Minimum Wages and Racial Inequality

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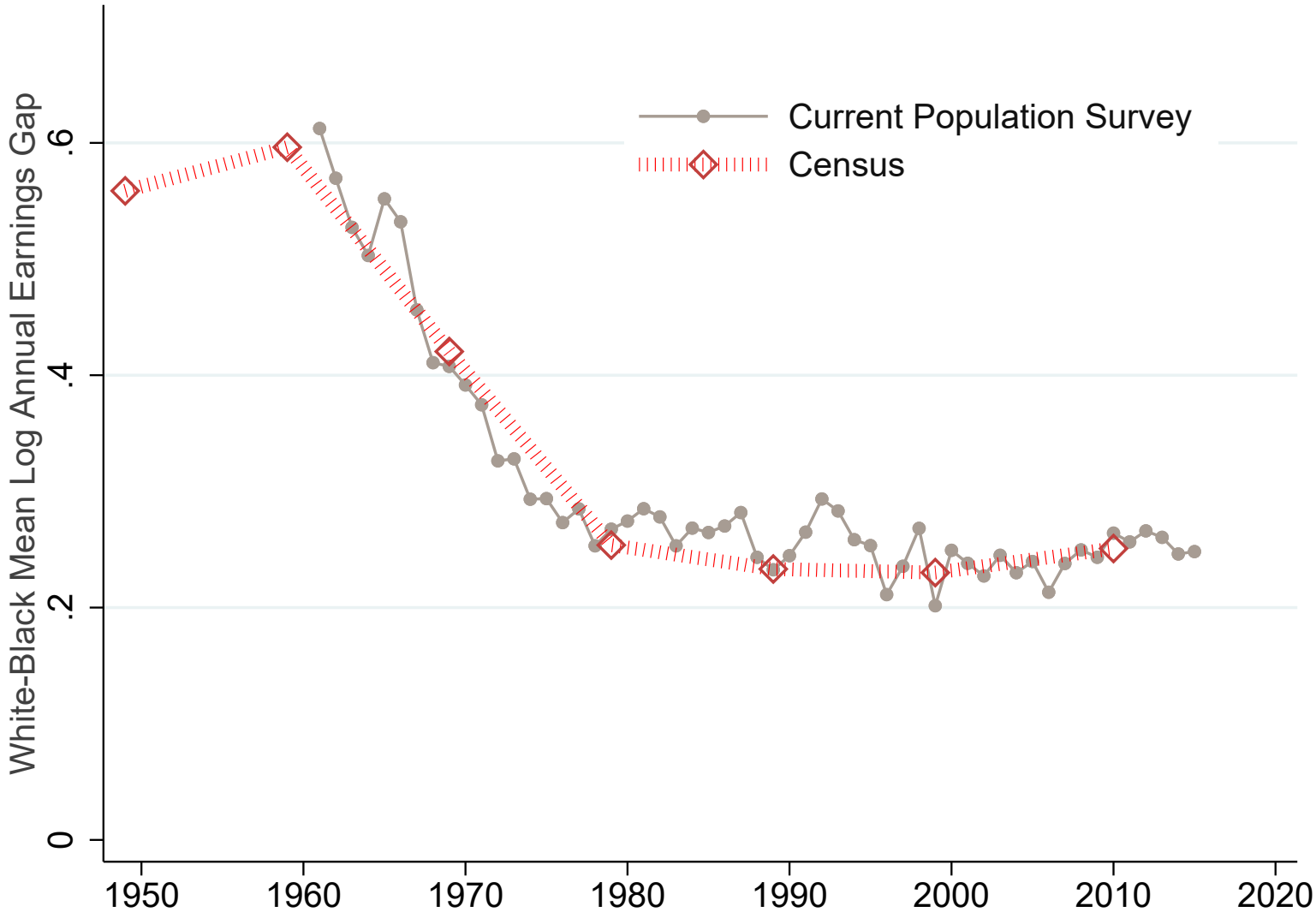
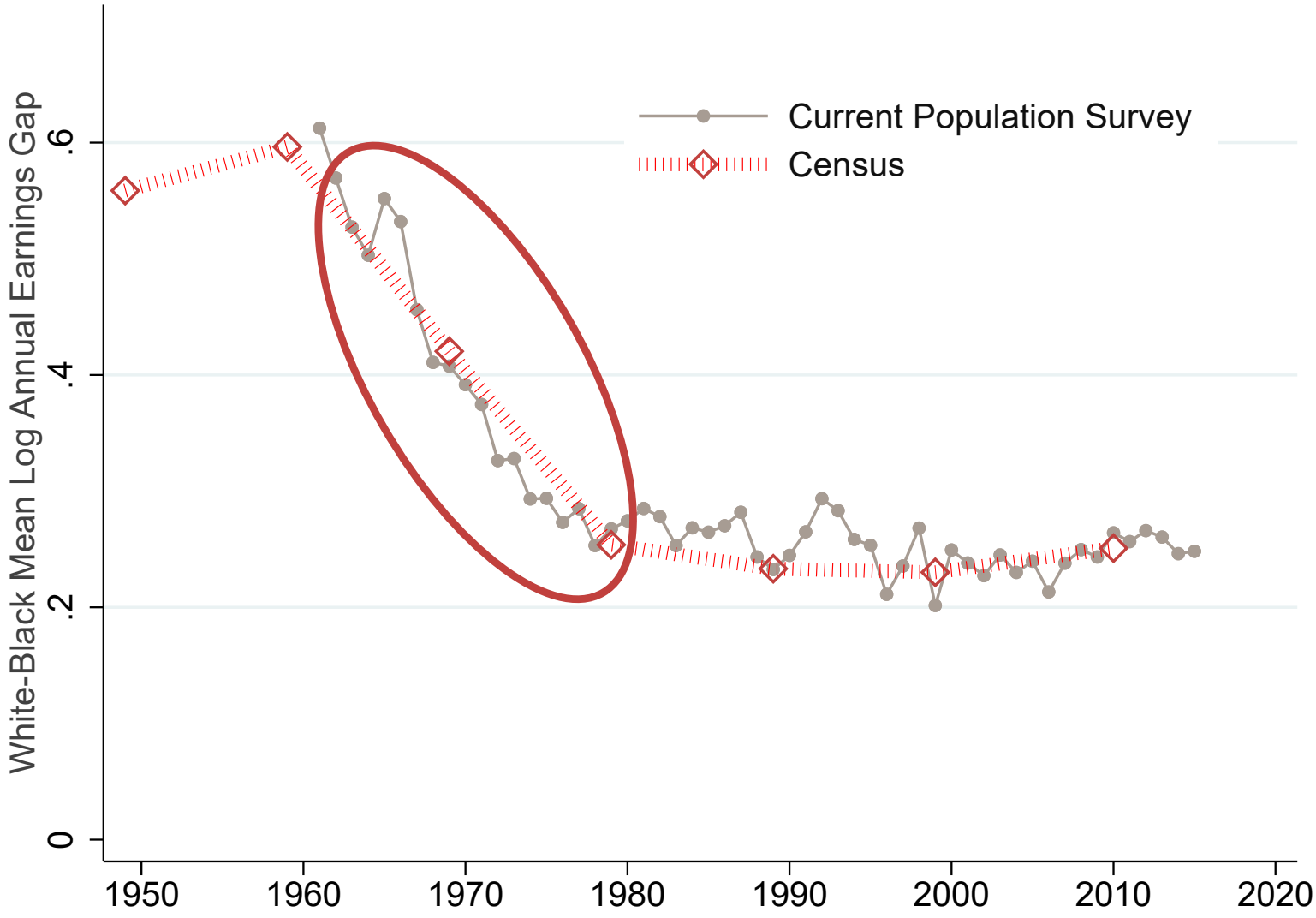
September 12th 2019

White-Black Earnings Gap



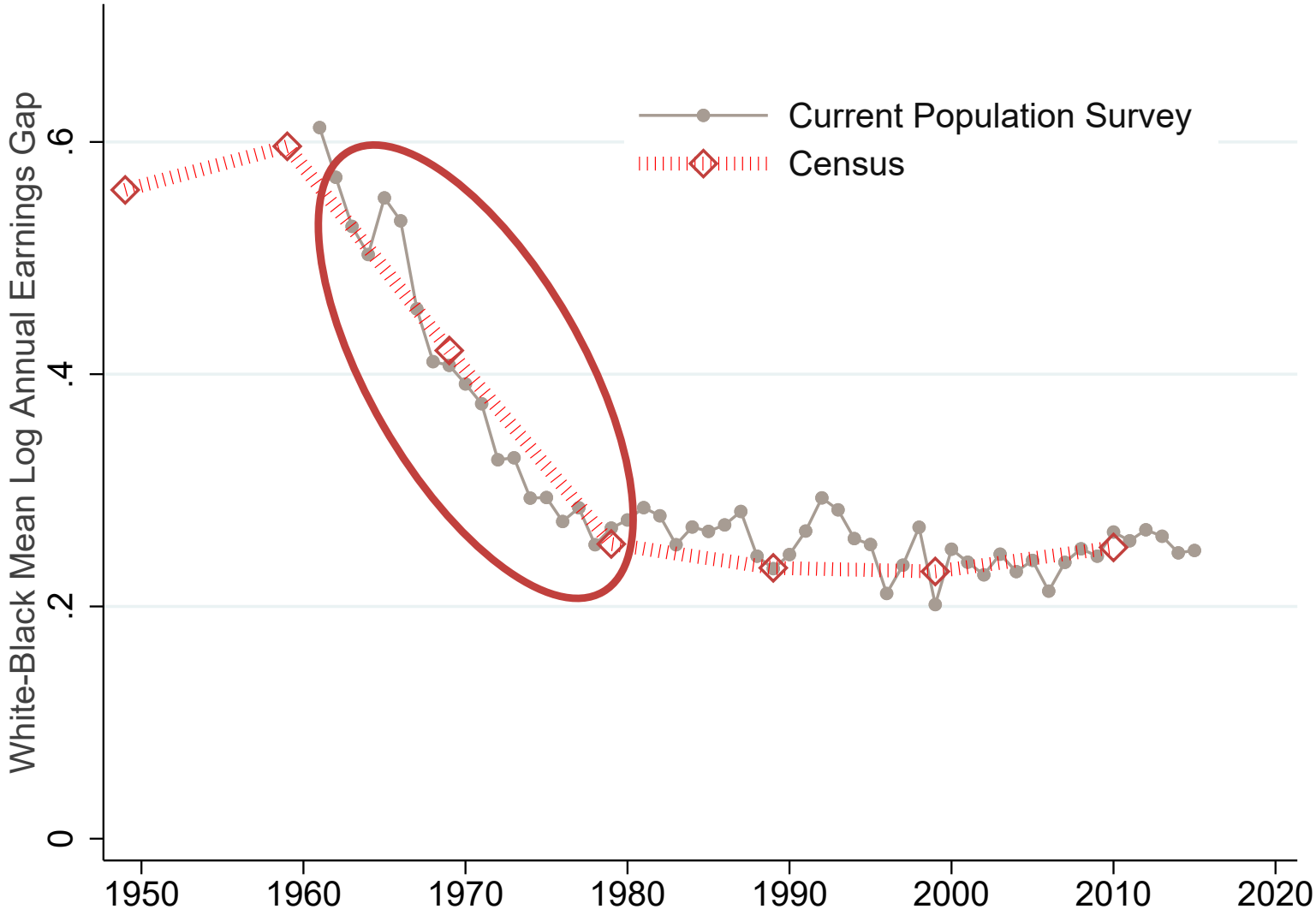
Persistence of large racial economic disparities: striking dimension of inequality in the US.

White-Black Earnings Gap



Racial earnings gap fell only once since 1950:
in 1960s and 1970s.

White-Black Earnings Gap



Why did the racial gap fall in 1960s and 1970s?

Key to understand what policies could ↘ racial gap today.

A new explanation

New explanation for racial gap $\searrow$ during Civil Rights Era: introduction of min. wage in new sectors of the economy.

- 1938 federal min wage excluded a number of sectors where black workers over-represented.
- 1967: min. wage introduced in agriculture, hotels, restaurants, schools, hospitals, nursing homes & other services.
- Newly covered sectors employed 1/3 of all US black workers.
- 1967 reform can explain $\sim$ 20% decline in racial gap in late '60s & early '70s.

$\rightarrow$ We uncover critical role of min. wage in dynamics of racial inequality.

Empirical challenges

Two challenges to identify role of 1967 extension of min. wage in reduction of racial inequality:

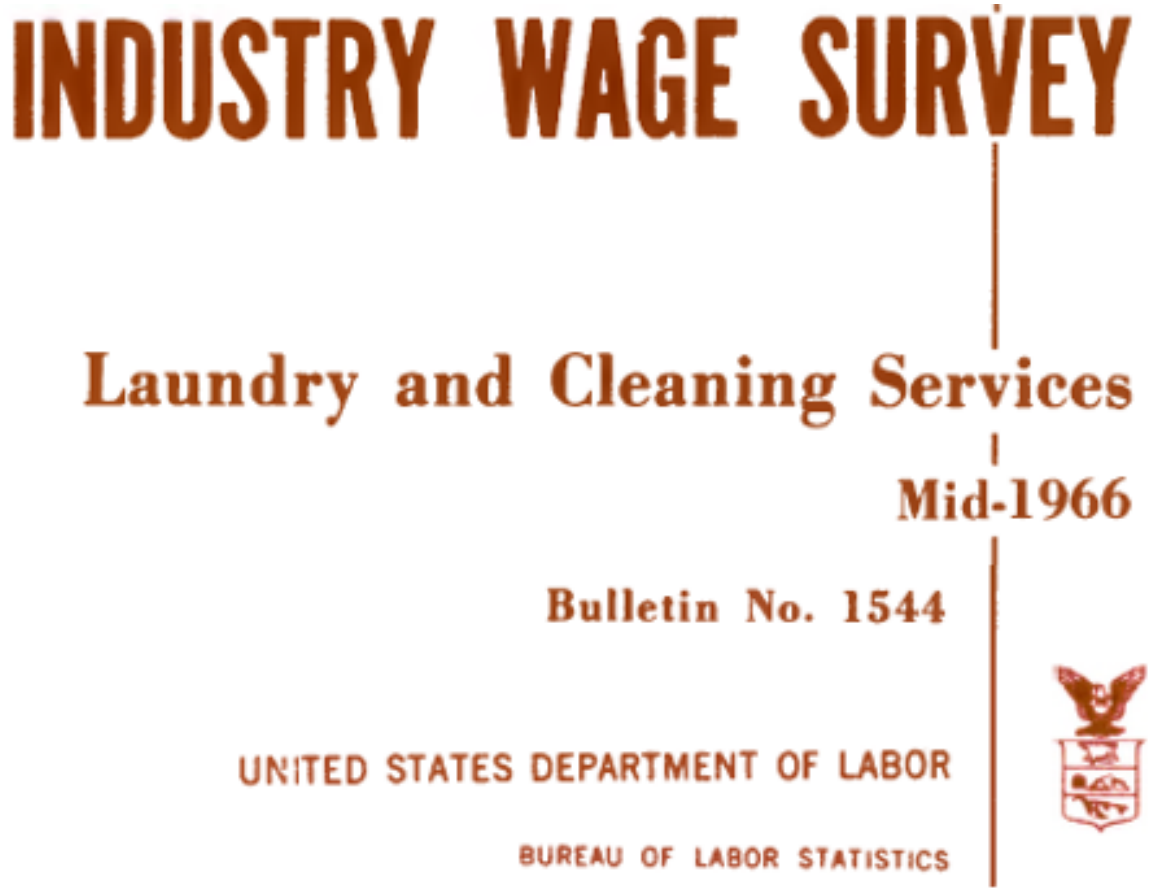
- **Difficulty in identifying causal effect** in context of other policy changes during Civil Rights Era.
- **Lack of data on hourly wages** in the 1960s.

$\rightarrow$ We overcome these challenges by using a variety of research designs and unearthing a **new data source** on hourly wages.

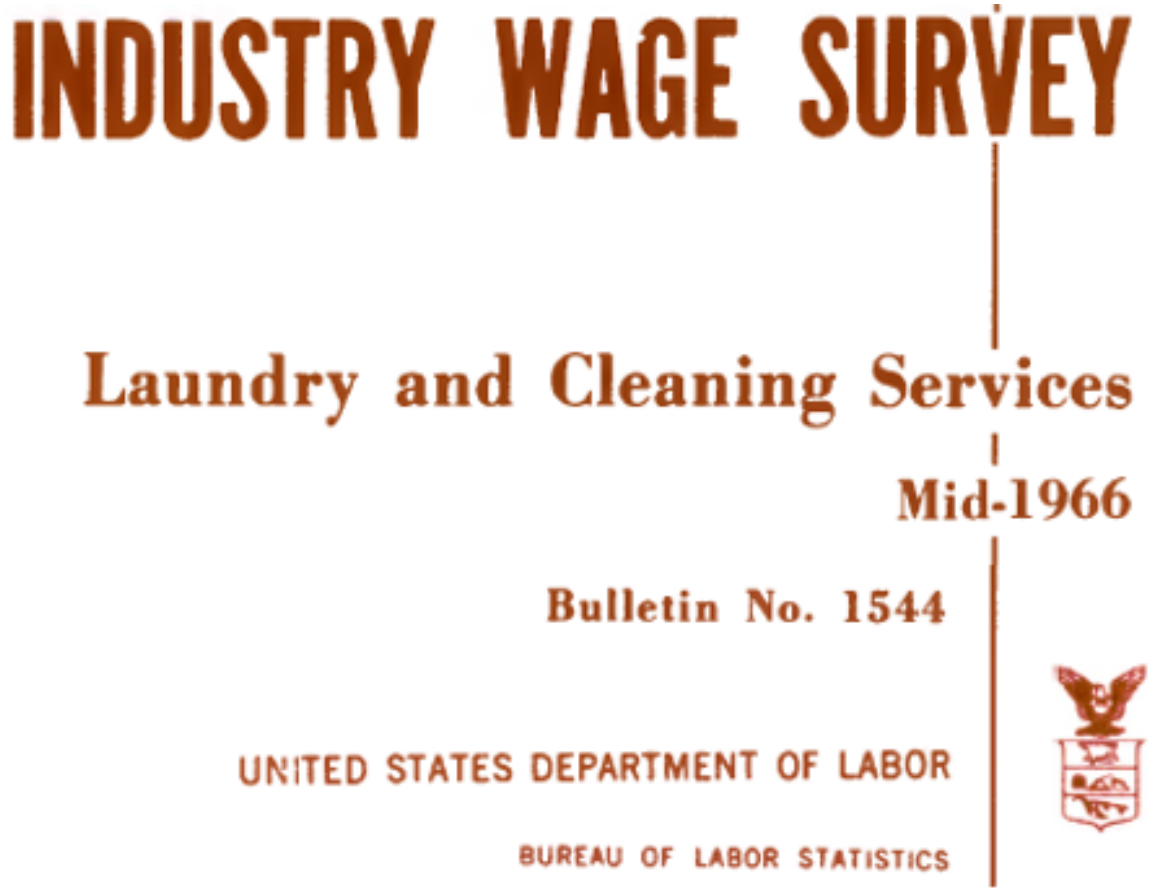
A new data source

Bureau of Labor Statistics (BLS) Industry Wage Reports

- Distribution of hourly wages.
- By fine industry $\times$ year $\times$ region $\times$ gender $\times$ occupation.
- We digitize $\sim$ 1,000 distributions. ▸ List of ind.



→ Regular BLS industry wage reports from the 1930s to the 1970s.



→ Rich source of data: can be used to study gender inequality, regional convergence, rural-urban gap, wage-price inflation, wage vs. non-wage compensation, etc.

INDUSTRY WAGE SURVEY

Laundry and Cleaning Services

Mid-1966

Bulletin No. 1544

UNITED STATES DEPARTMENT OF LABOR

BUREAU OF LABOR STATISTICS

industry	year	region	avg_hourly_wages	number
laundries	1966	us	Under $0.75	13,623
laundries	1966	us	$0.75 and under $0.80	6,812
laundries	1966	us	$0.80 and under $0.85	8,050
laundries	1966	s	Under $0.75	13,182
laundries	1966	s	$0.75 and under $0.80	5,961

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Table 3. Earnings Distribution: All Areas—Women

Average hourly earnings [1]	United States			South		
	Total	Inside plant workers	Office workers	Total	Inside plant workers	Office workers
Under $0.75	4.4	4.6	0.5	11.5	11.9	1.8
$0.75 and under $0.80	2.2	2.3	.2	5.2	5.4	.3
$0.80 and under $0.85	2.6	2.7	.5	6.4	6.6	1.4
$0.85 and under $0.90	2.6	2.7	.3	6.3	6.6	.6
$0.90 and under $0.95	2.4	2.6	.4	5.4	5.5	1.4
$0.95 and under $1.00	1.8	1.8	.2	4.3	4.4	.6
$3.00 and over	.4	.4	1.3	.1	.1	.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers	309,624	292,145	17,479	114,628	109,592	5,036
Average hourly earnings [1]	$1.33	$1.31	$1.68	$1.08	$1.06	$1.47

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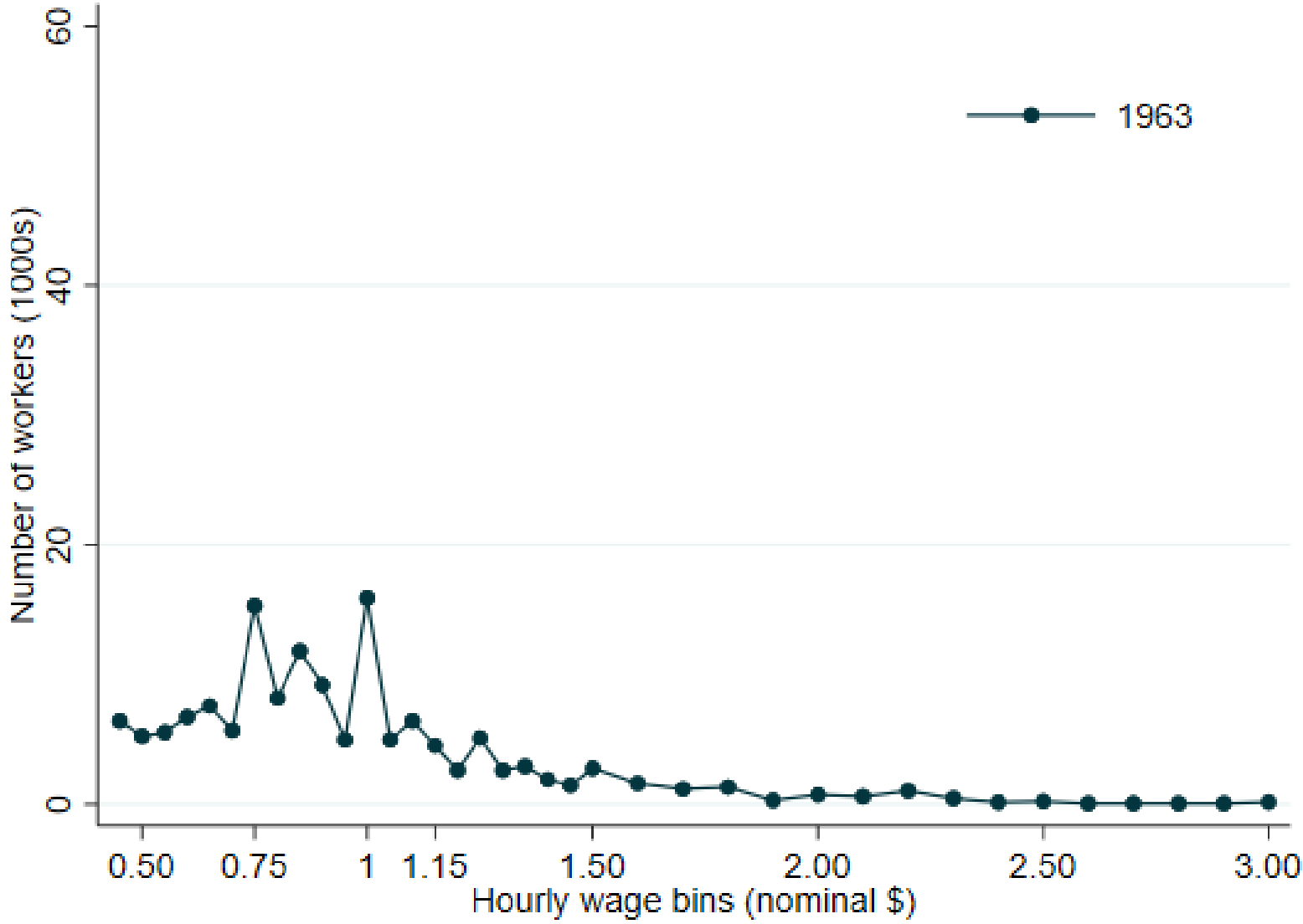
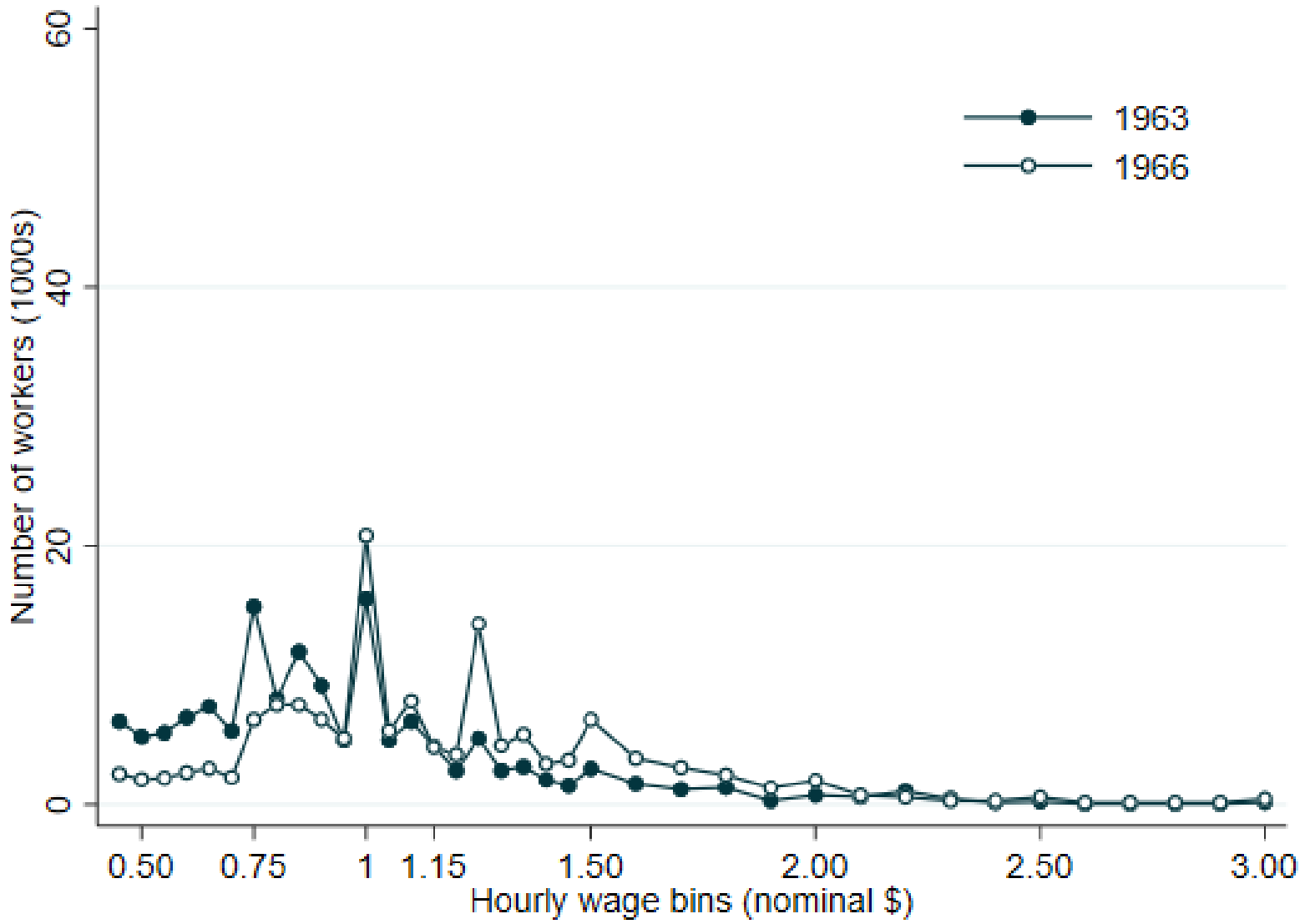
Hourly wage distribution in laundries South



→ Low-wage industry: 70% of workers paid at or below $1.

Hourly wage distribution in laundries South



Hourly wage distrib. shifted to the right from 1963 to 1966.

$\rightarrow$ reflects nominal wage growth.

