Board Monitoring and Access to Debt Financing

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Abstract

Board monitoring should affect a firm's access to debt financing because it improves firm performance and the board is ultimately responsible for the firm's debt. In this study, we show empirically that access to debt financing indeed benefits in two ways from board monitoring: directly from the monitoring and indirectly from improvement in performance. The methodological challenge is in separating the two effects from each other and from those of other drivers of debt financing.

JEL Classification of Two Authors: G2; G3

1. Introduction

Board monitoring of management behavior improves firm operating income (e.g., Eisenberg, Sundgren, and Wells, 1998; Vafeas, 1999; Bozec, 2005) and could lower lenders' risk because interest is paid out of operating income. As a result, a firm's access to debt may be enhanced at least indirectly by the board's effective monitoring of management behavior. Access to debt may also be improved directly by board monitoring because, by law, the board must approve and is, thus, responsible for banking relationships and a firm's debt. In fact, lenders do look to board monitoring of management behavior as protection against agency problems (Ferris, Jagannathan, and Pritchard, 2003; Pope, Young and Lin, 2003). Thus, a firm's access to debt financing should be enhanced both directly and indirectly by board monitoring.

We examine this implication of effective monitoring by the board for access to bank debt using data from a recent survey of small business financing. As pointed out by Berger and Udell (1995), small business is an ideal setting for testing theories about the agency problems of debt financing because it is where information asymmetry is most serious. The results show that board monitoring improves the firms' access to debt financing both directly and indirectly as implied by the literature. These effects are in addition to those provided by signalling, bonding, and relationship, the agency cost control mechanisms commonly suggested as solutions to the lender-borrower agency problems.

This study makes several contributions to the board monitoring and small business financing literatures. First, as far as we are aware, this is the first study to examine empirically the influences of board monitoring on access to debt financing of small firms. Second, the study contributes to the empirical evidence on solutions to the agency

problems between lenders and borrowers. Third, the study makes a contribution to the literature on debt financing of small businesses, which play an important role in the economy (Coleman, 2002; Cavalluzzo, Cavalluzzo and Wolken, 2002).

The article is organized as follows: in section 2, we discuss the background for the study. Data and methodology are introduced in section 3, followed by section 4 which presents and discusses the results. Conclusions are made in section 5.

2. Effects of Board Monitoring on Access to Debt Financing

Debt financing has been extensively studied by finance scholars[1]. The literature follows two directions. One views debt financing as balancing the benefits of leverage against the costs of bankruptcy while the other focuses on the debt engendered agency problems between owners and lenders. The two streams complement each other because resolution of agency problems affects both the benefits and risks of debt financing. This section briefly discusses the agency problems between owners and lenders and the literature on the monitoring role of the board. The discussion serves as background for the empirical methodology employed.

2.1. Agency Problems and Firm Access to Debt Financing

The idea that agents may pursue their self interests at the expense of principals may be traced back to Adam Smith (1776). Recent discourse about this agency problem typically cites Ross (1973) and Jensen and Meckling (1976). Theoretical developments have pinpointed information asymmetry as the source of the problem and expanded the concept to cover all contracting, including that between lender and borrower (Myers, 1977; Smith and Warner, 1979; Sitglitz and Weiss, 1981). Two general types of agency

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[1] For a review, see Harris & Raviv (1991).

problems arise from the different configurations of asymmetric information. Adverse selection arises before contracting when there is asymmetric information about the contracting agent's type, for example, ability and commitment of the agent. On the other hand, moral hazard surfaces when the asymmetric information is about the actions of the manager after contracting. In terms of debt financing, the moral hazard problem manifests itself as the owner-borrower changing the probability distribution of the cash flows to lenders after receiving the loan while the adverse selection problem, following Akerlof (1970), is one of the lender systematically overvaluing the debt by under-estimating the risk.

Credible signaling by the borrower could reveal the true type and screening by the lender could force the agent to do so; these are the commonly suggested tools for dealing with adverse selection (Harris and Raviv, 1991). Bonding (Smith and Warner, 1979) and monitoring by the lender are recommended as solutions for moral hazard problems (Harris and Raviv, 1991).

