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ORGANIZATION, MANAGEMENT, AND ECONOMIC GROWTH

Do Private Equity Owned Firms Have Better Management Practices?[†]

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Private equity (PE) ownership has become commonplace within the United States, and is increasing its presence across Europe and Asia. However, there is still some debate over the impact of PE acquisitions on firms and the channel through which these affect organizations. Davis et al. (2014) suggest that PE acquisitions in the United States increase firm-level productivity by expanding productive plants and contracting unproductive plants, suggesting superior managerial skills around investment and plant selection. Similarly, Bernstein and Sheen (2014) examine the effect of restaurant chain buyouts in Florida and report significant improvements in store-level operational practices in chain-owned stores relative to franchised locations, where presumably private equity owners had more limited influence. However, Smith (2014) uses Indian data to suggest that PE selects already productive firms and provides them with financial support to grow, providing no post-takeover improvement in performance or management. Lerner, Leamon, and Hardymon (2012) present a longer discussion of the mixed evidence.

In this paper we peek inside the black box of PE ownership by examining the association between PE ownership and management practices. We do this by using a management evaluation score developed in Bloom and Van Reenen (2007) and extended in Bloom, Sadun, and Van Reenen (2015). In summary, we find that PE owned firms are typically well managed. They have significantly better management practices than almost all other ownership groups such as family-run, founder owned, or government owned firms. The only exceptions are dispersed shareholder firms (e.g., publicly listed firms) and family firms run by external (nonfamily) CEOs, which have similar levels of our management score to PE owned firms. This correlation is robust to controlling for observable aspects of the firm such as size and industry. It also holds both in developed and less developed economies, suggesting PE ownership is associated with superior management regardless of the particular country in which the firm is located. PE ownership is linked in particular with improved monitoring and operational practices—the collection and use of data associated with modern management technologies such as Lean manufacturing. PE owned firms also show stronger performance related incentive practices, but this advantage is smaller. Finally, PE ownership is also associated with greater delegation of authority to plant managers, especially in demand related activities such as sales and marketing and new product introductions.

One note of caution is that, because of the cross-sectional nature of our data, we cannot distinguish selection from treatment effects. That is, the superior management of PE owned firms could come entirely from purchasing well-managed firms, rather than improving firms' management over time. While this is possible, we think it is unlikely to fully explain our results because in the United States and United Kingdom the common perception is that PE firms look for badly managed targets to acquire

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for performance turnaround, implying negative selection effects.

I. Measuring Management

We use a "double-blind" management survey developed in Bloom and Van Reenen (2007). In summary—with full details in Bloom, Sadun, and Van Reenen (2015)—we collect information on 18 dimensions of firms' management grouped into three areas: (i) performance monitoring (information collection and analysis); (ii) effective targets (using stretching short- and long-run targets); and (iii) performance incentives (rewarding high-performing employees, and retraining or moving underperformers). In a separate part of the survey, we also collect information on the extent to which plant managers can make autonomous decisions (i.e., without their corporate headquarters approval, see Bloom, Sadun, and Van Reenen 2012 for details).

One part of the double-blind methodology is that our interviewers are not told anything about the financial performance of the firms they interview. They are simply given the firms' names and telephone numbers, making them "performance blind" as they generally have not heard of the medium-sized companies we survey. The second part of the double-blind technique is that the managers we interview are not informed that they are being scored. To achieve this, we score management using a predefined practice grid provided by a leading international consultancy company and open-ended questions. Having interviewers "performance blind" and managers "scoring blind" helps to minimize any potential bias in the survey. The 18 individual management dimensions are averaged into one overall management score after they have each been normalized to z-scores (a mean of zero and a standard-deviation of one).

Over multiple survey waves since 2004 we have collected management practice scores from over 15,000 interviews in over 10,000 manufacturing plants across 34 countries, which we analyze in this paper.[1] These firms are randomly drawn from the population of all firms—both public and private—with 50 to 5,000 employees in each country we survey. The sample of countries—which is chosen both by economic size (i.e., we targeted large economics like the United States and China) as well as regional representation—is shown in Table 1. This reports the number of firms in each country, alongside the number and share that are PE owned. One striking finding is the spread of PE ownership around the world. While it is unsurprising to see over 5 percent of plants owned by PE in Northern Europe and North America, we also see PE ownership rates above 1 percent in most

[1] There are multiple interviews of firms, mainly because we built in a panel element, following the same firms over time. A full replication file is available at http://www.stanford.edu/~nbloom/PE.zip.

