Collective Bargaining, Wage Floors, and the Racial Earnings Gap

Ellora Derenoncourt (Princeton) François Gerard (QMUL)

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NBER Summer Institute: Labor Studies

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- Unions and collective bargaining (CB) shown to reduce inequality (Farber et al., 2021)
- Unions and CB can reduce between group inequality (Biasi and Sarsons, 2021)
- ▶ The evidence on union impacts on racial gaps is mixed
 - Ashenfelter (1972) finds that exclusion from unions can offset higher premiums for Black workers in the US
 - Differentials in coverage and premiums are key to union/CB effects on racial earnings gaps
- Evidence from other post-slavery societies is lacking

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- ▶ We study the impact of collective bargaining on inequality and the racial earnings gaps in Brazil
 - Major post-slavery economy with excellent administrative data
 - Substantial and persistent racial inequality
- ▶ We scrape the universe of collective bargaining agreements (CBAs; ≈430K) and link to establishments
- Describe union/CB landscape for each racial group
 - Union density and coverage over time
 - Differentials in coverage vs. premiums
- Analyze a key union policy: wage floors (WFs)
 - How do WPs affect employment and earnings by radial group? What is the impact of WPs on inequality?
 What are the mechanisms driving these effects?

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- ▶ Unlike US, CB associated with 2.5 log pt larger racial earnings gap in Brazil (≈ 10% of unadjusted gap)
 - Small differentials in coverage; driven by geography
 - -~80% of effect driven by differentials in premiums
 - Why do unions benefit white workers more, even when nonwhite workers tend to have low wage jobs?

We examine role of key union policy: wage floors

- Null employment effects; no compensating differentials
- Earnings compress from below, i.e., 50/10 ratio falls by pprox 6%
- No impact on racial gaps; differential in how binding WFs are
- Mechanisms behind racial gap in wage floor coverage
 - Nonwhite new hires over-represented below WF; white new hires over-represented above WF
 - Differential not explained by occupation, suggesting enforcement issues over exemption in union policy
- ▶ Wage floors unlikely to diminish the premium gap, but better WF coverage could reduce inequality more

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1 Unions and collective bargaining in Brazil

2 Impact of wage floors: bunching with DiD

3 Mechanisms: DiD on worker transitions

Outline

1 Unions and collective bargaining in Brazil

2 Impact of wage floors: bunching with DiD

3 Mechanisms: DiD on worker transitions

Union density and CB coverage



DGLM

Union density and CB coverage



▶ In Brazil, union membership not required for CB coverage
 ▶ 50%+ CB coverage; but ≈11K unions ⇒ variation in CBAs
 Racial gaps US Maps
 Collective Bargaining and Wage Floors

- 1. Universe of registered CBAs (Sistema Mediador)
 - Online system for writing, filing, and registering CBAs
 - Clauses already categorized into groups
- 2. Linked employer-employee data (RAIS)
 - Annual survey covering the entire formal sector
 - Earnings and contracted wages from December

Merging CBAs to establishment of coverage, we use

- a) 10% random sample of private sector workers in RAIS... overall effect of CB
- b) Establishment-level panel tracking the yearly changes in "primary" wage floors... impact of WF conditional on coverage

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Unions and collective bargaining in Brazil

2 Impact of wage floors: bunching with DiD

3 Mechanisms: DiD on worker transitions

Wage floors and the distribution of wages



• Wage floor coverage effects = share of workers at or above WI

DGLM

Wage floors and the distribution of wages



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Wage floors and the distribution of wages



▶ No WF coverage: wage floor policy vs. weak enforcement?