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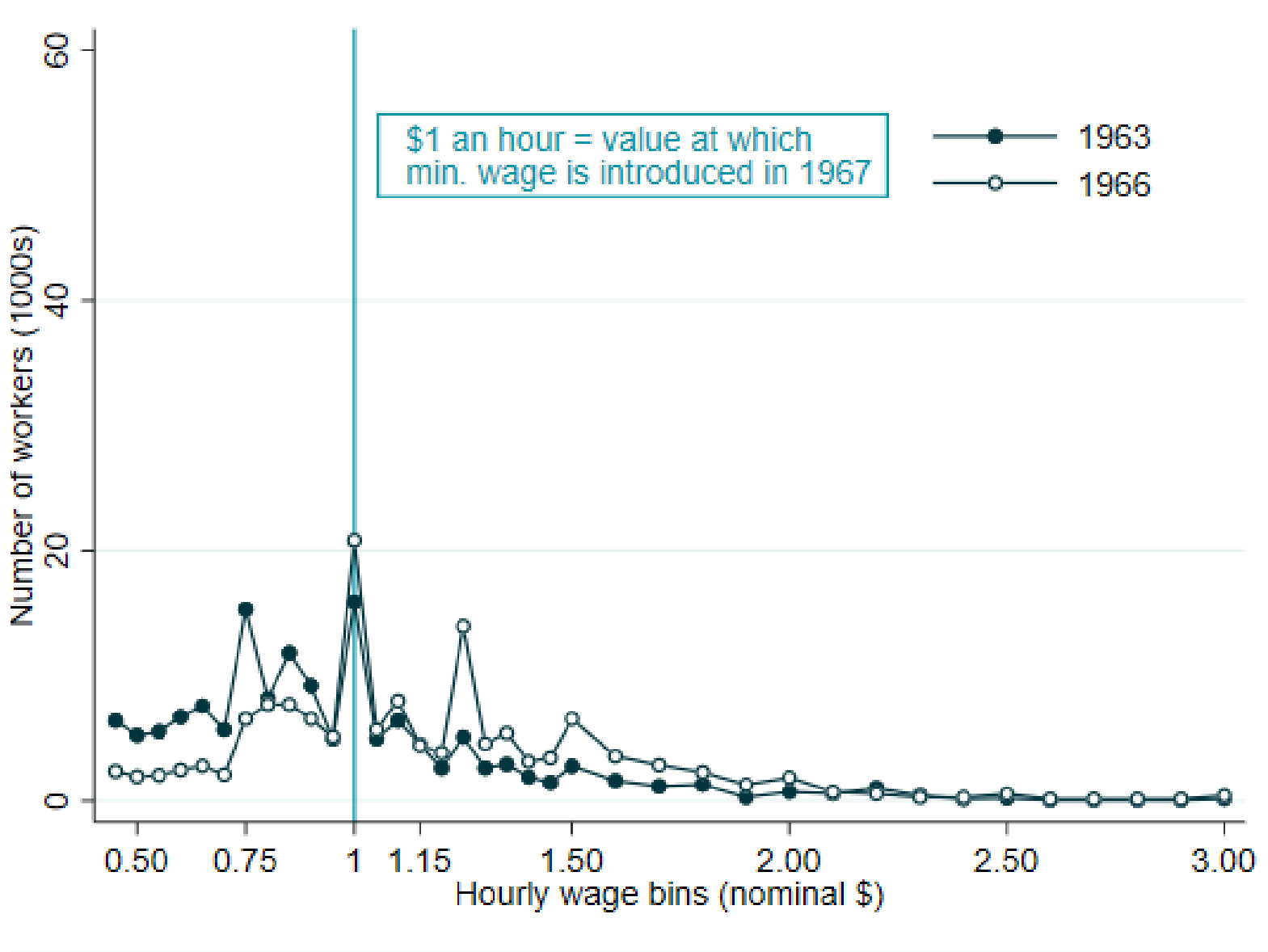
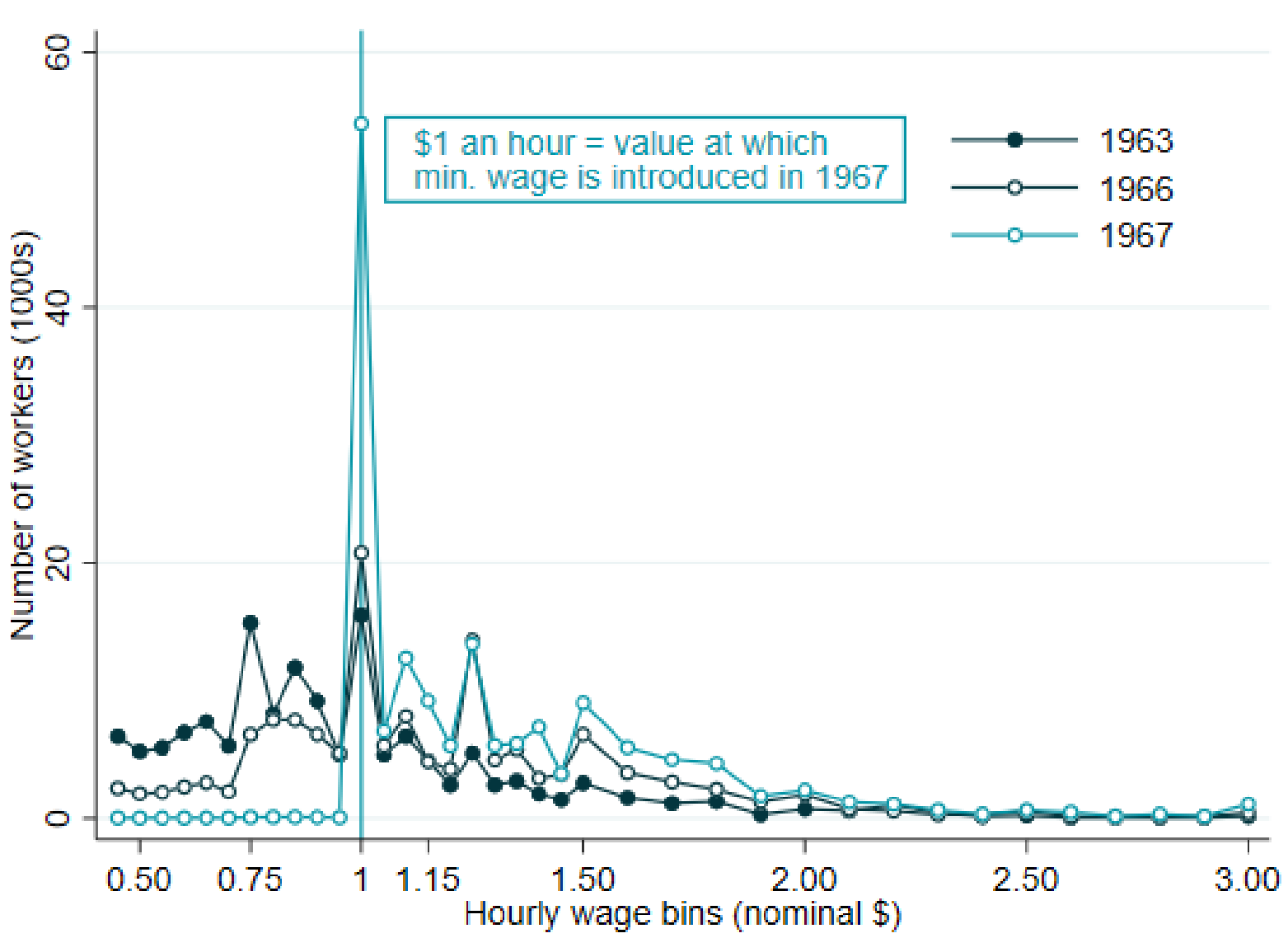


In 1967, the min. wage is introduced at \$1 in laundries.

Hourly wage distribution in laundries South



→ Large spike at \$1 in 1967.

→ Clear evidence of how 1967 reform affected wages & emp.

A new data source

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$\rightarrow$ Provides clear evidence of how 1967 reform affected distribution of wages & employment. Combine with **March**

Current Population Survey (CPS)

- Individual characteristics (e.g., education).
- Information on race.

$\rightarrow$ Allows us to study heterogeneity of the effect, most importantly across racial groups. ▸ map

Research designs

Earnings

- Industry difference-in-differences (newly covered vs. previously covered industries).
- Sharp increase in earnings, twice as large for black workers ($\sim$ 10%) as for whites.

Employment

- "Bunching" estimator (compare bunching at new min. wage to # workers below min wage pre-reform).
- Consistent results in cross-state design (strongly vs. weakly treated states).
- No evidence of large disemployment effect.

$\rightarrow$ Decline in racial earnings gap translates into decline in racial income gap.

Contribution to literature

Racial Inequality: What caused $\searrow$ in racial gap?

- **Demand factors**: Anti-discrimination policies.

  Freeman, 1973; Welch, 1973; Smith and Welch, 1976; Haworth et al., 1977; Donohue and Heckman, 1991.

- **Supply factors** ($\sim 50\%$): $\nearrow$ in schooling and transfers.

  Butler and Heckman, 1977; Brown, 1984; Smith and Welch, 1986 & 1989; Card and Krueger, 1992 & 1993; Johnson 2016.

▸ Timing ▸ Magnitude

Contribution to literature

Racial Inequality: What caused $\searrow$ in racial gap?

- **Demand factors** ($\sim$ 30%): Anti-discrimination policies.

  Freeman, 1973; Welch, 1973; Smith and Welch, 1976; Haworth et al., 1977; Donohue and Heckman, 1991.

- **Supply factors** ($\sim$ 50%): $\nearrow$ in schooling and transfers.

  Butler and Heckman, 1977; Brown, 1984; Smith and Welch, 1986 & 1989; Card and Krueger, 1992 & 1993; Johnson 2016.

Minimum Wage

- **Redistributive effects** of min. wage

  DiNardo et al., 1996; Autor et al., 2016; Dube, 2017.

- Very **large min. wage increases**

  Harasztosi and Lindner, 2017; Engbom et al., 2018; Jardim et al. 2018.

- Burgeoning lit. on **bunching** applied to min. wage

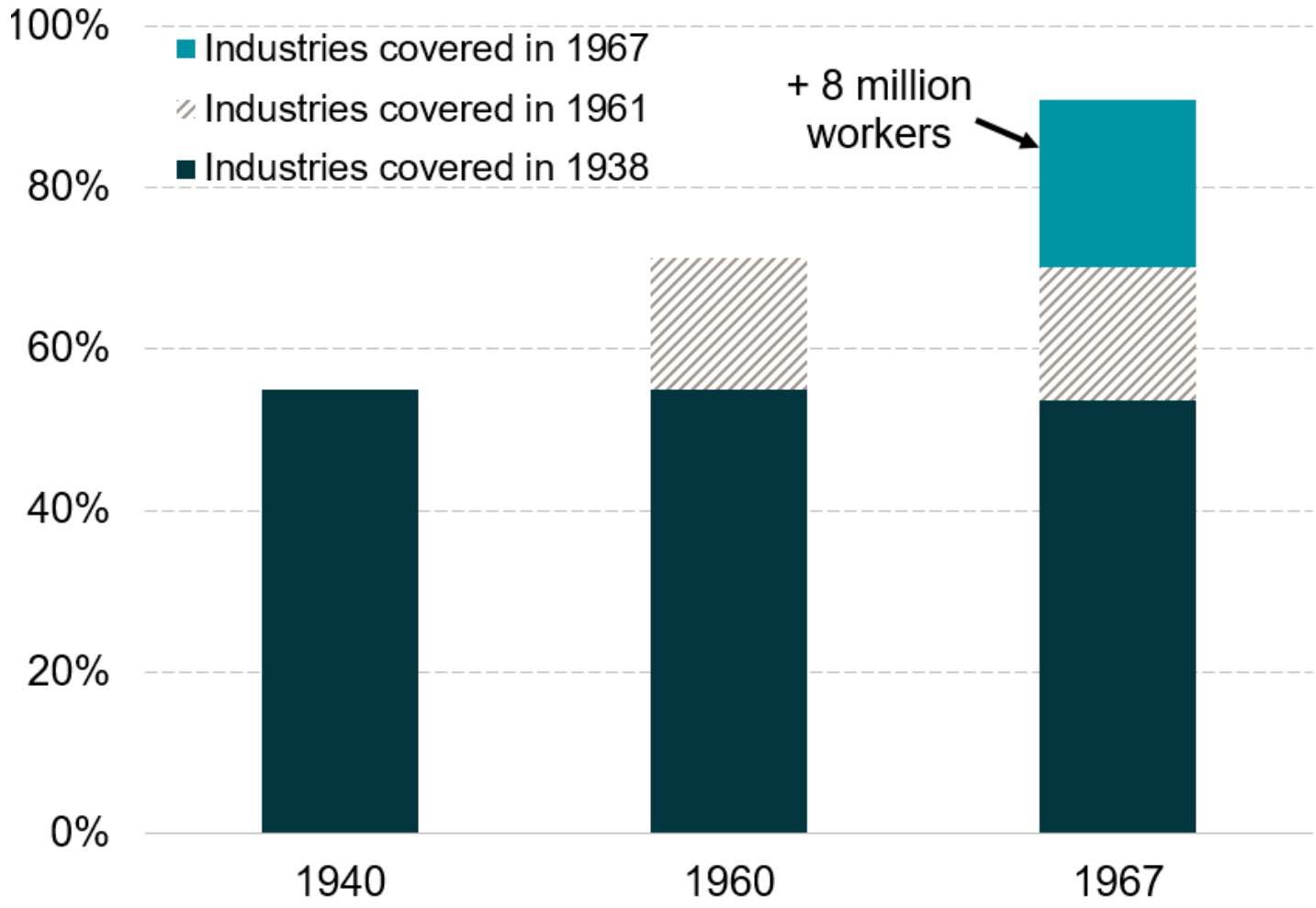
  Harasztosi and Lindner, 2017; Cengiz et al., 2018.

Outline

1. Background on 1967 reform
2. Effect on earnings
3. Effect on employment
4. Effect on economy-wide racial gap
5. Conclusion

Background on 1967 reform

Share of workers covered by federal minimum wage



→ Industries covered in 1967 represent $\sim$ **20% of economy** and **30% of black workers**.

▸ Sum stats ▸ Industry Breakdown ▸ Black shares

MARCH ON WASHINGTON FOR JOBS AND FREEDOM

AUGUST 28, 1963

WHAT WE DEMAND*

1. Comprehensive and effective *civil rights legislation* from the present Congress—without compromise or filibuster—to guarantee all Americans
   access to all public accommodations
   decent housing
   adequate and integrated education
   the right to vote

2. Withholding of Federal funds from all programs in which discrimination exists.

3. *Desegregation of all school districts in 1963.*

4. Enforcement of the *Fourteenth Amendment*—reducing Congressional representation of states where citizens are disfranchised.

5. A new *Executive Order* banning discrimination in all housing supported by federal funds.

6. Authority for the Attorney General to institute *injunctive suits* when any constiutional right is violated.

7. A massive federal program to train and place all unemployed workers—Negro and white—on meaningful and dignified jobs at decent wages.

8. A national *minimum wage* act that will give all Americans a decent standard of living. (Government surveys show that anything less than $2.00 an hour fails to do this.)

9. A broadened *Fair Labor Standards Act* to include all areas of employment which are presently excluded.

10. A federal *Fair Employment Practices Act* barring discrimination by federal, state and municipal governments, and by employers, contractors, employment agencies, and trade unions.

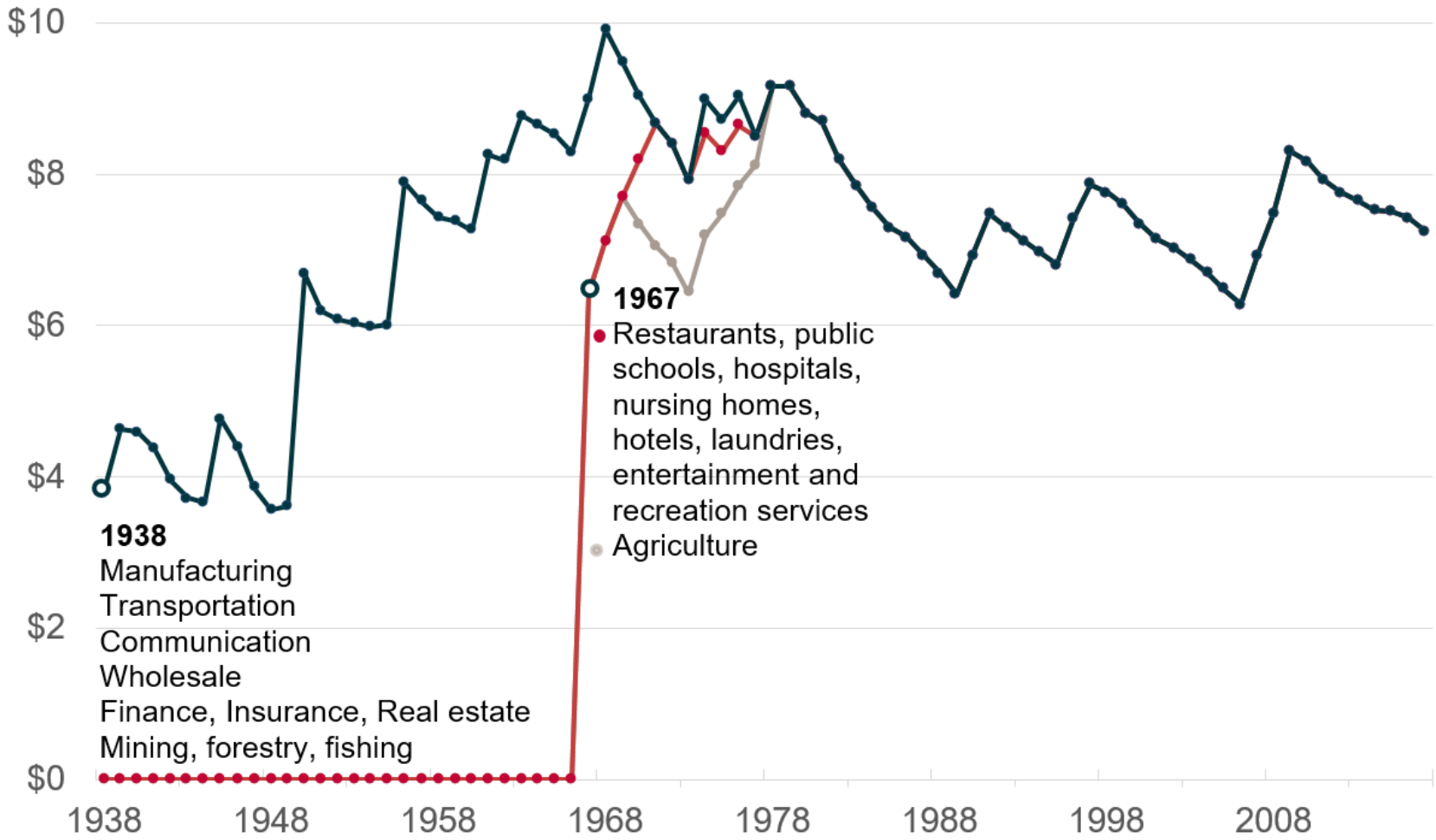
$\rightarrow$ 1967 reform is part of Civil Rights Movement.

[This minimum wage law] will help minority groups who are helpless in the face of prejudice that exists. (...) It will not force employers to cut down and fire employees (...) – the record doesn't show that. [This law], with its increased minimum, with its expanded coverage, will prevent much of th[e] exploitation of the defenseless – the workers who are in serious need.

— Lyndon B. Johnson

Remarks at the Signing of the Fair Labor Standards Amendments of 1966
September 23, 1966

Federal minimum wage, $2017



$\rightarrow$1967 intro of min. wage $\sim$ 35% earnings $\nearrow$ for affected workers
= **huge shock** ($\rightarrow$ relevant for debate on \$15 today).

▸ All reforms ▸ Min. wage to median ratio

Effect of 1967 reform on annual earnings

Industry diff-in-diff to study effects on earnings

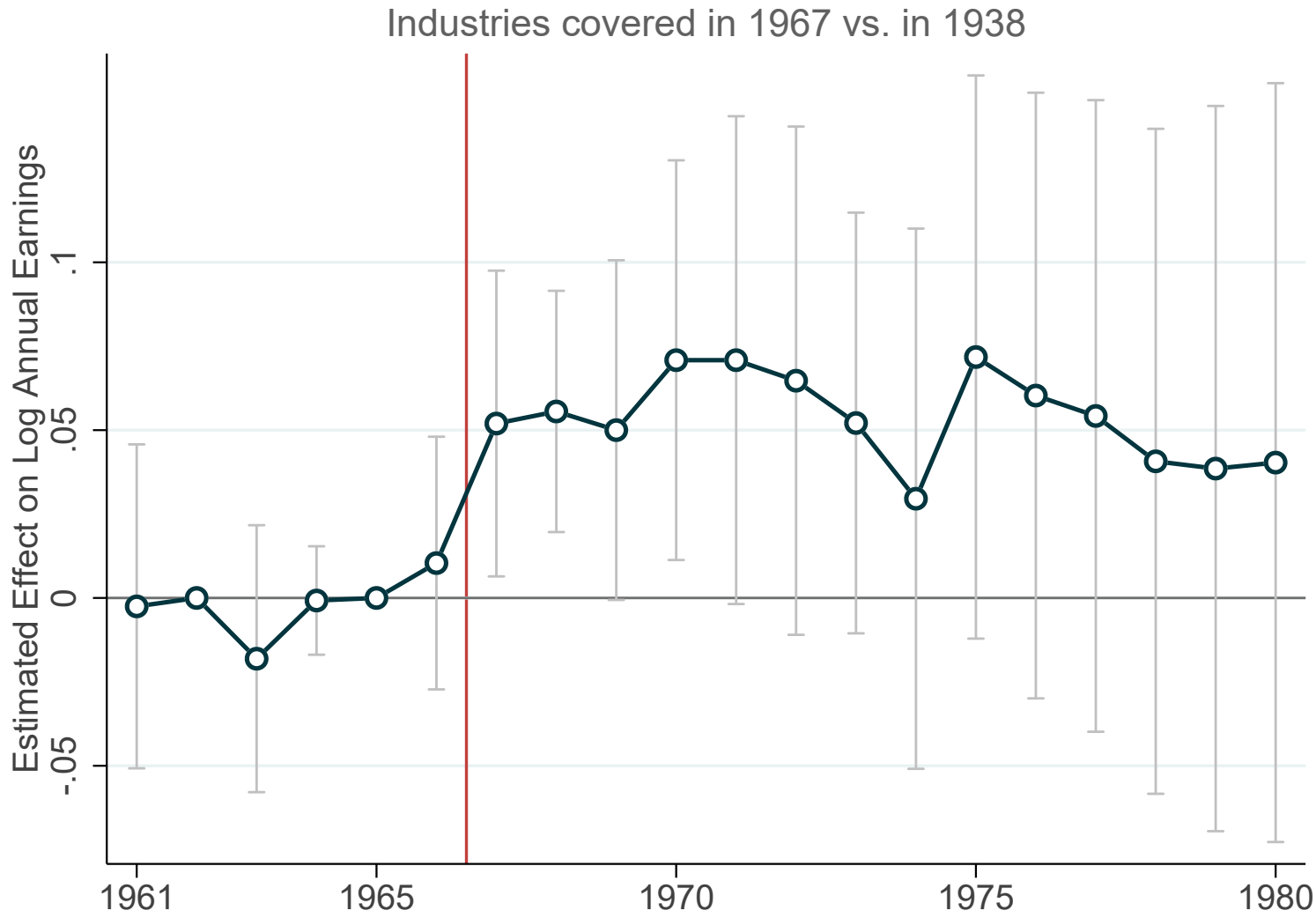
$$\log w_{ijst} = \alpha + \sum_{k=-4}^{15} \beta_k \text{Covered 1967}_j \times \delta_{t+k} + \mathbb{X}'_{ijst}\Gamma + \delta_j + \delta_t + \varepsilon_{ijt}$$

- w_{ijst}: log annual earnings for individual i, industry j in state group s and year t.
- β_k measures effect of reform k years after base year 1965.
- $\mathbb{X}_{ijst}$: individual-level controls (gender, race, exp., educ., nb of weeks & hours worked, occupation, marital status).
- δ_j and δ_t: industry and year fixed effects.

$\rightarrow$ Identification assumption: Absent '67 reform, earnings in 1967 and in 1938 industries would have evolved similarly.

$\rightarrow$ Show results with CPS (consistent results with BLS).

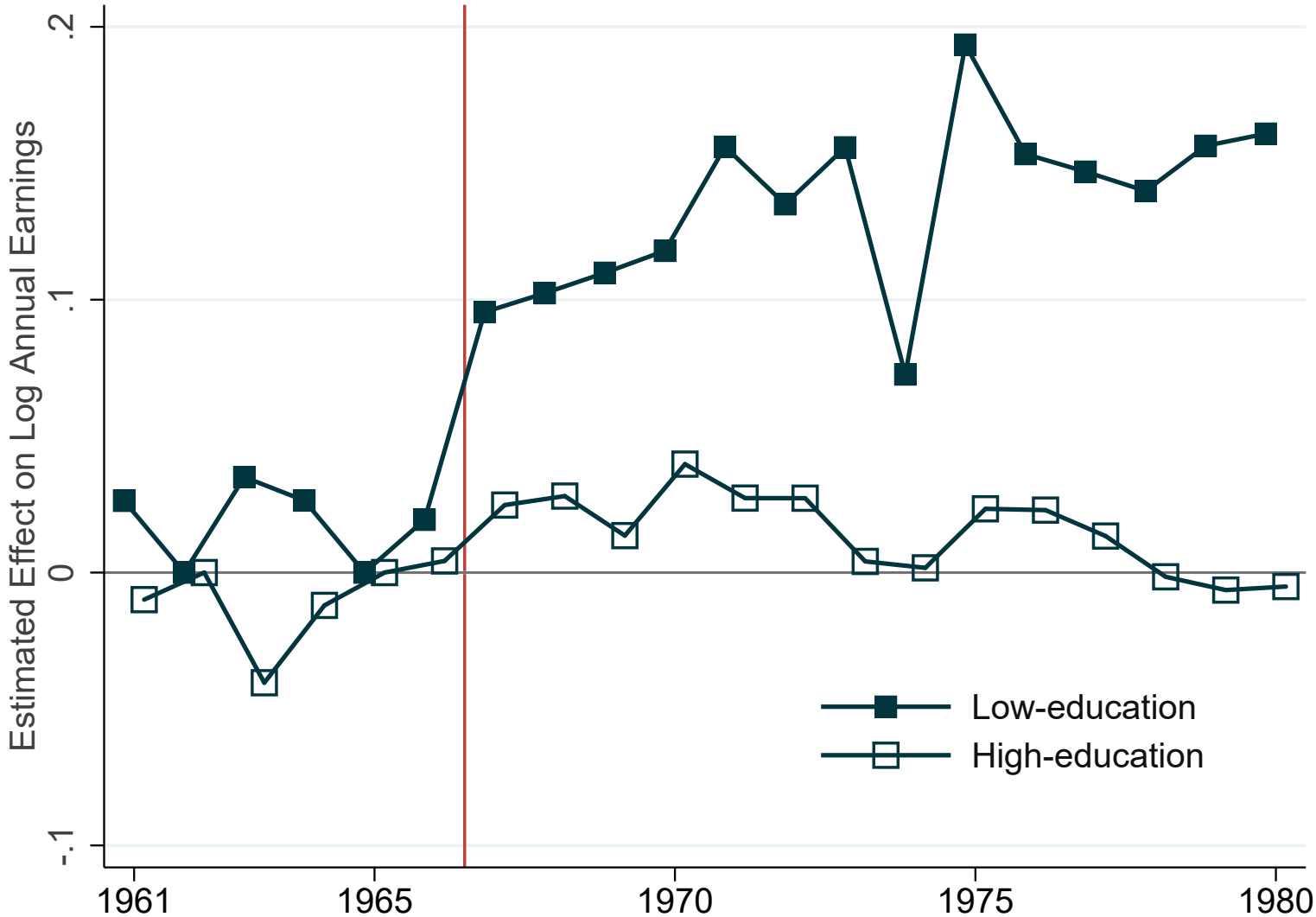
Effect of 1967 extension of min. wage on annual earnings



→ **Immediate ↗ in earnings in 1967** in newly treated industries relative to control industries.

▸ No controls ▸ No hours

Effect on earnings for high- vs. low-education workers



→ Effect **concentrated among low-education workers**.

→ Similar pattern among blacks ▸ Blacks and whites ▸ Whites

Effect on earnings: robustness

$\forall$ period $k \in$ [1961-1966], [1967-1972] & [1973-1980],

$$\log w_{ijst} = \alpha + \sum_k \beta_k \text{Covered 1967}_j \times \delta_{t+k} + \mathbb{X}'_{ijst}\Gamma + \delta_j + \delta_k + \varepsilon_{ijst}$$

	(1)	(2)	(3)	(4)	(5)	(6)
Covered in 1967 × 1967-1972	0.065** (0.025)	0.059** (0.024)	0.056** (0.022)	0.065** (0.023)	0.063** (0.023)	0.065** (0.029)
Obs	407,823	407,823	401,171	375,393	407,823	407,823
Controls	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y
State linear trends	N	Y	N	N	N	N
W/o agriculture	N	N	Y	N	N	N
Full-Time only	N	N	N	Y	N	N
Winsorized data	N	N	N	N	Y	N
2-way clusters	N	N	N	N	N	Y

$\rightarrow$ Baseline effect on earnings pooled 1967-72: + 6.5 log points.

▸ Hourly wages w/ BLS ▸ Cross-state

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$\rightarrow$ Effect on earnings robust to inclusion of state linear trends.