Table 1—Private Equity Ownership Across Our Sample

Country	All firms	PE firms	PE share (%)
Argentina	566	4	0.71
Australia	470	15	3.19
Brazil	1,145	11	0.96
Canada	418	33	7.89
Chile	544	8	1.47
China	761	1	0.13
Colombia	170	3	1.76
Ethiopia	131	0	0.00
France	751	36	4.79
Germany	685	29	4.23
Ghana	107	3	2.80
Greece	585	7	1.20
India	921	2	0.22
Italy	628	20	3.18
Japan	172	0	0.00
Kenya	184	3	1.63
Mexico	524	5	0.95
Mozambique	109	5	4.59
Myanmar	146	1	0.68
New Zealand	149	8	5.37
Nicaragua	97	1	1.03
Nigeria	118	0	0.00
Poland	364	10	2.75
Portugal	410	7	1.71
Republic of Ireland	161	5	3.11
Singapore	373	0	0.00
Spain	213	8	3.76
Sweden	377	44	11.67
Tanzania	150	1	0.67
Turkey	332	15	4.52
United Kingdom	1,618	108	6.67
United States	1,516	71	4.68
Vietnam	76	0	0.00
Zambia	68	1	1.47
Total	15,038	465	3.09

Note: Private Equity ownership across our random sample (50 to 5000 employees) of manufacturing firms. The number of firms interviewed in each country (the "All firms" number) was driven by funding and country size.

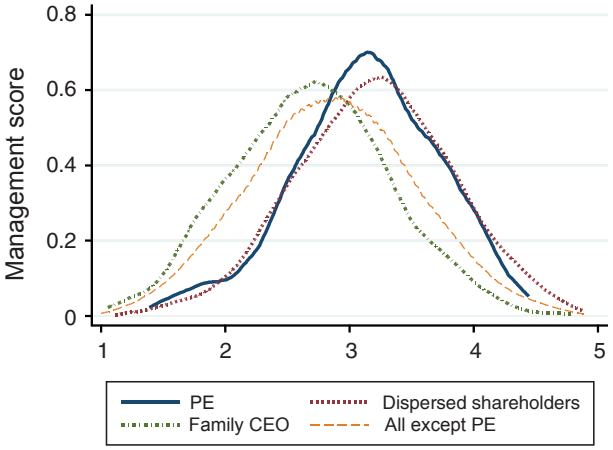

FIGURE 1. THE DISTRIBUTION OF MANAGEMENT SCORES ACROSS OWNERSHIP TYPES

Note: The kernel distribution of management practice scores for 15,038 firms, of which 465 are owned by PE, 4,076 by dispersed shareholders (publicly listed), and 2,539 by family and have a (second or greater) generation family CEO.

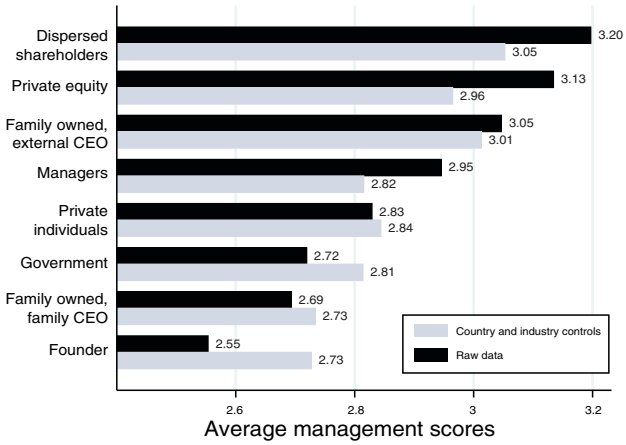

FIGURE 2. AVERAGE MANAGEMENT SCORES ACROSS OWNERSHIP TYPES

Notes: Management scores for 15,038 firms. Raw data and with country and three-digit SIC industry controls.

of Asia, South American, and even African countries. So while PE ownership may be rare in those countries, it still occurs on a regular basis.

To validate the accuracy of the management scoring we carry out two pieces of analysis (see Bloom et al. 2014 for details). First, we reinterview 222 firms using both a different interviewer and a different plant manager at the same firm, finding scores have a correlation of 0.51 (p-value < 0.001). This suggests our management scores are consistently measuring firm-level practices. Second, we match our management practice data to firm-level performance indicators from independently collected company accounts, such as productivity, profitability, sales growth, and Tobin's Q. We find that better management practices are strongly correlated with these independently collected firm performance measures in every region we interviewed. For example, a one unit increase in our management practice score is associated with a 15 percent increase in productivity, a 34 percent increase in size, and a 4 percent increase in employment growth rates.

II. Management Practices in Private Equity Firms

In Figure 1 we plot the distribution of management practices across PE owned firms (solid line), dispersed shareholders (dotted line), family owned and managed firms (hatched line), and all other firms except PE (dashed line). Three results are clear. First, PE firms have generally a superior distribution of management practices compared to other firms. Second, PE firms have a particularly large advantage over family firms, a group we focus on because they represent the most common target group for PE firms in developing countries. Third, PE firms have similar management practices to dispersed shareholder (publicly listed) firms, a group which is frequently the source of acquisitions in developed countries like the United States and United Kingdom.

