

# 1 Table of Means

	Startup	Incumbent	All Firms
<b>Panel A: Firm-level</b>			
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
<b>Panel B: User-level</b>			
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.

## 2 Figures

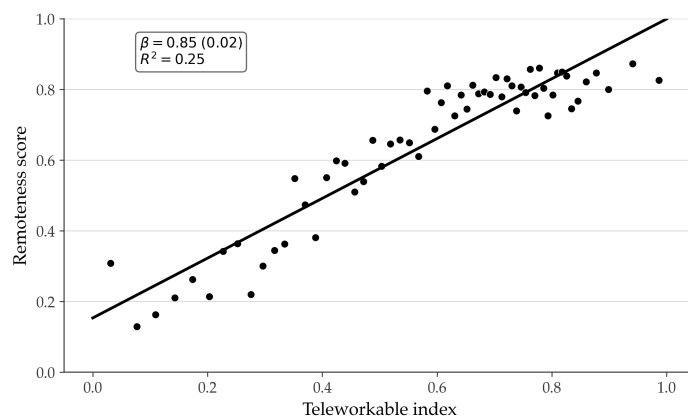


Figure 1: Remote vs. Teleworkable Scores

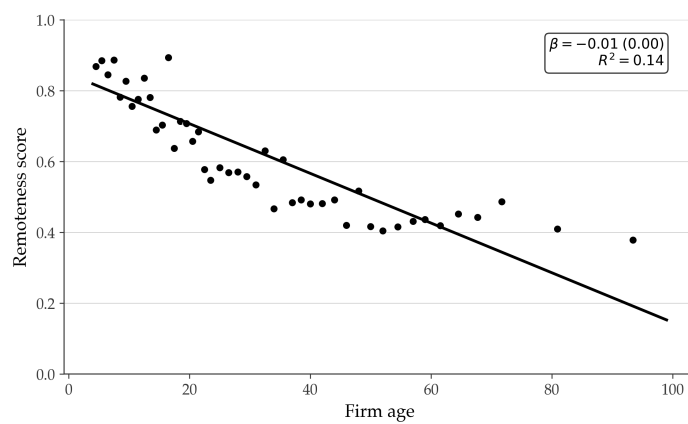


Figure 2: Remote vs. Firm Age

### 3 Event Studies

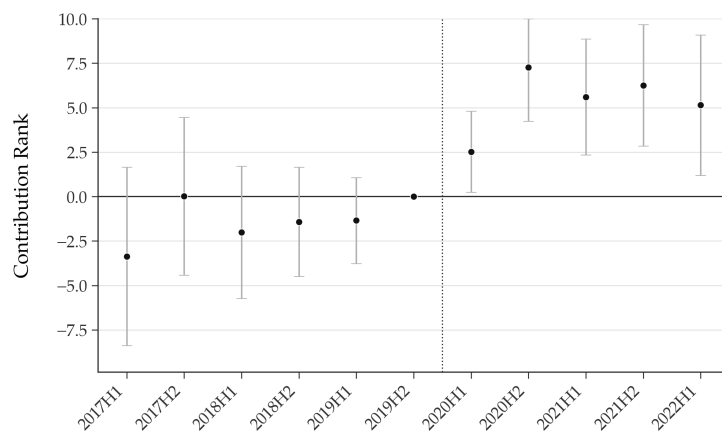


Figure 3: Event study: user rank for contributions (OLS)

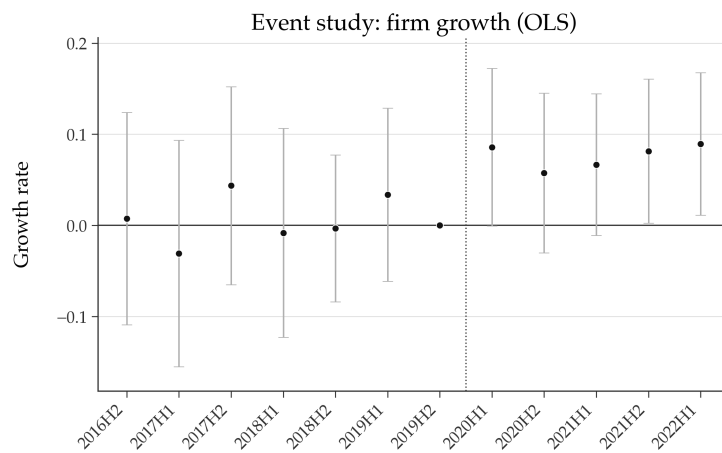


Figure 4: Event study: firm growth (OLS)