▶ Wage floor coverage effects = share of workers at or above WF



Bunching moment tracks primary wage floors

Trends

Higher wage floors seem less binding (enforcement vs. union policy)

Wag



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DGLM



Bunching moment tracks primary wage floors

Trends

Higher wage floors seem less binding (enforcement vs. union policy)

DGLM



Bunching moment tracks primary wage floors

▶ Higher wage floors seem less binding (enforcement vs. union policy)

Wag

ition Trends

Bunching and DiD design

- **Treated:** group of establishments (s) that experience a similar event (h) in a specific event-year (t)
 - Event: $\Delta floor \geq 5 \log pts; \log(floor) \log(minwage) \geq 0.05$
 - Event-year: $t \in [2011, 2013]$ to allow $\tau \in [-3, 4]$
 - Similar event: $floor_{-1}$ and $floor_0$ are in the same R\$40 bucket (k); pre-period wage floors are stable
- **Control:** group of establishments similar to the treated group with close pre-period wage floors but no event
 - Similar to treated: must be in the same region x size x industry
 - Close pre-period floors: $floor_{-1}$ is in the same R\$40 bucket as treated; wage floors in the pre-period are stable
 - There are no events (as defined for treated) in the post-period
- **Specification:** stacked DiD pooling all wage floor events

$$Y_{stkh} = \sum_{j=-3} \alpha_{jk} (D_s \times \delta_{\tau=j}) + \mu_s + \delta_{\tau} + \gamma_t + u_{stkh}$$



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Specification: stacked DiD pooling all wage floor events

$$Y_{stkh} = \sum_{j=-3}^{4} \alpha_{jk} (D_s \times \delta_{\tau=j}) + \mu_s + \delta_{\tau} + \gamma_t + u_{stkh}$$

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DGLM

Short-run impact on the wage distribution



- Localized effects around the new wage floor
- Null employment effects in the short-run

DGLM

Short-run impact on the wage distribution



Null employment effects in the short-run
Short-run impact on the wage distribution



Null employment effects in the short-run

Overall

Amenities

Long-run impact of WFs on missing and excess jobs

"Just below" bins: $b = k \in \{-3, -2, -1\}$; "Just above" bins: $a = k \in \{0, 1, 2\}$

White workers Nonwhite workers

Null employment effects in the long run (∆a + ∆b ≈ 0
≈3ppt larger shift in mass among nonwhite workers

Rest 🔪 Bunching

Collective Bargaining and Wage Floors

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Long-run impact of WFs on missing and excess jobs

"Just below" bins: $b = k \in \{-3, -2, -1\}$; "Just above" bins: $a = k \in \{0, 1, 2\}$

White workers



- ▶ Null employment effects in the long run $(\Delta a + \Delta b \approx 0)$
- ▶ \approx 3ppt larger shift in mass among nonwhite workers

Rest 📜 Bunchi

DiD regression results

	Or	Original bunching sample			Simulation: general floor & full compliance		
-	Mean	50/10 earnings	Wage floor	Mean	50/10 earnings	Wage floor	
	earnings	ratio	coverage	earnings	ratio	coverage	
	(1)	(2)	(3)	(4)	(5)	(6)	
Panel A: White worker	''S						
$(Ds=1)\times(\tau\geq 0)$							
Mean outcome							
Adjusted R2							
Panel B: Nonwhite wor	rkers						
$(Ds=1)\times(\tau\geq 0)$							
Mean outcome							
Adjusted R2							
Panel C: Racial gaps							
$(Ds=1)\times(\tau\geq 0)$							
Mean outcome							
Adjusted B2							



DiD regression results

50/10 ratio WF coverage

	Ori	ginal bunching sa	mple	Simulation:	general floor & fu	Il compliance
-	Mean	50/10 earnings	Wage floor	Mean	50/10 earnings	Wage floor
	earnings	ratio	coverage	earnings	ratio	coverage
-	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: White worker	rs					
$(Ds=1)\times(\tau \ge 0)$	0.009	-0.024**	-0.083***			
	(0.012)	(0.011)	(0.011)			
Mean outcome	2,204	0.495	0.931			
Adjusted R2	0.96	0.89	0.60			
Panel B: Nonwhite wor	rkers					
$(Ds = 1) \times (\tau \ge 0)$	0.011	-0.029***	-0.112***			
	(0.012)	(0.009)	(0.013)			
Mean outcome	1,885	0.412	0.908			
Adjusted R2	0.94	0.79	0.66			
Panel C: Racial gaps						
$(Ds = 1) \times (\tau \ge 0)$	0.002	-0.005	-0.028***			
	(0.008)	(0.011)	(0.007)			
Mean outcome	-0.156	-0.083	-0.023			
Adjusted R2	0.87	0.73	0.60			