2.2.Board Monitoring and Firm Access to Debt Financing

Researchers have studied extensively the role of the board in monitoring management behavior (e.g., Byrd and Hickman, 1992; Brickley, Coles and Terry, 1994; Hermalin and Weisback, 1998; Peasnell, Pope and Young, 2005). Board size (Yermack, 1996), board composition (Hermalin and Weisbach, 1988; Shivdasani and Yermack, 1999), board activity (Brickley and James, 1987; Eisenberg, et al., 1998; Klein, 1998; Vafeas, 1999; Xie, Davidson III and DaDalt, 2003), a director's affiliation (Brickley, Coles and Jarrell, 1997), incentive compensation for board (Hermalin and Weisbach, 1991), and intensity of board activities (Jensen, 1993; Vafeas, 1999) are some board monitoring issues

receiving attention in the literature. Positive impacts on firm performance are interpreted as happening because the benefits derived from controlling moral hazard problems through board monitoring are higher than the costs.

Related to debt financing, the monitoring typically discussed in the agency literature is monitoring by the lender. Corporate law, however, stipulates that the board must approve and is, thus, responsible for banking relationships and a firm's debt. As a result, lenders look to board monitoring of management behavior for protection against agency problems (Ferris, et al., 2003). If the board includes representatives of lenders, these representatives will monitor the relationship between the firm and its lenders as well as that between managers and owners (Booth and Deli, 1999). Thus, we should expect effective board monitoring to improve directly a firm's access to debt financing.

In addition, research (e.g., Eisenberg, et al., 1998) shows that board monitoring is positively related to the firm's operating income. Since interest on debt must be paid out of a firm's operating income, increasing the operating income improves the firm's ability to service its debt. Thus, a firm's access to debt should also be enhanced indirectly by improved firm performance as a result of the board's effective monitoring of management behavior. Determining the significance of these direct and indirect effects of board monitoring on debt financing is the main objective of this study.

Following previous researchers (Jensen, 1993; Vafeas, 1999), we focus on board monitoring in terms of board meeting frequency. Ceteris paribus, more active monitoring by the board with respect to the well-being of the firm can be expected to include more scrutiny of the firm's continuing ability to service the debt. At the very least, a higher board meeting frequency implies more time available for such monitoring. As a result of

the high cost of board meetings, however, especially in terms of executive time in preparation and attendance, it is reasonable to have fewer board meetings when the firm is performing well, despite their potential to improve firm performance (Jensen, 1993), and to have more meetings when the firm is not. Consequently, the observed board meeting frequency of a firm is both past performance and monitoring induced. Vafeas (1999) shows that this is indeed the case for large U.S. publicly traded firms. As a result, testing whether board meeting frequency affects debt financing requires the separation of the monitoring induced component of board activities from the past performance induced component. Only when accessibility to debt financing is positively affected by the monitoring induced component can one conclude that the evidence shows board monitoring to be an effective moral hazard control mechanism.

The relationship between board meeting frequency and performance may be further complicated by the implications of the pecking order hypothesis (Myers and Majluf, 1984). The hypothesis implies that firm growth is constrained by the availability of internally generated cash flow. This means that the better the current performance of the firm, the less the firm will be constrained in its growth plans. But the more the firm plans to grow, the more frequently the board may have to meet to evaluate and approve the plans.

To summarize, board monitoring of managers should enhance a firm's access to debt financing directly and indirectly. If monitoring is measured in terms of board meeting frequency, then the monitoring induced frequency must be separated from the current and past performance induced frequencies. In the next section, we describe the data and the

procedures used to test whether monitoring induced board meeting frequency indeed enhances a firm's access to debt financing.

3. Data, Models, Variables, and Estimation

3.1.Data

Our data are extracted from a 2001 Industry Canada survey on Financing Canadian Small- and Medium-Sized Enterprises (SMEs): Satisfaction, Access, Knowledge and Needs. The population was Canadian small firms with fewer than 500 employees, excluding non-profit organizations, holding companies, franchises, and those involved in outsourced government administration services. The mail survey instrument was mailed to 10,020 of these companies. The data set with 2,116 firms includes a rich collection of variables dealing with the agency problems between lender and borrower. Thus, it is ideal for testing the relationship hypothesized in this study.