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Full-Time only	N	N	N	Y	N	N
Winsorized data	N	N	N	N	Y	N
2-way clusters	N	N	N	N	N	Y

$\rightarrow$ Effect on earnings robust to exclusion of agriculture.

Effect on earnings: robustness

$\forall$ period $k \in$ [1961-1966], [1967-1972] & [1973-1980],
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Full-Time only	N	N	N	Y	N	N
Winsorized data	N	N	N	N	Y	N
2-way clusters	N	N	N	N	N	Y

$\rightarrow$ Effect on earnings robust to restricting sample to full-time workers and winsorizing outcome and controls at 5% level.

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2-way clusters	N	N	N	N	N	Y

$\rightarrow$ Precision unaffected by two-way clustering (industry & state).

Predicted effect on earnings

	(1)	(2)	(3) = (1) × (2)	(4)
	Share of workers at or below the MW (%)	Avg increase in earnings for MW workers (%)	Predicted increase in earnings (%)	Estimated increase in earnings (%)
All	16.1	33.5	5.4	5.3
By education				
Low-education	31.4	33.0	10.4	10.1
High-education	9.6	34.2	3.3	2.5
By race				
Black	28.8	38.2	11.0	8.0
White	13.9	32.0	4.5	4.3

Notes: same sample as in earnings regressions, in treated ind. in 1966. Share of mw workers = workers at or below the 1967 mw. Estimates in col. (3) and (4) are for 1967 only.

→ Assumes perfect compliance, no spillovers, no employment or GE effects, and small measurement error in hourly wage.

→ Share of affected workers in treated industries $\sim$ 16%.

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$\rightarrow$ Average wage increase among affected workers $\sim$ 35%.

Predicted effect on earnings

	(1)	(2)	(3) = (1) × (2)	(4)
	Share of workers at or below the MW (%)	Avg increase in earnings for MW workers (%)	Predicted increase in earnings (%)	Estimated increase in earnings (%)
All	16.1	33.5	5.4	5.3
By education				
Low-education	31.4	33.0	10.4	10.1
High-education	9.6	34.2	3.3	2.5
By race				
Black	28.8	38.2	11.0	8.0
White	13.9	32.0	4.5	4.3

Notes: same sample as in earnings regressions, in treated ind. in 1966. Share of mw workers = workers at or below the 1967 mw. Estimates in col. (3) and (4) are for 1967 only.

$\rightarrow$ Estimated effects on earnings consistent with predicted effects.

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Notes: same sample as in earnings regressions, in treated ind. in 1966. Share of mw workers = workers at or below the 1967 mw. Estimates in col. (3) and (4) are for 1967 only.

→ Estimated effects on earnings consistent with predicted effects.

→ i.e. consistent with our assumptions of perfect compliance, no spillovers, no emp. or GE effects.

Predicted effect on earnings

	(1)	(2)	(3) = (1) × (2)	(4)
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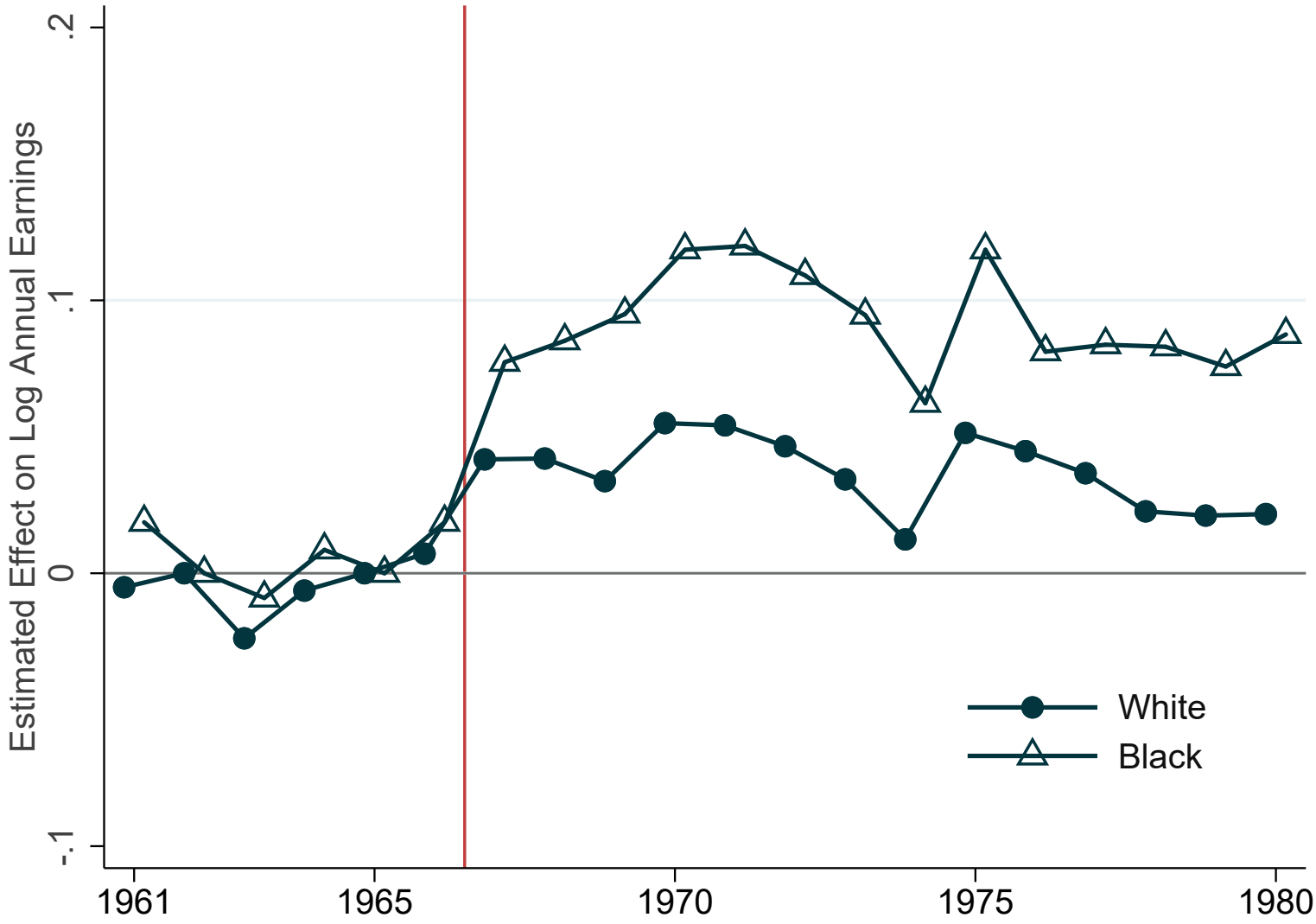
→ Estimated effects on earnings consistent with predicted effects.

Effect on earnings for white vs. black workers



→ **Effect on earnings about twice as large for black workers** ($\sim 10\%$) compared to white ($\sim 5\%$). ▸ Levels ▸ with state-by-year FE

Predicted effect on earnings

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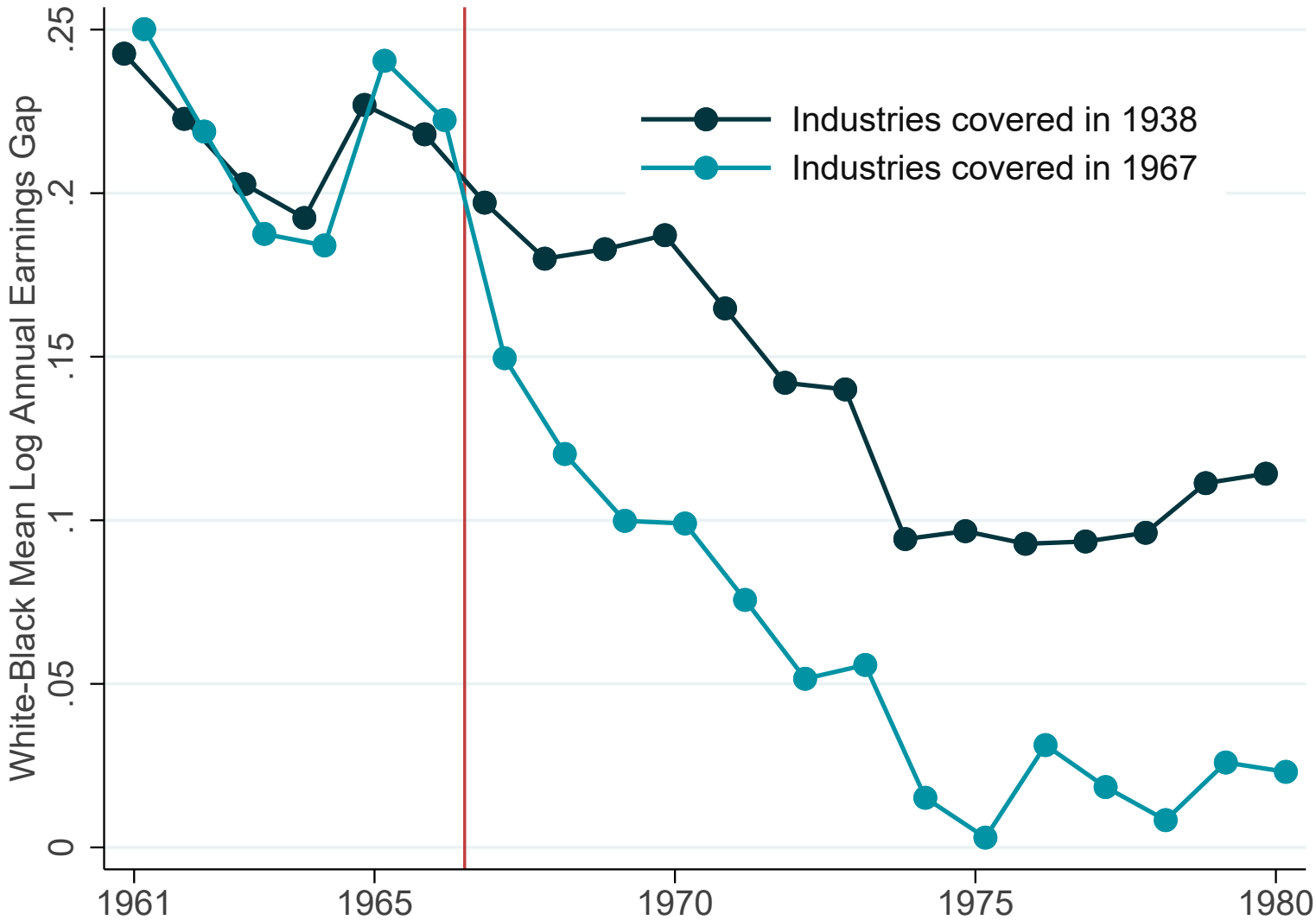
Notes: same sample as in earnings regressions, in treated ind. in 1966. Share of mw workers = workers at or below the 1967 mw. Estimates in col. (3) and (4) are for 1967 only.

→ Black workers twice as likely to be affected by the reform compared to white workers.

Adjusted White-Black Earnings Gap



→ Adjusted racial gap falls to zero in treated industries after the reform. ▸ By skill groups ▸ By gender ▸ Unadjusted

Effect of 1967 reform on employment

Empirical strategies to study employment effects

Aggregate evidence

- No discontinuity in fraction of workers in treated and control industries around 1967. ▸ TC Shares
- No discontinuity in white vs. black shares within treated industries around 1967. ▸ Black Shares ▸ Aggregate shares

Micro-evidence

- Cross-state difference-in-differences (strongly vs. weakly treated states).
- "Bunching" (compare bunching at new min. wage to # workers below min wage pre-reform).

Cross-state design to study employment effects

Build **min wage database by state, industry and gender**:

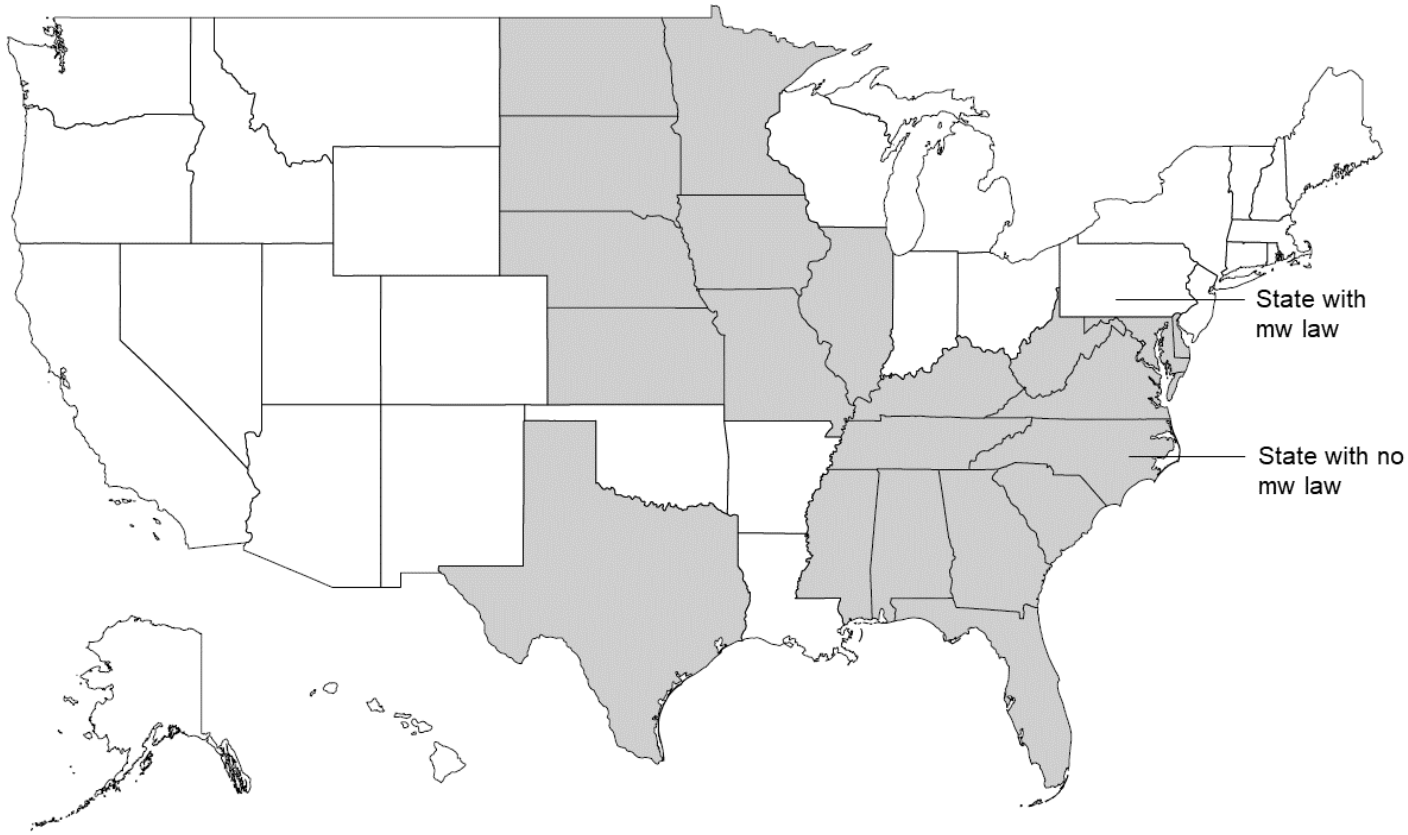
- In 1965 31 states + D.C. had minimum wage laws.
- Variations in state coverage.

  Sources: Report of the min wage study commission (1981) & Dept. of Labor Handbook on women workers (1965).

Use geographic variation in bite of reform

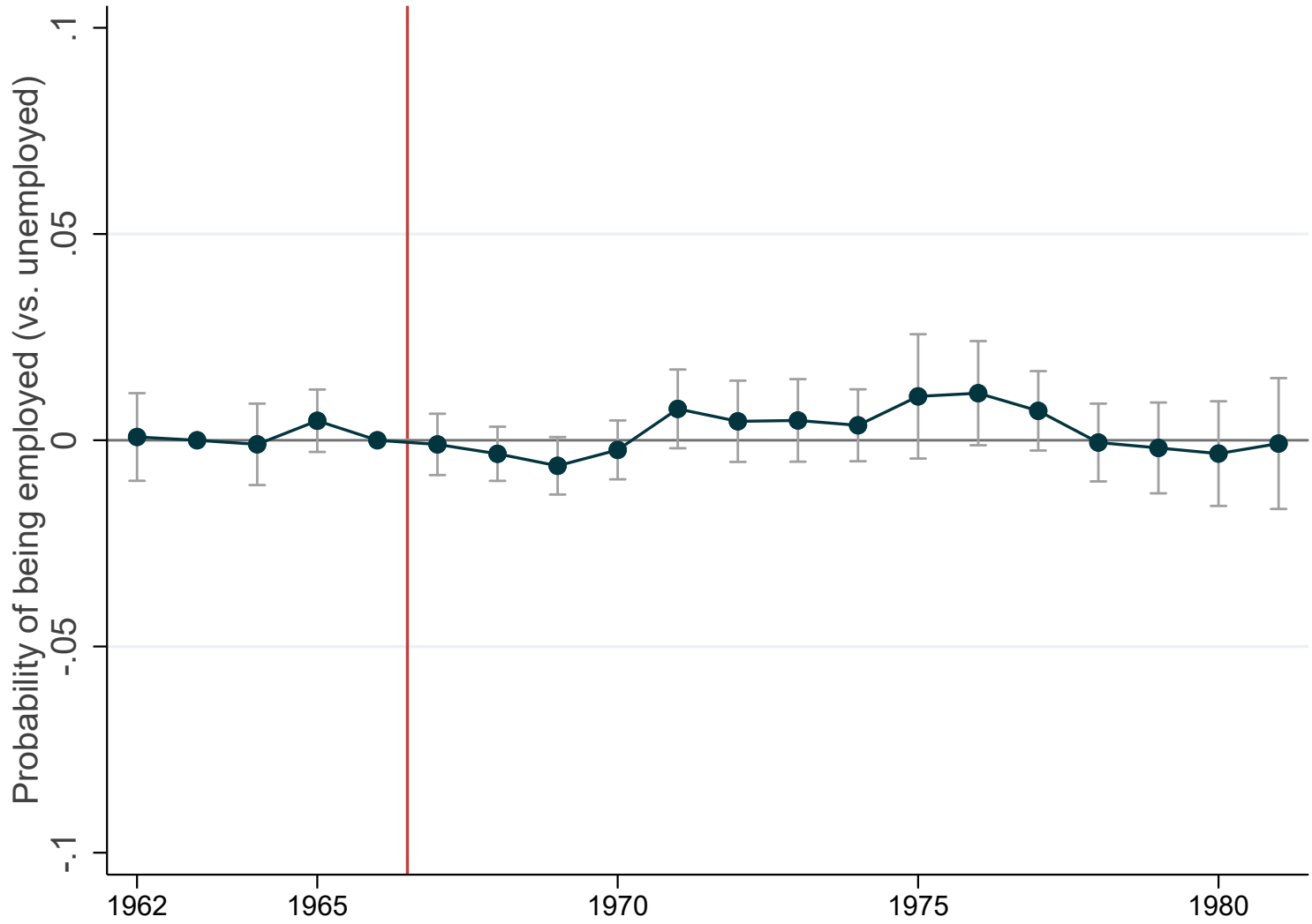
- Treatment group: workers in strongly treated states (no state minimum wage as of January 1966).
- Control group: workers in other states.

States with no min wage law as of January 1966



List of states with no min. wage as of 1966: Florida, Illinois, Texas, Alabama-Mississippi, North Carolina-South Carolina-Georgia, Kentucky-Tennessee, Iowa-North Dakota-South Dakota-Nebraska-Kansas-Minnesota-Missouri, Delaware-Maryland-Virgina-West Virginia, Arkansas-Louisiana-Oklahoma.

Impact on probability of being employed (vs. unemployed)



→ **Precise zero effect on employment**.

▸ By race ▸ By skill ▸ By gender ▸ By cohorts ▸ Table unemp/NILF

Results on probability of employment

$\forall$ period $k \in$ [1961-1966], [1967-1972] & [1973-1980],

$$\mathbb{1}\{\text{emp}_{ist}\} = \alpha + \delta_k + \sum_k \beta_k \text{Strongly}_s \times \delta_{t+k} + \mathbb{X}'_{ist}\Gamma + \delta_s + \varepsilon_{ist}$$

	All	Black	White
Strongly treated states × 1967-1972			
Employment	0.000	-0.008	0.000
	(0.002)	(0.007)	(0.002)
	693,449	65,939	627,510
Earnings	0.040***	0.123***	0.025***
	(0.010)	(0.025)	(0.008)
	534,977	51,666	483,311
Employment elasticity	0.00	-0.07	0.02
se	(0.05)	(0.06)	(0.08)
Controls	Y	Y	Y
Time FE	Y	Y	Y
State FE	Y	Y	Y

$\rightarrow$ Can rule out employment elasticity wrt earnings < -0.1.

▸ Earnings table TC ▸ Elasticities

Results on probability of employment

$\forall$ period $k \in$ [1961-1966], [1967-1972] & [1973-1980],

$$\mathbb{1}\{\text{emp}_{ist}\} = \alpha + \delta_k + \sum_k \beta_k \text{Strongly}_s \times \delta_{t+k} + \mathbb{X}'_{ist}\Gamma + \delta_s + \varepsilon_{ist}$$

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se	(0.05)	(0.06)	(0.08)
Controls	Y	Y	Y
Time FE	Y	Y	Y
State FE	Y	Y	Y

$\rightarrow$ Precise zero effect **holds for black workers** (can rule out elasticities < -0.2). ▸ Alternative designs

Bunching methodology

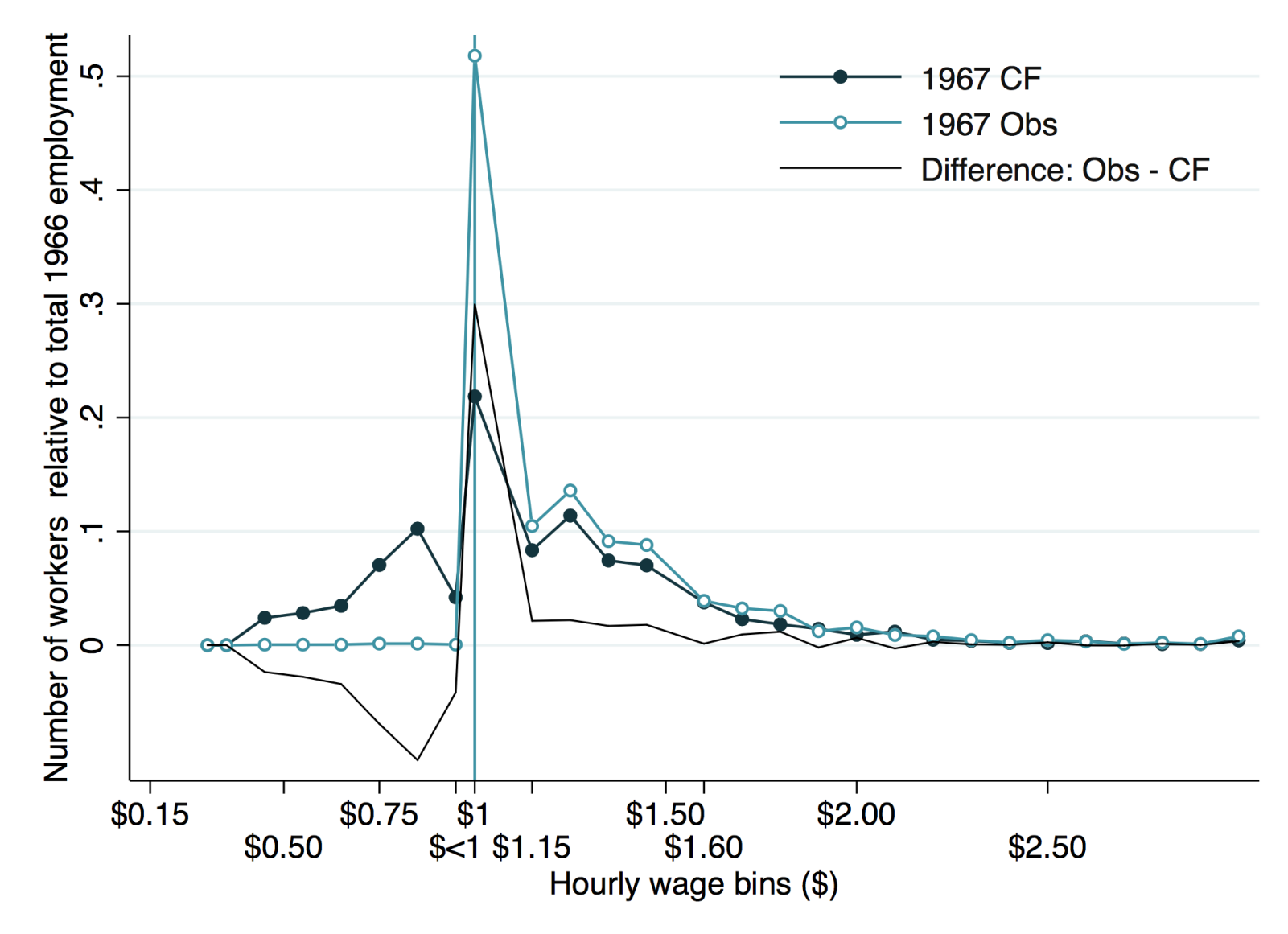
Build 1967 counterfactual distributions for treated industries:

- Inflate 1966 wage distributions by 1966-67 national income per capita growth rate ($+$ 4.4%).

Compare 1967 counterfactual–1967 evolution of # workers:

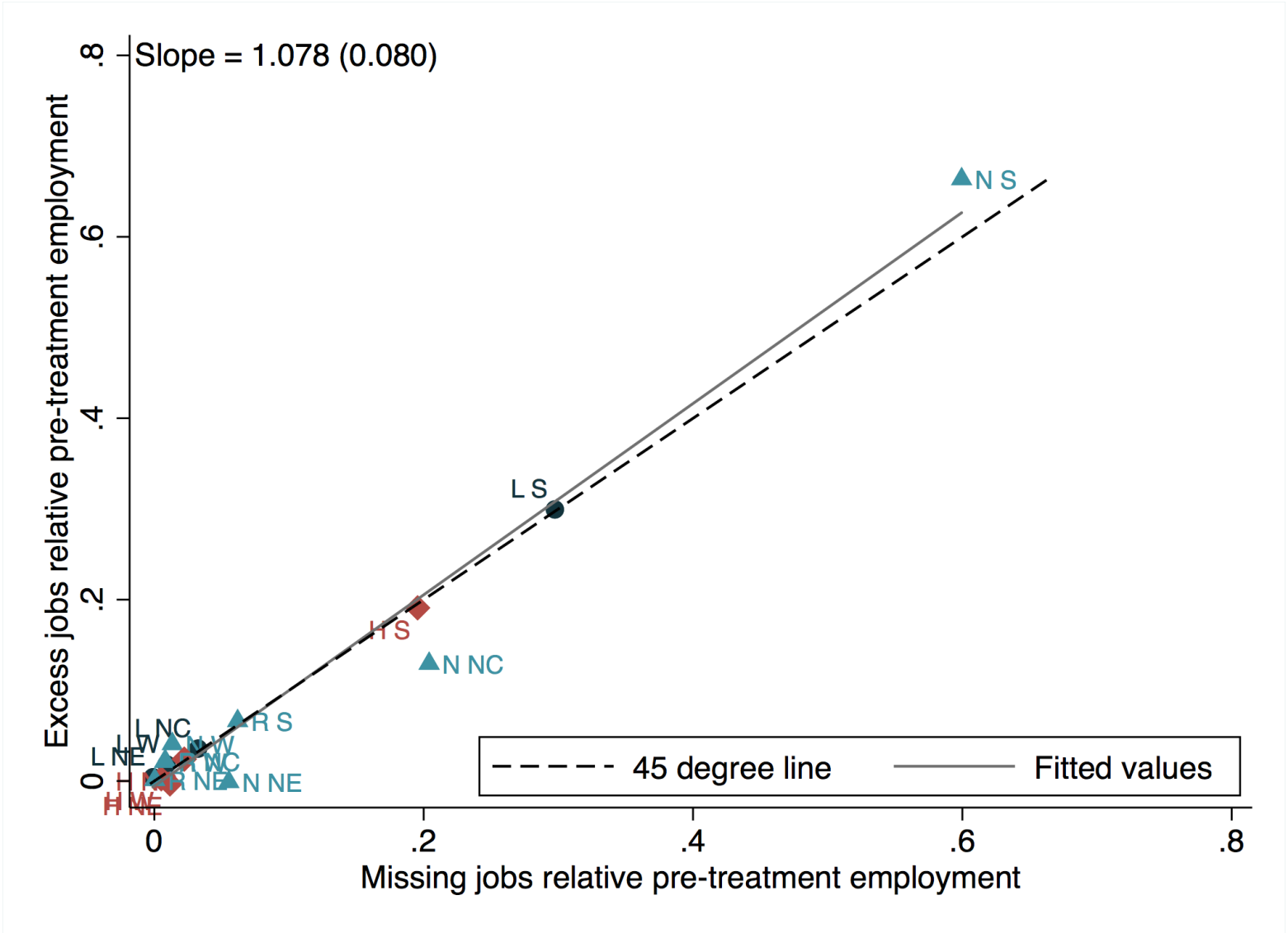
- Paid strictly below the min. wage ("missing jobs").
- At or slightly above the min. wage ("excess jobs").
- Identification assumption: absent reform, wages would have evolved acc. to national income per capita 1966-67 growth.
- Do it by treated industry $\times$ regions available in BLS.
- Benchmark: spillover up to 1.15 $\times$ MW; sensitivity to other thresholds.

