

Productivity Effects with Composition Growth Controls

August 14, 2025

1 Introduction

Productivity regressions with composition growth rates as controls. Tests whether remote productivity effects persist after controlling for changes in workforce mix.

2 Role Composition Growth Controls

Table 1: Productivity Effects with Role Growth Controls

	(1) Admin	(2) Engineer	(3) Finance	(4) Marketing	(5) Operations	(6) Sales	(7) Scientist
Panel A: OLS							
Remote \times Post	-0.701 (0.488)	-0.674 (0.479)	-0.630 (0.494)	-0.731 (0.482)	-0.169 (0.509)	-0.607 (0.481)	0.080 (0.571)
Remote \times Post \times Startup	6.646*** (1.340)	6.115*** (1.248)	5.697*** (1.374)	5.941*** (1.285)	5.768*** (1.537)	5.745*** (1.268)	7.710*** (1.969)
Panel B: IV							
Remote \times Post	-7.662* (4.325)	-6.420* (3.824)	-7.599* (4.400)	-7.750* (4.178)	-7.179 (5.009)	-6.712* (3.993)	-5.457 (11.429)
Remote \times Post \times Startup	14.617** (5.733)	11.578** (5.085)	13.901** (5.845)	13.221** (5.400)	15.178** (6.349)	11.854** (5.261)	5.791 (12.304)
N	160,847	169,172	155,993	165,632	148,180	167,300	122,407
KP rk Wald F	104.6	132.0	101.7	112.4	77.9	121.0	15.5

Notes: User-level productivity regressions with worker-firm interacted fixed effects. Dependent variable is user productivity (total contributions Q100). Controls include role-specific growth rates interacted with COVID period. Remote is an indicator for remote-first firms. Post indicates post-COVID periods. Startup indicates young, high-growth firms. Standard errors clustered by user. * p<0.10, ** p<0.05, *** p<0.01.

3 Seniority Composition Growth Controls

Table 2: Productivity Effects with Seniority Growth Controls

	(1) Level 1	(2) Level 2	(3) Level 3	(4) Level 4
Panel A: OLS				
Remote \times Post	-0.722 (0.484)	-0.714 (0.478)	-0.676 (0.482)	-0.651 (0.484)
Remote \times Post \times Startup	6.120*** (1.273)	6.008*** (1.246)	6.411*** (1.267)	6.151*** (1.294)
Panel B: IV				
Remote \times Post	-7.492* (4.018)	-6.472* (3.879)	-6.857* (3.921)	-7.295* (4.103)
Remote \times Post \times Startup	12.551** (5.284)	11.016** (5.125)	12.381** (5.219)	12.881** (5.393)
N	165,392	169,466	166,528	165,062
KP rk Wald F	120.0	128.7	126.5	116.2

Notes: User-level productivity regressions with worker-firm interacted fixed effects. Dependent variable is user productivity (total contributions Q100). Controls include seniority-specific growth rates interacted with COVID period. Seniority levels: 1 (most junior) to 4 (most senior). Remote is an indicator for remote-first firms. Post indicates post-COVID periods. Startup indicates young, high-growth firms. Standard errors clustered by user. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.