

**Small Business Borrowing and the Owner-Manager Agency Costs:
Evidence on Finnish Data**

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10.11.2005

Abstract. This study investigates the impact that managerial ownership has on loan availability and credit terms. We find that managerial ownership is common in a sample of small and medium sized Finnish firms. Our results suggest that an increase in managerial ownership decreases loan availability. The results on loan interest rates suggest that while an increase in managerial ownership initially increases interest rates, the effect is reversed at higher levels of ownership. Collateral requirements increase monotonically with managerial ownership. Overall, the results suggests that banks view that there are agency costs involved with managerial ownership even in small and medium sized firms and that this is taken into account when lending to these firms.

Key words: Small business borrowing, agency costs, loan availability, credit terms

JEL: G3

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Introduction

Corporate managers often complain about not being able to borrow enough capital at reasonable rates. Berger and Udell (1998) suggest that the constraints in raising external finance are even more pronounced for smaller firms. Storey (1994) further suggests that small firms find it difficult to obtain outside capital and when they are able to obtain debt capital, it is at high interest rates. Economic theorists suggest that these problems are caused by market frictions such as information asymmetries and agency costs.

Previous literature suggests that the equity ownership structure of a firm affects the manager-shareholder conflict and therefore also the agency costs related to these specific information asymmetries. The underlying thought in this literature (see, e.g., Jensen and Meckling, 1976, and Galai and Masulis, 1976) is that when managers' stockholdings increase, management becomes more likely to make decisions consistent with the best interests of other stockholders at the expense of bondholders or other uninformed stakeholders. Consequently, over some level of common stockholdings by managers, larger stockholdings are associated with higher risk of outstanding debt and higher loan return premia. This relationship does not always have to be positive, however. First, as management's stake increases, its wealth becomes less well diversified, so management becomes concerned about the undiversifiable risk of its

stake. Second, as management's stake increases, it can use its control of votes to protect its position (Stulz, 1988, and Morck, Schleifer, and Vishny, 1988). As a result of these conflicting forces both theoretical and empirical evidence in, e.g., Morck, Schleifer, and Vishny (1988) and McConnell and Servaes (1990) indicates that managerial ownership tends to affect shareholder wealth positively at low levels of ownership and may affect shareholder wealth negatively at higher levels of ownership

Previous literature on the relationship between managerial ownership and bondholder or other creditor wealth is scarce. Bagnani et al. (1994) argue that the literature on the relationship between managerial ownership and shareholder wealth has direct implications on the relationship between managerial ownership and bondholder wealth. They suggest that at some level of managerial ownership managers have increased incentives to act in the stockholders' best interests and take risks that are potentially harmful to the bondholders' best interests. Their empirical results are well in line with these arguments and suggest that managerial ownership increases bond return premia at medium levels of ownership and lower these premia at higher levels of ownership. Ownership concentration, too, has been given some attention in the agency literature. Mueller and Inderst (2001) show that firms with relatively dispersed ownership structures face lower agency costs of debt than firms with a concentrated ownership structure. Filatotchev and Mickiewicz (2001) further suggest that ownership concentration is associated with a less efficient use of financial resources. Based on this, it could be argued that an increase in ownership concentration increases interest rates and collateral requirements and decreases loan availability.

While theories on asymmetric information suggest that owners will always be better informed than outsiders, small business owners are likely to be significantly better informed than any outsider, such as the bank (see, e.g., Storey, 1994). This is

partly because information on them is not collected by independent analysts. This information asymmetry suggests that banks should price agency costs even more severely than bondholders do. Brau (2002) uses data on small firm bank loans and investigates the impact that the firms' ownership structure has on loan interest rates and collateral requirements, but finds no significant effect in either case. Niskanen and Niskanen (2004) use data on small firm bank loans and find that bank loans are less likely to include covenants if management holds more than 50 % of equity. These results are interpreted to mean that the need for covenants that restrict managements' actions is less pronounced if management holds a large share of corporate equity.

