Voluntary minimum wages: The local labor market effects of national retailer policies

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Motivation

- Wage stagnation and growing wage inequality since the 1980s
  - Declining unions and LMIs; falling real federal minimum wage

    [Western and Rosenfeld (2011); Farber et al. (2021); Autor et al. (2016); Krueger and Ashenfelter (2022); Weil (2014, 2017).]
  - State and local minimums stepped in where fed. min. failed

    [Dube (2019a,b); Cengiz et al. (2019); Dube and Lindner (2021); Autor et al. (2023).]
- Increasingly common private sector wage policy since 2014:
  - Voluntary minimum wages (VMWs):

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    [Dube (2019a,b); Cengiz et al. (2019); Dube and Lindner (2021); Autor et al. (2023).]
- Increasingly common private sector wage policy since 2014:
  - Voluntary minimum wages (VMWs):
    - An elective, company-wide minimum wage, applied to all of a firm's establishments in the country.

VMWs by private employers: a new wage standard?

'Pay a living wage': Bernie Sanders accuses Disney of dodging fair pay

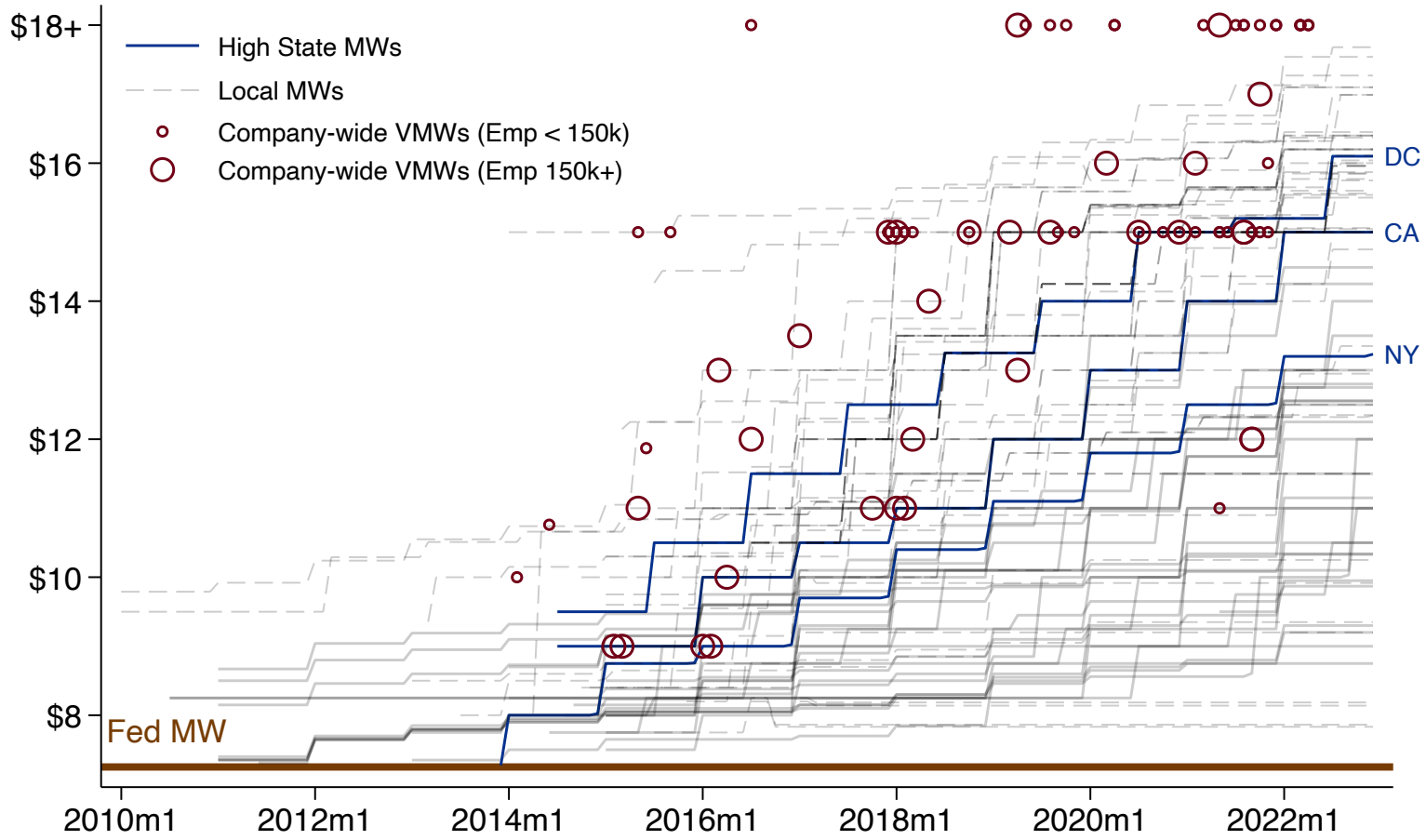
The senator and other critics say the company is forgoing government subsidies and tax breaks to avoid wage hikes

▲ Bernie Sanders has criticized Disney for what he describes as the company's failure to pay workers living wages. Photograph: Rogelio V. Solis/AP

BUSINESS NEWS FEBRUARY 19, 2015 / 8:46 AM /

Wal-Mart, under pressure, boosts minimum U.S. wage to $9 an hour

Landscape of minimum wages in the U.S. since 2010



Data sources: Zipperer & Vaghul (2022); National Employment Law Project (2023); authors' assembled list.

Amazon/Whole Foods announces $15 minimum wage

"We listened to our critics, thought hard about what we wanted to do, and decided we want to lead... We're excited about this change and encourage our competitors and other large employers to join us."

- Jeff Bezos, Amazon Founder & CEO, October 2018
`https://blog.aboutamazon.com`

Other motivations

VMWs by large retailers are examples of firm wage policies set at a national level. [Hazell, Patterson, Sarsons, & Taska (2022).]
Motivations may include:

- Reputation concerns
- Coordination with other firm-wide policies (pricing, inventory)
- Firm-wide efforts to reduce turnover

This paper

Provides a first, systematic study of voluntary minimum wages at large retailers (empl.>150k) and their broader impact.

- How have voluntary minimum wages (VMWs) affected adopting company's wage distributions and employment?
- Do VMWs spill over in adopting employers' local labor markets?

Contributions:

- Comprehensive evaluation of large retailer VMWs
  - Large retailers with policies make up $\sim$ 2% of US labor force
- Assessment of spillovers to firms in shared labor market
- Sheds light on nature of wage-setting in low-wage US retail

Empirical strategy

We use administrative payroll data to study the direct and spillover effects of VMWs.

