The Role of Pregnancy in Gender Discrimination

Evidence from the Pregnancy Discrimination Act of 1978

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→ This quasi-experiment allows us to identify the role of pregnancy as a **driver** of gender discrimination by studying employers' response to the PDA

Research Questions

1. Do employers discriminate women because of fertility-related concerns?
2. How did the PDA affect employment outcomes of fertile-age women?

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2. How did the PDA affect employment outcomes of fertile-age women?

Ex ante, the effect on employment of fertile-age women is **ambiguous** due to two offsetting employers' responses:

+ reduce **firings** of pregnant women (if firing costs sufficiently high)
− shift discrimination onto **hiring** margin (also forbidden, but less enforceable)

Context

- Equal Pay Act (EPA) of 1963 prohibits gender-based *wage* discrimination between employees in the same establishment and job position
- Title VII of the Civil Rights Act (CRA) of 1964 prohibits gender-based discrimination in employment (hiring, firing, and promotion)
- 1970s:
  - Controversial Supreme Court cases in 1974 and 1976 rule that pregnancy discrimination is not gender discrimination $\Rightarrow$ **not** covered by Title VII
  - Multiple US states independently strengthen employment protection of pregnant women
- Pregnancy Discrimination Act (PDA) of 1978

State Policies Context

Pregnancy Discrimination Act of 1978

- Passed on October 31, 1978, with strong bipartisan support
- Mandated **equal treatment** of pregnant and other workers affected by *comparable* temporary disabilities
  - *De jure*, in all aspects of employment
  - *De facto*, enforceable in terms of **employment protection**
- Enforced by the Equal Employment Opportunity Commission (EEOC)

Empirical Strategy

Individual-level Data

- Surveys on employment and fertility of women 18-35 (CPS ASEC and PSID)

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  - Hirings: non-employed at $t-1$ and employed at t
  - Firings: employed at $t-1$ and non-employed at t because of a layoff (CPS)

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Identification via **DID** around passage of **PDA** in 1978 comparing states

- States treated by the **PDA** **(PDA-treated)**
- States treated by **pre-PDA policies** **(PDA-control)**

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- States treated by the **PDA** **(PDA-treated)**
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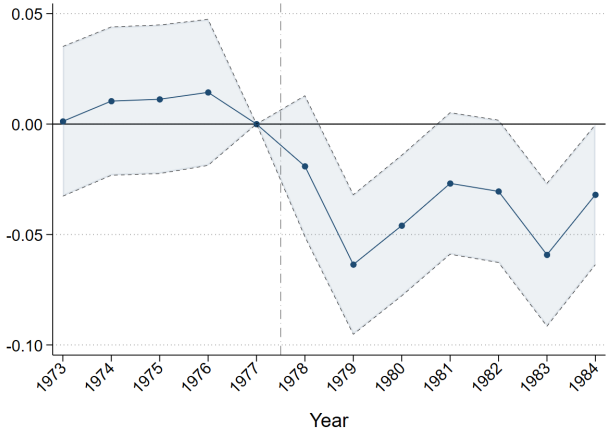
Specification: State & Year FE, individual controls (age, race, education, married)

Assumption: absent the PDA, outcomes of individuals in **PDA-treated** and **PDA-control** states would have evolved in **parallel** before and after 1978

Specification CPS States PSID States

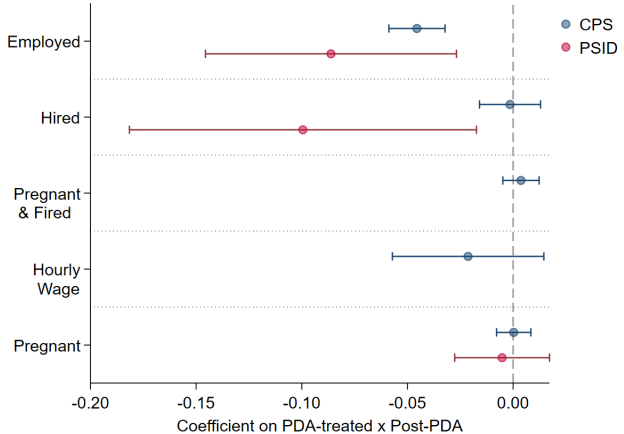
Event-Study Estimates: Employment of Fertile-Age Women



Notes: Data from CPS ASEC. Sample restricted to women 18-35 in PDA-treated and PDA-control states. 95% CI based on robust s.e.

Raw Trends PSID Other Outcomes Extended

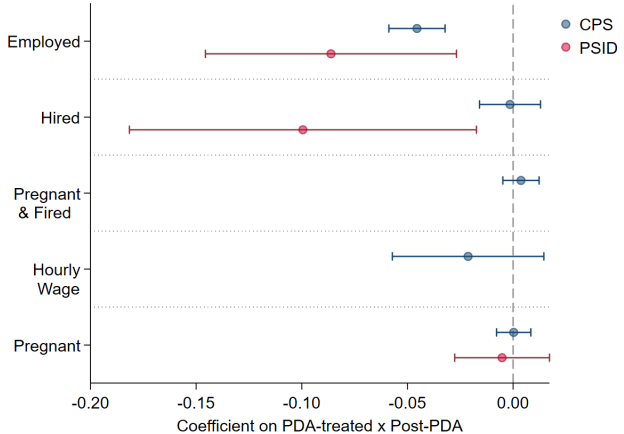
DID Estimates for Fertile-Age Women



Notes: OLS estimates, 95% CI based on robust s.e.