Case study: laundries in the South



→ Small employment elasticity wrt avg wage of 0.03. ▸ CF details

Generalized bunching estimates: missing and excess jobs



→ Small changes in low-wage employment by industry × regions.

→ Holds even where bite of the reform is large. ▸ Robustness to 1.20 × MW

Generalized bunching estimates: elasticities (1/2)

	Employment counts	Workers below $1 (Percent)	Black share (Percent)	Emp. elasticity wrt average wage 1.15 ×MW	Emp. elasticity wrt average wage 1.20 ×MW
Laundries					
South	142,358	0.33	0.38	0.02	0.16
Midwest	107,127	0.04	0.19	0.40	0.34
Northeast	97,395	0.00	0.41	0.10	0.01
West	50,835	0.01	0.15	-0.45	-0.60
Hotels					
South	113,529	0.39	0.44	-0.10	-0.07
Midwest	83,277	0.11	0.30	-0.11	-0.07
Northeast	80,764	0.05	0.18	n.a.	n.a.
West	66,898	0.04	0.12	0.16	0.18

→ Small elasticities ▸ Formula, robust to spillover up to 1.20 × MW.

→ Elast. not higher in groups where share of black workers is large.

Generalized bunching estimates: elasticities (2/2)

	Employment counts	Workers below $1	Black share	Emp. elasticity wrt average wage	
		(Percent)	(Percent)	1.15 ×MW	1.20 ×MW
Restaurants					
South	271,757	0.35	0.27	n.a.	n.a.
Midwest	303,807	0.13	0.07	-0.70	0.70
Northeast	250,141	0.04	0.14	-0.22	0.76
West	185,977	0.03	0.05	-0.63	-0.36
Nursing Homes					
South	70,584	0.69	0.11	0.26	0.36
Midwest	110,199	0.32	0.06	-0.48	-0.59
Northeast	83,748	0.09	0.11	-0.41	-0.48
West	52,662	0.03	0.06	0.45	0.66
All industries					
U.S.	2,071,056	0.17	0.17	0.06	-0.21

→ Results are robust to alternative employment estimator using the BLS data. ▸ Alternative

Potential explanations for small employment effects

Neoclassical model

- Inelastic labor demand (e.g., complementarity between factors of production or tight labor markets in 1960s).

Monopsony model

- Positive employment effects.

Collective discrimination before the reform

- White collusion to pay black workers low wages.
- Jim Crow laws barred black workers from certain occupations (e.g., Heckman and Payner, 1989).

  $\rightarrow$ Similar mechanism but on prices (wages) rather than quantities in treated industries?

Effect of 1967 reform on economy-wide racial earnings gap

Decomposition of racial gap (1/3)

$$G^{\text{total}} = \underbrace{s_w^c G^c + s_w^t G^t}_{\text{Within industry}} + \underbrace{G_b^{ct}(s_w^c - s_b^c)}_{\text{Between industry}}$$

Earnings gaps:

- $G^{\text{total}} = \overline{\log \omega_w} - \overline{\log \omega_b}$: racial gap for all industries.
- G^c: racial gap in industries covered in 1938 (control).
- G^t: racial gap in industries covered in 1967 (treatment).
- G_b^{ct}: Control-treatment earnings gap among black workers.

Decomposition of racial gap (2/3)

$$G^{\text{total}} = \underbrace{s_w^c G^c + s_w^t G^t}_{\text{Within industry}} + \underbrace{G_b^{ct}(s_w^c - s_b^c)}_{\text{Between industry}}$$

Share of workers:

- s_w^c: share of white workers working in the control group.
- s_w^t: share of white workers working in the treatment group.
- $s_w^c + s_w^t = s_b^c + s_b^t = 1$
- In 1980, $s_w^c = 64\%$; $s_w^t = 36\%$; and, $s_b^c = 56\%$; $s_b^t = 44\%$.

▸ Black shares ▸ White shares

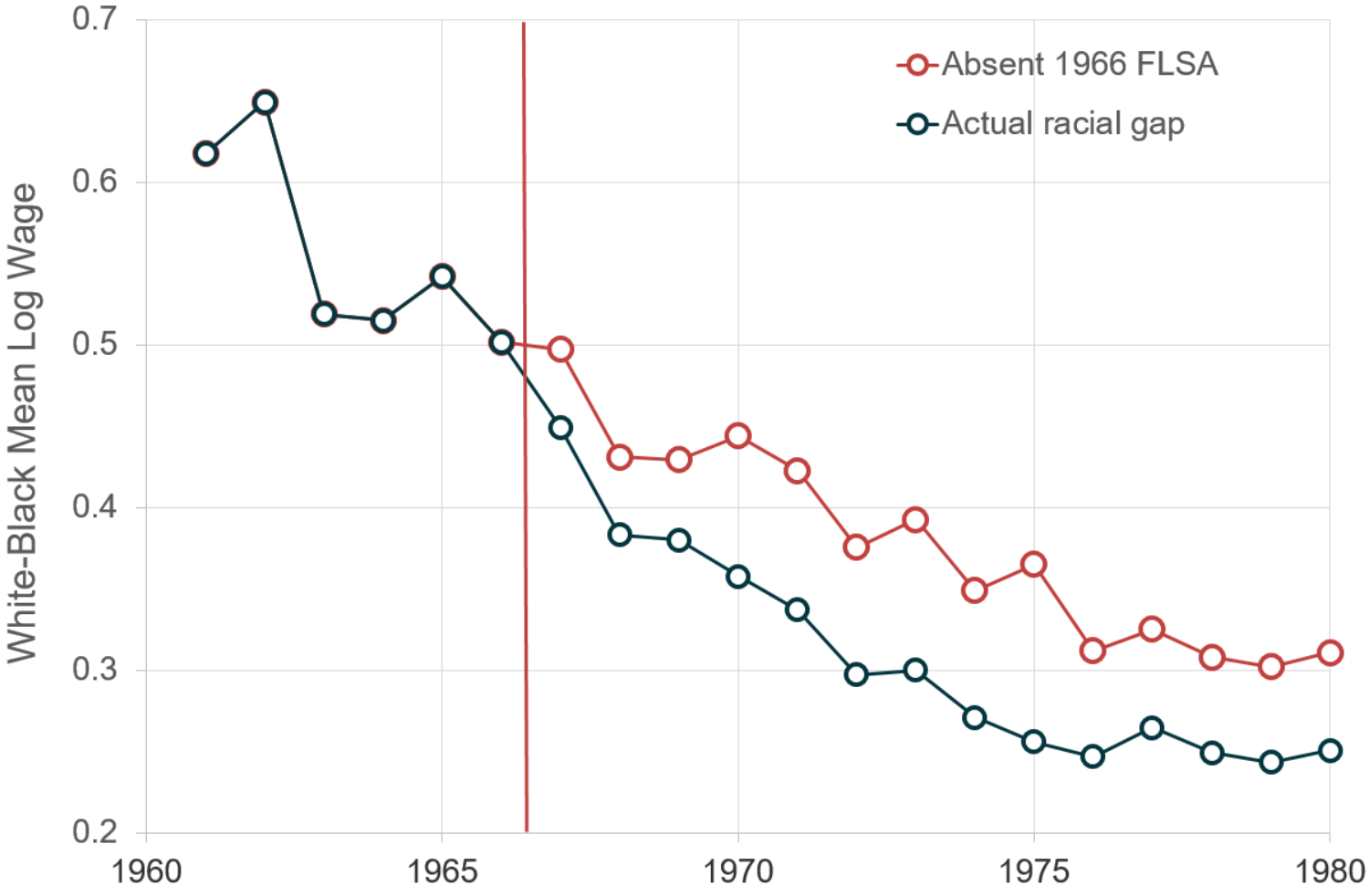
Decomposition of racial gap (3/3)

$$G^{\text{total}} = \underbrace{s_w^c G^c + s_w^t G^t}_{\text{Within industry}} + \underbrace{G_b^{ct}(s_w^c - s_b^c)}_{\text{Between industry}}$$

To calculate the **contribution of 1967 reform to decline in racial gap**, we assume:

- **1.** G^t evolves as G^c after 1966.
- **2.** G_b^{ct} evolves as G_w^{ct} after 1966.
- **3.** s_w^c, s_w^t, s_b^c not affected by the reform.

1967 min wage reform ↘ racial gap by $\sim 20\%$



→ Within-industry effect accounts for more than 80% of impact of reform on economy-wide racial gap.

What caused the decline in racial gap?

Explanation		Reference	Contribution
Supply	School quantity	Smith & Welch (1980)	20%
	School quality	Card & Krueger (1992)	20%
	Other factors	Heckman & Payner (1989)	10%
MW		Derenoncourt & Montialoux (2018)	20%
Demand	Anti-discr. policies	Donohue & Heckman (1991)	30%
Total			100%

$\rightarrow$ 1967 extension of min. wage had first-order effect on racial inequality (as large as school desegregation).

Conclusion & future research

Key findings:

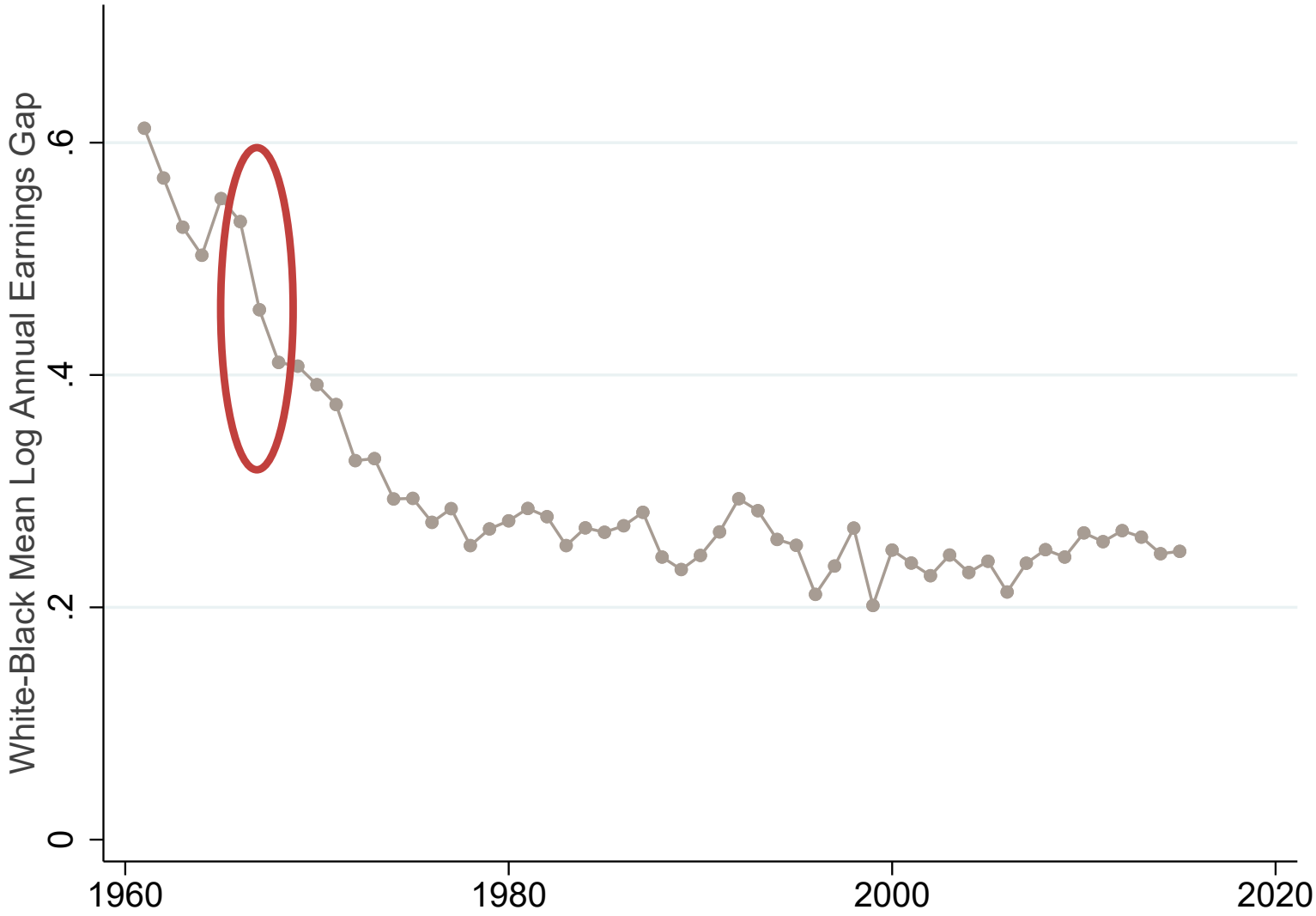
- 1967 extension of min. wage translated into large wage increase but no large dis-emp. effects.
- It played a critical role in $\searrow$ racial earnings and income inequality.

Future research:

- Investigate **other contexts**: racial inequalities in US today, in Brazil, and inequalities btwn natives & immigrants in Europe.
- Study **political economy** of local min. wage changes in US.

Appendix

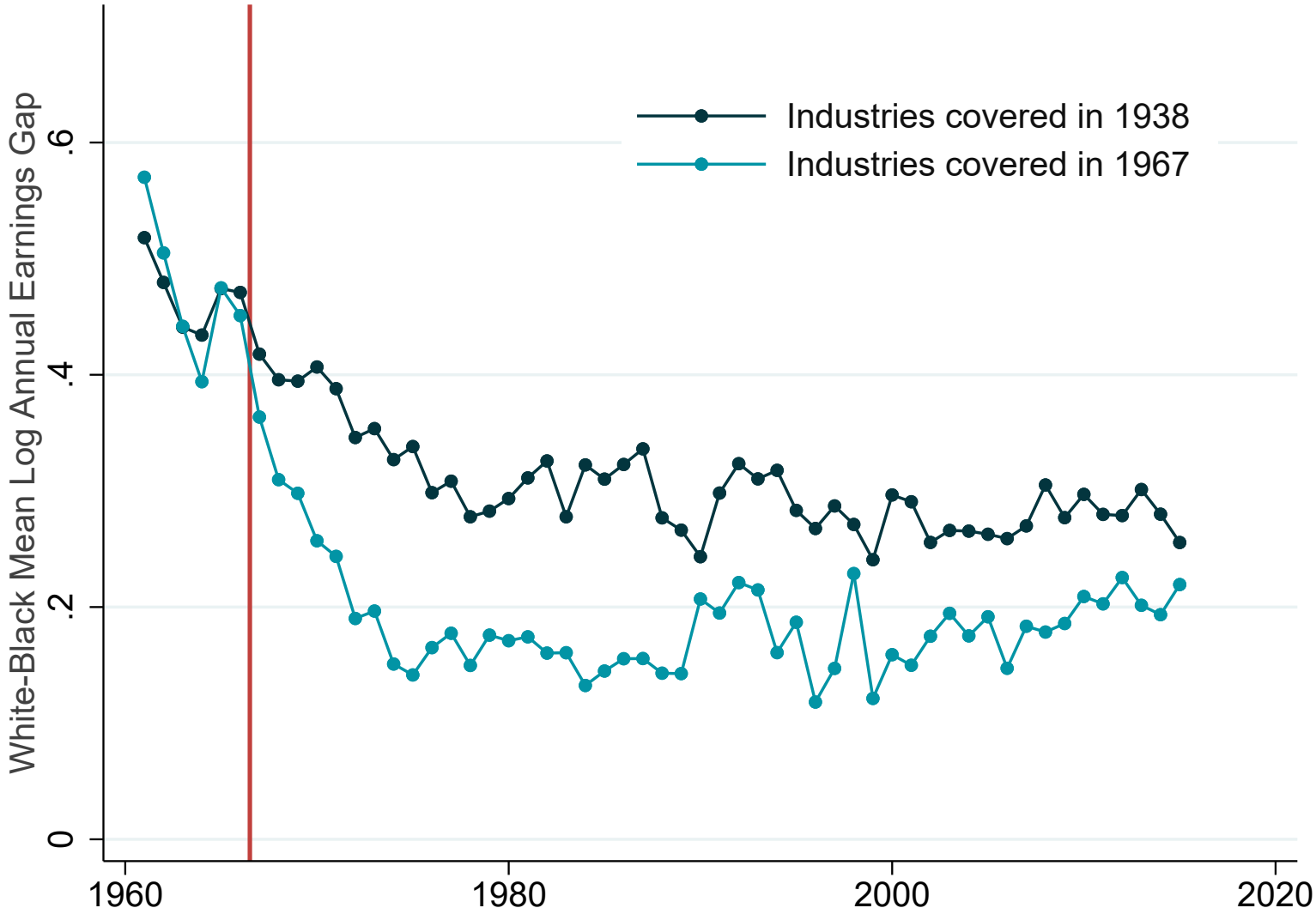
White-Black Earnings Gap



$\rightarrow$ 1967 reform can explain **timing** of $\searrow$ in racial earnings gap.

▸ Back

White-Black Earnings Gap: treated vs. control industries



$\rightarrow$ 1967 reform can explain **magnitude** of $\searrow$ in racial earnings gap.

Back

Workers characteristics, 1965-66

	Control group		Treatment group	
	White	Black	White	Black
Annual earnings (in $2017)	45,809	28,870	32,848	20,854
Age	39.8	38.8	39.9	39.0
Gender				
Male	0.76	0.80	0.43	0.39
Female	0.24	0.20	0.57	0.61
Education				
11 yrs of schooling or less	0.38	0.64	0.26	0.51
More than 11 yrs of schooling	0.62	0.35	0.74	0.48
Region				
South	0.26	0.44	0.26	0.56
Non-South	0.74	0.56	0.74	0.44
Full-time/part-time status				
Full-time, full-year	0.87	0.79	0.68	0.67
Part-time	0.13	0.21	0.32	0.33
Observations	24,636	2,035	8,685	1,544

Sources: March CPS 1966-67. Sample: Adults 25-55, worked more than 13 weeks last year, worked more than 3 hours last week. CPI-U-RS used as deflator.

Back

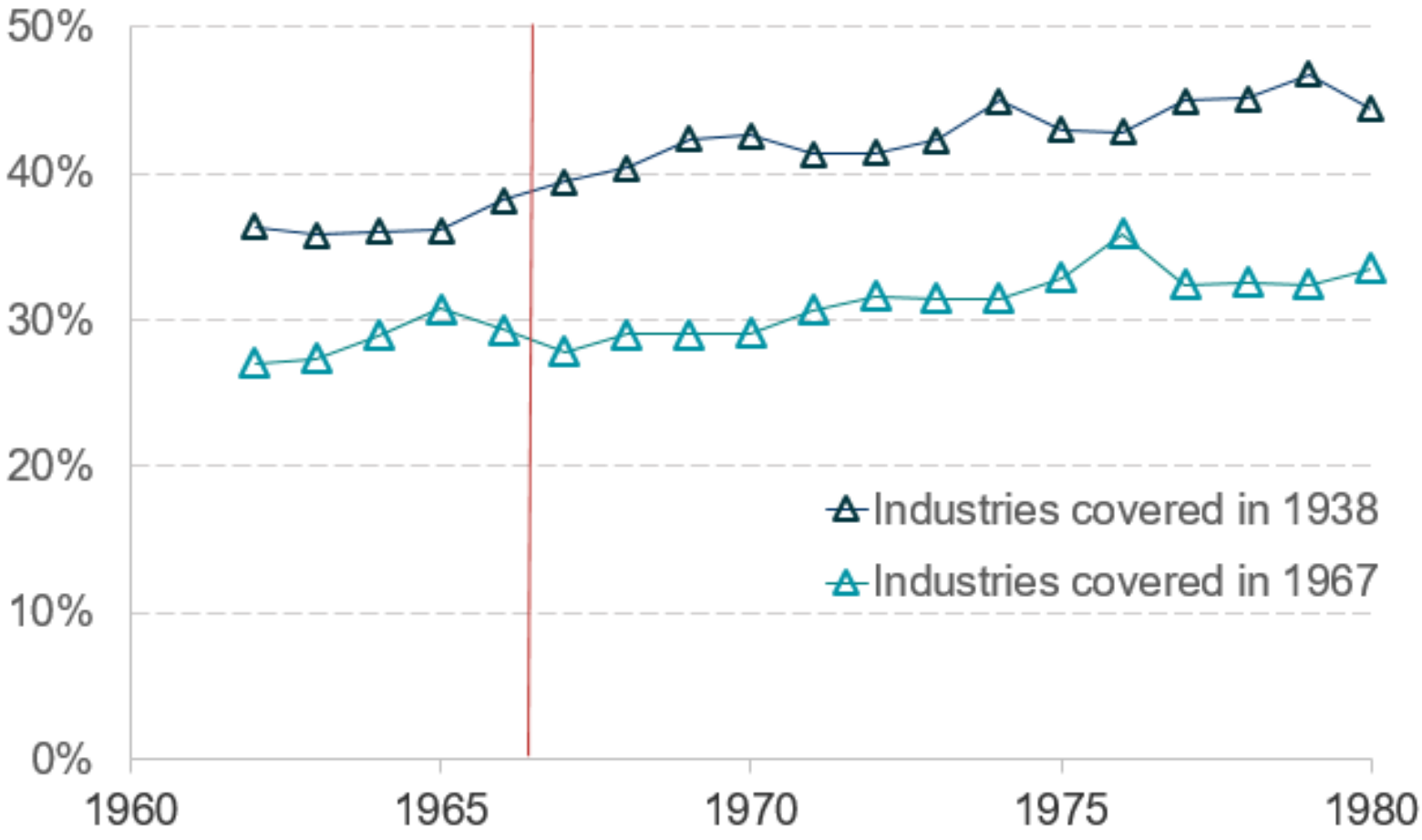
Employment and earnings by industry and by race, 1967

	Employment		Employment shares		Earnings ($2017)	
	Number	Percent	White	Black	White	Black
All industries	38,490,848	1.00	0.89	0.11	42,575	24,522
Industries covered by 1938 FLSA	20,663,098	0.54	0.92	0.08	46,469	29,174
Industries covered by 1961 FLSA	6,336,330	0.16	0.92	0.08	39,854	23,701
Retail trade	3,961,711	0.10	0.93	0.07	35,438	24,463
Construction	2,374,619	0.06	0.89	0.11	47,520	22,868
Industries covered by 1966 FLSA	7,962,920	0.21	0.86	0.14	33,435	21,405
Schools	2,913,630	0.08	0.90	0.10	38,560	30,513
Nursing homes	1,419,030	0.04	0.91	0.09	37,928	23,684
Hospitals	1,260,220	0.03	0.79	0.21	27,767	20,939
Hotels & laundries	741,447	0.02	0.76	0.24	25,581	16,667
Restaurants	777,805	0.02	0.86	0.14	22,344	15,777
Agriculture	599,313	0.02	0.75	0.25	24,406	11,685
Entertainment	251,475	0.01	0.87	0.13	44,099	22,524
Public Administration	2,848,719	0.07	0.87	0.13	46,944	35,436
Domestic service	679,782	0.02	0.31	0.69	10,054	8,381

Source: 1967 March CPS. Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Industries covered by 1938 Fair Labor Standards Act (FLSA), and subsequent amendments (1961 and 1966 amendments).

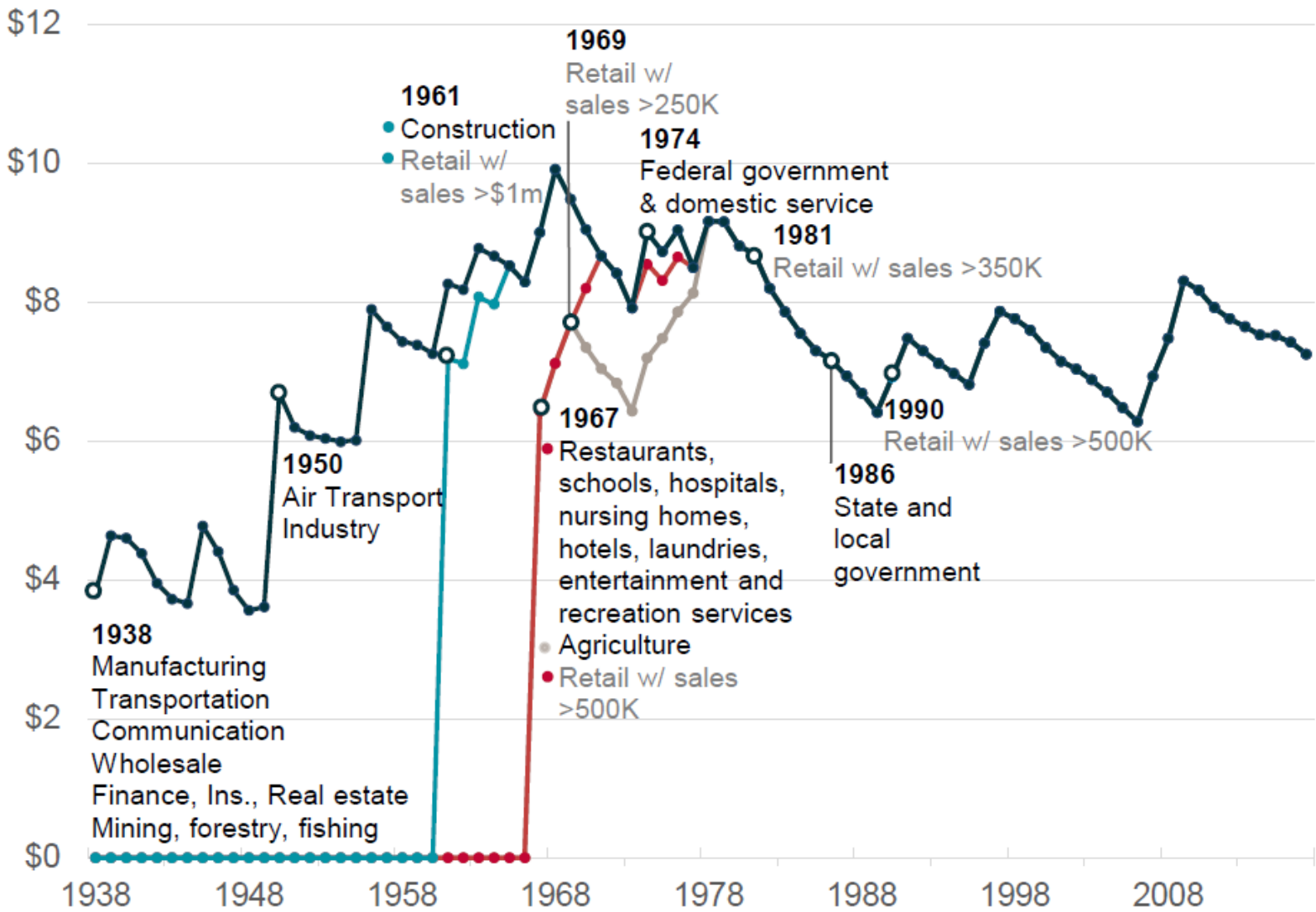
▸ Back

Black shares in total black employment, by industry



Back

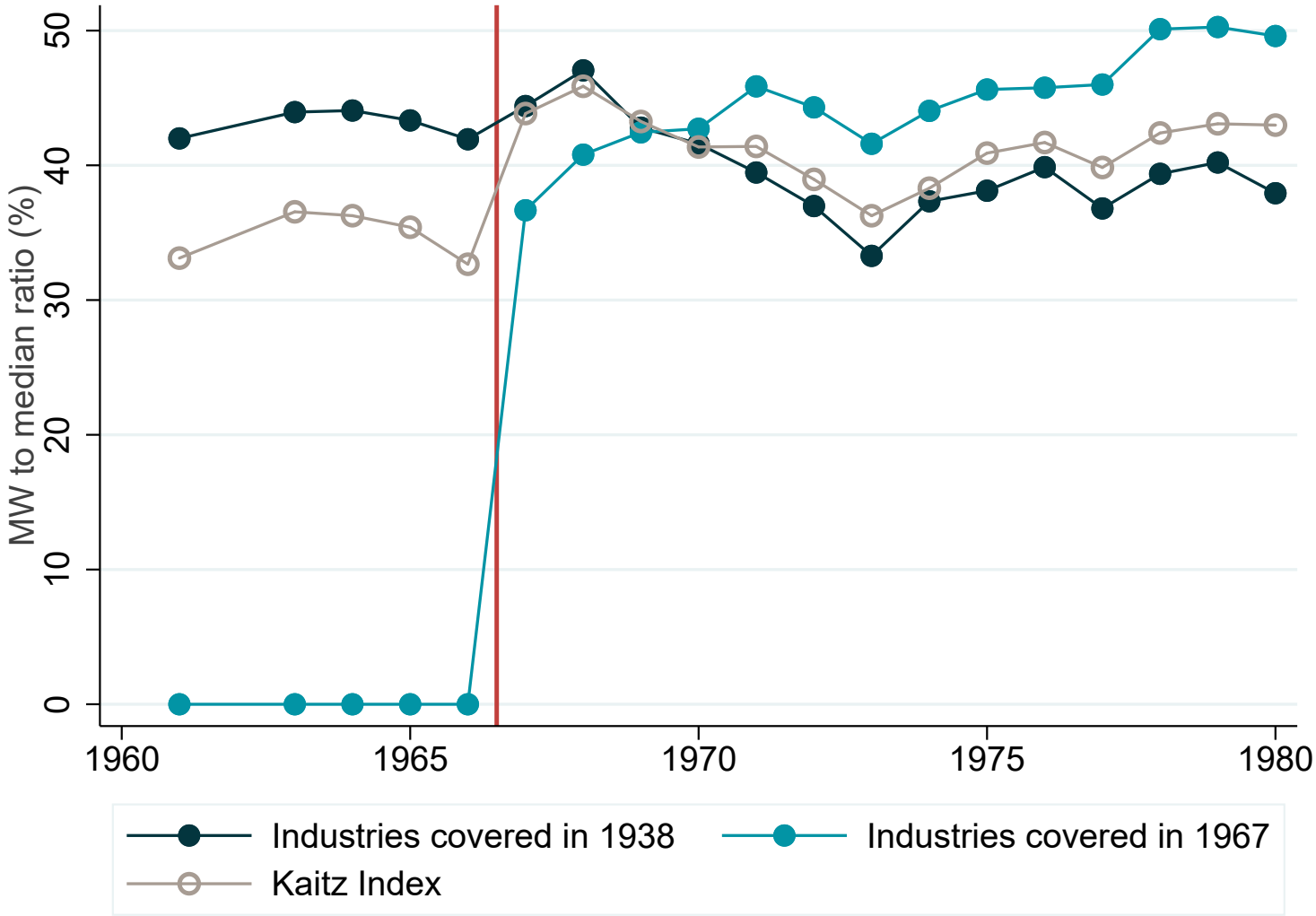
The Fair Labor Standards Act (1938-2017), $2017



Note: Minimum wage series deflated using CPI-U-RS ($ 2017).