The most serious validity problem with using the data set is that the identities of the sample firms and firm owners are not available to us. So we are unable to verify independently the self-reported data. In terms of statistical methodology, the two most serious problems are missing data and some poorly-designed questions. We avoided using data from questions that we considered ambiguous and, to deal with the statistical issues, we tested for missing data bias and estimated the models with alternative proxies.

3.2.Variables

In this section, we discuss how the dependent, independent, agency, and control variables are measured. Following Berger and Udell (1995), we study debt financing in terms of the firm's line of credit because it is how most small firms access debt financing.

3.2.1. Dependent variable – ACCESSIBILITY

The amount of debt that a firm has in its capital structure is not a good measure of accessibility because one cannot tell whether it is determined by demand or supply (Petersen and Rajan, 1994). Neither is approval or rejection of a loan application. Furthermore, how much a firm finances with debt is affected by the cost of servicing the debt; thus, measuring access by one or the other does not provide a complete picture of accessibility. Therefore, we decided to measure accessibility by a borrower's satisfaction with the amount approved relative to that requested, the interest rate imposed, and the fees charged.

The respondents were asked to rate their satisfactions with the amount, interest rate, and fees on separate five-point Likert scales. If a respondent is very or totally satisfied with all three elements, the variable ACCESSIBILITY is assigned a value of one. If a borrower is less satisfied or dissatisfied with any of the three elements, ACCESSIBILITY is set to zero. In other words, debt financing is considered accessible for a borrower only when the borrower is very or totally satisfied with the amount approved relative to the amount requested, the interest rate imposed, and the fees charged[2].

The reasoning is as follows. When a borrower is satisfied with the amount, interest rate, and fees, it means that either the interest rate and fees are lower than or the amount is greater than that on the demand function. Thus, measuring accessibility by satisfaction with all the terms of the line of credit implies that the terms offered by the lenders are equal to or better than those the borrowers were willing to accept.

3.2.2. Independent variable - MONITORING

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[2] As discussed later, we also used the average rating in the robustness tests.

As mentioned before, we follow previous researchers (Jensen, 1993; Vafeas, 1999) and measure board monitoring by board meeting frequency. Board meeting frequency is usually measured as a continuous variable by researchers who study large publicly held firms (e.g., Vafeas, 1999; Xie, et al., 2003); but we measure it here using a binary variable indicating whether the firm's board met more than twice a year. Communications with the people who designed the survey questionnaire indicates that board meeting frequency was measured this way because their experience suggested that this would strike a good balance between the response rate and the information collected. Using two meetings as the cut-off is valid for the following reasons. First, small firms are likely to discuss company affairs in informal gatherings and not consider it a board meeting (Eisenberg, et al., 1998). Second, they will have fewer long-term policy and strategic issues for the board to consider (Eisenberg, et al., 1998). Third, board meetings are more expensive relative to the resources of a small firm. Therefore, small firms are unlikely to hold as many formal board meetings as large firms.

As discussed previously, testing whether access to debt financing is affected by board monitoring as proxied by board meeting frequency requires the separation of performance induced board meeting frequency from the monitoring induced board meeting frequency. Therefore, we separate MONITORING, the monitoring induced board meeting frequency, from the financial performance induced meeting frequency using the following model:

$$\text{BMF}_t = f(\text{ROA}_t, \text{ROA}_{t-1}, \text{control variables}) + \varepsilon_1 \qquad (1)$$

where BMF_t is the board meeting frequency in the current year, ROA_t is return on asset in the current year, ROA_{t-1} is return on asset lagged one period, and ε_1 is the residual.

Since the residual ε_1 is free of the influences of past performance and other explanatory factors, it may be interpreted as a measure of MONITORING, the monitoring induced board meeting frequency. Thus, we set:

$$MONITORING = \varepsilon_1$$

Vafeas' (1999) model also includes firm performance lagged two years. His findings indicate, however, that performance lagged two-years has a negligible effect on board meeting frequency in the current year. Therefore, excluding this variable should not affect the model's ability to separate monitoring induced board meeting frequency from performance induced board meeting frequency.

