

# Does Bank Ownership Increase Firm Value? Evidence from China<sup>\*</sup>

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## Abstract

We present evidence that Chinese banks hold significant shares of Chinese listed companies and appoint board directors at these companies. A bank relationship leads to better access to bank loans yet worse performance, as measured by return-on-assets (ROA) or Tobin's Q. Our findings from this leading emerging market suggest that, consistent with existing evidence from developed economies, bank relationships promote access to bank capital, but in contrast to the developed markets, banks do not seem to exercise better monitoring or promote firm efficiency.

JEL Classifications: G21, G32

Key words: bank relationship, bank ownership, valuation, Chinese financial markets.

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## **Section 1. Introduction**

Banks play a very important role in finance. By determining the availability and interest rate of loans, banks can determine firms' capital structure and cost of capital. In addition, banks monitor the companies that they lend money to, thereby providing important governance oversight to client companies. In many countries, banks go even further in trying to influence company decisions by directly owning company shares and appointing directors (Bris et al. 2006, Gordon and Schmid 2000, Petersen and Rajan 1994, Santos and Rumble 2006).

Despite the variations across the banking system in different markets, extant studies on developed markets generally agree that bank ownership is beneficial to companies (Barth et al. 2006). Bank ownership clearly promotes companies' access to bank capital, which can be extremely valuable during market turmoils (Kang and Shivdasani 1995). In addition, while some theories argue that bank ownership may lead to conflicts of interest (Diamond 1984, Mahrt-Smith 2006), most studies find support for the notion that in developed economies, banks can effectively monitor and discipline borrowers and improve firm performance (Kang et al. 2000, Krozner and Strahan 2001, Welch 1997).

Given relatively scarce bank capital and loose governance in emerging markets, it seems plausible that banks can play an even more important role in such markets. Yet, because of the drastic differences in the legal and cultural landscape between the emerging markets and the developed markets, banks may not be able to play as effective a monitoring role in emerging markets as in developed markets (Barth et al. 2006, Laeven, 2001). Indeed, several studies point out that in emerging market economies, bank

relationships are often politically motivated and come at the cost of loose governance (Cull and Xu 2000, 2005, Tian 2004). Thus, studying how banks influence listed companies' behavior in the context of an emerging market should extend our understanding of the role of banking and corporate governance in such markets.

In the current study, we investigate the practice of banks that own shares of listed companies in China, a leading emerging economy. By utilizing the unique information on bank ownership and board composition at listed companies, we find that Chinese banks hold a considerably large number of listed company shares. Through their holdings, banks get to appoint board directors and vote on important corporate matters.<sup>1</sup>

Consistent with theory and previous literature, such bank ownership benefits the listed companies with better access to debt financing. For instance, companies with bank ownership have significantly higher debt, *ceteris paribus*. However, the enhanced access to bank lending does not seem to improve corporate performance. Using various proxies for operating performance, growth opportunities, and valuation, we find that companies with bank ownership perform worse than those without bank ownership. Our results hold when we control for state ownership and other important firm characteristics.

Our findings contribute primarily to the following two strands of literature. First, we provide novel evidence on how banks influence listed companies in China, one of the most prominent emerging markets. Unlike most emerging economies, China is unique in the sense that its banking sector has remained largely closed to foreign banks. The domestic banks dominated the banking sector during the sample period. Hence, our findings provide new insights into how banks influence listed companies in a setting with

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<sup>1</sup> Several studies document that board characteristics impact corporate decisions in China. See, for example, Fan et al. (2007b), Firth et al. (2006a) and Firth et al. (2006b).

weak corporate governance and little influence from the mainstream western banking system (Allen et al. 2005, Fan et al. 2007a). Such unique evidence relates to the corporate finance literature on how banks monitor borrowers when agency problems are severe (Harvey et al. 2004).

Second, and more importantly, our results extend the literature on how bank relationships influence company performance and value. It remains controversial in the extant literature as to whether the existence of a bank relationship helps firm performance. On the one hand, banks can enhance firm value by providing valuable capital and monitoring (Gordon and Schmid 2000, Kang et al. 2000). On the other hand, a bank relationship may distort management's incentives, induce companies to move away from optimal financial and operational decisions, and hurt company valuation (Berlin et al. 1996, Mahrt-Smith 2006).

The current study confirms the second argument and shows that indeed bank ownership can hurt listed company performance. This result is in line with the studies by Limpahayom and Polwitoon (2004) and Fok et al. (2004) on Thailand and Taiwan, respectively. However, different from previous studies' focus on bank relationships around regional financial crises, we are most interested in understanding how banks affect corporate borrowing practices and influence corporate decisions in relatively stable market conditions. Further, unlike previous studies that investigate bank relationships that rely heavily on information such as conglomerate membership and lending relationship, the current study exploits the unique data on direct bank ownership of companies' shares. Such data extend the literature's understanding of banks' impact on listed companies through a more direct relationship. Finally, distinct from the case of Thailand and Taiwan,

which heavily rely on foreign capital investments and foreign banks, the Chinese financial sector is largely closed during the sample period. While both previous studies stress the role played by foreign banks on local companies, we focus exclusively on domestic banks in the current study.

