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Management quality and the cost of debt: Does management matter to lenders?

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ABSTRACT

This paper investigates the effect of organizational capital, typified by various management practices within a firm, on the cost of external debt financing. Using a sample of medium-sized manufacturing firms in the US, we find that better management practices enhance a firm's external financing capacity by lowering the firm's cost of bank loans. We do not find any evidence that the lower loan cost of a high-quality-management firm is associated with more restrictive non-price contract terms such as greater collateral requirements and stricter covenants. These results suggest that banks explicitly take into account the risk arising from poor management practices when pricing and designing debt contracts.

1. Introduction

Academics and industry practitioners have long puzzled over whether and to what extent the management of a firm matters for its performance. Over time a consensus has emerged that the success of any firm depends on factors beyond the raw inputs, production technology, and financial structure. The human beings who run the firm ultimately determine the level of efficiency achieved and the cost borne by the firm (e.g., Walker, 1887; Blair, 1999; Lev, 2001; Hulten and Hao, 2008; Feng et al., 2009; Berk et al., 2010).[1] Quantifying the role of "managerial technology", however, remains challenging and has been at best captured as firm- and CEO-specific "fixed effects" (Mundlak, 1961; Hambrick and Mason, 1984; Baily et al., 1992; Bertrand and Schoar, 2003; Carpenter et al., 2004; Graham et al., 2012; Bloom and Van Reenen, 2007). This paper contributes to the extant literature by directly estimating the impact of a firm's management quality on its cost of bank debt.

In a frictionless capital market, management quality is irrelevant because market forces ensure that all companies adopt best management practices. In an environment with capital-market frictions, however, managers do not always act in stakeholders' interest and, as a result, need not use the best management practices from stakeholders' perspectives (Berle and Means, 1932; Jensen and Meckling, 1976). In such a world, the quality of a firm's management practices is a manifestation of the underlying frictions in the complex construct of the firm. A large literature exists to understand the relationship between quantifiable measures of management quality such as corporate governance, accounting practices, and CEO skills, and various corporate outcomes such as equity return, cost of debt, and firm value.[2] While the extant literature enhances our understanding of the effects of these measures of management quality on various firm-level outcomes, its reach is limited because these are at best indirect proxies for management quality. Such indirect proxies are unlikely to fully capture the effect of organizational capital, typified by various aspects of managerial practices that are much more intimate to a firm's day-to-day operations, on firm-level outcomes, specifically the pricing and design of debt contracts. It is thus important to directly quantify the quality of management practices to fully understand how creditors value organizational capital because CEOs may come and go, corporate

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[1] The idea that "managerial technology" affects firm performance goes back at least to Walker (1887) and is central to the Lucas (1978) model of firm size. Management quality is also important for the internal governance mechanisms of firms. Feng et al. (2009) provide a good overview on these issues.

[2] See, for example Jensen and Meckling (1976), Anderson et al. (2003), Bhojraj and Sengupta (2003), Klock et al. (2005), Ashbaugh-Skaife et al. (2006), Qiu and Yu (2009), Fields et al. (2012), Bliss and Gul (2012), Bharath et al. (2008), Gompers et al. (2003), Cremers and Nair (2005), Ashbaugh-Skaife et al. (2011), DeAngelo and Rice (1983), Linn and McConnell (1983), Jensen and Ruback (1983), Cremers et al. (2007), Chava et al. (2009), Denis and McConnell (2003), and McConnell et al. (2010).

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governance and accounting practices may change when a new CEO is hired or an incumbent CEO is fired, but organizational capital evolves rather slowly and constitutes the core of the firm's managerial competencies (Bloom and Van Reenen, 2007).

To this end, we take advantage of two unique data sets. The first is on measures of managerial practices and the second is on firm-level bank loan contracting. Together, they allow us to relate the quality of management practices, broadly defined as "managerial technology" or organizational capital, to the cost of bank loans at the individual firm level. The managerial practices data set is that of Bloom and Van Reenen (2007). They collect information on various management practices: on operations (which is about the introduction of modern management techniques), monitoring (tracking and reviewing employee performances), targets (setting relevant goals for the firm's employees to strive towards), and incentive mechanism (rewarding employees with better performance). We combine Bloom and Van Reenen's (2007) firm-specific management-practices measures with the Compustat database for general corporate variables for the US medium-sized manufacturing firms in their database.[3] The other data set is Loan Pricing Corporation's (LPC) DealScan data. The combined data set contains firm level corporate data, management-practices measures, and individual firm-level loans with their specific attributes such as loan size, duration, collateral, covenants, and spread.