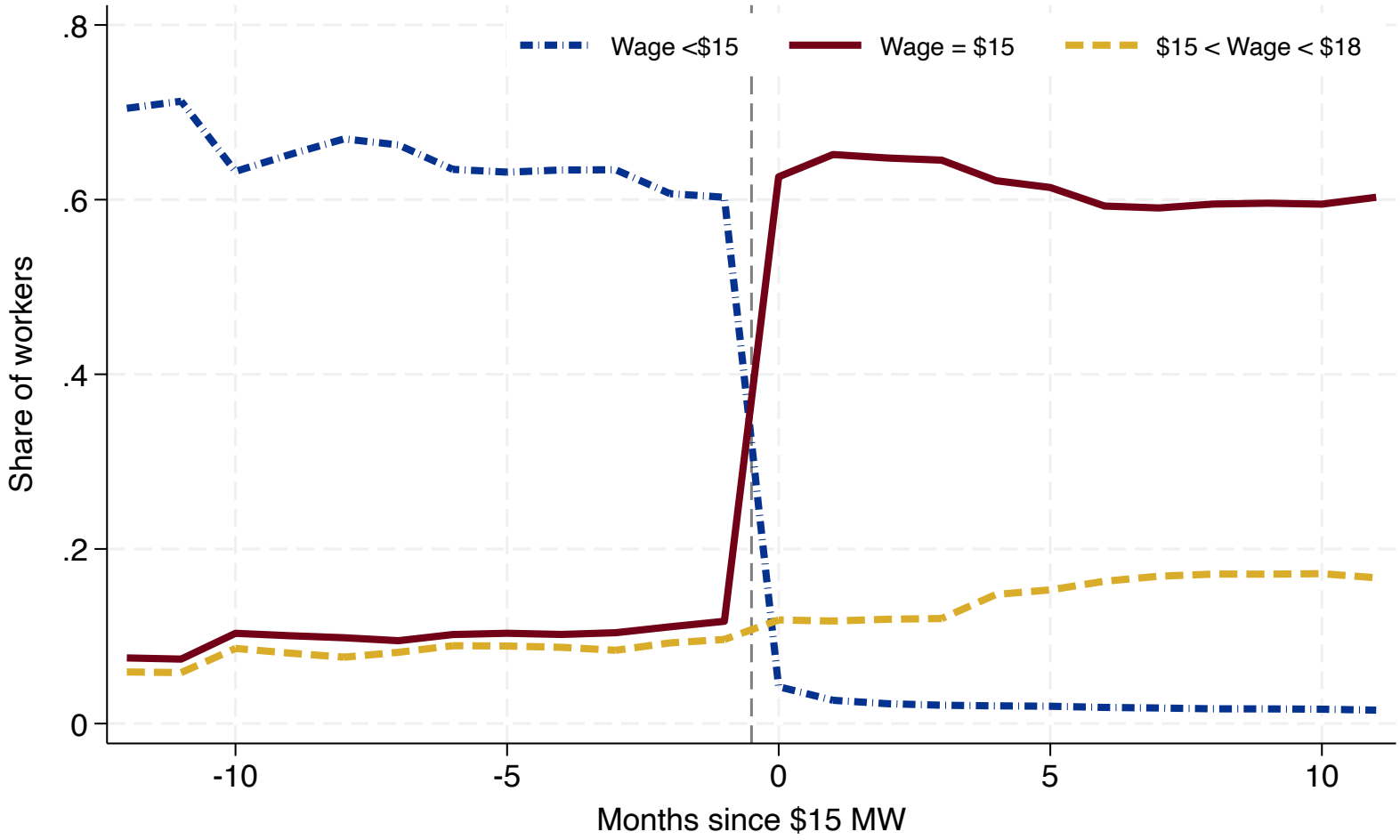
- Firm-level data covering >33% of U.S. hourly employment + market-level data:
  - Wage and employment records of large firms from a major credit bureau that provides employment verification services
  - Small firm wage data from a major payroll provider
  - Industry $\times$ CZ earnings data from QCEW

Empirical strategy, cont'd

We use national firm policies to isolate local labor market effects.

- National firm policies generate arbitrary local wage variation
  - Direct effects: local wage changes are exogenous from an individual employee's perspective (e.g., quit decision)
  - Spillover effects to other firms: VMWs represent a sudden, exogenous shift in wages of a single competitor
    - Shock is not confounded by common local or industry shocks.

$15 VMW among large retailers (empl. $>$ 150k)



Data sources: Large credit bureau.

Quantifying VMW effects with a gap design

We use the gap design from studies of national minimum wage policies to document direct effects of large retailer VMWs.

[Card & Krueger (1994); Draca, Machin, & Van Reenen (2011); Dustmann et al. (2022).]

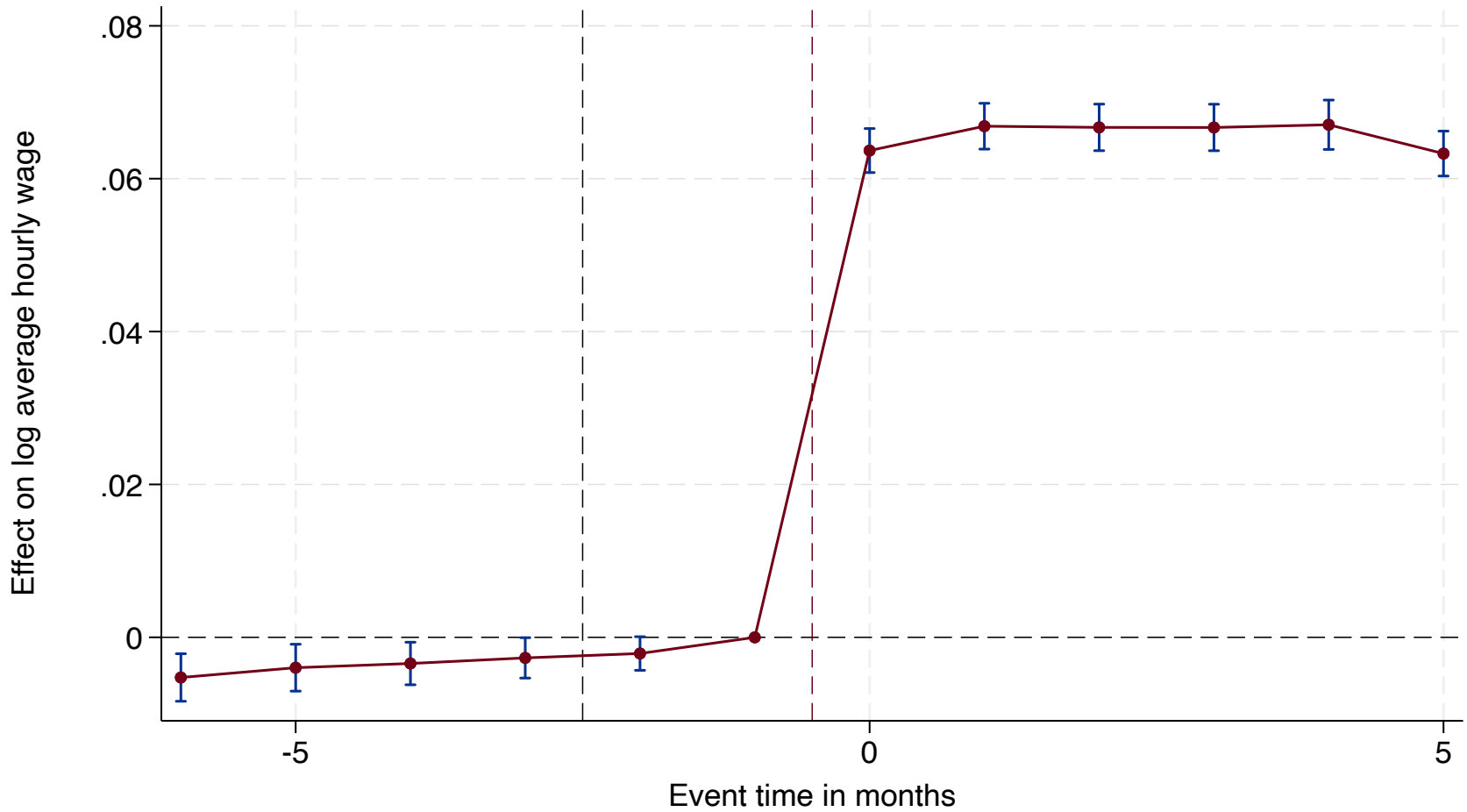
Intuition behind gap measure:

- What percent increase in the company's wage rate is required to bring all employees in an area up to the new minimum?[1]
- Leverages more variation in bite than fraction below the minimum wage:
  - For a \$15 VMW, an area where all workers earn \$10/hr has a larger "gap" than one where all are paid \$12 (50% vs. 25%).
  - An area where all workers are paid \$7.50 has a gap of 1.

[1] Assumes workers earn exactly their wage bin (e.g., $w \in [8, 9) = 8$).

Effect of large retailer $15 VMW on own wages

$$\log w_{f,CZ,t} = \alpha + \sum_{k=-6}^{5} \beta_k \overline{GAP}_{f,CZ} \times \mathbb{1}_{[t=k]} + \eta_{CZ} + \delta_t + \varepsilon_{CZ}$$



▸ 24-month, placebo-in-time ▸ Spillovers up wage distribution

Data sources: Large credit bureau.

Effects of company VMWs on own wages and employment

	All events	Major events	$15 events
Dep Var:	Indep Var: Large Retailer Gap X Post		
Log avg. wage	0.035***	0.047***	0.068***
	(0.000)	(0.001)	(0.002)
Log employment	0.016***	0.026**	0.044**
	(0.006)	(0.012)	(0.019)
Separation rate	-0.004***	-0.005***	-0.007***
	(0.000)	(0.001)	(0.001)
Separation rate to other firms	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)
Log new hires	-0.026**	0.010	-0.014
	(0.010)	(0.019)	(0.029)
Total employment elasticity	0.450***	0.551**	0.644**
	(0.169)	(0.257)	(0.288)
	[0.118,0.781]	[0.047,1.055]	[0.078,1.211]
Obs	63,928	30,547	9,238
CZs	632	631	380
Events	20	8	4
St. dev. gap	.05	.06	.08
Pre-period mean:			
Sep rate	.064	.065	.072
Sep rate to other firms	.012	.014	.014
Log new hires	3.1	3.1	2.74
Month from event FEs	Y	Y	Y
CZ FEs	Y	Y	Y

Notes: Major events = more than 30% of workforce affected. Data sources: Large credit bureau.

