

1 Figures

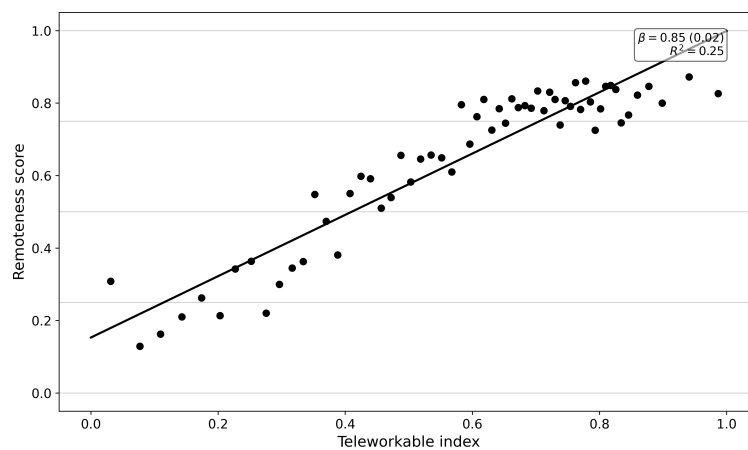


Figure 1: Remote v. Teleworkabe Scores

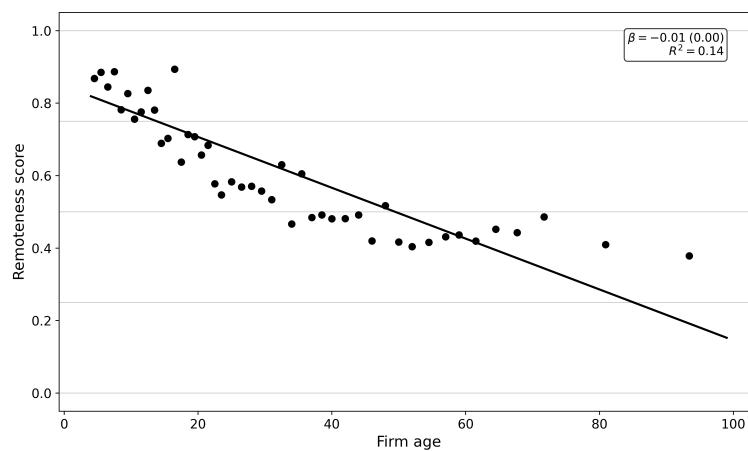


Figure 2: Remote v. Firm Age

2 Table of Means

Table 1: Table of Means

	Startup	Incumbent	All Firms
Panel A: Firm-level			
Growth	0.20 (0.31)	0.06 (0.16)	0.09 (0.22)
Leave	0.26 (0.31)	0.21 (0.28)	0.22 (0.29)
Join	0.35 (0.32)	0.17 (0.18)	0.22 (0.24)
Teleworkable Score (0–1)	0.67 (0.18)	0.54 (0.25)	0.57 (0.24)
Remote Score (0–1)	0.85 (0.30)	0.57 (0.41)	0.64 (0.40)
Employees (Count)	271 (1432)	2740 (9555)	2126 (8380)
Age	7 (2)	43 (34)	34 (33)
Rent (\$/sq ft)	49 (21)	37 (19)	40 (20)
Centrality Score	1419 (1830)	949 (1309)	1066 (1470)
Seniority Levels (Count)	3.62 (0.77)	3.86 (0.50)	3.80 (0.59)
Number of firms	878	2630	3508
Observations	10450	31530	41980
Panel B: User-level			
Total Contributions	362.95 (817.44)	192.73 (522.28)	225.70 (594.89)
Restricted Contributions	320.05 (746.65)	139.96 (359.56)	174.84 (466.14)
Number of firms	721	1503	2224
Number of users	8338	31993	37186
Observations	44801	186504	231305

Notes: Panel A uses firm–half–year observations. Panel B relies on worker–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. *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 User Productivity – Pre-COVID Panel

