Parenthood in Poverty

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Motivation

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Parenthood impacts many aspects of life:

- May be particularly destabilizing for new parents with less financial resources
- Most research on new parenthood has focused on changes in income and labor market outcomes.
- Low-SES new parents may not yet be in the labor force, making these outcomes less relevant

By looking at other domains besides employment, we can gain new insight into the impact of new parenthood

Motivation

The US has reduced investment in public housing and other social safety net programs over time, potentially impacting new parents during this vulnerable period.

Important for policy design:

- Identify programs that new parents rely on to help direct resources
- High potential for impacting lives of young children, huge externalities

This paper

Study the causal impact of parenthood on housing stability, health, crime, and government assistance use

- Sample: women of low socio-economic status.
- Data: 15 years of detailed, high frequency administrative records from large urban US county.
- Identification: Event study around first birth.

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What we do NOT do:

- Analyze whether or not having a child is stabilizing or destabilising for new parents who are low-SES
- disentangle the e□ect of changes in need from changes in eligibility

Preview of results

New parenthood causes extremely large increases in housing assistance use, mental health treatment, and other government assistance, while reducing crime.

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3. **Government assistance:** Increases takeup of Medicaid and SNAP (50%), and TANF (3x)
4. **Crime:** Reduces criminal activity by 50%

Contribution to literature

a) **(Economic) consequences of parenthood**: Earnings, employment and wage gap literature (Kleven et al. 2019, Brooks and Zohar WP...). Teenage parenthood and education (Holtz et al. 1997, Fletcher and Wolfe 2009, Kearney and Levin 2012), Curtis et al. (2013); Miller et al. (2020) on financial distress, Massenkoff and Rose (2020) on crime. Comprehensive set of outcomes (some not studied before), focus on low-income population, high-frequency administrative data, within-person DiD.

b) **Causes of permanent/transitory economic hardship**: Health shocks (Dobkin et al., 2018), death of spouse (Fadlon and Nielsen 2017)
Family formation as event.

c) **Housing and family formation**: Home ownership (e.g. Mulder and Wagner 2001), house price impacts on fertility (e.g. Dettling and Kearney 2014)
Focus on relevant outcomes for low-income populations: public housing + homelessness.

d) **Housing instability and homelessness**: Curtis et al. (2013), Lucas (2017), Corinth (2017), Weitzman (1989)
Study role of family formation, non-survey-based data on housing outcomes.

e) **Take-up and targeting of government benefits**: Hoynes, Bitler, Bailey, Currie

Background & Data

Background

US context:

- Government assistance in the US often has large eligibility changes around parenthood
    - Main 3 criteria (on top of low income): younger than 18, older than 65, or **caring for dependent child** - otherwise: strict work requirements or categorical ineligibilty.
    - Matters for: Medicaid (i.e. healthcare), food assistance, cash assistance (but not for housing assistance).

Data

Focus on Allegheny County, Pennsylvania.

- Population of 1.2 million.
- Includes the city of Pittsburgh.

Data: From Allegheny County Data Warehouse: Administrative records at the individual level, monthly, 2005-2019.

Allegheny County

Table 1: Allegheny County Characteristics

	Allegheny County mean	Rest of US mean
College plus	0.35	0.28
Foreign born	0.05	0.13
Median hshld income	60,055.76	61,287.21
Poor	0.13	0.14
White	0.81	0.64
Black	0.14	0.13
Hispanic	0.02	0.16
Asian	0.02	0.04
Single parent	0.33	0.32
Rent 2-bedroom	890.77	982.46
Population	1,223,348.00	1,094,111.02

Allegheny County is similar across many characteristics to the average US county (weighted by population)

Data

Event(s):

- Identify (and date) all first births via Birth records.
- Identify (and date) miscarriages via Medicaid records and birth records.

Outcomes (binary indicators at the individual-month level):

- Housing: Public housing residence, Section 8 voucher, homelessness encounters.
- Government assistance: Medicaid (healthcare), SNAP (food stamps), TANF (cash assistance).
- (Mental) health (via Medicaid): Substance use disorder treatment, encounters for major mental health disorders.
- Crime: misdemeanor and criminal offenses.

Sample Selection

- Birth records: All women who:
  - have first live birth in 2007-2018 (such that we have min. 1 year pre and post data);
  - are age 16-40 at time of birth.