Interpretation of own-wage and employment effects

- Large retailer VMWs reduce separations substantially.
- Quit elasticity in range of literature ($\sim$-1.02).
- No increase in hiring–overall reduction in churn.
- Effects are consistent with company statements and media reports re: turnover-related motivations for adopting.

Spillovers to other firms in shared labor markets

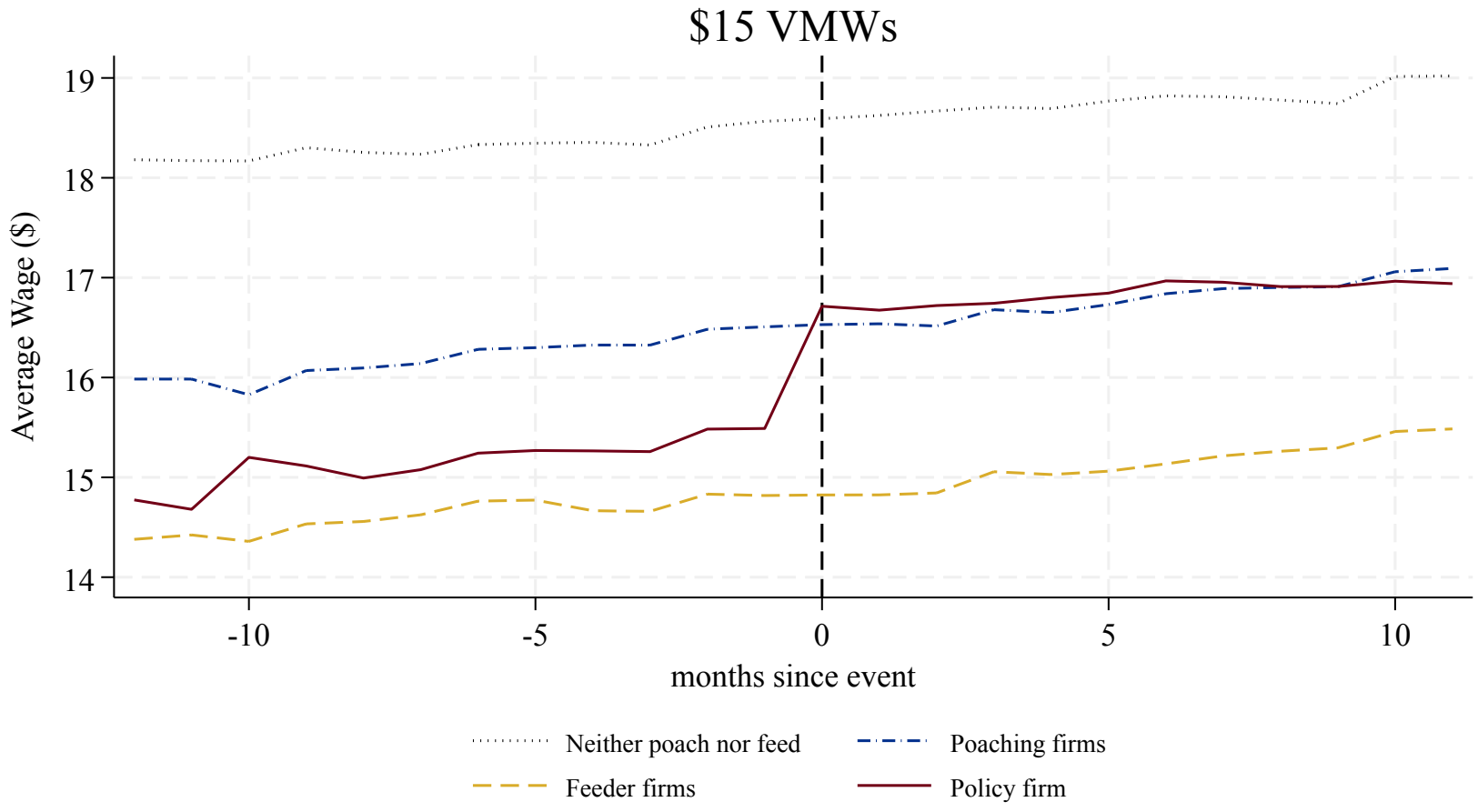
- Sets of competitors considered:
  - Other large firms in the credit bureau database
  - Small firms from major payroll provider
  - At the aggregate CZ-level using the QCEW
- Approach:
  - Large retailer's gap as measure of exposure
  - Market-level gap as measure of exposure ▸ Definition

Spillovers in among variously defined competitor markets

What is the association between large retailer CZ-level "gap" and wages at other establishments (firm-CZ pairs) before and after large retailer VMW?

- Same CZ as large retailer.
- Same CZ + industries connected through worker flows.
- Same CZ + establishments connected through worker flows.

Relative wages of VMW employers and competitors



All in-sample nonpolicy firms. Nonpolicy firms balanced from -6 to +5.

Data sources: Large credit bureau.

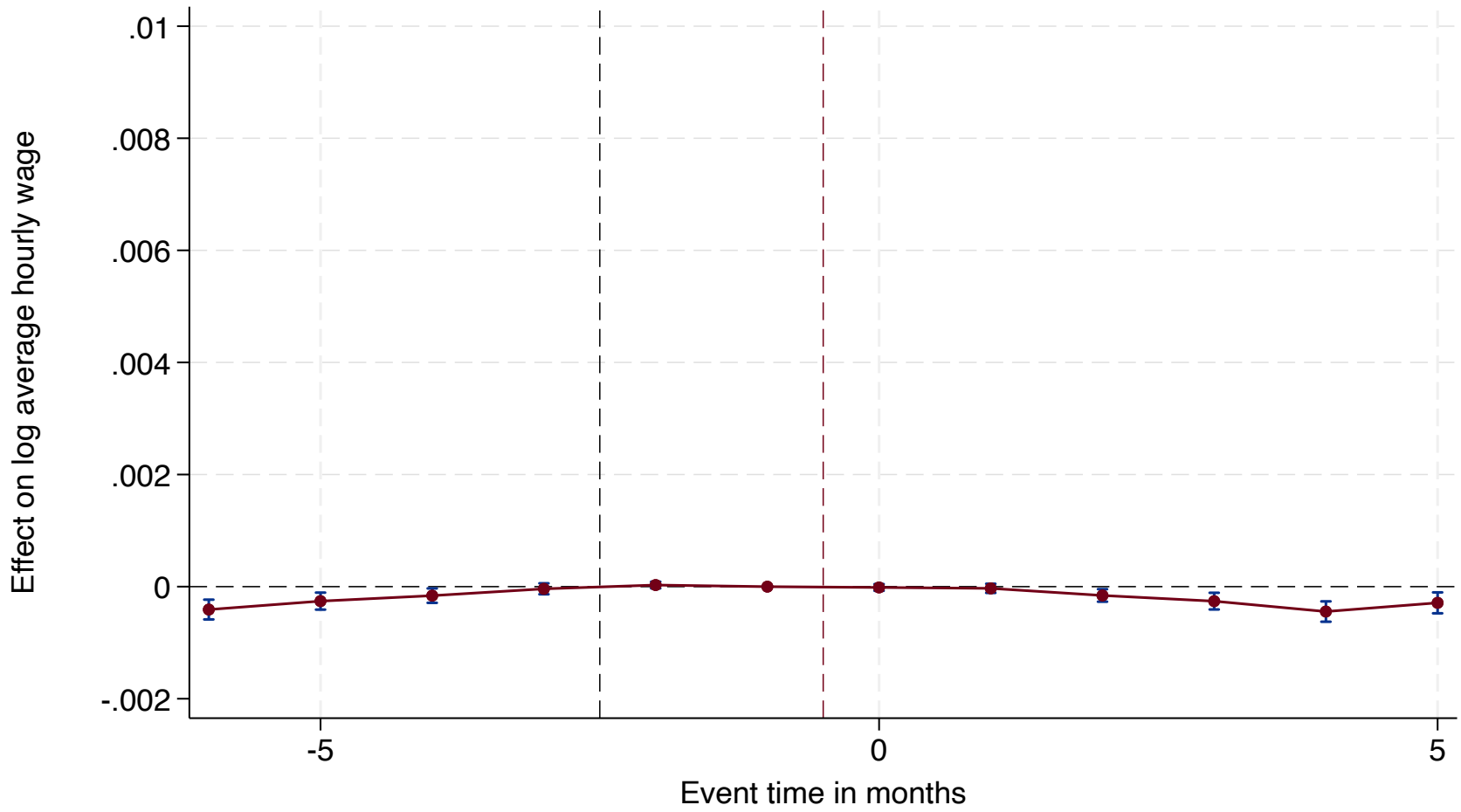
Effect of $15 VMW on hiring by connected firms

Independent variable	Dep. Var.: Probability of new hires		
	Overall	From Large Retailer	From Others
Large retailer gap X 1(Post)	-0.0004	-0.0048***	-0.0003
	(0.0006)	(0.0017)	(0.0006)
Obs	4,032,624	4,032,624	4,032,624
CZs	628	628	628
St. dev. large retailer gap	.054	.054	.054
Dep var pre-treat mean	.81	.21	.79
Company X CZ FEs	Y	Y	Y
Month from event FEs	Y	Y	Y

Data sources: Large credit bureau.