The control variables are: firm growth in total assets (CHLOGTA), firm age (AGEFIRM), industry dummies, whether the firm is home based (HOMEBASED), and R&D expenditure (R&D). We use growth rather than firm size, measured by total assets, because a growing firm should have more decisions for the board to make. It is possible that the older the firm the more structured and formal may be its decision-making processes and, thus, the more frequently the board meets formally. Different industries may differ in the number of issues for the board to decide. If a business is home based, it is more likely to make decisions informally and require fewer meetings of the board. R&D expenditure has been found to influence board meeting frequency (Vafeas, 1999). The board's decisions with respect to R&D expenditures are part of its responsibilities in monitoring managerial behavior. By including this independent variable and, as a result, excluding the impact of such monitoring activities on our measure of monitoring induced board meeting frequency, we refine our measure of MONITORING with respect to its role in monitoring the lender-owner relationship.

3.2.3. Control variable - Financial performance (FP)

Financial performance of the firm affects access to debt financing in two ways. First, it enhances access because a more profitable firm should be able to borrow more or on better terms. Second, as discussed above, it affects board meeting frequency. As a result, the performance variables were used twice in the analysis - first to segregate the monitoring induced board meeting frequency from the performance induced frequency and then as a control variable in testing the effect of board monitoring on debt access.

The equity shares of small firms are generally not publicly traded and, as a result, neither their equity market-to-book ratio nor equity value is available. Thus, the financial performance for a small firm is typically measured by its pre-tax operating income (e.g., Berger and Udell, 1995). This measure is superior to net income because it avoids the effects of financing and tax which, in the small business, may be confounded by the owners' personal tax planning. Therefore, we use the pre-tax return on asset (ROA) as the performance measure.

3.2.4. Control variables - Lender/Owner Agency Variables

Aside from monitoring, firms rely on signaling and bonding to minimize the agency problems in debt financing (Harris and Raviv, 1991; Smith and Warner, 1979). For small firms, developing a long-term relationship with the lender is an additional means for solving these problems (Petersen and Rajan, 1995; Berger and Udell, 1995). Essentially, a long-term relationship reduces the information asymmetry between the lender and borrower, thus minimizing both adverse selection and moral hazard problems.

We include two proxies for signalling. The first (SIGNAL1) is whether the owner has used a personal line of credit to help finance the business during the past three years. We

interpret this as a credible signal of the owner's personal commitment to the business. The other one (SIGNAL2) indicates whether a person other than the owner is in charge of financial and/or accounting matters in the firm. By having a third party in charge of financial matters and reporting, the owner sends the signal that financial information supplied by the firm is less susceptible to manipulation by the owner. This is because the owner always runs the risk of the financial person resigning if the owner insists on manipulating the financial data. The extent to which this is a good measure of the credibility of the financial information given to the lender depends on the integrity of the unrelated financial/accounting person. But the cost of resigning is, ceteris paribus, lower for the unrelated person than for the related person. This is because, for the related person, resigning will also affect the kinship relation. SIGNAL1 is a dummy variable assigned a value of one if the owner has financed the business with personal credit while SIGNAL2 has a value of one if the person in charge of finance and accounting is not related to the owner and zero otherwise.

Researchers frequently measure relationship by the length of the institutional relationship between the firm and the lending institution. While it can be argued that if the relationship is not to the satisfaction of both bank and firm, the relationship would cease, the quality of the relationship may not be indicated by the longevity alone. A firm may have a relationship with the same bank but cannot form a personal relationship with the account manager because of turnover. Furthermore, the firm may have few other alternatives, especially when the banking market is highly concentrated. As Stiglitz and Weiss (1981) argue, adverse selection makes it difficult for firms to switch lenders. Therefore, we measure the strength of the relationship between the lender and the firm by

three variables. They are: (i) whether the bank supported the firm when times were difficult (RELATION1), (ii) whether the bank was willing to negotiate credit terms (RELATION2), and (iii) account manager turnover (RELATION3). All three relationship variables were measured using a five-point Likert scale.

Due to the serious asymmetric information problems in small firms, lenders tend to require guarantees for the debt (Petersen and Rajan, 1994; Coleman, 2002). Guarantees, similar to personal collateral (Berger and Udell, 1995), complement monitoring because it is not or not as dependent on the firm's performance. We interpret this as a bonding variable. BONDING is measured by the level of borrowers' satisfaction with the guarantees required by the lending institution on a five-point Likert scale.