This study extends previous work by using data on small firm loans and more detailed management ownership variables. The main difference to Bagnani et al. (1994) is that we use data on small firm bank lending. Our study differs from Brau (2002) and in that we are able to use more detailed specifications of the managerial ownership variables. Furthermore, the Finnish institutional setting differs from that in, e.g., U.S. or U.K., since the Finnish capital markets are bank-based and highly concentrated with only a small number of banks operating in the country. A distinguishing feature of the bank-based systems is that banks by nature monitor the performance of their customer firms more closely than in market-based systems such as that of the U.S. Furthermore, La Porta et al. (1999) suggest that the agency costs of debt may be different in an environment where financial discipline and legal protection is weaker than in, e.g., the US and U.K.

Our results show that an increase in managerial ownership decreases loan availability. We also find that when the number of owners increases, it becomes easier for firms to obtain loans. Loan interest rates and collateral requirements are also affected by increases in managerial ownership. The results suggest that banks price agency costs at medium levels of managerial ownership. The results on collateral

requirements are more pronounced. We find that collateral requirements increase at all levels of managerial ownership. The results on relationship lending variables suggest that close bank-borrower relationships improve loan availability and decrease collateral requirements even if they do not seem to have an impact on interest rates. Bank competition seems to have an opposite effect, i.e., when the number of banks operating in the county where the firm is located increases, loan availability improves and collateral is required less often. We find no effect on interest rates.

Section two of the study presents the data and motivates the use of variables applied in the analysis. Section three presents descriptive statistics on the variables. Chapter four presents the econometric tests on the likelihood that the firms loan application has been denied or not and chapter five goes on to investigate the determinants of interest rate margins and collateral requirements. Chapter six concludes the discussion.

Data and Variables

The data for the study were collected through a private survey which targeted all except small service industry firms (net sales below 1 million FIM, 1 euro ~ 6 FIM) operating in the Häme region in mid-western Finland. The data consist of small and medium sized companies and contains 2672 observations. The number of observations used in the regression tests in tables 2, 3 and 4 is smaller due to missing observations in some variables. The firms were asked to provide information for the period 1994-1997 in, e.g., the following main areas:

1. Corporate background information such as industry, firm age and number of employees.
2. Main bank relationship.
3. Number of lending banks.
4. Corporate financial characteristics.
5. Detailed information on loans taken by the firm during 1994-1997.
6. Corporate ownership structure.

Dependent Variables

We investigate the impact of managerial ownership on three variables. The first one is a dummy variable which takes the value of one if the firm's loan application has been rejected by a bank during the research period of 1994-1997. We use this variable to measure loan availability from the firm's perspective. The second dependent variable is the interest rate spread on each of the firm's bank loans taken during the research period and the third one is a dummy variable which takes the value of one if the loan in question has collateral attached to it.

Independent Variables

Managerial ownership. Previous studies suggest that managerial ownership potentially creates conflicts of interest between managers and bondholders. This in turn suggests that increases in management ownership decrease loan availability, increase loan interest rates and collateral requirements. This literature

further suggests that the relationship between interest rates and other credit terms is not necessarily linear. Instead, Bagnani et al. (1994) suggest, that management may start to protect its own position when its ownership level becomes very high. We construct three different variables for testing the impact that the level of managerial ownership has on loan availability and credit terms. The first variable is the share of managerial ownership in the firm. To take into account the possibility that the relationship between managerial ownership and our dependent variables is nonlinear, we include a quadratic specification of the ownership variable. Finally, we construct group dummy variables to represent different levels of managerial ownership. The breakpoints that we choose are 5, 25 and 50 percent. Based on previous literature we expect to find that managerial ownership decreases loan availability and increases collateral requirements. Furthermore, we expect to find that the relationship between managerial ownership and interest rates is nonlinear and that firms with medium levels of managerial ownership face higher interest rate requirements.

We also include a measure for ownership concentration to take into account the possibility that ownership concentration may also have an impact on loan availability and credit terms. Mueller and Inderst (2001) and Filatotchev and Mickiewicz (2001) suggest that firms with relatively dispersed ownership structures face lower agency costs and use financial resources more efficiently. Our measure for ownership concentration is the number of owners that the firm has. Based on the discussion above, it can be expected, that an increase in the number of owners facilitates loan availability, lowers interest rates and collateral requirements.