Compression from below; no impact on racial gap at the mean

Drop-top

Full coverage would reduce racial gap by 1.1 log pts ($\approx 7\%$ decrease)

DiD regression results

50/10 ratio WF coverage

	Ori	ginal bunching sa	nple	Simulation:	Simulation: general floor & full compliance		
-	Mean	50/10 earnings	Wage floor	Mean	50/10 earnings	Wage floor	
	earnings	ratio	coverage	earnings	ratio	coverage	
	(1)	(2)	(3)	(4)	(5)	(6)	
Panel A: White worker	-'8						
$(Ds=1)\times(\tau \ge 0)$	0.009	-0.024**	-0.083***	0.032**	-0.053***	0.044***	
	(0.012)	(0.011)	(0.011)	(0.012)	(0.012)	(0.012)	
Mean outcome	2,204	0.495	0.931	2,204	0.495	0.931	
Adjusted R2	0.96	0.89	0.60	0.96	0.87	0.66	
Panel B: Nonwhite wo	rkers						
$(Ds=1)\times(\tau \ge 0)$	0.011	-0.029***	-0.112^{***}	0.043***	-0.086***	0.058^{***}	
	(0.012)	(0.009)	(0.013)	(0.012)	(0.011)	(0.015)	
Mean outcome	1,885	0.412	0.908	1,885	0.412	0.908	
Adjusted R2	0.94	0.79	0.66	0.94	0.75	0.69	
Panel C: Racial gaps							
$(Ds=1)\times(\tau \ge 0)$	0.002	-0.005	-0.028***	0.011	-0.033***	0.014^{*}	
	(0.008)	(0.011)	(0.007)	(0.008)	(0.012)	(0.008)	
Mean outcome	-0.156	-0.083	-0.023	-0.156	-0.083	-0.023	
Adjusted R2	0.87	0.73	0.60	0.87	0.72	0.48	

Compression from below; no impact on racial gap at the mean

Drop-top

Full coverage would reduce racial gap by 1.1 log pts ($\approx 7\%$ decrease)

Outline



2 Impact of wage floors: bunching with DiD

3 Mechanisms: DiD on worker transitions

DiD on worker transitions



Where are workers near the new WF coming from? Does this change when the wage floor is introduced?

$$\mathbb{1}\{Hire\}_{ipk} = \sum_{j=-2}^{0} \alpha_{jk} (D_i \times \delta_{p=j}) + \delta_p + \gamma_t + \phi_i + u_{ipk}$$

• Union policy: add occupation fixed effects • Racial differentials: interact NW_i with D_i and $\delta_{p=j}$

DGLM

Mechanisms: DiD on worker transitions $\bigcirc \bigcirc \bigcirc$

DiD on worker transitions



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▶ Union policy: add occupation fixed effects

Racial differentials: interact NW_i with D_i and $\delta_{p=j}$

Origin of workers near WF

Outcome: hired indicator	Just below	Just above	Just below	Just above
(wage bins at destination)	(w/o occup	(w/o occupation FEs)		oation FEs)
	(1)	(2)	(3)	(4)

 $(D_i = 1) \times (p = 0)$

 $(D_i=1) \times (p=0) \times (NW_i=1)$

Sum of coefficients

Adjusted R2		
Observations		

Differential in how hires are distributed by race around WF
Occupations-specific WFs don't explain this differential



Origin of workers near WF

Outcome: hired indicator	Just below	Just above	Just below	Just above
(wage bins at destination)	(w/o occuj	pation FEs)	(with occup	pation FEs)
	(1)	(2)	(3)	(4)
$(D_i=1) \times (p=0)$	0.004	0.021*		
	(0.013)	(0.011)		
$(D_i=1) \times (p=0) \times (NW_i=1)$	0.027^{*}	-0.026*		
	(0.016)	(0.014)		
Sum of coefficients	0.031**	-0.005		
	(0.016)	(0.015)		
Adjusted R2	0.147	0.145		
Observations	650,209	541,569		

