

Online Appendix for *Family formation and crime*

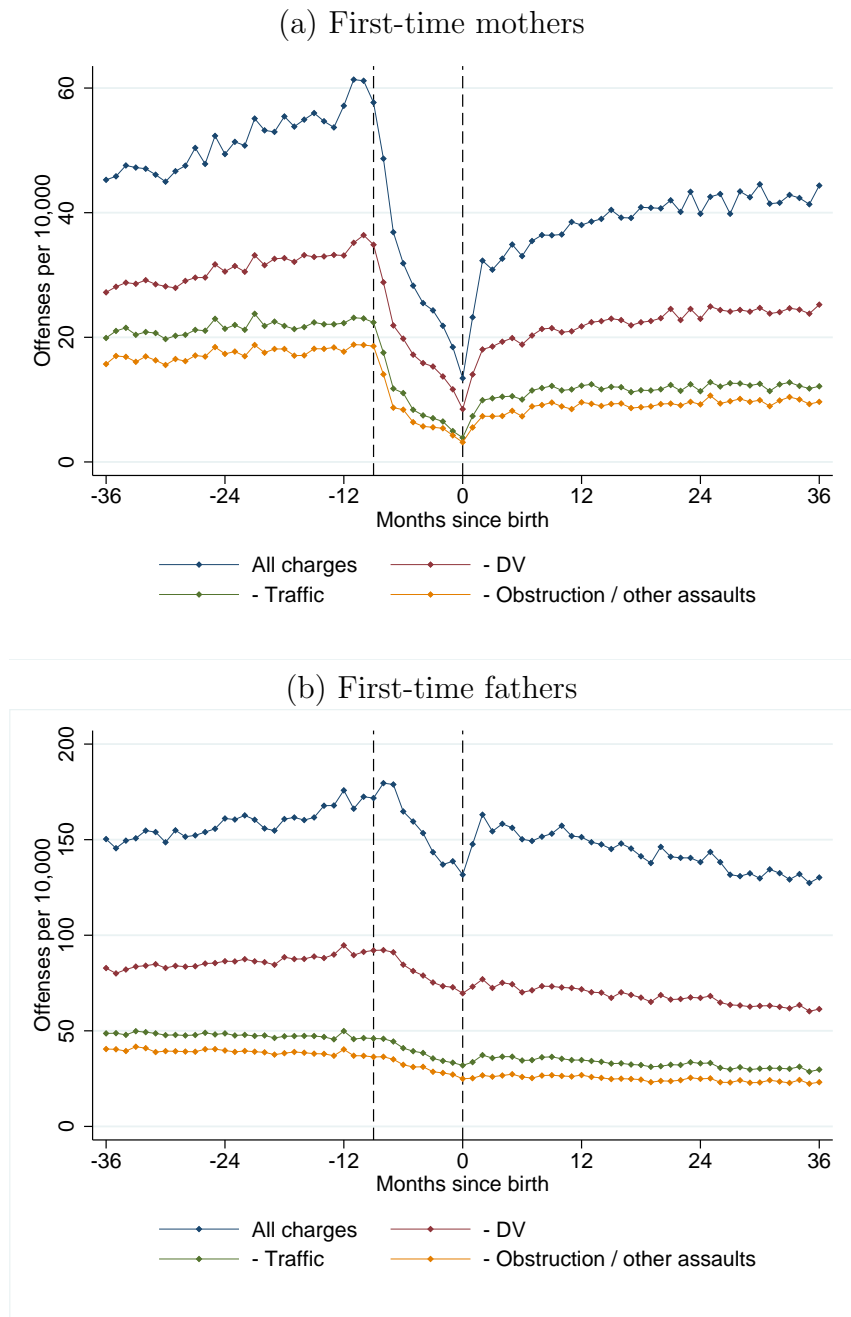
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August 30, 2023

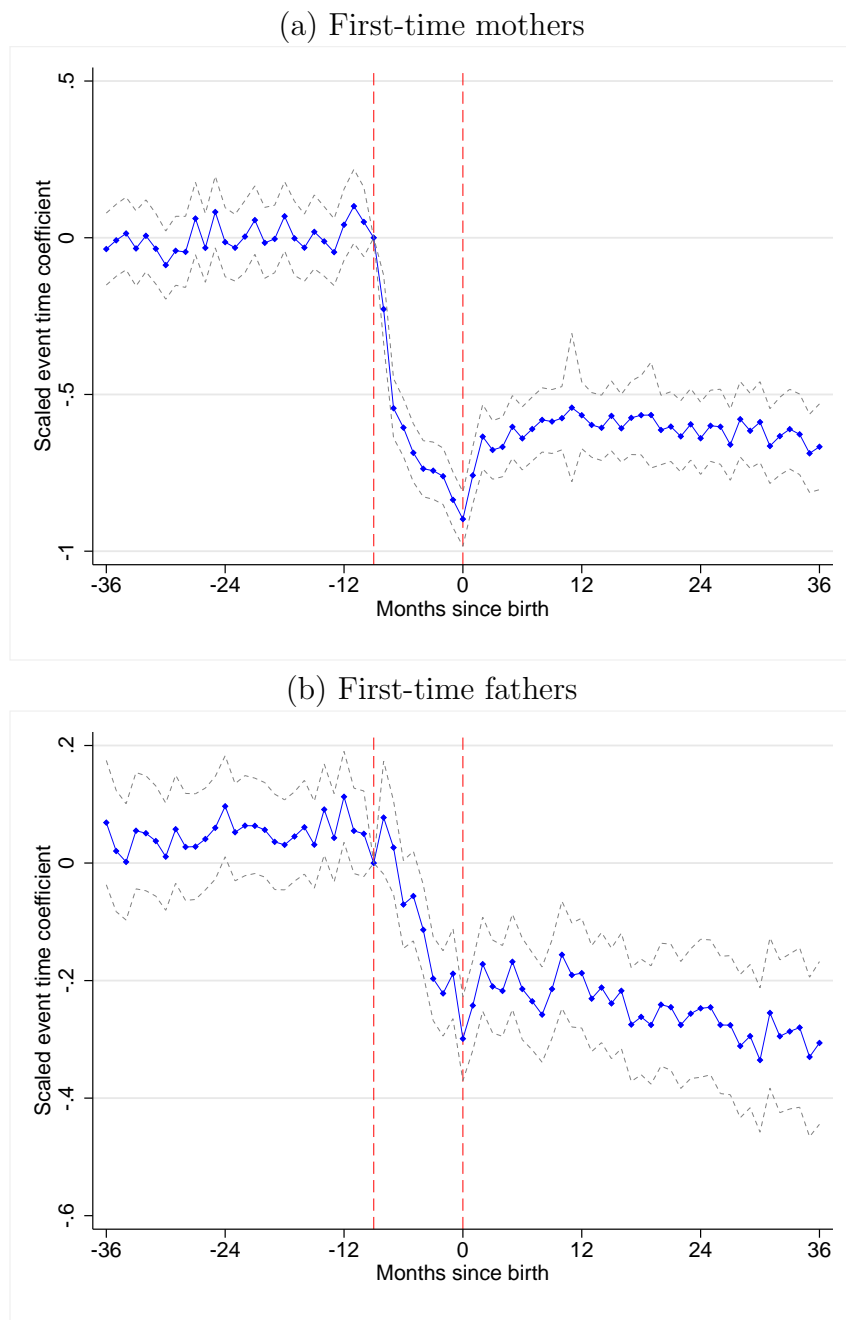
A Additional figures and tables

Figure A.1: Crime categories



Notes: 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: Traditional event study estimates



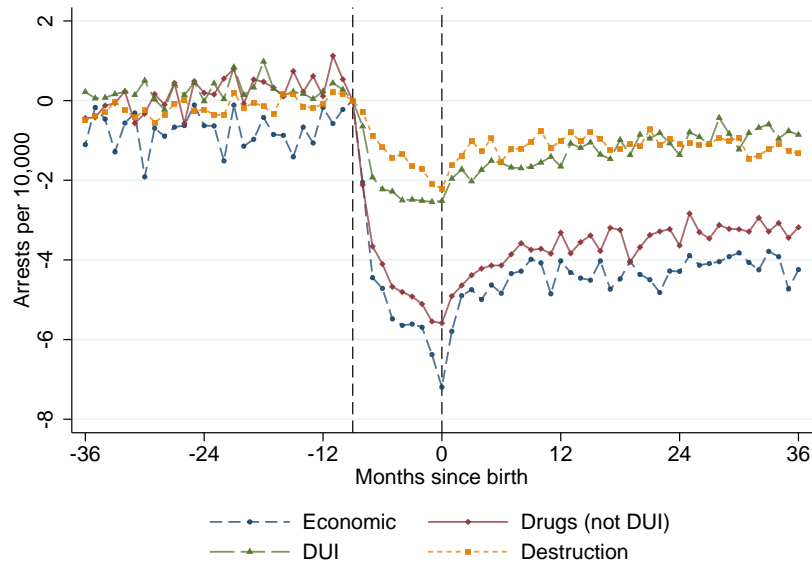
Notes: This figure plots estimated effects of childbirth from a traditional event study specification. In both panels, the dots show point estimates and the dotted lines give confidence intervals of event time coefficients from:

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

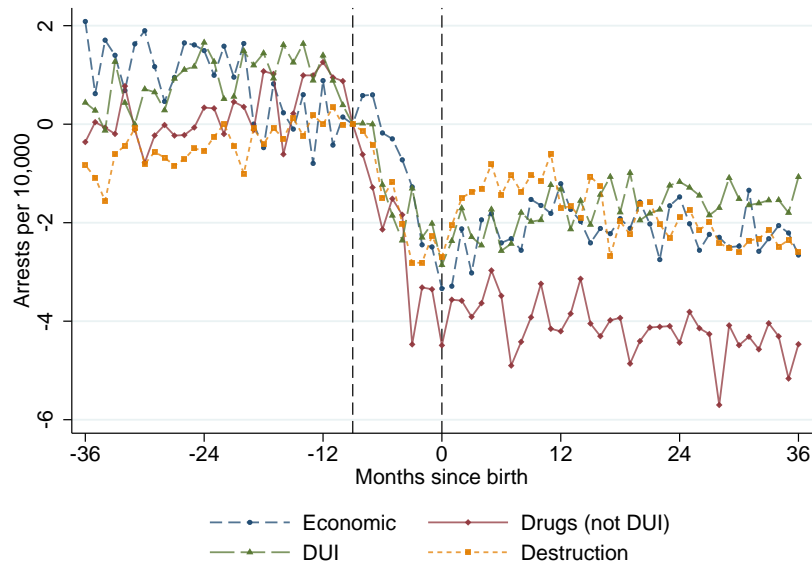
where $\mathbb{1}(arrest)_{it}$ is equal to one if person i committed one of the four main offenses in month t , α_i denotes person fixed effects and δ_k are the event time coefficients measuring effects k months relative to birth. The set S runs from 36 months before to 36 months after birth, omitting $k = -9$. We bin the endpoints before and after 37 months from birth and include these as separate controls. The controls in \mathbf{X}_{it} include a 4th-order polynomial in age (measured in months) and dummies for being above 18 and 21 years of age. Panel (a) includes the first-time mothers sample and panel (b) includes the first-time fathers sample. The outcome is any offense from one of the four main crime categories. The estimates are divided by the average in the omitted period.

Figure A.3: Crime-type specific effects

(a) First-time mothers

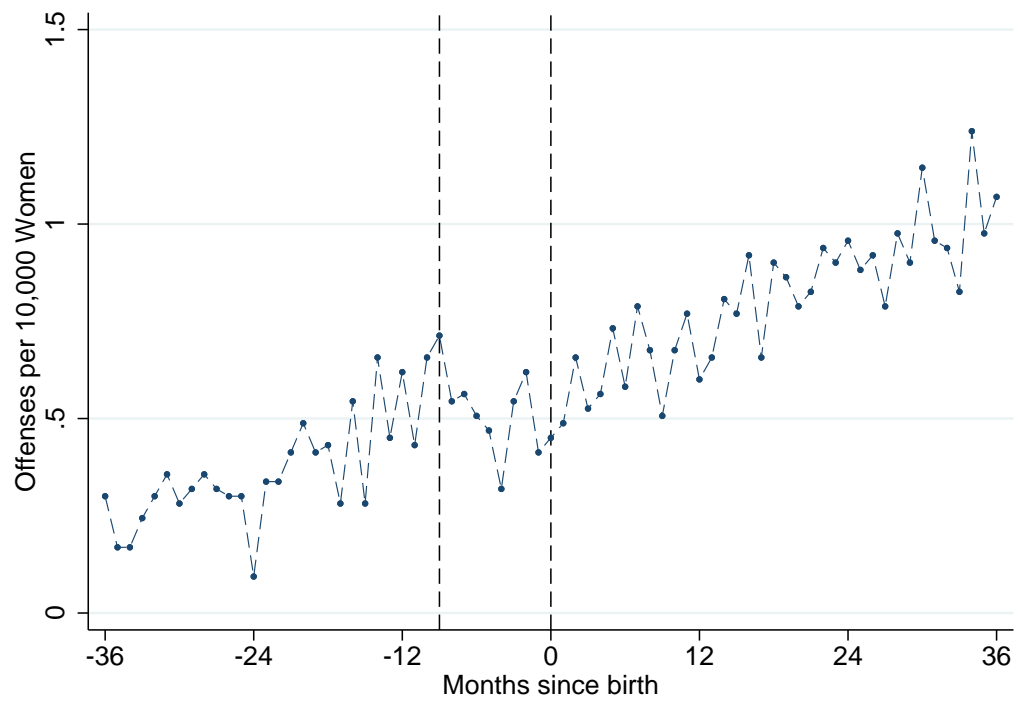


(b) First-time fathers



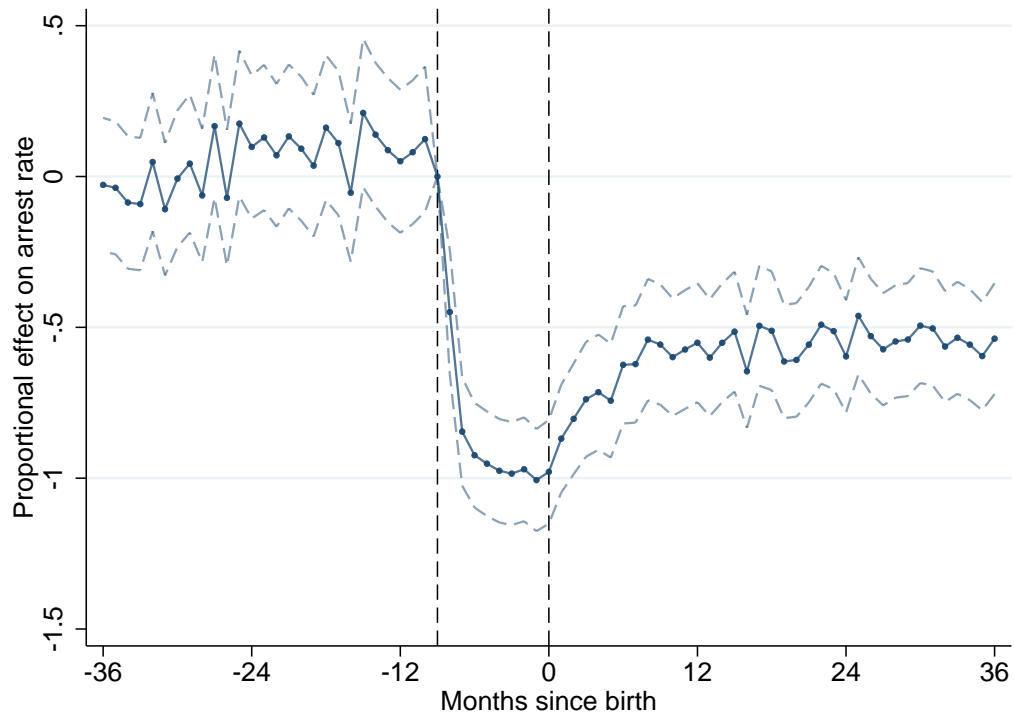
Notes: This figure plots averages of regression estimates of Specification 1, which measures effects of births relative to these older parents, for first-time mothers and fathers. The outcome for each series is an indicator for any arrest for the crime type specified in the legend. Effects are scaled by 10,000. In both panels, the vertical dashed lines mark 9 months before the birth and the month of birth.

Figure A.4: Driving without a license, mothers



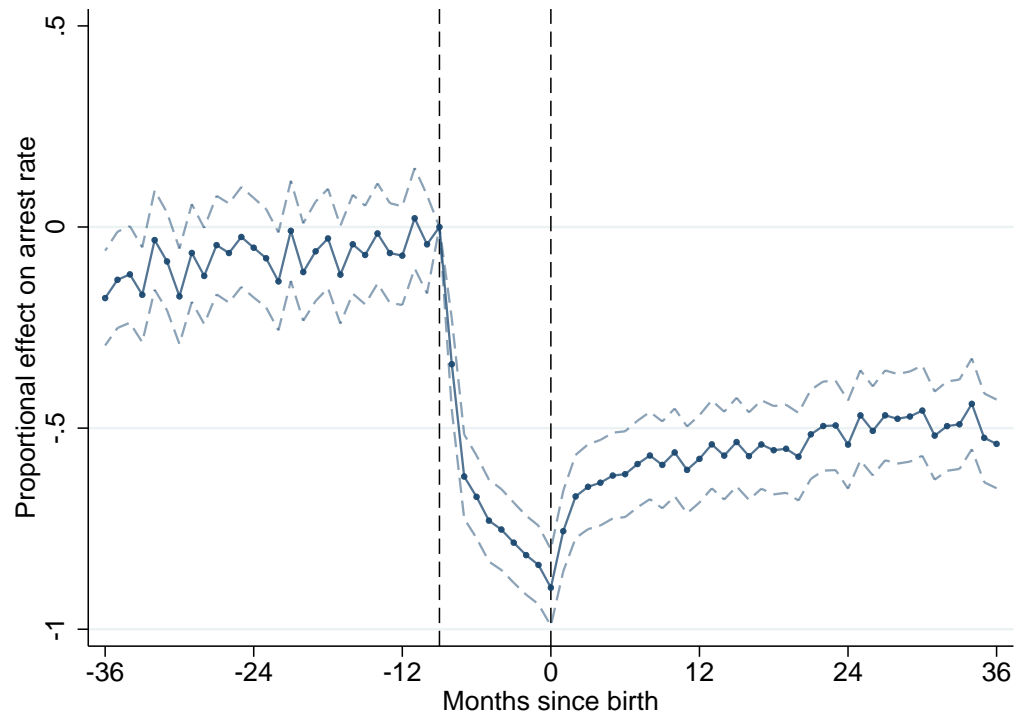
Notes: This figure shows the raw averages of an indicator for arrests for driving without a license, the most common non-DUI driving offense, around childbirth. Includes fully balanced arrest data for 532,790 first-time mothers. The vertical dashed lines mark 9 months before the birth and the month of birth.