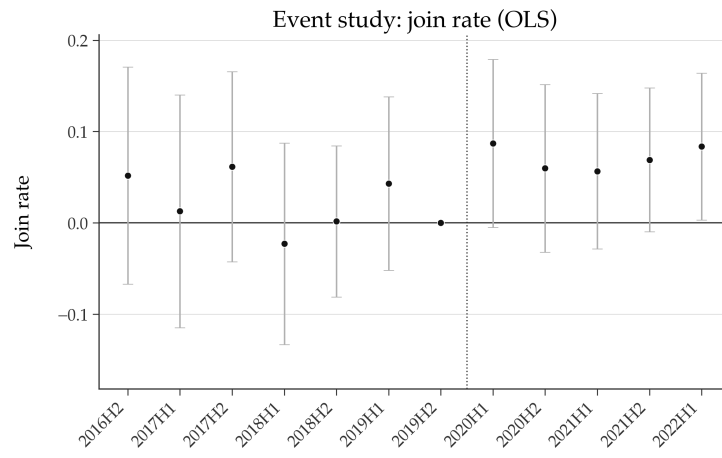


Figure 5: Event study: join (OLS)

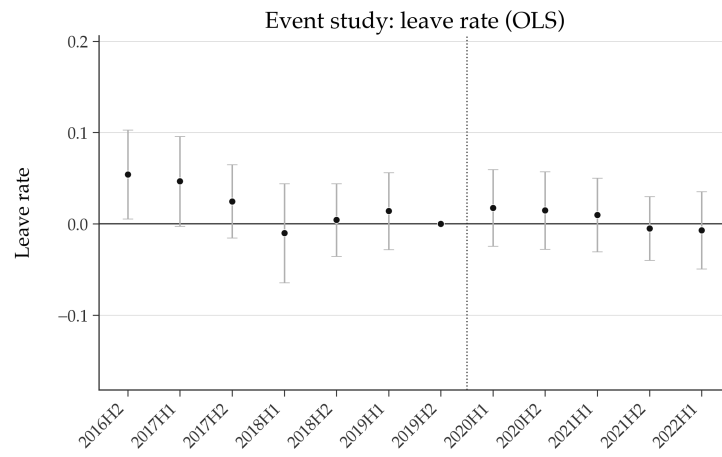


Figure 6: Event study: leave (OLS)

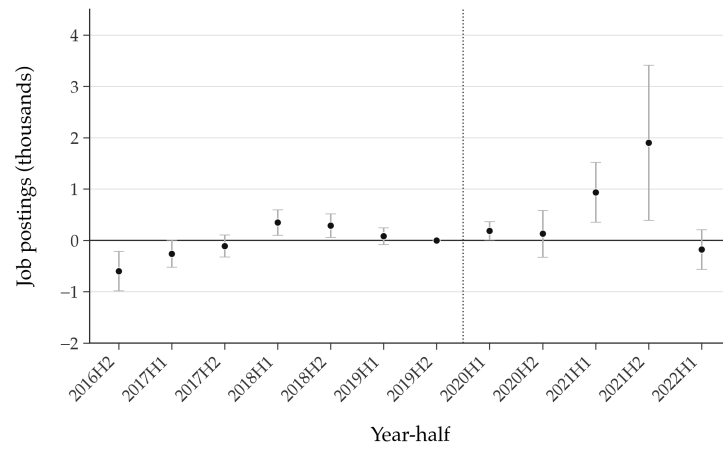


Figure 7: Event study: job postings (OLS)