3.1 OLS

Table 2: User Productivity – OLS

	(1)	(2)	(3)	(4)	(5)	(6)
	Total (pct. rk.)	Total (pct. rk.)	Total (pct. rk.)	Restr. (pct. rk.)	Total (wins.)	Restr. (wins.)
Remote \times 1(Post)	-0.28 (0.44)	-1.03** (0.48)	-1.23** (0.50)	-1.48*** (0.52)	-19.74*** (4.66)	-17.33*** (3.91)
Remote \times 1(Post) \times Startup		5.18*** (1.24)	6.21*** (1.27)	7.31*** (1.27)	59.23*** (14.22)	55.41*** (12.74)
Time FE	✓	✓	✓	✓	✓	✓
Firm FE	✓	✓				
User FE	✓	✓				
Firm \times User FE			✓	✓	✓	✓
Pre-COVID mean	49.92	49.92	49.92	48.48	184.71	138.15
N	229,862	229,862	224,708	224,708	224,708	224,708

3.2 Instrumental Variables

Table 3: User Productivity – IV

	(1)	(2)	(3)	(4)	(5)	(6)
	Total (pct. rk.)	Total (pct. rk.)	Total (pct. rk.)	Restr. (pct. rk.)	Total (wins.)	Restr. (wins.)
Remote \times 1(Post)	-3.61 (2.82)	-7.15* (3.90)	-9.26** (4.01)	-6.75 (4.19)	-124.39*** (33.82)	-105.59*** (28.11)
Remote \times 1(Post) \times Startup		9.94* (5.37)	12.45** (5.39)	10.52* (5.42)	130.92** (55.14)	108.20** (48.92)
Time FE	✓	✓	✓	✓	✓	✓
Firm FE	✓	✓				
User FE	✓	✓				
Firm \times User FE			✓	✓	✓	✓
Pre-COVID mean	49.92	49.92	49.92	48.48	184.71	138.15
KP rk Wald F	543.26	140.60	123.43	123.43	123.43	123.43
N	229,862	229,862	224,708	224,708	224,708	224,708

3.3 First Stage

Table 4: First-Stage Estimates – User Productivity (precovid)

	Remote \times $\mathbb{1}(\text{Post})$	Remote \times $\mathbb{1}(\text{Post}) \times \text{Startup}$
Teleworkable \times $\mathbb{1}(\text{Post})$	0.23*** (0.01)	-0.00* (0.00)
Teleworkable \times $\mathbb{1}(\text{Post}) \times \text{Startup}$	0.16*** (0.02)	0.39*** (0.02)
$\mathbb{1}(\text{Post}) \times \text{Startup}$	0.09*** (0.02)	0.60*** (0.01)
Time FE	✓	✓
Firm FE	✓	✓
User FE	✓	✓
Partial F	325.46	186.55
N	229,862	229,862

4 User Productivity – Heterogeneity Splits

4.1 Modal vs. Non-Modal MSA

Define an indicator based on the worker’s CBSA: **1** if it matches the firm’s modal (most frequent) CBSA, **0** if it differs, and **2** if the worker’s CBSA is missing.

Table 5: Modal MSA heterogeneity

Parameter	0	1	2
Remote $\times \mathbb{1}(\text{Post})$	-5.397 (4.536)	-14.685 (12.461)	-8.418 (8.151)
Remote $\times \mathbb{1}(\text{Post}) \times \text{Startup}$	18.970** (7.396)	16.135 (16.998)	11.198 (9.863)
N	72,334	95,685	54,895
KP rk Wald F	102.35	13.29	28.09

4.2 Distance Terciles

Compute each worker’s average great-circle distance to the firm headquarters (km). Sort firms into distance terciles and tag observations as **1**=short, **2**=medium or **3**=long distance.

Table 6: Distance heterogeneity

Parameter	1	2	3
Remote $\times \mathbb{1}(\text{Post})$	-22.315*** (6.835)	-17.570* (10.544)	-2.737 (4.940)
Remote $\times \mathbb{1}(\text{Post}) \times \text{Startup}$	10.143 (17.334)	31.297** (13.517)	6.629 (6.474)
N	27,504	49,129	147,989
KP rk Wald F	13.88	14.01	103.68

4.3 Dynamic Labour-Growth (within half-year)

employment growth, bucket “3” the top tercile. For every half-year, compute each firm’s employment growth rate $g_{ft} = \frac{E_{ft}}{E_{f,t-1}} - 1$ and place firms into terciles within that half-year: **1**=low, **2**=mid, **3**=high growth.