- Restrict to low-SES individuals. Defined as observing using Medicaid in at least one month in the 5 years prior to pregnancy
  - Note that by identifying low-SES individuals in this way, results are local to low-SES individuals who are already familiar with medicaid

) 12,000 first births.

Low SES vs. non-low SES first-time mothers

	Low SES mean	Non-low SES mean
Age	22.424	28.869
Age 16-17	0.093	0.013
Black	0.527	0.086
White	0.453	0.842
Dad listed on birth certificate	0.562	0.907
Any homeless encounter in year before pregnancy	0.017	0.000
Any MHD encounter in year before pregnancy	0.126	0.003
Any SUD encounter in year before pregnancy	0.050	0.001
Observations	12407	68306

Summary statistics suggest that women identified are indeed lower SES than the rest of the women in the data

Empirical Strategy

Empirical Strategy

Event study using Borusyak, Jaravel, and Spiess's (2021) e cient and robust imputation estimator

Similar to an event study with time and individual xed e ects, where xed e ects are estimated from untreated observations only

Empirical Strategy

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4. Average across observations to obtain average treatment effect

Empirical Strategy

First step: two-way fixed effect model with individual and calendar year-month fixed effects, estimated among the untreated observations only, via OLS:

$$y_{it} = \quad + \quad _i + \quad _t + \quad _i \quad t + \quad _{it}; \qquad (1)$$

- y_{it} is the outcome of interest for individual i in calendar year-month t
- $_i$ and $_t$ are individual and calendar year-month fixed effects
- untreated observations are all those observed ahead of a woman's pregnancy that results in her first live birth.

Second step: Use this model to predict outcomes for treated observations

Empirical Strategy

Third step: obtain observation-level treatment effect estimates as the difference between actual and predicted outcomes, for each treated observation:

$$\hat{\tau}_{it} = y_{it} - \hat{y}_{it}, \quad (2)$$

where $\hat{y}_{it}$ is the prediction obtained from the previous step

Average across observations for relative event time periods to obtain treatment effects

Assessing Identifying Assumption

Our strategy depends on two assumptions: (1) pregnancy is not anticipated and (2) there are no events that are correlated with both pregnancy and our outcomes of interest

- Could be violated for many reasons (e.g. pregnancy is endogenous to meeting new partner).

Solutions:

- Pregnancy occurs with a lag ⇒ Sharp timing of event and high-frequency measurement of outcomes allow us to visually and informally assess pre-trends / sharpness of changes.
- Robustness I: Compare outcomes for women who experienced a live birth to those who experienced a miscarriage
- Robustness II: Compare outcomes for the same woman who experienced a miscarriage that was later followed by a live birth

Robustness: Natural variation in pregnancy outcome

1. Across-person DiD: Comparing Medicaid-insured women who experience a miscarriage vs. live birth.
   - Deals with endogeneity concern around the timing of pregnancy.
2. Within-person DiD: Compare across events for women who first experience a miscarriage followed by a live birth in quick succession.
   - Relative to Across-person DiD: reduces sample selection bias concerns.
   - For power-reasons, include also non-low SES.

Results

Housing outcomes

Pregnancy and childbirth likely increase one's housing needs and may lead to greater instability.

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- Section 8: Rental assistance voucher: pay at most 30% of income in rent; nd apartment in private market; long (2.7 years on average) waiting list.

Results: Housing

Homeless Shelter Visits

Results: Housing

Homeless Shelter Visits

Long Term Homeless Assistance

Parenthood increases homeless program use in the short and long term.

- ˆ Shelter visits increase by 0.1pp (100%) during pregnancy

▸ Raw Means

Results: Housing

Public Housing Residence

Section 8 Usage

Parenthood also increases long term usage of housing assistance programs with public housing usage increasing by 1.7ppts (150%)

Raw Means

Results: Housing

Medium/Long-Term Homelessness Assistance:
Heterogeneity by Substance Use Disorder

Homelessness assistance appears driven by those with SUD.

Results: Housing

New parenthood increases both short term and long term housing assistance usage.

Long term housing assistance use appears driven by people with substance use disorder.

Substance Use Disorder and Mental Health Disorders

Only observe treatment for Medicaid insured. So, restrict sample to:

- Continuously Medicaid insured: Those who were Medicaid-insured throughout an approximately 3 year period surrounding birth (34% of sample).) Holds insurance status xed.