Table CPS | Table PSID | States | Fertility | Migration | Monthly Trends | Monthly CPS | Policies | Men | Ethnicity

DID Estimates for Fertile-Age Women



PDA accounts for ↓ 6.6 – 13.1% employment of fertile-age women in PDA-treated states

↓ Hiring and = Firing suggests **low** perceived sanctions

↓ Hourly Wages

Notes: OLS estimates, 95% CI based on robust s.e.

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How Did Firms Respond to the PDA?

PDA $\uparrow$ costs of employing fertile-age women $\Rightarrow$ employers could respond via:

- Hiring $\downarrow$
- Wages $\downarrow$

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- Wages $\downarrow$

$\rightarrow$ Some employers faced **constraints** to adjustment on the **wage** margin due to the **Equal Pay Act**

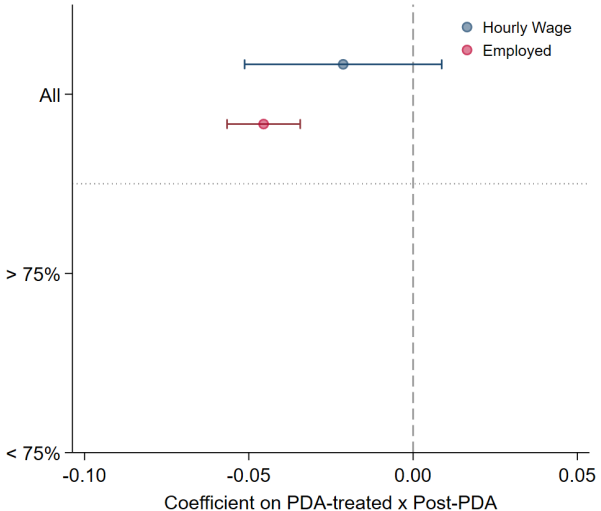
$\rightarrow$ Wages of men and women in the same firm-position had to be **equal**

$\Rightarrow$ Women's wages could only adjust if men's wages did too!

How Did Firms Respond to the PDA?

Exploit variation in **strength** of **EPA constraints** comparing industries where **Share Female**

- $> 75\% \rightarrow$ mostly women employed, low *bite* of EPA
- $< 75\% \rightarrow$ men's wages limit adjustments



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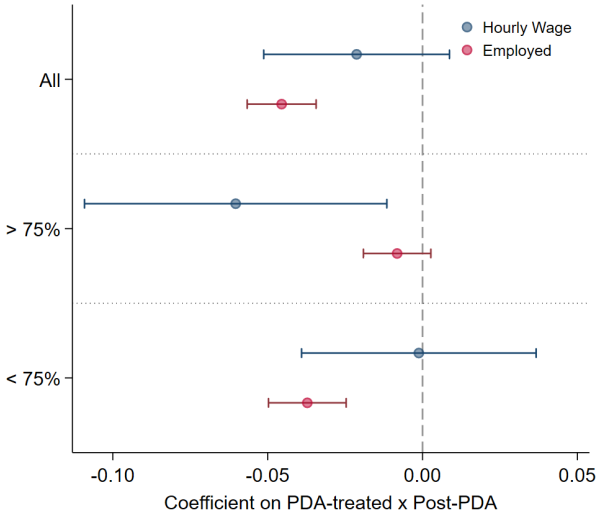
Industries where EPA constraints

- Weak → response on **wages**
- Strong → response on **employment**

Table



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Interpreting the Results

Simple search and matching model where

- Firms employ women who may become **pregnant**
- Upon pregnancy, firms decide between
  1. **Keeping** $\Rightarrow$ pay **accommodation cost**
  2. **Firing** $\Rightarrow$ pay **firing cost**, open new vacancy

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PDA $\Rightarrow$ Expected sanction if **firing** $\Rightarrow \uparrow$ **firing cost**

- Higher cost of employing fertile-age women $\Rightarrow \downarrow$ hires
- Firings $\downarrow$ only if **firing cost** high enough *vs* **accommodation cost**

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- Higher cost of employing fertile-age women $\Rightarrow \downarrow$ hires
- Firings $\downarrow$ only if **firing cost** high enough *vs* **accommodation cost**

1. Weak enforcement (low firing cost): $\downarrow$ hirings, $=$ firings $\Rightarrow \downarrow$ employment
2. Strong enforcement (high firing cost): $\downarrow$ hirings, $\downarrow$ firings $\Rightarrow$? employment

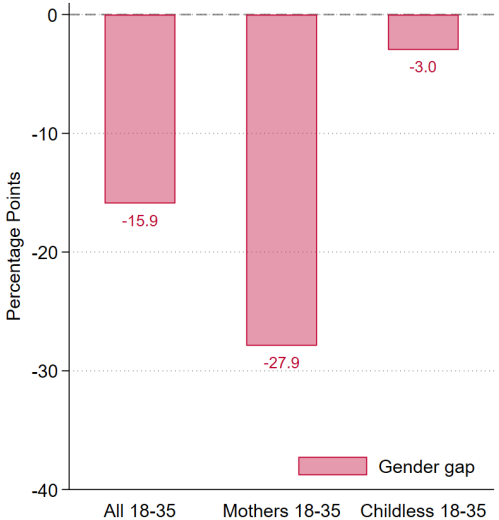
$\rightarrow$ Results consistent with **1**

Graph

Quantifying Fertility-Related Discrimination

Back-of-the-Envelope exercise:

- What % of gender **employment** gap is explained by the response to the PDA?
- **Proxy** for role of expected **fertility** in driving gender discrimination



Notes: OLS estimates. CPS ASEC data.

