



Emerging Markets Group

EMG Working Paper Series

WP-EMG-01-2009

***'Does Bank Ownership Increase Firm Value?
Evidence from China'***

Xiaochi Lin, Yi Zhang and Ning Zhu

January 2009

Emerging Markets Group
Cass Business School
City University
106 Bunhill Row
London
EC1Y 8TZ
UK

www.cass.city.ac.uk/emg/

Does Bank Ownership Increase Firm Value? Evidence from China

Xiaochi Lin

Guanghua School of
Management
Peking University
Beijing, 100027
China

Yi Zhang

Guanghua School of
Management
Peking University
Beijing, 100027
China

Ning Zhu*

Graduate School of
Management
UC Davis
Davis, CA 95616
USA

ABSTRACT

Direct bank ownership of company shares is believed to benefit borrowing companies in developed markets. However, little is known about how such bank relationship works in emerging markets, where the relative costs and benefits of such practice become less straightforward due to loose institutional background and weak governance. Utilizing novel data on bank equity ownership and board structure of listed companies in China, one of the leading emerging markets, we find that: 1. banks hold considerable shares of listed companies; 2. banks appoint board members through equity holdings; 3. bank ownership promotes company access to bank capital; 4. companies with banks as leading shareholders witness relatively poor operating performance. Such results are robust with alternative performance measures, industries, and sample periods. Further analysis indicates that inefficient investments resulting from bank ownership are responsible for the disappointing performance. Our results provide new insights to the debate regarding the merits of bank equity ownership of companies and emphasize how banking and corporate finance behave differently in emerging markets due to their unique institutional background.

JEL Classifications: G21, G32

Key words: banking, bank ownership, valuation, emerging markets, Chinese financial markets.

* Ning Zhu can be reached at 530-752-3871 (phone), 530-752-2924 (fax) or nzhu@ucdavis.edu (email)

Does Bank Ownership Increase Firm Value? Evidence from China

ABSTRACT

Direct bank ownership of company shares is believed to benefit borrowing companies in developed markets. However, little is known about how such bank relationship works in emerging markets, where the relative costs and benefits of such practice become less straightforward due to loose institutional background and weak governance. Utilizing novel data on bank equity ownership and board structure of listed companies in China, one of the leading emerging markets, we find that: 1. banks hold considerable shares of listed companies; 2. banks appoint board members through equity holdings; 3. bank ownership promotes company access to bank capital; 4. companies with banks as leading shareholders witness relatively poor operating performance. Such results are robust with alternative performance measures, industries, and sample periods. Further analysis indicates that inefficient investments resulting from bank ownership are responsible for the disappointing performance. Our results provide new insights to the debate regarding the merits of bank equity ownership of companies and emphasize how banking and corporate finance behave differently in emerging markets due to their unique institutional background.

JEL Classifications: G21, G32

Key words: banking, bank ownership, valuation, emerging markets, Chinese financial markets.

1. Introduction

Banks play very important roles in finance by determining the availability and cost of credit. The availability and cost of credit, in turn, determine company capital structure and cost of capital. In addition to their role of facilitating capital flows, banks also monitor their debtors, thereby providing valuable governance oversight to the entire economy.

In many countries, banks extend their control and monitoring of debtors by directly owning company shares and appointing directors (Bris et al. 2006; Gorton and Schmid 2000; Petersen and Rajan 1994; Santos and Rumble 2006). While most extant studies on developed markets agree that direct bank ownership provides better capital access to and better monitoring on companies (Diamond 1984; Barth et al. 2006), things are more complex in emerging markets. First, by being lenders and shareholders at the same time, banks face apparent conflict of interest and may favor their own interests at the expense of general shareholders. Such problems may be particularly serious in emerging markets, where bank credit is scarce and highly valuable and corporate governance at banks and companies are similarly weak (Cull and Xu, 2000; Tian 2004).

