

Are managers the carriers of productivity?

The impact of manager change on firm productivity

Martin Neubrandt

Advanced Topics in Empirical Finance

2023. 11. 07.

Corvinus University of Budapest

Outline

1. Introduction
2. Data and methodology
3. Results
4. Conclusion

Introduction

Motivation

What we know...

- Large and persistent **productivity difference between firms**, **several explanations** for this heterogeneity (Syverson, 2011)
- Role of **managers** and **management practices** in the productivity of firms is **pivotal** (Bender et al., 2018; Bertrand & Schoar, 2003; Bloom & Van Reenen, 2007; Bloom et al., 2016; Giorcelli, 2019)
- **Learning by hiring works** on the worker-level (Görg & Strobl, 2005; Parrotta & Pozzoli, 2012; Poole, 2013; Stoyanov & Zubanov, 2012)

Research question

- If managers are important and they change firms... Do they bring 'goodness' to the new firm?
- If yes, then manager mobility can have macro-level impact
- **Are managers the carriers of productivity, when they move from one firm to another?**

Research question

- If managers are important and they change firms... Do they bring 'goodness' to the new firm?
- If yes, then manager mobility can have macro-level impact
- **Are managers the carriers of productivity, when they move from one firm to another?**
 - H1: Incoming managers have positive effect on receiving firm productivity if they come from higher productivity firms

Research question

- If managers are important and they change firms... Do they bring 'goodness' to the new firm?
- If yes, then manager mobility can have macro-level impact
- **Are managers the carriers of productivity, when they move from one firm to another?**
 - H1: Incoming managers have positive effect on receiving firm productivity if they come from higher productivity firms
 - *Later H2: Productivity of sending firm do not decrease if managers leave*

Data and methodology

Data

- ADMIN3: **Linked employee-employer** database which **covers half of the Hungarian population** aged 0+ years in 2003
- Monthly information about 5 million people between 2003-2017, and active workers can be linked to firms in every month
- (Top) manager identification using FEOR-08 (ISCO-08) occupation codes, aged between 20-65 years
- Manager change (91,000 manager, 11,000 top manager)
 - 12 month (top) manager at sender and receiving firm
 - allow 2 month gap between change

Data cont.

- Merge with yearly firm balance sheet data
- Narrowed to manufacturing firms with more than 5 employees
- Around 175,000 firm-year observation
- Productivity: Labor productivity=Value-added/employee
- High/Low productivity firm - Average productivity gap is positive/negative

Descriptive statistics

Table 1: Summary statistics for restricted sample firms

		Manager changer		Top manager changer	
		High prod.	Low prod.	High prod.	Low prod.
	All firms				
log(Employee)	2.90	4.20	4.63	3.60	4.03
log(Capital)	8.63	10.53	10.80	9.65	9.99
log(Sales)	12.04	13.87	14.16	12.91	13.13
log(VA)	10.81	12.61	12.63	11.64	11.70
log(Productivity)	7.90	8.37	7.99	8.02	7.67
Foreign	0.15	0.35	0.40	0.23	0.20
Exporter	0.46	0.70	0.72	0.59	0.62
Prod. gap		0.91	-0.86	0.83	-0.79
Same industry		0.23	0.36	0.29	0.47
Observation	175,753	3,101	1,498	344	160

Methodology

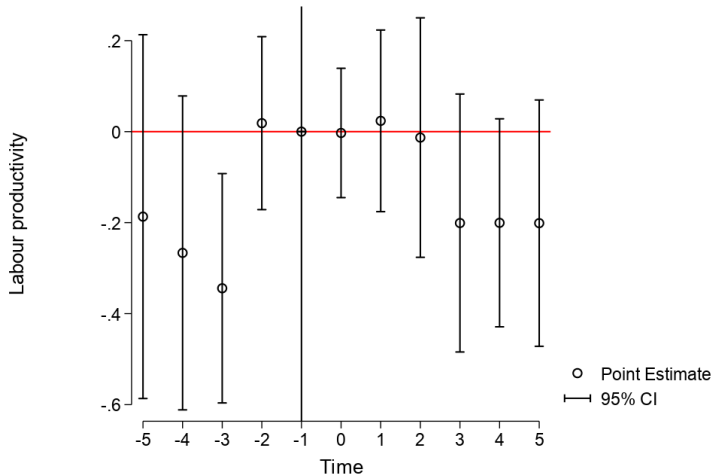
Event study panel data model with firm and year fixed effects, winsorized dependent variables, weighted with employee

