

Online Appendix for "On the Returns to Invention Within Firms: Evidence from Finland"

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TABLE A1: DESCRIPTIVE STATISTICS

		<i>– Treatment group –</i>			
		Inventor	Entrepreneur	Whitecollar	Bluecollar
Wage before	mean	42,938	28,278	37,231	27,828
	sd	41,220	26,366	30,742	12,116
	median	39,642	21,507	34,942	28,173
Wage pre	mean	48,536	29,946	41,213	29,067
	sd	33,212	25,834	28,158	12,611
	median	45,169	24,819	38,078	29,296
Wage post	mean	66,788	47,134	51,414	35,639
	sd	67,992	29,803	35,614	14,037
	median	60,163	41,636	46,092	34,914
		<i>– Control group –</i>			
		Inventor	Entrepreneur	Whitecollar	Bluecollar
Wage before	mean	38,799	26,377	34,690	26,328
	sd	27,910	25,166	22,090	11,460
	median	35,652	21,683	32,891	26,747
Wage pre	mean	43,361	28,239	38,773	27,474
	sd	30,736	24,396	32,343	11,783
	median	39,335	22,717	35,982	27,789
Wage post	mean	55,600	39,779	49,035	32,935
	sd	34,413	32,980	29,959	12,827
	median	48,852	32,849	44,040	32,476

Notes: the wages are in real year 2014 euros. "Before" refers to years five or more years before the patent application, "pre" to years 1-4 years before the patent application, and "post" to the year of the patent application, and the following 10 years.

TABLE A2: ROBUSTNESS RESULTS FOR INVENTORS

Treated	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	0.131*** (0.0105)	0.101*** (0.0163)	0.102*** (0.0161)	0.120*** (0.0177)	0.0920*** (0.0170)	0.115*** (0.0164)	0.102*** (0.0145)	0.0902*** (0.0180)	0.131*** (0.0105)	0.101*** (0.0163)	0.102*** (0.0161)	0.120*** (0.0177)	0.0920*** (0.0170)	0.115*** (0.0164)	0.102*** (0.0145)	0.0902*** (0.0180)
Treated pre	0.0360*** (0.0139)	0.0417*** (0.0133)	0.0337** (0.0138)	0.0398*** (0.0132)	0.0362** (0.0152)	0.0396*** (0.0143)	0.0418*** (0.0147)	0.0453*** (0.0140)	0.0356** (0.0139)	0.0431*** (0.0131)	0.0345*** (0.0124)	0.0394*** (0.0121)	0.0573*** (0.0161)	0.0602*** (0.0156)	0.0360*** (0.0139)	0.0417*** (0.0133)
Treated post	0.0187* (0.0102)	0.0159* (0.00966)	0.0488*** (0.0167)	0.0511*** (0.0162)	0.0434*** (0.0165)	0.0468*** (0.0161)	0.0621*** (0.0182)	0.0697*** (0.0171)	0.0544*** (0.0175)	0.0508*** (0.0169)	0.0487*** (0.0167)	0.0548*** (0.0158)	0.0469*** (0.0152)	0.0493*** (0.0149)	0.0597*** (0.0185)	0.0605*** (0.0186)
Observations	93,939	93,939	93,939	93,939	93,939	93,939	76,717	76,717	87,097	87,097	94,006	94,006	98,527	98,527	97,013	97,013
R-squared	0.271	0.329	0.271	0.329	0.282	0.337	0.260	0.298	0.259	0.322	0.270	0.329	0.291	0.357	0.382	0.433
Number of individuals	8,185	8,185	8,185	8,185	8,185	8,185	7,439	7,439	7,982	7,982	8,185	8,185	8,185	8,185	8,185	8,185
Dependent variable	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inearnings	Inearnings	Inwage	Inwage	Inwage	Inwage
Individual FE	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES
Age FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Calendar year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treatment year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Age x calendar year FE	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Pre-treatment effects	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Sample	A	A	A	A	A	A	B	B	C	C	A	A	D	D	E	E

Notes: Standard errors in parentheses, and clustered at the individual level. *** p<0.01, ** p<0.05, * p<0.1. All specifications include the size of the firm (# employees) as a control variable and a dummy for missing employment information. Sample details are as follows. A: Base, B: Drop observations with missing information on number of employees of the firm, C: exclude top-3 employers of inventors, D: include observations for which $t < -5$, E: include observations where individual in the public sector.