Figure A.5: Difference-in-differences estimates for alcohol offenses, mothers under 21 years old



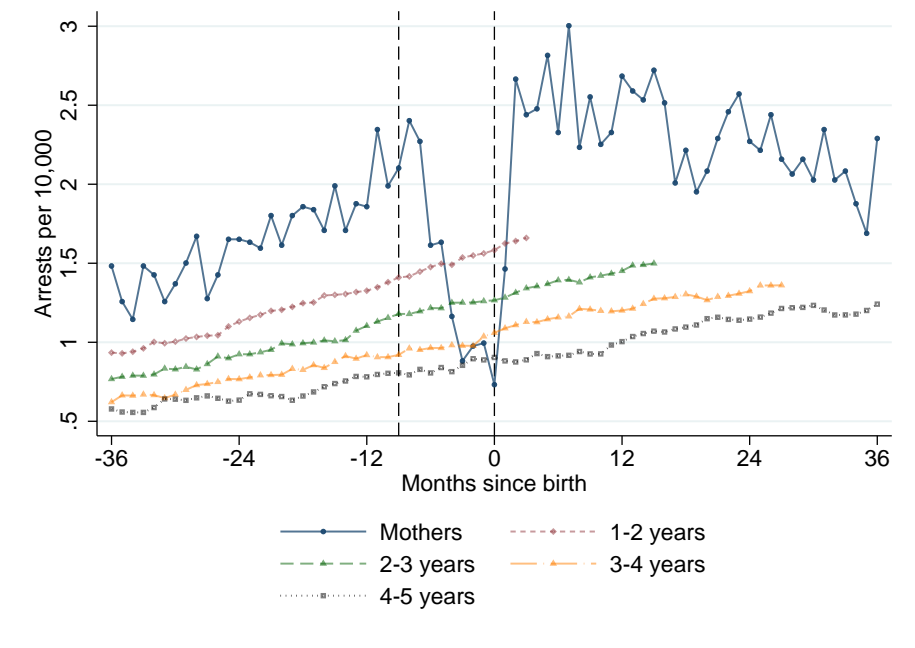
Notes: This figure plots regression estimates of effects of childbirth from Specification 1 with 95% confidence intervals derived from standard errors clustered at the mother level shown in dashes. The sample is restricted to mothers who gave birth before turning 21. The outcome is an indicator for any alcohol-related arrest. Estimates are divided by average arrest rates 9 months before birth to show proportional effects. The dashed lines mark 9 months before the birth and the month of the birth.

Figure A.6: Difference-in-differences estimates for teen mothers



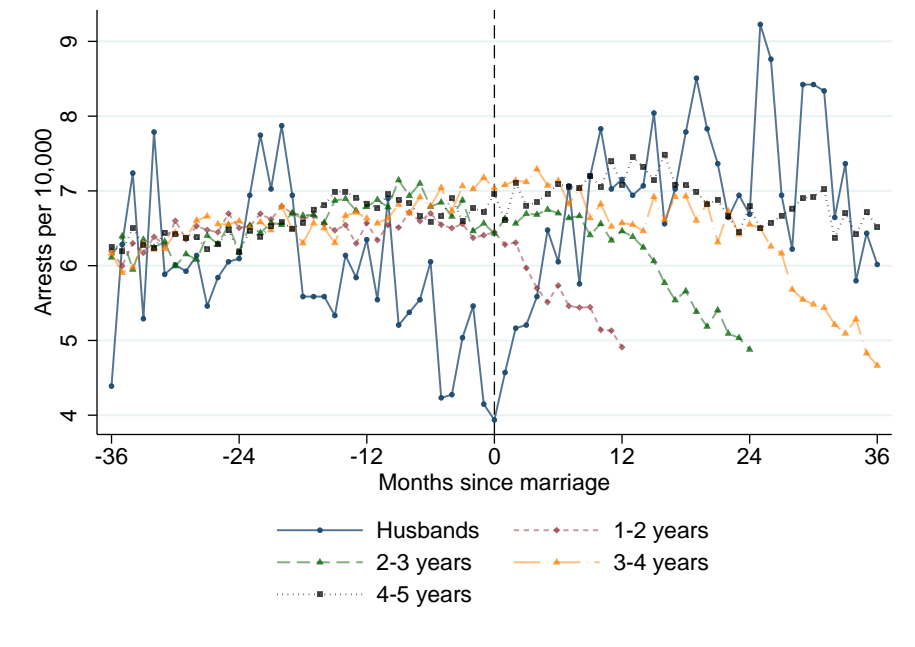
Notes: This figure plots regression estimates of effects of childbirth from Specification 1 with 95% confidence intervals derived from standard errors clustered at the mother level shown in dashes. The sample is restricted to first-time mothers who gave birth at age 19 or younger. The outcome is an indicator for any economic, drug, DUI, or property destruction offense within the month. Estimates are divided by average arrest rates 9 months before birth to show proportional effects. The dashed lines mark 9 months before the birth and the month of the birth.

Figure A.7: Mothers' domestic violence



Notes: This figure plots average monthly arrest rates around childbirth for mothers and several comparison groups. The outcome is an indicator for any domestic violence arrest. Mothers' and older mothers' outcomes are constructed as in Figure 2. The vertical dashed lines mark 9 months before the birth and the month of birth.

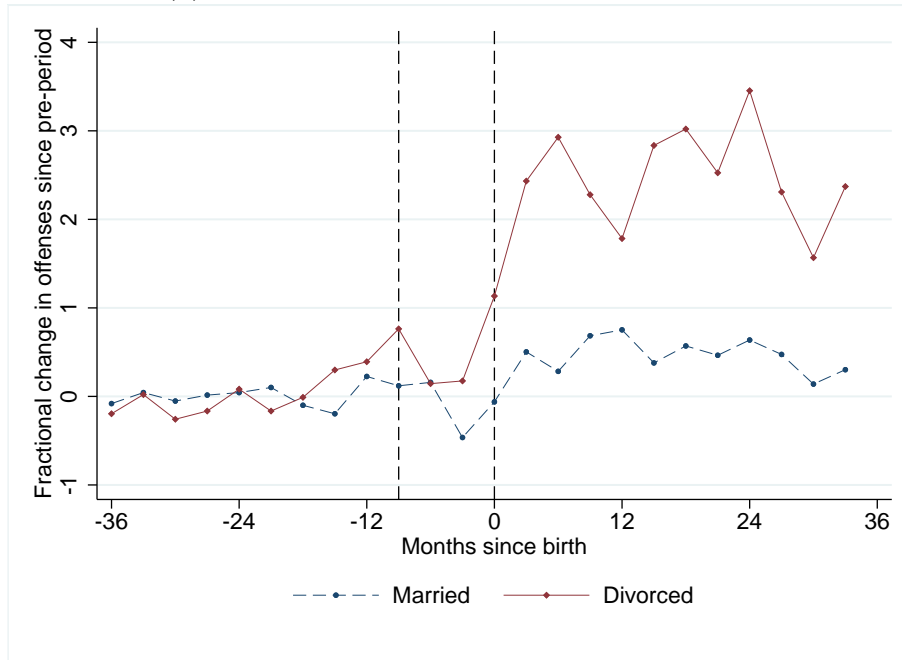
Figure A.8: Fathers' domestic violence around marriage