Relationship Lending. A number of studies on relationship lending suggest that close bank-borrower relationships enhance credit availability, especially for small firms. Mayer (1988), Petersen and Rajan (1994), and Boot and Thakor (1994) suggest that

firms with close ties to financial institutions have a lower cost of capital and better access to funds as opposed to firms without these ties. E.g., Petersen and Rajan (1994), Berger and Udell (1995), and Harhoff and Körting (1998), find that the existence of a relationship lowers the price of credit, and that borrowing from multiple banks increases the price and collateral requirements and reduces the availability of credit. Binks and Ennew (1997) investigate a number of different attributes of bank-firm relationships and suggest that small businesses could benefit from a closer and more informed relationship with their banks. Other studies suggest that firms operating in concentrated as opposed to competitive markets have easier access to funds (Petersen and Rajan, 1995; Boot and Thakor, 2000; Strahan and Weston, 1998; Bonaccorsi di Patti and Gobbi, 2001).

To control for bank-borrower relationships, we include one relationship lending variable and one variable measuring the degree of bank market concentration in our models. Our relationship lending variable is the number of lending banks that the firm uses. Previous literature suggests that an increase in the number of lending banks decreases loan availability and increases interest rates and collateral requirements. Our variable for bank market concentration is the number of banks operating in the region where the firm is located. Based on previous evidence on the effect of bank market concentration we expect to find that firms operating in concentrated markets have easier access to credit.

Firm and loan characteristics. We include five firm specific characteristics in the models. Firm size (the natural log of total assets), profitability (Return on Assets) and leverage (debt to assets) can be seen as proxies for firm quality. It can be expected that firms with higher quality have easier access to credit and lower interest rate and collateral requirements. Firm age can be seen as a proxy for the private information the bank has about the borrower and it is expected to improve loan availability and decrease loan interest rates as well as collateral requirements. We also

include a dummy variable which takes the value of one if the firm is situated in an urban location. Some studies have observed that firms in rural areas have easier access to funds than urban firms (e.g., Harhoff and Körting, 1998).

We include one loan characteristic to control for loan specific differences when we investigate the determination of the interest rate margin. This variable which takes the value of one if the loan has collateral. While it can usually be agreed upon that riskier loans are priced with a premium, the relationship between firm risk and collateral is by no means simple. One set of theories suggests that the level of collateral is negatively related to the risk level of the firm's investment projects (see, e.g., Berger and Udell, 1990), while another line of thought (e.g., Besanko and Thakor, 1987, and Chan and Thakor, 1987) suggests the contrary.

Descriptive Statistics

Table 1 presents descriptive statistics for key variables. The average share of management ownership in all sample firms is 66 %. Overall, we find that 37 % of the firms claim that their loan application has been rejected and that they have therefore foregone investments. The average interest rate margin on all loans is 1.513 % and 93 % of the loans have collateral. In column II of table 1 we differentiate between different levels of management ownership so that the data is rearranged into groups of firms where management holds between 5 - 25 %, 25 - 50 % or above 50 % of company shares. This division is in line with, e.g., Bagnani et al. (1994), with the exception that we do not have a group in which management holds between 1-5 % ownership. The reason for this is that the minimum ownership share observed in our data is 5 % in the

firms where management ownership is observed. We find that the firms in which management owns equity are more financially constrained, pay higher interest rates and are more likely to pledge collateral than the firms in which management doesn't hold equity.

Table 1

The results in column II suggest that the likelihood of a loan rejection increases notably if management holds between 5 and 25 % of company shares. A total of 49 % of these firms claim that their loan application has been rejected. These firms are also more likely to have collateralized loans and pay higher interest rates. When we compare the firms with different levels of management ownership shares in column II, we observe that loan rejections are most common in the group of firms where management holds between 5-25 % of equity. We further observe that interest rates are highest in the firms with 25-50 % managerial ownership.

