1 Figures

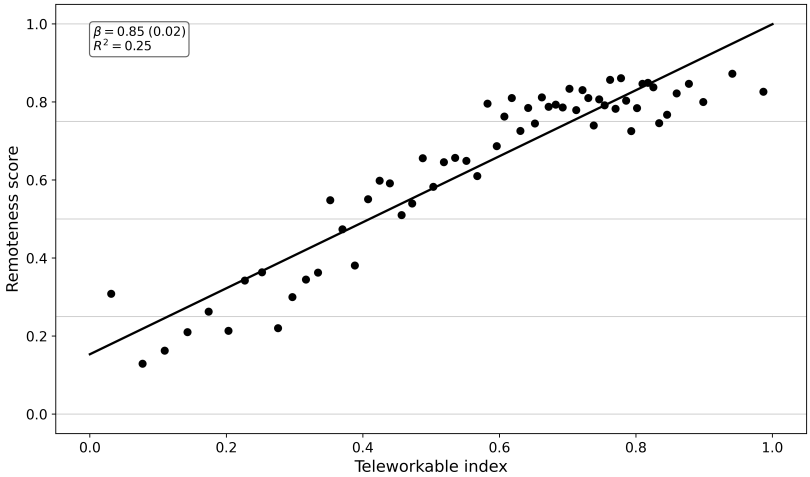

Figure 1: Remote v. Teleworkabe Scores

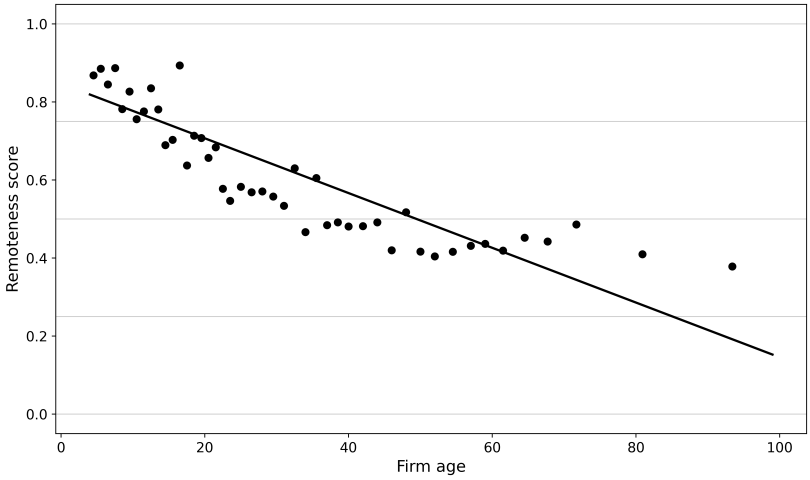

Figure 2: Remote v. Firm Age

2 Table of Means

Table 1: Table of Means

	Startup	Incumbent	All Firms
Panel A: Firm-level			
Growth	0.20	0.06	0.09
	(0.31)	(0.16)	(0.22)
Leave	0.26	0.21	0.22
	(0.31)	(0.28)	(0.29)
Join	0.35	0.17	0.22
	(0.32)	(0.18)	(0.24)
Teleworkable Score (0–1)	0.67	0.54	0.57
	(0.18)	(0.25)	(0.24)
Remote Score (0–1)	0.85	0.57	0.64
	(0.30)	(0.41)	(0.40)
Employees (Count)	271	2740	2126
	(1432)	(9555)	(8380)
Age	7	43	34
	(2)	(34)	(33)
Rent ($/sq ft)	49	37	40
	(21)	(19)	(20)
Centrality Score	1419	949	1066
	(1830)	(1309)	(1470)
Seniority Levels (Count)	3.62	3.86	3.80
	(0.77)	(0.50)	(0.59)
Number of firms	878	2630	3508
Observations	10450	31530	41980
Panel B: User-level			
Total Contributions	526.52	311.88	355.99
	(932.95)	(470.01)	(601.57)
Restricted Contributions	468.96	231.83	280.56
	(887.00)	(407.75)	(550.40)
Number of firms	379	759	1138
Number of users	1210	4051	4820
Observations	10896	42124	53020

Notes: Panel A uses firm–half–year observations; "Number of firms" counts distinct firm IDs that ever appear in each category over the full sample window, so Startup and Incumbent counts need not sum to the "All" column. Panel B relies on worker–half–year observations and its bottom rows list (i) distinct firms, (ii) distinct users, and (iii) total worker–half–year observations. Startup/Incumbent user counts are likewise distinct ID counts aggregated across the whole period and therefore can overlap. *Growth*, *Leave*, and *Join* rates are fractions between 0 and 1. *Teleworkable* and *Remote* scores are index values between 0 and 1. The sample period spans 2016 H2–2022 H1 at the firm level and 2017 H1–2022 H1 at the user level.