Outcomes: Most common SUD and mental health disorders in general:

- Treatment for Opioid Use Disorder
- Treatment for any mental health disorder

Results: SUD and Mental Health Treatment

Opioid Use Disorder Treatment

Any Mental Health Disorder Treatment

Treatment for SUD increases in the short term, while treatment for mental health disorders in general increases in the long term by 2.1ppts (28%).

▸ Raw Means

Results: SUD and Mental Health Treatment

Mood Disorder Treatment

Increased mental health treatment over time appears driven by mood disorders, which increase by 2.1ppts (46%) after birt

▸ Raw Means

Government Assistance Programs

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Main programs of interest:

- Medicaid: Virtually free health insurance.
- SNAP: Food stamps worth $350 a month.
- TANF: Cash assistance worth $300 a month.

Government Assistance Programs

Big changes in eligibility:

Monthly Income Thresholds

	Pre-pregnancy	Pregnancy	Post-pregnancy
Medicaid	$1,400	$3,100	$2,000
SNAP	$1,400	$1,400	$2,250
TANF	-	$205	$316

Note: Applies to person who is single and becomes a 2-person household after birth.

SNAP: 3-month limit per 3 year period, unless pregnant or with dependent child or working.

Results: Medicaid

Medicaid

24.2ppts (43%) higher after birth. Also sharp drop in enrollment 2 months post-birth due to eligibility changes

▸ Raw Means

Results: SNAP and TANF

SNAP

TANF

SNAP and TANF usage also increase signi cantly through pregnancy and childbirth, with SNAP 15.3ppts (56%) and TANF 14.5ppts (300%) higher in the year after birth. ▸ Raw Means

Results: Government Assistance

Pregnancy and childbirth trigger large increases in the use of government assistance.

While likely driven by increases in eligibility, may also be due to increases in underlying need.

Results: Crime

What e ect does pregnancy and childbirth have on criminal activity?

- Cost of going to jail is high for new parents, increasing cost of criminal activity
- However economic need of new parents may be higher, increasing motivation for crime such as theft

Results: Crime

Crime

Crime falls during pregnancy and post birth, with crime rates .9ppts (52%) lower after birth . ▸ Raw Means

Conclusion

Using high-frequency administrative data with an event study research design, we document the e ects of parenthood in the domains of housing, mental health, social assistance use, and crime.

We nd that pregnancy and new parenthood:

1. increase housing instability and trigger transitions into housing assistance programs
2. increase treatment for opioid use disorder and mood disorder
3. increase the use of medicaid and government cash assistance programs
4. reduce criminal behavior

Our results show that low-SES women rely strongly on government assistance programs and emphasizes the importance of these programs during this vulnerable time.

Thank you!

Summary stats

	A: Live Birth Event Sample	B: Across-person DiD Sample		C: Within-person DiD Sample
		Live birth	Miscarriage	
	mean	mean	mean	mean
Age	22.424	23.672	24.834	28.406
Age 16-17	0.093	0.061	0.084	0.019
Black	0.527	0.467	0.495	0.100
White	0.453	0.483	0.454	0.861
Dad listed on birth certi cate	0.562	0.630	.	0.933
Low SES	1.000	0.831	0.746	0.108
Medicaid insured in year before pregnancy	0.727	0.752	0.665	0.074
Any homeless encounter in year before pregnancy	0.017	0.028	0.027	0.002
Any MHD encounter in year before pregnancy	0.126	0.132	0.140	0.018
Any SUD encounter in year before pregnancy	0.050	0.055	0.044	0.005
(Also) has miscarriage		0.058	1.000	0.013
(Also) has live birth		1.000	0.264	0.377
Months between events				12.578
Observations	12407	3000	772	2640
Event years	2008-2016	2015-2018	2015-2018	2008-2016
Restrict to low SES	Yes	No	No	No
Restrict to Medicaid insured in early pregnancy	No	Yes	Yes	No

Notes: Table shows summary statistics for women in each of the three main samples. Observations are at the individual level (note that in Panel B, an individual can enter both in the live birth group and the miscarriage group). Panel A pertains to all rst live births in the sample period to women of low SES in the county. Panel B, left column pertains to women with a rst live birth in the period 2015-2018 who are Medicaid-insured in early pregnancy (that is, in any of the rst 4 months of pregnancy). Panel B, right column pertains to women with a miscarriage event (measured via Medicaid claims diagnosis codes available for the years 2015 onward) who have not had a previous live birth at the time of the event. Panel C pertains to women whose birth certi cate at rst live birth lists a previous non-live birth within the last 18 months. Outcomes are measured as of time of the event (in Panel C: the non-live birth event), unless otherwise noted. Low SES is dummy that equals 1 if person is observed as Medicaid-insured at any point in the ve years preceding the pregnancy leading up to the event (in Panel C: the non-live birth event). Pregnancy onset is approximated as 10 months before the month of birth (for live birth events), and four months before the event (for miscarriage/non-live-birth events).