$$y_{it} = \left(\sum_{j \in \{-5, \dots, 0, \dots, 5\}} \beta_j \cdot D_{i,t-j} \right) + \alpha_i + \delta_t + \gamma X_{it} + \varepsilon_{it}$$

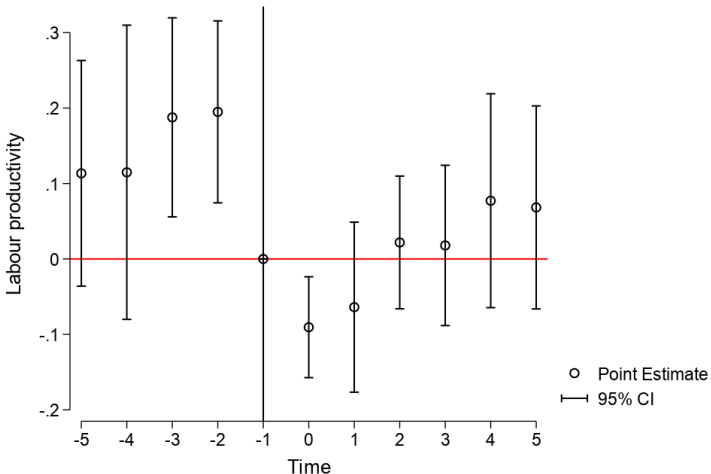
- y_{it} : Log of labor productivity
- $D_{i,t-j}$: Event time indicator dummy variables
- X_{it} : Control variables: manager age, same industry

Results

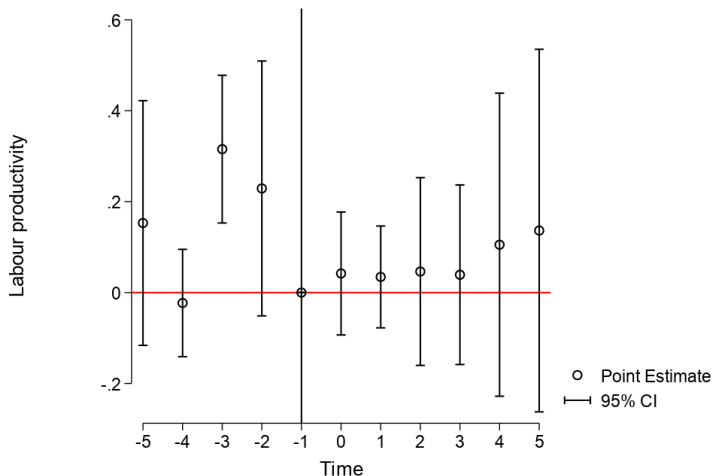
Manager change - High productivity



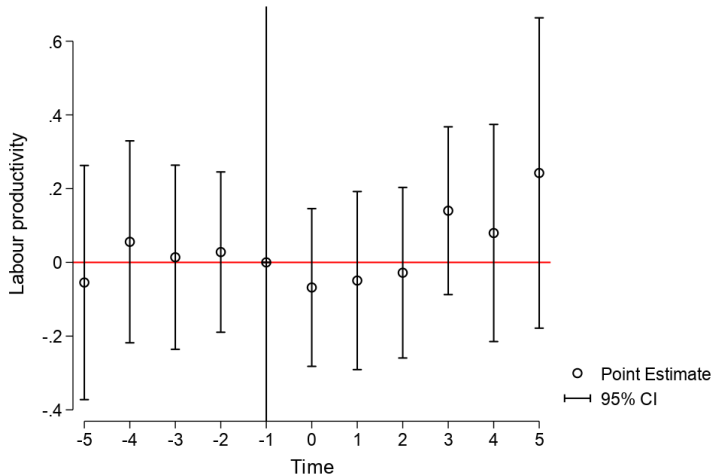
Manager change - Low productivity



Top manager change - High productivity



Top manager change - Low productivity



Conclusion

- Manager transfers between firms are not random, it depends on idiosyncratic and aggregated shocks
 - Possible solution: IV
- Multiple treatment problem
 - Possible solution: Top manager narrow + average prod. gap of sender firms only solve a part of the issue
- Should improve manager and manager change identification (e.g. non-compete agreement)
- *Later: Say more about the sender firms*

Conclusion

Still have a lot of work to do...

