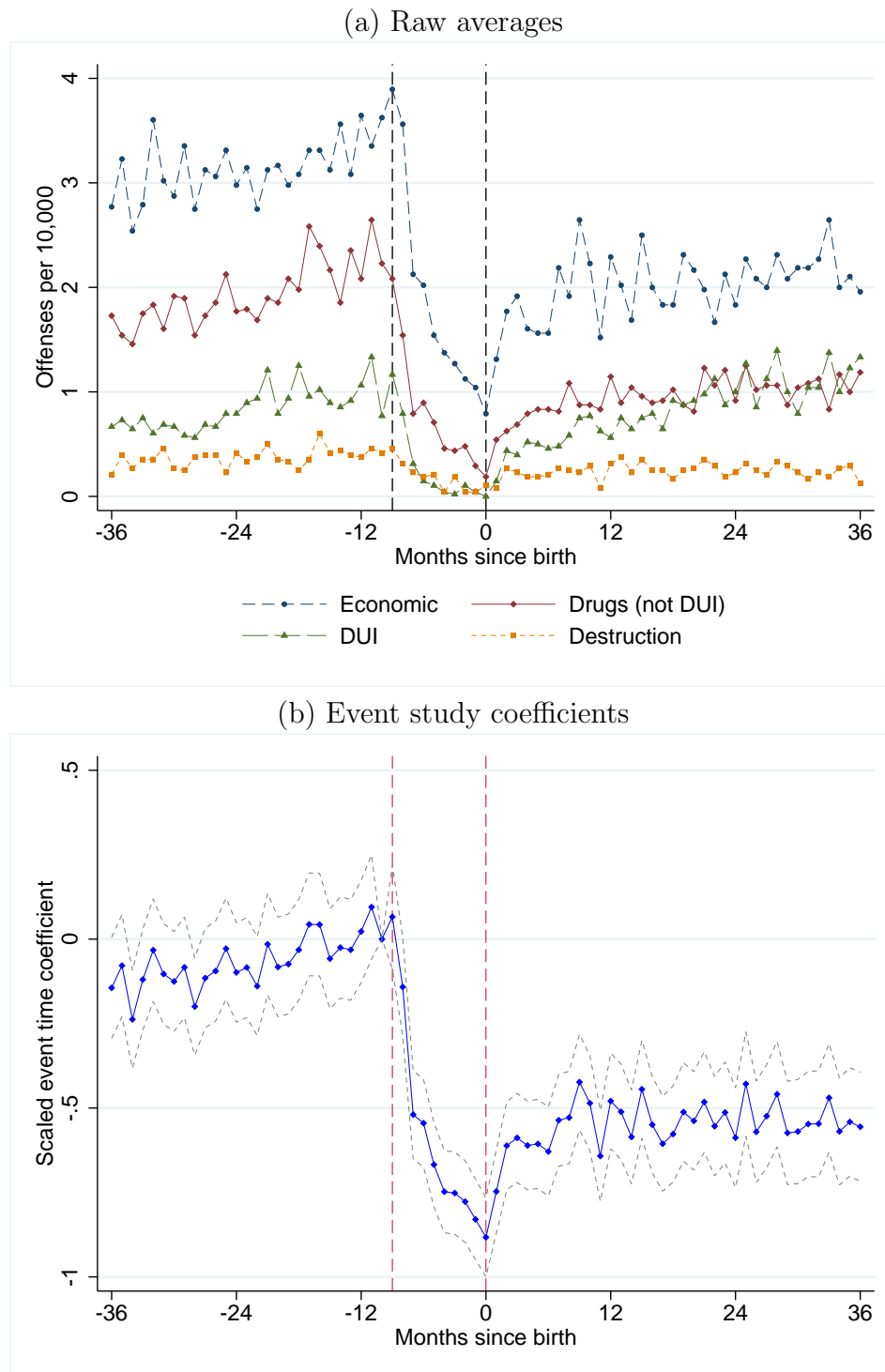
Yakusheva, Olga and Jason Fletcher, “Learning from teen childbearing experiences of close friends: Evidence using miscarriages as a natural experiment,” *Review of Economics and Statistics*, 2015, *97* (1), 29–43.

Zoutewelle-Terovan, Mioara and Torbjorn Skardhamar, “Timing of Change in Criminal Offending Around Entrance into Parenthood: Gender and Cross-Country Comparisons for At-Risk Individuals,” *Journal of Quantitative Criminology*, 2016, *32* (4), 695–722.

– , **Victor Van Der Geest, Aart Liefbroer, and Catrien Bijleveld**, “Criminality and family formation: Effects of marriage and parenthood on criminal behavior for men and women,” *Crime & Delinquency*, 2014, *60* (8), 1209–1234.

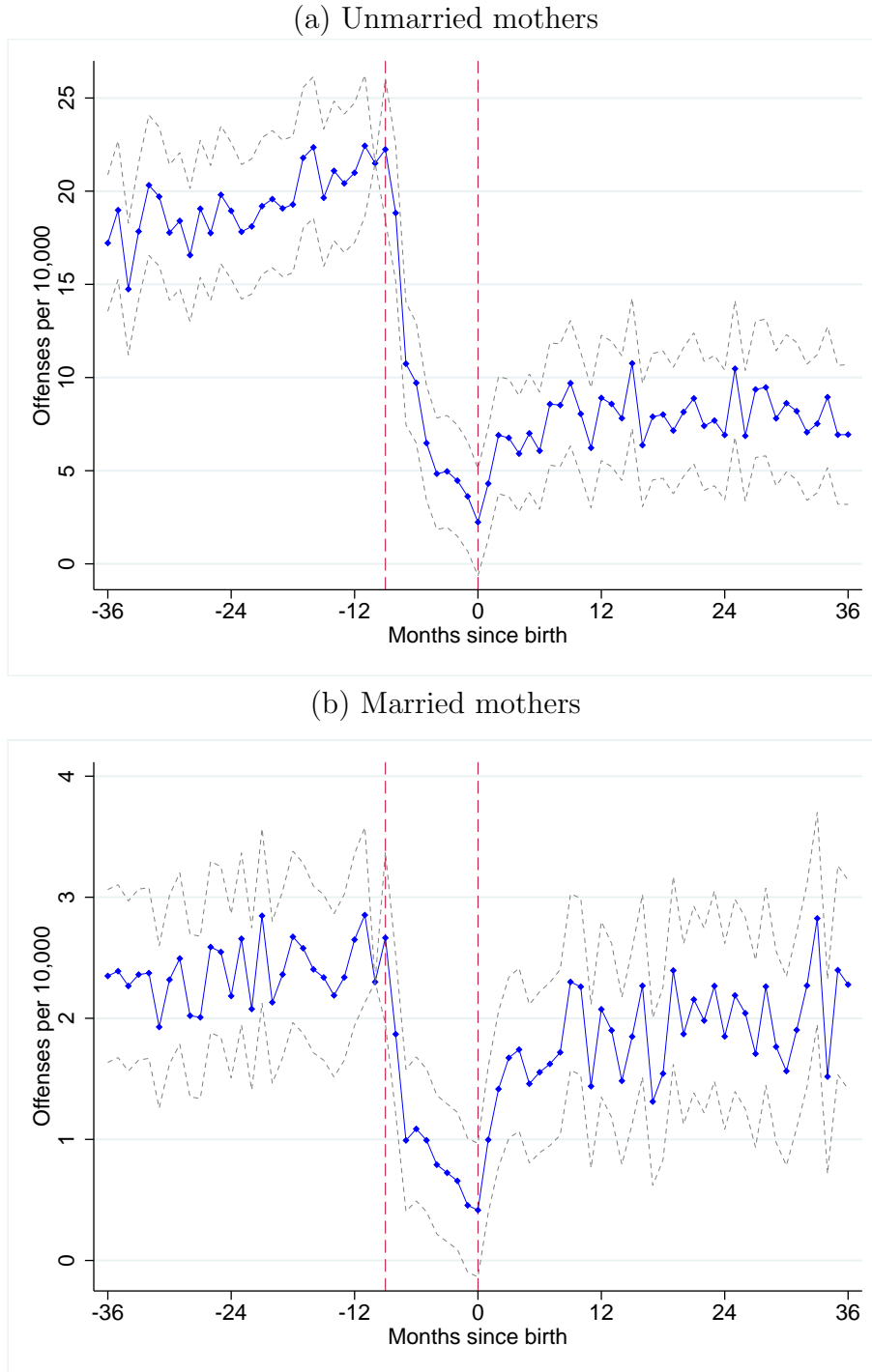
13 Figures

Figure 1: Monthly arrest rate around first birth, All first-time mothers



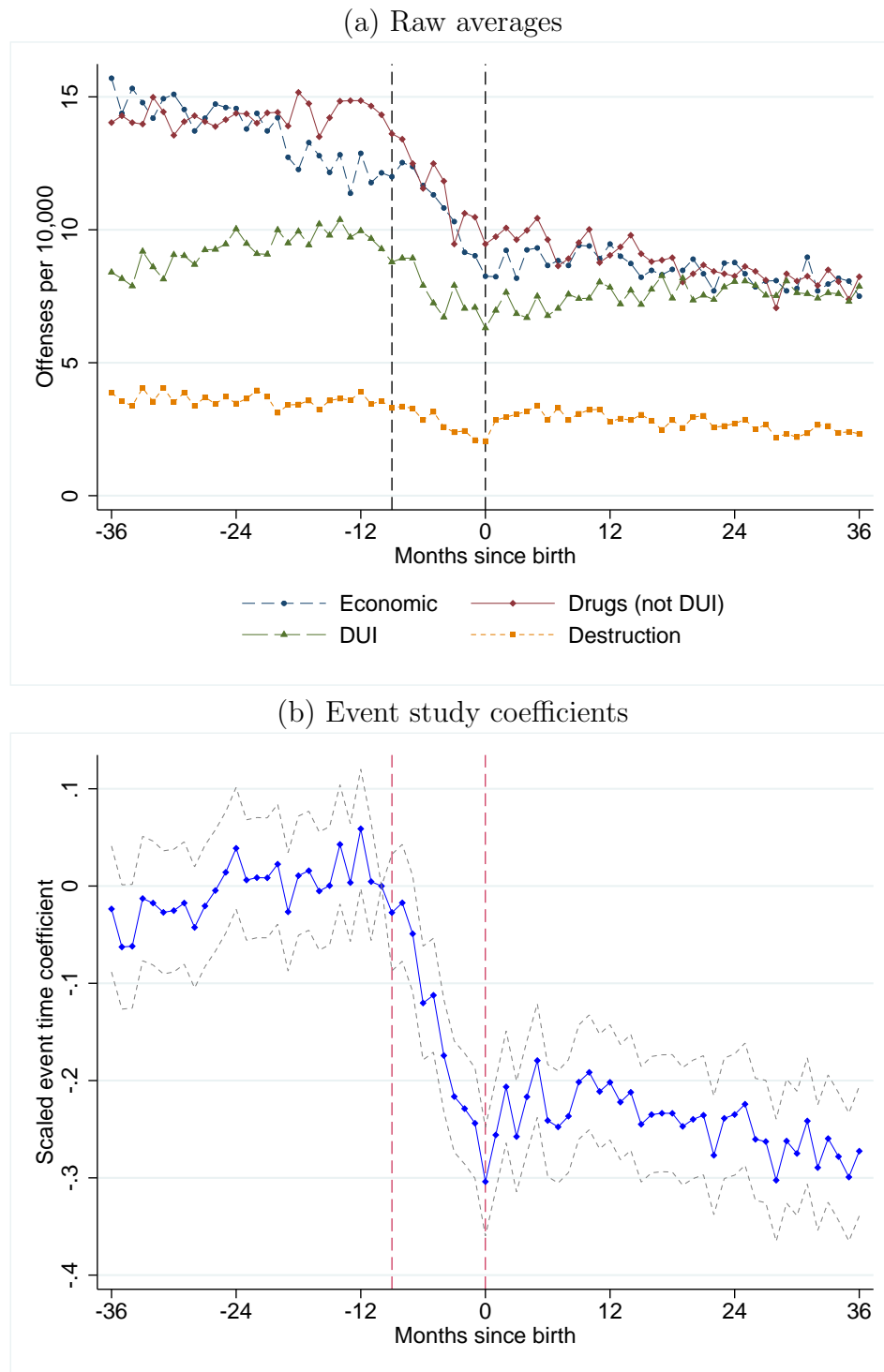
Includes fully-balanced arrest data for 480,111 first-time mothers. Panel (a) shows the average of an indicator for any offense from the specified category. DUI stands for driving under the influence. In panel (b), the dots show point estimates and dashed lines show 95% confidence intervals of the coefficients δ_k from the event study specification shown in Equation 1, with an indicator for any arrest in the four crime categories from panel (a) as the dependent variable. The coefficients are divided by the average arrest rate in the omitted period, 10 months before birth. Standard errors are clustered at the person level. In both panels, the vertical dashed lines mark 9 months before the birth and the month of birth.