Back

Minimum wage to median ratio and Kaitz index



Back

Effect of 1967 extension of min. wage on annual earnings

→ Similar point estimates with and without controls.

→ Sorting on observables not part of response to '67 reform.

▸ Back

Effect of 1967 extension of min. wage on annual earnings

→ No effect on intensive margin in the short-run.

→ Slight ↘ in nb hours and weeks worked post-1975.

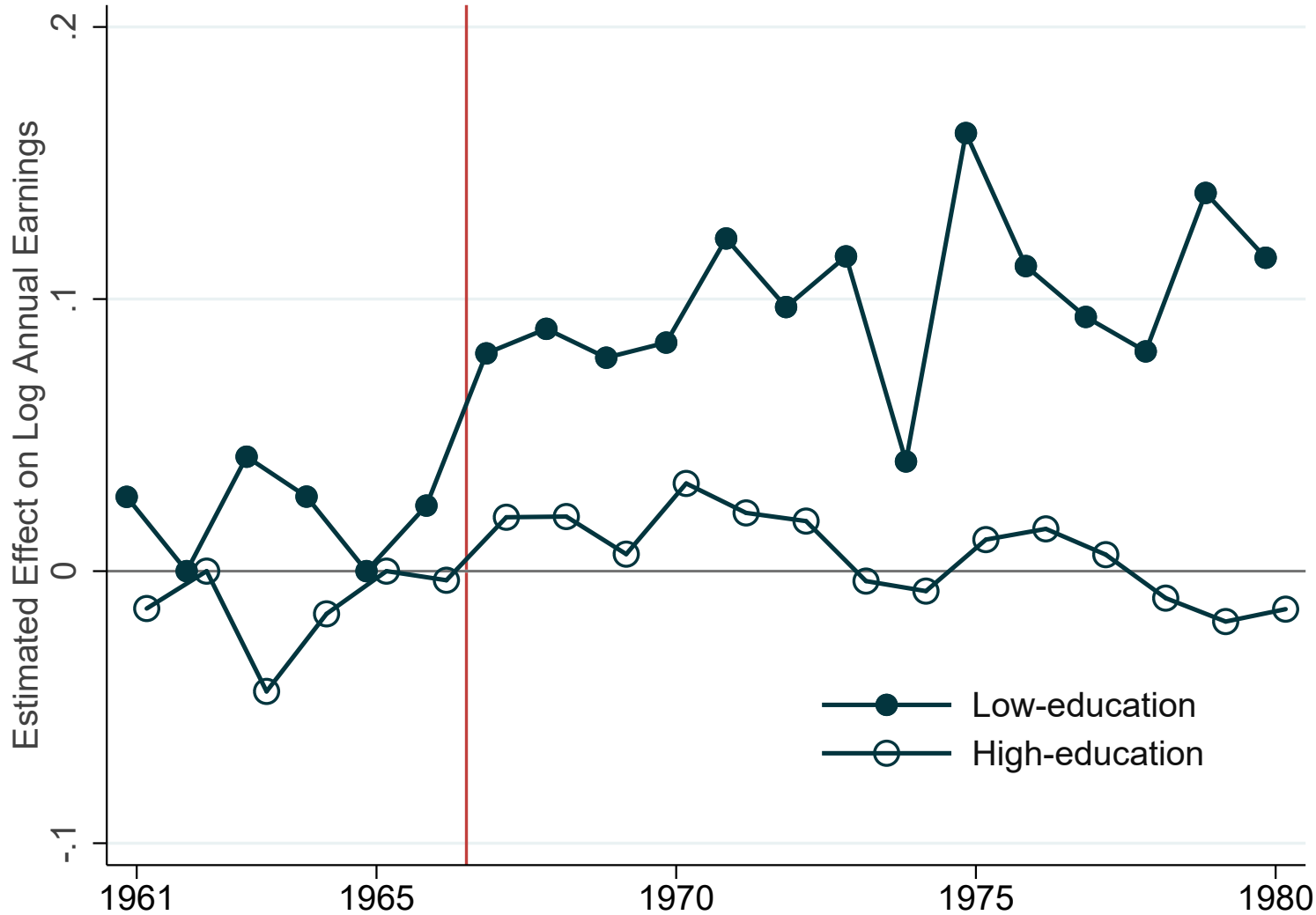
▸ Back

Effect on earnings for high- vs. low-education workers among blacks

→ Effect **concentrated among low-education workers**.

▸ Back

Effect on earnings for high- vs. low-education workers among whites



→ Effect **concentrated among low-education workers**.

▸ Back

Effect on hourly wages using BLS data

Model 1: $y_{jrt} = \alpha + \beta_1 \text{Covered 1967}_j \times \text{Post}_t + \nu_j + \eta_r + \lambda_t + \varepsilon_{jrt}$

Model 2: $y_{jrt} = \alpha + \beta_1 \text{Covered 1967}_j \times \text{Post}_t \times \text{South}_r + \beta_2 \text{Covered 1967}_j \times \text{Post}_t + \beta_3 \text{Post}_t \times \text{South}_r + \beta_4 \text{Covered 1967}_j \times \text{South}_r + \nu_j + \eta_r + \lambda_t + \varepsilon_{jrt}$

	Model 1		Model 2	
	Full sample	Strict sample	Full sample	Strict sample
Covered in 1967 ×				
1967-1969	0.110***	0.112***	0.089***	0.081***
	(0.034)	(0.027)	(0.029)	(0.019)
1967-1969 × South			0.092***	0.136**
			(0.032)	(0.049)
Obs	167	89	167	89
Time FE	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y
Region FE	Y	Y	Y	Y

→ Consistent (although a bit higher) with effects on annual earnings in CPS.

▸ Back

Effect on earnings in strongly vs. weakly treated states

$\forall$ period $k \in$ [1961-1966], [1967-1972] & [1973-1980],

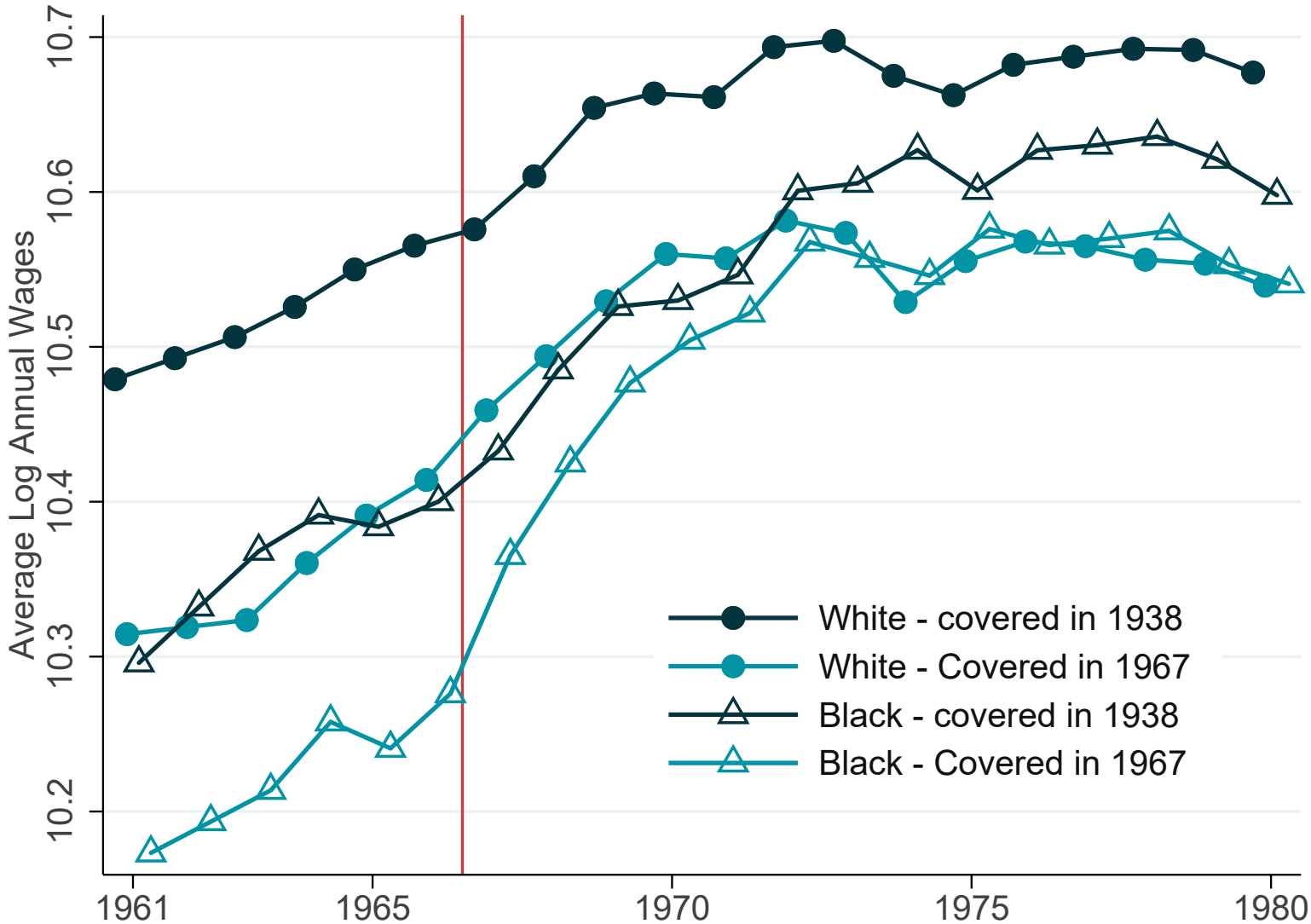
$$\log w_{ist} = \alpha + \text{Strongly}_s + \sum_k \beta_k \text{Strongly}_s \times \delta_{t+k} + \mathbb{X}'_{ist}\Gamma + \delta_s + \delta_k + \varepsilon_{ist}$$

	All	Treated	Control
Strongly treated states × 1967-1972	0.040***	0.067**	0.030***
	(0.010)	(0.024)	(0.007)
Obs	534,977	134,896	272,896
Controls	Y	Y	Y
Time FE	Y	Y	Y
State FE	Y	Y	Y

→ Wage effect in 1967 industries (+6.7%) > 1938 ind. (+3%).

→ 1966 share of workers ≤ \$1 larger in strongly (11.2%) than in weakly treated states (5.7%). ▸ Back to wages ▸ Back to emp.

Effect on earnings for white and black workers



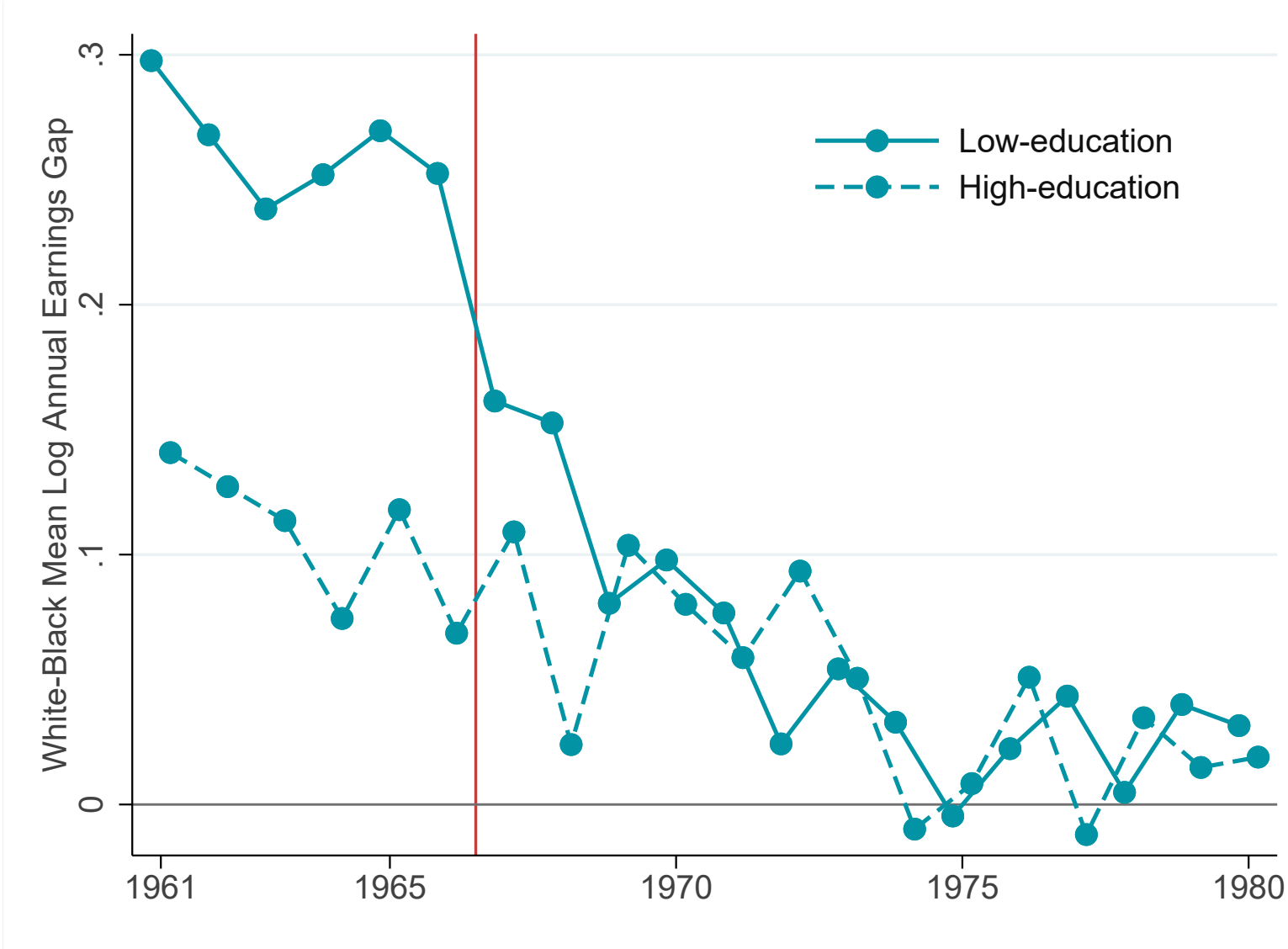
Back

Effect on earnings for white and black workers

	(1)		(2)	
	White	Black	White	Black
Covered in 1967 ×				
1967-1972	0.095***	0.054**	0.074**	0.048**
	(0.022)	(0.023)	(0.030)	(0.022)
1973-1980	0.078*	0.036	0.043	0.035
	(0.037)	(0.042)	(0.043)	(0.041)
Obs	37,770	370,053	36,895	370,053
Controls	Y	Y	Y	Y
Time FE	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y
State FE	N	N	Y	Y
State-by-year FE	N	N	Y	Y

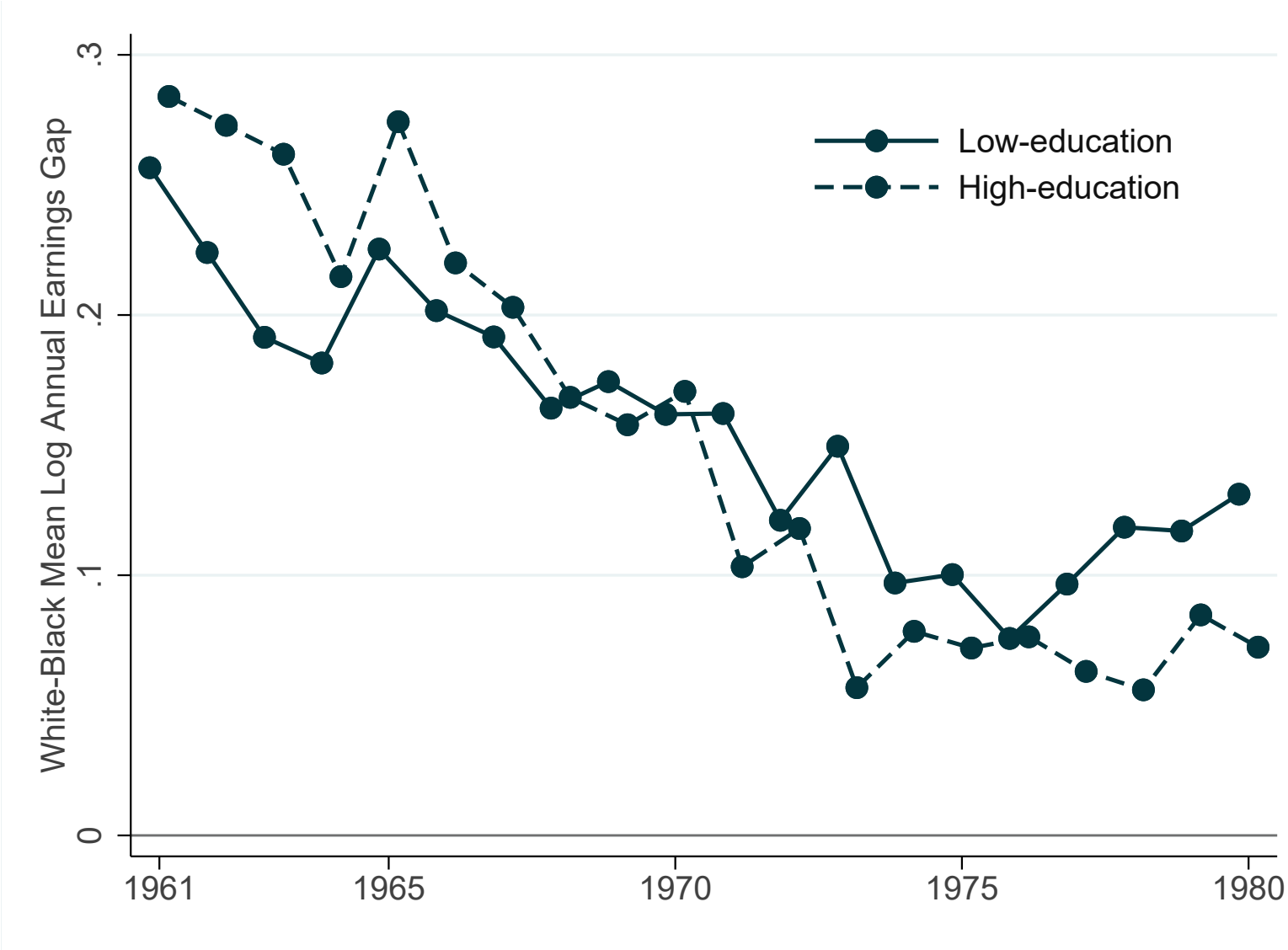
Back

Adjusted White-Black Earnings Gap within treated industries



Back

Adjusted White-Black Earnings Gap within control industries



Back

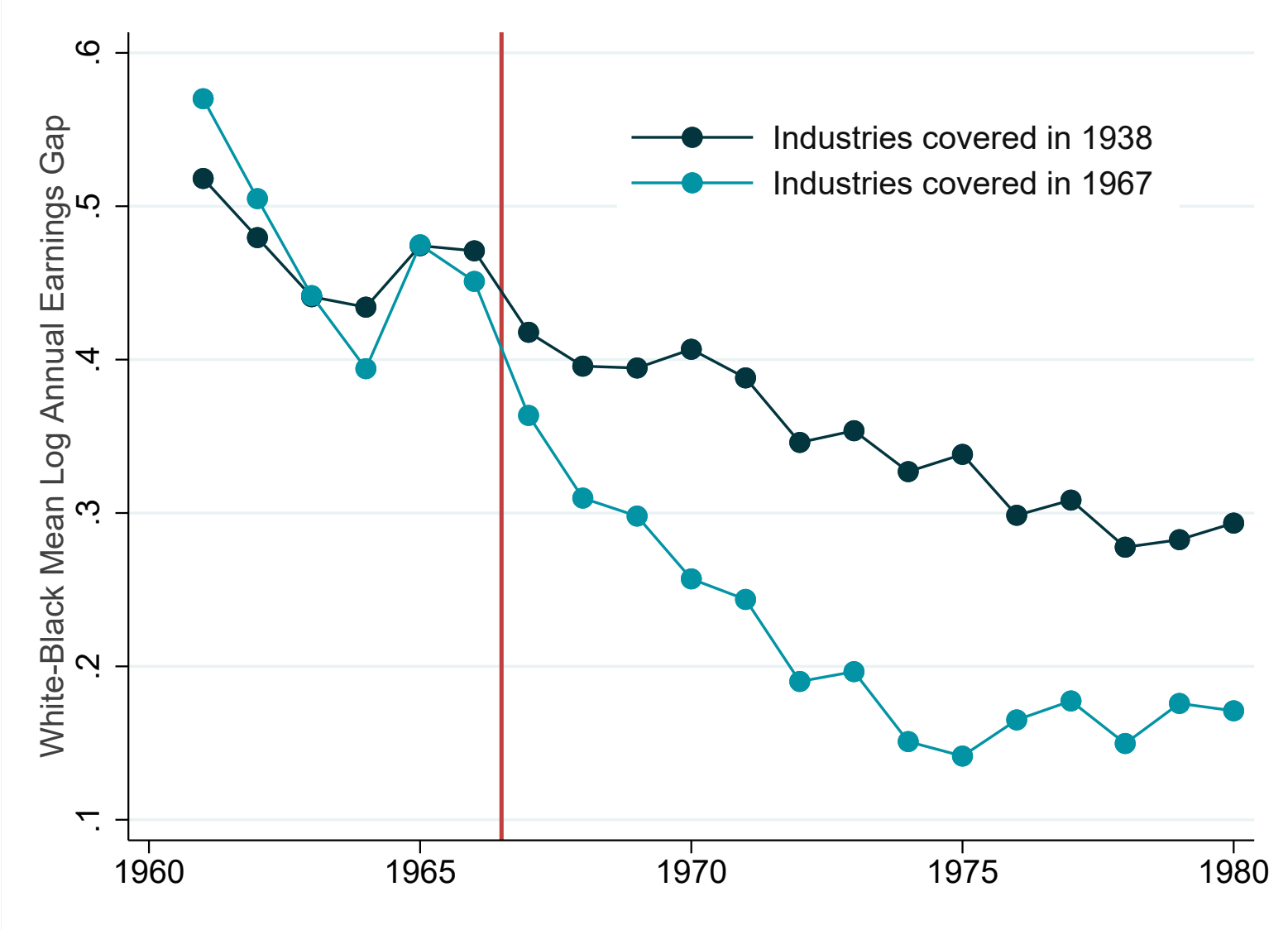
Effect on racial gap driven by reduced gap among men

	All	Women	Men
Covered in 1967 × 1967-1972	-0.076	-0.043	-0.085
	(0.043)	(0.036)	(0.065)
Obs	407,823	157,510	250,313
Controls	Y	Y	Y
Time FE	Y	Y	Y
Industry FE	Y	Y	Y

Notes: Adults 25-55, worked more than 13 weeks last year, worked more than 3 hours last week. Standard errors clustered at the industry level.

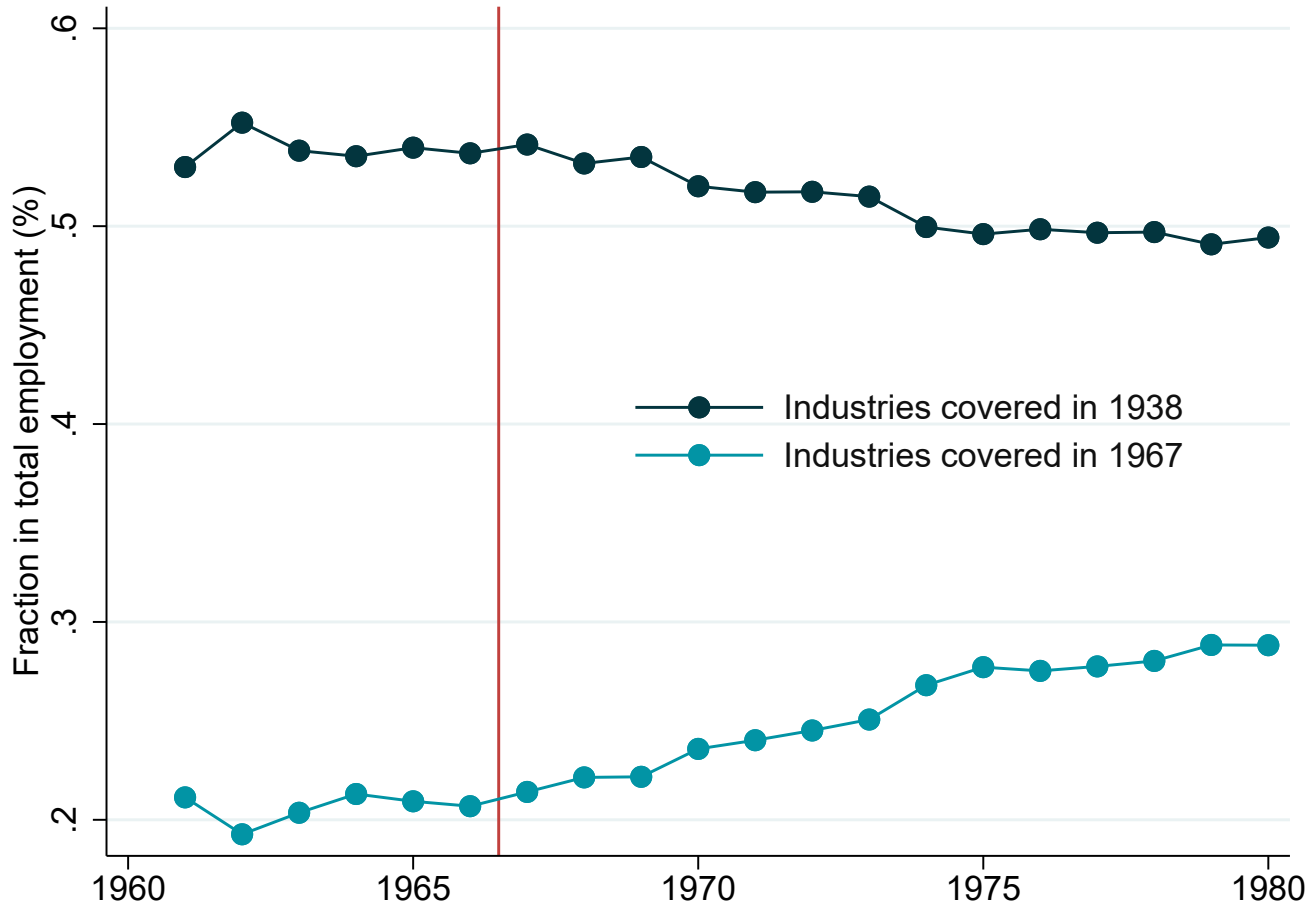
Back

Unadjusted White-Black Earnings Gap



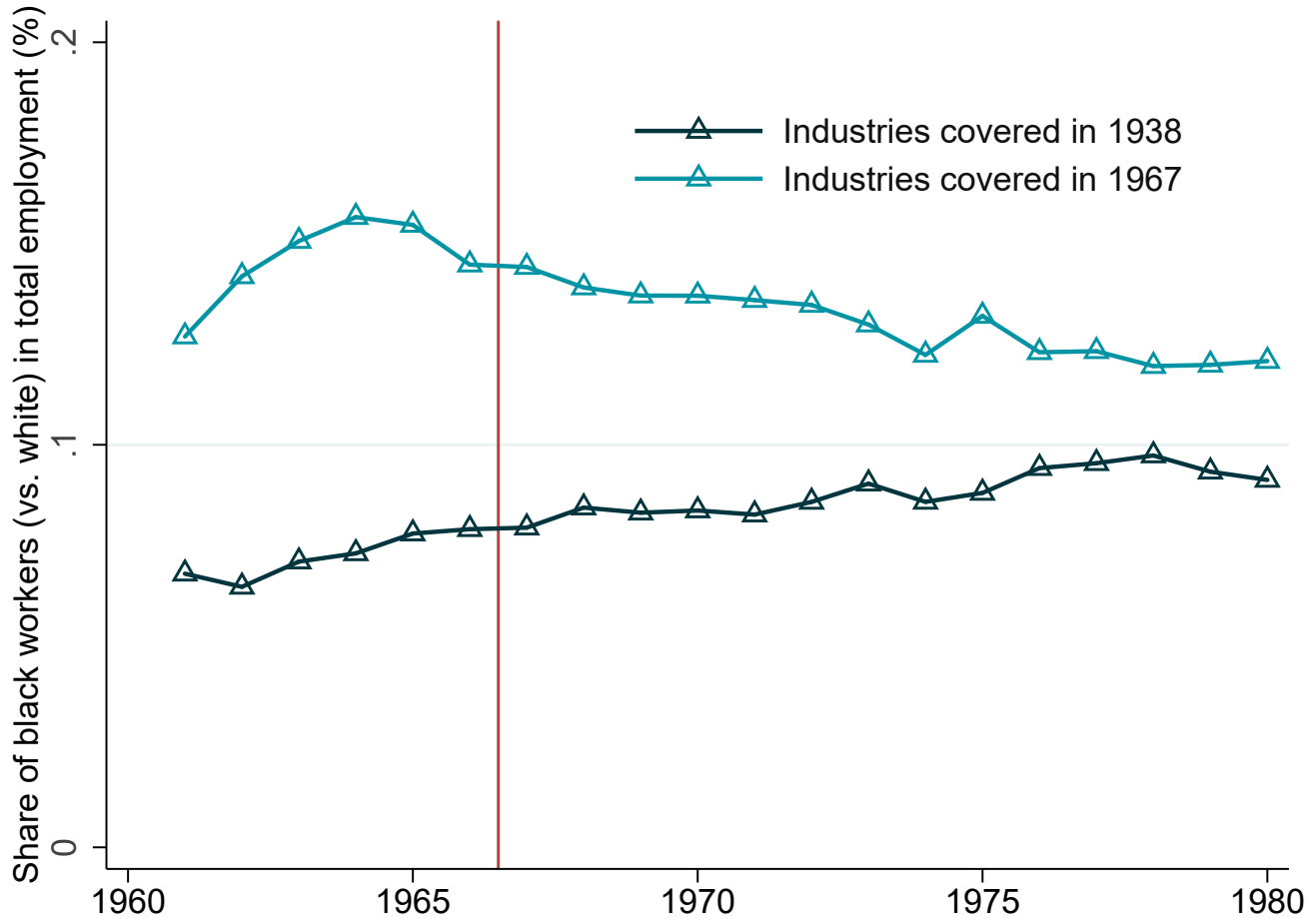
→ Unadjusted racial gap falls to ∼ 15% in treated industries after the reform. ▸ Back