Appendix

Eligibility changes

Program	Eligibility Before rst pregnancy	Eligibility During rst pregnancy	Eligibility with one child in household
Medicaid	ineligible before 2015< $1,400 since 2015	< $3,100	< $580 before 2015 < $2,000 since 2015
SNAP	< $1,400, must participate in work program at least 20 hours per week in order to receive bene ts for more than 3 months	< $1,400, no work requirement	< $2,250, no work requirement
TANF	ineligible	< $205	< $316
SSI	$783 and presence of disability	$783 and presence of disability	$1,175 and presence of disability
Homeless Services	12 shelters and 47 permanent/transitional housing programs for singles	Can access normal shelters, plus 37 extra shelters for pregnant women	37 shelters and 55 permanent/transitional housing programs for families with children
Public Housing & Section 8	< $3,875, min. 18 year old household head	unchanged	< $4,429, min. 18 years old household head
MHD/SUD services in Medicaid		unchanged	unchanged

Notes: All eligibility thresholds listed in US$ refer to gross monthly household income for a household with one adult (and one child, for the last column), and correspond to 2020 eligibility thresholds. The only program with a major change to eligibility thresholds over the sample period is Medicaid, which was expanded in 2015 to include households without children and to increase income thresholds for parents. "Unchanged" means no change relative to eligibility before rst pregnancy.

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Housing: Raw means

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Section 8 Usage

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Results: SUD and Mental Health Treatment

Opioid Use Disorder Treatment

Any Mental Health Disorder Treatment

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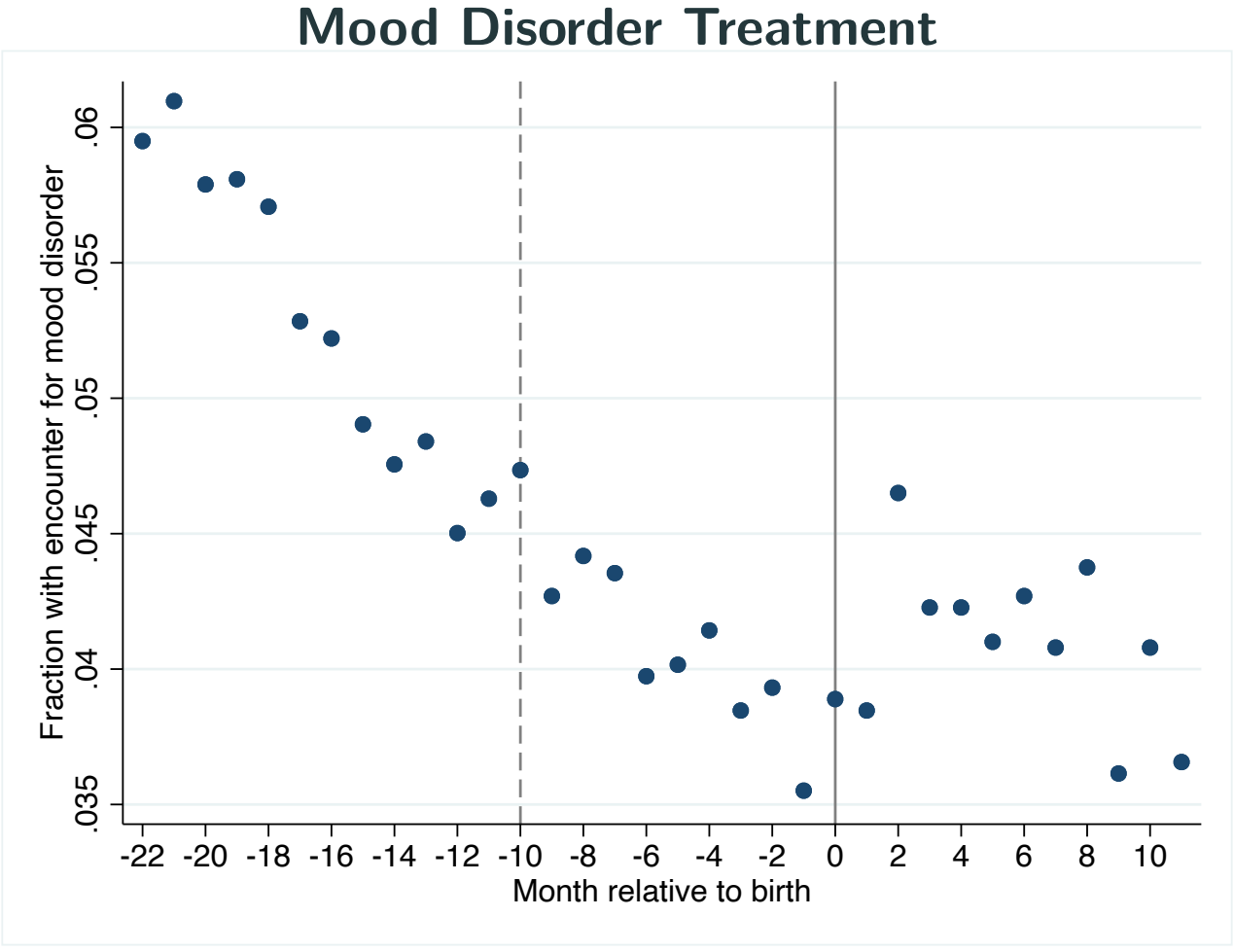
Results: SUD and Mental Health Treatment