In sum, our results, along with findings from other developing countries, suggest that whether a bank relationship can increase firm value seems to depend heavily on the institutional background and governance framework in which the banks and firms are located. Banks may be able to enhance firm value in developed economies where laws and business practices enable banks to play a vigilant monitoring role over borrowers. In contrast, bank relationships and ownership can destroy value in emerging markets, where agency problems are far more severe and where banks' monitoring role is compromised by the legal environment.

The rest of the paper proceeds as follows: Section 2 describes the data and summarizes firm characteristics for companies with and without bank ownership; Section 3 explains the empirical methodology, presents the major empirical findings, and discusses the results; and Section 4 concludes.

## **Section 2. Data and Summary Statistics**

We hand-collect data on equity ownership and board composition for all companies listed at the Shanghai Stock Exchange and Shenzhen Stock Exchange, the two stock exchanges in China, between 1994 and 2004. To make sure that there are at least 5 years of observations on each firm, we include only firms that went public by the end of 2000. The SinoFin and CSMAR databases, two widely used databases on Chinese listed

company financial information, publish detailed information on the 10 largest shareholders of each public company traded at the aforementioned stock exchanges. For each company, we collect the identity and percentage ownership of each of the 10 largest shareholders.<sup>2</sup> We then search the Chinese Securities Regulatory Committee (CSRC) filings by each company, public records, and news articles to identify whether one of the top 10 shareholders is a bank.<sup>3</sup> We went through the above public sources to make sure that bank holdings did not come from debt-for-equity swap.

We next hand-collect information on the background of each director on each public company's board and determine whether the board member is an employee of or is appointed by a bank. Such information enables us to determine how many board members at each company are appointed by commercial banks. We draw other supplemental information about financial statements, stock market, and corporate governance from the Sinofin and CSMAR database. Following most existing studies, we exclude financial companies from our sample.

(Insert Table 1 about here)

Our final sample includes 8,763 sample firm-years, for a total of 1,053 companies. We report our sample summary statistics in Table 1, where we divide all observations into two broad categories depending whether there is commercial bank presence among the company's top 10 shareholders. Out of the 8,763 observations, at least one bank is among the 10 largest shareholders in 1,188 of the firm-years (for 172 companies). Figure

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<sup>2</sup> We acknowledge that the shares held by banks can be both tradable and non-tradable shares and believe that it should not have considerable implications to the situations in China during the sample years, when a large fraction of shares of publicly listed companies remained non-tradable.

<sup>3</sup> It is rare that listed companies bank shares so we do not need worry about cross-holding situation as in Japan or South Korea.

1 illustrates the distribution of bank ownership for companies with banks among their top 10 shareholders. Although most of the banks own no more than 5 percent of the listed companies, bank ownership can be as high as 20 percent for about 1 percent of all observations. Considering that the bank loan is the dominant source of corporate financing in China, the bank equity holdings should have an important impact on corporate financing.<sup>4</sup>

(Insert Figure 1 about here)

We next present detailed firm characteristics for firms with and without banks as their leading shareholders in Table 2. Several interesting findings emerge. First and foremost, firm performance is better for firms without bank ownership than those with bank ownership, measured by many common performance criteria: ROA and ROE is much higher for listed companies without bank ownership than those that have bank shareholders. The differences are statistically significant at the 1 percent level. We obtain similar results when using widely used valuation measures such as Tobin's Q and operating profits relative to sales. Such preliminary results are in stark contrast to previous findings from Thailand that suggest bank ownership has little impact on firm performance or valuation (Limpaphayom and Polwitoon 2004).

(Insert Table 2 about here)

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<sup>4</sup> In 1994, total corporate bond issuance amounted to 16.175 billion RMB yuan, and equity issuance in domestic markets was 13.805 billion RMB yuan, both greatly surpassed by the new addition of bank loans of 721.662 billion RMB yuan. In addition, the total market value of tradable shares in domestic markets was 96.482 billion RMB yuan, again much smaller than the amount of total outstanding bank loans of 3362.71 billion yuan. The 2004 statistics paint a very similar picture. (source: China Financial Year Book.)

We find similar patterns when comparing the growth opportunities facing the two types of firms. Again, our summary statistics indicate that firms with banks as leading shareholders witness a lower level of growth (equity growth ratio, asset growth ratio, operating income growth ratio, operating profit growth ratio, and net profit growth ratio) than those firms without bankers as leading shareholders. Further, firms with bank equity ownership also observe less efficient use of their assets, as reflected by a lower level of the asset turnover ratio and fixed asset turnover ratio. Almost all of the differences are significant at the 5 percent level. In addition, we notice considerable differences in DABOOK (the ratio of total debt to total assets) , DAMART (the ratio of total debt to enterprise value, defined as the sum of book value of debt plus market value of equity), DEBOOK (the ratio of debt to book equity value), and DEMART (the ratio of debt to market equity value), several various measure of firm indebtedness, between the two types of companies. Firms with bank ownership employ significantly more debt than other firms.

Finally, there are some marked differences between the two types of companies from the perspective of corporate governance. The largest shareholders hold considerably more company shares for firms without bank ownership (45.24%) than for firms with bank ownership (34.76%). In addition, we find that firms with bank ownership are much less likely to be controlled by the state government (71.8% of the companies) than those without bank ownership (80.2%).<sup>5</sup>

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<sup>5</sup> One possible explanation is that the government sometimes prefer to exercise its control over companies through their lending banks.