Table 7: Dynamic growth heterogeneity

Parameter	1	2	3
Remote \times $\mathbf{1}(\text{Post})$	-21.670*** (8.314)	-1999.185 (47319.406)	-0.061 (3.690)
Remote \times $\mathbf{1}(\text{Post}) \times \text{Startup}$	16.986* (9.466)	2060.627 (48326.980)	-4.698 (6.619)
N	36,785	95,617	66,963
KP rk Wald F	31.22	0.00	51.93

4.4 Pre vs. Post-COVID Labour-Growth

Compute for each firm the percentage change in mean headcount from the pre-COVID period (before 2020H1) to the post-COVID period, Winsorise at the 1st/99th percentiles, and assign tercile codes **1**=low, **2**=mid, **3**=high medium-run growth.

Table 8: Post-COVID growth heterogeneity

Parameter	1	2	3
Remote \times $\mathbf{1}(\text{Post})$	-16.398** (7.906)	6.876 (18.371)	-4.275 (3.546)
Remote \times $\mathbf{1}(\text{Post}) \times \text{Startup}$	-17.303 (21.480)	-1.172 (18.738)	-0.158 (7.519)
N	45,951	112,354	66,403
KP rk Wald F	29.49	5.77	28.78

5 User Productivity – Covid Bifurcation (Full Remote, Pre-COVID Panel)

Table 9: User Productivity – Lean (Precovid, fullremote) – Part 1

Specification	Total Contrib. (pct. rk)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rent		✓			✓	✓		✓
HHI			✓		✓		✓	✓
Seniority				✓		✓	✓	✓
Panel A: OLS								
Remote \times $\mathbb{1}(\text{Post})$	-0.86*** (0.31)	-0.71** (0.32)	-0.84*** (0.31)	-0.82*** (0.31)	-0.70** (0.32)	-0.67** (0.32)	-0.82*** (0.31)	-0.68** (0.32)
Remote \times $\mathbb{1}(\text{Post}) \times \text{Startup}$	3.39*** (0.71)	2.79*** (0.72)	3.50*** (0.72)	3.35*** (0.71)	2.90*** (0.72)	2.75*** (0.72)	3.53*** (0.73)	2.91*** (0.73)
N	224,708	218,112	224,596	224,708	218,032	218,112	224,596	218,032
Panel B: IV								
Remote \times $\mathbb{1}(\text{Post})$	-4.11** (1.77)	-3.75* (1.96)	-4.29** (1.72)	-4.10** (1.80)	-3.98** (1.92)	-3.72* (2.01)	-4.30** (1.77)	-3.97** (2.00)
Remote \times $\mathbb{1}(\text{Post}) \times \text{Startup}$	5.61** (2.45)	4.97* (2.68)	6.74*** (2.55)	5.53** (2.51)	6.08** (2.83)	4.91* (2.74)	6.99** (2.71)	6.32** (3.00)
N	224,708	218,112	224,596	224,708	218,032	218,112	224,596	218,032
KP rk Wald F	311.51	247.30	326.09	299.86	253.61	236.73	306.94	234.74

6 User Mechanisms – Covid Bifurcation (Continuous) – Pre-COVID Panel

Table 10: User Mechanisms – Lean (Precovid) – Part 1

Specification	Total Contrib. (pct. rk)					
	(1)	(2)	(3)	(4)	(5)	(6)
Rent		✓			✓	✓
HHI			✓		✓	
Seniority				✓		✓
Panel A: OLS						
Remote \times 1(Post)	-1.23** (0.50)	-0.95* (0.51)	-1.22** (0.50)	-1.08** (0.51)	-0.95* (0.51)	-0.90* (0.52)
Remote \times 1(Post) \times Startup	6.21*** (1.27)	4.03*** (1.26)	6.39*** (1.28)	6.76*** (1.32)	4.21*** (1.27)	4.62*** (1.31)
N	224,708	218,112	224,596	224,708	218,032	218,112
Panel B: IV						
Remote \times 1(Post)	-9.26** (4.01)	-9.23* (4.87)	-9.72** (3.93)	-13.82* (7.80)	-9.97** (4.86)	-15.05* (8.88)
Remote \times 1(Post) \times Startup	12.45** (5.39)	11.76* (6.15)	14.94*** (5.62)	26.14*** (10.10)	14.35** (6.49)	26.68** (11.32)
N	224,708	218,112	224,596	224,708	218,032	218,112
KP rk Wald F	123.43	81.62	130.14	30.71	82.68	24.19