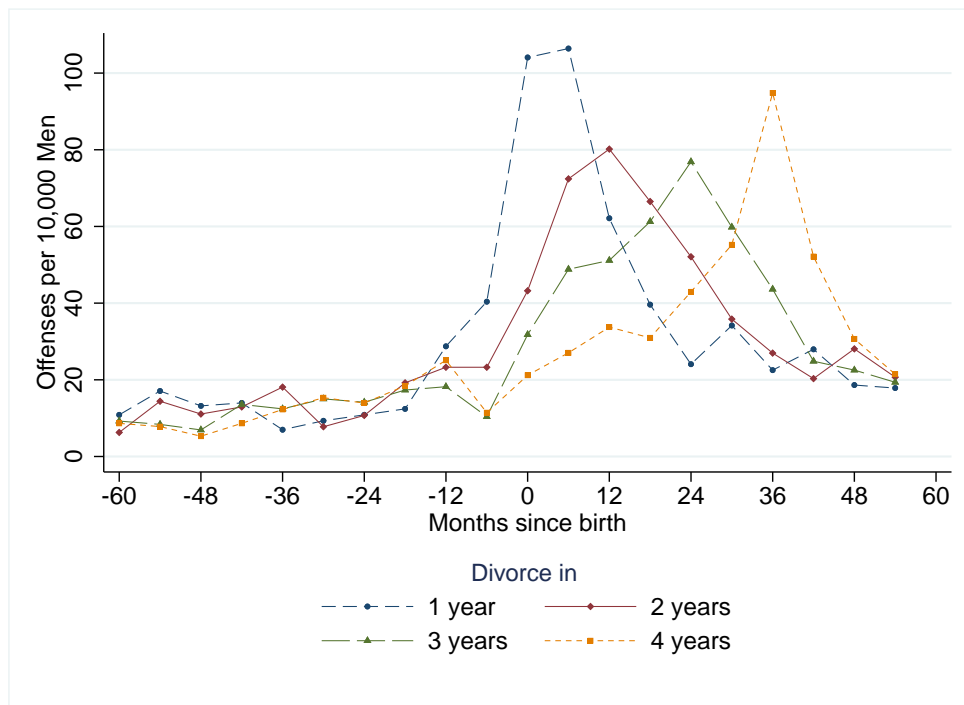
Notes: This figure shows average arrest rates around marriage for husbands and older husbands. It is also constructed using the same approach as in Figure 3, so that husband's arrest rates are compared to older husbands' over the same ages.

Figure A.9: Domestic violence vs. divorce

(a) Domestic violence by marriage outcome

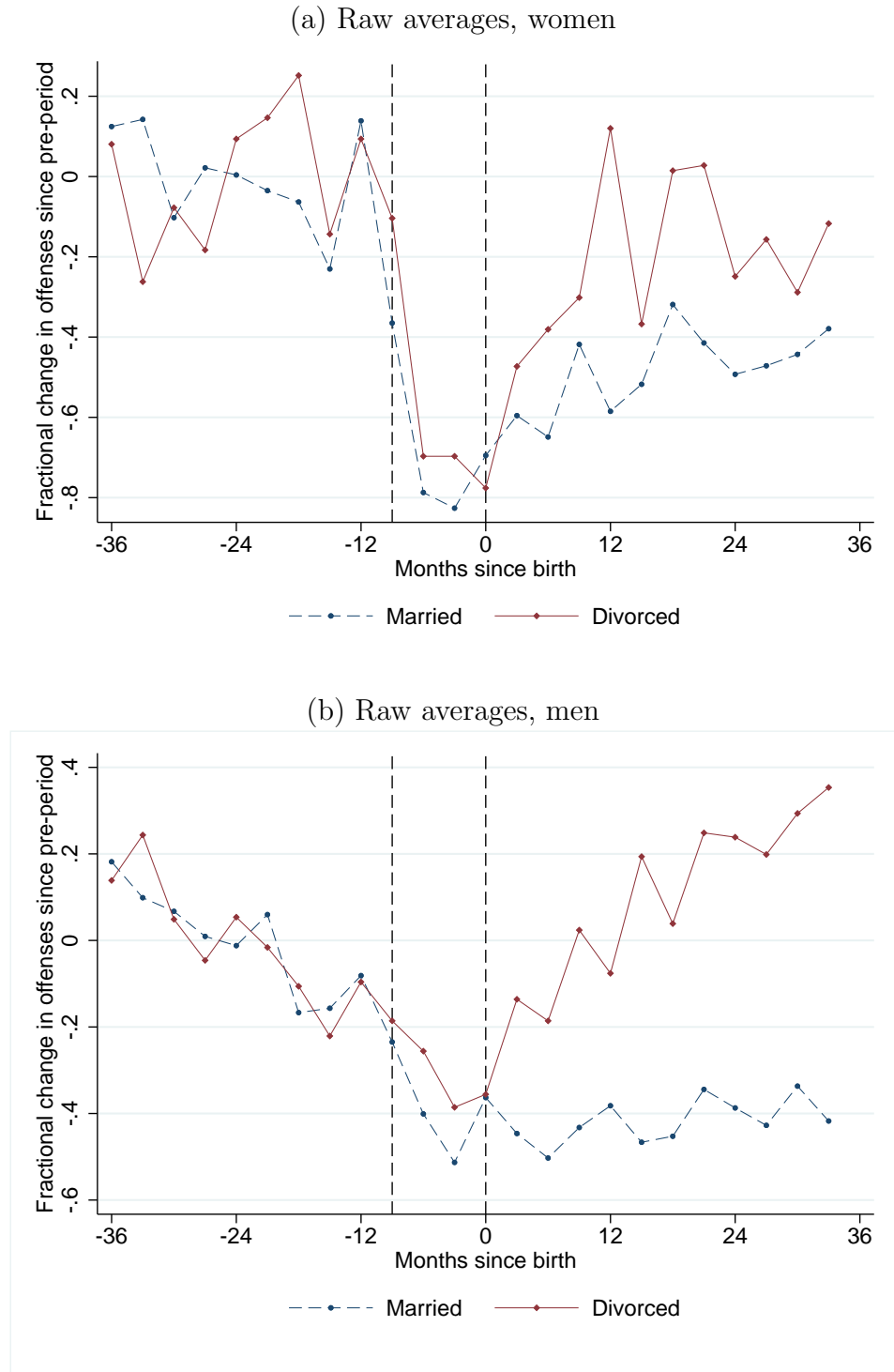


(b) Domestic violence by divorce timing



Notes: This figure examines how domestic violence arrests relate to divorce. Panel (a) includes 126,777 still-married men and 10,145 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 2,146 (1 year), 4,511 (2 years), 5,768 (3 years), and 5,976 (4 years).

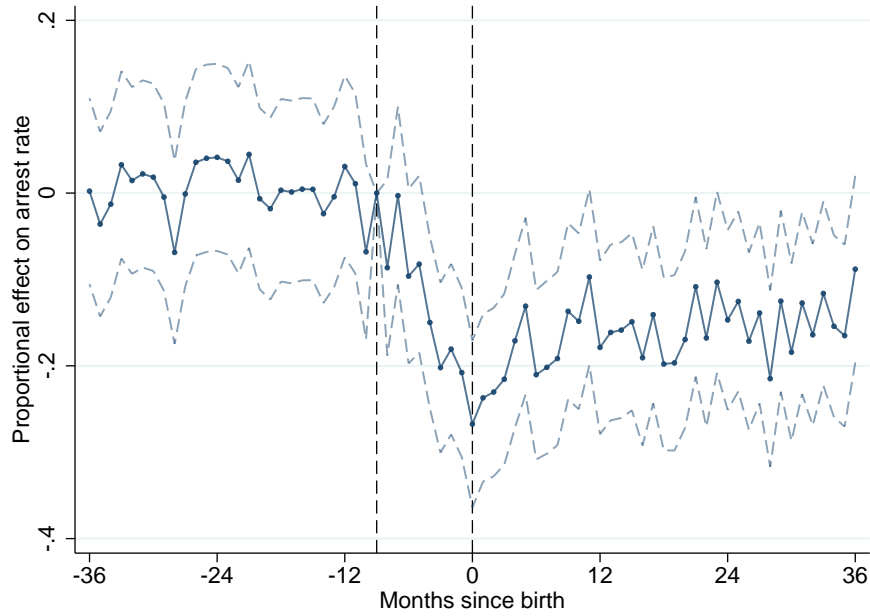
Figure A.10: Heterogeneity in the effect of childbirth between good marriages and bad marriages



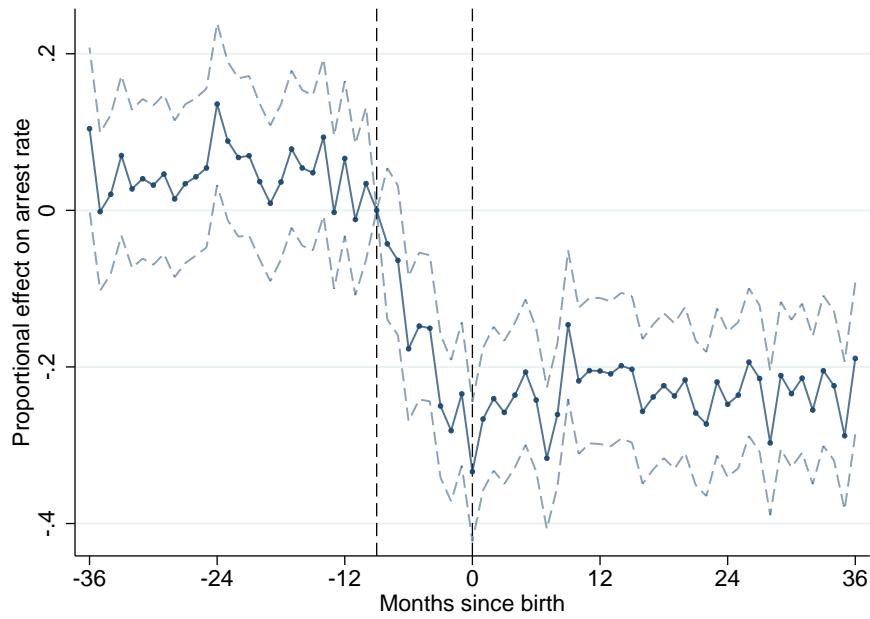
Notes: This figure shows differences in arrests around marriage for couples that divorce within five years of childbirth compared to those who remain married. Panel (a) includes data on 135,774 still-married women and 10,319 divorced women. Panel (b) includes arrest data on 126,777 still-married men and 10,145 divorced men. The outcome is any drug, DUI, economic, or property destruction arrest, divided by the prepregnancy 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.