Employment shares by industry type



Source: March CPS 1962-1981. Back

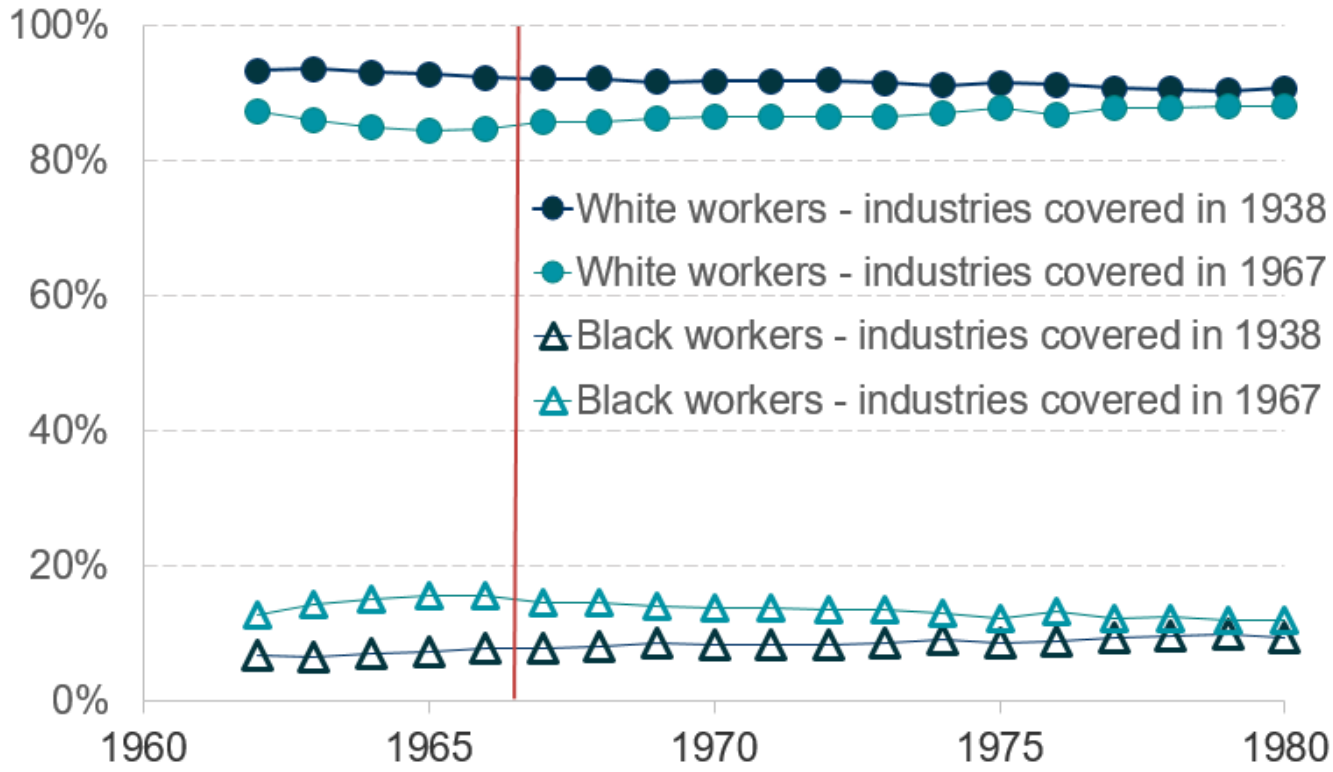
Black employment shares (vs. White) by industry type



Source: March CPS 1962-1981.

Back

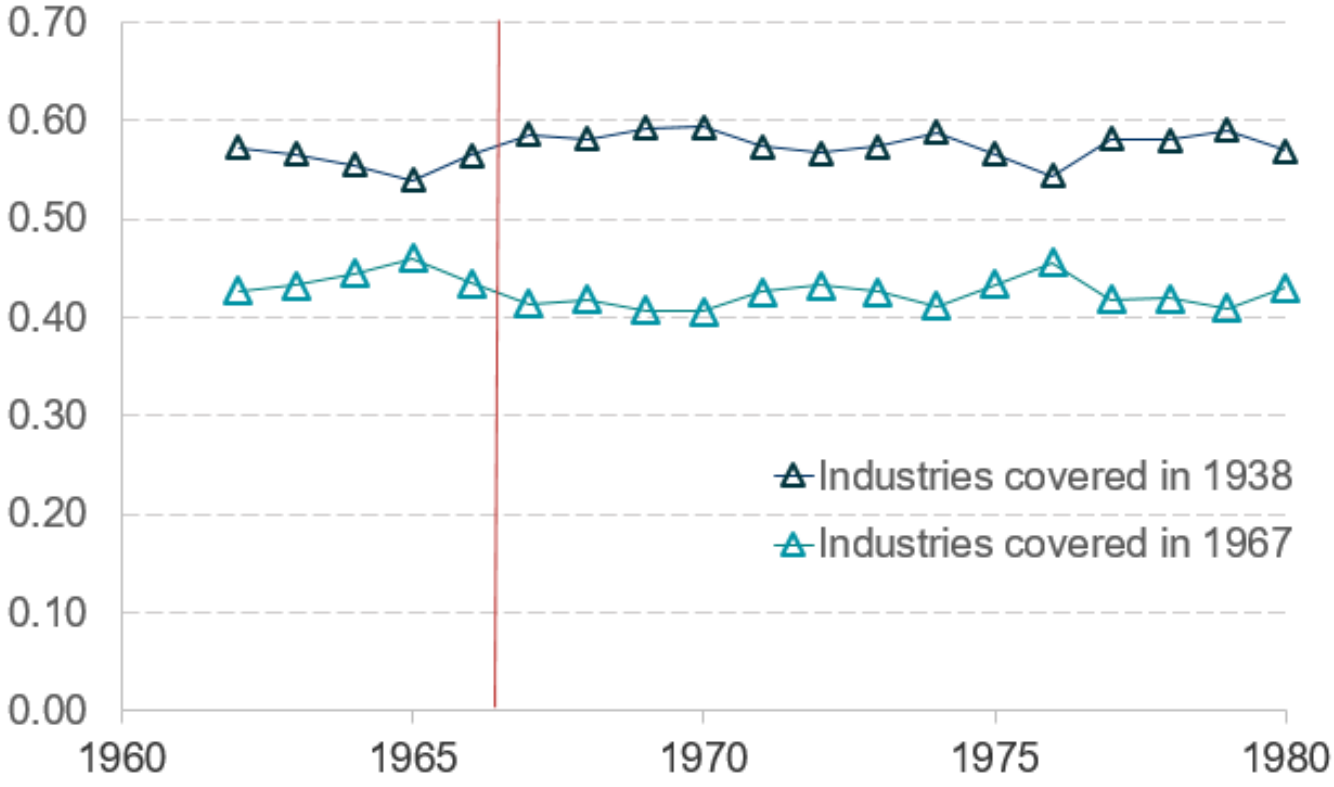
Black & White employment shares by industry type



Source: March CPS 1962-1981.

Back

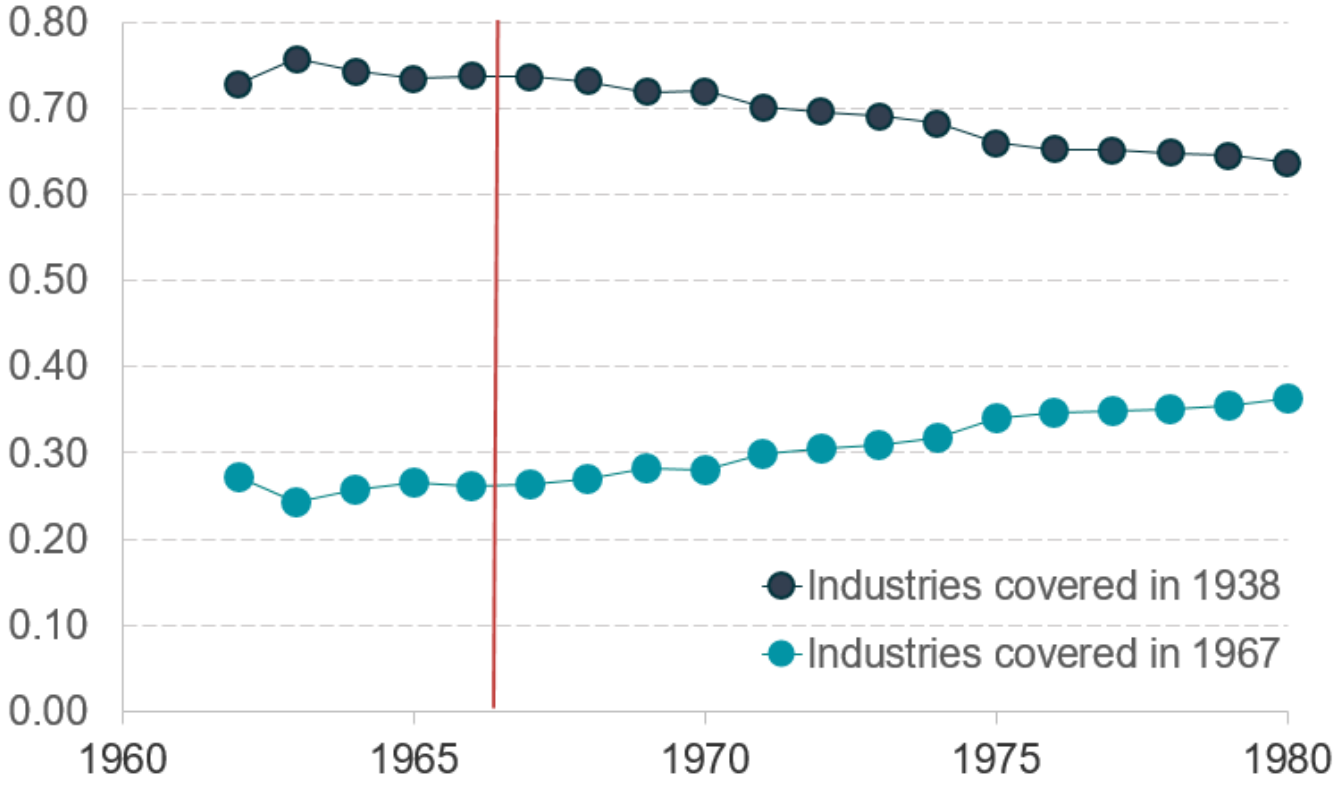
Black emp. shares by industry in total black emp.



Source: March CPS 1962-1981. Total employment defined here as employment in industries covered in 1938 and industries covered in 1967 combined.

Back

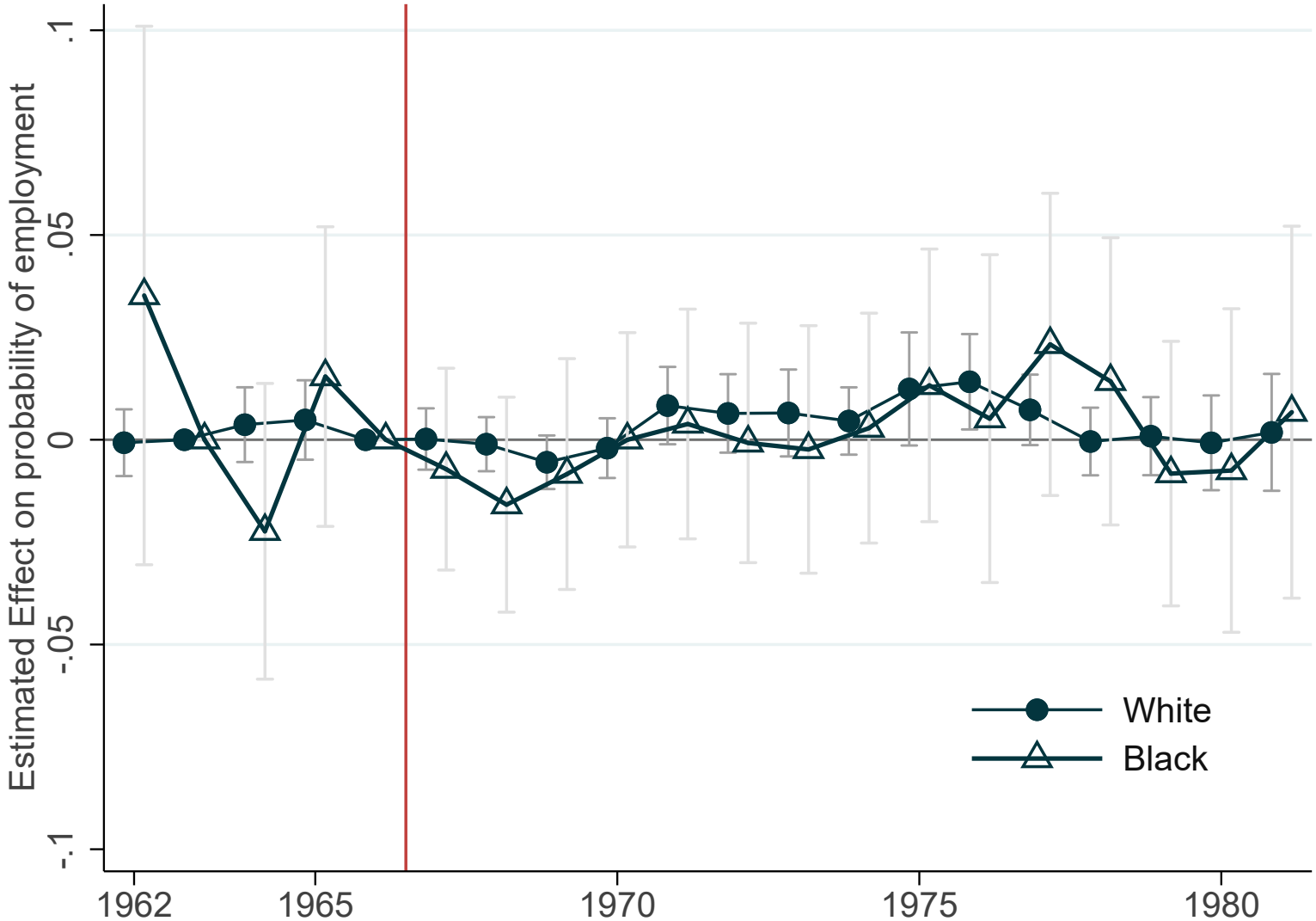
White emp. shares by industry in total white emp.



Source: March CPS 1962-1981. Total employment defined here as employment in industries covered in 1938 and industries covered in 1967 combined.

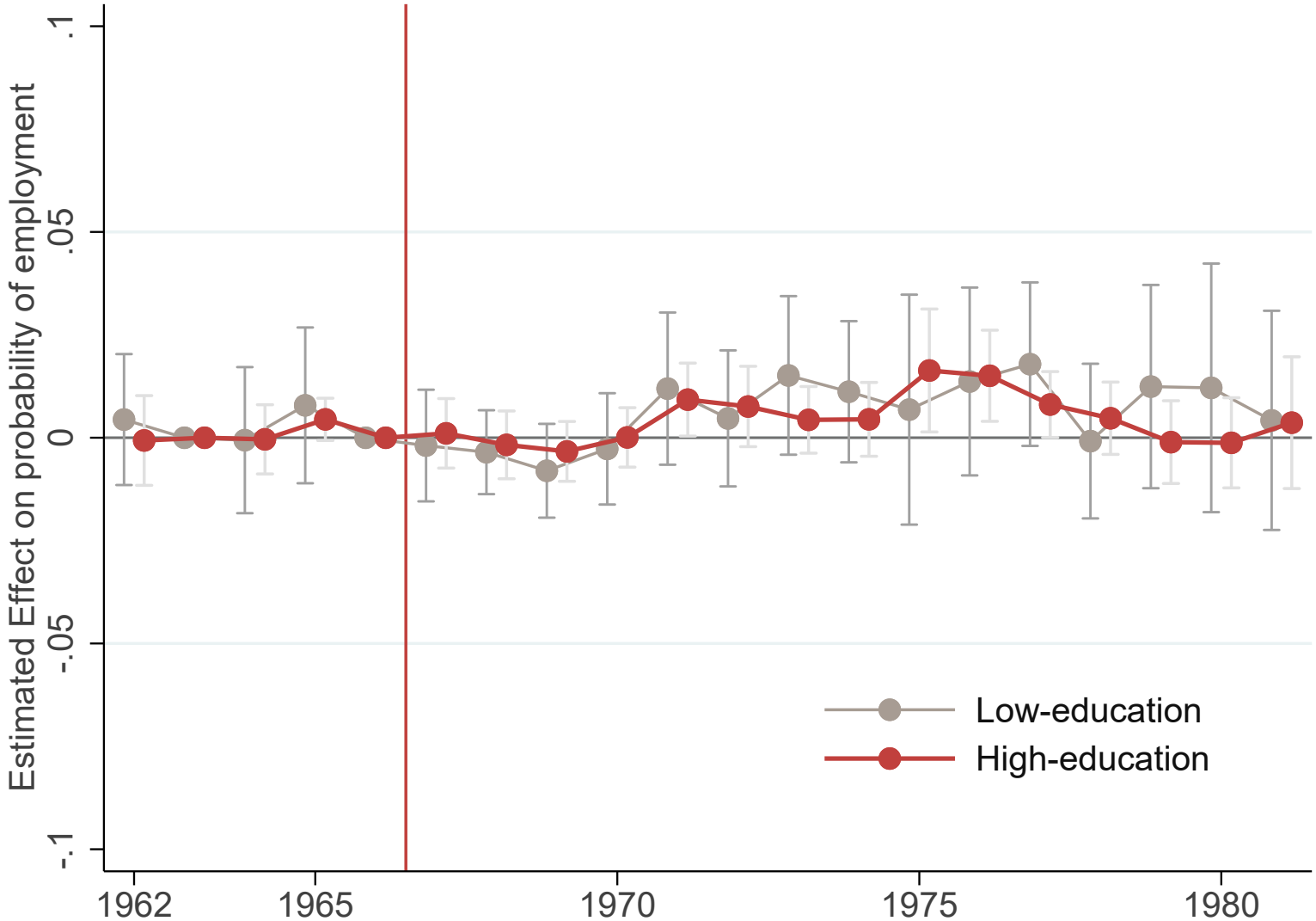
Back

Impact on employment, by race



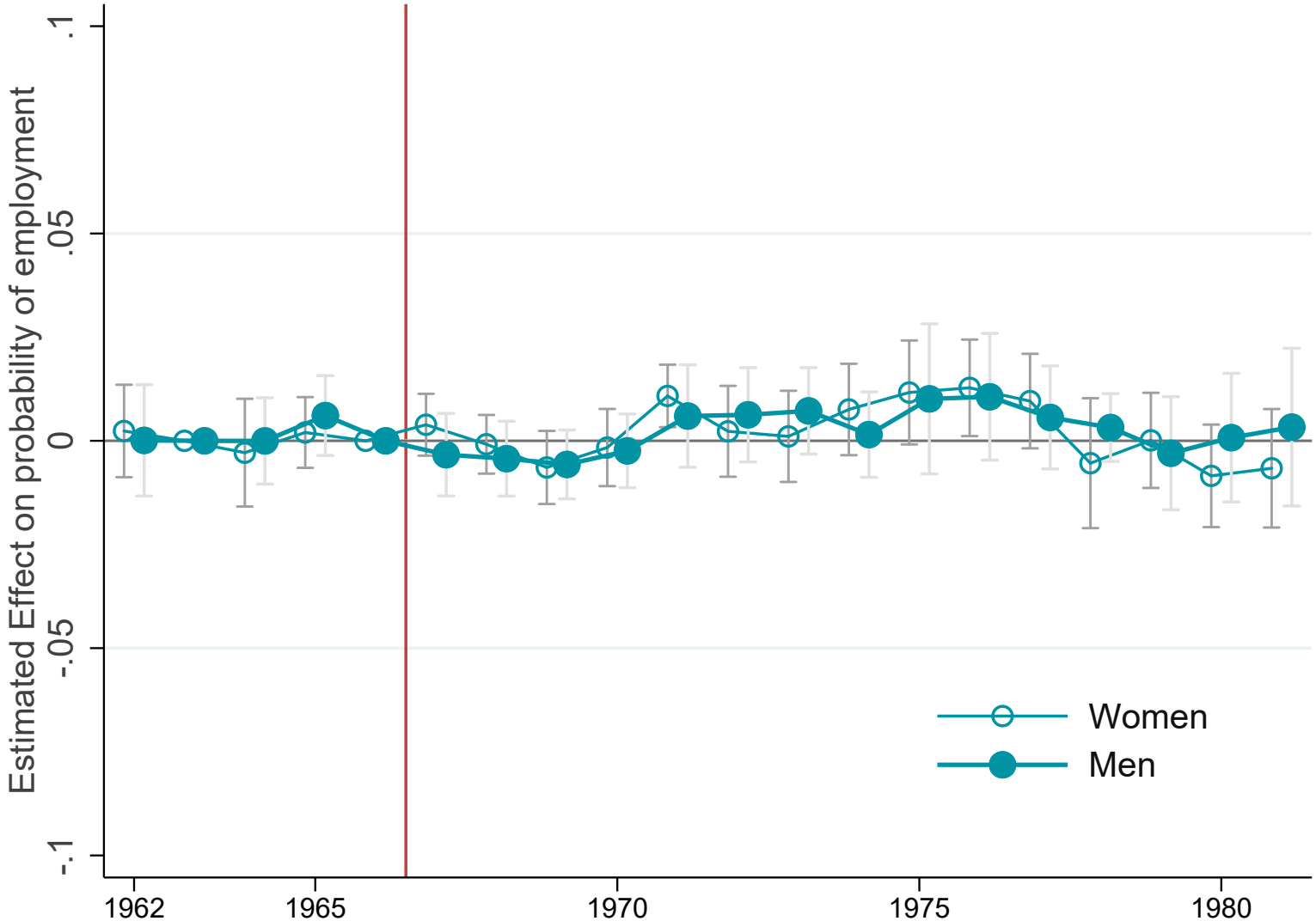
Back

Impact on employment, by education



Back

Impact on employment, by gender



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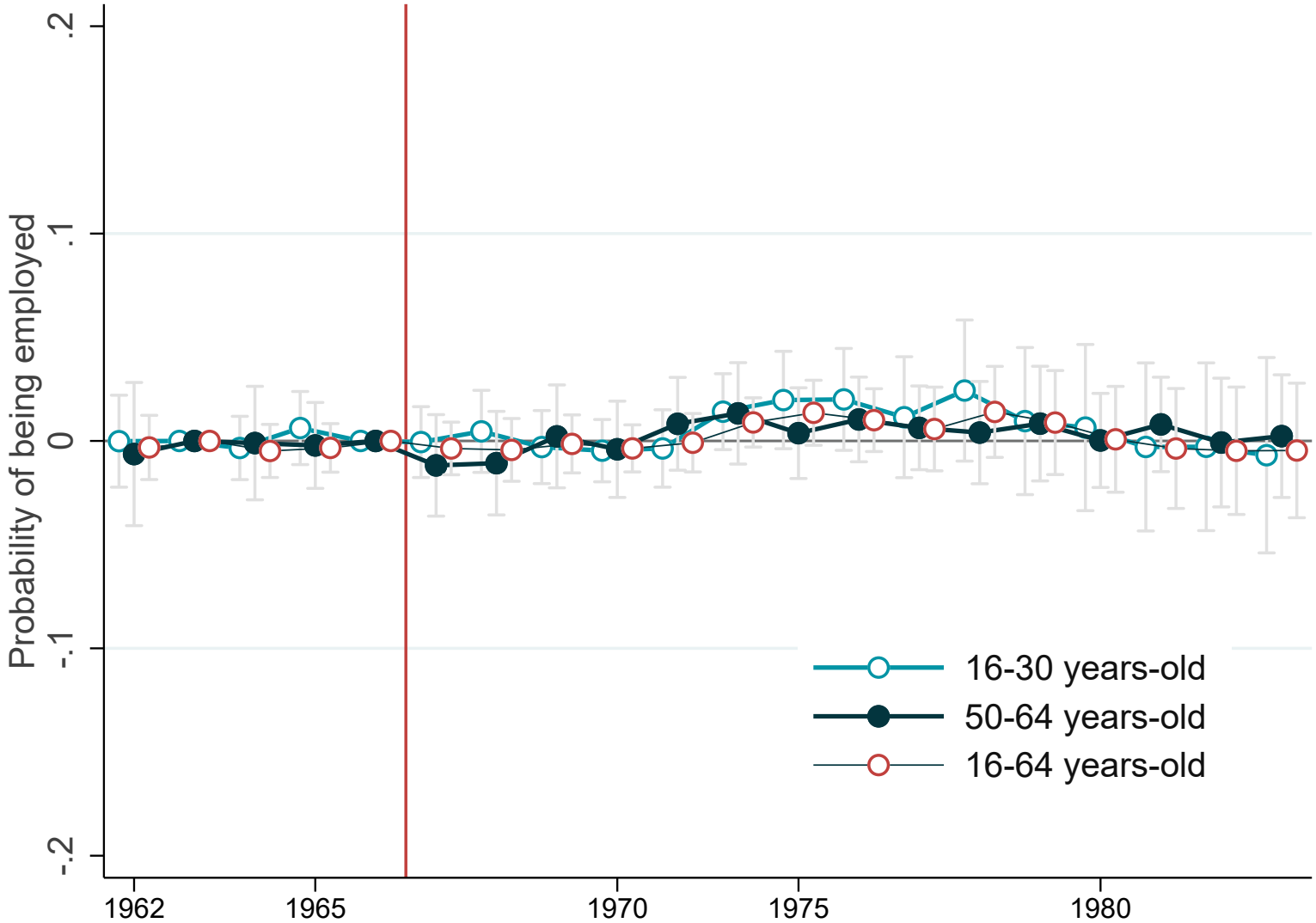
Impact on employment, across cohorts



Back

Results on probability of employment (vs. unemp./NILF)

$\forall$ period $k \in$ [1961-1966], [1967-1972] & [1973-1980],

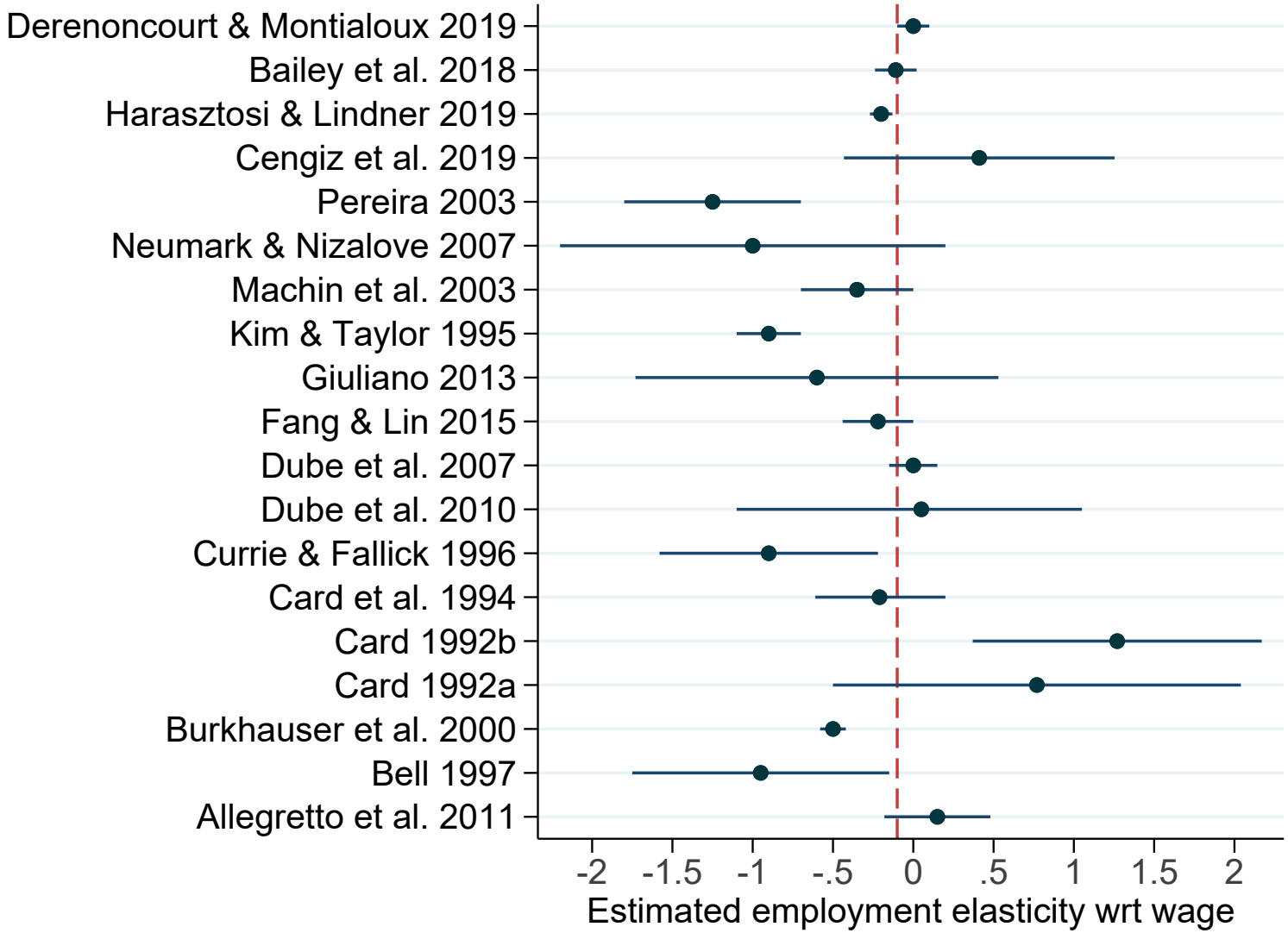
$$\mathbb{1}\{\text{emp}_{ist}\} = \alpha + \delta_k + \sum_k \beta_k \text{Strongly}_s \times \delta_{t+k} + \mathbb{X}'_{ist}\Gamma + \delta_s + \varepsilon_{ist}$$

	All	Black	White
Strongly treated states × 1967-1972			
Employment	0.006	0.013	0.007*
	(0.004)	(0.009)	(0.004)
	944,981	88,763	856,218
Earnings	0.040***	0.123***	0.025***
	(0.010)	(0.025)	(0.008)
	534,977	51,666	483,311
Employment elasticity	0.22	0.15	0.41
se	(0.15)	(0.11)	(0.25)
Controls	Y	Y	Y
Time FE	Y	Y	Y
State FE	Y	Y	Y

$\rightarrow$ Can rule out employment elasticity wrt earnings < -0.1.