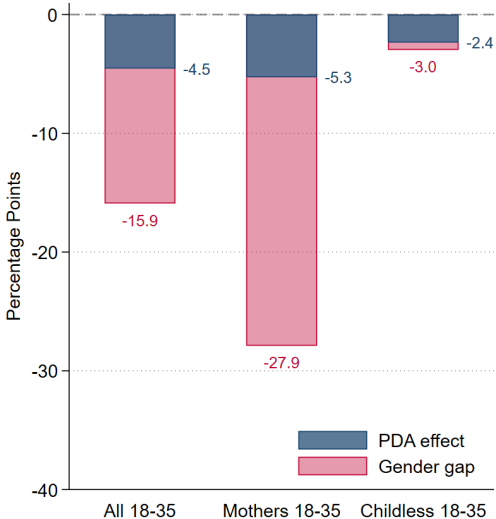
Quantifying Fertility-Related Discrimination

Back-of-the-Envelope exercise:

- What % of gender **employment** gap is explained by the response to the PDA?
- **Proxy** for role of expected **fertility** in driving gender discrimination

28% of the gender **employment gap** explained by **fertility-related** discrimination

→ 80% for Childless women



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Conclusion

Study effects of Pregnancy Discrimination Act (1978)

- Comparing states that adopted the PDA *vs* states that already had such protections
- To isolate the contribution of expected fertility to gender discrimination

Findings

- $\downarrow 6.6 - 13.1\%$ employment of fertile-age women, driven by $\downarrow$ hiring and no change in firing of pregnant workers
- EPA shaped response: constrained $\downarrow$ wages $\Rightarrow \downarrow\downarrow$ employment
- 28% of gender employment gap at the time explained by **fertility-related** discrimination

Thank You!

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Literature

Gender discrimination in the labor market

Zabalza et al., 1985, Neumark et al., 2006, Becker et al., 2019, Thomas, 2020, Fernández-Kranz et al., 2021, Kline et al., 2022, He et al., 2023, Passaro et al., 2023, Goldin, 2023, Bailey et al., 2024, Blau, 2025 ...

→ Isolate discrimination based on future and realized **fertility**

→ Interactions between gender-discrimination laws

The Pregnancy Discrimination Act of 1978

Gruber, 1994, Mukhopadhyay, 2012, Stearns, 2015, Timpe, 2024 ...

→ Focus on *intrinsic* component: **employment protection**

Employer Responses to Employment Protection

Acemoglu et al., 2001, Autor, 2003, Kugler et al., 2004, Autor et al., 2006, Martins, 2009, Sestito et al., 2018 ...

→ Study increased employment protection of subset of workers: pregnant women

1960s-1980s: Contemporaneous Trends

The "*Quiet Revolution*" (Goldin, 2006)

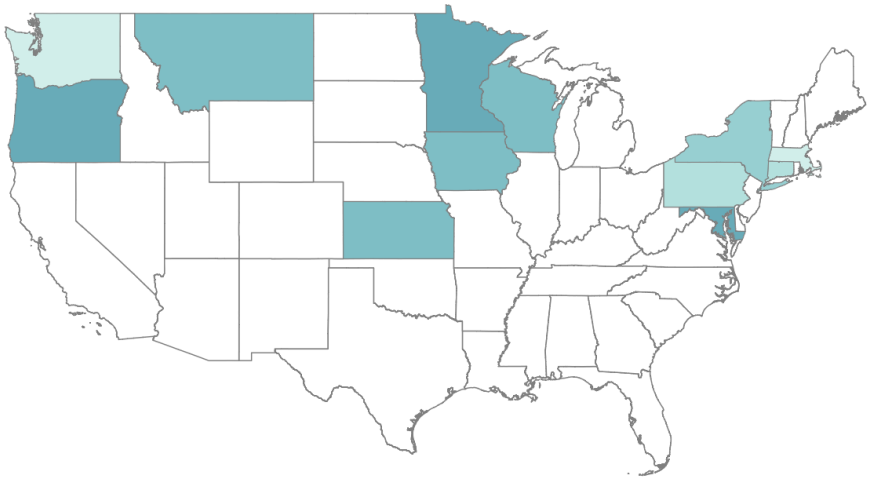
- Decades of strong ↑ female labor force participation (LFP)
  - → especially pronounced for fertile-age women, whose LFP rates had stagnated before the 1960s (Blau, 2024)
- ↑ female enrollment in higher education
- ↑ age at first marriage and childbirth, ↓ fertility rates
- Two pivotal factors:
  - birth control pill (FDA approved: 1960, widespread availability early 1970s)
  - states' unilateral divorce laws

\+ Male LFP rates and real wages slowly ↓

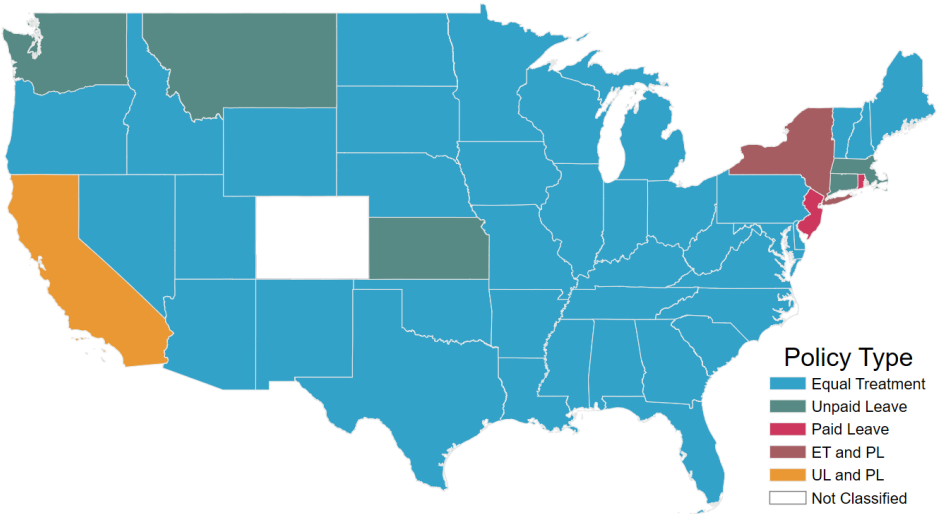
\+ The *noisier revolution*: women's and civil rights movements