$15 VMW spillovers, all establishments in shared CZ

$$\log w_{-f,CZ,t} = \alpha + \sum_{k=-6}^{5} \beta_k \overline{GAP}_{f,CZ} \times \mathbb{1}_{[t=k]} + \eta_{CZ} + \delta_t + \varepsilon_{CZ}$$



Data sources: Large credit bureau.

Cross-employer wage elasticity, large retailer's gap

Indep. Var.: Large Retailer Gap X 1(Post)	All events	Major events	$15 events	$15: pos. flows
Dep. Var.:				
Log avg. wage, non-policy	-0.0006***	-0.0004***	0.0001	0.0001
	(0.0001)	(0.0001)	(0.0002)	(0.0002)
Log avg. wage, policy	0.0394***	0.0524***	0.0713***	0.0623***
	(0.0008)	(0.0014)	(0.0021)	(0.0020)
Cross-employer wage elasticity	-0.0141***	-0.0084***	0.0020	0.0016
	(0.0029)	(0.0026)	(0.0022)	(0.0034)
	[-0.0198,-0.0083]	[-0.0135,-0.0034]	[-0.0023,0.0062]	[-0.0051,0.0083]
Obs	9,021,253	4,163,710	1,744,869	728,323
CZs	631	629	380	376
Firms	1053	1023	930	1579
St. dev. large retailer gap	.055	.067	.088	.082
Company X CZ FEs	Y	Y	Y	Y
Month from event FEs	Y	Y	Y	Y

Data sources: Large credit bureau.

Robustness of negligible spillover effects

- Market gap as measure of exposure ▸ Definition ▸ Results
- Spillover using competitor gap: VMW vs. state MW ▸ Results
- Bunching design ▸ Results
- Heterogeneity by same industry as VMW employer ▸ Results

Effects on smaller companies and overall CZ-level earnings

- Negligible wage effects on smaller companies
  - Competitor gap ▸ Results
  - Market gap ▸ Results
- Only direct effect on VMW employer detectable at CZ level ▸

Comparison to leading oligopsony model predictions

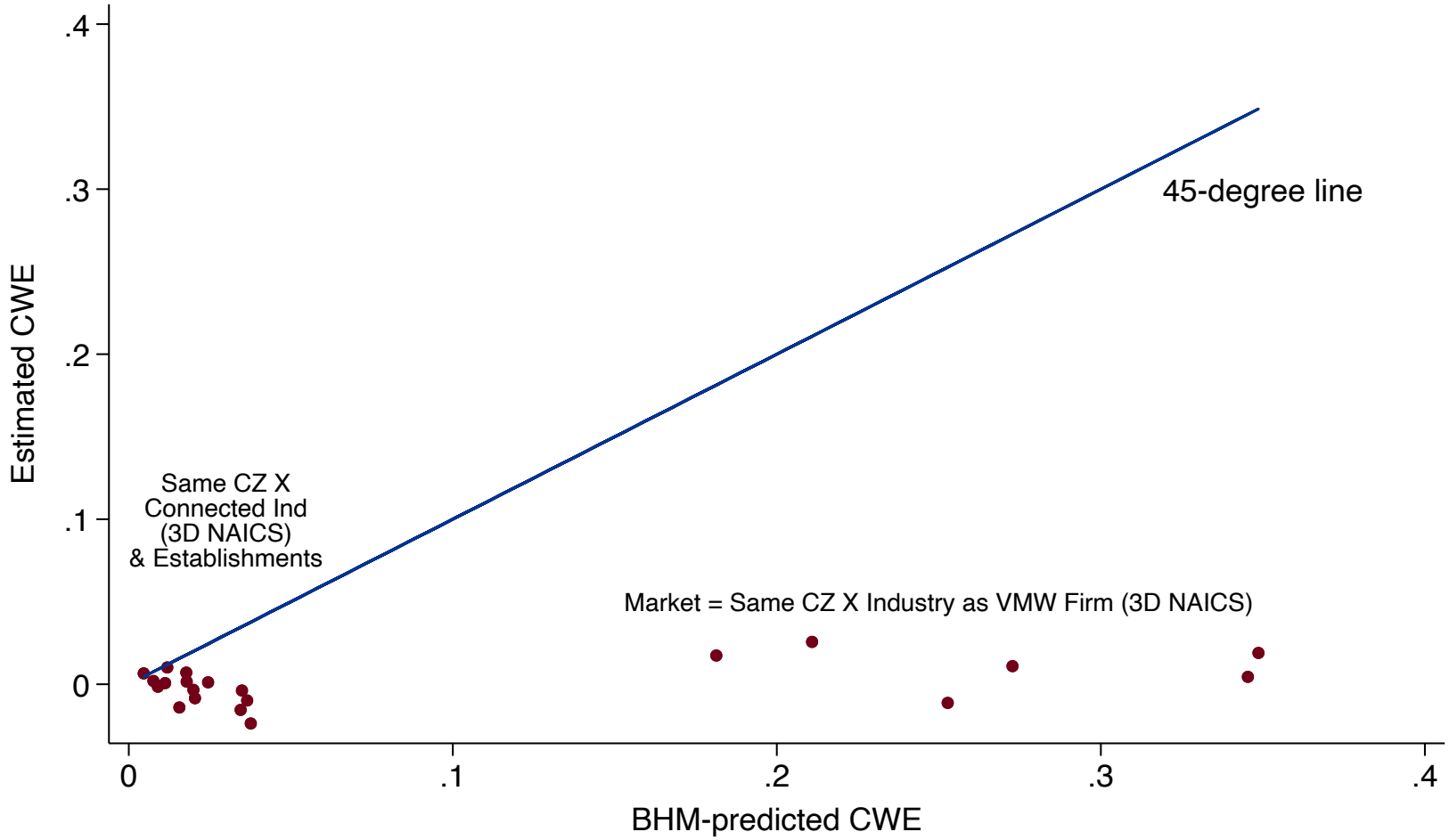
Berger, Herkenhoff, & Mongey (2022):

- Model of oligopsonistic competition with worker preferences over jobs and labor market concentration.
- Wage shocks at "leader" k tighten LM in concentrated areas
- Induces strategic wage responses at follower j that depend on:
  - Leader and follower firm payroll shares
  - Within- (η) & across-market (θ) substitutability for workers

Approach:

- Calculate payroll shares across multiple market definitions (e.g., same CZ, CZ $\times$ worker flows, CZ $\times$ same ind.)
- Use existing quantitative calibrations for η and θ

Comparison to leading oligopsony model predictions



Data sources: Large credit bureau.

Conclusion

- Employer VMWs have proliferated over the last 10 years.
- VMWs have led to raises in over 3 million large retailer jobs.
- VMWs reduce turnover at large retailers, but spillovers to broader market are limited.
  - Inconsistent with predictions of leading oligopsony models
  - Labor market concentration does not appear to be a major wage determinant in US low wage retail
  - Successive VMW adoption may be national-level phenomenon
  - As policy for influencing wages, VMWs appear far more limited than statutory minimums or spillovers from CBAs

Market gap measure of exposure to VMW policies

▸ Back

The "market" gap = implied increase in market-wide wage bill in CZ from bringing VMW company employees up to company MW.

- In area where all earn \$7.50 and \$15 VMW retailer is 50% of employment, company gap = 1, but market gap = 0.5.
- If workers at other firms earn \$15, then market gap = .33.
- Empirically, market gap strongly correlated with large retailer employment share. ▸ Correlation by Experiment
- Market gap among firms in credit bureau data strongly correlated with large retailer's wage bill share in QCEW (.61).