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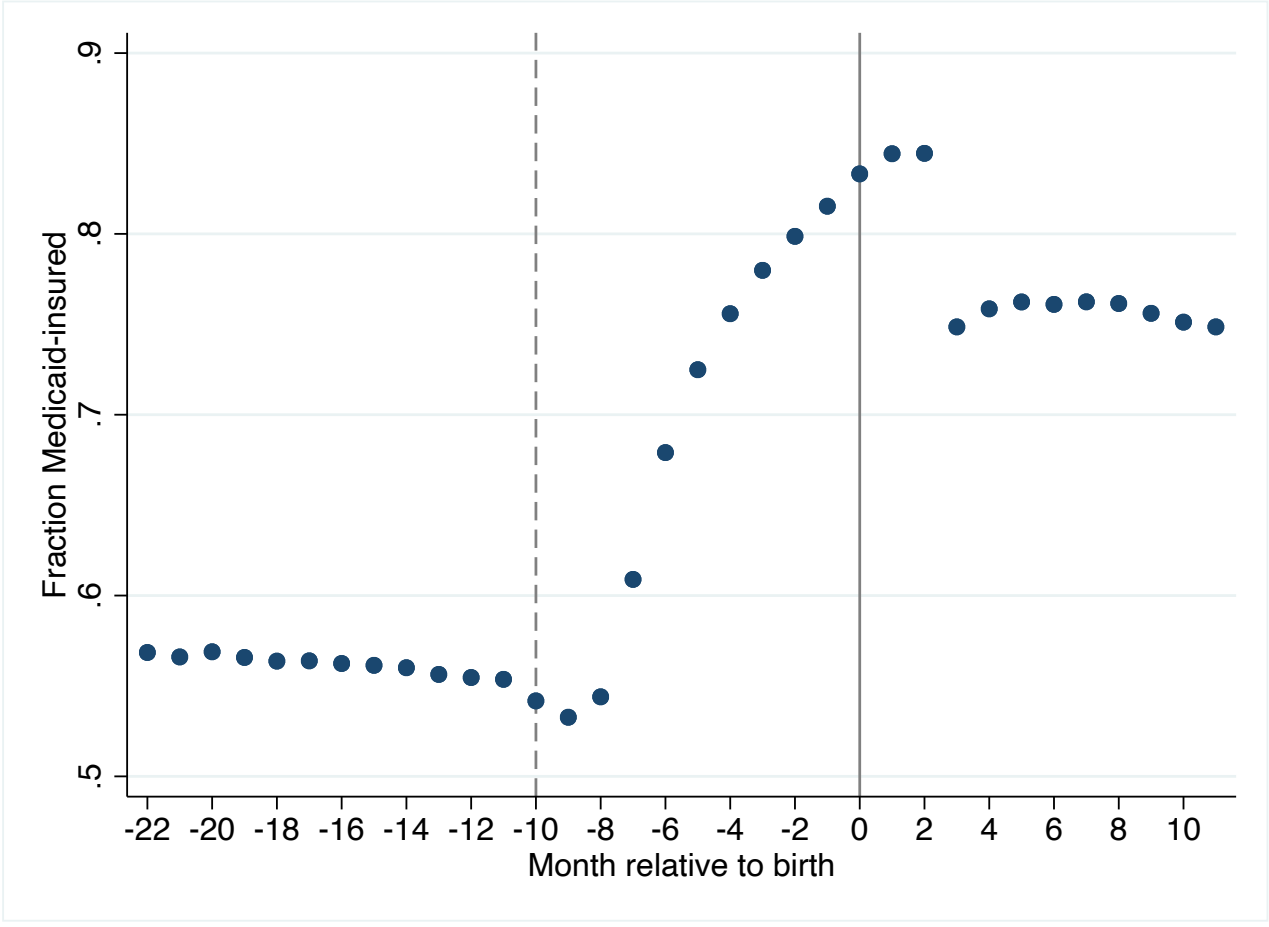
Results: Medicaid