Back

State Policies on Employment of Pregnant Workers

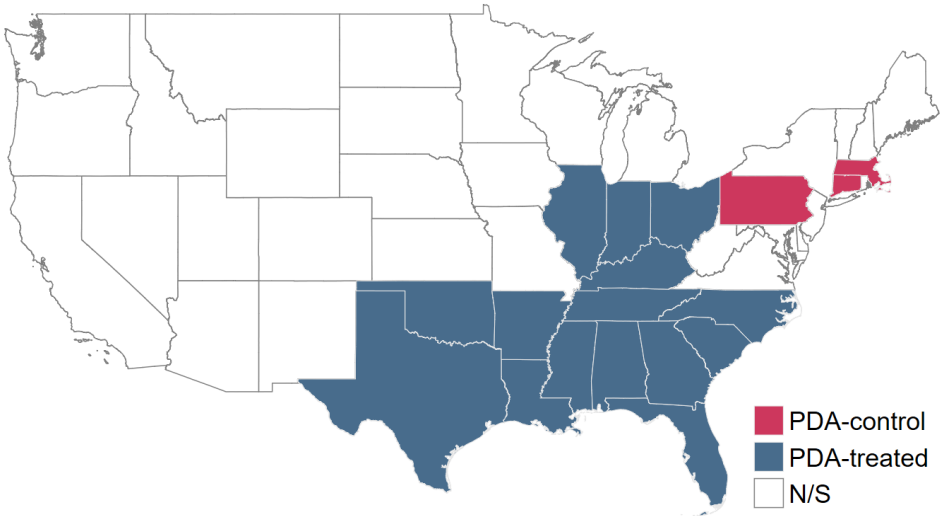


Types of Policy



Back

PDA-treated (Treated in 1978) and PDA-control (Treated $\leq$ 1973)



Estimating Equation

Using data on all **female** respondents age **18-35** in PDA-treated and PDA-control states, from 1973 to 1984

$$y_{i,s,t} = \beta SW_s \times P_t + \theta_s + \delta_t + \Gamma X_{i,s,t} + \varepsilon_{i,s,t}$$

i : individual, s : state, t : year

$y_{i,s,t}$: outcome of interest

SW_s: PDA-treated dummy

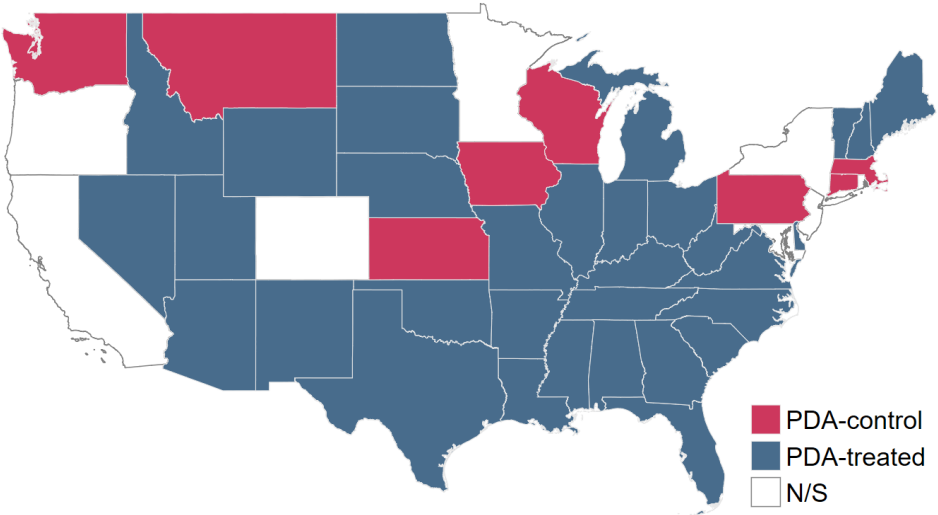
P_t: Post-PDA dummy ($t > 1978$)

θ_s: State FE, δ_t: Year FE

$X_{i,s,t}$: individual-level controls (race, education, age, metro-area)

Back

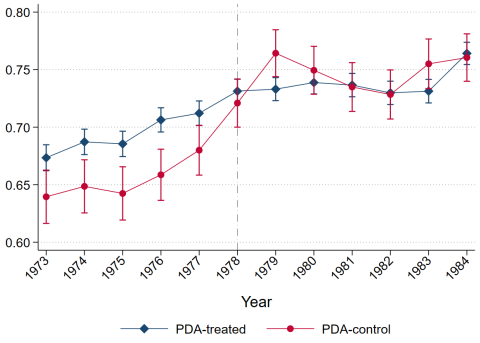
PDA-treated (Treated in 1978) and PDA-control (Treated $\leq$ 1975)



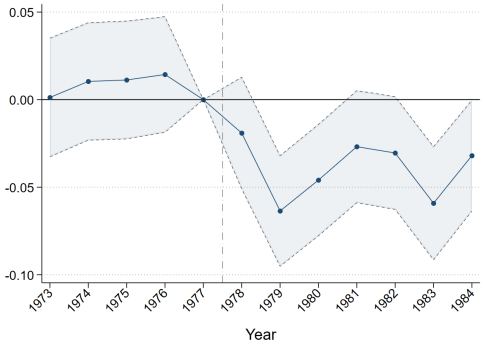
◂ CPS States ◂ Back

Event-Study Estimates: Employment

(a) Raw Mean Trends



(b) Event-Study Estimates



Notes: Data from CPS ASEC. Sample restricted to women 18-35 in PDA-treated and PDA-control states. 95% CI based on robust s.e.