Figure 2: Mother heterogeneity by marital status, event study coefficients



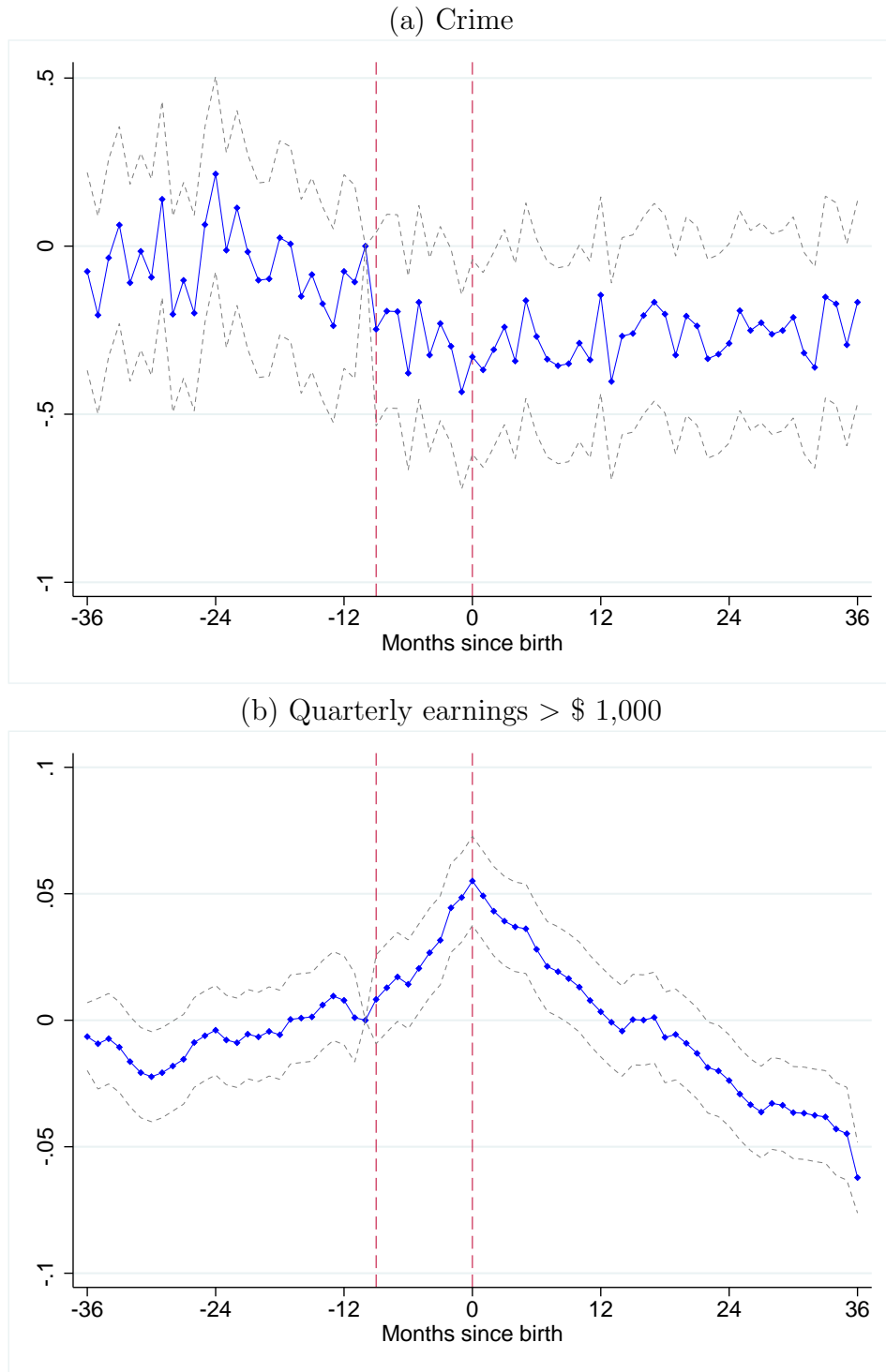
Includes fully-balanced arrest data on 112,016 unmarried (panel (a)) and 368,095 married (panel (b)) first-time mothers. Dots show point estimates and dashed lines show 95% confidence intervals of the coefficients δ_k from the event study specification shown in Equation 1, with an indicator for a drug, DUI, economic, or property destruction arrest as the dependent variable. Standard errors are clustered at the person level. The omitted period is 10 months before birth and the arrest rate in the omitted period is added to the coefficients to show average arrest rates. The vertical dashed lines mark 9 months before the birth and the month of birth.

Figure 3: Monthly arrest rate around childbirth, All first-time fathers



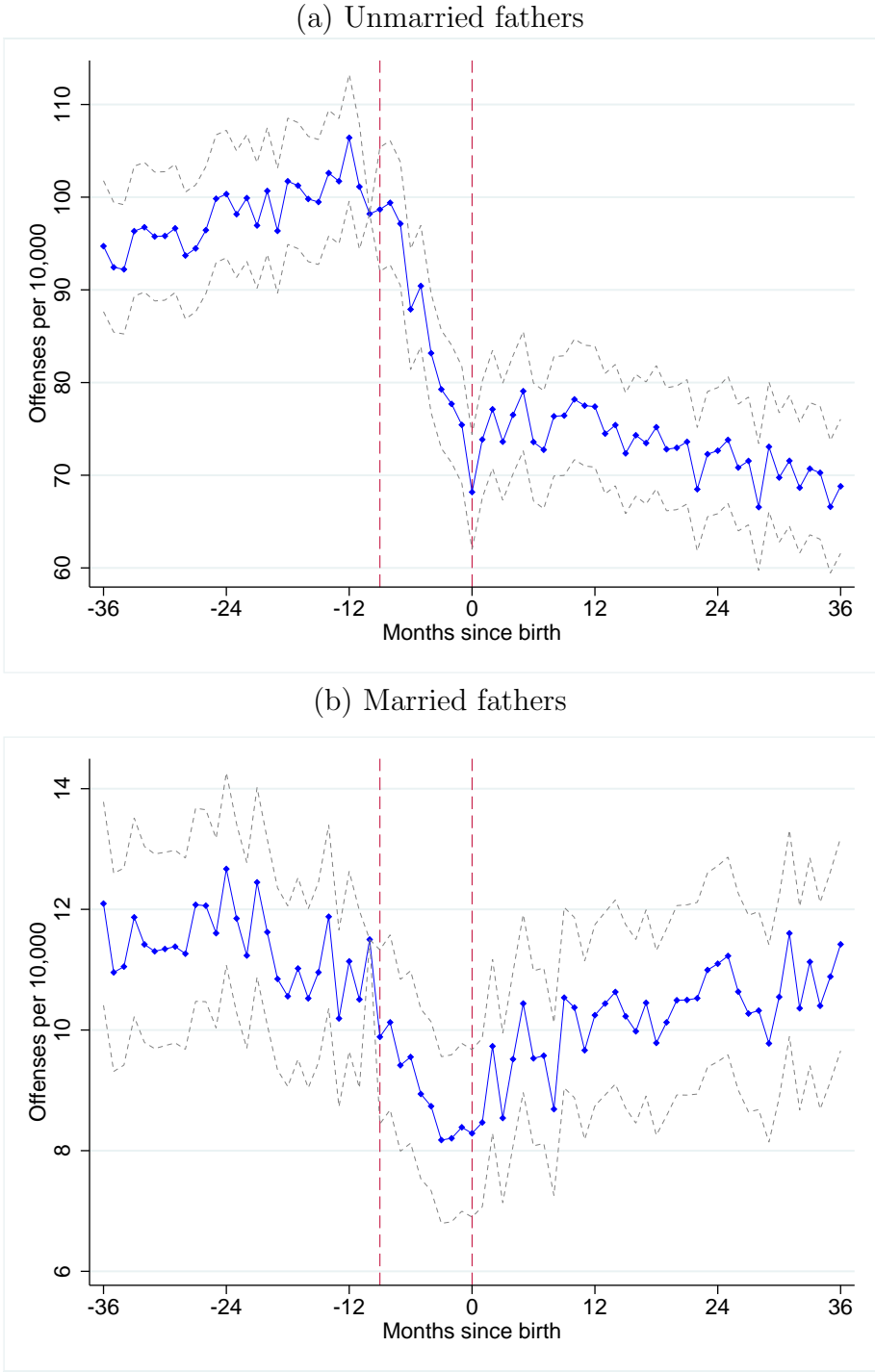
Includes fully-balanced arrest data for 545,166 first-time fathers. Panel (a) shows the average of an indicator for any offense from the specified category. DUI stands for driving under the influence. In panel (b), the dots show point estimates and dashed lines show 95% confidence intervals of the coefficients δ_k from the event study specification shown in Equation 1, with an indicator for any arrest in the four crime categories from panel (a) as the dependent variable. The coefficients are divided by the average arrest rate in the omitted period, 10 months before birth. Standard errors are clustered at the person level. The vertical dashed lines in both panels mark 9 months before the birth and the month of birth.

Figure 4: Event studies for wage sample, All first-time fathers



Includes fully-balanced arrest data for 5,773 first-time fathers who came under DOC supervision prior to the birth. In panel (a), the dots show point estimates and dashed lines show 95% confidence intervals of the coefficients δ_k from the event study specification shown in Equation 1, with an indicator for a drug, DUI, economic, or property destruction arrest as the dependent variable and divided by the average arrest rate in the omitted period, 10 months before birth. The vertical dashed lines mark 9 months before the birth and the month of birth. Panel (b) plots the same coefficients and confidence interval with quarterly earnings over \$1,000 as the dependent variable. Standard errors are clustered at the person level.

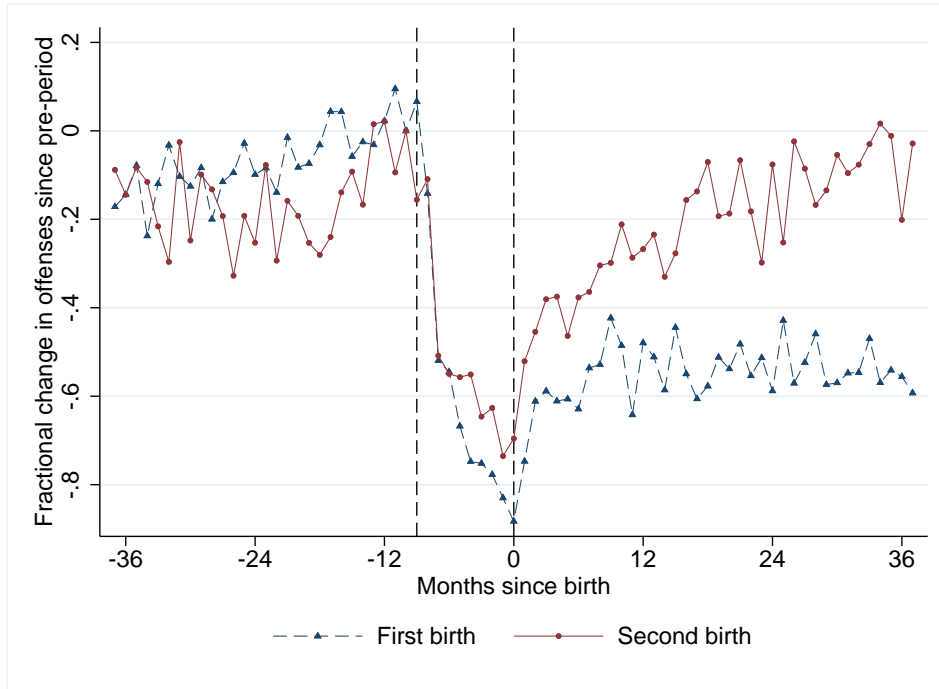
Figure 5: Father heterogeneity by marital status, event study coefficients



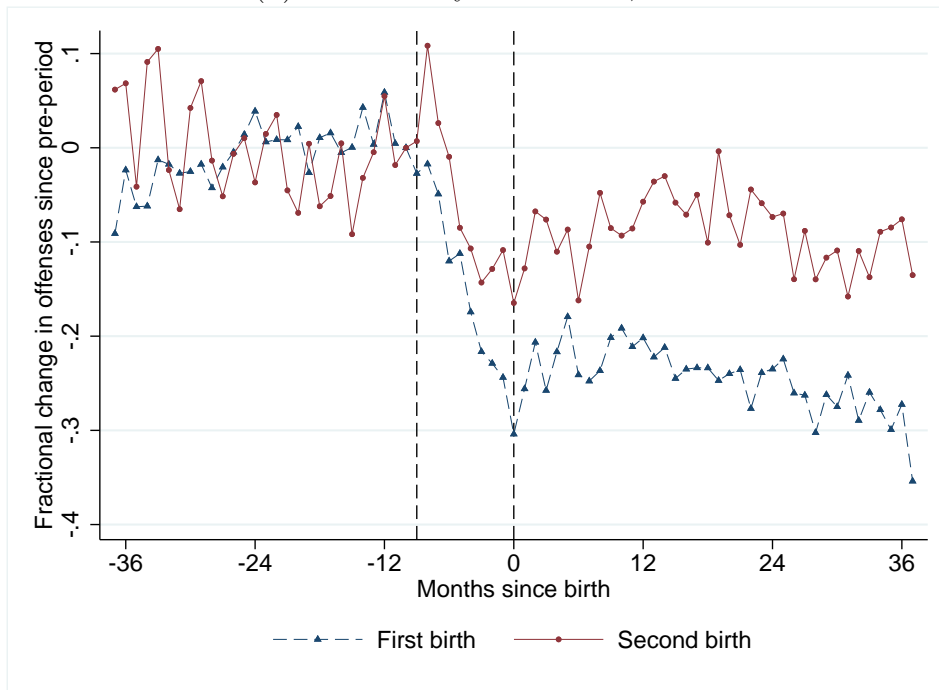
Includes fully-balanced arrest data on 160,052 unmarried and 385,114 married first-time fathers. Dots show point estimates and dashed lines show 95% confidence intervals of the coefficients δ_k from the event study specification shown in Equation 1, with an indicator for a drug, DUI, economic, or property destruction arrest as the dependent variable. Standard errors clustered at the person level. The omitted period is 10 months before birth and the arrest rate in the omitted period is added to the coefficients to show average arrest rates net of age effects. The vertical dashed lines in both panels mark 9 months before the birth and the month of birth.