7 User Mechanisms – Covid Bifurcation (Binned) – Pre-COVID Panel

Table 11: User Mechanisms – Lean (Precovid) – Part 1

Specification	Total Contrib. (pct. rk)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rent		✓			✓	✓		✓
HHI			✓		✓		✓	✓
Seniority				✓		✓	✓	✓
Panel A: OLS								
Remote \times 1(Post)	-1.23** (0.50)	-0.93* (0.51)	-1.28*** (0.50)	-1.19** (0.50)	-0.99* (0.52)	-0.88* (0.52)	-1.24** (0.50)	-0.94* (0.52)
Remote \times 1(Post) \times Startup	6.21*** (1.27)	4.01*** (1.26)	6.22*** (1.27)	6.15*** (1.28)	4.05*** (1.26)	3.95*** (1.27)	6.18*** (1.28)	4.00*** (1.27)
N	224,708	218,112	224,596	224,708	218,032	218,112	224,596	218,032
Panel B: IV								
Remote \times 1(Post)	-9.26** (4.01)	-8.49 (5.28)	-9.12** (4.00)	-9.28** (4.12)	-8.67 (5.34)	-8.47 (5.47)	-9.17** (4.10)	-8.71 (5.57)
Remote \times 1(Post) \times Startup	12.45** (5.39)	10.91* (6.48)	12.62** (5.37)	12.30** (5.52)	11.26* (6.52)	10.80 (6.67)	12.60** (5.50)	11.27* (6.75)
N	224,708	218,112	224,596	224,708	218,032	218,112	224,596	218,032
KP rk Wald F	123.43	68.32	123.26	117.48	66.46	63.68	117.24	61.39

8 User Mechanisms – Remote Bifurcation (Continuous) – Pre-COVID Panel

Table 12: User Mechanisms (Precovid) – Part 1

Specification	Total Contrib. (pct. rk)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rent		✓			✓	✓		✓
HHI			✓		✓		✓	✓
Seniority				✓		✓	✓	✓
Panel A: OLS								
Remote \times 1(Post)	-1.03** (0.48)	-1.94* (1.13)	-0.57 (0.60)	4.11 (5.86)	-1.48 (1.18)	4.59 (5.86)	5.55 (5.95)	6.04 (5.94)
Remote \times 1(Post) \times Startup	5.25*** (1.24)	2.91** (1.24)	5.64*** (1.29)	5.10*** (1.24)	3.35*** (1.28)	2.71** (1.24)	5.47*** (1.29)	3.12** (1.28)
N	229,710	222,851	229,620	229,710	222,798	222,851	229,620	222,798
Panel B: IV								
Remote \times 1(Post)	-4.57 (3.39)	-2775.24 (11069.18)	-98.17 (198.56)	88633.78 (356887.66)	2183.05 (9557.95)	39.59 (4560.50)	5246.00 (17096.43)	1651.21 (1963.50)
Remote \times 1(Post) \times Startup	9.78* (5.44)	259.56 (1034.96)	-27.25 (77.53)	2571.92 (10384.31)	-254.15 (1451.85)	196.96 (446.61)	239.35 (527.34)	18.19 (505.58)
N	229,710	208,057	214,249	214,330	208,006	208,057	214,249	208,006
KP rk Wald F	180.13	0.02	0.08	0.02	0.01	0.04	0.04	0.02