Cross-employer wage effects, market gap

Indep. Var.: Market Gap X 1(Post)	All events	Major events	$15 events	$15: pos. flows
Dep. Var.:				
Log avg. wage, non-policy	-0.0007***	-0.0007***	0.0001	-0.0003*
	(0.0001)	(0.0001)	(0.0001)	(0.0002)
Log avg. wage, policy	0.0061***	0.0053***	0.0096***	0.0147***
	(0.0007)	(0.0012)	(0.0029)	(0.0032)
Obs	9,021,253	4,163,710	1,744,869	728,323
CZs	631	629	380	376
Firms	1053	1023	930	1579
St. dev. market gap	.002	.002	.002	.003
Company X CZ FEs	Y	Y	Y	Y
Month from event FEs	Y	Y	Y	Y

Data sources: Large credit bureau. ▸ Results

Effects on wages of small companies, large retailer's gap

	All VMWs	Major VMWs	$15 VMWs
Dependent variable: Log average wage, small companies			
Independent Variable:			
Large retailer gap (Std.) × Post	0.0016*	0.0012	-0.0008
	(0.0009)	(0.0010)	(0.0010)
Dependent variable: Log average wage, policy company			
Independent Variable:			
Large retailer gap (Std.) × Post	0.0376***	0.0407***	0.0434***
	(0.0012)	(0.0016)	(0.0018)
Cross-wage elasticity estimated via 2SLS:			
Dependent variable: Log average wage, small companies			
Independent Variable:			
Log average wage, policy company	0.0425*	0.0302	-0.0187
	(0.0237)	(0.0246)	(0.0223)
Observations	2,053,936	844,942	427,531
CZs	443	402	312
Number of Firms	19,892	17,487	13,716
SD Large Retailer Gap (unstd.)	0.0517	0.0649	0.0816
Firm-FEs	Y	Y	Y
CZ-FEs	Y	Y	Y
Event time-FEs	Y	Y	Y

Data sources: Large credit bureau; Payroll provider.

▸ Back

Effects of wages on small companies, market gap

	All VMWs	Major VMWs	$15 VMWs
Dependent variable: Log average wage, small companies			
Independent Variable:			
Market gap (Std.) × Post	0.0016**	0.0022**	0.0002
	(0.0007)	(0.0009)	(0.0009)
Dependent variable: Log average wage, policy company			
Independent Variable:			
Market gap (Std.) × Post	0.0087***	0.0078***	0.0120***
	(0.0016)	(0.0020)	(0.0036)
Observations	2,053,936	844,942	427,531
CZs	443	402	312
Number of Firms	19,892	17,487	13,716
SD Market Gap. (unstd.)	0.0012	0.0015	0.0018
Firm-FEs	Y	Y	Y
CZ-FEs	Y	Y	Y
Event time-FEs	Y	Y	Y

Data sources: Large credit bureau; Payroll provider.

▸ Back

Effects on overall CZ-level earnings

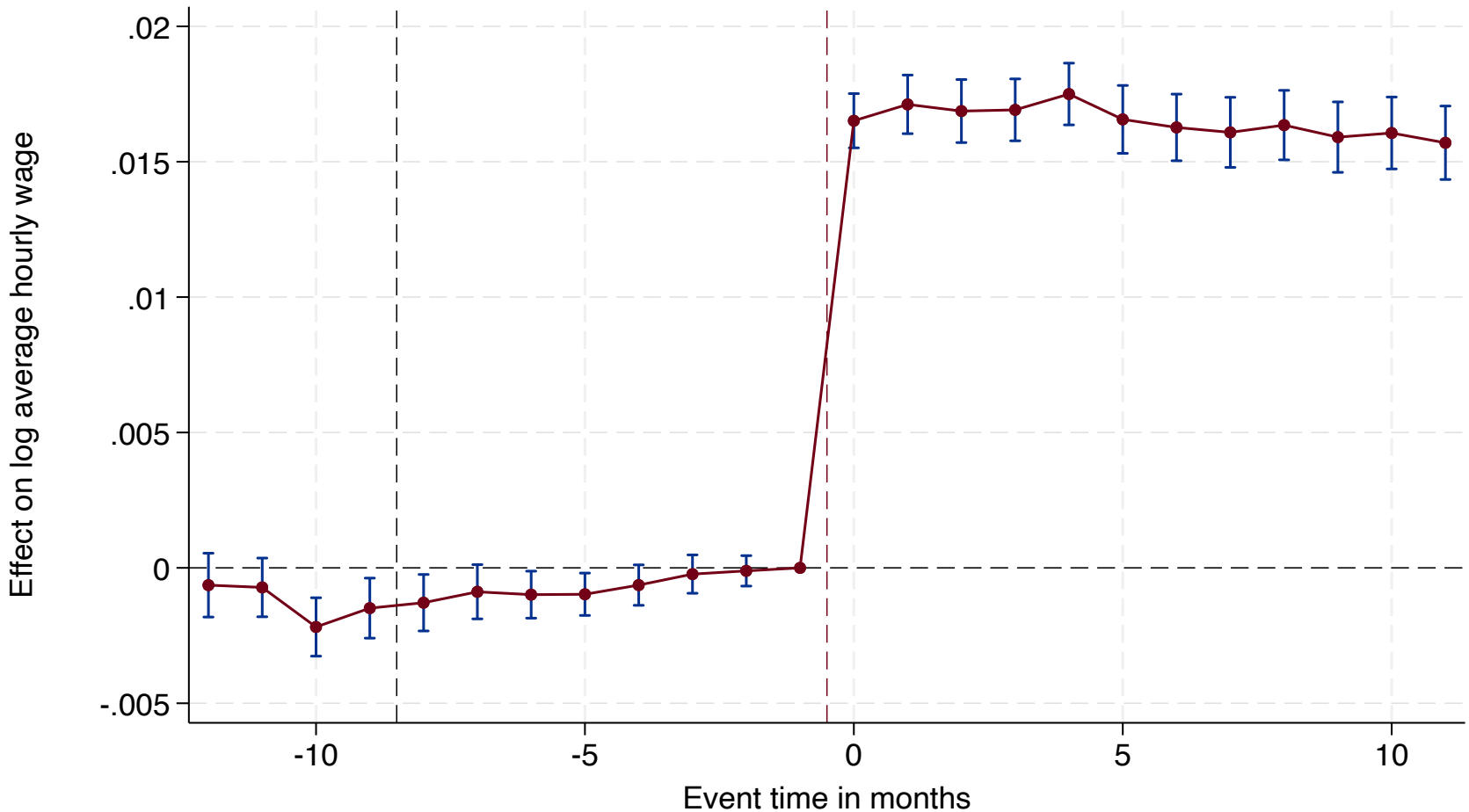
We compare 1st quarter earnings of policy company to all estab. in a CZ. Market gap proxy: large retailer's gap weighted by their wage bill share.

Independent variables:	Dep Var: Log 1st quarter average earnings		
	Policy	All	All minus policy
Market Gap Proxy X 1(Post)	0.0046***	0.0001	-0.0006
	(0.0013)	(0.0008)	(0.0008)
Obs	13,300	13,300	13,300
CZs	631	631	631
Mean Market Gap Proxy	.0001	.0001	.0001
St. Dev. Market Gap Proxy	.0002	.0002	.0002
Dep Var Mean	8.23	9.28	9.28
CZ FEs	Y	Y	Y
Month from event FEs	Y	Y	Y