Figure 6: Second births

(a) Event study coefficients, women



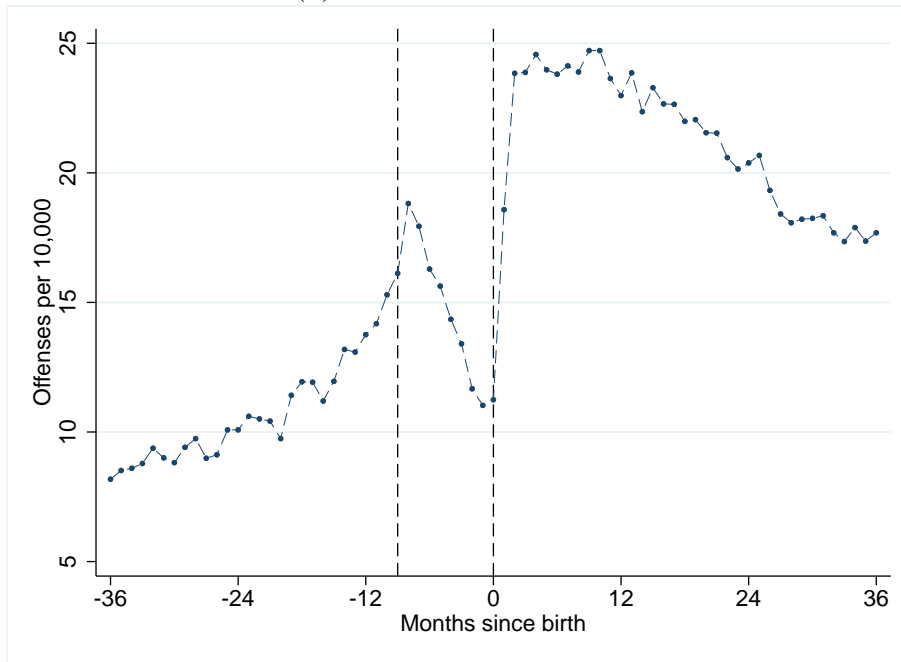
(b) Event study coefficients, men



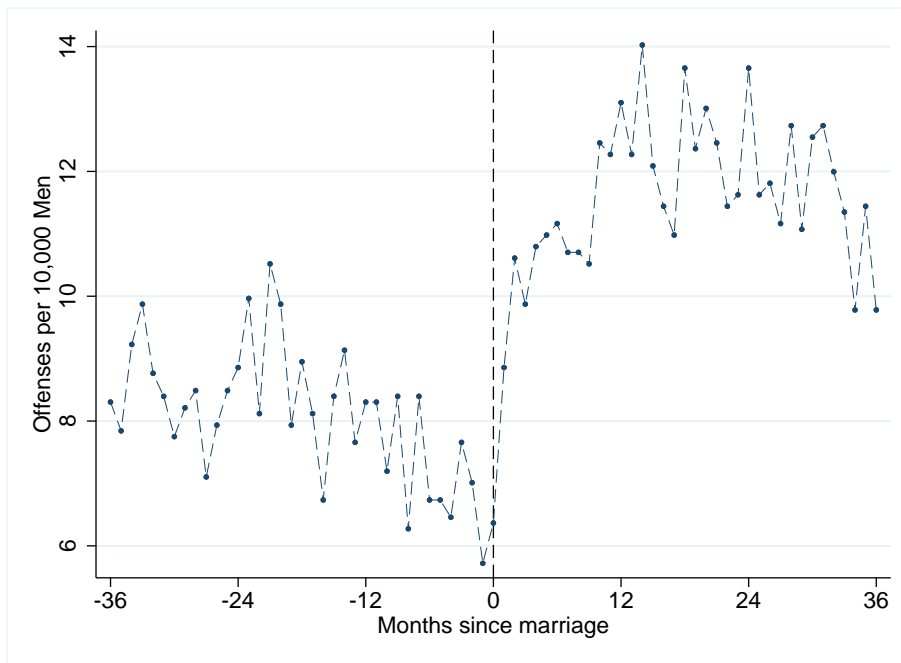
Plots show coefficients δ_k from the event study specification show in [Equation 1](#) with an indicator for any drug, DUI, economic, or property destruction arrest as the dependent variable. Each line represents a separate event study regression run using fully-balanced arrest data on the women (panel (a), $N=160,360$) and men (panel (b), $N=180,557$) who have at least two births in the sample window. The coefficients are divided by the average arrest rate in the omitted period, 10 months before birth. The vertical dashed lines mark 9 months before the birth and the month of birth.

Figure 7: Domestic violence

(a) Arrests around birth

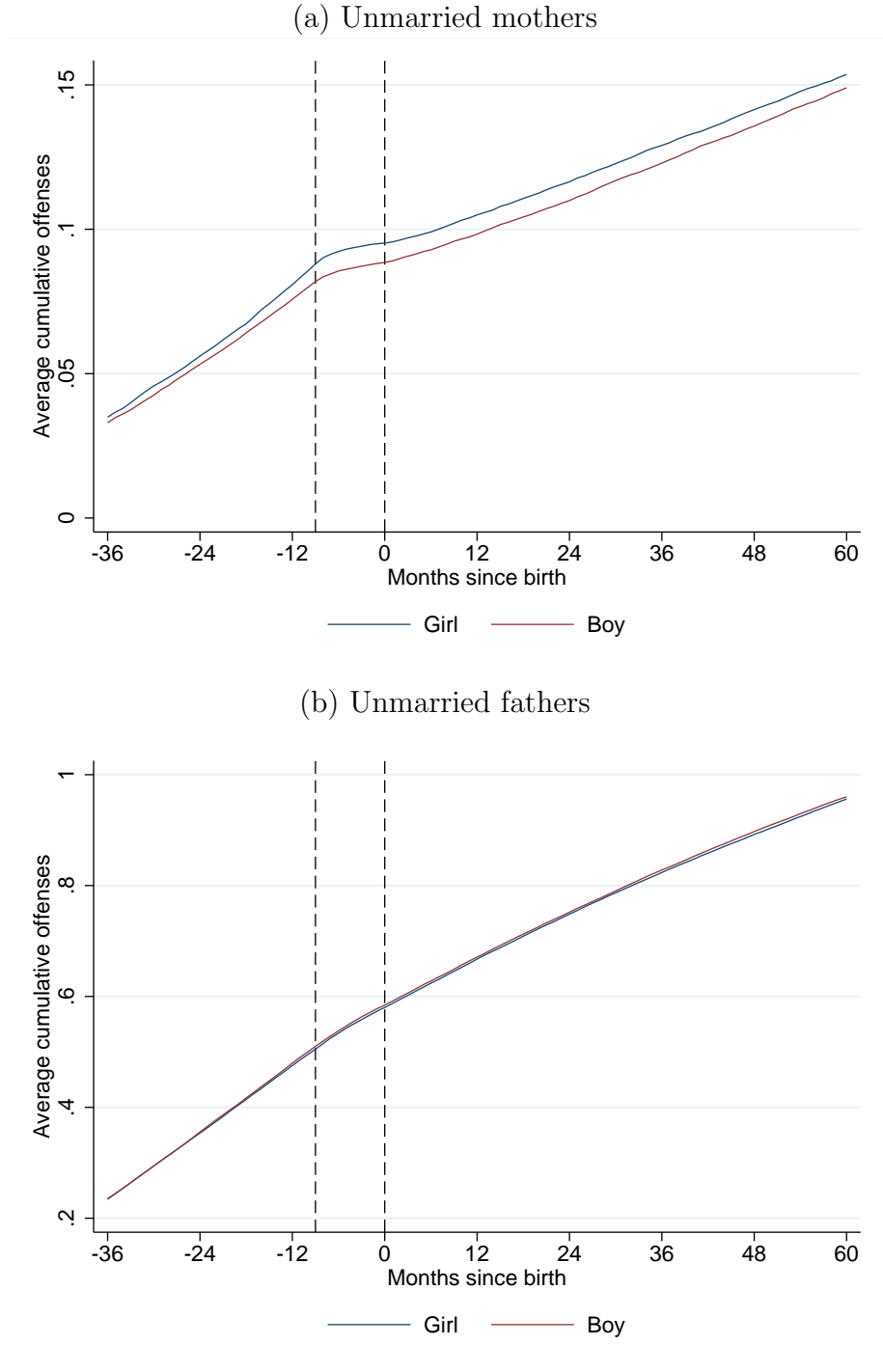


(b) Arrests around marriage



Panel (a) gives the raw average of an indicator for a domestic violence offense each month in the 3 years before and after birth. The sample includes fully-balanced arrest data for 545,166 first-time fathers and the vertical dashed lines mark 9 months before the birth and the month of birth. Panel (b) shows the same domestic violence outcome and includes fully-balanced arrest data for 245,756 married men. The vertical dashed line indicates the month of marriage.

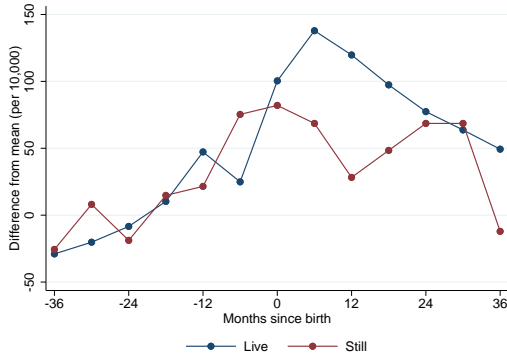
Figure 8: Heterogeneity by infant sex among single first-time parents



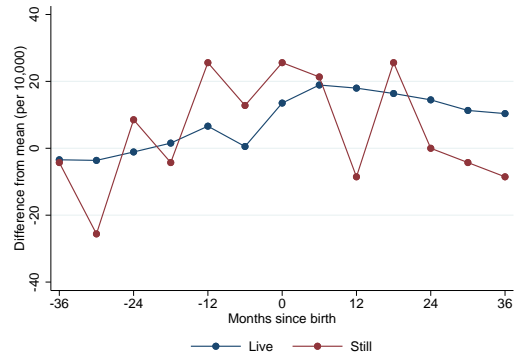
Includes fully-balanced arrest data on 160,052 unmarried first-time fathers and 112,016 unmarried first-time mothers. Both plots show the monthly averages of a cumulative count of an offense indicator, equal to 1 if the mother or father committed a drug, DUI, economic, or property destruction offense in a given month.