Thank you for your attention!

Appendix

Number of managers in the ADMIN data

Year	Manager	Top manager	Manager change	Top manager change
2003	163,026	33,388	-	-
2004	163,654	33,448	4,634	498
2005	164,874	34,371	4,617	425
2006	167,020	35,767	4,964	436
2007	177,054	38,830	5,355	487
2008	179,191	40,796	11,937	2,148
2009	167,673	39,292	4,786	661
2010	177,075	44,081	5,077	672
2011	175,607	41,847	12,759	1,575
2012	184,059	45,263	6,080	744
2013	176,300	39,563	7,754	1,070
2014	170,791	37,798	4,203	502
2015	168,631	36,974	4,540	544
2016	166,467	36,065	3,710	464
2017	163,063	34,634	10,684	871
Total	2,564,485	572,117	91,100	11,097

Number of firms in the firm balance sheet data

Year	Number of firms (Raw)	Number of firms (Narrow)
2003	175,525	11,703
2004	255,332	13,235
2005	265,221	13,166
2006	276,561	13,081
2007	290,099	12,858
2008	307,206	12,219
2009	319,055	11,403
2010	330,915	11,212
2011	352,328	11,218
2012	350,955	10,921
2013	350,942	10,834
2014	347,265	11,171
2015	342,030	11,433
2016	330,555	11,081
2017	305,521	10,218
Total	4,599,510	175,753

References



Bender, S., Bloom, N., Card, D., Reenen, J. V., & Wolter, S. (2018). **Management practices, workforce selection, and productivity.** *Journal of Labor Economics*, 36, S371–S409.
<https://doi.org/10.1086/694107>



Bertrand, M., & Schoar, A. (2003). **Managing with style: The effect of managers on firm policies.** *The Quarterly Journal of Economics*, 118, 1169–1208.
<https://doi.org/10.1162/003355303322552775>



Bloom, N., Sadun, R., & Reenen, J. V. (2016, June). ***Management as a technology? (Working Paper 22327)***. National Bureau of Economic Research.

<https://doi.org/10.3386/w22327>



Bloom, N., & Van Reenen, J. (2007). **Measuring and explaining management practices across firms and countries.** *The Quarterly Journal of Economics*, 122, 1351–1408. <https://doi.org/10.1162/qjec.2007.122.4.1351>



Giorcelli, M. (2019). **The long-term effects of management and technology transfers.** *American Economic Review*, 109, 121–152.

<https://doi.org/10.1257/aer.20170619>



Görg, H., & Strobl, E. (2005). **Spillovers from foreign firms through worker mobility: An empirical investigation.** *The Scandinavian Journal of Economics*, 107, 693–709.

<https://doi.org/10.1111/j.1467-9442.2005.00427.x>



Parrotta, P., & Pozzoli, D. (2012). **The effect of learning by hiring on productivity.** *The RAND Journal of Economics*, 43(1), 167–185. <https://doi.org/https://doi.org/10.1111/j.1756-2171.2012.00161.x>



Poole, J. P. (2013). **Knowledge transfers from multinational to domestic firms: Evidence from worker mobility.** *Review of Economics and Statistics*, 95, 393–406. https://doi.org/10.1162/REST_a_00258



Stoyanov, A., & Zubanov, N. (2012). **Productivity spillovers across firms through worker mobility.** *American Economic Journal: Applied Economics*, 4, 168–198.
<https://doi.org/10.1257/app.4.2.168>



Syverson, C. (2011). **What determines productivity?** *Journal of Economic Literature*, 49, 326–365.
<https://doi.org/10.1257/jel.49.2.326>