3 Mechanisms

We begin with the "base" specification:

$$y_{it} = \alpha + \beta_1 \left(remote_i \times covid_t\right) + \beta_2 \left(remote_i \times covid_t \times startup_i\right) + \delta \left(covid_t \times startup_i\right) + \mathrm{FE}_{it} + \varepsilon_{it},$$

which captures how the outcome responds to remote work during COVID and whether that effect differs in young firms.

In the **rent** "mirror" model we add two additional channels:

$$y_{it} = \alpha + \beta_1 \left(remote_i \times covid_t\right) + \beta_2 \left(remote_i \times covid_t \times startup_i\right) + \delta \left(covid_t \times startup_i\right) + \gamma_1 \left(covid_t \times rent_i\right) + \gamma_2 \left(remote_i \times covid_t \times rent_i\right) + \mathrm{FE}_{it} + \varepsilon_{it},$$

so that γ_1 and γ_2 capture how both the baseline COVID effect and the remote-work premium vary with local office rents.

Likewise, the **centrality** (HHI) model adds:

$$y_{it} = \alpha + \beta_1 \left(remote_i \times covid_t\right) + \beta_2 \left(remote_i \times covid_t \times startup_i\right) + \delta \left(covid_t \times startup_i\right) + \gamma_1 \left(covid_t \times hhi_i\right) + \gamma_2 \left(remote_i \times covid_t \times hhi_i\right) + \mathrm{FE}_{it} + \varepsilon_{it}.$$

By turning on each check-mark (rent, centrality, seniority) one at a time—and then in combination—we "mirror" the base COVID×Remote specification through different mechanisms.

3.1 User Productivity Mechanisms

Table 2: User Productivity Mechanisms

	Total Contrib. (pct. rk)							
Specification	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Baseline	✓	✓	✓	✓	✓	✓	✓	✓
Rent		✓		✓		✓		✓
HHI			✓	✓			✓	✓
Seniority					✓	✓	✓	✓
Panel A: OLS								
Remote × 𝟙(Post)	-2.66***	0.18	-2.52*	1.14	12.69	14.73	16.23	19.07
	(0.99)	(2.33)	(1.30)	(2.45)	(11.42)	(11.41)	(11.83)	(11.83)
Remote × 𝟙(Post) × Startup	9.18***	8.50***	8.33***	8.47***	8.09***	7.93***	7.60***	7.75***
	(2.69)	(2.74)	(2.92)	(2.92)	(2.76)	(2.79)	(2.95)	(2.95)
N	52,995	51,392	51,392	51,392	51,392	51,392	51,392	51,392
Panel B: IV								
Remote × 𝟙(Post)	-17.36**	-662.28	123.22	-312.49	-21312.51	160.32	957.68	-267.63
	(8.72)	(1258.52)	(577.60)	(1438.40)	(66029.29)	(922.16)	(3030.76)	(3882.03)
Remote × 𝟙(Post) × Startup	31.85***	117.04	211.08	238.68	-47.81	70.47	-107.21	227.12
	(12.28)	(170.78)	(709.68)	(398.71)	(427.16)	(66.79)	(379.62)	(1235.02)
N	52,995	47,771	47,771	47,771	47,771	47,771	47,771	47,771
KP rk Wald F	26.05	0.09	0.02	0.04	0.03	0.08	0.05	0.00

3.2 User Productivity – Wage Dispersion Mechanisms

Table 3: User Mechanisms – Wage Dispersion (Part 1)