TABLE A3: ROBUSTNESS RESULTS FOR ENTREPRENEURS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Treated	0.0808 (0.0579)	0.148 (0.0941)	0.153 (0.0974)	0.220* (0.120)	0.148 (0.0941)	0.0995 (0.0884)	0.160* (0.0847)	0.0242 (0.0842)								
Treated pre	-0.0792 (0.0856)	-0.0153 (0.0825)	-0.0915 (0.0883)	-0.0226 (0.0854)	-0.152 (0.116)	-0.0822 (0.106)	-0.0792 (0.0856)	-0.0153 (0.0825)	-0.0637 (0.0851)	-0.0637 (0.0851)	0.00974 (0.0831)	-0.0899 (0.0757)	-0.0604 (0.0730)	-0.0302 (0.0766)	-0.00825 (0.0750)	
Treated post	0.213*** (0.0523)	0.292*** (0.0512)	0.146 (0.0937)	0.279*** (0.0902)	0.142 (0.0971)	0.264*** (0.0930)	0.0394 (0.124)	0.126 (0.113)	0.146 (0.0937)	0.279*** (0.0902)	0.172* (0.0896)	0.297*** (0.0883)	0.134 (0.0825)	0.232*** (0.0800)	0.263*** (0.0863)	0.340*** (0.0835)
Observations	13,372	13,372	13,372	13,372	13,372	13,372	10,707	10,707	13,372	13,372	13,455	13,455	13,678	13,678	15,371	15,371
R-squared	0.129	0.180	0.129	0.180	0.166	0.219	0.103	0.134	0.129	0.180	0.118	0.161	0.133	0.186	0.186	0.258
Number of individuals	1,123	1,123	1,123	1,123	1,123	1,123	1,087	1,087	1,123	1,123	1,124	1,124	1,123	1,123	1,123	1,123
Dependent variable	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inearnings	Inearnings	Inwage	Inwage	Inwage	Inwage
Individual FE	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES
Age FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Calendar year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treatment year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Age x calendar year FE	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Pre-treatment effects	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Sample	A	A	A	A	A	A	B	B	C	C	A	A	D	D	E	E

Notes: Standard errors in parentheses, and clustered at the individual level. *** p<0.01, ** p<0.05, * p<0.1. All specifications include the size of the firm (# employees) as a control variable and a dummy for missing employment information. Sample details are as follows. A: Base, B: Drop observations with missing information on number of employees of the firm, C: exclude top-3 employers of inventors, D: include observations for which $t < -5$, E: include observations where individual in the public sector.

TABLE A4: ROBUSTNESS RESULTS FOR WHITE-COLLAR WORKERS

Treated	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	0.0211*** (0.00321)	0.0259*** (0.00492)	0.0254*** (0.00490)	0.0254*** (0.00490)	0.0515*** (0.00581)	0.0259*** (0.00492)	0.0272*** (0.00495)	0.0252*** (0.00437)	0.0183*** (0.00539)	0.0183*** (0.00539)	0.0183*** (0.00539)	0.0183*** (0.00539)	0.0183*** (0.00539)	0.0183*** (0.00539)	0.0183*** (0.00539)	0.0183*** (0.00539)
Treated pre																
Treated post																
Observations	1,320,370	1,320,370	1,320,370	1,320,370	1,320,370	1,320,370	872,101	872,101	1,320,370	1,320,370	1,320,676	1,320,676	1,390,720	1,390,720	1,362,446	1,362,446
R-squared	0.320	0.347	0.320	0.347	0.324	0.348	0.320	0.329	0.320	0.347	0.320	0.348	0.336	0.373	0.421	0.456
Number of individuals	107,986	107,986	107,986	107,986	107,986	107,986	87,224	87,224	107,986	107,986	107,986	107,986	107,986	107,986	107,986	107,986
Dependent variable	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inearnings	Inearnings	Inwage	Inwage	Inwage	Inwage
Individual FE	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES
Age FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Calendar year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treatment year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Age x calendar year FE	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Pre-treatment effects	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Sample	A	A	A	A	A	A	B	B	C	C	A	A	D	D	E	E