(Insert Figure 3 about here)

In addition to the differences in the above firm characteristics, our analysis on board member characteristics reveals that bank ownership has an important influence on the board composition of such companies. Figure 2 shows that a majority of listed companies with bank ownership have board directors affiliated with or appointed by the banks. In contrast, unreported analysis indicates that companies without banks as top shareholders rarely have board members affiliated with or appointed by banks. Clearly, bank ownership translates directly into banks' control and influence over the corporate board, and hence important corporate decision-making (Kaplan and Minton 1994). We further report in Figure 3 that banks hold on average 10-20 percent of board seats (one to two board members on an average board) for companies with banks as leading shareholders. In unreported analysis, we find that a bank may appoint more than one member to a company board, most often when the bank is among the three largest shareholders.

(Insert Figure 3 about here)

### **Section 3. Empirical Methodology and Findings**

#### **3.1 Methodology**

In addition to analyzing the descriptive statistics in the previous section, we perform regression analyses to examine the impact of bank ownership on listed-companies' access to bank loans and on their relative performance. To control for the fact

that bank ownership, access to bank credit, and firm performance may be endogenously determined and influence each other at the same time, we follow the existing literature (Flath 1993, Harvey et al. 2004) and implement a simultaneous system of regressions to estimate their respective impact on each other. We discuss each of the three specifications we use in turn below.

(i) Firm Performance

Performance = constant +  $\beta_1$  \* Bank presence +  $\beta_2$  \* DABOOK +  $\beta_3$  \* Lnasset +  $\beta_4$  \* Age +  $\beta_5$  \* Largest shareholder's ownership +  $\beta_6$  \* State + other control variables + Industry dummies + Year fixed effect.

(1)

In specification (1), we are interested in finding out whether bank ownership enhances or destroys company value. We implement two distinct measures of firm performance, namely, return on assets (ROA) and Tobin's Q. In unreported analysis we also use alternative measures such as return on equity (ROE) and find that the results are very similar. We implement two alternative ways to measure bank ownership in this specification. First, we use a continuous variable of the percentages owned by banks among the top 10 shareholders. In addition, we use a dummy variable that equals 1 if at least one bank is among the 10 largest shareholders for a company, and 0 otherwise. If bank ownership is beneficial to company valuation, we expect a significantly positive  $\beta_1$  (Diamond 1984, Gorton and Schmid 2000, and Limpaphayom and Polwiton 2004). In contrast, if the conflict of interest problem outweighs the benefit of bank monitoring, the coefficient should be significantly negative. In unreported alternative specifications, we include the square of bank ownership to control for the possible non-linear relationship

between bank ownership and firm performance, due to the balance between informational advantage and the conflict of interest problem for the bank (Claessens and Klingebiel 2001). Consistent with the theoretical argument, we indeed find a weak quadratic relationship between bank ownership and firm performance. Such results are available from the authors upon request.

Another variable of interest is DABOOK, i.e., the ratio of debts to assets, which can be heavily influenced by banks' presence as shareholders. We expect a significantly positive (negative)  $\beta_3$  if greater debt can increase (decrease) the performance of Chinese listed companies. Given that the corporate bond market in China remains largely undeveloped, most of the debts that listed companies borrow originate from bank loans. As a result, we use the ratio of debt to assets as a proxy for companies' access to the bank loan market.

Further, we include the following variables that are widely shown to matter to corporate performance: firm size (Lnasset), firm age (Age), ownership of the largest shareholder (Largest), and a dummy variable indicating whether the firm is state-owned (State).<sup>6</sup> We provide a detailed description of the variables in all three specifications in Appendix 1.

## (2) Bank Equity Ownership

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<sup>6</sup> Several studies document that these factors have an effect on firm performance in China. See, for example, Sun et al. (2002) and Sun and Tong (2003).

Bank presence = constant +  $\beta_1$  \* performance +  $\beta_2$  \* DABOOK +  $\beta_3$  \* Lnasset +  $\beta_4$  \* Age +  $\beta_5$  \* Largest +  $\beta_6$  \* State +  $\beta_7$  \* Fix + other control variables + Industry dummies + Year fixed effect

(2)

In Equation (2), we are mainly interested in understanding what influences banks' presence as leading shareholders of the listed companies. In particular, we investigate whether firm performance and indebtedness influences bank ownership among Chinese listed companies. Although it is straightforward that banks probably have incentives to own listed companies with relatively better performance, it is not clear how indebtedness influences bank holdings. Banks may choose to avoid holding companies with more debt to avoid risks, as normal investors might do. On the other hand, if a company incurs most of its debt from a particular bank, the bank may have an incentive to exert more direct influence on the company by direct equity ownership. To be consistent, we use both the dummy variable and the continuous bank ownership variable as the dependent variables and include a similar set of control variables as in Equation (1). We include in this regression an additional variable, Fix, (fixed assets to total assets), which previous studies (Flath 1993, Limpaphayom and Polwitoon 2004) suggest matter to bank ownership.