	Total Contrib. (pct. rk)							
Specification	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rent		✓				✓	✓	✓
Hhi			✓			✓		
Seniority				✓			✓	
Wage					✓			✓
Panel A: OLS								
Remote × 𝟙(Post)	-2.75***	0.18	-2.52*	12.69	2.89	1.14	14.73	6.08*
	(1.00)	(2.33)	(1.30)	(11.42)	(2.59)	(2.45)	(11.41)	(3.40)
Remote × 𝟙(Post) × Startup	8.74***	8.50***	8.33***	8.09***	8.48***	8.47***	7.93***	8.37***
	(2.72)	(2.74)	(2.92)	(2.76)	(2.71)	(2.92)	(2.79)	(2.73)
N	51,392	51,392	51,392	51,392	51,392	51,392	51,392	51,392
Panel B: IV								
Remote × 𝟙(Post)	-18.51*	-662.28	123.22	-21312.51	19.76	-312.49	160.32	-573.59
	(9.46)	(1258.52)	(577.60)	(66029.29)	(48.56)	(1438.40)	(922.16)	(886.81)
Remote × 𝟙(Post) × Startup	33.64**	117.04	211.08	-47.81	22.42	238.68	70.47	101.32
	(13.17)	(170.78)	(709.68)	(427.16)	(22.05)	(398.71)	(66.79)	(125.34)
N	51,392	47,771	47,771	47,771	47,771	47,771	47,771	47,771
KP rk Wald F	22.24	0.09	0.02	0.03	1.30	0.04	0.08	0.10

Table 4: User Mechanisms – Wage Dispersion (Part 2)

	Total Contrib. (pct. rk)							
Specification	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rent				✓	✓	✓		✓
Hhi	✓	✓		✓	✓		✓	✓
Seniority	✓		✓	✓		✓	✓	✓
Wage		✓	✓		✓	✓	✓	✓
Panel A: OLS								
Remote × 𝟙(Post)	16.23	3.06	18.01	19.07	6.97**	20.31*	20.99*	24.06**
	(11.83)	(2.60)	(11.93)	(11.83)	(3.41)	(11.91)	(12.26)	(12.25)
Remote × 𝟙(Post) × Startup	7.60***	7.70***	7.86***	7.75***	7.96***	7.81***	7.00**	7.27**
	(2.95)	(2.90)	(2.75)	(2.95)	(2.91)	(2.77)	(2.93)	(2.93)
N	51,392	51,392	51,392	51,392	51,392	51,392	51,392	51,392
Panel B: IV								
Remote × 𝟙(Post)	957.68	78.94	-1640.16	-267.63	-343.99	177.25	1243.85	-236.02
	(3030.76)	(334.52)	(3352.78)	(3882.03)	(1669.54)	(793.32)	(8409.43)	(6844.11)
Remote × 𝟙(Post) × Startup	-107.21	104.81	-16.90	227.12	202.35	65.50	-126.95	219.76
	(379.62)	(460.55)	(89.07)	(1235.02)	(352.90)	(46.40)	(522.86)	(2338.34)
N	47,771	47,771	47,771	47,771	47,771	47,771	47,771	47,771
KP rk Wald F	0.05	0.01	0.13	0.00	0.01	0.10	0.01	0.00

3.3 Firm Mechanisms

Table 5: Firm Scaling Mechanisms

	Growth							
Specification	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Baseline	✓	✓	✓	✓	✓	✓	✓	✓
Rent		✓		✓		✓		✓
HHI			✓	✓			✓	✓
Seniority					✓	✓	✓	✓
Panel A: OLS								
Remote × 𝟙(Post)	0.003	0.007	-0.019***	-0.016	0.024	0.028	-0.022	-0.019
	(0.005)	(0.011)	(0.007)	(0.013)	(0.024)	(0.026)	(0.026)	(0.029)
Remote × 𝟙(Post) × Startup	0.070***	0.071***	0.063**	0.063**	0.068***	0.068***	0.064***	0.065**
	(0.024)	(0.026)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
N	41,980	38,436	38,436	38,436	38,436	38,436	38,436	38,436
Panel B: IV								
Remote × 𝟙(Post)	0.006	-0.113***	-0.039**	-0.157***	-0.037	-0.150*	-0.159**	-0.270***
	(0.009)	(0.043)	(0.018)	(0.044)	(0.067)	(0.079)	(0.072)	(0.083)
Remote × 𝟙(Post) × Startup	0.209**	0.139	0.037	0.026	0.122	0.109	0.056	0.045
	(0.102)	(0.099)	(0.102)	(0.101)	(0.096)	(0.096)	(0.101)	(0.100)
N	41,980	38,436	38,436	38,436	38,436	38,436	38,436	38,436
KP rk Wald F	16.53	11.27	10.14	8.41	9.84	8.35	7.70	6.62