The current study intends to provide new evidence regarding the pros and cons of direct bank ownership of companies by investigating the practice of banks ownership of listed companies in China, a leading emerging economy. By utilizing 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.¹

As to whether bank ownership benefits the companies, we find that, consistent with theory and previous literature, bank ownership benefits the listed companies with better access to debt financing. Companies with bank ownership have significantly higher debt, *ceteris paribus*, than those without bank ownership. For example, the debt to asset ratio is 3.5 percentage higher for companies with banks as leading shareholders than for those without banks (49.5 versus 46 percent).

However, the enhanced access to bank lending does not seem to improve corporate performance in China. 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, use alternative proxies for performance, and use sub-samples of different sectors and time periods.

Our preliminary exploration of the causes behind such under-performance suggests that the relatively easy access to bank loans encourages firms to engage in sub-optimal investments. Firms with leading bank shareholders make significantly more investments than those without. At the same time, despite the general positive relationship between investment and firm performance, investment level at companies with leading bank shareholders relates negatively with performance measures (i.e. return-on-asset). Such findings suggest that banks do not seem to exercise enough monitoring

¹ 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).

over their loans to affiliated companies. As a result, the better access to bank loans these listed companies enjoy turns into a doubled-edged sword and hurts firm performance.

The current study makes two primary contributions to the literature. First, we provide some new evidence on the effect of banks owning listed companies in emerging markets. Because emerging markets contrast drastically with developed markets in terms of institutional background (such as law, legal enforcement, government quality, etc.), new evidence is needed on the relationship between listed companies and banks from emerging markets. Our findings are important not because they describe banking systems in emerging markets, but also because they put the relationship between banks and companies in a global context.

Perhaps more importantly, our paper contributes to the debate on the efficacy of bank ownership on firm performance. Our findings suggest that direct bank ownership in emerging markets may not be as attractive an option as it is in developed markets, at least on the basis of firm performance. We conjecture that the relatively weak monitoring mechanism and relatively under-developed banking system are responsible for our findings. Such results underline the importance of the monitoring roles that banks play in developed markets and of the interaction between the banking sector and institutional background in emerging markets.

The rest of the paper proceeds as follows: Section 2 reviews the extant literature; Section 3 describes the data and summarizes firm characteristics for companies with and without bank ownership; Section 4 explains the empirical methodology, presents the major empirical findings, and discusses the results; and Section 5 concludes.

2. Literature Review

Given the influence of banks on several crucial corporate operation decisions, such as credit availability, cost of capital, and capital structure, corporate finance and banking literature has long found the relationship between banks and listed companies an interesting and important topic. Despite the variations across the banking systems 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 turmoil (Kang and Shivdasani 1995). In addition, while some theories argue that bank ownership may lead to conflicts of interest (Diamond 1984; Mahrt-Smith 2006; Welch, 1997), most studies support the notion that banks can effectively monitor and discipline borrowers and improve firm performance, at least in developed markets (Kang et al. 2000; Krozner and Strahan 2001; Bris et al. 2008).

Given the 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. At the same time, because of the drastic differences in the legal and cultural landscape between the emerging markets and the developed markets, it is naive to assume that banks voluntarily play as effective monitoring roles in emerging markets as they do in developed markets (Barth et al. 2006; Laeven, 2001). Indeed, several studies point out that in emerging 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 through direct ownership in the context

of an emerging market should extend our understanding of the role of banking and corporate governance in such markets.

The first objective of the paper is to bridge the gap in the banking literature between developed and emerging markets by providing novel evidence on how banks influence listed companies in China, one of the most prominent emerging markets. China is representative of the rest of the emerging markets in that it shares many similarities with other emerging markets in legal enforcement, government quality, and regulatory backdrop. On the other hand, unlike many other 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 weak corporate governance and little competition from the mainstream global banking franchise (Allen et al. 2005; Fan et al. 2007a).

Second, and probably more importantly, our results extend the literature on how bank relationship influences company performance and value. It remains controversial in the extant literature as to whether the existence of a bank relationship helps firm performance. On one hand, banks can enhance firm value by providing valuable capital and monitoring (Gorton and Schmid 2000; Kang et al. 2000). On the other, 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). Given that existing studies show that how banks monitor borrowers depends on the severity of the agency problem (Harvey et al. 2004), our

evidence from a leading emerging market adds new insights into optimal market design and contracting of lending in the emerging markets.