Empirical Results

Loan Availability

We measure loan availability by using a qualitative dummy variable which gets the value of one if the firm's loan application has been rejected and the firm has therefore foregone investment opportunities. While it is difficult to measure credit availability directly, a number of alternative measures have been suggested in this

context. Petersen and Rajan (1994) and Harhoff and Körting (1998) suggest that the firm's usage of trade credit can be used as a proxy for loan availability. The underlying thought there being, that firms with limited access to loans from financial institutions will turn to trade credit as an alternative source of funds. Others, e.g., Morck and Nakamura (1999) have suggested that high leverage and a high ratio of loans from financial institutions to total debt can be used as indicators of strong bank ties and loan availability.

Table 3 presents the results on loan availability. The results in column I suggest that increases in management ownership increase the likelihood that the firm's loan application has been rejected by a bank. The squared ownership variable further suggests that this effect is intensified at higher ownership levels. We also include a variable for the number of owners that the firm has. When we use this alternative specification of the ownership variable in column II, we find that ownership dispersion has the opposite effect in that an increase in the number of owners that the firm has decreases the likelihood that its loan application has been rejected by a bank. When we differentiate between different levels of management ownership and use the group of firms with no management ownership as the control group, we find that loan availability is reduced at all levels of management ownership and that this effect becomes more significant as management's share of ownership increases. These findings support the notion that an increase in managerial ownership increases the banks risks and that dispersed ownership is associated with lower agency costs.

Table 3

The results of the firm specific variables suggest that older and more profitable firms are less likely to become financially constrained by their banks and that an increase in the existing debt to assets ratio increases the likelihood of a loan application being denied. When we investigate relationship lending effects by using the number of lending banks that the firm uses, we find a positive relationship suggesting that the more banks the firm uses the more likely it is, that its loan application has been rejected. This result is well in line with most studies in the relationship lending literature which suggest that a close lending relationship enhances loan availability. The results on bank competition are the contrary. They suggest that firms operating in an area with more concentrated banking markets are more likely to have been rejected a loan application. Again, this finding is well in line with previous literature.

Interest rate spread

Our measure for the cost of capital is the interest rate margin on each individual loan taken by the firm during the research period. The results on the effects that management ownership has on the cost of debt capital suggest that this relationship is not linear. The results in column I show that interest rates increase at lower levels of management ownership and start to decrease later on. The results in column III further show, that interest rates are significantly higher when management holds between 25 and 50 % of company shares. These results are in line with Bagnani et al. (1994) and support the notion that banks price agency costs at medium levels of managerial ownership. There is one difference as opposed to the results in Bagnani et al. (1994), however. When we investigate ownership concentration in column II, we find no

significant connection between loan interest rates and the number of owners that the firm has.

Table 3

The results on firm characteristics suggest that bigger and more profitable firms pay lower interest rates. It also seems that firms with a high debt to assets ratio pay higher interest rates. All these results are in line with previous literature and support the idea that high quality firms pay lower interest rates. An urban location, too, seems to increase interest rate requirements. This finding is similar to, e.g., Harhoff and Körting (1998). The results on the collateral dummy suggest that firm, which are required to put up collateral also pay interest rates. This supports, e.g., Besanko and Thakor (1987) who suggest that the usage of collateral is positively associated with the risks involved. Relationship lending and bank competition do not seem to have an impact on loan interest rates.

Collateral requirements

The question of whether collateral should be pledged or not has been given a lot of attention in the literature. This is by no means surprising because small and medium sized corporations in particular claim that their ability to pledge collateral is instrumental to their ability to raise outside capital. In our sample slightly more than 90 % of loans are secured by collateral. The theoretical literature offers several explanations to the widespread use of collateral. Bester (1985) and Boot et al. (1991) argue that the existence of private information increases collateral usage in loan

contracts. Others like Chan and Thakor (1987) suggest that collateral is efficient in resolving moral hazard and adverse selection problems. Myers and Rajan (1998) further suggest that security reduces the possibility of moral hazard because collateralizing new debt may be a way of preventing the liquidity of the new debt from spilling over and enhancing the power of old creditors. This suggests that collateral requirements should increase when managerial ownership increases, because collateral can be used to protect lenders against agency problems.

We find that collateral requirements increase with management ownership. Furthermore, the results in column III suggest that this effect is highly significant at all levels of ownership. Ownership dispersion on the other hand seems to decrease collateral requirements. These results are in line with the idea that collateral is used to protect lenders against agency problems created with management ownership.