3.4 Firm Mechanisms – Wage Dispersion

Table 6: Firm Mechanisms – Wage Dispersion (Part 1)

	Growth Rate							
Specification	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rent		✓				✓	✓	✓
Hhi			✓			✓		
Seniority				✓			✓	
Wage					✓			✓
Panel A: OLS								
Remote × 𝟙(Post)	0.001	0.007	-0.019***	0.024	-0.041***	-0.016	0.028	-0.035**
	(0.005)	(0.011)	(0.007)	(0.024)	(0.012)	(0.013)	(0.026)	(0.015)
Remote × 𝟙(Post) × Startup	0.070***	0.071***	0.063**	0.068***	0.066***	0.063**	0.068***	0.066***
	(0.025)	(0.026)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.026)
N	38,436	38,436	38,436	38,436	38,436	38,436	38,436	38,436
Panel B: IV								
Remote × 𝟙(Post)	0.010	-0.113***	-0.039**	-0.037	-0.042	-0.157***	-0.150*	-0.153***
	(0.009)	(0.043)	(0.018)	(0.067)	(0.028)	(0.044)	(0.079)	(0.048)
Remote × 𝟙(Post) × Startup	0.157	0.139	0.037	0.122	0.149	0.026	0.109	0.133
	(0.100)	(0.099)	(0.102)	(0.096)	(0.100)	(0.101)	(0.096)	(0.099)
N	38,436	38,436	38,436	38,436	38,436	38,436	38,436	38,436
KP rk Wald F	14.56	11.27	10.14	9.84	9.56	8.41	8.35	8.15

Table 7: Firm Mechanisms – Wage Dispersion (Part 2)

	Growth Rate							
Specification	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rent				✓	✓	✓		✓
Hhi	✓	✓		✓	✓		✓	✓
Seniority	✓		✓	✓		✓	✓	✓
Wage		✓	✓		✓	✓	✓	✓
Panel A: OLS								
Remote × 𝟙(Post)	-0.022	-0.053***	-0.016	-0.019	-0.050***	-0.011	-0.055**	-0.052*
	(0.026)	(0.012)	(0.026)	(0.029)	(0.016)	(0.027)	(0.028)	(0.030)
Remote × 𝟙(Post) × Startup	0.064***	0.059**	0.064***	0.065**	0.059**	0.064**	0.061**	0.061**
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
N	38,436	38,436	38,436	38,436	38,436	38,436	38,436	38,436
Panel B: IV								
Remote × 𝟙(Post)	-0.159**	-0.061*	-0.083	-0.270***	-0.169***	-0.184**	-0.174**	-0.275***
	(0.072)	(0.033)	(0.068)	(0.083)	(0.049)	(0.078)	(0.072)	(0.081)
Remote × 𝟙(Post) × Startup	0.056	0.038	0.116	0.045	0.028	0.104	0.058	0.048
	(0.101)	(0.101)	(0.097)	(0.100)	(0.100)	(0.096)	(0.101)	(0.100)
N	38,436	38,436	38,436	38,436	38,436	38,436	38,436	38,436
KP rk Wald F	7.70	7.54	7.29	6.62	6.54	6.48	6.11	5.36

4 Firm Scaling

4.1 OLS

Table 8: Firm Scaling OLS

Panel A: Growth

	(1)	(2)	(3)	(4)	(5)
Remote × 𝟙(Post)	0.013**	0.003	-0.003	-0.000	-0.004
	(0.005)	(0.005)	(0.006)	(0.007)	(0.011)
Remote × 𝟙(Post) × Startup		0.070***	0.077***	0.080***	0.090***
		(0.024)	(0.024)	(0.027)	(0.035)
Time FE	✓	✓			
Firm FE	✓	✓	✓	✓	✓
Industry × Time FE			✓		✓
HQ × Time FE				✓	✓
N	41,980	41,980	41,644	33,710	24,003

Panel B: Additional Outcomes

	Outcome	
	Join	Leave
Remote × 𝟙(Post)	0.012**	0.016***
	(0.005)	(0.002)
Remote × 𝟙(Post) × Startup	0.050*	-0.013
	(0.026)	(0.011)
Pre-COVID mean	0.24	0.14
N	41,980	41,980