Our findings from China seem to support the view that bank ownership is not always beneficial and can indeed hurt the performance that banks own, consistent with other studies in Asia (Limpahayom and Polwitoon (2004) on Thailand and Fok et al. (2004) on Taiwan, respectively). Unlike previous studies' focus on firm and bank behavior during market turmoil and financial crisis, we are most interested in understanding how banks affect corporate borrowing practices and influence corporate decisions in relatively stable market conditions.

Whereas previous studies 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 rely heavily 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 the impact of 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 depends 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 monitoring by banks is compromised by the legal environment.

Finally, our preliminary exploration suggests that one possible reason for the disappointing performance of bank-owned companies may be their easy access to bank capital and the lack of monitoring exercised by banks. It seems that the dual role played by banks as both creditors and leading shareholders hinder them from effectively checking on firm investment decisions. It is worth noting that such results are preliminary due to our data limitation, and future studies are needed to draw definitive answers as to why banks have distinct impact on firm valuations in developed and emerging markets.

3. Data and Summary Statistics

We combine data from different sources in the current study. The most unique feature of our data is that 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. 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.² 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

² 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. Consider this alternative: While shares held by banks are generally both tradable and nontradable, during our sample years in China, most shares of publicly listed companies were nontradable.

bank.³ We went through the above public sources to make sure that bank holdings did not come from debt-for-equity swap in state-owned-enterprise reform. To make sure that there are at least 5 years of observations and to facilitate empirical study, we include only firms that went public by the end of 2000.

In addition, we also 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. The above data on bank ownership and board composition together help depict a clear picture on bank ownership in China.

We draw other supplemental information about financial statements, stock market returns, 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)

Panel A of Table 1 reports the number of firms with and without bank ownership within respective sample years and Panel B reports the distribution of firms with and without bank ownership across various industries. Our final sample includes 8,763 sample firm-years, for a total of 1,053 companies. We divide all observations into two broad categories. If at least one commercial bank is among a company's top 10 shareholders, we define the company as bank-owned. We define a company as not-bank-owned if none of the company's top 10 shareholders is a bank.

³ It is rare that listed companies own bank shares in our sample years, so we do not need worry about cross-holding situations as in Japan or South Korea.

Table 1 reveals that there are 1,188 observations (172 companies) of bank-owned companies, out of the 8,763 firm-year observations. Panel A of Table 1 suggests that, as the total number of listed companies increases, the fraction of companies with banks as shareholders decreases over time. This is consistent with prior argument that banks play a greater role in the early stage of securitization reform of leading state-owned enterprises in China. Panel B of Table 1 shows that the pattern is quite similar across most industries, with banks among leading shareholders for about 15 percent of all companies. Two notable exceptions are the farming and forestry industries and construction industry, two sectors with arguably the least government intervention and, hence, fewer policy-motivated bank operations.

Figure 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, we expect such bank equity ownership to have considerable impact on corporate financing decisions.⁴

(Insert Figure 1 about here)

We next contrast a wide range of firm characteristics for firms with and without banks as their leading shareholders in Table 2. Several interesting findings emerge. First

⁴ 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.) Should this appear in the References?

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 (0.035 and 0.053) than those that have bank shareholders (0.021 and 0.016). The differences are statistically significant at the 1 percent level. We obtain similar results when commonly used valuation measures, such as Tobin's Q and operating profits relative to sales. Such preliminary results are in stark contrast to previous studies on Thailand, which find that bank ownership has little impact on firm performance or valuation (Limpahayom and Polwitoon, 2004).

(Insert Table 2 about here)

We find similar patterns when comparing the growth opportunities facing the two types of firms. 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 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), and several various measures of firm indebtedness between the two types of companies. Firms with bank ownership employ significantly more debt than other firms.

Finally, the two types of companies show marked differences from the perspective of corporate governance. The largest shareholders hold considerably more company shares for firms without bank ownership (45.24%) than those with bank ownership (34.76%). 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%).⁵

(Insert Figure 2 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 a bank's control and influence over the corporate board and, hence, over important corporate decision-making (Kaplan and Minton, 1994). We further report in Figure 3 that banks hold on average 10 to 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.