Data sources: Large credit bureau; QCEW. Back

$15 VMW own wage effects, 24-month placebo-in-time

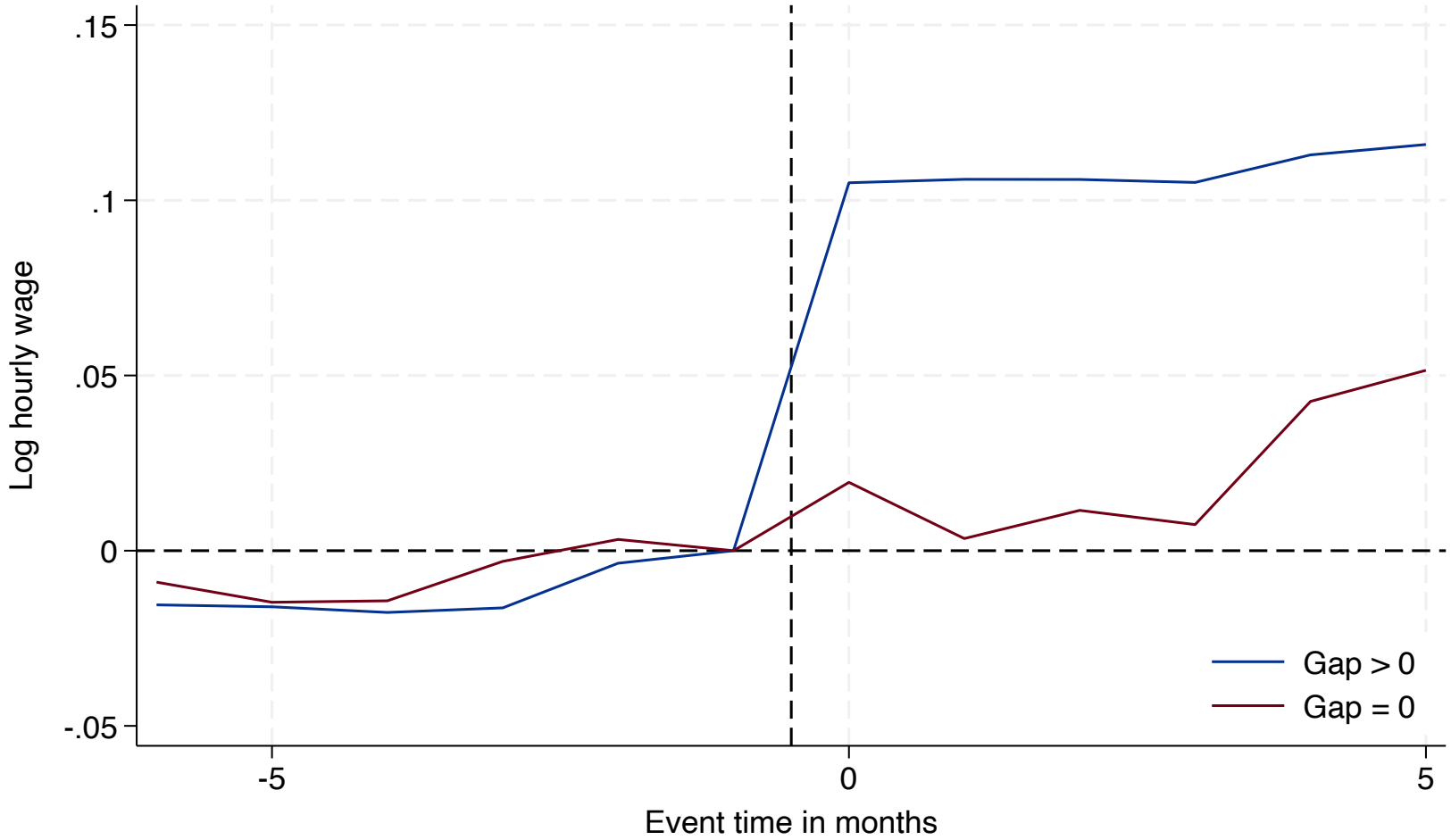
$$\log w_{f,CZ,t} = \alpha + \sum_{k=-6}^{5} \beta_k \overline{GAP}_{f,CZ} \times \mathbb{1}_{[t=k]} + \eta_{CZ} + \delta_t + \varepsilon_{CZ}$$



Notes: Gap measurement period ends at dashed line. Data sources: Large credit bureau.

▸ Back

Raw wage changes, by gap group



Data sources: Large credit bureau.

▸ Back

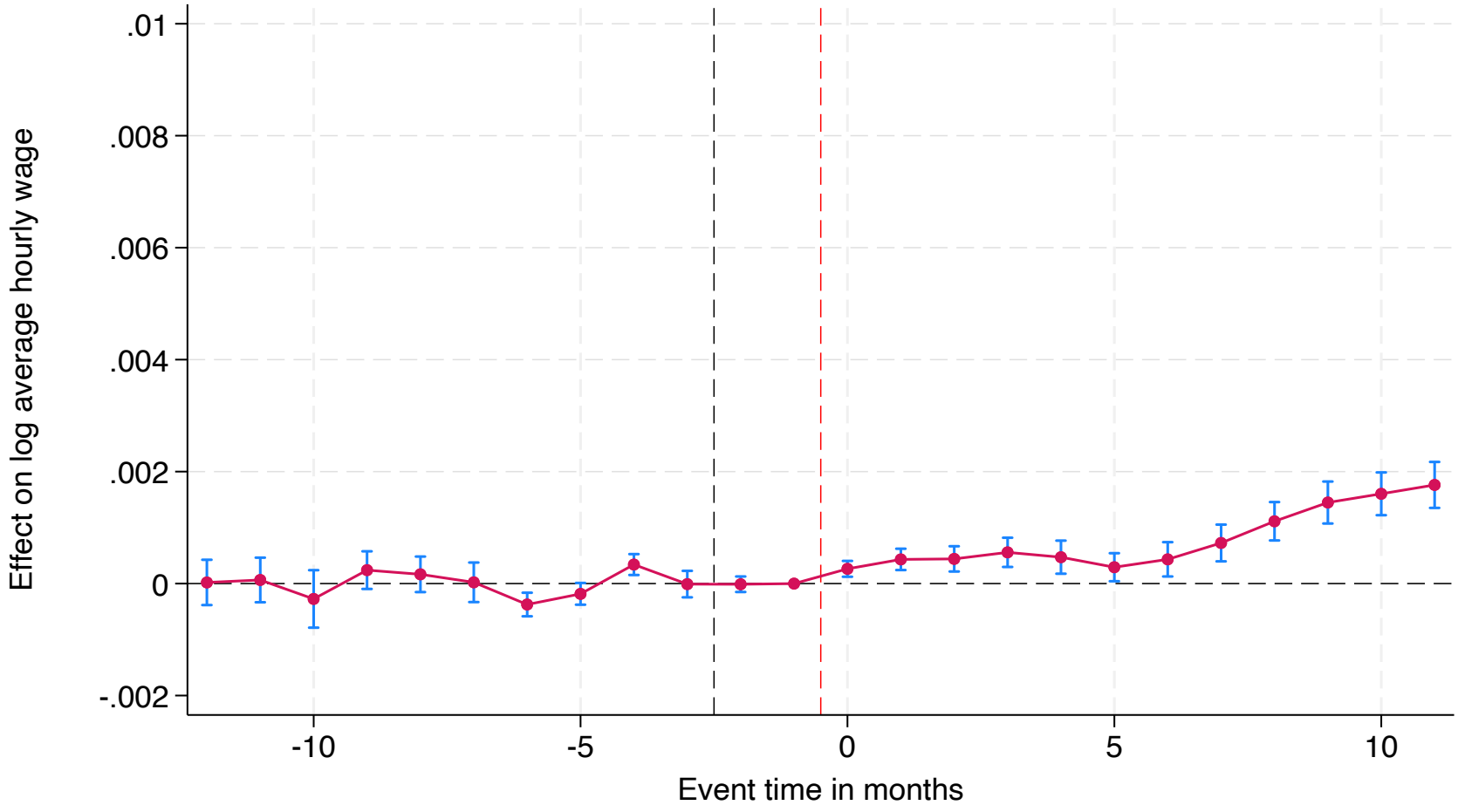
Correlation between gap measures and employment share

Experiment (% of local emp.)	Own gap – Emp. share	Own gap – Market gap	Market gap – Emp. share
1 (1.66)	0.29	0.74	0.58
2 (1.72)	0.15	0.58	0.58
3 (1.69)	0.15	0.62	0.52
4 (1.70)	0.40	0.82	0.60
5 (0.16)	-0.40	-0.07	0.80
6 (0.15)	-0.25	-0.01	0.83
7 (0.16)	-0.24	0.07	0.82
8 (0.18)	-0.27	0.07	0.76
9 (0.16)	-0.12	0.28	0.78
10 (0.09)	-0.45	0.72	-0.09
11 (0.11)	-0.32	0.80	-0.08
12 (0.13)	-0.37	0.76	-0.04
13 (0.14)	-0.38	0.70	0.05
14 (0.23)	-0.37	0.65	0.15
15 (0.23)	-0.45	0.63	0.07
16 (0.20)	-0.38	0.49	0.24
17 (0.24)	-0.43	0.37	0.30
18 (0.25)	-0.49	0.29	0.29
19 (0.24)	-0.53	0.20	0.33
20 (0.33)	-0.20	0.01	0.91

Data sources: Large credit bureau.