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Event-Study Estimates: Employment, PSID Sample

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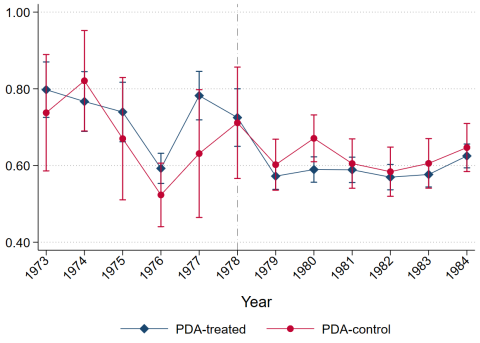
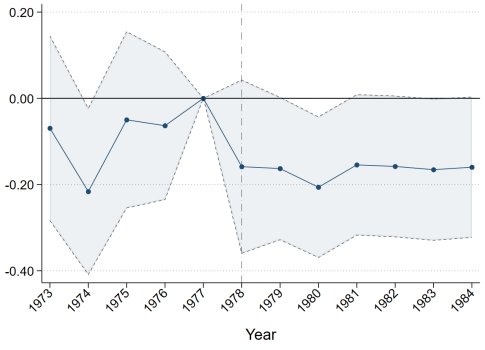


(b) Event-Study Estimates



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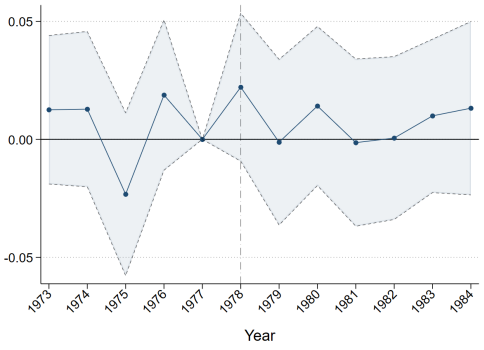
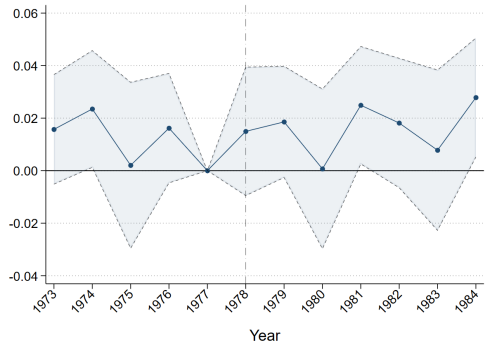
Event-Study Estimates: CPS-ASEC Sample

(a) Hired



(b) Pregnant and Fired



Notes: Data from CPS ASEC. Sample restricted to women 18-35 in PDA-treated and PDA-control states. 95% CI based on robust s.e.

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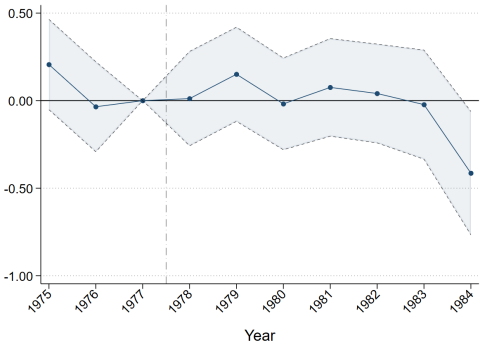
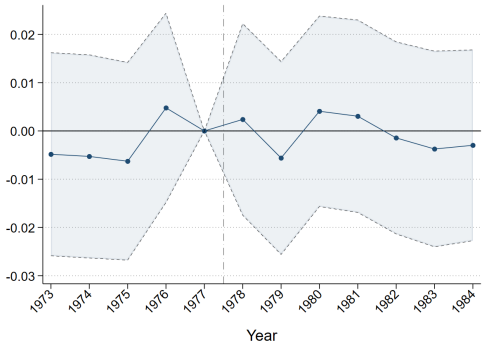
Event-Study Estimates: CPS-ASEC Sample

(a) Hourly Wage



(b) Pregnant



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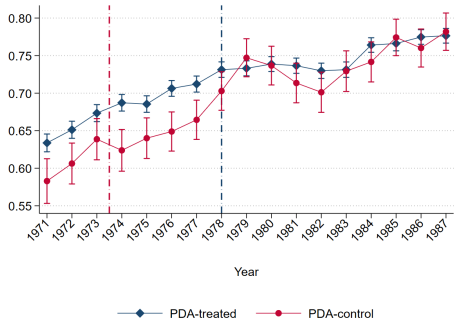
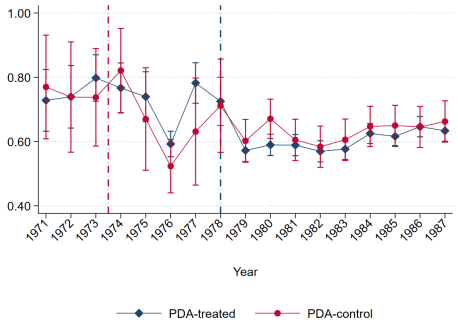
Raw Trends in Employment, Extended Time Window

(a) CPS-ASEC



(b) PSID



Notes: Sample restricted to women 18-35 in PDA-treated and PDA-control states. 95% CI based on robust s.e. Vertical red dashed line indicates adoption of policies in PDA-control states, blue dashed line indicates passage of PDA.