▶ Differential in how hires are distributed by race around WF

Occupations-specific WFs don't explain this differential



Origin of workers near WF

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	(1)	(2)	(3)	(4)
$(D_i=1) \times (p=0)$	0.004	0.021*	0.002	0.022**
	(0.013)	(0.011)	(0.013)	(0.011)
$(Di\!=\!1)\!\times\!(p\!=\!0)\!\times\!(NWi\!=\!1)$	0.027^{*}	-0.026*	0.026^{*}	-0.026*
	(0.016)	(0.014)	(0.016)	(0.014)
Sum of coefficients	0.031**	-0.005	0.028*	-0.004
	(0.016)	(0.015)	(0.016)	(0.015)
Adjusted R2	0.147	0.145	0.149	0.147
Observations	650,209	$541,\!569$	650,133	541,531

- ▶ Differential in how hires are distributed by race around WF
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Education DiD

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- CB can reduce inequality, but there is little evidence outside high-income countries
- ▶ We study CB in Brazil where union premiums are larger for white than nonwhite workers
- Examining a key union policy (i.e., wage floors), we find
 - No reduction in the earnings gap within covered workplaces
 - Discretionary enforcement limits effects on inequality
 - Nonwhite hires are more likely to slip from coverage
- Different from evidence on other floors, e.g., minimum wage
- What drives premium gaps? Spillovers to non-CB workers?

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Union density and CB coverage





Collective bargaining in the US and Brazil

	United States	Brazil
Level of CB	Firm-level only	Sectoral and firm-level
Union with CB rights	Elected by workers	Assigned based on
		category \times geography
CB coverage	Members only	Universal
	(varies by state)	
Coordination in CB	Limited scope	Fragmented



Union representation maps

Metalworkers in São Paulo





Union representation maps

Administrative assistants in São Paulo



 DGLM

Descriptive statistics of analysis sample

	Observations	CBAs			Wa	age floor le	vels
	(proportion)	mean	median	std dev	mean	median	st d dev
$All\ establishments$	792,155	4.8	5.0	2.6	7.10	7.07	0.21
Panel A: Size							
100+ workers	(0.03)	5.0	5.0	2.7	7.16	7.10	0.27
25-99 workers	(0.10)	5.0	5.0	2.6	7.13	7.08	0.24
10-24 workers	(0.17)	5.1	5.0	2.6	7.12	7.07	0.23
1-9 workers	(0.70)	4.7	5.0	2.6	7.09	7.06	0.20
Panel B: Region							
Midwest	(0.19)	5.3	5.0	2.7	7.13	7.11	0.17
Southeast	(0.62)	4.8	4.0	2.6	7.12	7.09	0.21
South	(0.07)	4.7	5.0	2.6	7.03	6.97	0.22
North	(0.03)	4.4	4.0	2.5	6.99	6.94	0.21
Northeast	(0.09)	4.6	4.0	2.6	6.97	6.92	0.19

▶ Negotiate CBAs in ≈ 5 out of the 8 years in the sample

▶ Wage floors are higher at larger firms and richer regions

Return

Descriptive statistics of analysis sample

	Observations	CBAs		Wa	age floor le	vels	
	(proportion)	mean	median	std dev	mean	median	std dev
$All\ establishments$	792,155	4.8	5.0	2.6	7.10	7.07	0.21
Panel C: Industry							
Banking	(0.02)	4.7	4.0	2.5	7.29	7.13	0.41
Transportation	(0.04)	4.4	4.0	2.5	7.27	7.25	0.26
Construction	(0.03)	4.0	3.0	2.5	7.22	7.26	0.22
Communication	(0.01)	4.9	5.0	2.5	7.15	7.09	0.25
Manufacturing	(0.10)	4.7	5.0	2.5	7.14	7.12	0.22
Professional activities	(0.03)	5.2	5.0	2.7	7.14	7.11	0.26
Health	(0.04)	4.8	4.0	2.7	7.08	7.01	0.27
Administrative activities	(0.11)	5.7	6.0	2.7	7.08	7.07	0.15
Commerce	(0.46)	4.8	5.0	2.6	7.08	7.05	0.19
Real estate	(0.01)	5.1	5.0	2.6	7.08	7.08	0.16
Education	(0.02)	4.5	4.0	2.5	7.04	7.00	0.20
Hospitality	(0.07)	4.0	4.0	2.4	7.04	7.04	0.12
Others	(0.04)	5.4	6.0	2.8	7.03	7.01	0.17
Culture	(0.01)	5.0	5.0	2.5	7.03	7.00	0.17