Figure 9: Stillbirths, level difference

Father domestic violence

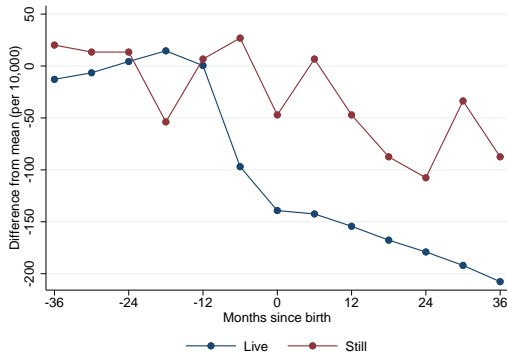


(a) Unmarried Fathers

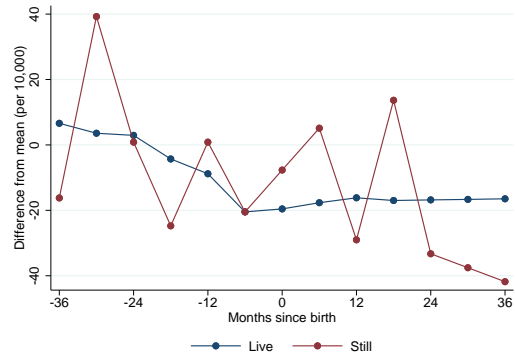


(b) Married Fathers

Father four main crimes

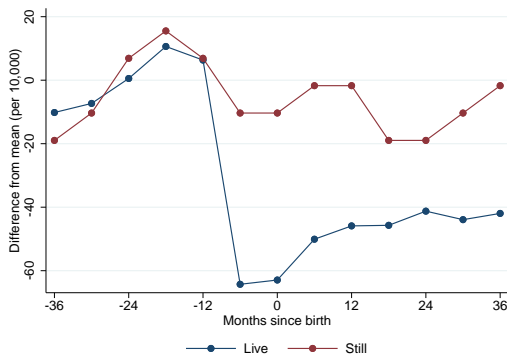


(c) Unmarried Fathers

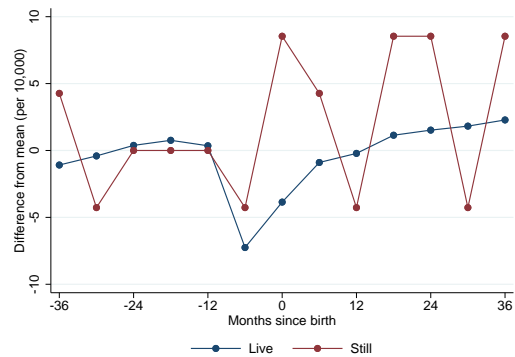


(d) Married Fathers

Mother four main crimes



(e) Unmarried Mothers

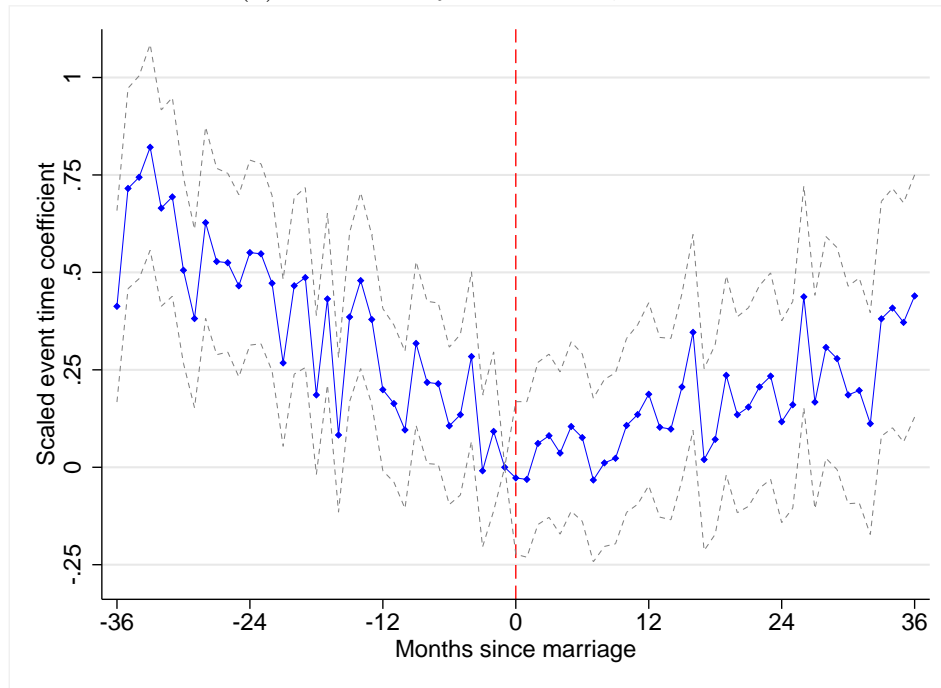


(f) Married Mothers

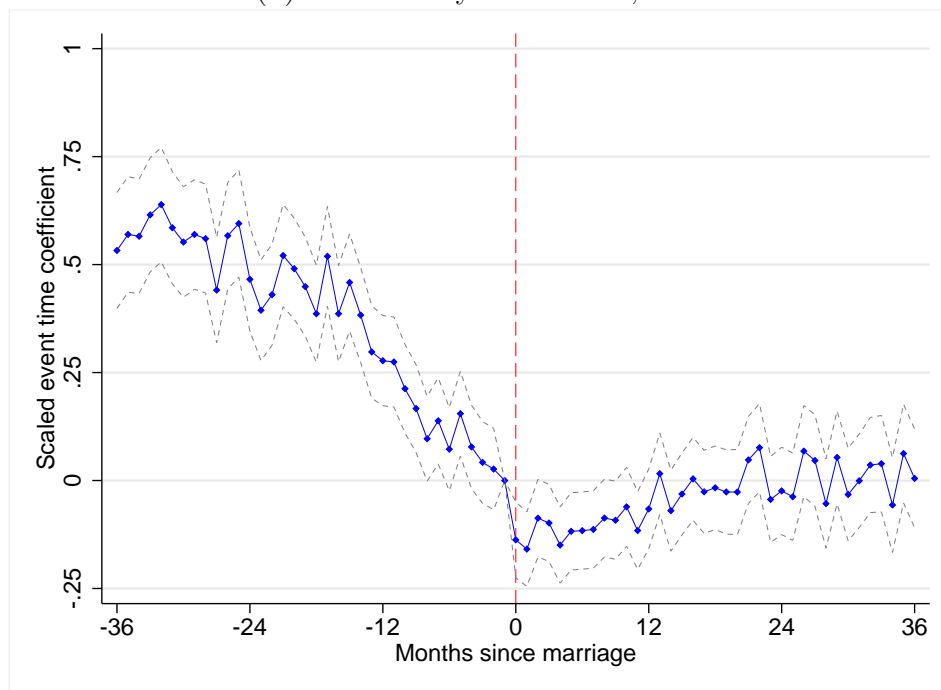
Across panels, the data plotted is the average of an indicator for being charged with an offense in a six-month period, minus the average of the indicator for that group (either live or stillbirth). For example, the point at month 24 in Panel (e) indicates that, for every 10,000 single mothers, there were 40 fewer offenses compared to the overall rate.

Figure 10: Plots of arrests around marriage

(a) Event study coefficients, women

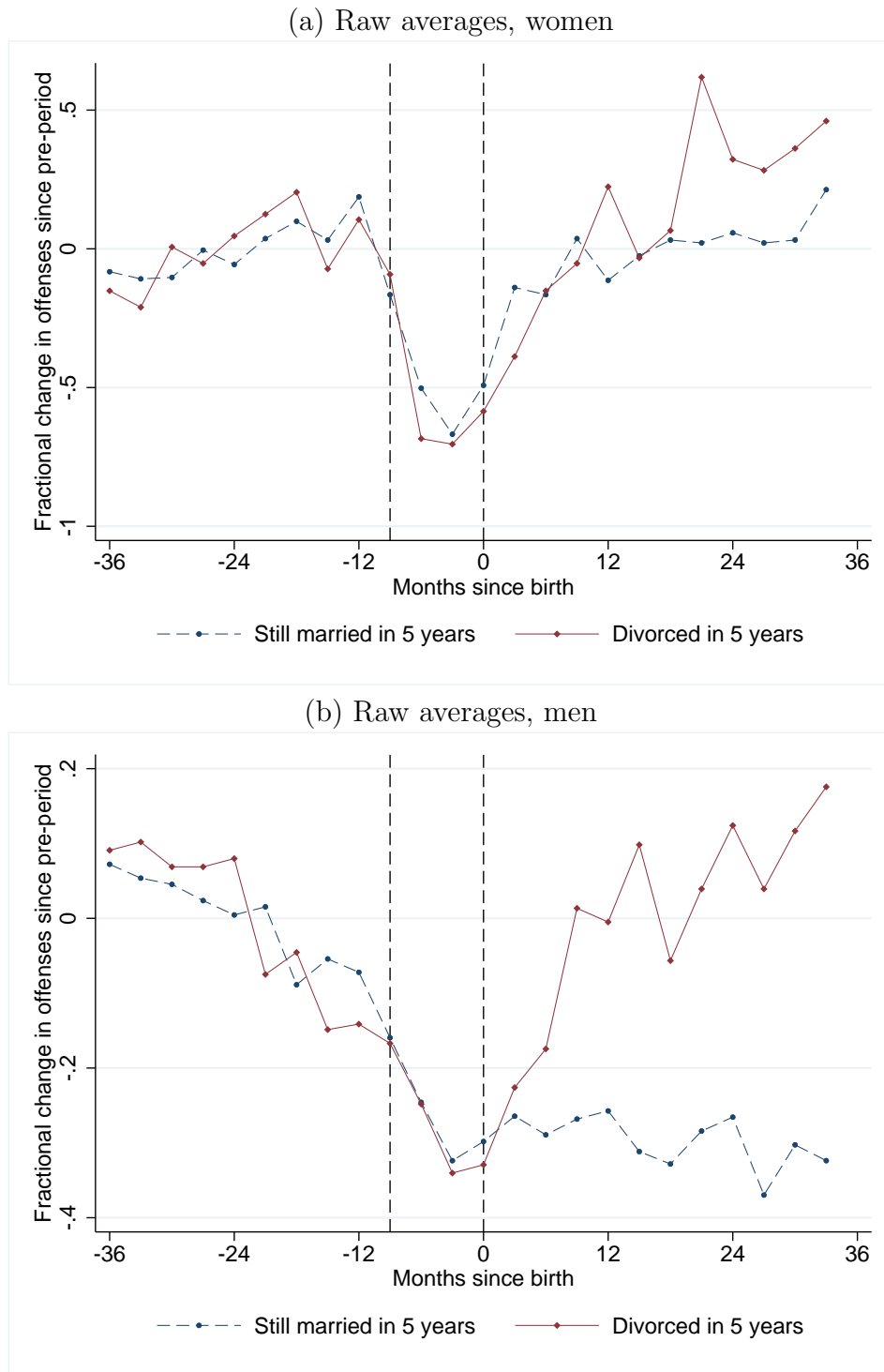


(b) Event study coefficients, men



Includes all fathers (N=245,756) and mothers (N=222,392) from the birth data who are visible in the arrest data 3 years after and 3 years before their marriage. Dots show point estimates and dashed lines show 95% confidence intervals of the coefficients δ_k from the event study specification shown in Equation 1, with an indicator for a drug, DUI, economic, or property destruction arrest as the dependent variable. Standard errors are clustered at the person level. The omitted period is one month before birth. The vertical dashed line marks the month of marriage.

Figure 11: Heterogeneity in the effect of childbirth between good marriages and bad marriages



Panel (a) includes fully-balanced arrest data on 349,779 still-married women and 18,316 divorced women. Panel (b) includes fully-balanced arrest data on 364,076 still-married men and 21,038 divorced men. The outcome is any drug, DUI, economic, or property destruction arrest, divided by the pre-pregnancy average. Divorce classification is derived from a fuzzy match between the Washington state marriage and divorce indexes. The vertical dashed lines mark 9 months before the birth and the month of birth.

Table 1: Descriptive statistics, Mother sample

Variable	(1) All births	(2) + Clear match	(3) +Mother's first	(4) Stillbirths
Mother age	27.91 (6.01)	28.50 (5.91)	27.55 (6.05)	28.04 (6.66)
Father age	30.40 (6.83)	30.97 (6.72)	30.05 (6.87)	30.45 (7.47)
Mother married at birth	0.73 (0.44)	0.81 (0.39)	0.77 (0.42)	0.67 (0.47)
Mother on Medicaid	0.36 (0.48)	0.31 (0.46)	0.32 (0.47)	
WIC	0.34 (0.47)	0.30 (0.46)	0.31 (0.46)	0.23 (0.42)
Twins+	0.02 (0.12)	0.02 (0.13)	0.02 (0.13)	0.05 (0.22)
Male infant	0.51 (0.50)	0.51 (0.50)	0.51 (0.50)	0.52 (0.50)
Mother White	0.71 (0.45)	0.71 (0.45)	0.69 (0.46)	
Mother Black	0.04 (0.20)	0.03 (0.18)	0.04 (0.19)	
Mother Hispanic	0.11 (0.32)	0.12 (0.32)	0.13 (0.33)	
Mother Asian	0.09 (0.29)	0.10 (0.30)	0.11 (0.32)	
Mother other or missing	0.04 (0.21)	0.04 (0.19)	0.04 (0.19)	
Low birth weight (<2500g)	0.05 (0.22)	0.05 (0.21)	0.06 (0.23)	0.60 (0.49)
Any father arrest	0.41 (0.49)	0.35 (0.48)	0.34 (0.47)	0.31 (0.46)
Any mother arrest	0.25 (0.43)	0.09 (0.28)	0.07 (0.26)	0.04 (0.18)
Median zipcode income	59834.99 (18187.96)	60739.80 (18542.80)	60599.29 (18396.08)	58650.58 (18073.86)
Midpregnancy marriage	0.03 (0.18)	0.03 (0.18)	0.04 (0.21)	0.05 (0.21)
Divorce	0.22 (0.42)	0.21 (0.41)	0.21 (0.41)	0.36 (0.48)
Father ever incarcerated	0.04 (0.20)	0.03 (0.16)	0.02 (0.15)	0.04 (0.19)
Father ever on probation	0.09 (0.28)	0.06 (0.23)	0.05 (0.22)	0.07 (0.25)
Observations	983,687	809,451	480,111	3,502

Standard deviations shown in parentheses. Insurance and ethnicity not recorded for stillbirths. Median zipcode income is for the years 2006-2010 from the American Community Survey via [Michigan's Population Studies Center](#).

Table 2: Descriptives for married and unmarried parents

Variable	(1)	(2)
	Unmarried	Married
Mother age	23.58 (5.73)	28.60 (5.51)
Father age	25.93 (6.57)	30.78 (6.10)
Mother on Medicaid	0.65 (0.48)	0.22 (0.42)
WIC	0.61 (0.49)	0.23 (0.42)
Twins+	0.01 (0.11)	0.02 (0.13)
Male infant	0.51 (0.50)	0.51 (0.50)
Father White	0.48 (0.50)	0.72 (0.45)
Father Black	0.07 (0.26)	0.04 (0.19)
Father Hispanic	0.19 (0.39)	0.10 (0.30)
Father Asian	0.05 (0.21)	0.10 (0.30)
Father other or missing	0.21 (0.41)	0.04 (0.19)
Low birth weight (<2500g)	0.06 (0.24)	0.05 (0.23)
Any father arrest	0.56 (0.50)	0.24 (0.43)
Any mother arrest	0.46 (0.50)	0.14 (0.35)
Median zipcode income	54753.86 (15006.51)	62025.28 (18820.73)
Father ever incarcerated	0.07 (0.26)	0.01 (0.10)
Father ever on probation	0.14 (0.34)	0.03 (0.16)
Observations	160,052	385,114

Standard deviations shown in parentheses. The samples restrict to clean matches and father's first birth. Median zipcode income is for the years 2006-2010 from the American Community Survey via [Michigan's Population Studies Center](#).

Table 3: Event study coefficients, All mothers

	Economic	Drugs	DUI	Destruction
36 months before birth	-0.133 (0.089)	-0.100 (0.128)	0.027 (0.224)	-0.409 (0.271)
24 months before birth	-0.107 (0.087)	-0.148 (0.125)	0.095 (0.220)	0.031 (0.297)
12 months before birth	0.021 (0.090)	-0.061 (0.128)	0.356 (0.233)	-0.041 (0.290)
9 months before birth	0.060 (0.091)	-0.082 (0.128)	0.494 (0.241)	0.090 (0.300)
6 months before birth	-0.384 (0.080)	-0.634 (0.108)	-0.760 (0.166)	-0.525 (0.250)
3 months before birth	-0.575 (0.074)	-0.838 (0.101)	-0.918 (0.156)	-0.537 (0.251)
Month of birth	-0.694 (0.071)	-0.945 (0.097)	-0.950 (0.156)	-0.736 (0.235)
3 months after birth	-0.450 (0.080)	-0.739 (0.107)	-0.484 (0.192)	-0.471 (0.262)
6 months after birth	-0.542 (0.078)	-0.699 (0.110)	-0.415 (0.199)	-0.533 (0.261)
9 months after birth	-0.303 (0.086)	-0.650 (0.113)	-0.071 (0.222)	-0.502 (0.267)
12 months after birth	-0.406 (0.085)	-0.575 (0.118)	-0.298 (0.213)	-0.332 (0.286)
24 months after birth	-0.576 (0.086)	-0.720 (0.120)	0.221 (0.256)	-0.589 (0.286)
36 months after birth	-0.611 (0.094)	-0.626 (0.133)	0.636 (0.294)	-0.900 (0.289)

Selected point estimates shown for the event study specification given in [Equation 1](#) controlling for a 4th-order polynomial in age and dummies for being over age 18 and 21, and using cluster-robust standard errors. The omitted period is ten months before birth. Coefficients are divided by the omitted period mean to give the proportional change since before the pregnancy.