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DID Estimates: CPS-ASEC Sample

Dep. Variable	(1) Employed	(2) Hired	(3) Pregnant & Fired	(4) Hourly Wage	(5) Pregnant
PDA-treated x Post-PDA	-0.045***	-0.001	0.004	-0.021	0.000
	(0.007)	(0.007)	(0.004)	(0.018)	(0.004)
Observations	115,217	34,395	10,441	68,374	115,217
Pre-PDA Mean	0.686	0.0873	0.00440	3.549	0.0901
R-squared	0.073	0.016	0.007	0.154	0.045
State FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

Notes: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. OLS estimates, robust standard errors in parentheses. Sample restricted to women 18-35 in PDA-treated and PDA-control states. Hourly wages measured as a z-score.

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DID Estimates: PSID Sample

	(1) Employed	(2) Hired	(3) Pregnant & Lost Job	(4) Pregnant
PDA-treated x Post-PDA	-0.086***	-0.099**	-0.122	-0.005
	(0.030)	(0.042)	(0.191)	(0.011)
Observations	14,479	8,639	1,289	20,250
Pre-PDA Mean	0.659	0.533	0.261	0.0815
R-squared	0.113	0.115	0.084	0.035
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Notes: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. OLS estimates, robust standard errors in parentheses. Sample restricted to women 18-35 in PDA-treated and PDA-control states.

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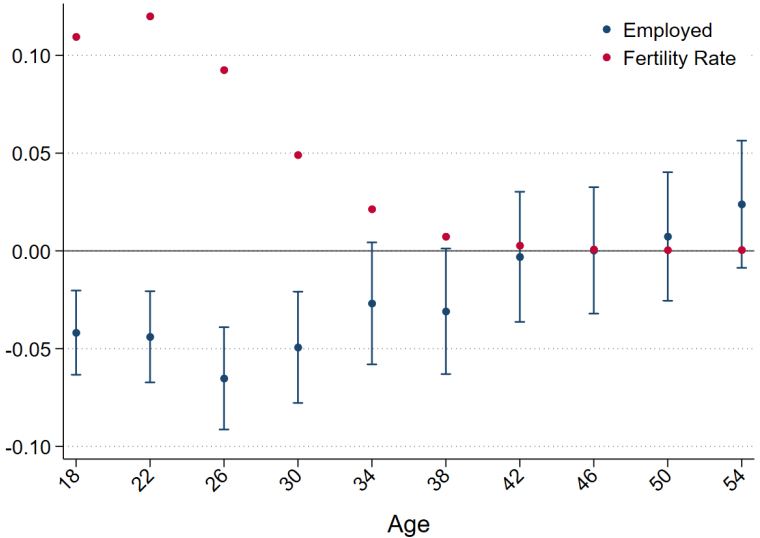
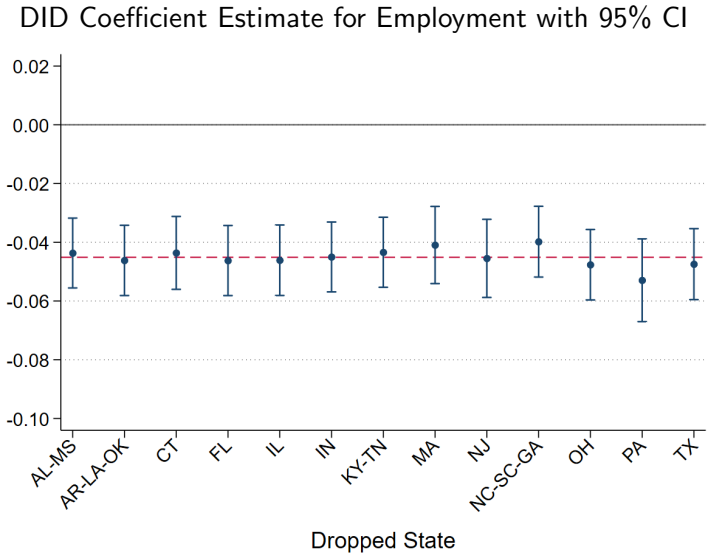
Fertility Rates and Employment Effects by Age: Women (CPS ASEC)



Notes: OLS estimates, 95% CI based on robust s.e.

Back

Robustness: Dropping One State at a Time (CPS ASEC)



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DID Estimates: PSID Data - All Possible States

Women 18-35	All		With Children		W/Out Children	
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Variable	Employed	Hired	Employed	Hired	Employed	Hired
PDA-treated x Post-PDA	-0.078***	-0.073**	-0.091***	-0.059	-0.074	-0.144*
	(0.028)	(0.036)	(0.034)	(0.041)	(0.046)	(0.077)
Observations	19,104	11,406	15,332	9,273	3,771	2,132
Pre-PDA Mean	0.624	0.520	0.586	0.504	0.748	0.590
R-squared	0.108	0.115	0.084	0.105	0.230	0.208
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. OLS estimates, robust standard errors in parentheses. 'With children' sample restricted to women that have children during their lifecycle. 'Without children' excludes these women from the sample.