▸ Back

Employment elasticities in the literature and in this paper



Back

Employment results using alternative cross-state designs

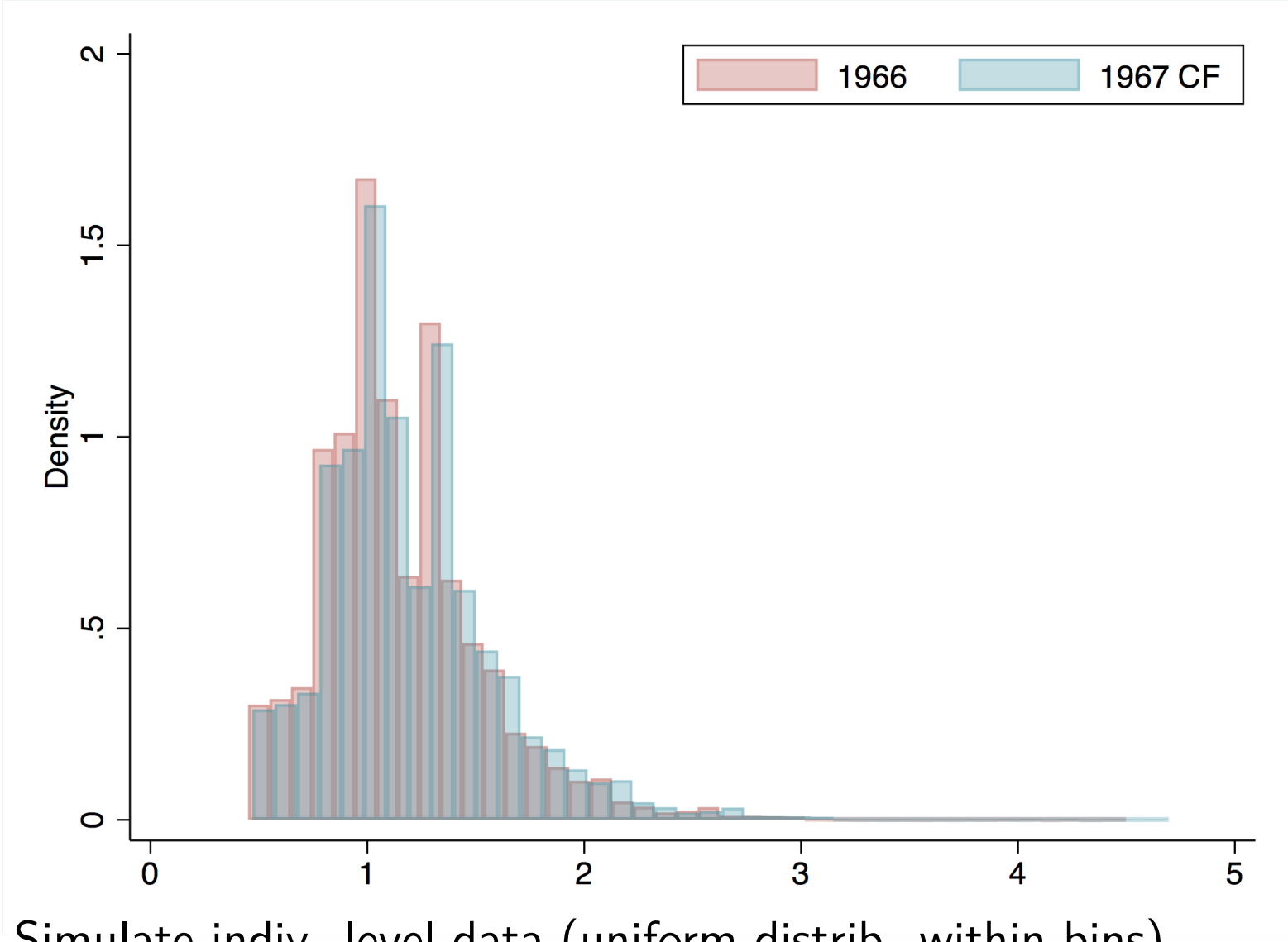
$\forall$ period $k \in$ [1961-1966], [1967-1972] & [1973-1980],

$$\mathbb{1}\{\text{emp}_{ist}\} = \alpha + \delta_k + \sum_k \beta_k \text{Treat. var.}_s \times \delta_{t+k} + \mathbb{X}'_{ist}\Gamma + \delta_s + \varepsilon_{ist}$$

	Alternative design #1 Kaitz index			**Alternative design #2** Fraction of affected workers		
	All	Black	White	All	Black	White
Treatment var. × 1967-1972						
Employment	-0.000	-0.005	0.000	0.001	-0.006*	0.001
	(0.001)	(0.004)	(0.001)	(0.001)	(0.003)	(0.001)
	693,088	65,851	627,237	693,088	65,851	627,237
Earnings	0.014***	0.051***	0.006	0.022***	0.064***	0.012***
	(0.005)	(0.013)	(0.004)	(0.004)	(0.012)	(0.004)
	534,798	51,615	483,183	534,798	51,615	483,183
Employment elasticity	-0.02	-0.10	0.06	0.03	-0.10	0.09
se	(0.07)	(0.07)	(0.17)	(0.05)	(0.05)	(0.08)
Controls	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y

$\rightarrow$ Can rule out elasticities < -0.24 for blacks. Back

Simulation of 1967 counterfactual in laundries South

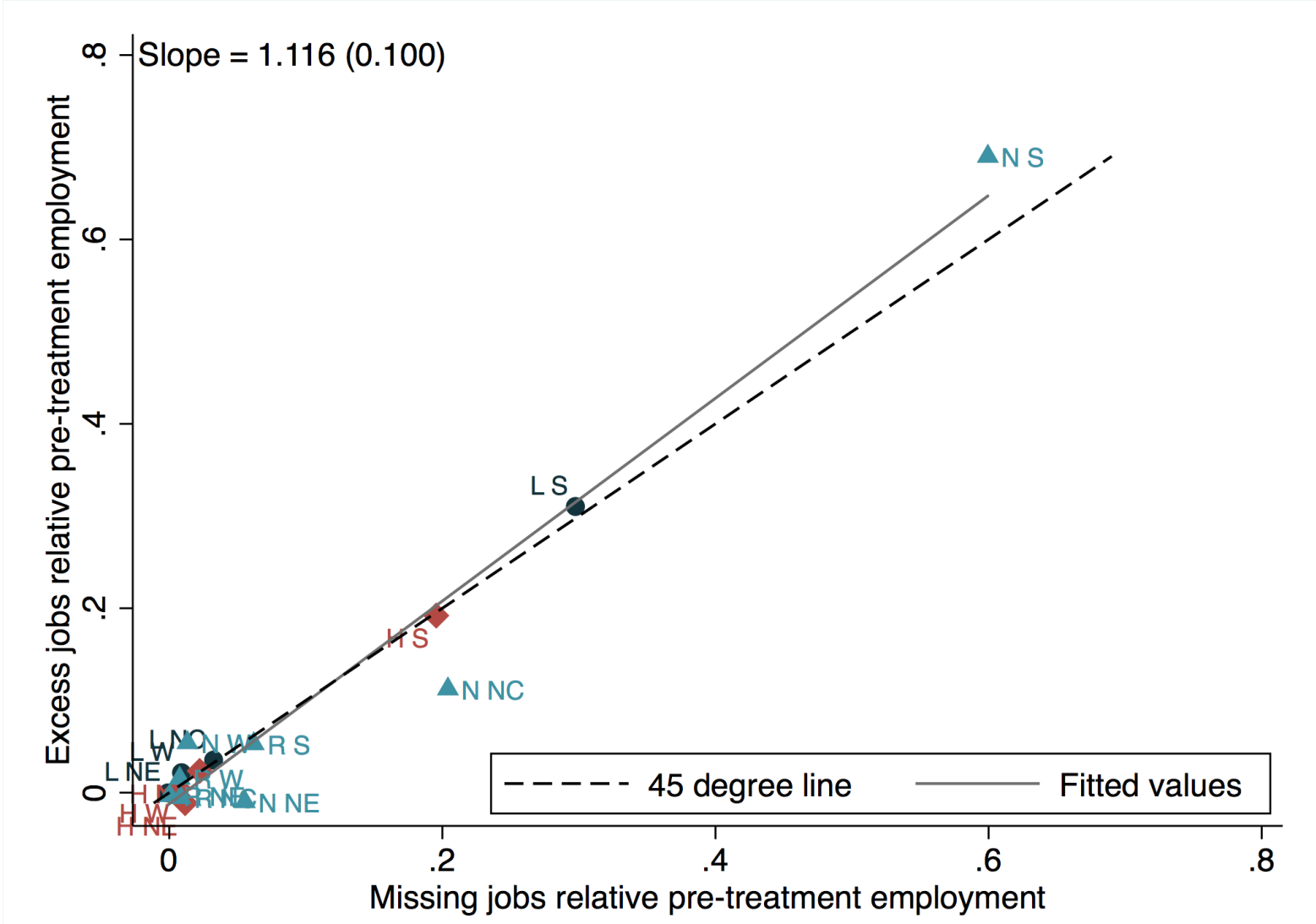


→ Simulate indiv. level data (uniform distrib. within bins).

→ Inflate wages & collapse back into original bins.

▸ Back

Generalized bunching estimates at 1.20 × MW



→ Slightly more > 0 emp. elasticity overall than 1.15 × MW.

→ Heterogeneity across regions $>$ across industries.

▸ Back

Employment elasticity wrt avg wage formula

$$\text{Emp. elasticity wrt avg wage} = \frac{\Delta e}{\Delta w} = \frac{\Delta a + \Delta b}{\Delta w}$$

- **Change in low-wage employment $\boldsymbol{\Delta e} = \Delta a + \Delta b$**
- **Missing jobs $\boldsymbol{\Delta a} = \text{Emp}^1[w < \text{MW}] - \text{Emp}^0[w < \text{MW}]$**
- **Excess jobs $\boldsymbol{\Delta b}$**
  $= \text{Emp}^1[MW \leq w < \bar{\text{W}}] - \text{Emp}^0[MW \leq w < \bar{\text{W}}]$

  Emp^1 (Emp^0) are # workers in 67 obs. (counterf.) distrib.
  Δe, Δa and Δb measured relative to 1966 employment.

- Change in average wages Δw

  1967 counterf.–1967 % change in avg wages in entire distrib.

Back

Alternative employment estimator using the BLS data

Compare 1966–1967 evolution of number of workers:

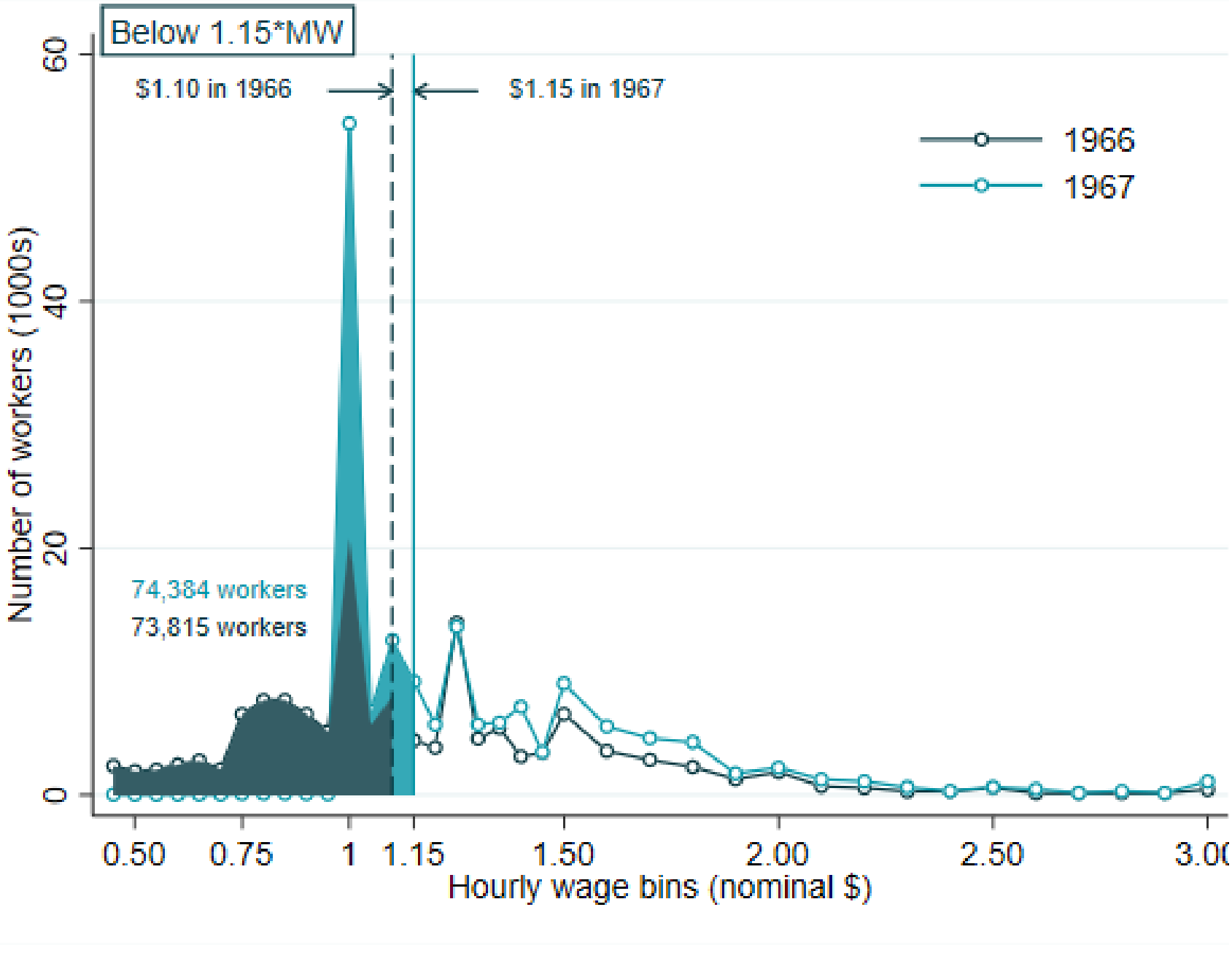
- Around minimum wage (affected by 1967 reform).
- Higher up in distribution (not affected by 1967 reform).
- Identification assumption: absent reform, # people employed at bottom of distrib. would have evolved as # employed at top.
- Checked no boom in low-wage emp. in control industries.

Benchmark assumption:

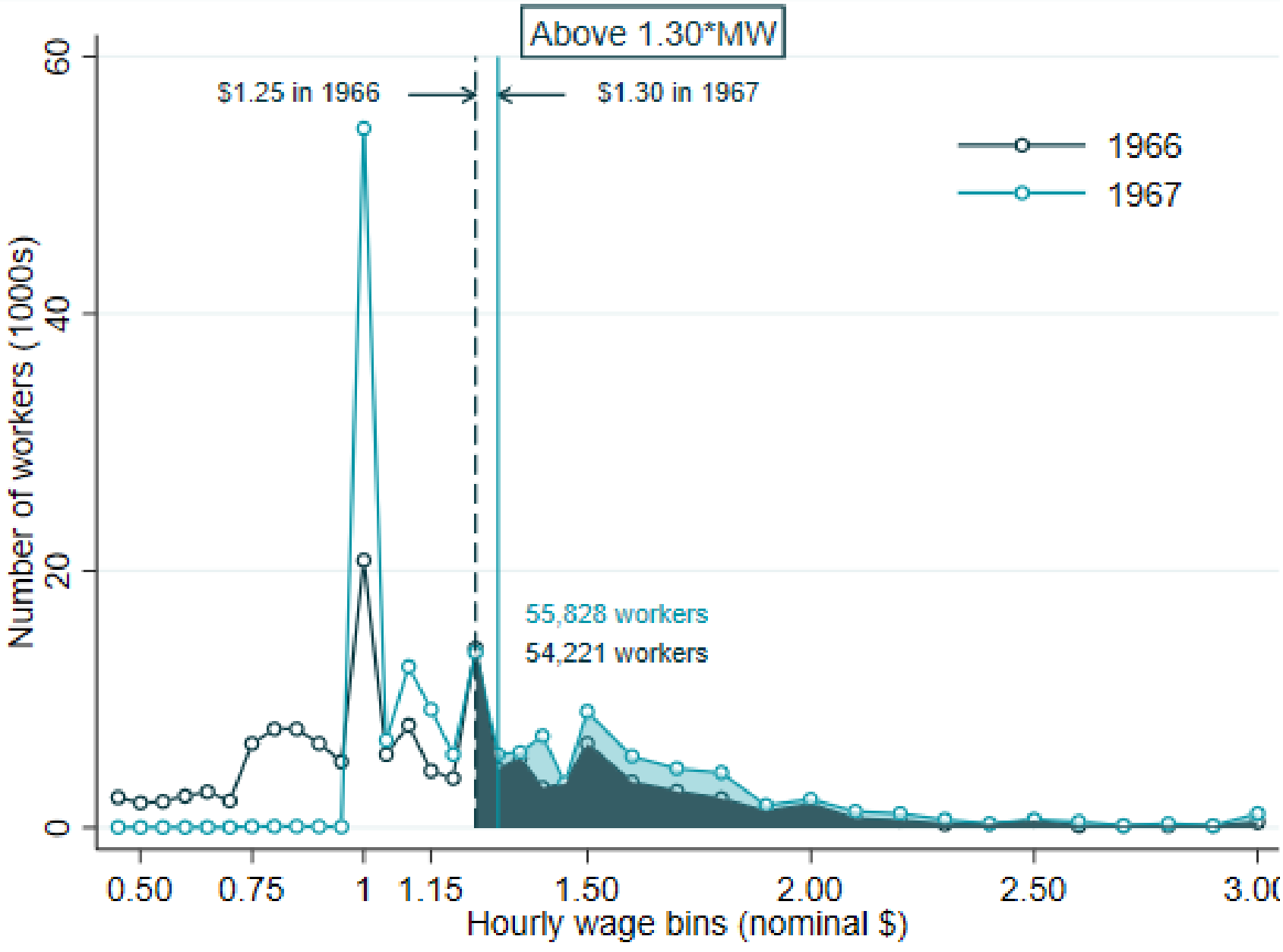
- Spillover up to 1.15 times minimum wage.
- Sensitivity analysis in robustness tests.

Back

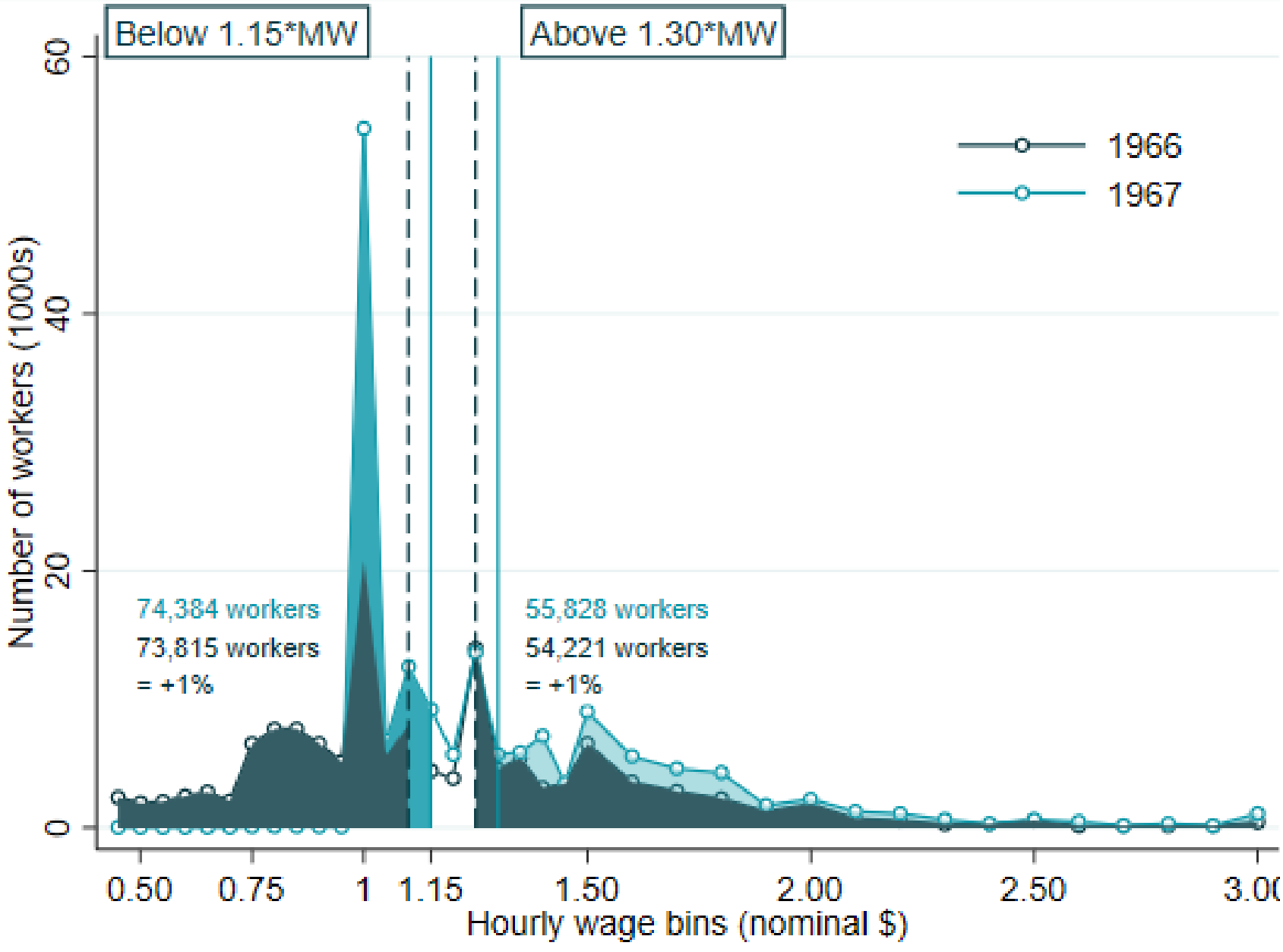
Hourly wage distribution in laundries in South



Hourly wage distribution in laundries in South



Hourly wage distribution in laundries in South



Generalized estimates

	Threshold for bottom	
Laundries, South	1×MW	1.15×MW
Employment		
1966-67 change, bottom (%)	2.8	1.0
1966-67 change, top [$1.30+] (%)	1.0	1.0
Average hourly wages		
1966-67 change (%)	27.06	18.2
Employment Elasticity	0.06	0.00
All industries, U.S.	1.15×MW	1.20×MW
Employment		
1966-67 change, bottom (%)	2.2	-1.3
1966-67 change, top [$1.70+] (%)	0.8	0.8
Average hourly wages		
1966-67 change (%)	8.73	7.36
Employment Elasticity	0.16	-0.28

▸ Laundries + regions ▸ Hotels ▸ Restaurants ▸ Nursing homes ▸ Schools

Generalized estimates

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▸ Laundries + regions ▸ Hotels ▸ Restaurants ▸ Nursing homes ▸ Schools