Return

DGLM

Panel tracking "primary" wage floors

- 1. Define an establishment's core labor union
 - Modal union among CBAs with wage floors that bite
 - Guarantees same category of coverage over time
- 2. Find the main CBA by the core union for a given estab-year
 - Priority to CBAs with wage floors that bite (largest mass)
 - Without bite, choose CBA aligning with prior/future floors
- 3. Extract the "primary" wage floor from each main CBA
 - Priority to wage floors that bite (largest mass)
 - Without bite, choose wage floor aligning with prior/future floors
- 4. Impose panel restrictions
 - Primary wage floor \geq minimum wage
 - Mass at primary wage floor > mass at all other floors
 - Change in nominal value of wage floors $\in [-10, 30]$ log points

Coverage vs Bite Return



Wage floor coverage vs. bite



- ▶ Wage floor coverage \Rightarrow bite on the wage distribution
- ▶ Given bite, it's possible to select a "primary" wage floor

Return

Workers covered and "at wage floors"

		Share of workers		rs Share of workers at		Share of	workers at
	Number of	cover	covered (%)		e floor (%)	primary wage floor (%)	
	workers	WF CBAs	Panel CBAs	WF CBAs	Panel CBAs	WF CBAs	Panel CBAs
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
2009	29,427,908	47.2	25.8	9.3	7.5	7.4	6.3
2010	31,936,234	48.5	27.1	9.6	7.7	7.7	6.5
2011	33,851,940	49.8	28.2	10.2	8.2	8.0	6.8
2012	35,206,640	50.5	28.9	10.5	8.4	8.4	7.1
2013	36,280,308	49.8	28.7	10.3	8.4	8.3	7.1
2014	36,904,644	47.3	25.6	9.1	7.2	7.4	6.2
2015	35,841,112	44.6	25.4	8.9	7.3	7.2	6.2
2016	$34,\!288,\!404$	46.5	26.1	9.1	7.6	7.3	6.4
2017	$33,\!944,\!976$	43.5	22.9	7.9	6.5	6.4	5.6

Return

Impact of CB on racial earnings gap

$$\Delta = C_n M_n - C_w M_w$$



Coverage (C) and premiums (M)

Premiums (M) only

- ▶ CB contributes 2.5 log pts ($\approx 10\%$ of unadjusted gap)
- ▶ 80% explained by premiums differential (avg $M = 11 \log \text{ pts}$)

DGLM

$\overline{\text{Model}}$ (Ashenfelter, 1972)

▶ Effect of CB on mean earnings of nonwhite wrt white workers

$$\Delta^* = \frac{(E_n^o/E_w^o) - (E_n^c/E_w^c)}{E_n^c/E_w^c}$$

▶ Taking logs, we can approximate this object with

$$\Delta^* = (C_n M_n - C_w M_w) + (D_n - D_w)$$

- C: coverage rate (or union density)

- M: CBA premium (or union premium)

- D: impact on uncovered (or nonmembers)

▶ If impact of CB on the racial gap in the uncovered sector is small

$$\Delta^* \approx \Delta = C_n M_n - C_w M_w$$

Return

Racial gaps in coverage and premiums

	Racial differentials						
-	(1)	(2)	(3)	(4)			
Coverage	-0.028	-0.026	0.017	0.019			
	(0.002)	(0.002)	(0.001)	(0.001)			
Premiums	-0.118	-0.053	-0.060	-0.043			
	(0.005)	(0.002)	(0.002)	(0.002)			
Year	yes	yes	yes	yes			
Ind + occup	no	yes	yes	yes			
Micro-region	no	no	yes	yes			
Worker charact	no	no	no	yes			