3.2.5. Control variables - Manager/Owner Agency Variables

Owner-manager agency problems can affect a firm's access to debt financing because it also affects the financial performance of the firm. Theory predicts that, because many of the costs of owner monitoring are fixed, a shareholder must hold a large ownership share to be willing to engage in monitoring. Hence, the firm with a dominant shareholder should have more monitoring by the owner and be exposed to lower owner-manager moral hazard problems. If the owner also manages the firm or if the owner is the founder, we should expect further reduction in owner-management agency costs. The lower agency costs should improve firm performance and may be shared with lenders in the form of lowered risk, thus increasing accessibility.

The owner-manager agency variables used are whether there is a dominant shareholder (DOMINANT), whether the firm is owner managed (MANAGED), and whether the owner is the founder (FOUNDER). DOMINANT is a dummy variable with a value of

one if the dominant shareholder holds more than 50% of the shares; MANAGED has a value of one if the firm is managed by the owner; and FOUNDER has a value of one if the owner is also the founder of the business. Whether the owner is the founder could make a difference because the founder may be more committed to the survival of the business.

3.2.6. Control variables - Default risk

As discussed previously, access to debt financing is also affected by the default risk of the borrower. The data set does not contain information about the credit worthiness of either the firm, the owners, or the managers. Therefore, aside from the performance variables, we added size, growth, age of the firm, the stage of development of the firm, and the industry as proxies for a borrowing firm's default risk. Size is measured by LNEMPLOYEE, the logarithm of the number of employees; past growth by CHLOGTA, the change in logarithm of total assets; future growth by R&D expenditure as a percent of sales, age by LNAGEFIRM, logarithm of the reported age of the firm; and stage of development by four dummy variables: STARTUP, SLOWGROW, FASTGROW, and MATURE[3]. Nineteen industry dummies are used to classify the industries in which the sample firms operated because the firms are divided into 20 industries by Industry Canada.

3.2.7. Other control variables

Aside from factors related to default risk and the resolution of agency problems, researchers find that there are other characteristics of the firm and firm owner that may affect the small firms' access to debt financing (Coleman, 2002). For firm characteristics,

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[3] When all three are zero, the firm is in the winding-down stage.

researchers have considered whether the small business is home-based to be important. HOMEBASED is one if the firm is a home-based business. It could be taken as a measure of the owner's business sophistication. The other firm characteristic that we included is METROPOLITAN, whether the firm is located in an urban area, in case debt markets are different for rural and urban areas.

The owner of a small firm can be expected to have a more direct impact on the firm's performance than the shareholders of a large publicly held corporation. As Carroll and Mosakowski (1987, page 572) observe: "small firms are often the embodiment of their owner-managers". Thus, we include education of the firm owner (ELEMENTARY, HIGHSCHOOL, and PSECOND), the natural log of owner's age (LNAGEOWNER), the owner's years of experience in the firm (FIRMEXP), whether the owner belongs to a visible minority (MINORITY), the owner's gender (GENDER), and the owner's mother tongue (ENGLISH, FRENCH, other).

Finally, debt financing through some types of lenders may be more accessible than through others. The lender type variable (CANBANK) indicates whether the lender is a Canadian chartered bank.

3.3.Model

The model used to test whether board monitoring (MONITORING) improves a firm's access to debt financing is the following:

$$\text{ACCESSIBILITY} = \gamma_0 + \gamma_1 \text{MONITORING} + \gamma_2 \text{FP}_t + \gamma_3 \text{Lender/owner agency variables}$$
$$+ \gamma_4 \text{Manager/owner agency variables} + \gamma_5 \text{Default risk}$$
$$+ \gamma_6 \text{Control variables} + \varepsilon_4 \qquad\qquad (2)$$

This study's main research question is tested by the sign for γ_1. We use the lagged value of financial performance because the contemporaneous performance value would not be known to the lender at the time the terms are set.

Signalling, bonding, and relationship are the commonly suggested solutions to the lender-borrower agency problems. By including them, the manager-owner agency variables, financial performance, default risk, and the control variables, the coefficient for MONITORING should measure its incremental impact on access to debt financing.