### (3) Financial Leverage

DABOOK = constant +  $\beta_1$  \* bank presence +  $\beta_2$  \* Lnasset +  $\beta_3$  \* Largest +  $\beta_4$  \* State +  $\beta_5$  \* Intang +  $\beta_6$  \* Profi + Industry dummies + Year fixed effect

(3)

In Equation (3), the dependent variable is DABOOK and the most important independent variable is bank presence so as to understand what influences firm capital

structure. In addition to the control variables used in the previous two specifications, we include two other variables shown to matter to the choice of corporate borrowing. We include the ratio of intangible assets to total assets (Intang) because firms with relatively greater intangible assets are presumed to have weaker collateral. We also include operating profit to sales (Profi) to control for its impact on DABOOK. Understandably, greater profitability (operating earnings/sales) assures a firm of a growing pool of retained earnings, allows it to avoid the costs of external financing. Therefore, profitable firms have lower DABOOK.

### **3.2 Empirical Results**

Table 3 and Table 4 report the three-stage least squares regression results. The major difference between the two tables is that we use return on assets (ROA) to measure performance in Table 3 and Tobin's Q to measure performance in Table 4. The results are mostly consistent across the two tables. Within each table, we report two sets of results: we report results using a dummy variable for a bank being a leading shareholder in the three columns to the left and results using bank ownership in percentage in the three columns to the right. Again, the results are qualitatively the same.

When we first look at Equation (1), the most striking result is that the coefficient on bank ownership is negative and statistically significant at the 1 percent level, implying that bank ownership hurts corporate performance. The relationship between performance and indebtedness is mixed, however, depending on which performance measure we use. The results in Table 3 indicate that the level of firm borrowing hurts firm performance, when measured with ROA. On the other hand, the results are mixed and much weaker in

Table 4, where we use Tobin's Q to measure performance. In sum, there seem to be other forces that influence how bank ownership influences firm borrowing and performance, which we will investigate further in Section 3.3.

Our results are consistent with extant studies on China (Tian 2004, and Tian and Estrin 2007) that document a negative relationship between firm performance and leverage. These studies attribute this relationship to the soft-budget constraint in the Chinese banking sector and weak corporate governance practices resulting from the increased borrowing. On the other hand, these findings contrast with existing findings from the developed markets (Gordon and Schmid 2000) and other emerging markets (Limpaphayom and Polwitoon 2004) that document that bank equity ownership can improve firm performance.

We next turn to Equation (2) to understand what influences banks' decisions to hold listed company shares. Somewhat surprisingly, bank ownership is negatively correlated with firm performance and total debt. While it is understandable for banks to avoid companies with high levels of debt, the institutional background in China is probably responsible for the somewhat perverse negative relationship between performance and bank ownership. During the early days of the Chinese stock market, banks were often introduced as strategic investors to firms with relatively poor performance to help reform these state-owned enterprises. As a result, our findings show that banks are more likely to own shares from companies with relatively poor performance. Further, Equation (2) suggests that it is important to control for the interaction between bank ownership and performance at the same time, as suggested by previous studies (Gordon and Schmid 2000, Harvey et al. 2004).

Finally, the results for Equation (3) confirm our expectation that bank ownership increases the DABOOK of a company, given that almost all of a firm's debt takes the form of bank borrowing. Such findings are consistent with extant results from other markets that bank ownership encourages more borrowing from banks. In unreported analysis, we use different proxies for financial leverage, including DAMART (debt to book value of debt plus market value of equity), DEBOOK (debt to book value of equity), and DEMART (debt to market value of equity), and the results are similar.

### **3.3. Discussion**

Our findings so far suggest that bank ownership in China can destroy firm value. Although not the focus of the paper, we feel that it is interesting to explore why, unlike the findings in relation to other countries, bank ownership destroys value. Previous findings from developed markets such as the U.S. point out that investment policy is an important factor that determines firm performance and valuation. McConnell and Servaes (1995) examine the relationship between corporate value and leverage with a cross-section of U.S. firms and find that higher leverage leads to lower corporate value among companies with many investment opportunities. They conclude that for their sample of U.S. firms, bank monitoring varies depending on firm characteristics and investment opportunities.

Similarly, bank ownership may influence company investment policy and further corporate valuation. We next examine how bank ownership affects firm investment, which in turn influence firm operation. As firm investment and bank presence in the firm may be dependent on each other, we again employ simultaneous regression models to

disentangle the relationship. First, we adopt regressions in the left two columns in Table 5 and report the results from a simultaneous regression of firm investment and bank ownership. Consistent with our conjecture, we find that the relatively higher level of borrowing resulting from bank ownership induces companies to invest more. The last column of Table 5 reports a firm fixed effects regression of firm performance on firm investment, bank presence, and the interaction of investment with bank presence. We find that the coefficient on investment is positive, suggesting that investment increases performance. More interestingly, the coefficient on the interaction of investment and bank presence is significantly negative, suggesting that when a bank is among the leading shareholders, investment actually leads to worse performance.

Together with the previous results that firms with bank ownership tend to invest more, this analysis in table 4 indicates that the availability of cheap bank financing works against listed companies in China as such cheap financing leads companies to invest (irresponsibly) in projects with negative net present value. Moreover, it does not appear that banks exercise sufficient monitoring over the companies to avoid these unprofitable investment projects and hence they fail to provide the needed governance over the companies that they own.