9 User Mechanisms – Remote Bifurcation (Binned) – Pre-COVID Panel

Table 13: User Mechanisms (Precovid) – Part 1

Specification	Total Contrib. (pct. rk)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rent		✓			✓	✓		✓
HHI			✓		✓		✓	✓
Seniority				✓		✓	✓	✓
Panel A: OLS								
Remote \times 1(Post)	-1.23** (0.50)	-1.11* (0.63)	-1.54** (0.63)	2.65 (5.85)	-1.21* (0.71)	4.16 (5.80)	2.14 (5.90)	3.96 (5.86)
Remote \times 1(Post) \times Startup	6.21*** (1.27)	4.08*** (1.27)	6.07*** (1.29)	6.09*** (1.28)	4.06*** (1.28)	3.90*** (1.27)	5.95*** (1.29)	3.88*** (1.28)
N	224,708	218,112	224,596	224,708	218,032	218,112	224,596	218,032
Panel B: IV								
Remote \times 1(Post)	-9.26** (4.01)	-990.04 (3169.06)	-188.00** (95.53)	-21799.94 (13665.66)	-677.88 (982.93)	7540.44 (13396.79)	5749.41 (11264.50)	19936.89 (149586.97)
Remote \times 1(Post) \times Startup	12.45** (5.39)	-182.31 (642.58)	-14.51 (16.54)	-310.11 (255.37)	80.55 (85.79)	177.08 (266.43)	122.50 (200.54)	-67.96 (1452.16)
N	224,708	203,754	209,684	209,788	203,676	203,754	209,684	203,676
KP rk Wald F	123.43	0.03	2.18	0.96	0.17	0.09	0.07	0.00

10 Firm Scaling

10.1 OLS

Table 14: Firm Scaling — OLS

	(1)	(2)	(3)	(4)
	Growth (wins.)	Growth (wins.)	Join (wins.)	Leave (wins.)
Remote $\times \mathbb{1}(\text{Post})$	0.01** (0.01)	0.00 (0.00)	0.01** (0.00)	0.02*** (0.00)
Remote $\times \mathbb{1}(\text{Post}) \times \text{Startup}$		0.07*** (0.02)	0.05* (0.03)	-0.01 (0.01)
Time FE	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓
Pre-COVID mean	0.11	0.11	0.25	0.14
N	41,742	41,742	41,742	41,742

10.2 Instrumental Variables

Table 15: Firm Scaling — IV

	(1)	(2)	(3)	(4)
	Growth (wins.)	Growth (wins.)	Join (wins.)	Leave (wins.)
Remote $\times \mathbb{1}(\text{Post})$	0.02 (0.01)	-0.00 (0.01)	0.03*** (0.01)	0.04*** (0.00)
Remote $\times \mathbb{1}(\text{Post}) \times \text{Startup}$		0.22** (0.09)	0.23** (0.10)	0.06 (0.05)
Time FE	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓
Pre-COVID mean	0.11	0.11	0.25	0.14
KP rk Wald F	982.73	18.30	18.30	18.30
N	41,742	41,742	41,742	41,742

10.3 First Stage

Table 16: First-Stage Estimates – Firm Scaling

	Remote \times $\mathbb{1}(\text{Post})$	Remote \times $\mathbb{1}(\text{Post}) \times \text{Startup}$
Teleworkable \times $\mathbb{1}(\text{Post})$	0.772*** (0.024)	-0.000 (0.000)
Teleworkable \times $\mathbb{1}(\text{Post}) \times \text{Startup}$	-0.349*** (0.074)	0.423*** (0.070)
$\mathbb{1}(\text{Post}) \times \text{Startup}$	0.446*** (0.065)	0.497*** (0.063)
Time FE	✓	✓
Firm FE	✓	✓
Partial F	525.42	18.34
N	41,742	41,742

10.4 Remote \rightarrow Teleworkable: First Stage

Table 17: First-Stage Estimate: Remote \rightarrow Teleworkable

	Remote
Teleworkable	0.795*** (0.021)
R^2	0.290
N	3,486

10.5 Firm Mechanisms – Covid Bifurcation (Continuous)

Table 18: Firm Mechanisms – Lean (Part 1)