Table 5

Profitability and firm age decrease collateral requirements. It also seems that an increase in leverage increases collateral requirements. These results are well in line with, e.g., Bester (1985) and Chan and Thakor (1987) who suggest that the level of collateral requirements should be positively related to the risk level of the borrowers investment projects. Relationship lending has the expected effect on collateral requirements. The results in table 4 show that an increase in the number of lending banks increases the likelihood that collateral is required. This result is well in line with, e.g., Harhoff and Körting (1998). The results also indicate that an increase in local bank market competition decreases collateral requirements. This finding contradicts to some

extent previous studies suggesting that firms operating in concentrated financial markets have easier access to funds.

Conclusion

This study examines the impact that managerial ownership has on loan availability and credit terms of small and micro Finnish firms. The results show that managerial ownership is common in our sample and that it has an impact on loan availability and credit terms. The results on loan availability and collateral requirements suggest that an increase in managerial ownership decreases loan availability and increases the usage of collateral. The results on the cost of funds suggest that the relationship between managerial ownership and the interest rate margin on loans is non-linear. It seems that banks charge higher interest rates at medium levels of managerial ownership.

The results on ownership concentration are similar to the ones on managerial ownership. We find that firms with a dispersed ownership structure have easier access to credit and are less often required to pledge collateral. In this case, we find no effect on interest rates. The results on relationship lending characteristics are in line with previous studies. It seems that close lending relationships enhance loan availability and reduce collateral requirements. We do not find any connection between lending relationships and loan interest rates.

Overall, the results suggest that there are agency costs involved with managerial ownership and that banks take this into account when lending to small firms. Banks also price these effects at medium level of managerial ownership. Banks also seem to take agency costs into account in other aspects of the lending process. The

results also suggest that an increase in the number of owners is viewed positively by banks, indicating that dispersed ownership is associated with lower agency costs.

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Table 1
Descriptive statistics on key variables

Column I presents descriptive statistics for the total sample, column II splits the data into firms with less than or more than ten employees. The differences of the means between the groups in columns II and III is investigated through t-test. Statistical significant difference of means: *** denotes statistically significant difference of means at the 1 % level, ** at 5 % and * at 10 %.

Variable	I		II		
	Total sample	No management ownership (n = 390)	Management owns between 5-25 % (n = 60)	Management owns between 25-50 % (n = 164)	Management owns > 50 % (n = 827)
	Mean (st.dev)	Mean (st.dev)	Mean (st.dev)	Mean (st.dev)	Mean (st.dev)
Bank has rejected loan application	38 % (0.48)	37 % (0.482)	49 % (0.503)	38 % (0.486)	38 % (0.485)
Collateralized loans (%)	93 % (0.250)	84 % (0.367)	96 % (0.192)	96 % (0.200)	98 % (0.088)
Interest rate margin	1.153 % (1.627)	0.994 % (1.609)	1.232 % (1.039 %)	1.885 % (1.611)	1.684 % (1.270)
Total assets	34,336 (242206)	91,873 (439,287)	27,635 (75,253)	6,230 (11,821)	11,807 (70,544)
Return on Assets	16,7 % (0.35)	7.31 % (0.137)	6.84 % (0.111)	20.10 % (0.501)	21.67 % (0.383)
Firm age	18.33 (17.62)	21.2 (19.76)	21.24 (22.00)	14.04 (10.44)	18.01 (17.56)
Debt to assets	78 % (1.38)	76 % (0.611)	77 % (0.227)	77 % (0.227)	75 % (0.629)
Urban location dummy	47 % (0.50)	49 % (0.500)	62 % (0.488)	50 % (0.501)	45 % (0.497)
Number of lending banks	0.89 (0.87)	1.01 (1.233)	1.10 (1.008)	0.74 (0.636)	0.87 (0.709)

Table 2
Loan availability and managerial ownership

Table 2 presents the results from a logit-model where the dependent variable is a dummy variable, which gets the value of one if the firm has been rejected a loan and therefore foregone investments.