4.2 Instrumental Variables

Table 9: Firm Scaling IV

Panel A: Growth

	(1)	(2)	(3)	(4)	(5)
Remote × 𝟙(Post)	0.022*	0.006	-0.010	0.010	0.134
	(0.012)	(0.009)	(0.027)	(0.017)	(0.119)
Remote × 𝟙(Post) × Startup		0.209**	0.211*	0.318**	0.933
		(0.102)	(0.109)	(0.158)	(0.712)
Time FE	✓	✓			
Firm FE	✓	✓	✓	✓	✓
Industry × Time FE			✓		✓
HQ × Time FE				✓	✓
N	41,980	41,980	41,644	33,710	24,003
KP rk Wald F	839.65	16.53	18.36	8.83	1.22

Panel B: Additional Outcomes

	Outcome	
	Join	Leave
Remote × 𝟙(Post)	0.042***	0.051***
	(0.010)	(0.005)
Remote × 𝟙(Post) × Startup	0.228**	0.092
	(0.112)	(0.058)
Pre-COVID mean	0.24	0.14
N	41,980	41,980
KP rk Wald F	16.53	16.53

4.3 First Stage

Table 10: First-Stage Estimates – Firm Scaling

	Remote × 𝟙(Post)	Remote × 𝟙(Post) × Startup
Teleworkable × 𝟙(Post)	0.826***	-0.000
	(0.028)	(0.000)
Teleworkable × 𝟙(Post) × Startup	-0.412***	0.414***
	(0.077)	(0.072)
𝟙(Post) × Startup	0.455***	0.575***
	(0.055)	(0.052)
Time FE	✓	✓
Firm FE	✓	✓
Partial F	437.86	16.54
N	41,980	41,980

5 User Productivity

5.1 OLS

Table 11: User Productivity – OLS

Panel A: Total Contrib. (pct. rk)						
	(1)	(2)	(3)	(4)	(5)	(6)
Remote × 𝟙(Post)	-1.52*	-2.66***	-2.79***	-2.62***	-2.52**	-2.62**
	(0.92)	(0.99)	(0.99)	(1.01)	(1.06)	(1.17)
Remote × 𝟙(Post) × Startup		9.18***	9.77***	8.41***	9.44***	8.20**
		(2.69)	(2.68)	(2.91)	(2.80)	(3.28)
Time FE	✓	✓	✓			
Firm FE	✓	✓		✓	✓	✓
User FE	✓	✓		✓	✓	✓
Firm × User FE			✓			
Industry × Time FE				✓		✓
MSA × Time FE					✓	✓
N	52,995	52,995	52,718	52,386	52,176	49,470

Panel B: Additional Outcomes		
	Outcome	
	Restricted (pct. rk)	
Remote × 𝟙(Post)	-1.96**	
	(0.99)	
Remote × 𝟙(Post) × Startup	8.30***	
	(2.62)	
Pre-COVID mean	49.79	
N	52,995	

5.2 Instrumental Variables

Table 12: User Productivity – IV

Panel A: Total Contrib. (pct. rk)

	(1)	(2)	(3)	(4)	(5)	(6)
Remote × 𝟙(Post)	-5.76	-17.36**	-19.30**	-33.79**	-19.43*	-69.25**
	(6.24)	(8.72)	(8.79)	(13.70)	(10.16)	(32.95)
Remote × 𝟙(Post) × Startup		31.85***	33.67***	31.16**	38.26***	56.17***
		(12.28)	(12.32)	(12.23)	(14.58)	(21.61)
Time FE	✓	✓	✓			
Firm FE	✓	✓		✓	✓	✓
User FE	✓	✓		✓	✓	✓
Firm × User FE			✓			
Industry × Time FE				✓		✓
MSA × Time FE					✓	✓
N	52,995	52,995	52,718	52,386	52,176	49,470
KP rk Wald F	102.60	26.05	25.60	16.94	21.18	4.81

Panel B: Additional Outcomes

	Outcome
	Restricted (pct. rk)
Remote × 𝟙(Post)	-19.25**
	(8.88)
Remote × 𝟙(Post) × Startup	34.94***
	(12.13)
Pre-COVID mean	49.79
N	52,995
KP rk Wald F	26.05

5.3 First Stage

Table 13: First-Stage Estimates – User Productivity

	Remote × 𝟙(Post)	Remote × 𝟙(Post) × Startup
Teleworkable × 𝟙(Post)	0.25***	0.00***
	(0.03)	(0.00)
Teleworkable × 𝟙(Post) × Startup	0.09	0.34***
	(0.05)	(0.04)
𝟙(Post) × Startup	0.14***	0.65***
	(0.04)	(0.03)
Time FE	✓	✓
Firm FE	✓	✓
User FE	✓	✓
Partial F	60.08	36.85
N	52,995	52,995