Medicaid

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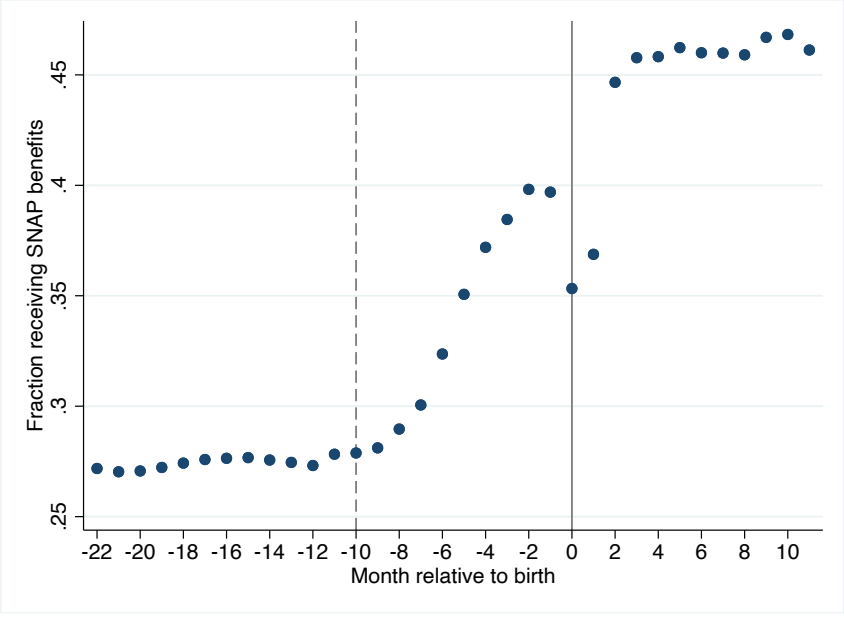
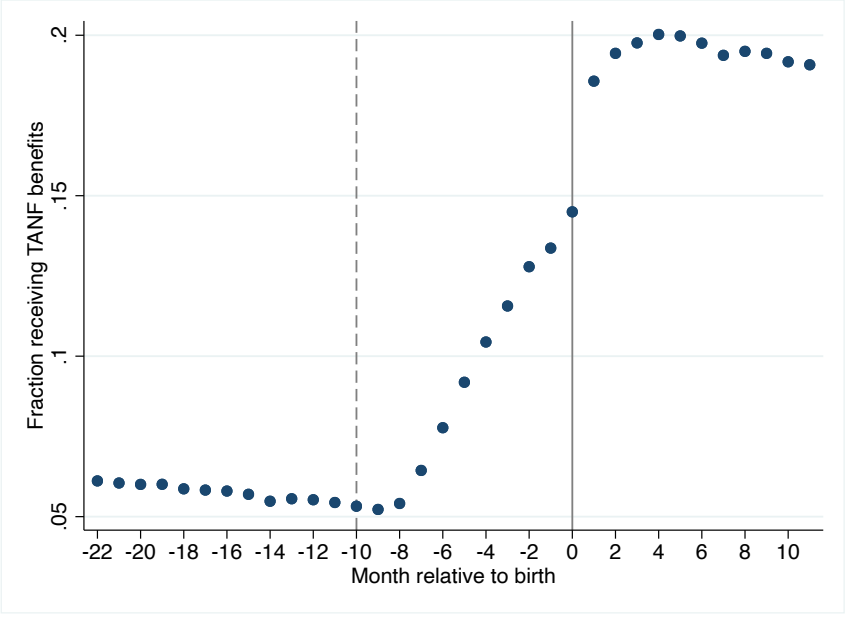
Results: SNAP and TANF