#### **Section 4. Conclusions**

We use detailed information on bank ownership and board composition of Chinese listed companies to understand banks' decision to directly own shares of listed companies and its implications. We find that it is common for commercial banks to own shares of listed companies in China. Given that the banks are free to liquidate their

holdings in the listed companies, our study provides new insights into banks' decision to hold shares of listed companies in one of the leading emerging economies. We show that similar to the practices in many other countries, bank ownership encourages bank borrowing and the level of indebtedness. However, in contrast to the belief that bank ownership and the related borrowing access helps firms invest in more profitable investment opportunities, our results suggest that direct bank ownership hurts company performance, possibly due to inefficient borrowing and investment.

Given the increasing evidence on bank ownership and firm performance in emerging markets, we believe that it is important to bear in mind that the extent to which banks play the role of monitoring over companies varies depending on the general legal and political background. More studies should be devoted to understanding the costs and benefits of direct bank ownership in the context of a broader range of markets.

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**Table 1. Sample Description**

Year	Panel A			Industry	Panel B		
	total	with banks	without banks		total	with banks	without banks
1994	290	72	218	Farming and forestry	194	15	179
1995	306	87	219	Mining	79	8	71
1996	509	133	376	Manufacturing	4,856	450	4,406
1997	714	144	570	public utility	341	75	266
1998	819	139	680	Construction	128	2	126
1999	916	132	784	Transportation	293	45	248
2000	1,052	116	936	Information Tech.	452	70	382
2001	1,050	102	948	trading business	848	183	665
2002	1,042	96	946	real estate	371	63	308
2003	1,037	89	948	Service	311	62	249
2004	1,028	78	950	Communications	91	24	67
				others	799	191	608
total	8,763	1,188	7,575	total	8,763	1,188	7,575

**Table 2. Summary Statistics**

Summary statistics for the sub-sample of firms with bank ownership and the sub-sample of firms without bank ownership. All variables are defined in Appendix 1. The last two columns test whether there is a significant difference between the mean/median of the sub-samples of firms with and without bank ownership. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% level, respectively.

	Firm with bank ownership			Firm without bank ownership			t-statistic	Wilcoxon test
	N	mean	median	N	mean	median		
Performance measures								
ROA	1188	0.021	0.038	7575	0.035	0.041	5.70***	3.86***
ROE	1188	0.016	0.064	7575	0.053	0.076	5.49***	5.54***
Tobin's Q	1188	2.825	2.461	7575	3.010	2.560	3.19***	2.62***
Operating profit/sales	1188	0.177	0.147	7575	0.217	0.195	7.32***	9.24***
Equity growth ratio	1085	0.064	0.051	6790	0.088	0.048	2.31**	1.02
Profit margin	1178	-0.047	0.064	7542	0.022	0.073	4.29***	1.99**
Financial leverage								
DABOOK	1188	0.495	0.476	7575	0.460	0.448	-5.32***	-4.42***
DAMART	1188	0.244	0.216	7575	0.230	0.195	-2.83***	-3.85***
DEBOOK	1188	1.240	0.849	7575	1.097	0.793	-3.73***	-2.63***
DEMART	1188	0.407	0.276	7575	0.376	0.242	-2.26***	-3.83***
Growth opportunities								
Asset growth ratio	1085	0.123	0.084	6790	0.149	0.097	2.92***	3.18***
Operating income growth ratio	1070	0.150	0.051	6753	0.229	0.126	3.85***	6.78***
Operating profit growth ratio	1039	-0.591	-0.092	6686	-0.389	-0.048	1.33	1.95*
Net profit growth ratio	1074	-1.241	-0.046	6765	-0.790	-0.016	2.44***	2.23**

Asset characteristics								
Inventory and gross fixed asset/total asset	1188	0.530	0.512	7575	0.563	0.546	4.51***	4.27***
Intangible asset/total asset	1188	0.042	0.021	7575	0.032	0.016	-6.76**	-5.77***
Net fixed asset/total asset	1188	0.276	0.247	7575	0.282	0.257	1.13	1.59
Control variables								
Age	1188	8.16	8.000	7575	7.520	7.00	-5.46***	-5.62***
Lnasset	1188	20.71	20.62	7575	20.87	20.82	5.44***	5.81***
Current ratio	1109	1.613	1.275	7654	1.736	1.409	3.19***	5.67***
Asset utilization								
Asset turnover	1178	0.590	0.426	7544	0.633	0.501	2.73***	6.12***
Fixed asset turnover	1178	2.821	1.448	7544	3.134	1.614	1.98**	3.81***
Ownership and board characteristics								
Largest State	1109	34.76	32.20	7654	45.24	44.77	19.2***	19.0***
	1188	0.718	1	7575	0.802	1	-6.66***	-6.64***
Size of board of directors	1188	10.35	10	7575	9.59	9	-9.60***	-9.35***
Number of bankers on the board	1188	1.19	1	7575	0.01	0	-88.6***	-75.5***
Percentage of seats on board hold by bankers	1188	11.86	11.111	7575	0.123	0.00	-89.4***	-75.4***

**Table 3. Simultaneous Regressions of ROA, Bank Presence, and Leverage**

Three-stage least squares analysis of the jointly determined system (ROA, DABOOK, and Bank/ Bankshare). ROA is return on assets. Bank is a dummy variable that equals 1 if the bank holds shares in the firm, and 0 otherwise. Bankshare is the percentage of equity ownership held by the bank. DABOOK is debt to assets. All other variables are defined in Appendix 1. z-statistics are reported in parentheses. Models include unreported industry and year dummies where indicated. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% level, respectively.