Notes: Standard errors in parentheses, and clustered at the individual level. *** p<0.01, ** p<0.05, * p<0.1. All specifications include the size of the firm (# employees) as a control variable and a dummy for missing employment information. Sample details are as follows. A: Base, B: Drop observations with missing information on number of employees of the firm, C: exclude top-3 employers of inventors, D: include observations for which $t < -5$, E: include observations where individual in the public sector.

TABLE A5: ROBUSTNESS RESULTS FOR BLUE-COLLAR WORKERS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Treated	0.0552*** (0.00328)	0.0657*** (0.00582)	0.0661*** (0.00581)	0.0589*** (0.00614)	0.0657*** (0.00582)	0.0661*** (0.00586)	0.0641*** (0.00490)	0.0503*** (0.00672)	0.0641*** (0.00490)	0.0503*** (0.00672)	0.0661*** (0.00586)	0.0641*** (0.00490)	0.0503*** (0.00672)	0.0641*** (0.00490)	0.0503*** (0.00672)	0.0661*** (0.00586)
Treated pre			-0.0124** (0.00550)	-0.0107** (0.00504)	-0.0122** (0.00549)	-0.0107** (0.00503)	-0.0126** (0.00583)	-0.00878* (0.00527)	-0.0124** (0.00550)	-0.0107** (0.00504)	-0.0130** (0.00552)	-0.0115** (0.00506)	-0.0111** (0.00461)	-0.00785* (0.00431)	-0.00814 (0.00641)	-0.00461 (0.00611)
Treated post	0.0332*** (0.00319)	0.0226*** (0.00585)	0.0218*** (0.00584)	0.0220*** (0.00555)	0.0218*** (0.00584)	0.0220*** (0.00555)	0.0307*** (0.00618)	0.0246*** (0.00580)	0.0226*** (0.00585)	0.0227*** (0.00556)	0.0203*** (0.00589)	0.0198*** (0.00558)	0.0240*** (0.00496)	0.0257*** (0.00486)	0.0332*** (0.00671)	0.0374*** (0.00664)
Observations	916,811	916,811	916,811	916,811	916,811	916,811	783,114	783,114	916,811	916,811	917,056	917,056	950,349	950,349	948,915	948,915
R-squared	0.229	0.256	0.231	0.259	0.231	0.259	0.228	0.258	0.229	0.256	0.230	0.257	0.235	0.269	0.339	0.367
Number of individuals	87,288	87,288	87,288	87,288	87,288	87,288	82,582	82,582	87,288	87,288	87,288	87,288	87,288	87,288	87,288	87,288
Dependent variable	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inwage	Inearnings	Inearnings	Inwage	Inwage	Inwage	Inwage
Individual FE	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES
Age FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Calendar year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treatment year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Age x calendar year FE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Pre-treatment effects	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Sample	A	A	A	A	A	A	B	B	C	C	A	A	D	D	E	E

Notes: Standard errors in parentheses, and clustered at the individual level. *** p<0.01, ** p<0.05, * p<0.1. All specifications include the size of the firm (# employees) as a control variable and a dummy for missing employment information. Sample details are as follows. A: Base, B: Drop observations with missing information on number of employees of the firm, C: exclude top-3 employers of inventors, D: include observations for which $t < -5$, E: include observations where individual in the public sector.