Figure A.11: Robustness to migration out of Washington State

(a) Difference-in-differences estimates for men with future crime



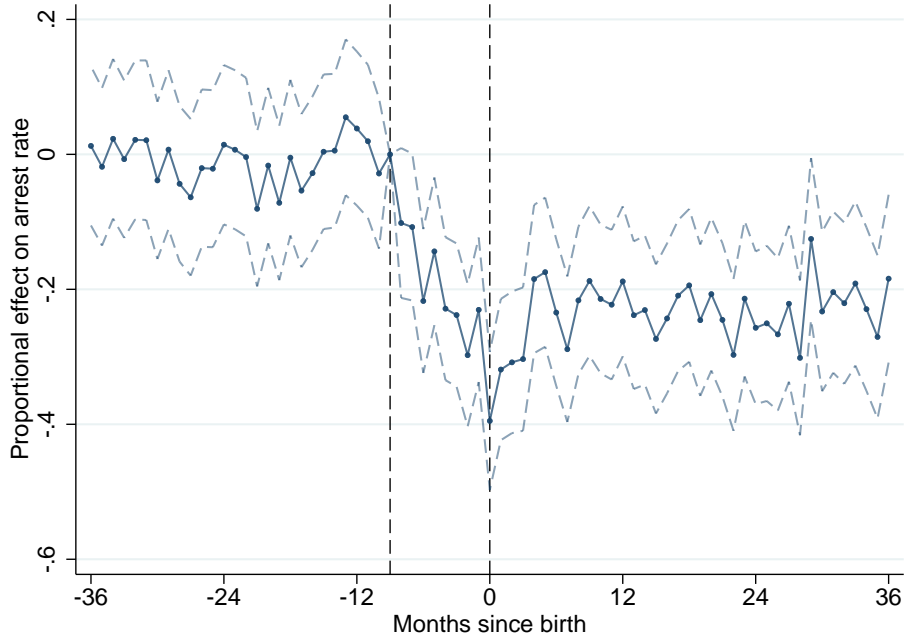
(b) Difference-in-differences estimates for men with future children



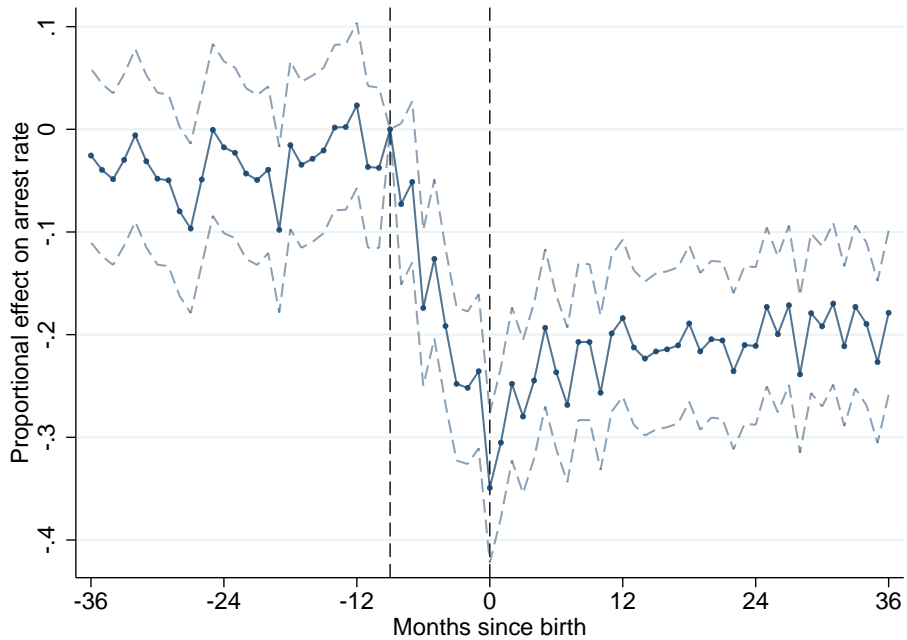
Notes: This figure plots regression estimates of effects of childbirth from Specification 1 with 95% confidence intervals derived from standard errors clustered at the father level shown in dashes. Panel (a) restricts to men charged with a driving-related (including DUI) offense 4-5 years after the birth. Panel (b) restricts to fathers who at some point have a second child in Washington State. The outcome is an indicator for any economic, drug, DUI, or property destruction offense within the month. Estimates are divided by average arrest rates 9 months before birth to show proportional effects. The dashed lines mark 9 months before the birth and the month of the birth.

Figure A.12: Robustness to migration into Washington State

(a) Fathers born in Washington



(b) Fathers with a juvenile offense



Notes: This figure plots regression estimates of effects of childbirth from Specification 1 with 95% confidence intervals derived from standard errors clustered at the father level shown in dashes. Panel (a) includes all fathers determined to be born in Washington State through a link to an earlier birth record. Panel (b) includes all fathers with a juvenile arrest in Washington State. The outcome is an indicator for any economic, drug, DUI, or property destruction offense within the month. Estimates are divided by average arrest rates 9 months before birth to show proportional effects. The dashed lines mark 9 months before the birth and the month of the birth.

Table A.1: Effects of sample restrictions, mother sample

	All births	+Age restrictions	+Good match	+Mother's first
Demographics				
White	0.71	0.71	0.71	0.69
Black	0.04	0.04	0.04	0.04
Hispanic	0.11	0.12	0.11	0.13
Asian	0.09	0.09	0.09	0.10
Other or missing	0.04	0.04	0.04	0.04
Age	27.91 (6.01)	27.52 (5.63)	27.66 (5.59)	26.73 (5.75)
Birth				
Low birth weight (<2500g)	0.05	0.05	0.05	0.06
Twins+	0.02	0.02	0.02	0.02
Male infant	0.51	0.51	0.51	0.51
Marital				
Mother married at birth	0.73	0.73	0.75	0.71
Midpregnancy marriage	0.03	0.03	0.03	0.05
Divorce if married	0.18	0.18	0.18	0.18
Economic				
Median zip code income	59834.99 (18187.96)	59661.75 (18093.91)	59900.66 (18191.49)	59944.48 (18110.35)
Mother on Medicaid	0.36	0.36	0.35	0.35
WIC	0.34	0.35	0.34	0.34
Crime				
Any arrest	0.25	0.25	0.22	0.19
Father ever incarcerated	0.04	0.04	0.04	0.04
Father ever on probation	0.09	0.09	0.08	0.07
Observations	983,687	955,914	908,480	532,790

Notes: This table shows how sample descriptives change as we implement restrictions sequentially for mothers. The first column includes all observations in the DOH birth records over the sample period, 1997 to 2009. The second column restricts to mothers between the ages of 15 and 40. The third column restricts to mothers who are unambiguously matched (or not matched) to the crime data. The final column restricts to the mother's first birth.

Table A.2: Effects of sample restrictions, father sample

	All births	+ Age restrictions	+Good match	+Father's first
Demographics				
White	0.66	0.66	0.67	0.65
Black	0.05	0.05	0.05	0.05
Hispanic	0.12	0.12	0.12	0.13
Asian	0.08	0.07	0.08	0.08
Other or missing	0.09	0.10	0.09	0.09
Age	30.21 (6.54)	28.99 (5.44)	29.15 (5.40)	28.23 (5.52)
Birth				
Low birth weight (<2500g)	0.05	0.05	0.05	0.06
Twins+	0.02	0.01	0.02	0.02
Male infant	0.51	0.51	0.51	0.51
Marital				
Mother married at birth	0.73	0.72	0.74	0.70
Midpregnancy marriage	0.03	0.03	0.03	0.05
Divorce if married	0.18	0.18	0.18	0.18
Economic				
Median zip code income	59820.84 (18182.44)	59415.29 (17961.17)	59791.10 (18094.11)	59576.83 (17924.14)
Mother on Medicaid	0.36	0.37	0.35	0.36
WIC	0.34	0.35	0.34	0.35
Crime				
Any arrest	0.41	0.42	0.37	0.34
Father ever incarcerated	0.04	0.05	0.03	0.03
Father ever on probation	0.09	0.09	0.07	0.06
Observations	976,581	889,533	814,220	502,900

Notes: This table shows how sample descriptives change as we implement restrictions sequentially for fathers. The first column includes all listed fathers in the DOH birth records over the sample period, 1997 to 2009. The second column restricts to fathers between the ages of 15 and 40. The third column restricts to fathers who are unambiguously matched (or not matched) to the crime data. The final column restricts to the father's first birth.