	Column I		Column II		Column III	
	Coef.	p	Coef.	p	Coef.	p
Constant	-0.461	0.214	-0.189	0.579	-0.521	0.162
<i>Firm characteristics</i>						
Ln (Total assets)	0.007	0.856	-0.004	0.906	0.010	0.789
Ln (1+ firm age)	-0.116	0.038	-0.105	0.064	-0.113	0.044
Return on Assets	-1.615	0.000	-1.523	0.000	-1.599	0.000
Urban location	-0.137	0.394	-0.151	0.350	-0.139	0.386
Debt to total assets	0.178	0.000	0.169	0.000	0.178	0.000
<i>Management ownership</i>						
Management ownership	0.014	0.024				
Management ownership squared	0.0001	0.067				
# of owners			-0.001	0.000		
Management ownership between 5-25 %					0.501	0.085
Management ownership between 25-50 %					0.414	0.035
Management ownership over 50 %					0.380	0.006
<i>Relationship lending</i>						
# of lending banks	0.692	0.000	0.763	0.000	0.690	0.000
# of banks in county	-0.097	0.076	-0.097	0.076	-0.100	0.068
R ²	0.179		0.191		0.181	
Number of observations	1 520		1 515		1 522	

Table 3
The interest rate spread and managerial ownership

Table 3 presents the results from a regression-model where the dependent variable is the interest rate spread on each individual loan that the company has taken during the research period.

	Column I		Column II		Column III	
	Coef.	p	Coef.	p	Coef.	p
Constant	0.681	0.000	0.757	0.000	0.659	0.000
<i>Firm characteristics</i>						
Ln (Total assets)	-0.083	0.000	-0.084	0.000	-0.080	0.000
Ln (1+ firm age)	-0.005	0.804	-0.014	0.489	-0.006	0.776
Return on Assets	-0.229	0.001	-0.231	0.001	-0.231	0.001
Urban location	0.100	0.076	0.104	0.072	0.102	0.071
Debt to total assets	0.010	0.524	0.011	0.487	0.010	0.526
Collateral dummy	1.616	0.000	1.622	0.000	1.615	0.000
<i>Management ownership</i>						
Management ownership	0.004	0.081				
Management ownership squared	-0.0003	0.091				
# of owners			0.0001	0.264		
Management ownership between 5-25 %					-0.031	0.770
Management ownership between 25-50 %					0.128	0.073
Management ownership over 50 %					0.049	0.320
<i>Relationship lending</i>						
# of lending banks	-0.027	0.246	-0.028	0.241	-0.026	0.256
# of banks in county	-0.014	0.462	-0.016	0.411	-0.014	0.456
R ²	0.454		0.436		0.451	
Number of observations	1 451		1 423		1 431	

Table 4
Collateral requirements and managerial ownership

Table 4 presents the results from a logit-model where the dependent variable is a dummy variable, which takes the value of 1 if the loan has collateral.

	Column I		Column II		Column III	
	Coef.	p	Coef.	p	Coef.	p
Constant	-1.579	0.000	-1.186	0.001	-1.712	0.000
<i>Firm characteristics</i>						
Ln (Total assets)	0.101	0.013	0.073	0.069	0.104	0.011
Ln (1+ firm age)	-0.152	0.014	-0.132	0.034	-0.145	0.020
Return on Assets	-0.902	0.003	-0.820	0.005	-0.899	0.003
Urban location	-0.007	0.969	-0.030	0.864	-0.025	0.886
Debt to total assets	0.097	0.084	0.083	0.167	0.097	0.085
<i>Management ownership</i>						
Management ownership	0.014	0.035				
Management ownership squared	0.000	0.104				
# of owners			-0.001	0.002		
Management ownership between 5-25 %					0.725	0.017
Management ownership between 25-50 %					0.574	0.008
Management ownership over 50 %					0.469	0.003
<i>Relationship lending</i>						
# of lending banks	0.693	0.000	0.763	0.000	0.690	0.000
# of banks in county	-0.175	0.000	-0.172	0.004	-0.171	0.004
R ²	0.180		0.186		0.184	
Number of observations	1 520		1 515		1 522	