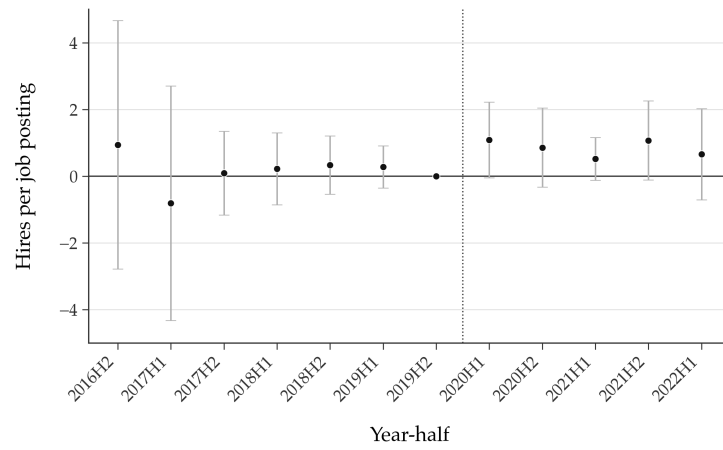


Figure 8: Event study: hires per job posting (OLS)

## 4 User Productivity

	Rank			Total
	(1)	(2)	(3)	(4)
<b>Panel A: OLS</b>				
Remote $\times$ $\mathbb{1}(\text{Post})$	-0.28 (0.44)	-1.03** (0.48)	-1.23** (0.50)	-19.74*** (4.66)
Remote $\times$ $\mathbb{1}(\text{Post}) \times \text{Startup}$		5.18*** (1.24)	6.21*** (1.27)	59.23*** (14.22)
Pre-Covid Mean	49.92	49.92	49.92	184.71
N	229,862	229,862	224,708	224,708
<b>Panel B: IV</b>				
Remote $\times$ $\mathbb{1}(\text{Post})$	-3.61 (2.82)	-7.15* (3.90)	-9.26** (4.01)	-124.39*** (33.82)
Remote $\times$ $\mathbb{1}(\text{Post}) \times \text{Startup}$		9.94* (5.37)	12.45** (5.39)	130.92** (55.14)
KP rk Wald F	543.26	140.60	123.43	123.43
N	229,862	229,862	224,708	224,708
<b>Fixed Effects</b>				
Time FE	✓	✓	✓	✓
Firm FE	✓	✓		
User FE	✓	✓		
Firm $\times$ User FE			✓	✓

## 5 Remote Modalities

Comparison Group	(1) Hybrid	(2) Hybrid/In-Person
<b>Panel A: OLS</b>		
Fully Remote.	-0.97*** (0.32)	-0.86*** (0.31)
Fully Remote $\times$ Startup	2.97*** (0.72)	3.39*** (0.71)
Pre-Covid Mean	50.04	49.92
N	210,721	224,708
<b>Panel B: IV</b>		
Fully Remote.	-3.72** (1.74)	-4.11** (1.77)
Fully Remote $\times$ Startup	4.37* (2.50)	5.61** (2.45)
KP rk Wald F	292.85	311.51
N	210,721	224,708
<b>Fixed Effects</b>		
Time FE	✓	✓
Firm $\times$ User FE	✓	✓





## 6 First Stage Summary

	Remote $\times$ 1(Post)		Remote $\times$ 1(Post) $\times$ Startup	
<u>User-level</u>				
Teleworkable $\times$ 1(Post)	0.23*** (0.01)	0.24*** (0.02)	-0.00* (0.00)	-0.00*** (0.00)
Teleworkable $\times$ 1(Post) $\times$ Startup	0.16*** (0.02)	0.16*** (0.03)	0.39*** (0.02)	0.40*** (0.02)
1(Post) $\times$ Startup	0.09*** (0.02)	0.09*** (0.02)	0.60*** (0.01)	0.59*** (0.01)
<b>Fixed Effects</b>				
Time FE	✓	✓	✓	✓
Firm FE	✓		✓	
User FE	✓		✓	
Firm $\times$ User FE		✓		✓
Partial F	325.46	295.11	186.55	175.46
KP rk Wald F	140.60	123.43	140.60	123.43
N	229,862	224,708	229,862	224,708
<u>Firm-level</u>				
Teleworkable $\times$ 1(Post)	0.77*** (0.02)	—	-0.00 (0.00)	—
Teleworkable $\times$ 1(Post) $\times$ Startup	-0.35*** (0.07)	—	0.42*** (0.07)	—
1(Post) $\times$ Startup	0.45*** (0.07)	—	0.50*** (0.06)	—
<b>Fixed Effects</b>				
Time FE	✓		✓	
Firm FE	✓		✓	
Partial F	525.42	—	18.34	—
KP rk Wald F	18.30	—	18.30	—
N	41,742	—	41,742	—