In Figure 2 we show the ranking of PE firms by management practices against a wide range of ownership types. The solid black bars plot this data using the raw management scores. In the raw data, apart from dispersed shareholders (e.g., publicly listed firms), PE ownership tops the ranking. The gray bars just below plot this data after controlling for country and industry dummies. A similar ranking persists even within the same country and industry, although PE owned firms now appear to be slightly below family firms run by external (i.e., nonfamily) CEOs (the difference between the two is not significant).

To further investigate the management practices advantage of PE firms Table 2 runs a

TABLE 2—MANAGEMENT PRACTICES SCORE BY OWNERSHIP TYPE COMPARED TO PRIVATE EQUITY

Dependent variable Management score	(1)	(2)	(3)
Founder	−0.854***	−0.480***	−0.323***
	(0.046)	(0.045)	(0.039)
Family CEO	−0.652***	−0.430***	−0.320***
	(0.047)	(0.045)	(0.039)
Family ownership, external CEO	−0.127**	0.020	−0.034
	(0.055)	(0.052)	(0.045)
Dispersed shareholders	0.097**	0.135***	0.061
	(0.045)	(0.043)	(0.037)
Private individuals	−0.449***	−0.237***	−0.137***
	(0.046)	(0.044)	(0.038)
Government	−0.619***	−0.284***	−0.322***
	(0.068)	(0.068)	(0.060)
Other	−0.276***	−0.099**	−0.102**
	(0.053)	(0.050)	(0.044)
Managers	−0.272***	−0.242***	−0.119*
	(0.075)	(0.071)	(0.063)
Observations	15,038	15,038	15,038
Country and industry dummies	No	Yes	Yes
Firm and noise controls	No	No	Yes

Notes: Dependent variable is the management *z*-score (mean zero and standard deviation of one), with PE ownership the omitted category. Standard errors clustered at the company level. Industry controls are three-digit SIC industry dummies. Firm controls are employment, age, and the proportion of employees with a degree. "Noise" controls include the duration of the interview, an interviewee dummy, and an interview reliability score.

regression of management practices on ownership type and an increasing number of controls. In column 1 we regress management practices on a set of ownership dummies with PE as the omitted base. We find that PE owned firms have significantly higher management scores than every other type of ownership group apart from dispersed shareholders. In many cases this gap is large—for example, PE firms have a raw management gap with family owned, family CEO firms of 0.652, which based on the association between management and performance quoted above, would be associated with about a 10 percent productivity gap and a 3 percent growth rate gap. In column 2 we include a set of country and industry dummies and our ownership rankings are pretty stable. Finally, in column 3 we include a full set of firm controls for size, age, and skills, plus a set of survey noise controls like interviewer dummies and interview duration controls. While some of the management gaps between ownership types shrink somewhat—mainly because we have controlled for firm size and employee skills which are partly outcome variables (well managed firms are likely to grow faster and be able to hire more skilled employees)—we still see PE firms have significantly higher management scores than most other ownership groups.

Finally, Table 3 examines PE ownership by type of management practice, breaking this into the three groups we outlined above: monitoring, targets, and incentives. For each of the three areas we compare PE owned firms to all other firms including the same set of country, industry, firm, and noise controls used in Table 2. We find that PE firms appear to have a particularly large gap in monitoring practices. These are the type of "Lean" manufacturing practices around continuous performance measurement, improvement, and feedback that originates in world-class firms like Toyota. Table 3 shows that PE firms are also relatively strong at setting effective targets, which involves setting stretching but realistic targets across the whole firm, with these targets matching up in the short and long run. Finally, while unconditionally PE firms do have better incentives over linking pay, promotion, and continued employment to the effort and ability, when we include a full set of country, firm, industry, and noise controls, the difference with other ownership becomes insignificant.

In the last two columns of Table 3 we examine whether PE firms also differ in terms of the decision making authority allocated to the plant manager. This *decentralization* index records the extent to which the plant manager can make autonomous decisions in terms of hiring and investment, sales and marketing, and product introduction initiatives. We find that PE firms appear to be more decentralized relative to other ownership types in terms of decisions related to sales/marketing and product introduction (column 5), while the difference is insignificant with respect to hiring and capital decisions (column 4).[2]

[2] In other work (Aghion et al. 2015) we show evidence that plant manager autonomy (especially in terms of sales/marketing and product introduction) played a key role in

Table 3—PE Management Practice Gap by Type of Practice and Decentralization

Dependent variable	Operations (1)	Targets (2)	Incentives (3)	Decentralization: hiring and investment (4)	Decentralization: sales, marketing, and new products (5)
Private equity ownership	0.147***	0.090**	0.027	−0.020	0.114**
	(0.037)	(0.037)	(0.043)	(0.037)	(0.058)

Notes: All columns include country, industry, firm, and noise controls. Standard errors clustered by firm. Columns 1 to 3 are based on 15,038 observations. Columns 4 and 5 are baed on 11,598 observations.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

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