▸ Back

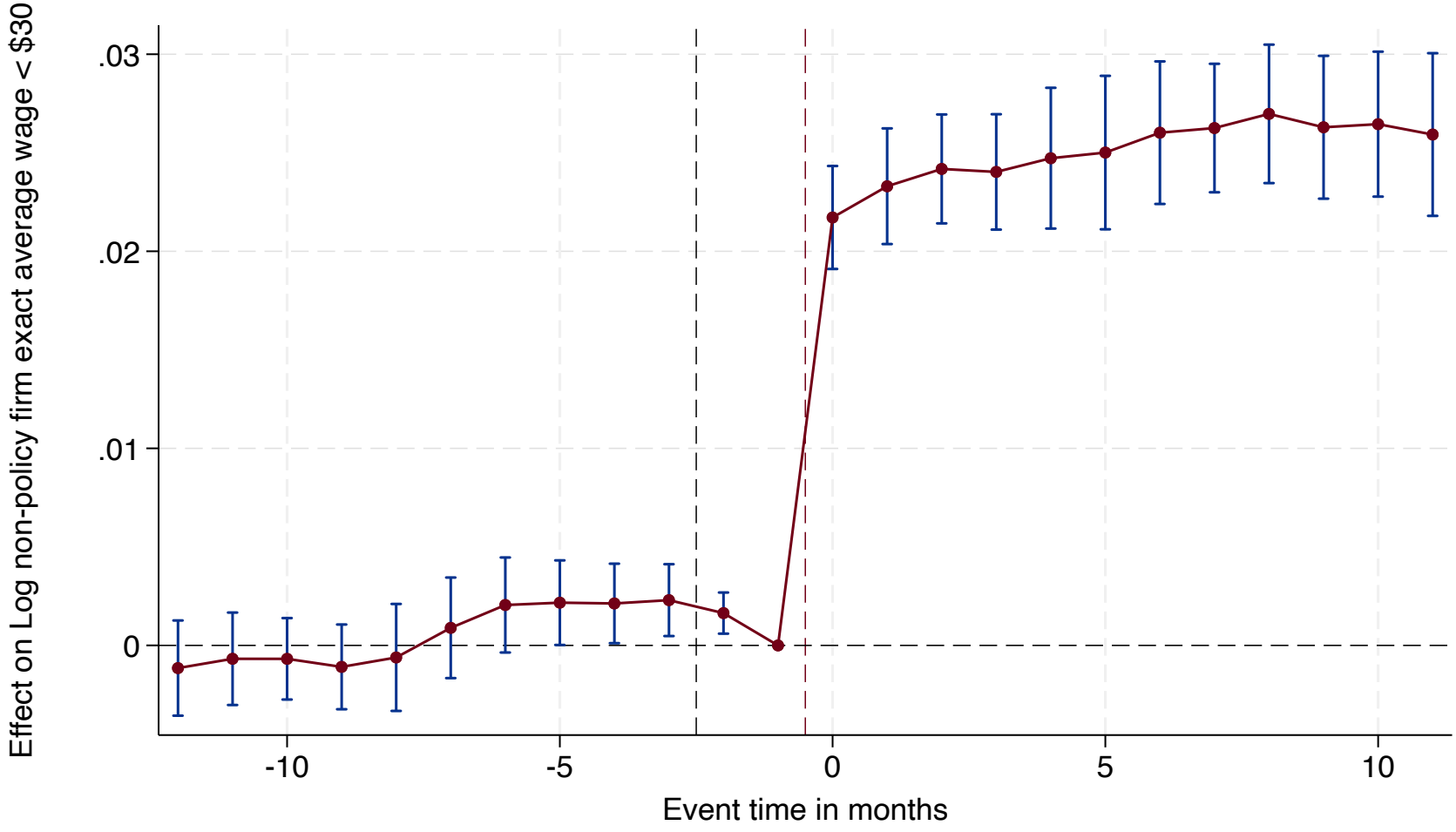
$15 VMW spillovers, non-policy gap (detrended)



Data sources: Large credit bureau.

▸ Back

Effect of California $12 MW, non-policy gap



Data sources: Large credit bureau.

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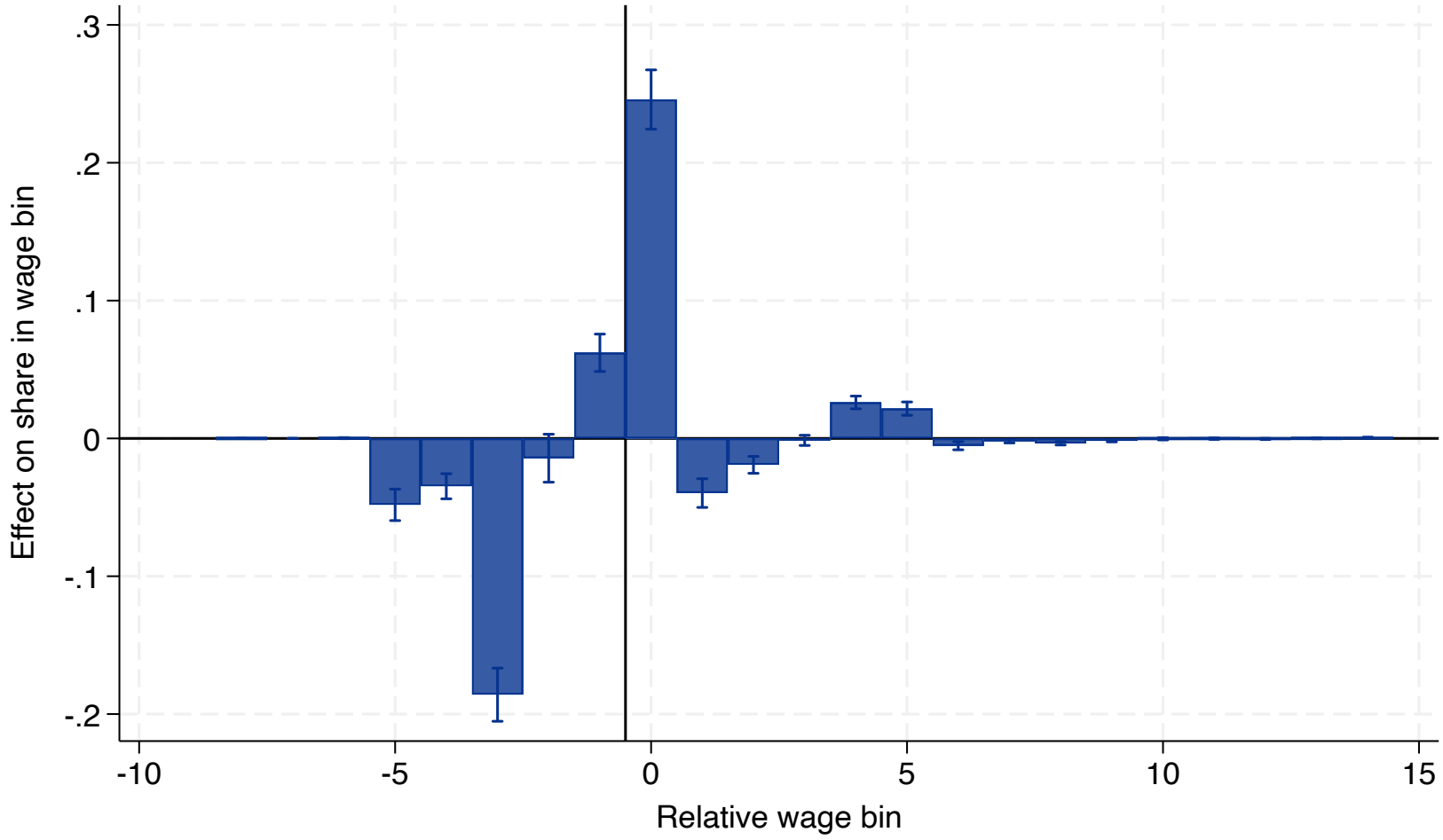
Own effects along wage distribution, large retailer gap



Data sources: Large credit bureau.