6 Dynamic Event-Study Evidence

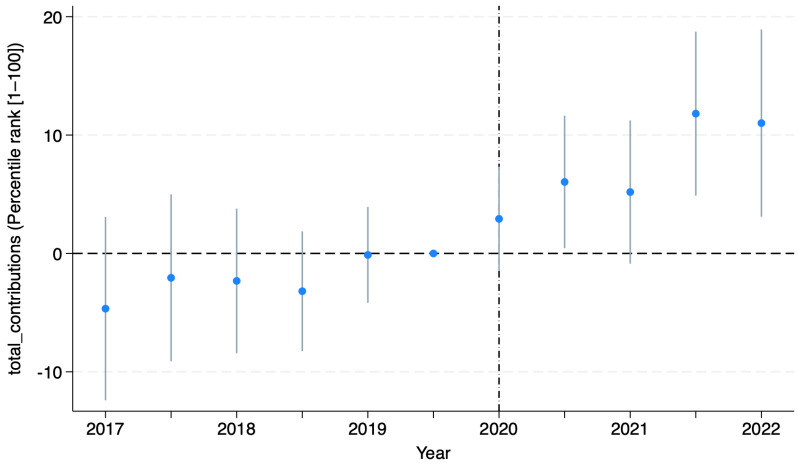

Figure 3: *
OLS – Total Contributions

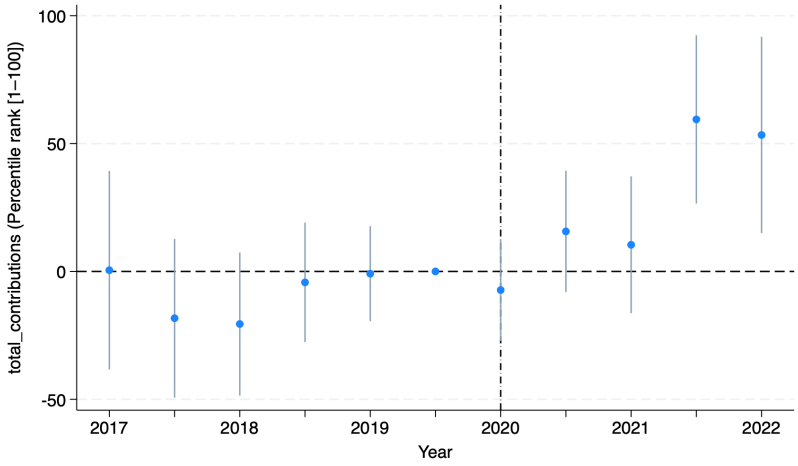

Figure 4: *
IV – Total Contributions

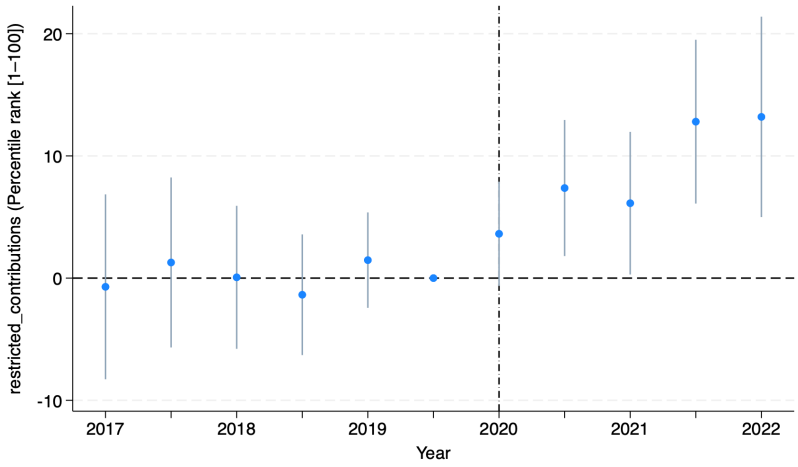

Figure 5: *
OLS – Restricted Contributions