## 7 User Mechanisms

	Contributions					
	(1)	(2)	(3)	(4)	(5)	(6)
Remote $\times$ 1(Post)	-9.26** (4.01)	-9.23* (4.87)	-9.72** (3.93)	-9.28** (4.12)	-10.13** (5.14)	-3.68 (3.88)
Remote $\times$ 1(Post) $\times$ Startup	12.45** (5.39)	11.76* (6.15)	14.94*** (5.62)	12.30** (5.52)	14.97** (6.91)	6.88 (5.65)
<b>Fixed Effects</b>						
Time FE	✓	✓	✓	✓	✓	✓
Firm $\times$ User FE	✓	✓	✓	✓	✓	✓
<b>Controls</b>						
Rent		✓			✓	
HHI			✓		✓	
Seniority				✓	✓	
Post-COVID Growth						✓
N	224,708	218,112	224,596	224,708	218,032	224,708
KP rk Wald F	123.43	81.62	130.14	117.48	74.32	134.89

## 8 Firm Scaling

	(1)	(2)	(3)	(4)	(5)	(6)
	Growth	Growth	Join	Leave	Job Postings (1,000s)	Hires/Job Postings
<b>Panel A: OLS</b>						
Remote $\times$ 1(Post)	0.01** (0.01)	0.00 (0.00)	0.01** (0.00)	0.02*** (0.00)	-0.91*** (0.23)	0.09 (0.08)
Remote $\times$ 1(Post) $\times$ Startup		0.07*** (0.02)	0.05* (0.03)	-0.01 (0.01)	0.63** (0.27)	0.37* (0.22)
Pre-Covid Mean	0.11	0.11	0.25	0.14	0.50	2.15
N	41,742	41,742	41,742	41,742	37,681	27,790
<b>Panel B: IV</b>						
Remote $\times$ 1(Post)	0.02 (0.01)	-0.00 (0.01)	0.03*** (0.01)	0.04*** (0.00)	-3.58*** (0.61)	0.38** (0.17)
Remote $\times$ 1(Post) $\times$ Startup		0.22** (0.09)	0.23** (0.10)	0.06 (0.05)	1.60* (0.96)	2.16** (1.09)
KP rk Wald F	982.73	18.30	18.30	18.30	10.66	9.04
N	41,742	41,742	41,742	41,742	37,681	27,790
<b>Fixed Effects</b>						
Time FE	✓	✓	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓	✓	✓



## 9 Role-Type Growth Rates

	Admin	Engineer	Finance	Marketing	Operations	Sales	Scientist
<b>Panel A: OLS</b>							
Remote $\times$ 1(Post)	0.0015 (0.0076)	-0.0183*** (0.0063)	-0.0015 (0.0067)	0.0022 (0.0075)	-0.0237*** (0.0068)	-0.0066 (0.0062)	0.0096 (0.0103)
Remote $\times$ 1(Post) $\times$ Startup	0.0527 (0.0469)	0.0722** (0.0310)	0.0107 (0.0399)	0.0540 (0.0344)	0.0132 (0.0493)	0.0339 (0.0244)	0.1256** (0.0608)
Post $\times$ Startup	-0.1421*** (0.0401)	-0.1083*** (0.0274)	-0.0965*** (0.0328)	-0.1123*** (0.0301)	-0.1104*** (0.0416)	-0.0981*** (0.0206)	-0.1779*** (0.0480)
Pre-period mean	0.1051	0.1061	0.0800	0.1074	0.0719	0.1053	0.0948
N (OLS)	19,793	22,845	18,334	20,672	16,866	23,633	11,033
<b>Panel B: IV</b>							
Remote $\times$ 1(Post)	-0.0109 (0.0132)	-0.0418*** (0.0111)	-0.0235* (0.0123)	-0.0047 (0.0138)	-0.0421*** (0.0126)	-0.0152 (0.0115)	0.0332 (0.0230)
Remote $\times$ 1(Post) $\times$ Startup	0.2598 (0.1705)	0.0552 (0.1445)	0.0302 (0.1592)	0.0022 (0.2032)	-0.0566 (0.1824)	0.0321 (0.1076)	0.0207 (0.1810)
Post $\times$ Startup	-0.3021** (0.1348)	-0.0868 (0.1226)	-0.1058 (0.1243)	-0.0657 (0.1754)	-0.0491 (0.1423)	-0.0940 (0.0915)	-0.1100 (0.1210)
First-stage $F$ (min)	10.46	10.46	10.46	10.46	10.46	10.46	10.46
KP rk Wald $F$	10.06	8.20	5.81	5.32	5.34	13.33	9.06
N (IV)	19,793	22,845	18,334	20,672	16,866	23,633	11,033
<b>Fixed Effects</b>							
Firm FE	✓	✓	✓	✓	✓	✓	✓
Half-year FE	✓	✓	✓	✓	✓	✓	✓