Table A.3: Descriptives of married and divorced parents

	Married		Divorced	
	Mothers (1)	Fathers (2)	Mothers (3)	Fathers (4)
Demographics				
White	0.81	0.81	0.83	0.80
Black	0.02	0.03	0.03	0.05
Hispanic	0.05	0.05	0.03	0.05
Asian	0.09	0.07	0.07	0.06
Other or missing	0.03	0.03	0.04	0.04
Age	28.07 (5.02)	29.31 (4.88)	25.23 (5.07)	27.02 (5.11)
Birth				
Low birth weight (<2500g)	0.05	0.05	0.06	0.06
Twins+	0.02	0.02	0.01	0.01
Male infant	0.52	0.52	0.51	0.51
Marital				
Mother married at birth	1.00	1.00	1.00	1.00
Midpregnancy marriage	0.13	0.14	0.28	0.28
Divorce	0.00	0.00	1.00	1.00
Economic				
Median zip code income	62839.21 (18206.16)	62454.59 (18074.11)	58908.64 (16025.63)	58587.03 (15785.47)
Mother on Medicaid	0.15	0.16	0.26	0.27
WIC	0.16	0.17	0.30	0.32
Crime				
Any arrest	0.12	0.29	0.29	0.54
Father ever incarcerated	0.01	0.01	0.05	0.04
Father ever on probation	0.03	0.03	0.12	0.09
Observations	135,774	126,777	10,319	10,145

Notes: This table reports summary statistics for mothers and fathers who were married vs. divorced five years after the birth. The overall sample includes all births in the primary sample matched to a marriage record and recorded as married on the birth certificate.

Table A.4: Papers on Crime and Childbearing or Marriage

Authors and Year	Journal	Data and sample size	Main results
Eichmeyer and Kent (2021)	Working paper	Administrative data from Allegheny County, PA, N= 99,500	Motherhood decreases crime and increases drug treatment and government support
Dustmann and Landerø (2021)	Journal of Political Economy	Danish administrative data, N=2,803	Fathers to sons show larger decrease in crime
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

Table A.4 – *Continued from previous page*

Authors and Year	Journal	Data and sample size	Main results
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
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 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

Table A.4 – *Continued from previous page*

Authors and Year	Journal	Data and sample size	Main results
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
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

Table A.4 – *Continued from previous page*

Authors and Year	Journal	Data and sample size	Main results
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
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

Table A.4 – *Continued from previous page*

Authors and Year	Journal	Data and sample size	Main results
Skardhamar and Lynstad (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
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

Table A.4 – *Continued from previous page*

Authors and Year	Journal	Data and sample size	Main results
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
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

B Paternal co-residence

In this section, we use the Survey of Income and Program Participation (US Census Bureau, 2015) to study father co-residence in households with unmarried mothers. We used respondents from the 1996 panel and identify births by identifying persons under 1 year old who appear in the household during the survey period. To have the same number of observations for each birth in the data, we restrict to households with survey responses 2 years before and after the birth. This leaves us with 842 observations. Our main variable, father presence, is equal to one if someone who has been listed as the father of the baby is present in the house for that month of the survey.

Figure B.1: Father presence for unmarried mothers, SIPP

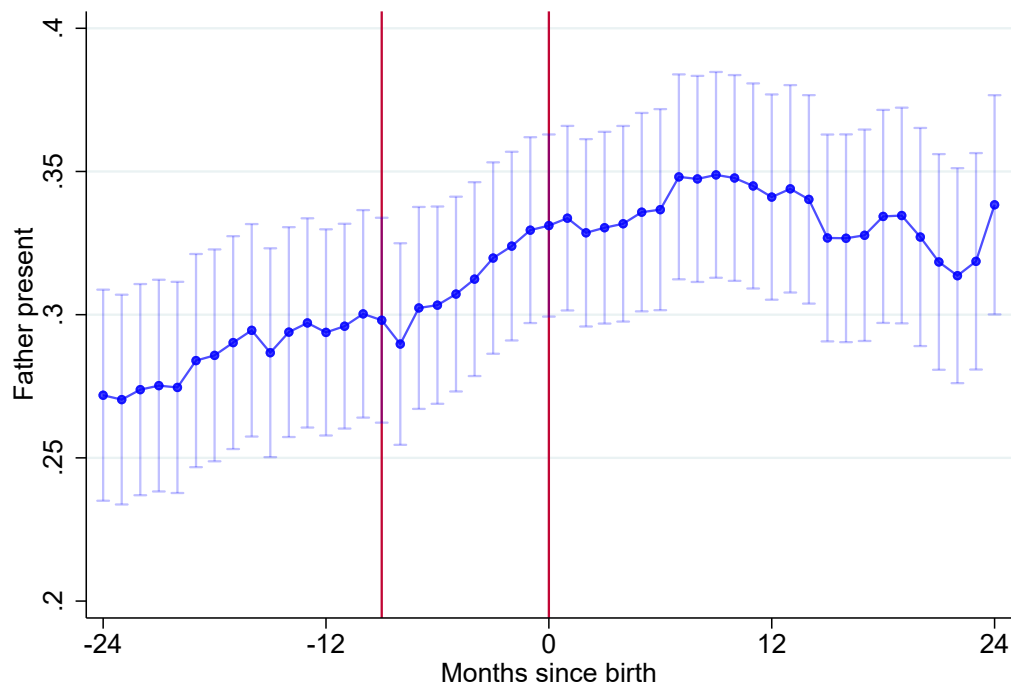


Figure B.1 shows the raw averages of father presence for all unmarried mothers in our sample. The figure suggests a modest increase in co-residence during pregnancy. Father presence increases by 10% during this time, from 30% of households 10 months before birth to 33 percent of households in the month of birth. It peaks at 35% 9 months after the birth.

C Time spent performing childcare

We use the American Time Use Survey (ATUS, 2022; Flood et al., 2022) to measure how much time married and unmarried parents spend performing childcare, in both the U.S. overall and restricting to Washington State.

To maximize sample size, we use data for all years available (2003-2020). Figure C.1 shows the average hours spent per day performing childcare, split by sex and with Washington state broken out in the red columns on the left. In the left panels, we define childcare as any activity which involves taking care of a household or non-household child.¹ Panel (a) shows that Washington women with at least one household child under the age of 2 spent 3.5 hours per day performing these activities, compared to 1.9 hours for Washington men. These estimates are similar to those in for the entire U.S. shown in the two columns on the right, 3.4 hours for women and 1.6 hours for men.

The ATUS allows respondents to indicate secondary childcare, when the respondent was caring for a child while doing something else, most commonly eating or drinking, preparing food, or watching television (but not sleeping). In panel (b), we include secondary childcare. This greatly increases the estimated hours although leaves the ratios unchanged across samples.

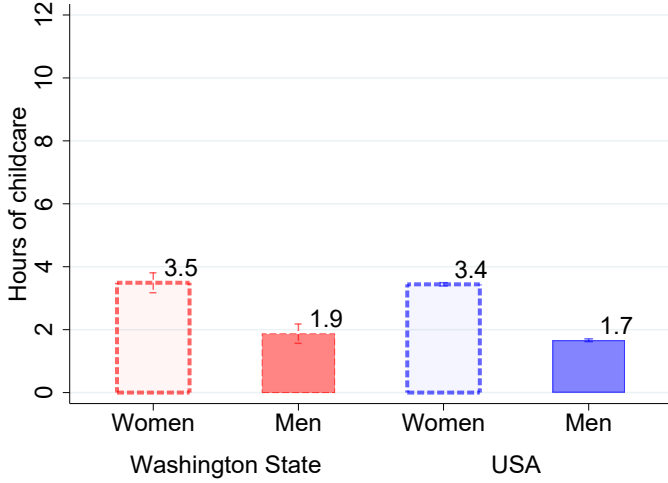
Panels (c) and (d) show the same estimates but restricting to unmarried respondents. The patterns are broadly similar to those for married couples. In most cases, unmarried couples report spending less time on childcare, regardless of whether secondary childcare is counted.

Finally, panels (e) and (f) restrict to respondents with only nonresident children. Here our estimates for Washington are quite noisy because there only 6 such females and 32 such males captured over the sample period. In both Washington and in the national sample, however, time spent caring for nonresident children is substantially lower: less than half an hour per day when considering primary activities and less than two hours when considering secondary childcare.