	Three-stage least squares (1)			Three-stage least squares (2)		
	Eq. (1) ROA	Eq. (2) Bank	Eq. (3) DABOOK	Eq. (1) ROA	Eq. (2) Share	Eq. (3) DABOOK
ROA		-1.654 (-1.42)			<b>-11.32***</b> (-4.36)	
Bank	<b>-0.363***</b> (-6.79)		<b>0.972***</b> (5.96)			
Bankshare				<b>-0.082***</b> (-5.91)		<b>0.063***</b> (2.72)
DABOOK	<b>-0.411***</b> (-13.81)	-0.503 (-0.79)		<b>-0.422***</b> (-11.17)	<b>-4.767***</b> (-3.34)	
Lnasset	<b>0.025***</b> (14.39)	<b>0.046*</b> (1.85)	-0.006 (-1.02)	<b>0.018***</b> (8.49)	<b>0.201***</b> (3.34)	<b>0.014***</b> (4.55)
Age	<b>0.007***</b> (10.47)	<b>0.014**</b> (2.23)		<b>0.006***</b> (8.29)	<b>0.088***</b> (5.50)	
Largest	<b>-0.001***</b> (-4.59)	<b>-0.002***</b> (-5.54)	<b>0.002***</b> (3.50)	<b>-0.001***</b> (-4.60)	<b>-0.017***</b> (-9.98)	0.000 (0.44)
State	<b>-0.014***</b> (-4.00)	<b>-0.031*</b> (-1.77)	0.001 (0.12)	-0.004 (-0.89)	-0.038 (-0.56)	<b>-0.025***</b> (-3.73)
Fix		<b>0.124***</b> (3.32)			-0.072 (-1.51)	
Intang			<b>-0.236*</b> (-1.84)			<b>0.118*</b> (1.89)
Profi			<b>-0.228***</b> (-6.53)			<b>-0.327***</b> (-15.44)
Industry	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Number of observations	8763	8763	8763	8763	8763	8763
Chi <sup>2</sup>	999.37	1228.64	464.68	606.09	630.91	1307.22
p-value	0.000	0.000	0.000	0.000	0.000	0.000

**Table 4. Simultaneous Regressions of Tobin's Q, Bank Presence, and Leverage**

Three-stage least squares analysis of the jointly determined system (Tobin's Q, DABOOK, and Bank/ Bankshare). Tobin's Q is the market value of equity plus the book value of debt divided by the book value of assets. Bank is a dummy variable that equals 1 if the bank holds shares in the firm, and 0 otherwise. Bankshare is the percentage of equity ownership held by the bank. DABOOK is debt to assets. All other variables are defined in Appendix 1. z-statistics are reported in parentheses. Models include unreported industry and year dummies where indicated. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% level, respectively.

	Three-stage least squares (1)			Three-stage least squares (2)		
	Eq. (1) Q	Eq. (2) Bank	Eq. (3) DABOOK	Eq. (1) Q	Eq. (2) Share	Eq. (3) DABOOK
Q		<b>-0.215**</b> (-2.47)			<b>-0.507*</b> (-1.80)	
Bank	<b>-1.661**</b> (-2.44)		<b>2.357***</b> (9.47)			
Bankshare				<b>-0.414***</b> (-3.01)		<b>0.419***</b> (5.53)
DABOOK	<b>0.161</b> (0.68)	<b>-2.786**</b> (-2.51)		<b>0.179***</b> (0.94)	<b>-7.342**</b> (-2.06)	
Roa		<b>-4.081***</b> (-2.82)			<b>-12.416***</b> (-2.66)	
Lnasset	<b>-0.990***</b> (-44.78)	<b>-0.106*</b> (-1.72)	<b>-0.035***</b> (-3.12)	<b>-1.016***</b> (-51.15)	-0.261 (-1.26)	0.017 (1.50)
Age	0.012 (1.48)	<b>0.035***</b> (3.04)		0.010 (1.55)	<b>0.088***</b> (5.50)	
Largest	<b>0.005**</b> (2.47)	-0.000 (-0.17)	<b>0.007***</b> (6.90)	0.002 (0.52)	<b>-0.013***</b> (-3.47)	<b>0.008***</b> (4.57)
State	<b>-0.208***</b> (-4.60)	<b>-0.106***</b> (-2.83)	0.035 (1.51)	<b>-0.159***</b> (-3.62)	-0.179 (-1.42)	-0.030 (-1.19)
Fix		<b>-0.207**</b> (-2.26)			<b>-0.693**</b> (-2.31)	
Intang			<b>-1.120***</b> (-4.84)			<b>-0.429*</b> (1.91)
Profi	<b>1.249***</b> (10.23)		-0.071 (-1.11)	<b>1.217***</b> (9.40)		<b>-0.125*</b> (-1.66)
Industry	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Number of observations	8763	8763	8763	8763	8763	8763
Chi <sup>2</sup>	5395.95	252.71	203.09	5241.92	497.07	119.56
p-value	0.000	0.000	0.000	0.000	0.000	0.000