## Appendix

### A Restricted Contributions

	Rank			Total
	(1)	(2)	(3)	(4)
<b>Panel A: OLS</b>				
Remote $\times$ $\mathbb{1}(\text{Post})$	-0.51 (0.46)	-1.44*** (0.50)	-1.48*** (0.52)	-17.33*** (3.91)
Remote $\times$ $\mathbb{1}(\text{Post}) \times \text{Startup}$		6.37*** (1.24)	7.31*** (1.27)	55.41*** (12.74)
Pre-Covid Mean	48.48	48.48	48.48	138.15
N	229,862	229,862	224,708	224,708
<b>Panel B: IV</b>				
Remote $\times$ $\mathbb{1}(\text{Post})$	-3.36 (2.91)	-6.60 (4.08)	-6.75 (4.19)	-105.59*** (28.11)
Remote $\times$ $\mathbb{1}(\text{Post}) \times \text{Startup}$		9.07* (5.43)	10.52* (5.42)	108.20** (48.92)
KP rk Wald F	543.26	140.60	123.43	123.43
N	229,862	229,862	224,708	224,708
<b>Fixed Effects</b>				
Time FE	✓	✓	✓	✓
Firm FE	✓	✓		
User FE	✓	✓		
Firm $\times$ User FE			✓	✓

## B Impulse Response Functions

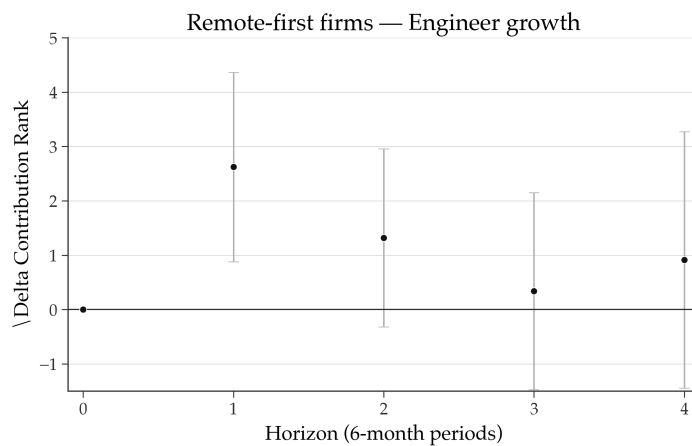


Figure 9: Impulse response: engineer productivity at fully remote firms

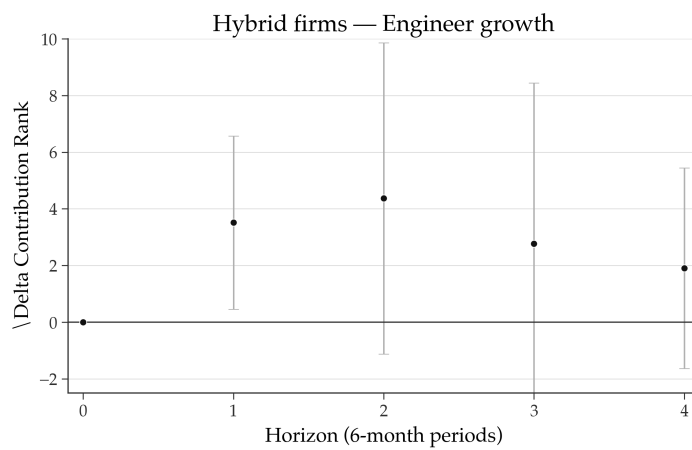


Figure 10: Impulse response: engineer productivity at hybrid/in-person firms