Table 4: Event study coefficients, All fathers

	Economic	Drugs	DUI	Destruction
36 months before birth	0.084 (0.031)	-0.111 (0.038)	-0.037 (0.057)	-0.049 (0.079)
24 months before birth	0.076 (0.029)	-0.049 (0.037)	0.085 (0.057)	-0.078 (0.073)
12 months before birth	0.027 (0.028)	0.018 (0.037)	0.059 (0.056)	0.061 (0.074)
9 months before birth	-0.007 (0.027)	-0.039 (0.036)	-0.056 (0.054)	-0.057 (0.071)
6 months before birth	-0.015 (0.027)	-0.127 (0.035)	-0.139 (0.053)	-0.142 (0.069)
3 months before birth	-0.070 (0.027)	-0.230 (0.033)	-0.139 (0.053)	-0.232 (0.067)
Month of birth	-0.157 (0.026)	-0.229 (0.033)	-0.290 (0.051)	-0.287 (0.066)
3 months after birth	-0.161 (0.026)	-0.194 (0.034)	-0.237 (0.052)	-0.088 (0.071)
6 months after birth	-0.141 (0.026)	-0.176 (0.034)	-0.246 (0.053)	-0.115 (0.071)
9 months after birth	-0.112 (0.027)	-0.186 (0.034)	-0.178 (0.054)	-0.080 (0.073)
12 months after birth	-0.113 (0.027)	-0.206 (0.034)	-0.139 (0.055)	-0.131 (0.072)
24 months after birth	-0.160 (0.029)	-0.208 (0.036)	-0.104 (0.059)	-0.152 (0.076)
36 months after birth	-0.239 (0.031)	-0.192 (0.039)	-0.099 (0.063)	-0.243 (0.080)

Selected point estimates shown for the event study specification given in [Equation 1](#) controlling for a 4th-order polynomial in age and dummies for being over age 18 and 21, and using cluster-robust standard errors. The omitted period is ten months before birth. Coefficients are divided by the omitted period mean to give the proportional change since before the pregnancy.

Table 5: Descriptives of married and divorced couples

Variable	(1) Married	(2) Divorced	(3) Difference
Mother age	28.83 (5.54)	26.92 (5.64)	-1.91*** (0.00)
Father age	31.22 (6.43)	29.48 (6.66)	-1.74*** (0.00)
Mother married at birth	1.00 (0.00)	1.00 (0.00)	
Mother on Medicaid	0.24 (0.42)	0.26 (0.44)	0.02*** (0.00)
WIC	0.24 (0.43)	0.29 (0.46)	0.05*** (0.00)
Twins+	0.02 (0.14)	0.02 (0.12)	-0.00*** (0.00)
Male infant	0.51 (0.50)	0.51 (0.50)	-0.00 (0.91)
Father White	0.71 (0.45)	0.77 (0.42)	0.06*** (0.00)
Father Black	0.04 (0.19)	0.05 (0.22)	0.01*** (0.00)
Father Hispanic	0.11 (0.32)	0.06 (0.24)	-0.05*** (0.00)
Father Asian	0.10 (0.30)	0.07 (0.25)	-0.03*** (0.00)
Father other or missing	0.04 (0.20)	0.05 (0.21)	0.00*** (0.00)
Low birth weight (<2500g)	0.06 (0.23)	0.05 (0.23)	-0.00*** (0.00)
Any father arrest	0.27 (0.45)	0.53 (0.50)	0.26*** (0.00)
Any mother arrest	0.13 (0.34)	0.32 (0.47)	0.19*** (0.00)
Median Zipcode Income (2006-2010)	61839.96 (18851.11)	59445.59 (16933.97)	-2394.37*** (0.00)
Midpregnancy marriage	0.06 (0.23)	0.15 (0.36)	0.09*** (0.00)
Father ever incarcerated	0.01 (0.11)	0.04 (0.21)	0.03*** (0.00)
Father ever on probation	0.03 (0.17)	0.10 (0.30)	0.07*** (0.00)
Observations	405,387	43,115	448,502

Standard deviations shown in parentheses. *** indicates $p < .01$. The samples restrict to clean matches and father or mother's first birth. Median zipcode income is for the years 2006-2010 from the American Community Survey via [Michigan's Population Studies Center](#).

Table 6: Stillbirth results, fathers

(A) Four main crime categories				
	(1)	(2)	(3)	(4)
After birth	-0.00280 (0.00298)	-0.00840 (0.00719)	-0.00112 (0.00122)	-0.00237 (0.00285)
Live X After birth	-0.00388 (0.00295)	-0.01169* (0.00708)	-0.00246** (0.00121)	-0.00817*** (0.00282)
Outcome mean	0.02921	0.07750	0.01629	0.04197
R-squared	0.173	0.169	0.197	0.194
N	7,136,961	2,100,007	7,136,961	2,100,007

(B) Domestic violence				
	(1)	(2)	(3)	(4)
After birth	0.00317** (0.00156)	0.01060*** (0.00357)	0.00218*** (0.00080)	0.00656*** (0.00175)
Live X After birth	0.00483*** (0.00153)	0.01087*** (0.00345)	0.00211*** (0.00079)	0.00471*** (0.00172)
Outcome mean	0.01163	0.02885	0.00685	0.01673
R-squared	0.142	0.141	0.155	0.156
N	7,136,961	2,100,007	7,136,961	2,100,007

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

These tables report estimates from the difference-in-differences specification reported in [Equation 2](#). Panel (A) uses criminal charges for drug, DUI, economic, or property destruction offenses in each six-month period as the outcome, while Panel (B) uses domestic violence offenses. Across panels, columns (1) and (3) report results for all first-time fathers in the sample (Number of men: 545,166 with normal births and 3,831 with stillbirths) and columns (2) and (4) report results restricting to unmarried fathers (N: 160,052 with normal births and 1,487 with stillbirths). The outcome in columns (1) and (2) is a count of charges. In columns (3) and (4), the outcome is a binary indicator for having any of those charges in the six-month period. Standard errors are clustered at the person level.

Table 7: Stillbirth results, mothers

(A) Four main crime categories				
	(1)	(2)	(3)	(4)
After birth	-0.00264*** (0.00056)	-0.00876*** (0.00133)	-0.00107*** (0.00035)	-0.00426*** (0.00074)
Live X After birth	-0.00111** (0.00053)	-0.00438*** (0.00120)	-0.00088** (0.00035)	-0.00262*** (0.00070)
Outcome mean	0.00419	0.01159	0.00244	0.00669
R-squared	0.127	0.133	0.157	0.165
N	6,286,969	1,471,288	6,286,969	1,471,288

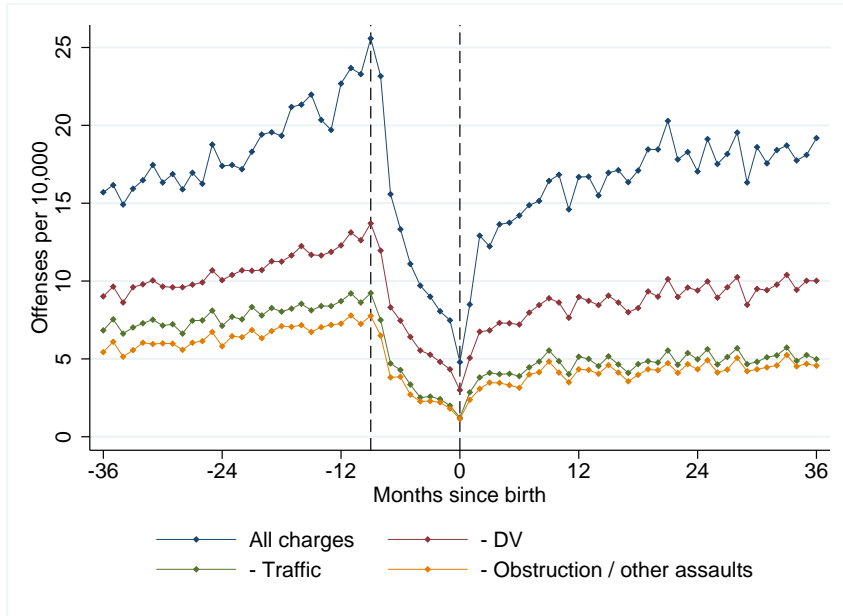
Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

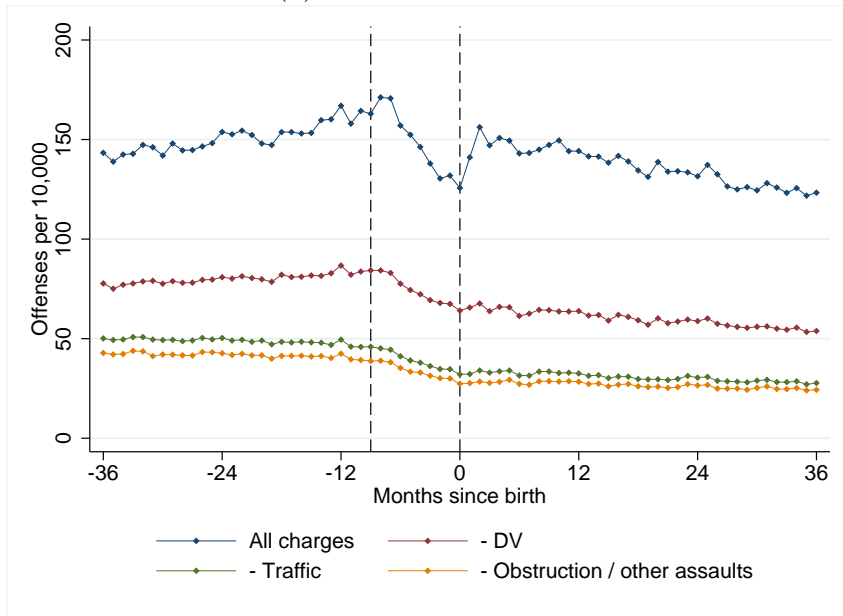
These tables reports estimates from the difference-in-differences specification reported in [Equation 2](#) using criminal charges for drug, DUI, economic, or property destruction offenses in each six-month period as the outcome. Columns (1) and (3) report results for all first-time mothers in the sample (Number of women: 480,111 with normal births and 3,502 with stillbirths). Columns (2) and (4) report results restricting to unmarried mothers (N: 112,016 with normal births and 1,160 with stillbirths). The outcome in columns (1) and (2) is a count of charges. In columns (3) and (4), the outcome is a binary indicator for having any of those charges in the six-month period. Standard errors are clustered at the person level.

Appendix A Additional figures and tables

Figure A.1: Crime categories



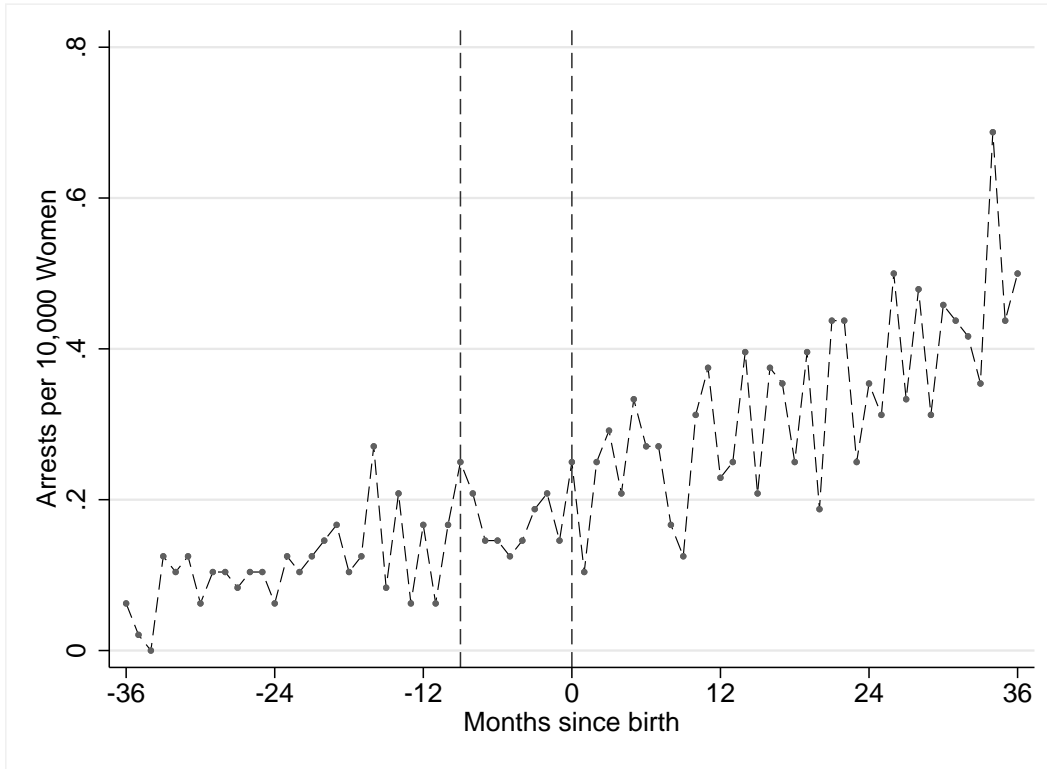
(a) First-time mothers



(b) First-time fathers

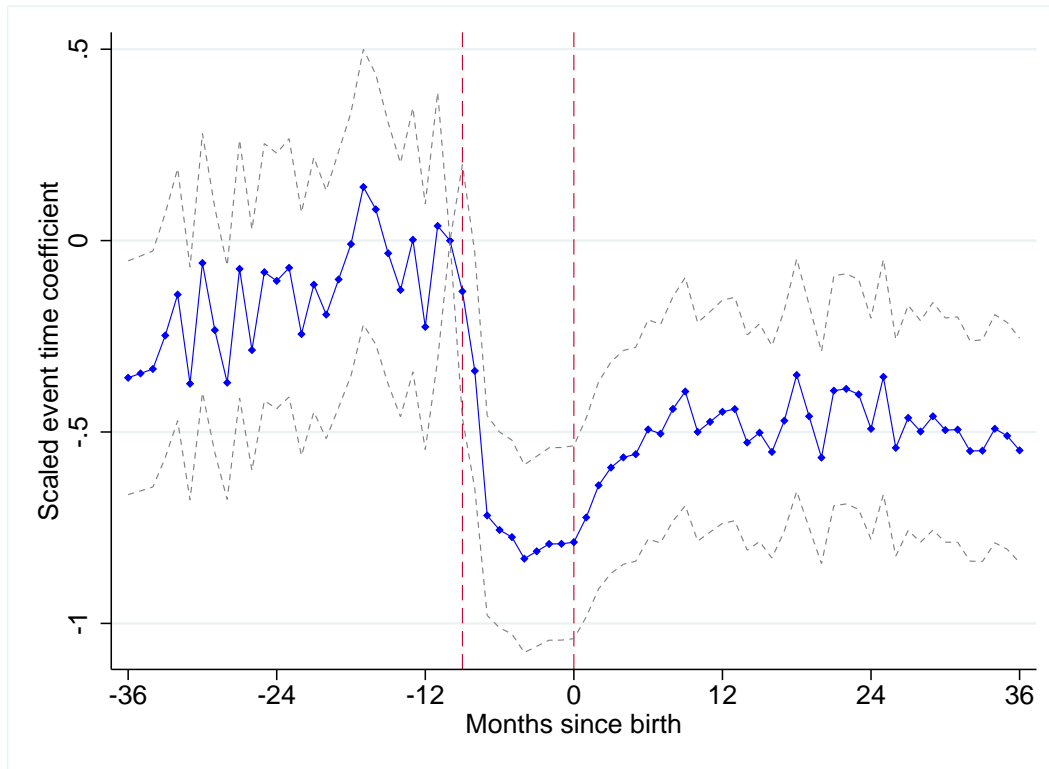
This figure shows how trends in the raw averages of crime outcomes around childbirth vary as we sequentially implement our category restrictions. The top blue line shows all charges. Next, in the red line, we remove all domestic violence charges, a category which we study separately. The green line removes all non-DUI driving offenses, and the yellow line removes charges of obstruction and non-DV assaults. This last line is the main crime outcome we use in our analysis, consisting of economic crimes, drug crimes, DUIs, and destruction of property.