Back

DID Estimates: PSID Data - Childhood State

Women 18-35	All		With Children		W/Out Children	
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Variable	Employed	Hired	Employed	Hired	Employed	Hired
PDA-treated x Post-PDA	-0.047	-0.060	-0.071*	-0.056	-0.001	-0.068
	(0.029)	(0.041)	(0.037)	(0.046)	(0.046)	(0.087)
Observations	15,093	8,953	12,082	7,310	3,011	1,643
Pre-PDA Mean	0.661	0.531	0.618	0.515	0.783	0.599
R-squared	0.114	0.119	0.088	0.109	0.242	0.232
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. OLS estimates, robust standard errors in parentheses. 'With children' sample restricted to women that have children during their lifecycle. 'Without children' excludes these women from the sample.

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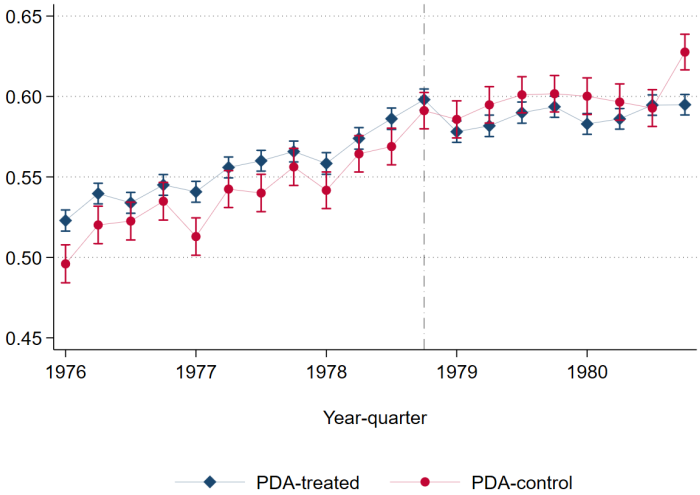
Raw Trends in Employment: Basic Monthly CPS



Notes: Sample of women 18-35 in PDA-treated and PDA-control states. 95% CI based on robust s.e.

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DID Estimates: Basic Monthly CPS Data

	(1) Employed	(2) Hired
PDA-treated x Post-PDA	-0.029***	-0.007**
	(0.003)	(0.003)
Observations	1,040,533	316,500
Pre-PDA Mean	0.541	0.111
R-squared	0.078	0.026
State FE	Yes	Yes
Year FE	Yes	Yes

Notes: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. OLS estimates, robust standard errors in parentheses.

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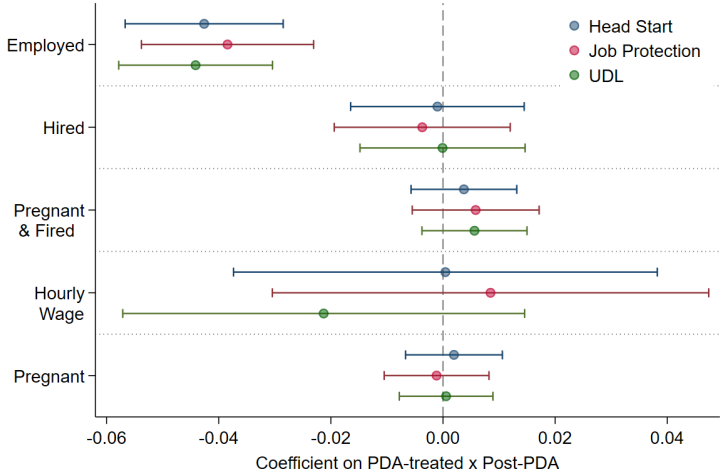
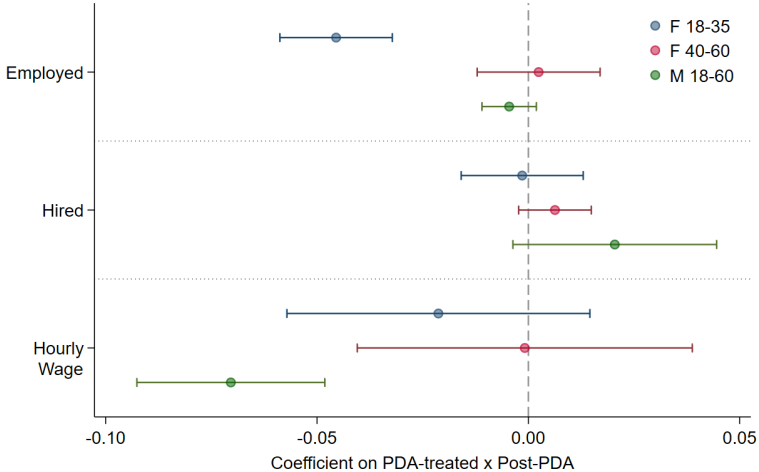
DID Estimates: Contemporaneous Policies



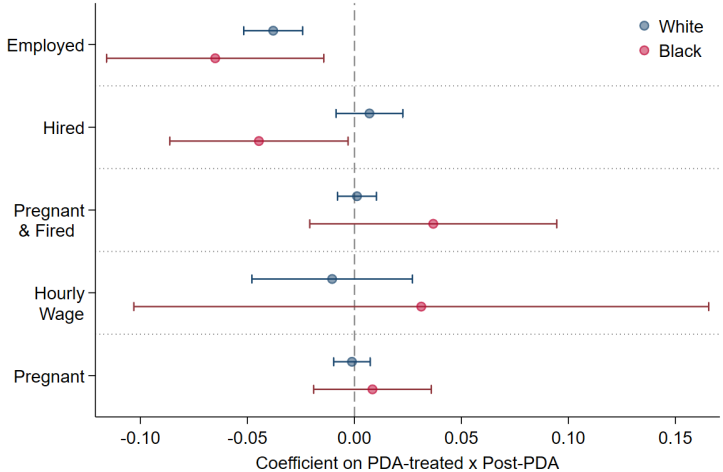
Notes: CPS ASEC data on women 18-35, OLS estimates, 95% CI based on robust s.e.