3.4. Estimation and Tests

Logit analysis was used to estimate the model used to separate the monitoring induced board meeting frequency from the performance induced components. If board meeting frequency has a past performance induced component, we should observe a statistically significant and negative coefficient for the lagged performance variable. And if board meeting frequency has a current performance induced component, we should observe a statistically significant and positive coefficient for the contemporaneous performance variable.

Estimating the main model used to test the main research question was quite involved because of the design of the survey instrument. Respondents were asked whether they applied for a line of credit. They were asked to proceed to questions about approval only if they had applied. Similarly, only those firms for whom the line-of-credit application was approved were asked to answer the questions about their satisfaction with the amount, interest rate, and service fees approved.

These contingency relationships could produce biases in the coefficients estimated if not corrected. This is because the coefficients estimated would have failed to consider the

characteristics of those firms, for example, that did not apply because they judged correctly that their chances of getting approval was low or zero. Similarly, the coefficients based on the firms that responded to the satisfaction questions would not have incorporated the characteristics of those firms that did not receive approval. An estimation technique for dealing with these potential biases is the multi-stage probit analysis[4].

A three-stage probit analysis based on both contingent variables APPLY and APPROVAL was used. The Inverse Mills' ratios (IMR) for APPLY and APPROVAL were used to correct potential sample selection bias in ACCESSIBILITY. The second IMR was then incorporated into estimating the final model. The coefficients for the IMRs should be significant if potential biases existed.

4. Results and Discussion

Table 1 presents the descriptive statistics for the sample firms. 35% of the firms applied for a line of credit and 85% of those who applied were approved[5]. 44.5% of the firms who received approval were totally satisfied about the amount approved relative to that requested, interest rate charged, and service fees imposed. Most of them (78%) arranged their line of credit with banks instead of trust companies and others. 32.4% of the firms' boards met more than twice a year. ROAs were highly positively skewed; average ROA was 34.0% in 1999 (median = 10.0%) and 33.1% in 2000 (median = 9.4%).

TABLE 1 ABOUT HERE

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[4] For a discussion about multi-stage probit analysis and how it deals with the potential biases, see Green (2003).

[5] This high percentage of approval suggests strongly that those who were likely to be rejected did not apply. This strengthens the case for using multi-stage probit.

58% had an unrelated person in charge of finance and/or accounting matters. 30% of the owners used personal credit to help finance the business. 89% were managed by the owner and 84% of the owners were the founders. 33% had a dominant owner holding more than 50% of the ownership shares. Average scores for relationships with lenders were between 3.2 and 3.6 out of 5, slightly above the midpoint.

Average firm assets were $2.7 million in 1999 and $3.2 million in 2000. 23.5% were home-based. 20% were in metropolitan areas and 72% described themselves as growing, 17% as mature, and 7% as winding down. Only 7% of the owners belonged to a visible minority group. 78% of the respondents were male, 35% had high school education, and 51% had post-secondary education. 27% were Francophones and 58% were Anglophones. The average work experience in the firm was 2.8 years.

4.1. Estimating the Monitoring Induced Board Meeting Frequency

Table 2 presents the results from estimating the model used to separate the monitoring induced board meeting frequency from those induced by performance. The coefficient for ROA_{1999} is negative and statistically significant. This is consistent with previous research (Jensen, 1993; Eisenberg, et al., 1998; Vefeas, 1999; Xie, et al., 2003). It confirms that board members meet more frequently when past performance is poor. The coefficients for firm growth (CHLOGTA), whether the business is home based (HOMEBASED), and variables measuring firm's stage of development are also significant and their signs as expected; that for growth is positive, the one for business type is negative, and those for firm's stage of development positive. As discussed in the Methodology section, the residuals from this model were then defined as the monitoring induced board meeting frequencies (MONITORING).

TABLE 2 ABOUT HERE

4.2.Effect of Board Monitoring on Debt Access

Table 3 presents the results of testing whether the monitoring induced board meeting frequency (MONITORING) positively affects a firm's access to debt financing. First of all, the IMR is highly significant; this shows that the coefficients estimated needed the correction to avoid bias.

TABLE 3 ABOUT HERE

The coefficient for MONITORING is positive and significant at the 5% level. This indicates that monitoring induced board meeting frequency does improve a firm's access to line of credit.