Return

Racial gaps in density, coverage, and premiums

	Racial differentials					
	PNAD	PNAD	RAIS			
	private sector	private-formal	private-formal			
	(1)	(2)	(3)			
Union density	-0.033	-0.028	-			
	(0.001)	(0.002)	-			
CB coverage	-	-	-0.035			
	-	-	(0.002)			
Premiums (density)	-0.054	-0.041	-			
	(0.006)	(0.005)	-			
Premiums (coverage)	-	-	-0.069			
	-	-	(0.003)			

Return

Coverage rates and union premiums by industry

$$\Delta = \sum_{j} P_{nj} C_{nj} M_{nj} - \sum_{j} P_{wj} C_{wj} M_{wj}$$

	Coverage rate			Union premium		
	Nonwhite	White	Racial gap	Nonwhite	White	Racial gap
	(1)	(2)	(3)	(4)	(5)	(6)
Construction	0.554	0.527	0.026	0.098	0.145	-0.048
Administrative activities	0.620	0.627	-0.008	0.064	0.116	-0.052
Hospitality	0.406	0.418	-0.012	0.050	0.042	0.008
Transportation	0.539	0.581	-0.042	0.075	0.093	-0.018
Real estate	0.526	0.611	-0.085	0.106	0.162	-0.055
Culture	0.431	0.483	-0.052	0.149	0.195	-0.045
Commerce	0.472	0.496	-0.024	0.099	0.148	-0.049
Others	0.351	0.409	-0.058	0.063	0.083	-0.020
Health	0.503	0.538	-0.035	0.036	0.039	-0.003
Professional activities	0.528	0.557	-0.029	0.087	0.176	-0.089
Communication	0.645	0.720	-0.075	0.144	0.238	-0.093
Education	0.405	0.493	-0.088	0.172	0.192	-0.020
Banking	0.607	0.662	-0.055	0.063	0.051	0.012
Manufacturing	0.637	0.649	-0.012	0.115	0.146	-0.032

Return

Impact of CB on gender earnings gap



Return

Wage distributions bunch at primary wage floors



Return
Distribution of floor-to-minimum gaps



Trends in floors



- ▶ Mean WF year-to-year growth pre-2015 \approx 3-4%
- ▶ Correlation of year-to-year WF and MW growth is 0.29