Figure A.2: Driving without a license, mothers



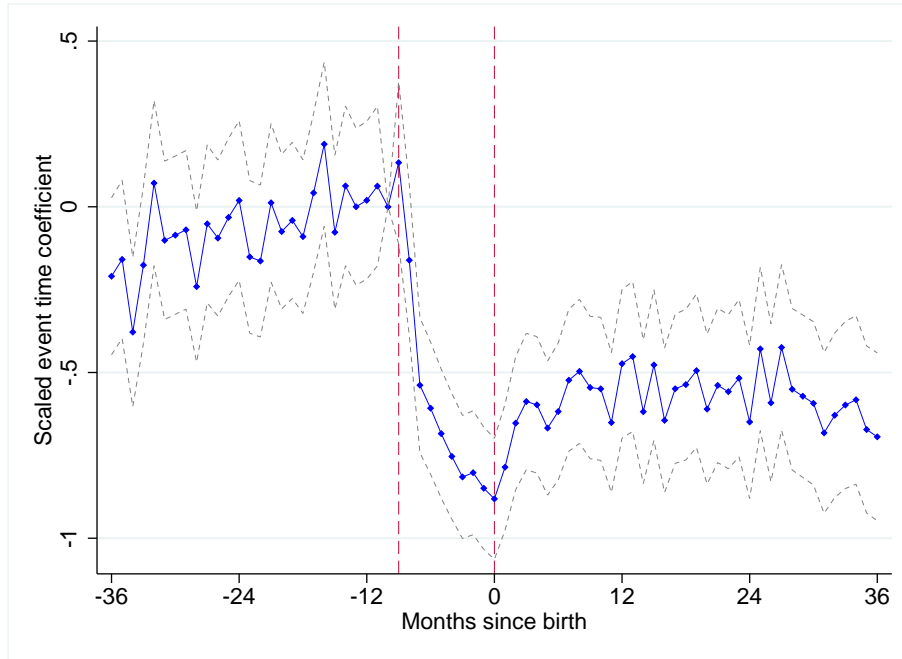
This shows the raw averages of an indicator for driving without a license, the most common non-DUI driving offense. Includes fully-balanced arrest data for 480,111 first-time mothers. The vertical dashed lines mark 9 months before the birth and the month of birth.

Figure A.3: Event study coefficients for alcohol offenses, mothers under 21 years old



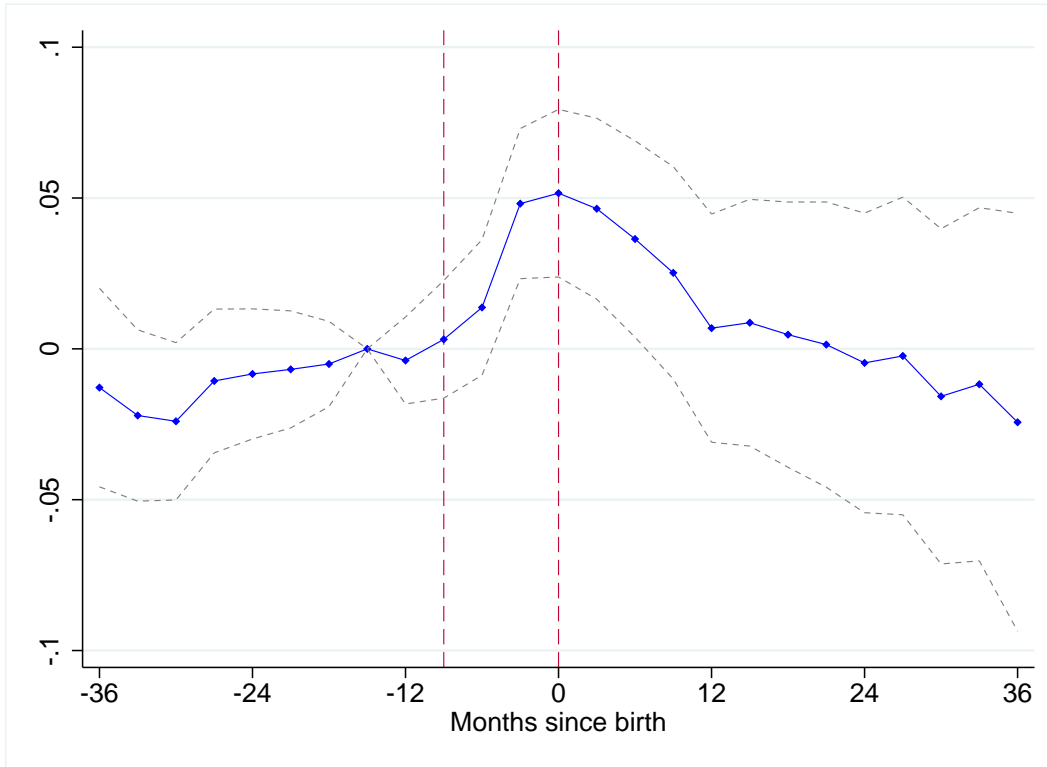
Dots show point estimates and dashed lines show 95% confidence intervals from an event study around birth shown in Equation 1. The sample is restricted to the 67,899 mothers who gave birth before turning 21. Standard errors clustered at the person level. The coefficients are scaled by the average offense rate in the omitted period, 10 months before birth. The dashed lines marks 9 months before the birth and the month of the birth.

Figure A.4: Event study coefficients for teen mothers



Includes a fully balanced panel of 45,759 first-time mothers who gave birth at age 19 or younger. Dots show point estimates and dashed lines show 95% confidence intervals of the coefficients δ_k from the event study specification shown in Equation 1, with an indicator for any economic, drug, DUI, or property destruction offense as the dependent variable. The coefficients are divided by the average offense rate in the omitted period, 10 months before birth. The dashed lines mark 9 months before the birth and the month of birth.

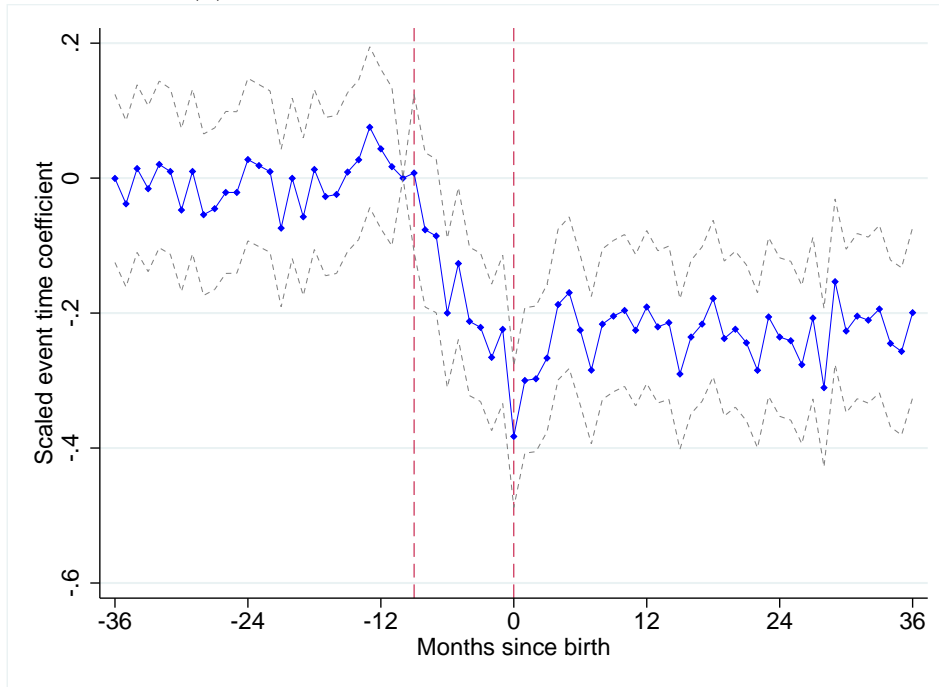
Figure A.5: Event study coefficients for wage sample, Fathers who ever have 2nd child



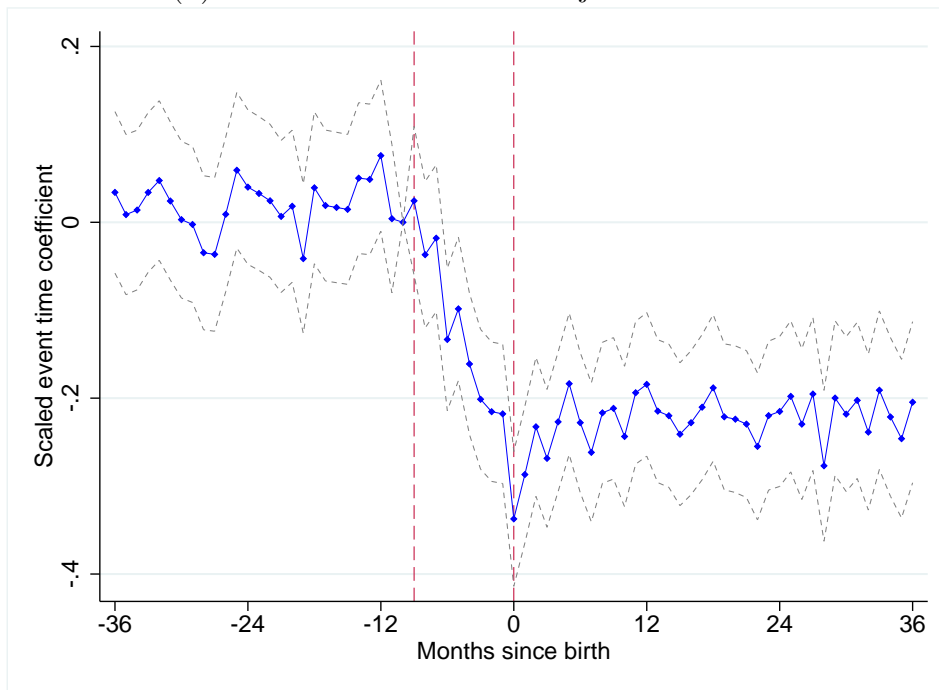
This shows the same earnings event study from Figure 4, restricting to fathers who eventually have a second child or a traffic offense in Washington 4-5 years after the birth ($N=2,481$). Event time indicators are grouped at the quarterly level to reduce noise. The outcome is an indicator for quarterly earnings over \$1,000. The vertical dashed lines mark 9 months before the birth and the month of birth. The omitted period is $t = -5$, i.e., 5 quarters before the birth.