The coefficient for ROA_{1999} is also positive and significant, implying that profitability does enhance access to debt. Bonding, signalling, and relationship all appear to improve small firms' access to debt financing. The coefficient for BONDING (guarantees) is positive and significant. It appears that SIGNAL1 (using personal credit to help finance the business) and SIGNAL2 (having an unrelated person in charge of the firm's finance and accounting functions) are not as credible signals. The first could be because the personal credit used would no longer be available to support the personal guarantee. RELATION1 (lender flexibility) also adds to debt accessibility. This is consistent with the conclusions made by Petersen and Rajan (1994) and Berger and Udell (1995) that the relationship between lender and borrower enhances accessibility.

Two of the manager/owner agency variables, DOMINANT ownership and owner MANAGED have positive and statistically significant coefficients; FOUNDER does not. As discussed previously, agency theory predicts that if firm has a dominant shareholder holding a large percentage of the shares and if the owner also manages the business, the owner-manager moral hazard problems should be less severe and the financial

performance better. But an improvement in financial performance should benefit lenders and improve the firm's access to debt financing only if such improvements are shared with lenders. Therefore, these three sets of results are also consistent with shareholders having to share with lenders the benefits of board monitoring and improvements in financial performance.

The lender type variable shows that Canadian banks are quite accessible to Canadian small firms. None of the firm owner variables are significant and, among the firm variables, only the stage of firm development significantly affects accessibility. It appears that both growth and mature firms are more likely to be dissatisfied with their accessibility to debt financing.

In summary, the results presented above show that board monitoring improves a firm's access to debt financing. This improvement is in addition to the effects of signalling, bonding, and relationship which have been suggested and shown by previous researchers to be effective tools for controlling the lender-borrower agency problems. The results also suggest that the benefits from improvements in firm performance as a result of board monitoring are shared with lenders.

4.3. Robustness Tests

We tested the results for robustness by using alternative proxies for access to debt financing and financial performance. For accessibility, we used the average score for the three dimensions of debt financing: amount, interest rate, and fees. We also tried different definitions of satisfaction with the terms. We found no qualitative change in the results. For financial performance, we also used return on sales and industry average adjusted return on assets. Again, there was no qualitative difference in the results.

To check for multicollinearity, we examined the variance inflation factors (VIF) for the independent and control variables. The VIFs are all under 10, indicating that any multicollinearity problem is not serious. Finally, we examined the potential endogeneity problem in the main model. A high board meeting frequency may be caused by a large amount of debt financing, because the board of directors may have to make more decisions with respect to the investing the funds obtained. Alternatively, if debt financing results in higher leverage, the board may have to meet more to deal with the higher risk of bankruptcy. Including instrumental variables for the endogeneity problem and a maximum-likelihood heteroskedastic probit estimation for the possibility of heteroskedasticity did not result in qualitative changes.

5. Conclusions

Research on the role and efficacy of the board of directors in monitoring managerial behavior has focused mainly on controlling the agency problems between managers and shareholders. In this study, we argue that unless the board is able to appropriate all of these benefits for the shareholders, lenders should also gain from the improvement in financial performance. Therefore, competitive lenders will make debt financing more accessible to borrowers with more effective board monitoring.

Our results show that board monitoring does improve a small firm's accessibility to debt financing. This improvement is incremental to the benefits yielded by signalling, bonding, and relationship which are commonly suggested as the tools for controlling the lender-borrower related agency problems of small firms.

By indirectly showing the positive benefits of board monitoring to lenders, the results suggest that shareholders and their board are not able to expropriate all of the benefits

from board monitoring; it appears that they have to share these with lenders although, on the surface, they are the ones who pay for board monitoring. Therefore, aside from confirming the predictions of agency theory as applied to corporate governance, this study introduces a new set of questions for future research regarding board monitoring. How are the benefits of board monitoring shared between shareholders and lenders? Do lenders get a free ride? Should lenders be benefitting from board monitoring? Are there ways that shareholders can exclude lenders from sharing in the benefits? Should they?