SNAP



TANF



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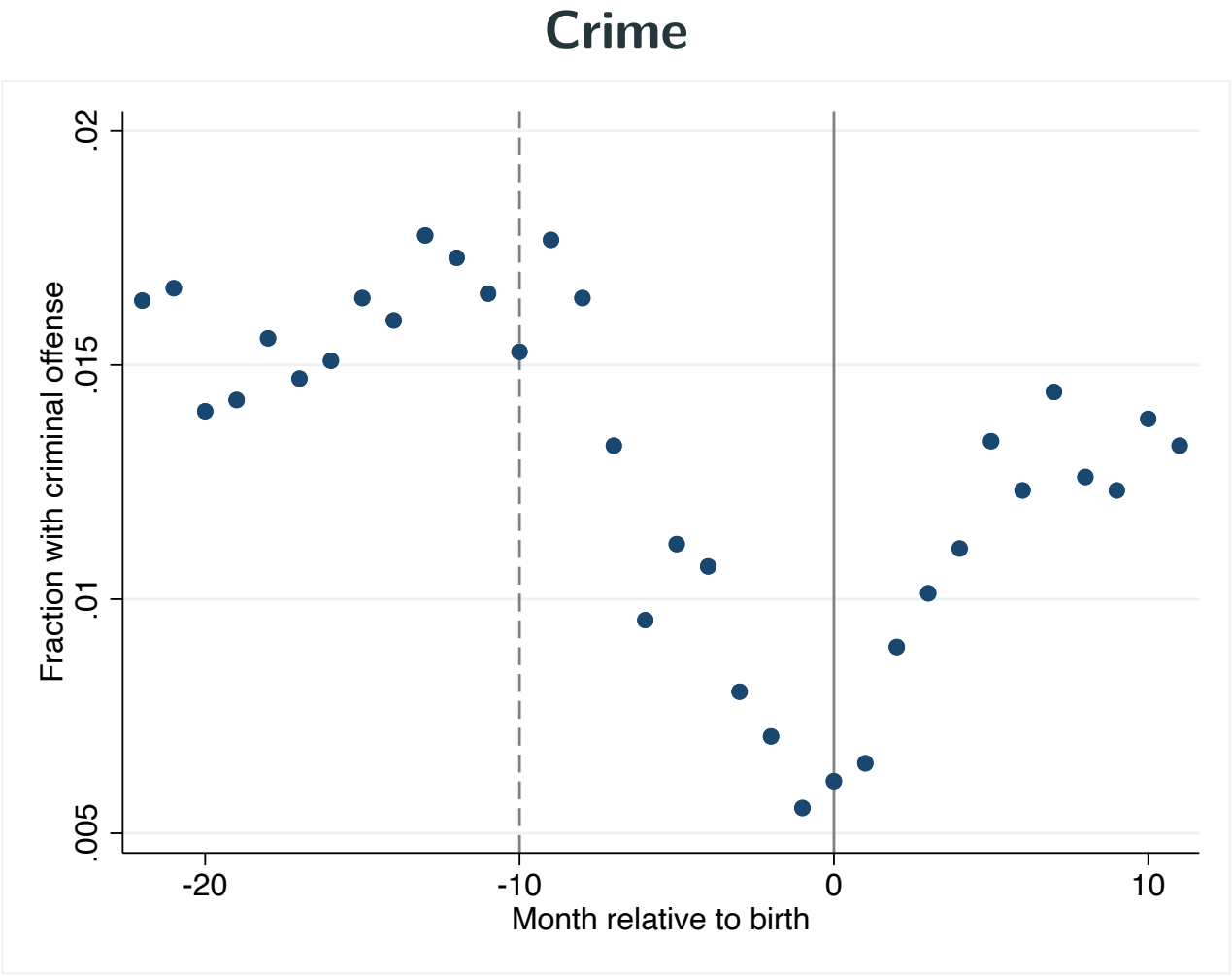
Results: Crime



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