**Table 5 Regression of Investment, Bank Presence, and Firm Performance**

A three-stage least squares analysis of the jointly determined system (Investment, and Bank) and a firm fixed effects analysis of the dependant variable ROA are reported in models (1) and (2), respectively. Inv is capital investment divided by total assets. ROA is return on assets. Bank is a dummy variable that equals 1 if the bank holds shares in the firm, and 0 otherwise. Bank× Inv is the interaction term of Inv with Bank. All other variables are defined in Appendix 1. Model (1) reports the estimated coefficients from a jointly determined system in Eqs. (1)-(2). z-statistics are reported in parentheses. Model (2) reports the result from a firm fixed effects model. t-statistics are reported in parentheses. Models include unreported industry and year dummies where indicated. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% level, respectively.

	Three-stage least squares (1)		Fixed effects regressions (2)
	Eq. (1) Investment	Eq. (2) Bank	ROA
Inv		<b>-0.071**</b> (-2.78)	<b>0.018***</b> (6.19)
Bank	<b>3.033**</b> (3.52)		<b>-0.010*</b> (-1.76)
Bank× Inv			<b>-0.027**</b> (-2.45)
DABOOK		<b>0.052***</b> (3.48)	<b>-0.227***</b> (-42.08)
Q	<b>0.036***</b> (2.70)	<b>-0.012***</b> (-4.70)	
Lnasset		0.002 (0.89)	
Age	<b>-0.033***</b> (-3.40)	<b>0.009***</b> (6.65)	
Largest	<b>0.007**</b> (3.21)	<b>-0.003***</b> (-10.43)	<b>0.001**</b> (5.08)
State	<b>0.063*</b> (1.81)	<b>-0.106**</b> (-2.83)	<b>-0.009**</b> (-2.48)
Fix		<b>0.114***</b> (8.28)	
Sales	<b>-0.016*</b> (-1.73)		
Cash	<b>0.482***</b> (11.43)		
Industry	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled
Number of observations	7709	7709	7709
Chi <sup>2</sup>	1017.36	238.65	115.08
p-value	0.000	0.000	0.000