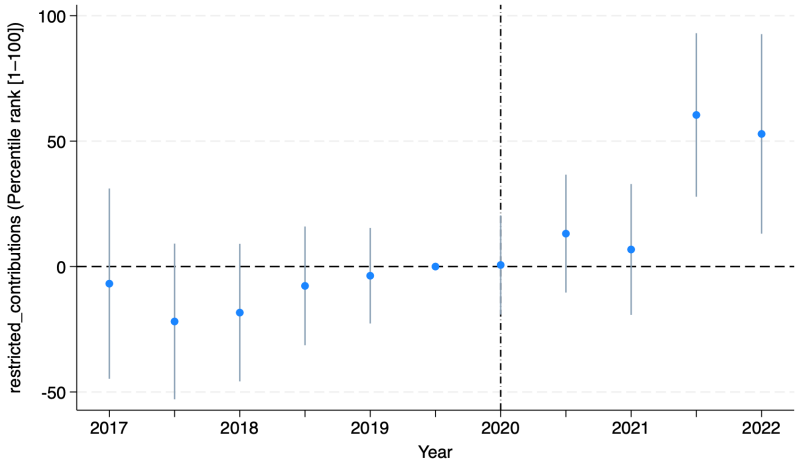

Figure 6: *
IV – Restricted Contributions

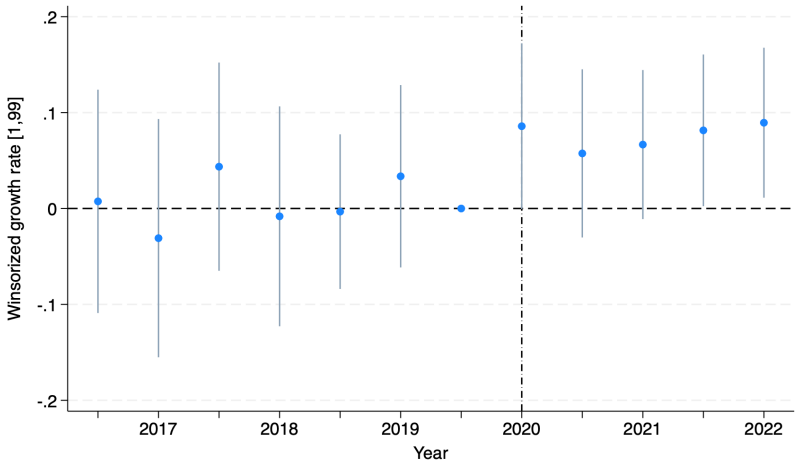

Figure 7: *
OLS – Employment Growth

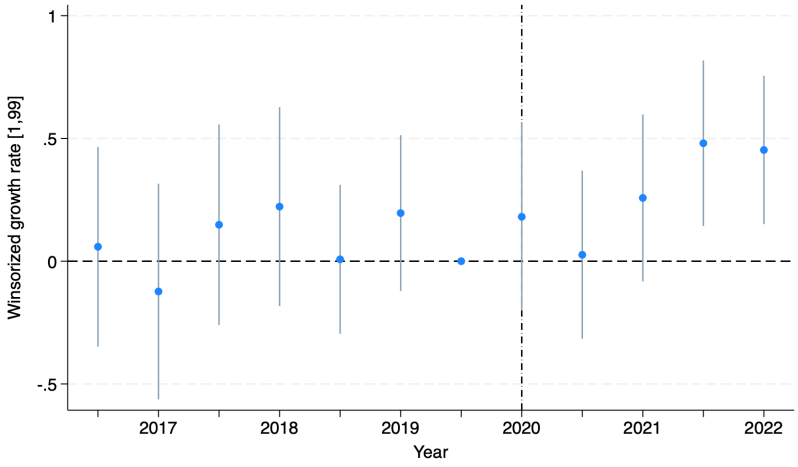

Figure 8: *
IV – Employment Growth