Specification	Growth Rate							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rent		✓			✓	✓		✓
HHI			✓		✓		✓	✓
Seniority				✓		✓	✓	✓
Panel A: OLS								
Remote \times 1(Post)	0.003 (0.005)	0.003 (0.005)	0.004 (0.005)	0.001 (0.005)	0.004 (0.005)	0.001 (0.005)	0.000 (0.005)	0.000 (0.005)
Remote \times 1(Post) \times Startup	0.070*** (0.024)	0.067*** (0.025)	0.066*** (0.024)	0.070*** (0.023)	0.061** (0.025)	0.066*** (0.025)	0.070*** (0.023)	0.065*** (0.025)
N	41,980	38,794	41,946	41,980	38,760	38,794	41,946	38,760
Panel B: IV								
Remote \times 1(Post)	0.006 (0.009)	0.013 (0.010)	0.008 (0.010)	0.003 (0.009)	0.015 (0.010)	0.009 (0.010)	0.002 (0.010)	0.008 (0.010)
Remote \times 1(Post) \times Startup	0.209** (0.102)	0.207* (0.113)	0.188* (0.102)	0.121 (0.094)	0.182 (0.115)	0.105 (0.105)	0.130 (0.095)	0.113 (0.107)
N	41,980	38,794	41,946	41,980	38,760	38,794	41,946	38,760
KP rk Wald F	16.53	14.39	15.27	16.46	13.05	14.37	15.67	13.57

10.6 Firm Mechanisms – Covid Bifurcation (Full Remote)

Table 19: Firm Mechanisms – Lean (Part 1)

Specification	Growth Rate							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rent		✓			✓	✓		✓
HHI			✓		✓		✓	✓
Seniority				✓		✓	✓	✓
Panel A: OLS								
Remote \times 1(Post)	-0.004 (0.004)	-0.003 (0.004)	-0.006 (0.004)	-0.007* (0.004)	-0.004 (0.004)	-0.006 (0.004)	-0.007 (0.004)	-0.006 (0.004)
Remote \times 1(Post) \times Startup	0.055*** (0.017)	0.050*** (0.018)	0.057*** (0.017)	0.052*** (0.017)	0.052*** (0.017)	0.047*** (0.017)	0.057*** (0.017)	0.052*** (0.017)
N	41,980	38,794	41,946	41,980	38,760	38,794	41,946	38,760
Panel B: IV								
Remote \times 1(Post)	0.007 (0.011)	0.020* (0.011)	0.014 (0.010)	0.004 (0.011)	0.025** (0.011)	0.016 (0.011)	0.012 (0.010)	0.021* (0.011)
Remote \times 1(Post) \times Startup	0.182** (0.091)	0.176* (0.102)	0.124 (0.086)	0.110 (0.087)	0.107 (0.096)	0.089 (0.098)	0.112 (0.089)	0.092 (0.100)
N	41,980	38,794	41,946	41,980	38,760	38,794	41,946	38,760
KP rk Wald F	14.26	11.74	13.61	13.37	11.16	10.92	12.74	10.37

10.7 Firm Mechanisms – Covid Bifurcation (Binned)

Table 20: Firm Mechanisms – Lean (Part 1)

Specification	Growth Rate							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rent		✓			✓	✓		✓
HHI			✓		✓		✓	✓
Seniority				✓		✓	✓	✓
Panel A: OLS								
Remote \times $\mathbb{1}(\text{Post})$	0.003 (0.005)	0.003 (0.005)	0.004 (0.005)	0.001 (0.005)	0.004 (0.005)	0.001 (0.005)	0.000 (0.005)	0.000 (0.005)
Remote \times $\mathbb{1}(\text{Post}) \times \text{Startup}$	0.070*** (0.024)	0.067*** (0.025)	0.066*** (0.024)	0.070*** (0.023)	0.061** (0.025)	0.066*** (0.025)	0.070*** (0.023)	0.065*** (0.025)
N	41,980	38,794	41,946	41,980	38,760	38,794	41,946	38,760
Panel B: IV								
Remote \times $\mathbb{1}(\text{Post})$	0.006 (0.009)	0.013 (0.010)	0.008 (0.010)	0.003 (0.009)	0.015 (0.010)	0.009 (0.010)	0.002 (0.010)	0.008 (0.010)
Remote \times $\mathbb{1}(\text{Post}) \times \text{Startup}$	0.209** (0.102)	0.207* (0.113)	0.188* (0.102)	0.121 (0.094)	0.182 (0.115)	0.105 (0.105)	0.130 (0.095)	0.113 (0.107)
N	41,980	38,794	41,946	41,980	38,760	38,794	41,946	38,760
KP rk Wald F	16.53	14.39	15.27	16.46	13.05	14.37	15.67	13.57