Using simple univariate analysis, we first show that high-quality-management firms are larger in size, have better growth opportunities and lower default risk, and are more profitable compared to low-quality-management firms. The loan spread of a high-quality firm, on average, is 45.50 basis-points (industry adjusted) lower compared to a low-quality firm in the sample. A 45.50 basis-points reduction in loan spread is equivalent to $0.46 million in annual interest savings (ignoring compounding) on an average loan size of $101.60 million in our sample. Furthermore, average loan size is larger for high-quality firms, with less collateral compared to low-quality management firms. A loan to a high-quality-management firm is also more likely to be syndicated and arranged by the most reputable lenders, that is, the big three banks in the US — the Bank of America, Citigroup, and Morgan Chase. These unconditional univariate statistics point to the fact that management quality does matter in the pricing and design of bank-loan contracts.

We use simple OLS regression analysis in our second set of empirical tests and find results similar to our univariate analysis, that is, better management practices are associated with lower loan spread. A one standard deviation increase in the overall management quality can reduce the conditional cost of bank loans by 58.40 basis-points for the average firm in the sample (conditional on firm- and loan-specific characteristics and industry and year fixed effects). When evaluated at the average loan size in the sample, this improvement in management quality can save $0.60 million in annual interest on a typical loan. For a low-management-quality firm (the firm in the 25th percentile of the overall management quality distribution), a similar improvement in overall management quality can reduce the cost of debt by 60.13 basis-points.

While the simple OLS estimate captures the correlation between management quality and loan cost, it is well known that correlation does not imply causality. In other words, the estimated relation may suffer from endogeneity problems. To address this issue, we use instrumental variable (IV) regression analysis. More specifically, we address endogeneity arising from three different sources. First, firms that are more likely to benefit from better management quality may be the ones that are also more likely to adopt high quality management. Furthermore, the expected cost of debt may affect a firm's choice of management structure. In other words, there could be additional unmeasured effects that affect both management quality and the loan rate leading to an omitted variable bias. Second, management quality may simply proxy for some non-price terms in the debt contract. It is also possible that management quality is correlated with some non-price terms in the debt contract, which, in turn, may be correlated with the loan spread if the interdependencies between price and non-price terms are not dealt with properly. Finally, as noted in Dennis et al. (2000) and, more recently, in Bharath et al. (2011), loan spread and non-price terms are simultaneously determined. Hence, if they are present in the same regression equation, endogeneity issues may arise. Our instrumental variable regression results suggest that the relationship between management quality and loan cost is robust to possible endogeniety issues. Moreover, the results remain economically significant once endogeneity is controlled for: a 1% increase in management quality for the average firm in the sample is associated with a 9.68 basis-points reduction in the loan spread. Our battery of robustness tests suggest that the estimated relationship between management quality and the cost of debt is robust to potential endogeneity.

In our third set of empirical tests, we examine closely various non-price contract terms and, consistent with Melnik and Plaut (1986), we find some non-price loan contract terms to be important. In particular, low-quality-management firms face more restrictive collateral requirements compared to high-quality-management firms. The other non-price terms such as maturity, covenants, and syndication show expected signs in the regression but they do not turn out to be statistically significant. Overall, we do not find any evidence that high-quality-management firms face stricter non-price contract terms even though their cost of bank loans is significantly lower.

Finally, we examine the out-of-sample performances of the sample firms and find strong evidence that in-sample management quality is indicative of how firm performance may evolve three years out of sample. That is, high-quality firms continue to perform better in the near future while low-quality firms continue to perform worse suggesting that the extent of discount a firm can get from a bank on a loan contract may signal the future profitability of the firm.

Our paper contributes to the literature in several important dimensions. First, to the best of our knowledge, our paper is the first to relate an increasingly significant component of firm capitalization, i.e., intangible organizational capital, to the cost of external debt financing. A major shift in the composition of firm investment and capital formation towards intangibles occurred over the last half of the 20th century (Blair, 1999; Lev, 2001; Hulten and Hao, 2008; Berk et al., 2010). At the same time, private bank loans have become the primary source of corporate debt financing, overtaking public debt since the last decade (Denis and Mihov, 2003; Bradley and Roberts, 2004; Sufi, 2007, 2009). The concurrent increases in the levels of intangibles and bank financing in recent decades make it important to examine how this particular form of organizational capital (intangibles) affects the pricing and design of bank loans. To the extent that various managerial practices of a firm signal the quality of the firm's intrinsic organizational capital, our paper provides additional insight into the mechanism via which intangibles can affect firm-level outcomes.

Second, our study complements Bertrand and Schoar (2003) and Bloom and Van Reenen (2007). Using manager-firm matched panel data, Bertrand and Schoar (2003) show that the fixed effect associated with a manager can be attributed to a particular style of management by the executive, and that the managerial style,

[3] We provide a rationale for using medium-sized manufacturing firms and management practices information from mid-level managers in our empirical design in Section 3 of the paper.