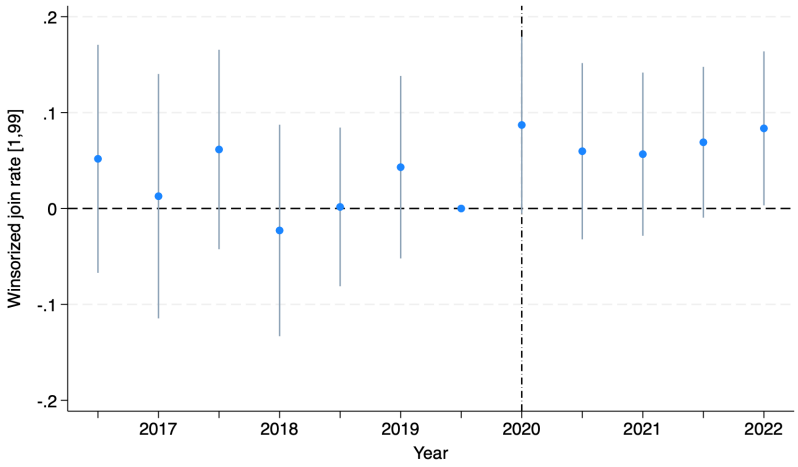

Figure 9: *
OLS – Join Rate

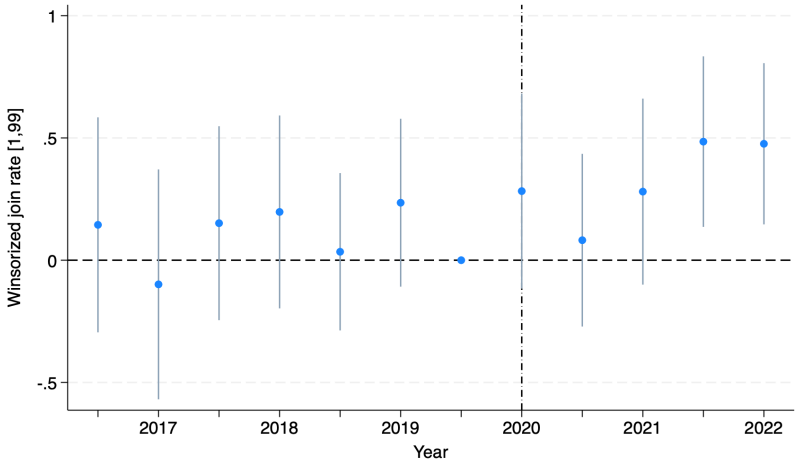

Figure 10: *
IV – Join Rate

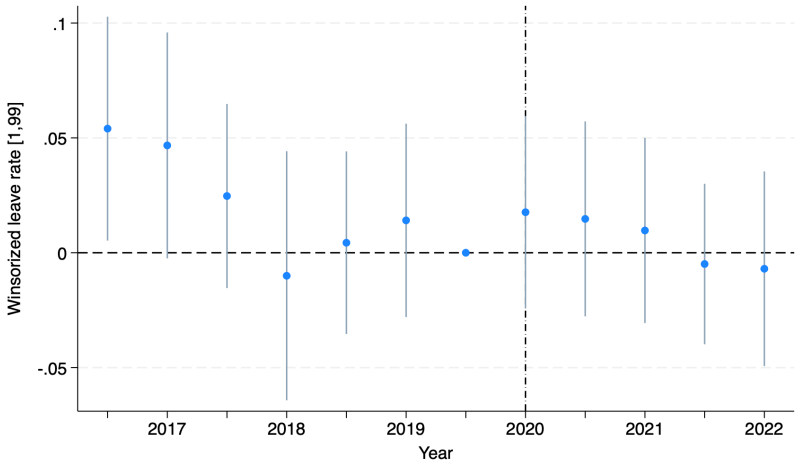

Figure 11: *
OLS – Leave Rate

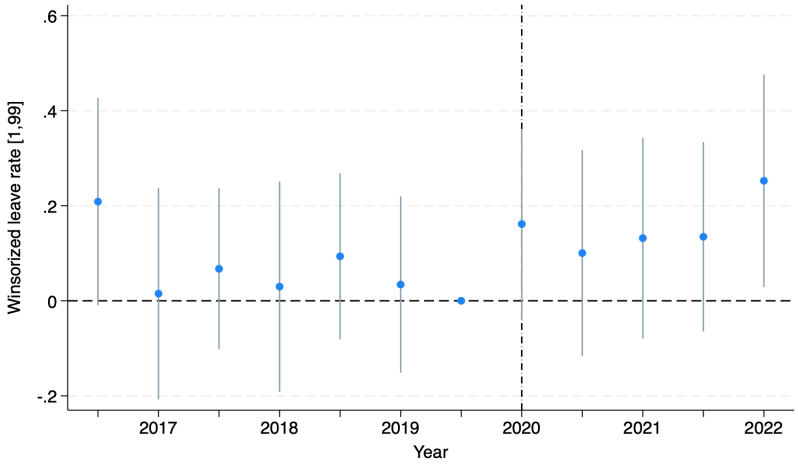

Figure 12: *
IV – Leave Rate