This study also adds to the small body of evidence about how governance affects the performance of a small firm. With few exceptions, research on board activities tends to focus on large publicly traded firms. Aside from access to debt financing, board activity most likely has the potential to affect many other aspects of the small firm's performance.

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Table 1. Descriptive Statistics

Variables	Mean	S. D.	N	Variables	Mean	S. D.	N
ACCESSIBILITY	0.44	0.50	918	HOMEBASED	0.24	0.42	2,095
Board Meeting Frequency	0.32	0.47	2,088	CHLOGTA	0.18	0.46	542
APPLY	0.54	0.50	2,106	EMPLOYEE	22.36	45.67	2,076
APPROVAL	0.85	0.36	1,137	METROPOLITAN	0.20	0.40	2,116
ROA_{1999}	34.0%	142%	505	STARTUP	0.05	0.22	2,072
ROA_{2000}	33.1%	164%	570	SLOWGROW	0.50	0.50	2,072
RELATION1	3.29	1.27	1,273	FASTGROW	0.22	0.41	2,072
RELATION2	3.26	1.19	1,265	MATURE	0.17	0.37	2,072
RELATION3	3.60	1.26	1,275	AGEOWNER	46.8	10.8	2,031
BONDING	2.96	1.38	1,291	MINORITY	0.07	0.26	1,990
SIGNAL1	0.58	0.49	2,097	FIRMEXP	2.8	1.44	2,101
SIGNAL2	0.30	0.46	2,078	HIGHSCHOOL	0.35	0.48	2,083
DOMINANT	0.33	0.47	1,538	PSECOND	0.61	0.49	2,083
MANAGED	0.89	0.32	2,088	GENDER	0.78	0.41	2,093
FOUNDER	0.84	0.37	2,095	FRENCH	0.27	0.44	2,092
TA_{1999} (in Millions)	2.7	8.01	558	ENGLISH	0.58	0.49	2,092
AGEFIRM	15.0	15.6	2,074	CANBANK	0.78	0.42	2,104

Table 2. BMF and Performance

	Coefficient	Std. Err.
Constant	-2.168***	0.767
ROA_{2000}	-0.056	0.112
ROA_{1999}	-1.007**	0.507
CHLOGTA	0.305	0.300
HOMEBASED	-1.022***	0.314
R&D	0.585	1.067
STARTUP	3.066***	0.936
SLOWGROW	2.026***	0.664
FASTGROW	2.415***	0.680
MATURITY	1.267*	0.695
Industry Dummies	None significant	
# of Observations	453	
Pseudo R^2	0.127	

***p<0.01, **p<0.05, *p<0.10

Table 3. Three-Stage Model: Monitoring and Debt Accessibility

	Coefficient	Std. Err.
CONSTANT	-4.354	4.481
MONITORING	0.457**	0.209
ROA_{1999}	0.393**	0.194
$SIGNAL_1$	0.961	0.604
$SIGNAL_2$	0.387	0.539
RELATION1	0.332	0.344
RELATION2	0.043	0.327
RELATION3	-0.091	0.189
BONDING	0.628***	0.184
DOMINANT	0.357	0.529
MANAGED	1.103*	0.610
FOUNDER	-0.041	0.486
LNAGEFIRM	-0.073	0.168
LNEMPLOYEE	-0.041	0.155
STARTUP	1.379	1.455
SLOWGROW	-0.602	0.786
FASTGROW	-1.309	0.835
MATURITY	-1.571*	0.875
HOMEBASED	-0.781	0.570
METROPOLITAN	-0.123	0.365
LNAGEOWNER	-0.562	1.474
MINORITY	-0.818	1.040
HSCHOOL	0.628	0.913
PSECOND	-0.011	0.883
GENDER	0.269	0.541
FRENCH	0.151	0.552
ENGLISH	0.320	0.498
CANBANK	0.806*	0.425
IMR	6.788*	3.615
Industry Dummies	Mixed[6]	
# of Observations	197	
Pseudo R^2	0.343	

***p<0.01, **p<0.05, *p<0.10

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[6] Industry 4 (Transportation, Warehousing and Couriers), Industry 9 (Educational Services), and Industry 16 (Mining and Oil and Gas Extraction) are significant at the 5% level, while Industry 14 (Agriculture) is significant at the 10% level. Other industries are not significant.