Robots and Female Employment in German Manufacturing: Online Appendix

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In this online appendix, we provide the full version of the two regression tables that we present in the paper. The tables include the point estimates of the relative time fixed effects and the reference-year sample mean of the outcome variables for treatment and control groups. Table 2 additionally includes the occupation-level employment share among female workers.

Table 1: Robot Adoption and Female Employment, Hires, and Separations

	All Female			Full-time Female		
	(1) Empl.	(2) Hire	(3) Sepr.	(4) Empl.	(5) Hire	(6) Sepr.
β_{-2}	0.2404	-0.1047	-0.0843	0.1004	-0.0998	-0.0979
	(0.1145)	(0.0979)	(0.1061)	(0.0893)	(0.0702)	(0.0794)
β_{-1}	0.4473	-0.0458	0.0081	0.1543	-0.1295	-0.0694
	(0.2070)	(0.1118)	(0.1323)	(0.1517)	(0.0873)	(0.1106)
β_0	0.5979	0.0043	0.1146	0.2243	-0.0167	-0.0087
	(0.2432)	(0.1139)	(0.1100)	(0.1838)	(0.0787)	(0.0814)
β_1	0.7677	0.3445	0.4356	0.2751	0.1933	0.2639
	(0.3266)	(0.1226)	(0.1553)	(0.2424)	(0.0890)	(0.1125)
γ_{-2}	0.2157	-0.3427	-0.3368	0.2593	0.8278	-0.6389
	(0.9426)	(1.0887)	(0.8218)	(0.8588)	(0.8132)	(0.7436)
γ_{-1}	-0.1403	-0.4191	0.1586	0.3633	1.2435	-0.0973
	(1.2578)	(1.3246)	(0.7825)	(1.0871)	(0.6525)	(0.7258)
γ_0	2.8846	2.8465	0.0433	3.5126	3.4904	0.0964
	(2.4821)	(2.0501)	(0.8954)	(2.4866)	(1.8016)	(0.8857)
γ_1	2.5832	0.0152	0.5381	3.5056	1.2453	0.3589
	(2.5112)	(0.7165)	(1.0122)	(2.7992)	(0.5917)	(0.9590)
Within R^2	0.0059	0.0091	0.0033	0.0072	0.0124	0.0035
Adopters Mean	54.69	7.04	6.55	36.09	3.25	4.45
Nonadopters Mean	25.31	3.63	3.37	16.51	2.00	1.99

Notes: This table reports event-study results based on the model described in the paper (number of observations = 8640). (i) The dependent variables are obtained directly from the plant-level BHP data. They are female employment in Columns (1) and (4), female hires in Columns (2) and (5), and female separations in Columns (3) and (6). (ii) Columns (1)–(3) refer to all female employees whereas Columns (4)–(6) refer to full-time female employees, only. (iii) Plant and (relative) time fixed effects are included. (iv) Standard errors in parenthesis are clustered at the plant level. (v) The mean of dependent variables is calculated for the treatment and control group separately in the reference year as of three years prior to adoption.

Table 2: Robot Adoption and Female Employment by Occupation Group

	(1) Low-qualified	(2) Medium-qualified	(3) High-qualified
β_{-2}	-0.0149	0.0483	0.1914
	(0.0770)	(0.0501)	(0.0511)
β_{-1}	0.0248	0.1791	0.2633
	(0.1250)	(0.0906)	(0.0840)
β_0	0.0198	0.2577	0.3532
	(0.1459)	(0.0998)	(0.1084)
β_1	0.0149	0.2800	0.5019
	(0.1947)	(0.1445)	(0.1397)
γ_{-2}	-0.3711	0.8289	-0.2002
	(0.4563)	(0.7038)	(0.1407)
γ_{-1}	-0.6300	0.8736	-0.2195
	(0.7622)	(0.7661)	(0.2003)
γ_0	0.1995	2.6282	-0.0198
	(1.1635)	(1.8695)	(0.2855)
γ_1	0.1430	2.4217	-0.0896
	(1.3139)	(1.7995)	(0.3421)
Within R^2	0.0006	0.0079	0.0064
Adopters Mean	33.29	17.18	5.44
Nonadopters Mean	11.94	9.99	3.68
Adopter Empl. Share	0.4473	0.4474	0.1053
Nonadopter Empl. Share	0.3792	0.4876	0.1332

This table reports event-study results based on the model described in the paper (number of observations = 8640). (i) The dependent variables, plant-level female employment by occupation group, are computed from the worker-level BeH data. (ii) Low-qualified occupations are unskilled manual, service, commercial and administrative occupations. Medium-qualified occupations are skilled manual, service, commercial and administrative occupations. High-qualified occupations are managers, engineers, technicians, and other professionals. (iii) Plant and (relative) time fixed effects are included. (iv) Standard errors in parenthesis are clustered at the plant level. (v) The mean of dependent variables and occupation-level employment share are calculated for the treatment and control group separately in the reference year as of three years prior to adoption. We compute the employment share by taking the ratio of female employment in a given occupation group to total female employment at the plant level and then averaging it across plants.