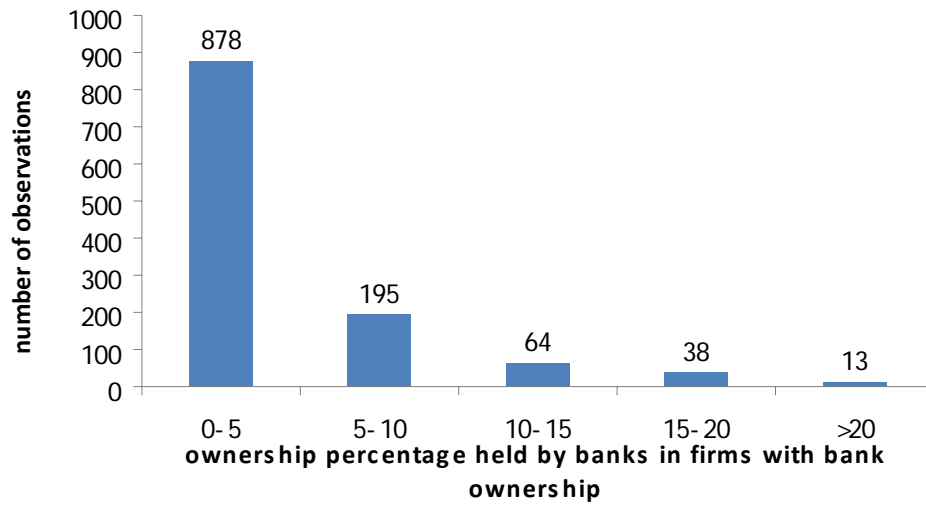


Figure 1. Distribution of bank ownership in listed firms with bank ownership

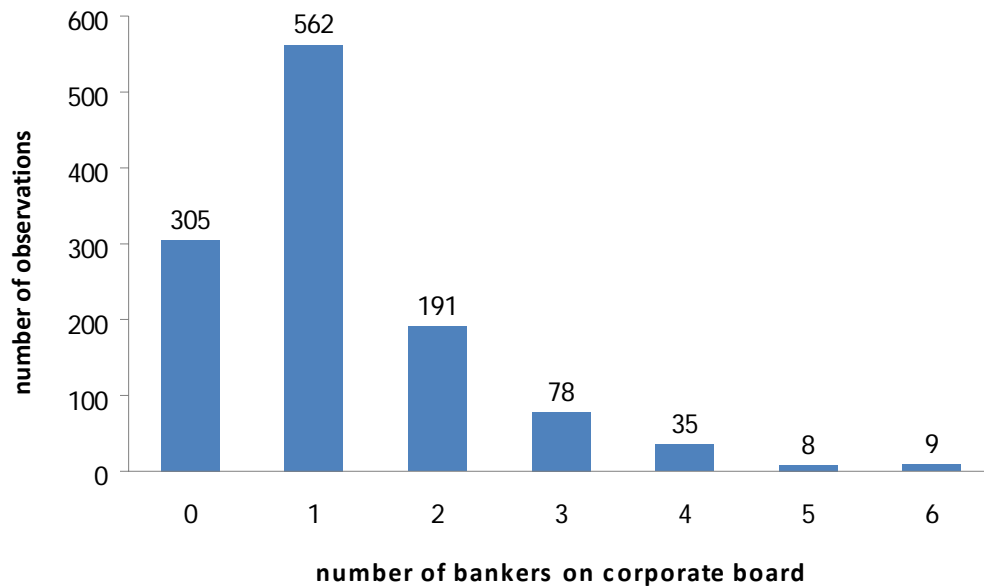


Figure 2. Distribution of number of bankers on board of directors in firms with bank equity ownership

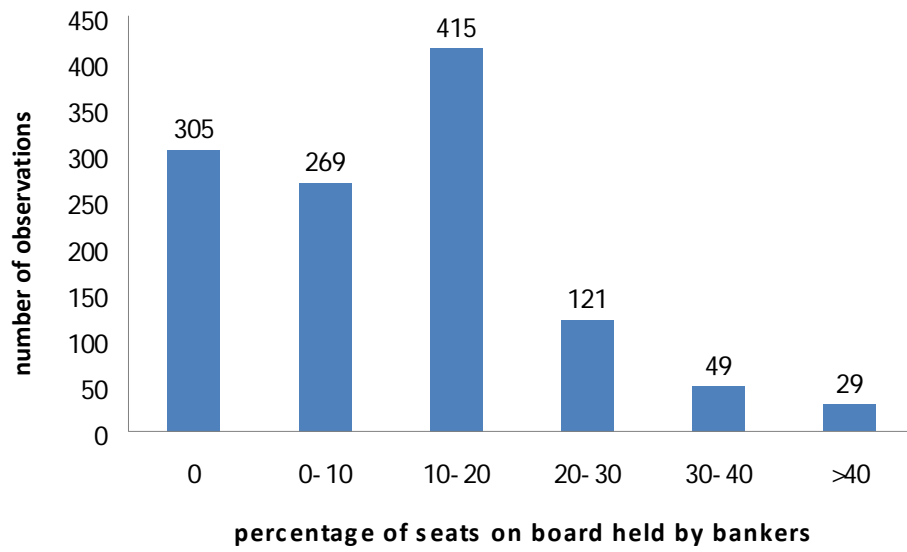


Figure 3. Distribution of bank-affiliated board directors in firms with bank equity ownership

Appendix 1. Description of variables

Variables	Descriptions
Bank participation (BANK)	Dummy variable that equals 1 if the bank holds shares in the firm, and 0 otherwise.
Bank ownership (BANKSHARE)	Percentage of equity ownership held by bank.
Return on Asset (ROA)	Net income divided by total assets.
Return on Equity (ROE)	Net income divided by shareholders' equity.
Tobin's Q (Q)	Market value of equity plus book value of debt divided by book value of total assets.
DABOOK	The ratio of total debt to total assets.
DAMART	Debt to book value of debt plus market value of equity.
DEBOOK	Debt to equity (book value).
DEMART	Debt to equity (market value).
Collateral Assets (FIX)	Ratio of net fixed assets to total assets.
Size (LNAEEST)	Natural logarithm of total assets.
Profitability (Profi)	Ratio of operating profit to sales.
Intangible Asset (INTANG)	Ratio of intangible assets to total assets.
Firm age (AGE)	Number of years since the firm was founded.
Ownership structure(LARGEST)	Percentage of equity ownership held by the largest shareholder.
State owned enterprise (STATE)	Dummy variable that equals 1 if the firm is state owned, and 0 otherwise.
Investment (INV)	Investment in year t divided by total assets in year t-1.
Sales revenue (SALES)	Sales revenue in year t divided by total assets in year t.
Cash flow (Cash)	The amount of cash flow in year t divided by total assets in year t.
Equity growth ratio	$(\text{Firm equity in year } t - \text{Firm equity in year } t-1) / \text{Firm equity in year } t-1$ .
Operating profit/sales	Operating profit/sales.
Profit margin	Gross profit/sales.
Asset growth ratio	$(\text{Firm assets in year } t - \text{Firm assets in year } t-1) / \text{Firm assets in year } t-1$ .
Operating income growth ratio	$(\text{Firm operating income in year } t - \text{Firm operating income in year } t-1) / \text{Firm operating income in year } t-1$ .
Operating profit growth ratio	$(\text{Firm operating profit in year } t - \text{Firm operating profit in year } t-1) / \text{Firm operating profit in year } t-1$ .
Net profit growth ratio	$(\text{Firm net profit in year } t - \text{Firm net profit in year } t-1) / \text{Firm net profit in year } t-1$ .
Inventory and gross fixed asset/total	Inventory and gross fixed assets/total assets.

asset	
Asset turnover	Net sales/assets.
Fixed asset turnover	Net sales/fixed assets.
Current ratio	Current assets/current liabilities.
Size of board of directors	Number of directors on board.
Number of bankers on the board	Number of bankers on the board.
Percentage of seats on board held by bankers	Percentage of seats on board held by bankers.