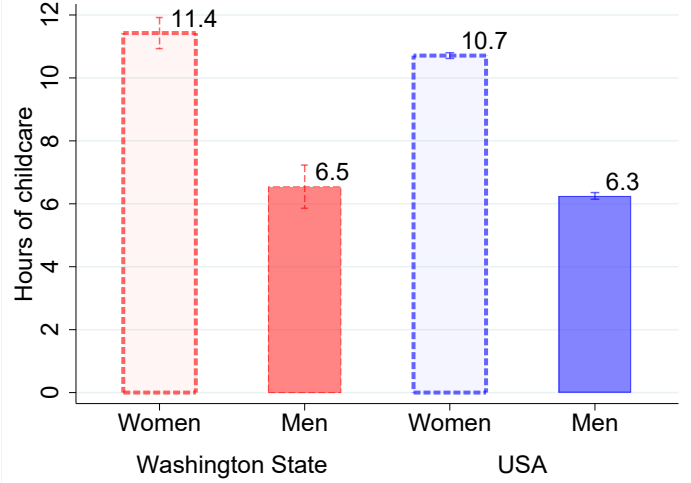
¹This includes activity codes 030000-030399 (caring for children, activities related to children’s health or education),180301-180303 (travel related to taking care of children),180401-180404 (travel related to non-household children),180801 (travel related to using childcare services),040000-040299 (caring for non-household children, activities related to non-household children’s health or education).

Figure C.1: Time spent performing childcare, ATUS

Married, living with kid(s) under 2

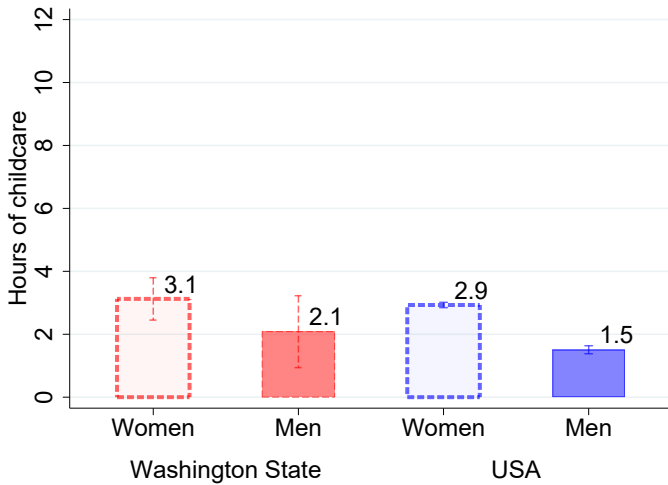


(a) Excluding secondary childcare

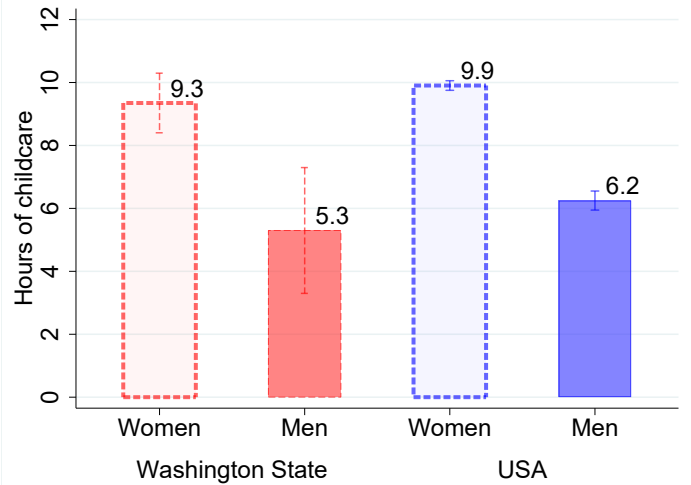


(b) Including secondary childcare

Unmarried, living with kid(s) under 2

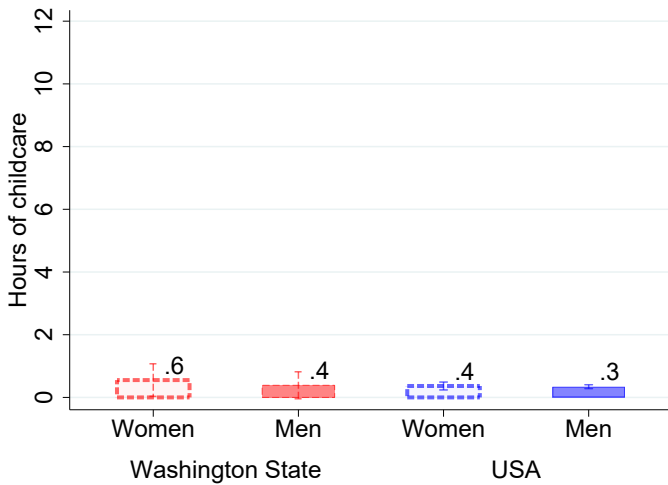


(c) Excluding secondary childcare

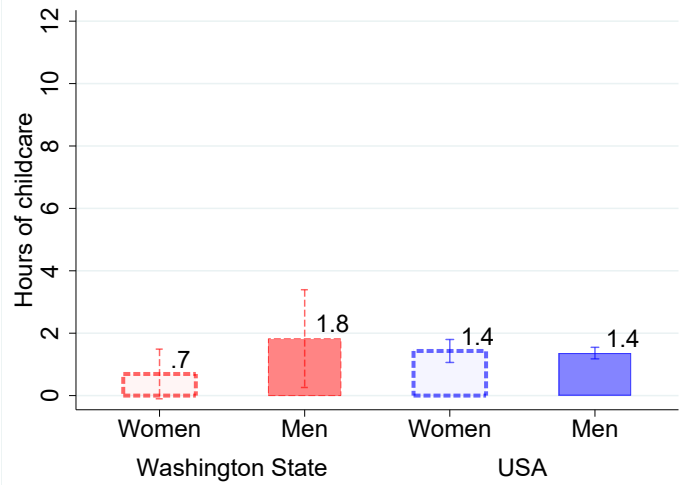


(d) Including secondary childcare

With only non-resident children



(e) Excluding secondary childcare



(f) Including secondary childcare

D Bounding effects for all potential parents

Our data only include parents who carry their child to term. The estimates can be viewed as reflecting the effects of *pregnancy* on couples who carry the child to term. The choice to keep the child is of course endogenous, so we measure the crime declines for those couples who respond to the pregnancy shock by deciding to keep the child. Even if the couples *choose* to begin trying for a family sometime earlier, the sharp decline in crime at $t = -9$ suggests that only the actual event of becoming pregnant triggers the crime decline.

The effects of pregnancy on the full population of *potential* parents may differ. To gauge the potential size of these effects, we conduct a simple bounding exercise. The approach is visualized in Figure D.1 and D.2, where we impute a path of arrest for the set of missing mothers / fathers who conceive at $t = -9$ but elect not to keep the child. Their arrest rates are assumed to follow the same age profiles of the focal mothers / fathers up to $t = -9$, then experience the same changes as *future* mothers / fathers who conceive within the next 1-5 years.

In other words, the missing couples who terminate a pregnancy are assumed to follow the same time trend as couples who are the closest match in terms of age. In the first 2 years of the plot, these are the focal parents before they experience their pregnancy. Then the counterfactual group shifts to include only the future parents as the focal parents are affected by pregnancy. Level differences would not affect the exercise—since we employ a difference-in-differences framework to estimate the effects, we require only imputed trends.

Mixing these missing parents into our sample in varying proportion would lead to different estimates that attenuate effects towards zero. Figure D.1 and D.2 shows the potential impact of this attenuation with varying degrees of missingness. If there are a large share of missing couples due to termination, effects of pregnancy may be significantly smaller. Even at 50% missingness, however, men who conceived at $t = -9$ would still show an over 10% long-run proportional decline in crime. Women still show a sustained 35% decline at the same rate of missingness.

Our estimates also require the couple to be named on the birth record. Mixing in the trends for missing parents not named on the record might attenuate the “overall” effect further if these parents do not respond to pregnancy. If they do respond in similar ways to named parents, then mixing them in would not attenuate estimates.

Proportionally, the declines around pregnancy are similar for married vs. unmarried parents, and similar over the full event time window for older vs. younger parents. These groups differ in the share of records missing parents’ information. Mothers with prior arrests are also more likely to have missing father information, and yet show very similar responses. This suggests that adding parents who have a child but are not named on the birth records would be unlikely to substantially affect the estimates. Still, a reasonable worst case bound would assume the missing parents do not respond at all; this bound would thus map to the exercises discussed above.

Finally, it is also possible that some couples become pregnant and then *elect* whether to terminate based on whether the mother or the father has been recently engaging in more or less crime. This kind of selection is more pernicious because it might lead us to conclude family formation causes crime declines when in fact, for the mothers / fathers in our sample, recent crime declines cause the decision to carry the child to term and thus appear in our sample.