Figure A.6: Event studies around childbirth, unmarried fathers

(a) Unmarried fathers born in Washington



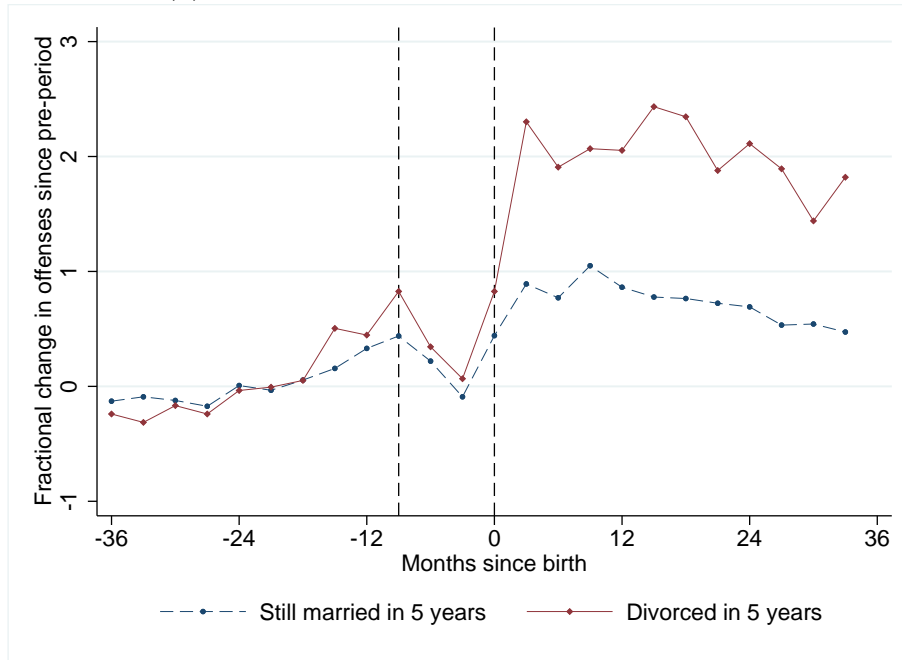
(b) Unmarried fathers with a juvenile offense



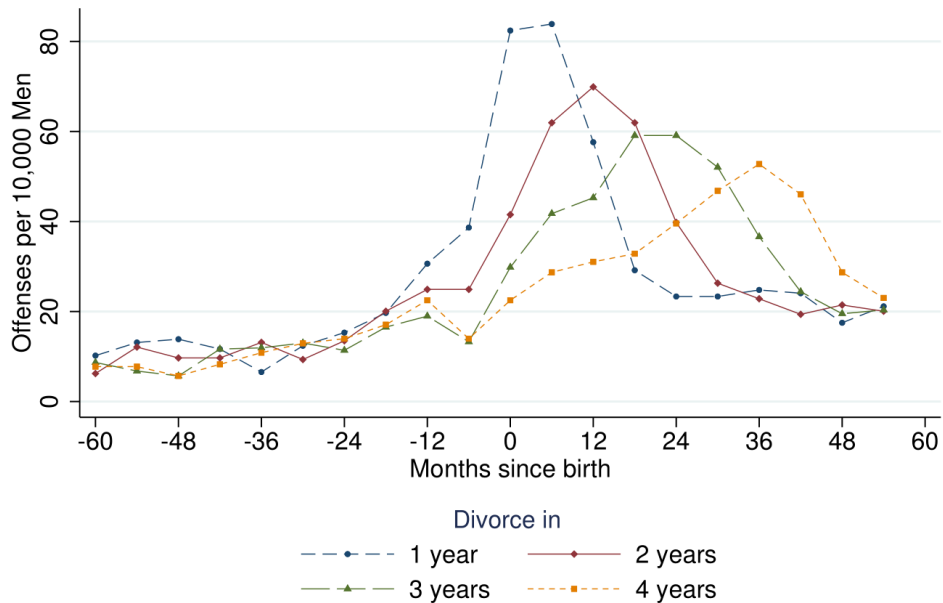
Panel (a) includes 15,600 fathers, panel (b) includes 37,014 fathers. Dots show point estimates and dashed lines show 95% confidence intervals of the coefficients δ_k from the event study specification shown in Equation 1, with an indicator for a drug, DUI, economic, or property destruction offense as the dependent variable. The coefficients are divided by the average offense rate in the omitted period, 10 months before birth. The vertical dashed lines mark 9 months before the birth and the month of birth.

Figure A.7: Domestic violence vs. divorce

(a) Domestic violence by marriage outcome

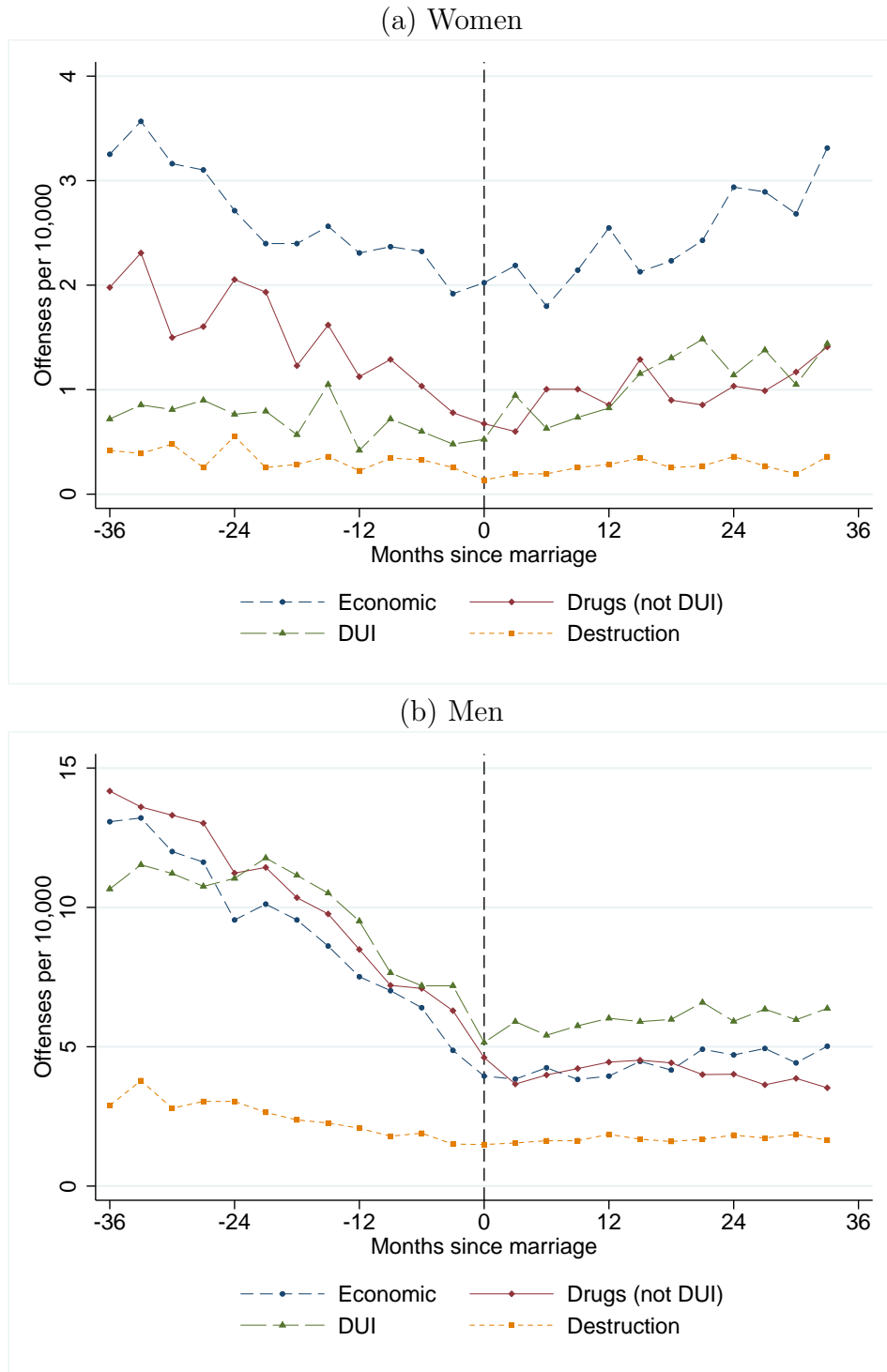


(b) Domestic violence by divorce timing



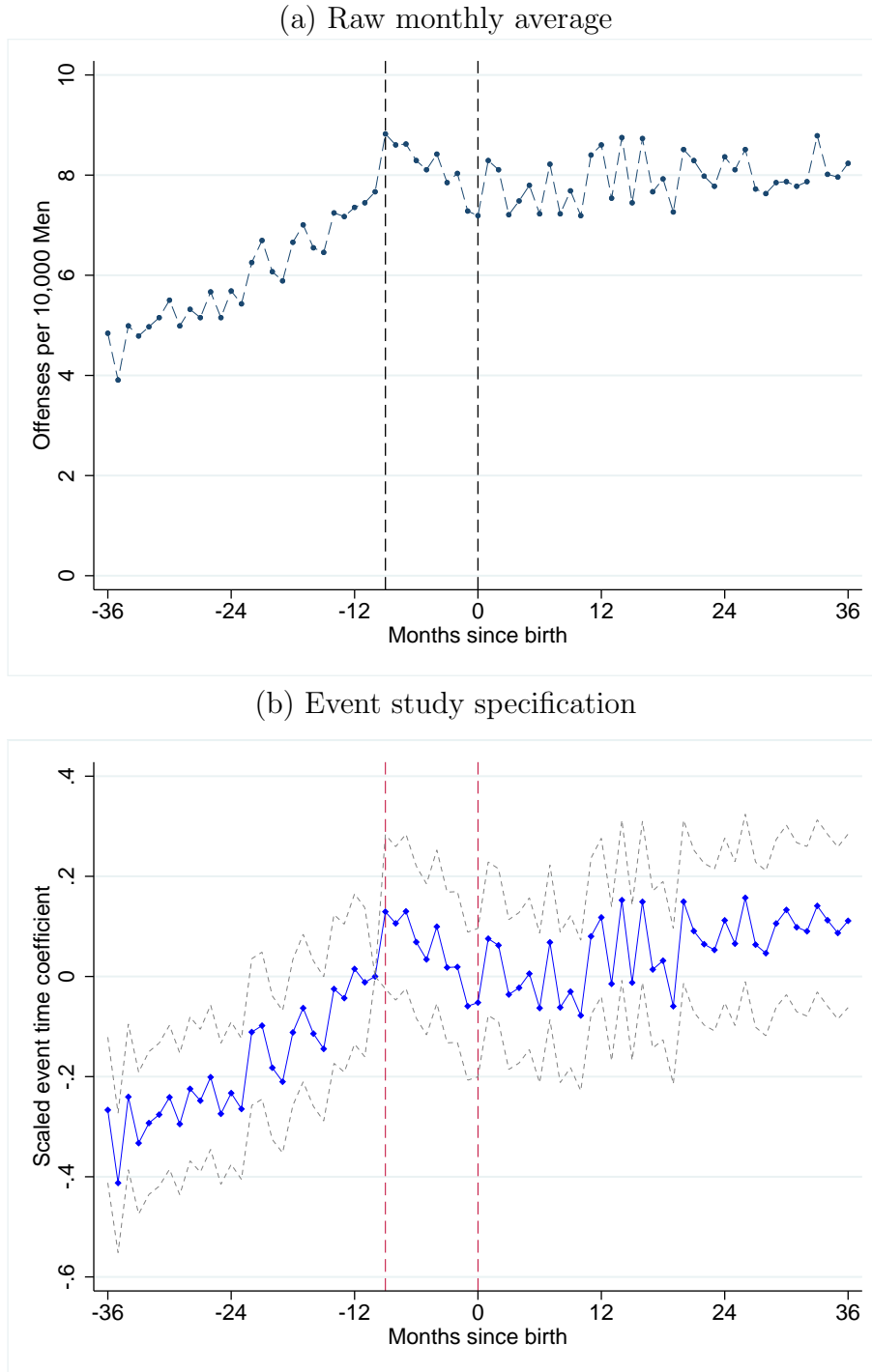
Panel (a) includes 364,076 still-married men and 21,038 divorced men. Panel (b) includes all men who were married for their first birth and then divorced 1-4 years after. Grouping is based on the rounded time in years between the child's birth date and date of the divorce decree (when the divorce is finalized). Sample sizes for the four groups are 2,285 (1 year), 4,816 (2 years), 6,147 (3 years), and 6,444 (4 years).

Figure A.8: Raw averages around marriage



Includes all fathers (N=245,756) and mothers (N=222,392) from the birth data who are visible in the offense data 3 years after and 3 years before their marriage. The vertical dashed line marks the month of marriage.

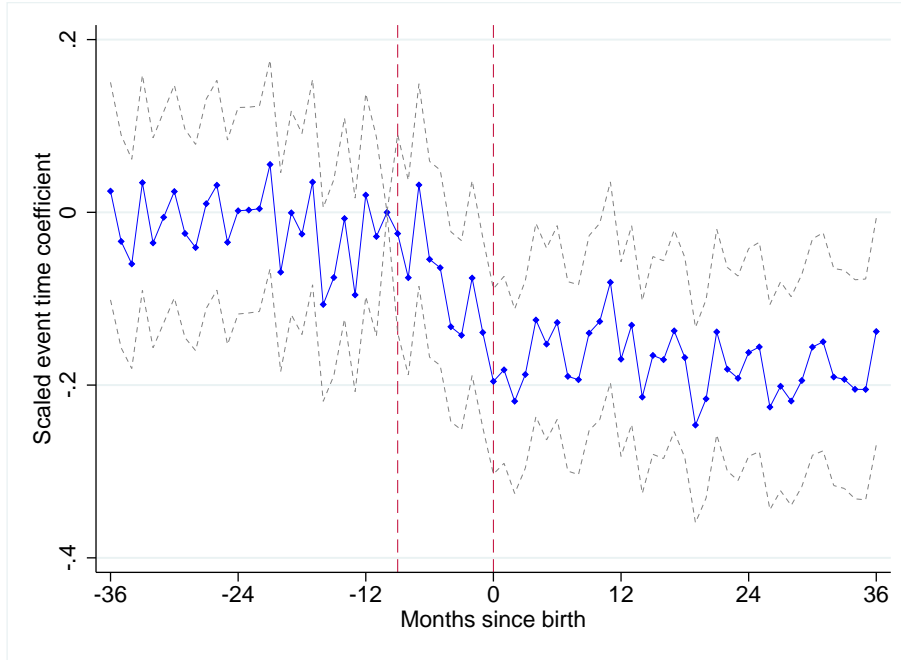
Figure A.9: Fathers traffic offenses



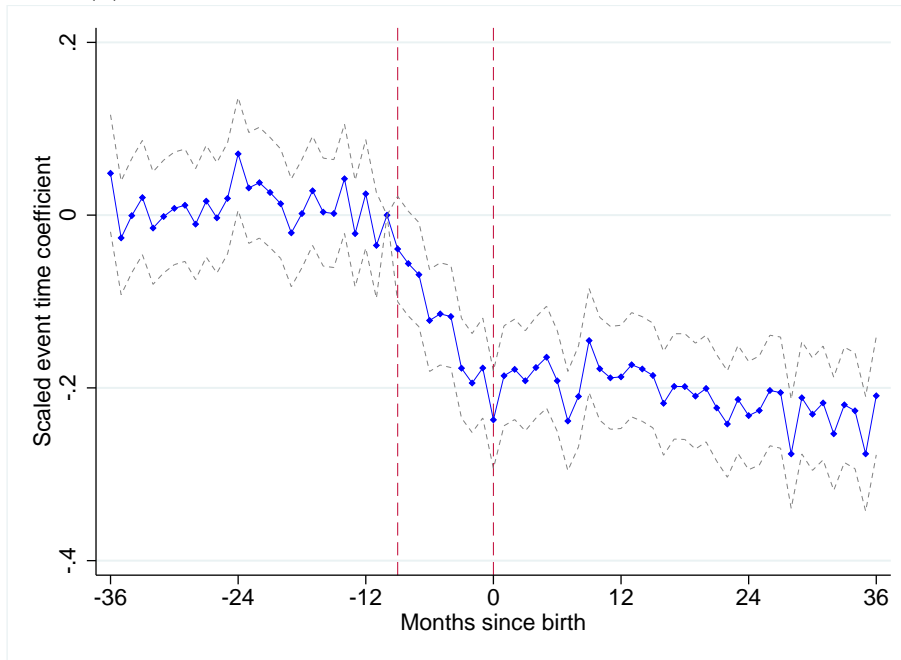
Panels show traffic offenses (mostly reckless driving and driving with an expired license) for 545,166 first-time fathers. In panel (b), dots show point estimates and dashed lines show 95% confidence intervals of the coefficients δ_k from the event study specification shown in Equation 1, with an indicator for a traffic offense as the dependent variable. The coefficients are divided by the average offense rate in the omitted period, 10 months before birth. The vertical dashed lines mark 9 months before the birth and the month of birth.