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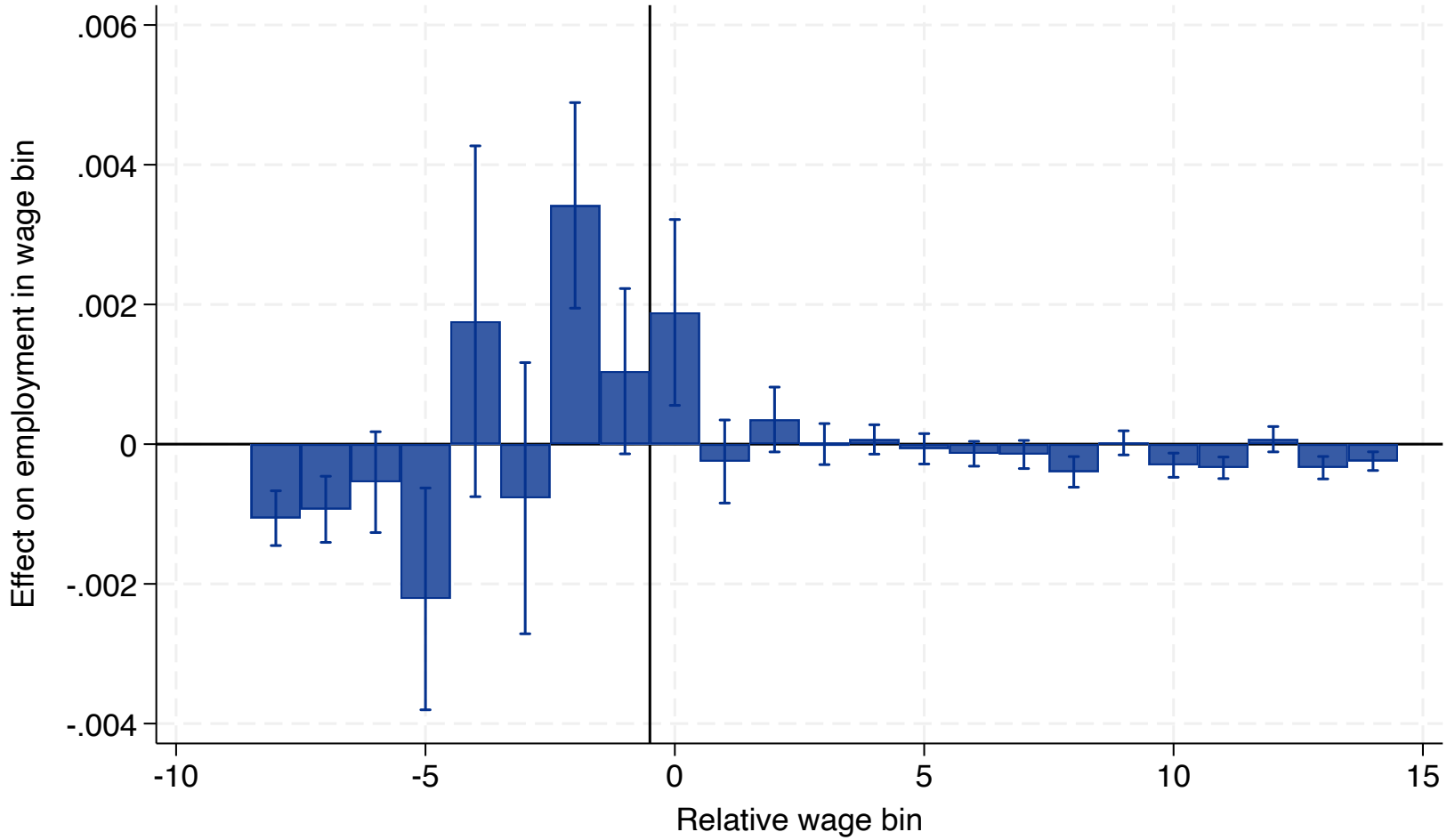
Spillover effects along wage distribution, large retailer gap



Data sources: Large credit bureau.

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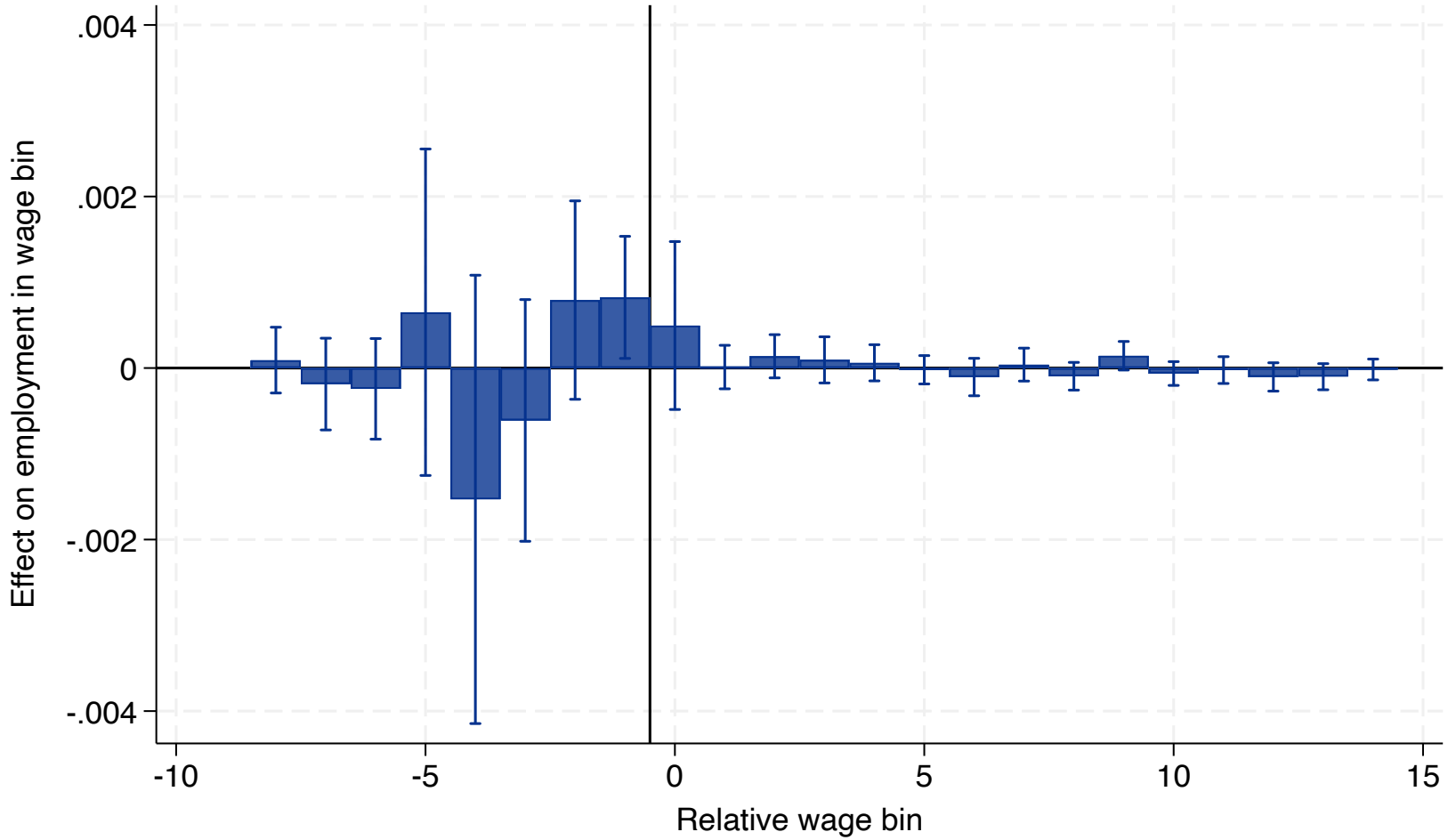
Spillover effects along wage distribution, market gap



Data sources: Large credit bureau.

▸ Back

Heterogeneity in cross-employer wage effects by shared industry, large retailer's gap

Independent variables	Dep Var: Log average wage, non-policy All events	Major events	$15 events
Large retailer gap X 1(Post) X 1(Policy Ind)	0.00026	0.00082***	0.00056*
	(0.00016)	(0.00020)	(0.00031)
Large retailer gap X 1(Post)	-0.00059***	-0.00050***	0.00010
	(0.00012)	(0.00014)	(0.00016)
1(Post) X 1(Policy Ind)	0.00190***	0.00098***	0.00158***
	(0.00019)	(0.00023)	(0.00033)
Obs	9,040,130	4,170,109	1,744,869
CZs	631	629	380
Firms	1053	1023	930
Firms in large retailer industry	137	86	82
St. dev. large retailer gap	.055	.067	.088
Company X CZ FEs	Y	Y	Y
Month from event FEs	Y	Y	Y

Data sources: Large credit bureau.

▸ Back