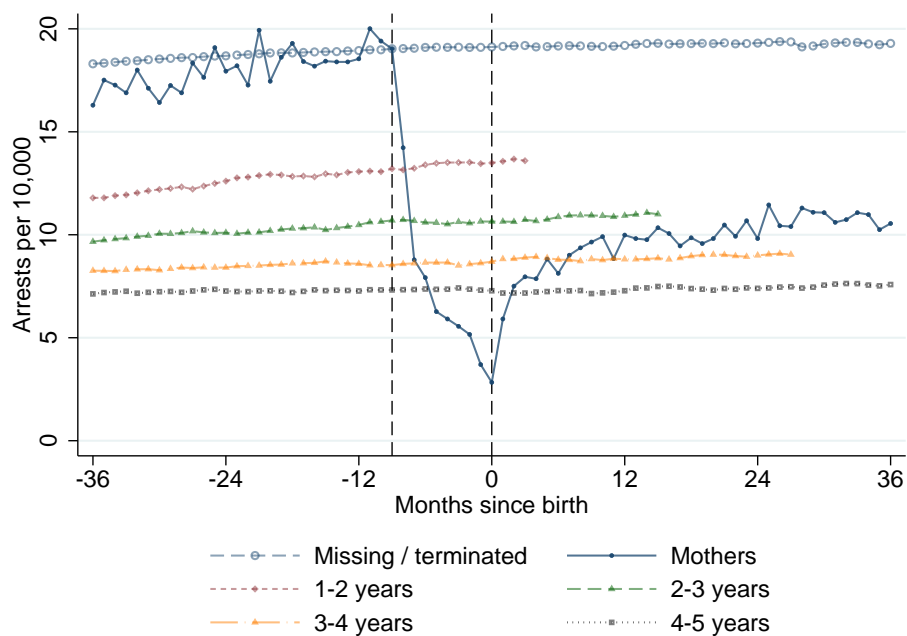
Several pieces of evidence weigh against this interpretation. First, if couples elect to terminate

because of increasing crime around pregnancy, then presumably they would also be more likely to *not* terminate because of decreasing crime around pregnancy. This selection pattern would generate negative pre-trends in the run-up to conception, but we see no such evidence of these trends in our estimates. Instead, given the sharp timing of the crime declines we document, any time-varying changes in offending propensities that affect the decision to terminate would need to occur very close to the moment of conception. Though we cannot rule out this possibility, we view it as unlikely.

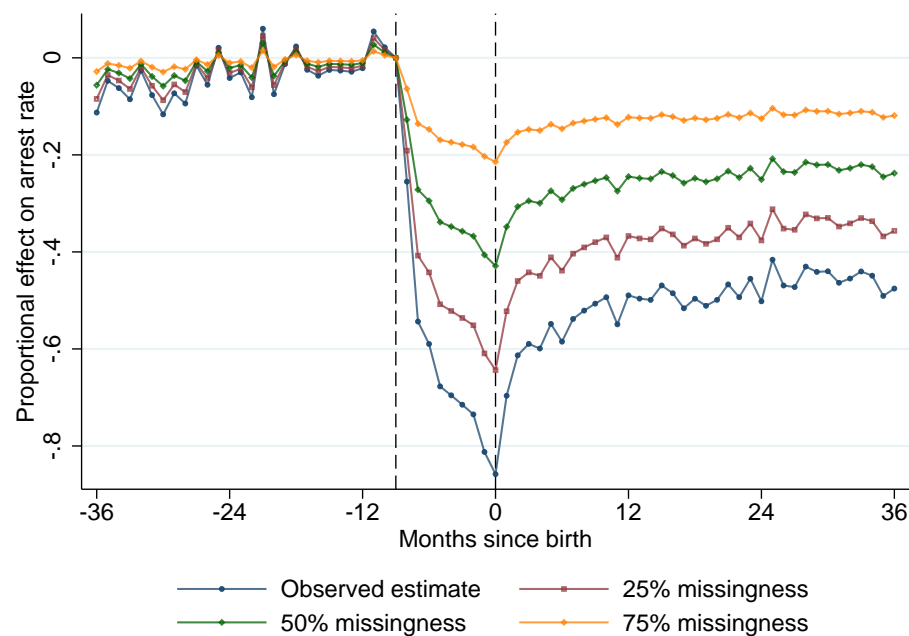
Second, if couples elect to terminate due to differences in age-crime profiles (e.g., the potential mothers who terminate at age 22 have steeper / increasing profiles at 22, while the potential mothers who do not terminate at age 22 do not), these differences would also affect the age-crime profiles for the comparison groups used to estimate the age-adjusted effects. That is, mothers who terminate after conceiving at age 24 would also have different age profiles at 22. To the extent that age profiles for couples who terminate are similar to the age profiles of couples who terminate 1-5 years later, as we show in the paper holds for couples who do *not* terminate, these differences would be absorbed in our diff-in-diff when including all couples in the data. Including the couples that terminate would thus lead us back to the attenuation story discussed above.

Figure D.1: Bounding exercise for first-time mothers

(a) Potential mothers vs. older mother counterfactuals

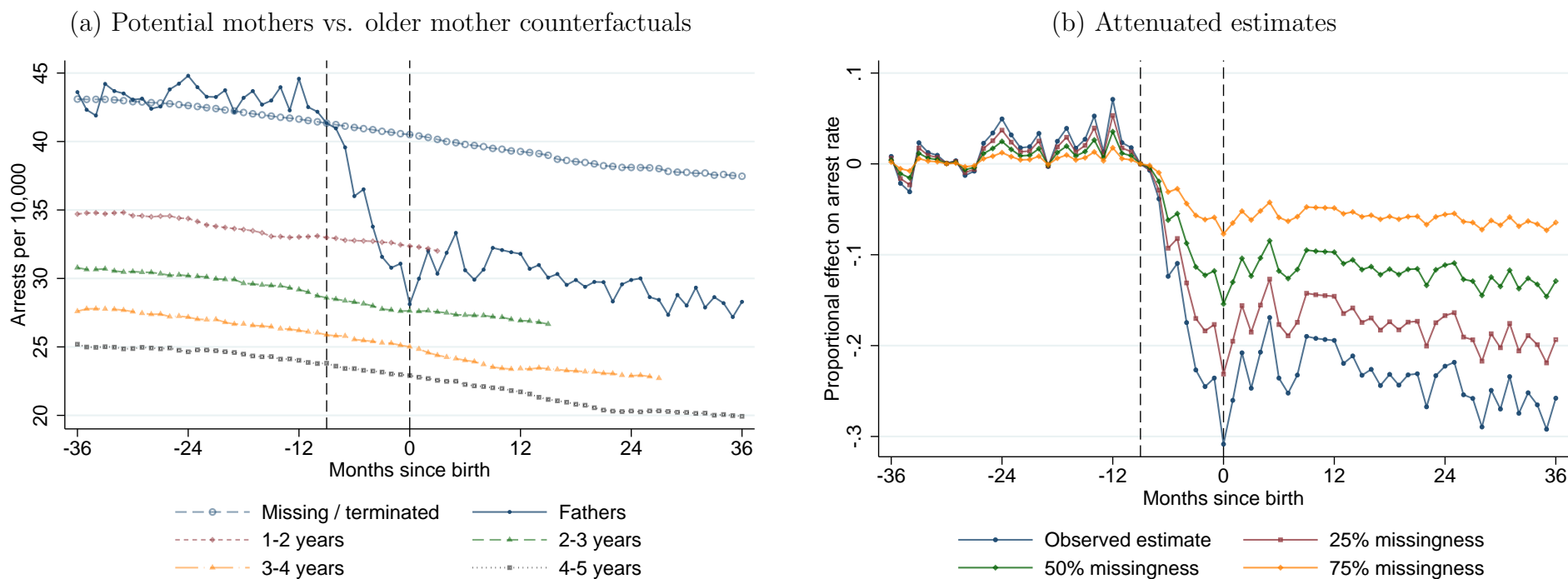


(b) Attenuated estimates



Notes: This figure illustrates the potential attenuation in estimates due to the inclusion of missing parents in the sample. Panel (a) plots mothers' and future mothers' arrest rates, along with an imputed path of arrest rates for missing mothers. This path takes the focal mothers' mean at $t = -9$ and uses changes in future mothers' arrest rates to impute an implied future arrest rate. Panel (b) plots the implied effect of mixing in these missing mothers in varying proportions on regression estimates. In both panels, the vertical dashed lines mark 9 months before the birth and the month of birth.

Figure D.2: Bounding exercise for first-time fathers



Notes: This figure illustrates the potential attenuation in estimates due to the inclusion of missing parents in the sample. Panel (a) plots fathers' and future fathers' arrest rates, along with an imputed path of arrest rates for missing fathers. This path takes the focal fathers' mean at $t = -9$ and uses changes in future fathers' arrest rates to impute an implied future arrest rate. Panel (b) plots the implied effect of mixing in these missing fathers in varying proportions on regression estimates. In both panels, the vertical dashed lines mark 9 months before the birth and the month of birth.

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