Return

Events by change in floors and observations





Trends in mean wage floors



DiD for wage floors



DGLM

R\$1080 to R\$1160 in 2013



R\$1680 to R\$1840 in 2013





Return

Short-run impact on the wage distribution by tenure



Return

DiD results for CBA content

Panel A: Counts		Panel D: Clauses							
Clauses	0.739	Wage deductions	0.044*	Advance notice	0.042	Work on Sundays and holidays	0.000	Union access to company information	-0.009
Tokens in text	-43.945	Wage isonomy	0.014	Separation/dismissal	-0.028	Workday compensation	0.008	Union access to workplace	-0.021
		Wage floors	0.000	Suspension of employment	0.039^{*}	Workday controls	0.034	Guarantees to union officers	-0.025
Panel B: Clause groups		Wage adjust./corrections	0.006	Part-time contracts	-0.003	Weekly rest	0.052***	Leave for union activities	0.004
Wages	0.000	Wage payment	0.017	Internship/apprenticeship	0.000	Duration and schedule	0.021	Other rules on union-firm relations	0.008
Bonus, pays, assistances	0.045**	Weekly rest remuneration	0.001	Female workforce	0.005	Absences	0.021	Procedures in relation to strikes	0.001
Employment contract	0.017	Apprenticeship salary	0.001	Youth workforce	-0.005	Break intervals	0.009	Factory commission	-0.002
Working conditions	0.024	Production or task salary	0.009	Outsourced workforce	0.000	Special shifts (women, students, etc.)	-0.005	Union fees	0.009
Workday rules	0.022	Other rules on wages	-0.011	Advanced-age workforce	-0.009	Other provisions on the workday	0.057**	Right of opposition to union fees	0.000
Health and safety	0.023	13th month bonus	0.017	Employment/hiring rules	0.029	Extension/reduction of workday	-0.014	Other rules on union representation	0.005
Holidays and leaves	0.031	Work function bonus	-0.007	Other worker groups	0.010	On-call rules	0.005	Union representative	0.024
Union relations	0.034**	Other bonuses	-0.014	People with special needs	0.004	Uninterrupted shifts	0.025	Unionization campaigns	0.014
General provisions	0.014	Night pay	0.028	Other rules on employment	-0.001	Acceptance of medical certificates	0.019	Application of the CBA	0.012
		Overtime pay	0.000	Adapting work functions	0.007	Accompaniment: work-related injuries	-0.005	Non-compliance with the CBA	-0.048^{*}
Panel C: Clause subgroups	Panel C: Clause subgroups		0.015	Assigning work functions	0.009	Guarantees: nonwork-related injuries	0.013	Mechanisms for conflict resolution	0.016
Wage adjustment	0.000	Shift pay	0.000	Performance evaluation	-0.002	Other rules on injury protections	-0.021	Other provisions	-0.025
Wage payment	0.017	Hazard pay (danger risk)	0.006	Other staffing rules	0.001	Rehabilitation of the injured	0.000	Rules for negotiating	0.015
Other: wages	0.010	On-call pay	-0.001	Worker particip. in mgmt	0.000	CIPA: accident prevention committee	-0.005	Renewal/termination of the CBA	-0.020
Other: adjust., payments	-0.011	Seniority pay	0.007	Task and wage schedule	-0.015^{+}	Health education campaigns	-0.020		
Bonuses	0.002	Other pays	0.020	Vocational training	0.002	Working environment conditions	-0.012		
Pays	0.052^{+*}	Food assistance	-0.003	Transfers	0.030°	Equipments for individual safety	-0.019		
Assistances	0.049**	Childcare assistance	0.049**	Moral harassment	0.002	Safety equipment	0.011		
Other income	0.027	Illness/disability assistance	0.010	Sexual harassment	0.001	Medical exams	-0.010		
Separations	0.001	Education assistance	-0.003	Tools and equipment	-0.008	Insalubrity	-0.002		
Contract types	-0.007	Housing assistance	0.005	Equal opportunities	0.000	Machine and equipment maintenance	-0.002		
Hiring	0.041	Maternity assistance	0.000	Disciplinary norms	-0.012	Other rules on prevention	0.016		
Other: emp. contract	-0.001	Death/funeral assistance	0.002	Other rules on work functions	0.016	Hazard (danger risk)	-0.007		
Staffing rules	0.024	Health assistance	0.004	Abortion protections	0.003	First aid	0.014		
Working conditions	0.022	Transportation assistance	-0.001	Work-related injury protections	0.007	Health and safety professionals	0.003		
Emp. protections	0.030	Subsistence allowance	0.030	Adoption protections	-0.004	Training for injury prevention	-0.008		
Workday rules	0.022	Other assistances	0.002	Retirement protections	0.022	Uniforms	0.017		
Health/safety protections	0.018	Retirement	-0.016	Apprenticeship protections	0.003	Vacation duration and concession	0.019		
Health/safety prevention	0.025	Fees	0.019	Employment protections	0.013	Collective vacations	0.016		
Holidays	0.028	Loans	-0.001	Maternity protections	0.028	Holiday remuneration	0.018		
Leaves	-0.001	Profit sharing	0.015	Paternity protections	0.004	Abortion leave	-0.009		
Other: holidays and leaves	-0.010	Awards	0.006	Nonwork-related injury protections	0.027^{+}	Adoption leave	-0.003		
Union-firm relations	0.009	Family salary	0.002	Military service protections	0.021	Maternity leave	-0.015		
Union organization	0.027	Life insurance	0.026	Other employment protections	-0.009	Paid leave	-0.004		
General provisions	0.014			Policy for dependents	-0.016	Unpaid leave	0.025		
				Policies for employment maintenance	-0.001	Other rules on holidays and leaves	-0.010		

pecification

DGLM

Compensating differentials

 $\mathbb{1}\{Clause_{ct}\} = \beta_0 + \beta_1 D_c + \beta_2 P_t + \beta_3 (D_c \times P_t) + \gamma X_{ct} + \varepsilon_{ct}$