Figure A.10: Outmigration

(a) Event study estimates for men with future crime



(a) Event study estimates for men with future children



Both panels show point estimates and 95% confidence intervals from the event study specification given in Equation 1 for first-time fathers. Panel (a) restricts to men charged with a driving-related (including DUI) offense 4-5 years after the birth ($N=14,980$). The outcome for the specification underlying panel (a) is an indicator for any economic, drug, or destruction offense. Panel (b) restricts to fathers who at some point have a 2nd child in Washington ($N=116,540$), with an indicator for any economic, drug, DUI, or destruction offense as the outcome.

Table A.1: Papers on Crime and Childbearing or Marriage

Authors and Year	Journal	Data and sample size	Main results
Gottlieb and Sugie (2019)	Justice Quarterly	NLSY97, N=8,496	Both cohabitation and marriage are associated with reductions in offending
Mitchell et al. (2018)	American Journal of Criminal Justice	NLSY97, N=2,787 non-fathers, 1,772 fathers	Fatherhood is associated with decreased substance use but not the likelihood of any arrest
Pyrooz et al. (2017)	Criminology	NLSY97, N=629	Mothers and residential fathers have decreased likelihoods of gang membership and offending
Tremblay et al. (2017)	Journal of Child and Family Studies	Pathways to Desistance Study, N=1,170	Fatherhood is associated with greater risk exposure among serious juvenile offenders
Na (2016)	Journal of Developmental and Life Course Criminology	Pathways to Desistance Study, N=864 adolescents and N=476 young adults	Teen fathers report increased offending following childbirth; older fathers experience a slight decrease
Zoutewelle-Terovan and Skardhamar (2016)	Journal of Quantitative Criminology	Statistics Norway, N=289 & Netherlands' Municipal Population Register and Judicial Documentation, N=279	For at-risk mothers and fathers, decrease leading up to birth; increase to higher levels afterwards
Landers et al. (2015)	Journal of Child and Family Studies	NLSY 1997, N=478	Young fathers have decreased drug use controlling for individual fixed effects
Craig (2015)	Journal of Crime and Justice	Add Health, N=3,327	Marriage decreases offending among whites and Hispanics but not blacks; Parenthood only decreases whites' offending

Table A.1 – *Continued from previous page*

Authors and Year	Journal	Data and sample size	Main results
Theobald et al. (2015)	Australian & New Zealand Journal of Criminology	Australian & New Zealand Journal of Criminology & Cambridge Study in Delinquent Development, N=411	The number of convictions decreases after childbirth for men; this effect is greater if the child is born before or within nine months of marriage
Barnes et al. (2014)	Justice Quarterly	Add Health, N=15,701	Marriage is correlated with but does not cause desistance
Zoutewelle-Terovan et al. (2014)	Crime & Delinquency	Netherlands Ministry of Justice, N=540	Marriage and parenthood both promote desistance of serious offending for men but not women
Skardhamar et al. (2014)	The British Journal of Criminology	Norwegian Register, N=80,064	Offending declines the year of before marriage followed by a slight increase after marriage; the rebound is due to those who split up
Craig and Foster (2013)	Deviant Behavior	Add Health, N=3,082	Marriage decreases delinquent behavior for both males and females
Monsbakken et al. (2012)	The British Journal of Criminology	Statistics Norway, N=208,296 persons (101,480 women and 106,816 men)	Offending declines permanently before childbirth despite slight rebound after
Bersani and Doherty (2013)	Criminology	NLSY97, N=2,838	Marriage decreases the likelihood of arrest; Offending is higher when one is divorced than when one is married
Doherty and Ensminger (2013)	Journal of Research in Crime and Delinquency	The Woodlawn Project, N=965	Marriage reduces offending for men only

Table A.1 – *Continued from previous page*

Authors and Year	Journal	Data and sample size	Main results
Jaffee et al. (2013)	Development and Psychopathology	Add Health, N=4,149	Marriage is associated with a lower rate of criminal activity
Mercer et al. (2013)	European Journal of Criminology	Netherlands Ministry of Justice & Population Registration, N=540	Married males have a higher likelihood of committing violent offenses compared with non-married males; reverse is true for women
Barnes and Beaver (2012)	Journal of Marriage and Family	Add Health, N=2,284 sibling pairs	Marriage is associated with desistance; this effect decreases after controlling for genetic influences
Beijers et al. (2012)	European Journal of Criminology	Netherlands, N=971	Marriage is associated with desistance among high-risk men married after 1970 in the Netherlands
Salvatore and Taniguchi (2012)	Deviant Behavior	Add Health, N=4,880	Both marriage and parenthood reduce offending
Van Schellen et al. (2012)	Journal of Quantitative Criminology	Netherlands CCLS, N=4,615	Marriage is associated with decreased conviction frequency for women; only marriage to a non-convicted spouse is beneficial for men
Kerr et al. (2011)	Journal of Marriage and Family	US - Capaldi and Patterson (1989) Study, N=206	Men desist from crime and use alcohol and tobacco less frequently following childbirth
Giordano et al. (2011)	Journal of Criminal Justice	Toledo Adolescent Relationships Study (TARS), N=1,066	Mothers are more likely to desist from crime than fathers; parents from disadvantaged backgrounds have less desistance than those from advantaged ones

Table A.1 – *Continued from previous page*

Authors and Year	Journal	Data and sample size	Main results
Forrest and Hay (2011)	Criminology & Criminal Justice	NLSY79, N=2,325	Unlike cohabitation, marriage is associated with reduced crime, but effects decrease once controlling for self-control measures
Herrera et al. (2011)	Journal of Research on Adolescence	Add Health, N=1,267 opposite sex romantic pairs	Relationship quality and length are associated with decreased crime
McGloin et al. (2011)	European Journal of Criminology	Netherlands CCLS, N=4,612	The year of marriage and year after have the greatest effect on decreasing offending
Kreager et al. (2010)	Criminology	Denver Youth Survey, N=567	Teen and young adult motherhood is associated with decreased delinquency for disadvantaged women; controlling for motherhood and age, marriage is not associated with desistance
Petras et al. (2010)	Criminology	Netherlands CCLS, N=4,615	The effects of marriage on probability and frequency of conviction are both negative
Ragan and Beaver (2010)	Youth & Society	Add Health, N=1,884	Marriage is associated with marijuana desistance
Skarhamar and Lyngstad (2009)	Statistics Norway Discussion Papers	Norwegian Register (Marriage N=121,207; First birth=175,118)	Men desist from crime leading up to marriage/childbirth; some rebound for serious offenses
Bersani et al. (2009)	Journal of Quantitative Criminology	Netherlands CCLS, N=4,615	Marriage is associated with a decrease in the odds of a conviction; the effect for women is less than that for men

Table A.1 – *Continued from previous page*

Authors and Year	Journal	Data and sample size	Main results
Savolainen (2009)	The British Journal of Criminology	Statistics Finland, N=1,325	Cohabitation has a stronger effect on desistance than marriage; parenthood is associated with decreased crime
Thompson and Petrovic (2009)	Journal of Research in Crime and Delinquency	NYS, N=1,496	First childbirth increases odds of drug usage for men and women, except single mothers; marriage decreases odds of drug usage for men but women's drug usage depends on strength of relationship
Beaver et al. (2008)	Social Science Research	Add Health, N=1,555	Being married increases the odds of desisting
King et al. (2007)	Criminology	NYS, N=1,725	After accounting for selection into marriage, marriage has a significant but small effect on crime; the decrease is much greater for males than females
Massoglia and Uggen (2007)	Journal of Contemporary Criminal Justice	Youth Development Study, N=1,000	Relationship quality is positively correlated with desistance
Sampson et al. (2006)	Criminology	Glueck and Glueck study (1950), N=500 male delinquents and 500 male nondelinquents	Marriage is associated with a 35 percent reduction in the odds of crime for men
Maume et al. (2005)	Journal of Quantitative Criminology	NYS waves 5-6, N=593	Marriage promotes marijuana desistance only for those with high marital attachment

Table A.1 – *Continued from previous page*

Authors and Year	Journal	Data and sample size	Main results
Hope et al. (2003)	The Sociological Quarterly	Add Health, N=6,877	Adolescent girls who keep their babies reduce delinquent behavior compared to those with other pregnancy resolutions
Piquero et al. (2002)	Social Science Quarterly	California Youth Authority, N=524	Controlling for individual differences, marriage is negatively associated with violent, but not nonviolent, arrests
Graham and Bowling (1995)	Home Office Research Study	UK household survey, N=2,529	Having children is a strong predictor of desistance for females but not for males

Table A.2: Descriptive statistics, Father sample

Variable	(1) All births	(2) + Clear match	(3) +Father's first	(4) Stillbirths
Mother age	27.84 (5.98)	28.04 (5.95)	27.12 (6.02)	27.50 (6.67)
Father age	30.21 (6.54)	30.40 (6.50)	29.36 (6.62)	29.61 (7.19)
Mother married at birth	0.73 (0.44)	0.75 (0.43)	0.71 (0.46)	0.61 (0.49)
Mother on Medicaid	0.36 (0.48)	0.34 (0.47)	0.36 (0.48)	
WIC	0.34 (0.47)	0.33 (0.47)	0.34 (0.47)	0.26 (0.44)
Twins+	0.02 (0.12)	0.02 (0.13)	0.02 (0.13)	0.06 (0.23)
Male infant	0.51 (0.50)	0.51 (0.50)	0.51 (0.50)	0.53 (0.50)
Father White	0.66 (0.47)	0.67 (0.47)	0.65 (0.48)	
Father Black	0.05 (0.22)	0.05 (0.21)	0.05 (0.21)	
Father Hispanic	0.12 (0.33)	0.11 (0.32)	0.13 (0.33)	
Father Asian	0.08 (0.26)	0.08 (0.27)	0.08 (0.28)	
Father other or missing	0.09 (0.29)	0.09 (0.28)	0.09 (0.29)	
Low birth weight (<2500g)	0.05 (0.22)	0.05 (0.22)	0.06 (0.23)	0.60 (0.49)
Any father arrest	0.41 (0.49)	0.36 (0.48)	0.34 (0.47)	0.26 (0.44)
Any mother arrest	0.25 (0.43)	0.23 (0.42)	0.23 (0.42)	0.21 (0.41)
Median zipcode income	59820.84 (18182.44)	60202.36 (18313.21)	59893.14 (18092.66)	58077.98 (17786.50)
Midpregnancy marriage	0.03 (0.18)	0.03 (0.18)	0.05 (0.21)	0.05 (0.21)
Divorce	0.22 (0.42)	0.22 (0.41)	0.22 (0.41)	0.36 (0.48)
Father ever incarcerated	0.04 (0.20)	0.03 (0.17)	0.03 (0.16)	0.03 (0.18)
Father ever on probation	0.09 (0.28)	0.07 (0.25)	0.06 (0.24)	0.06 (0.24)
Observations	976,581	896,459	545,166	3,831

Standard deviations shown in parentheses. Insurance and ethnicity not recorded for stillbirths. Median zipcode income is for the years 2006-2010 from the American Community Survey via [Michigan's Population Studies Center](#).

Table A.3: Descriptive statistics for mothers

Variable	(1) Unmarried Mothers	(2) Married Mothers
Mother age	23.57 (5.85)	28.77 (5.57)
Father age	26.30 (6.91)	31.19 (6.44)
Mother on Medicaid	0.65 (0.48)	0.22 (0.41)
WIC	0.60 (0.49)	0.22 (0.42)
Twins+	0.01 (0.10)	0.02 (0.13)
Male infant	0.51 (0.50)	0.52 (0.50)
Father White	0.45 (0.50)	0.72 (0.45)
Father Black	0.07 (0.25)	0.04 (0.19)
Father Hispanic	0.22 (0.41)	0.10 (0.30)
Father Asian	0.05 (0.22)	0.11 (0.31)
Father other or missing	0.22 (0.41)	0.04 (0.19)
Low birth weight (<2500g)	0.06 (0.24)	0.05 (0.23)
Any father arrest	0.57 (0.50)	0.27 (0.44)
Any mother arrest	0.14 (0.35)	0.05 (0.22)
Median zipcode income	55061.28 (15203.25)	62281.37 (18943.48)
Father ever incarcerated	0.07 (0.26)	0.01 (0.10)
Father ever on probation	0.13 (0.34)	0.03 (0.17)
Observations	112,016	368,095

Standard deviations shown in parentheses. Insurance information not recorded for stillbirths.