DID Estimates: Other Groups (CPS ASEC)



Notes: CPS ASEC data, OLS estimates, 95% CI based on robust s.e.

DID Estimates by Ethnicity (CPS ASEC)



Notes: CPS ASEC data on women 18-35, OLS estimates, 95% CI based on robust s.e.

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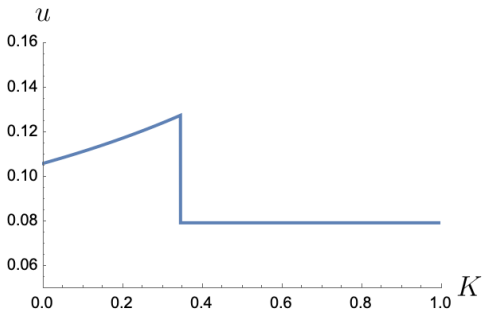
Heterogeneity by Share Women in Industry

	Hourly Wage in Industry			Employed in Industry		
	All	$\geq 75\%$	$< 75\%$	All	$\geq 75\%$	$< 75\%$
	(1)	(2)	(3)	(4)	(5)	(6)
PDA-treated x Post-PDA	-0.021	-0.060**	-0.001	-0.045***	-0.008	-0.037***
	(0.018)	(0.030)	(0.023)	(0.007)	(0.007)	(0.008)
Observations	68,374	22,442	45,921	115,217	115,217	115,217
Pre-PDA Mean	3.549	3.191	3.725	0.686	0.221	0.465
R-squared	0.154	0.154	0.151	0.073	0.012	0.048
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

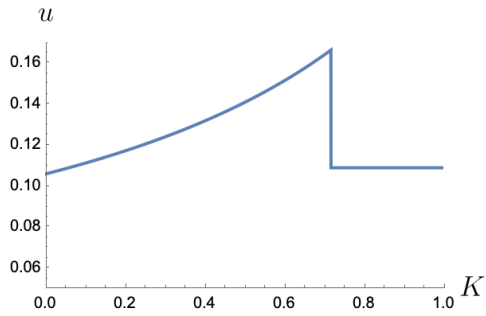
Notes: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. OLS estimates, robust standard errors in parentheses. Data from CPS-ASEC. Sample restricted to women 18-35 in PDA-treated and PDA-control states. Hourly wages measured as a z-score.

Effects on Women Unemployment: Two Scenarios

(a) Low 'Cost of Pregnancy' c for the Firm



(b) High 'Cost of Pregnancy' c for the Firm



K: firing cost ($\uparrow$ in enforcement)

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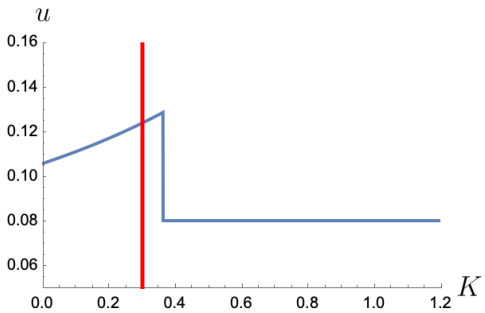
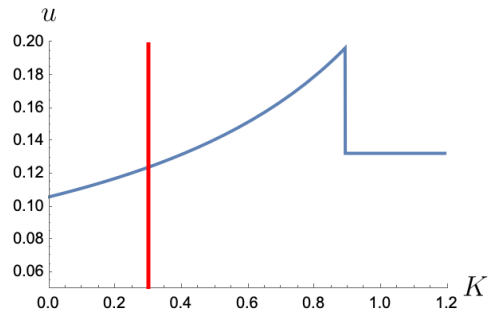
Effects on Women Unemployment: Two Scenarios

(a) Low 'Cost of Pregnancy' c for the Firm



(b) High 'Cost of Pregnancy' c for the Firm

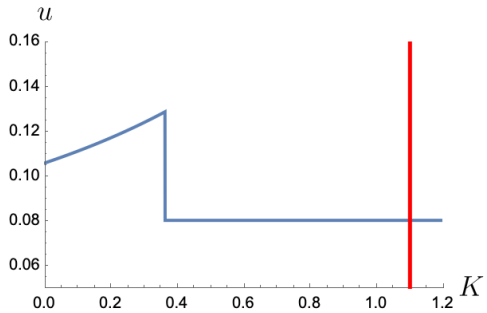


K: firing cost ($\uparrow$ in enforcement)

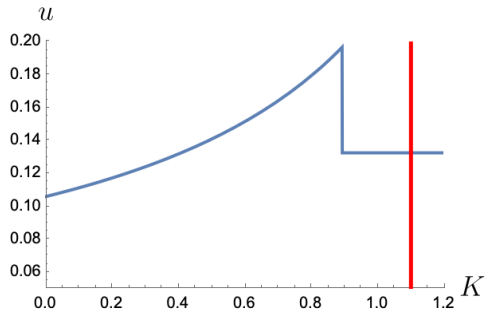
1. Weak Enforcement: $\downarrow$ hirings, $=$ firings $\Rightarrow$ $\downarrow$ employment

Effects on Women Unemployment: Two Scenarios

(a) Low 'Cost of Pregnancy' c for the Firm



(b) High 'Cost of Pregnancy' c for the Firm



K: firing cost ($\uparrow$ in enforcement)

1. Weak Enforcement: $\downarrow$ hirings, $=$ firings $\Rightarrow \downarrow$ employment
2. Strong Enforcement: $\downarrow$ hirings, $\downarrow$ firings $\Rightarrow$? employment

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