DiD to test for CBA changes paired with wage floor increases

- ▶ $1{Clause_{ct}}$: indicator for a clause type being in the CBA
- ▶ D_c : indicator for CBA in a treated pair, i.e., wage floor \nearrow
- ▶ P_t : indicator for the event-year CBA, i.e., $\tau = 0$
- \triangleright X_{ct}: fixed effects for year, firm-level vs. sectoral CBA, negotiation month, state where registered, and main union
- Standard errors clustered at the union level

Results Return

Long-run impact of WFs on missing and excess jobs

"Just below" bins: $b = k \in \{-3, -2, -1\}$; "Just above" bins: $a = k \in \{0, 1, 2\}$ "Rest below" bins: rb = k < -3; "Rest above" bins: ra = k > 2



Return

Long-run impact on the wage distribution by race



... cumulative sum = 0.030 (white); 0.003 (nonwhite)

Return

Mean earnings



Return

50/10 earnings ratio



Return

Wage floor coverage



Return

DiD regression results: dropping top wage bin

	Original bunching sample			Dropping top wage bin			
-	Mean	50/10 earnings	Wage floor	Mean	50/10 earnings	Wage floor	
	earnings	ratio	coverage	earnings	ratio	coverage	
	(1)	(2)	(3)	(4)	(5)	(6)	
Panel A: White worker	°s						
$(Ds=1)\times(\tau \ge 0)$	0.009	-0.024**	-0.083***	0.015**	-0.019**	-0.128***	
	(0.012)	(0.011)	(0.011)	(0.007)	(0.008)	(0.017)	
Mean outcome	2,204	0.495	0.931	1,629	0.318	0.892	
Adjusted R2	0.96	0.89	0.60	0.96	0.79	0.64	
Panel B: Nonwhite wo	rkers						
$(Ds=1)\times(\tau \ge 0)$	0.011	-0.029***	-0.112***	0.012	-0.020**	-0.147***	
	(0.012)	(0.009)	(0.013)	(0.011)	(0.010)	(0.018)	
Mean outcome	1,885	0.412	0.908	1,586	0.309	0.879	
Adjusted R2	0.94	0.79	0.66	0.94	0.70	0.67	
Panel C: Racial gaps							
$(Ds = 1) \times (\tau \ge 0)$	0.002	-0.005	-0.028***	-0.003	-0.002	-0.019**	
	(0.008)	(0.011)	(0.007)	(0.006)	(0.009)	(0.008)	
Mean outcome	-0.156	-0.083	-0.023	-0.026	-0.009	-0.013	
Adjusted R2	0.87	0.73	0.60	0.68	0.53	0.53	



Origin of workers near WF

Outcome: hired indicator	Just below	Just above	Just below	Just above	
(wage bins at destination)	(w/o occup	pation FEs)	(with occupation FEs)		
-	(1)	(2)	(3)	(4)	
$(D_i=1) \times (p=0)$	0.004	0.022*	0.002	0.022*	
	(0.013)	(0.011)	(0.012)	(0.011)	
$(Di\!=\!1)\!\times\!(p\!=\!0)\!\times\!(NWi\!=\!1)$	0.026*	-0.028**	0.026	-0.027**	
	(0.016)	(0.014)	(0.016)	(0.014)	
Sum of coefficients	0.031^{*}	-0.006	0.027^{*}	-0.006	
	(0.016)	(0.016)	(0.016)	(0.015)	
Adjusted R2	0.153	0.152	0.155	0.154	
Observations	650,209	$541,\!569$	650, 133	541,531	

Return

Origin of workers near WF