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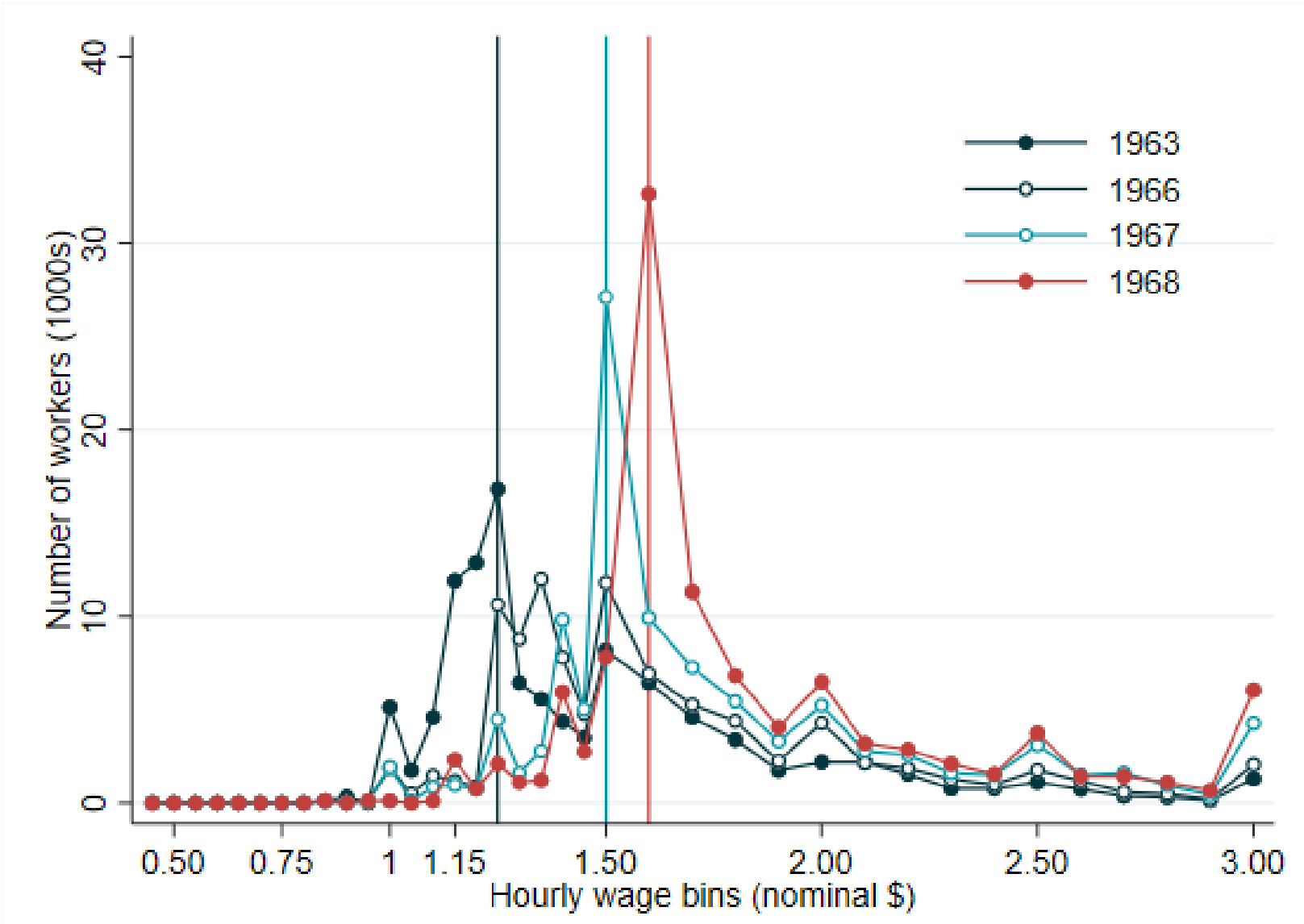
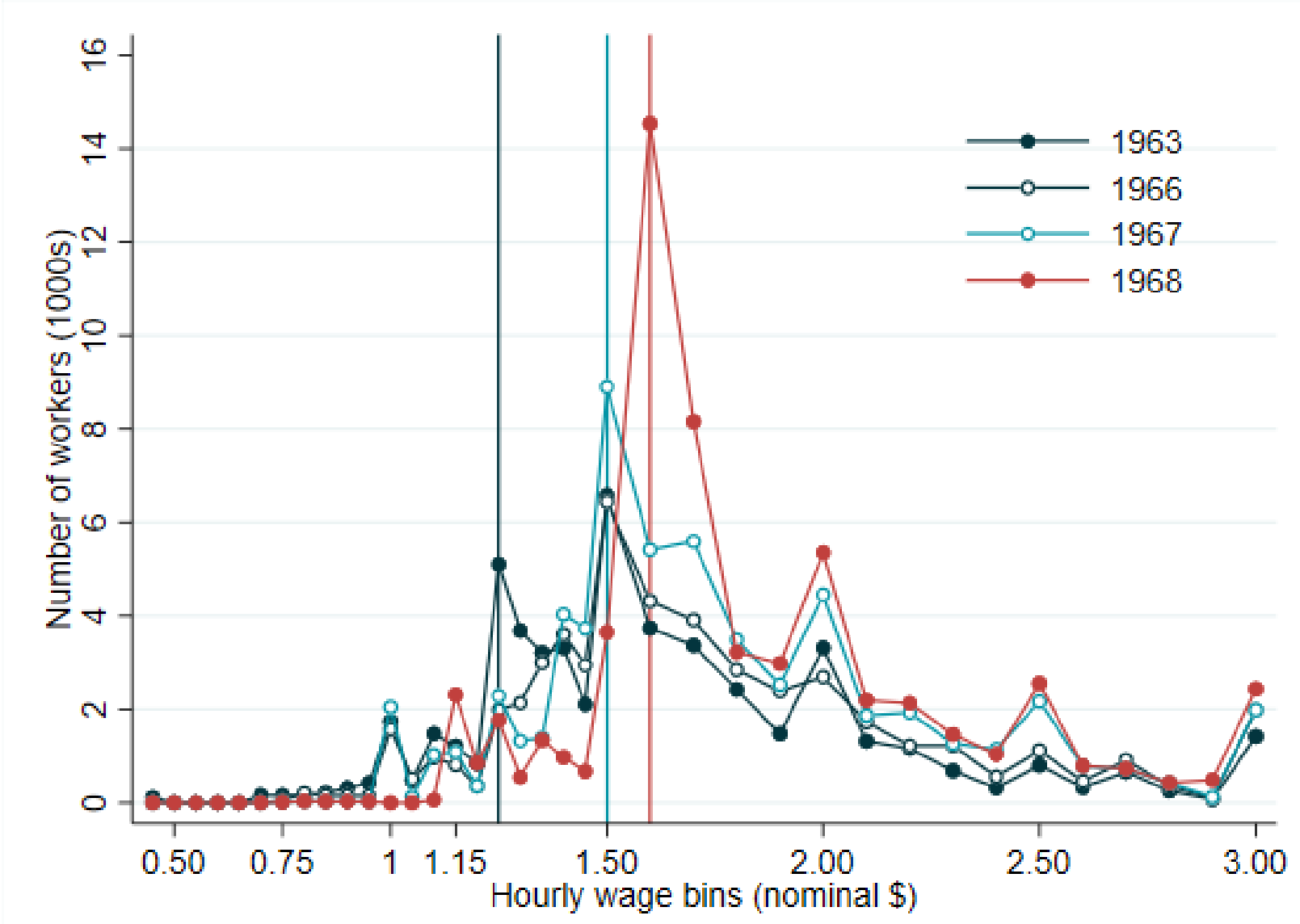
▸ Laundries + regions ▸ Hotels ▸ Restaurants ▸ Nursing homes ▸ Schools

Earnings distribution in laundries in Northeast



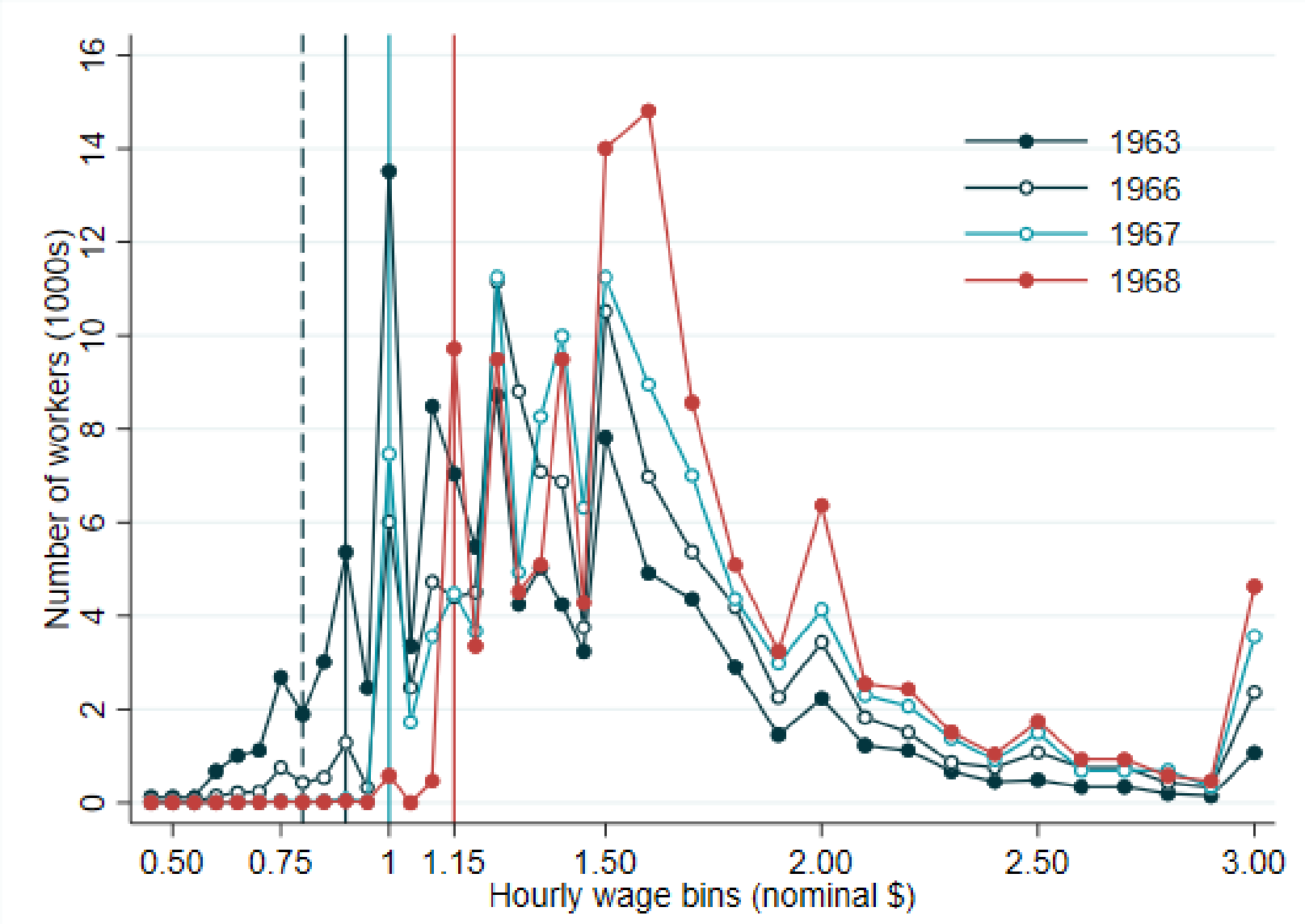
→ Min. wage in NY state: \$1.25 (1963 &1966), \$1.50 (1967), \$1.60 (1968). Back

Earnings distribution in laundries in West



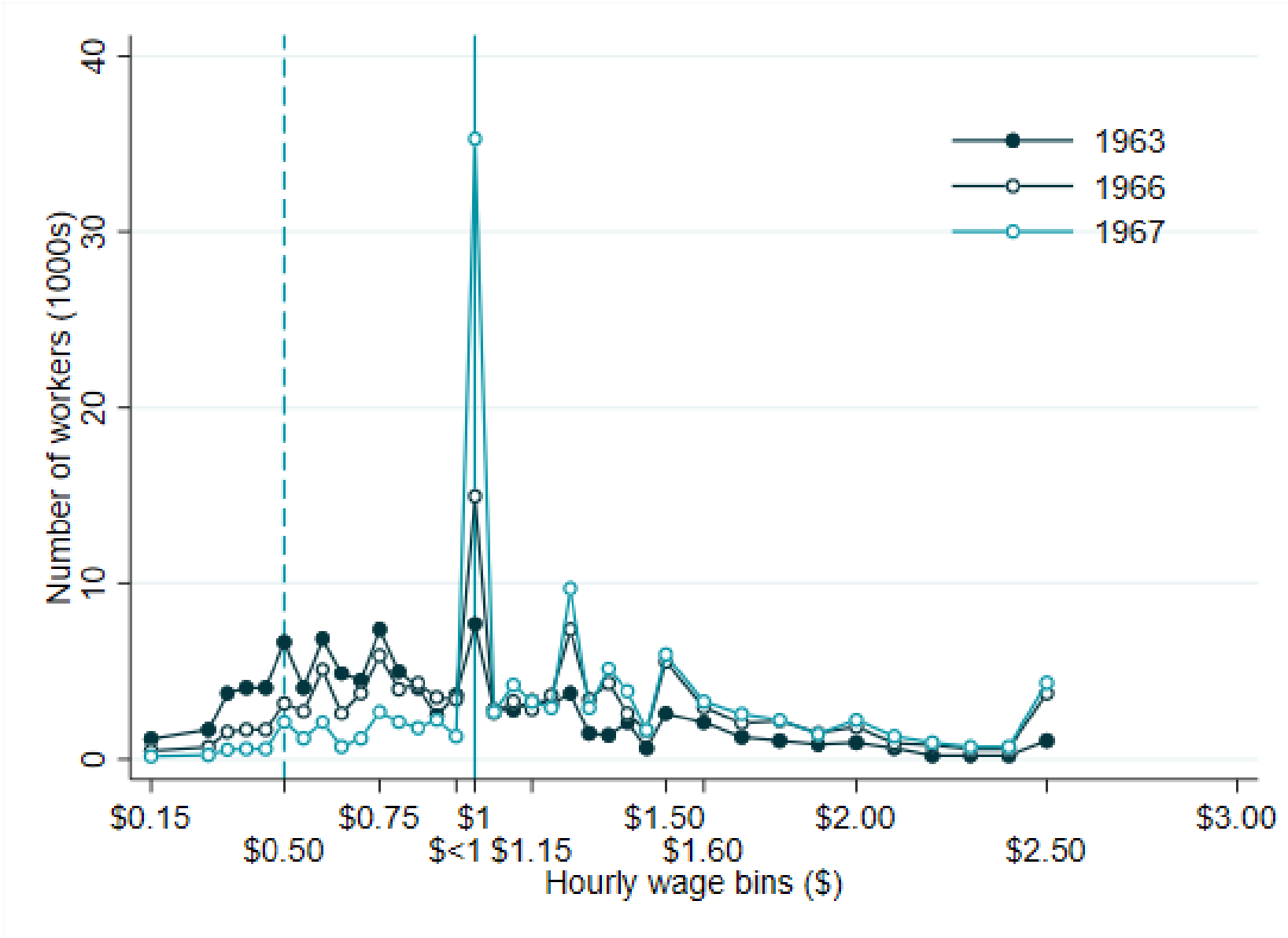
→ Min. wage in California: \$1.25 (1963 &1966), \$1.40 (1967), \$1.65 (1968). Back

Earnings distribution in laundries in Midwest



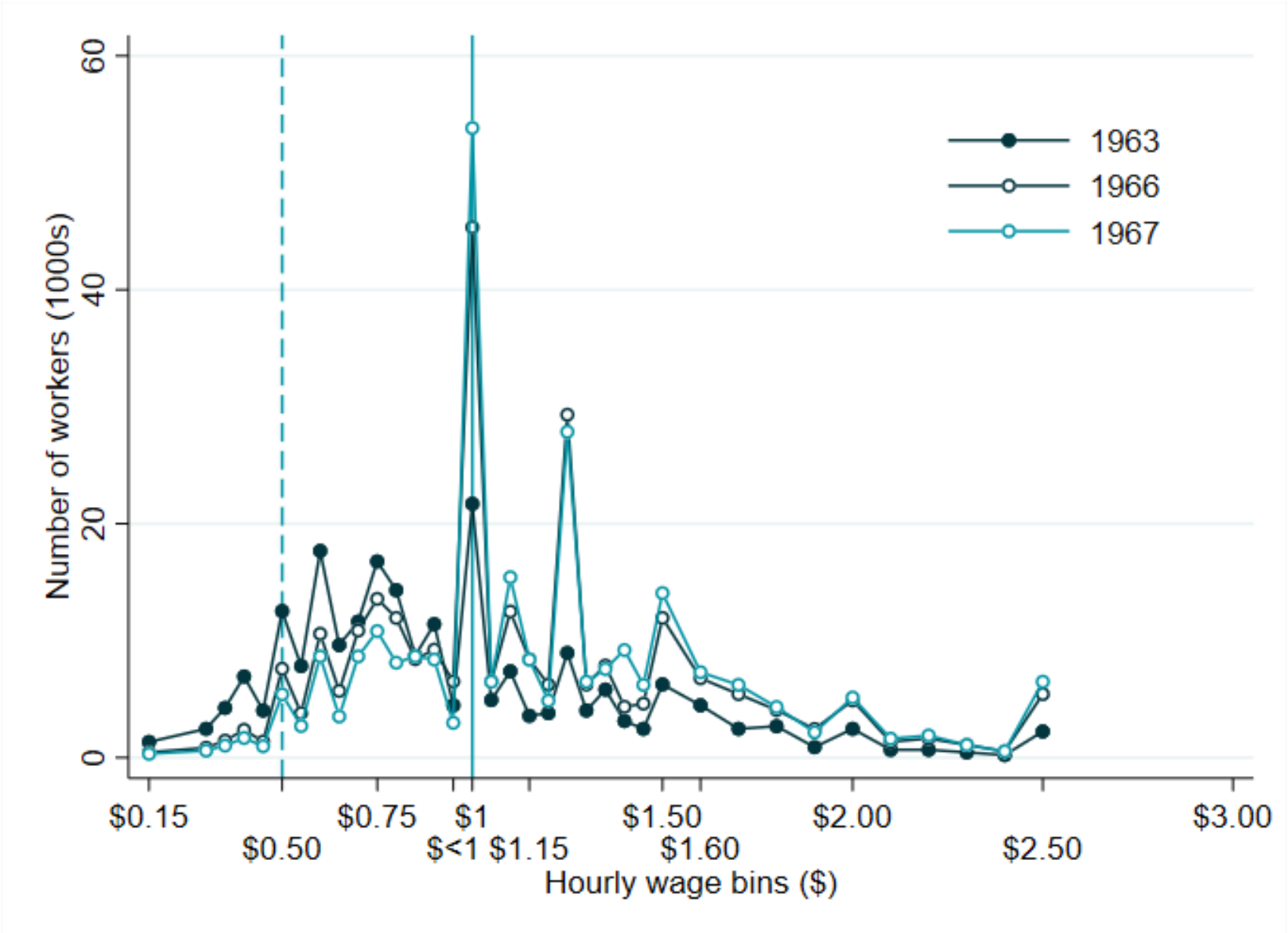
→ Min. wage in Ohio: \$0.8 (1963), \$0.9 (1966), \$0.8 (1967 & 1968); no min. wage in Illinois. Back

Earnings distribution in hotels (non-tipped) in South



Back

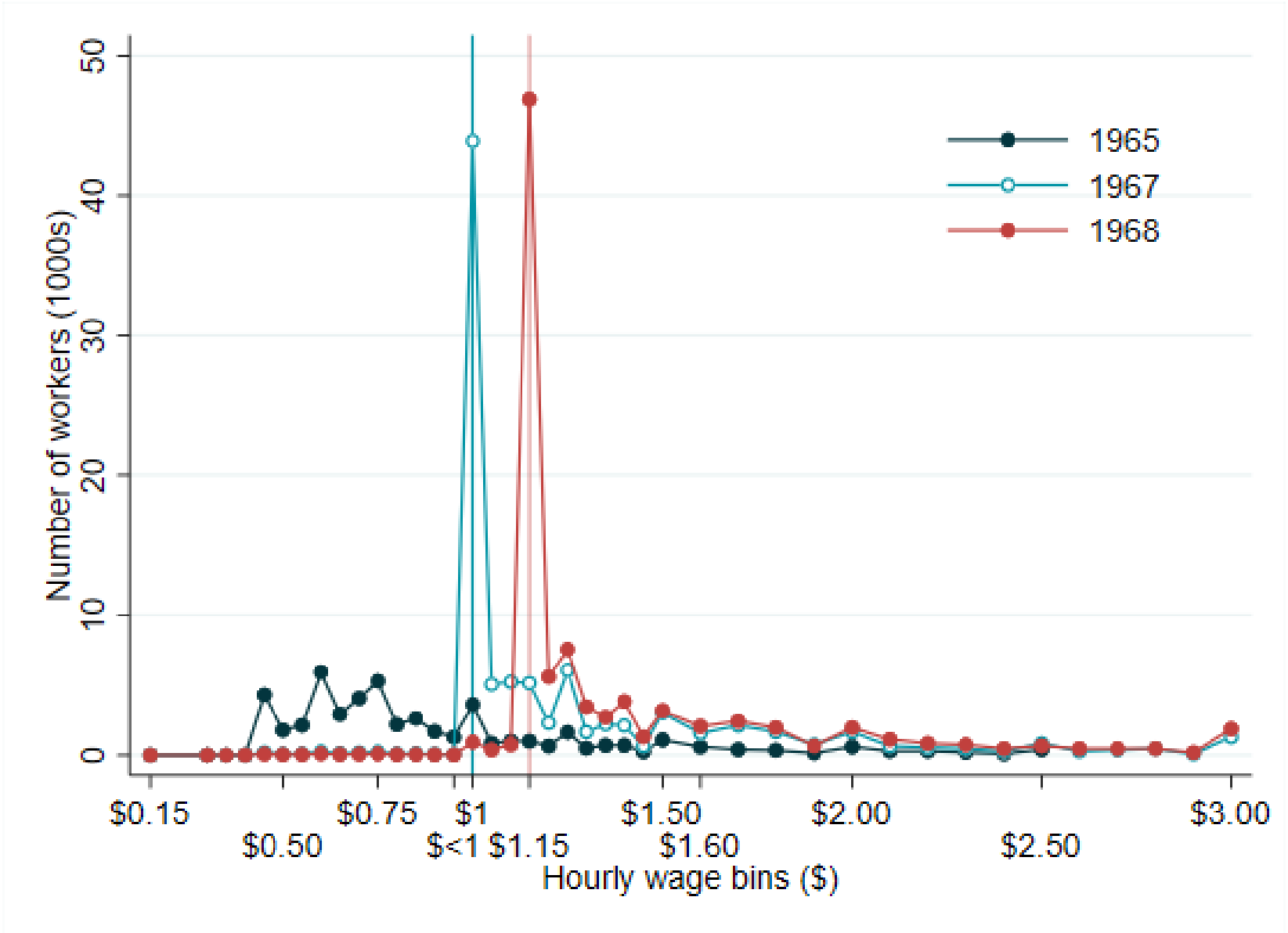
Earnings distribution in restaurants (non-tipped) in South



Note: small establishments (i.e. with annual sales below \$500K) aren't covered by the min. wage in 1967.

▸ Back

Earnings distribution in nursing homes in South



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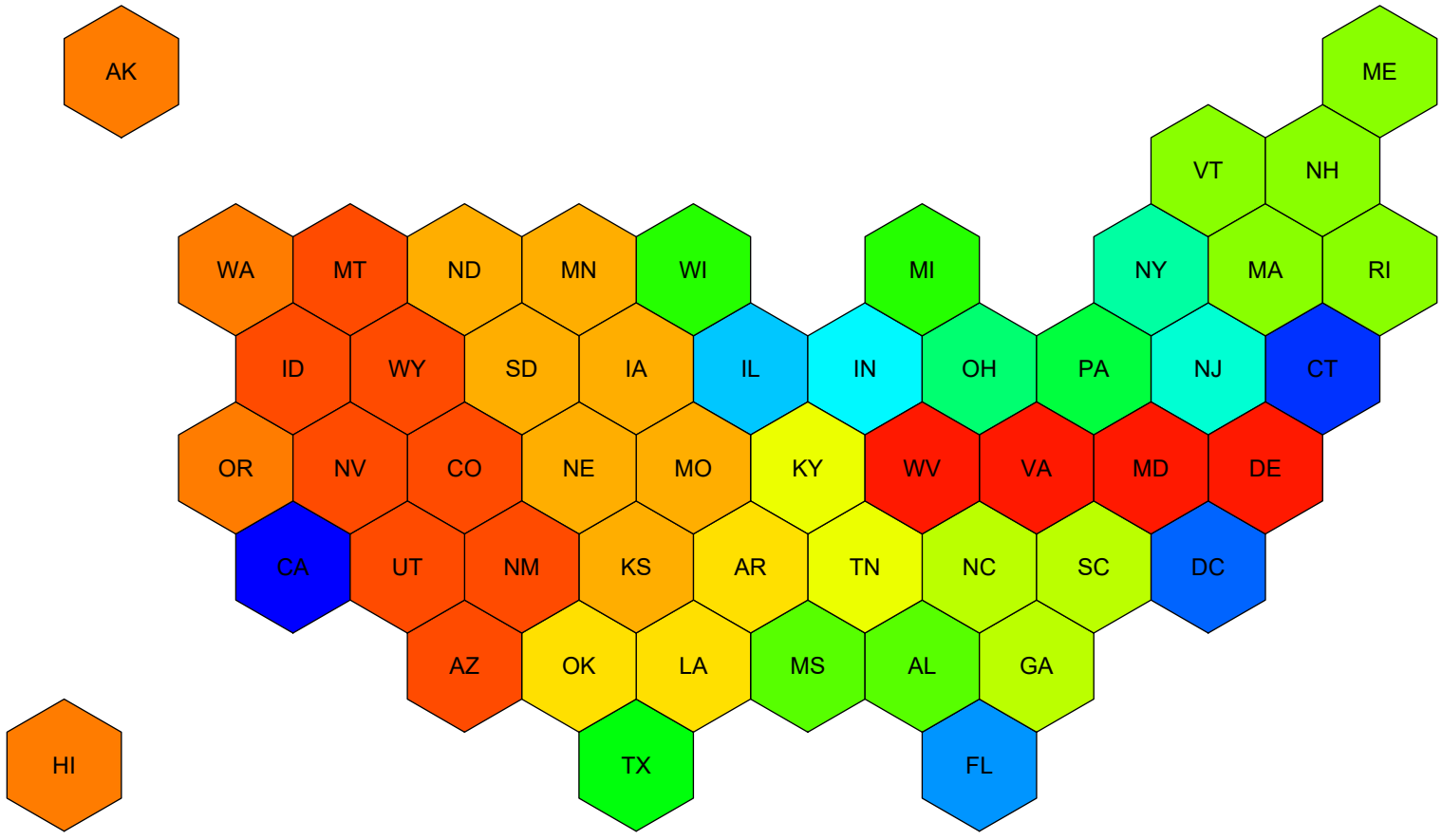
Earnings distribution in schools in South

Back

Map of state groups in early CPS files



Note: In March CPS 1963-76, some states are grouped together. We use this categorization of 21 state groups in our analysis. For example: California, Connecticut, New York State, Florida, and Indiana have their own state identifier in March CPS 1962-1981. Arkansas, Louisiana and Oklahoma are grouped together. State grouped together are geographically close, and similar in terms of state min. wage legislation.

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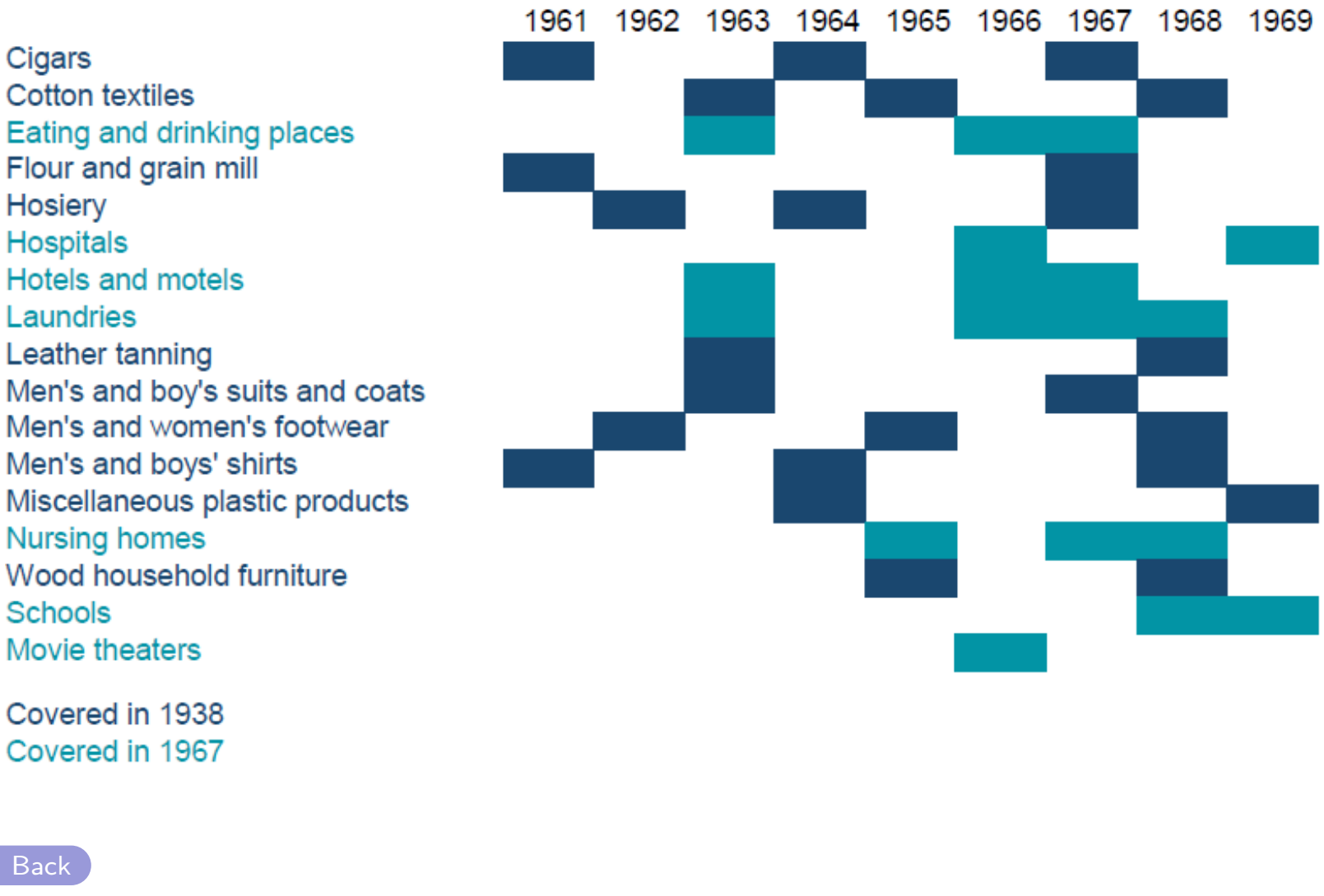
Digitized BLS Industry wage reports



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