⁵ One possible explanation is that the government sometimes prefers to exercise its control over companies through their lending banks.

(Insert Figure 3 about here)

4. Empirical Methodology and Findings

4.1 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, conditional on banks' tendency to own shares in such companies in the first place. Following the practice of the existing literature (Flath 1993; Fok et al. 2004; Harvey et al. 2004), we implement a three-stage least square (3SLS) estimation on the above three aspects at the same time.

Prior studies have argued that the three-stage least square (3SLS) approach has the following three advantages over the alternative OLS regression methods. First, the 3SLS framework enables one to directly deal with the problem that bank ownership, access to bank loans, and firm performance are all endogenously determined. Addressing this endogeneity complication is important for us to identify the causality of the empirical relationship. Second, the 3SLS estimator satisfies the requirement for a good instrument variable (IV) in that it correlates with the endogenous explanatory variable but does not correlate with the error term in the explanatory regressions. Finally, Greene (2002) and Wooldridge (2000) demonstrate that the 3SLS estimator is asymptotically efficient, making it a ready candidate for maximum-likelihood estimations. For our panel

regression setting, 3SLS is particularly attractive compared with the simple seemingly unrelated regressions (SUR) method because it provides better identification in estimation and facilitates the interpretation of our results.

We next provide details on each of the three specifications that we use in turn.

(i) Firm Performance

$$\text{Performance} = \delta + \beta_1 * \text{Bank presence} + \beta_2 * \text{DABOOK} + \beta_3 * \text{Lnasset} + \beta_4 * \text{Age} + \beta_5 * \text{Largest shareholder's ownership} + \beta_6 * \text{State} + \Sigma I + \Sigma Y. \quad (1)$$

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 distinct ways to measure bank ownership in this specification. One way that we use is a continuous variable of the percentage of total shares owned by banks among the top 10 shareholders. The other measure that we use is a dummy variable that equals 1 if at least one bank is among the 10 largest shareholders at a company and 0 otherwise. If bank ownership is beneficial to company valuation, we expect a significantly positive β_1 (Diamond 1984; Gorton and Schmid 2000; and Limpahayom

and Polwitoon 2004). In contrast, if the conflict of interest problem outweighs the benefit of bank monitoring, the coefficient should be significantly negative.⁶

Another variable of interest is DABOOK, the ratio of debts to assets, which can be heavily influenced by a bank's presence as a shareholder. We expect a significantly positive (negative) β_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.

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).⁷ δ is regression constant and ΣI and ΣY are industry and year dummies, respectively. We provide a detailed description of the variables in all three specifications in Appendix 1.

(2) Bank Equity Ownership

⁶ In an alternative specification, we include a quadratic term of bank ownership. Consistent with the theoretical argument that conflict of interest may cause a non-linear relationship between bank ownership and firm performance (Claessens and Klingebiel 2001), we find a weak quadratic relationship between bank ownership and firm performance. Such results are available from the authors upon request.

⁷ 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).

$$\text{Bank presence} = \delta + \beta_1 * \text{performance} + \beta_2 * \text{DABOOK} + \beta_3 * \text{Lnasset} + \beta_4 * \text{Age} + \beta_5 * \text{Largest} + \beta_6 * \text{State} + \beta_7 * \text{Fix} + \Sigma I + \Sigma Y. \quad (2)$$

In Equation (2), we are mainly interested in understanding what influences a bank's presence as a leading shareholder of a listed company. In particular, we investigate whether firm performance and indebtedness influence bank ownership among Chinese listed companies. Although it is straightforward that banks probably have incentives to own listed companies with relatively better performance for better returns, it is not straightforward how indebtedness influences bank holdings. Banks may choose to shun holding companies with more debt to avoid risks, as normal investors might do. However, 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 with Equation (1), we use both the dummy variable and the continuous bank ownership variable as the dependent variables for bank ownership and include a similar set of control variables. We include in this regression an additional variable, Fix, (fixed assets to total assets), which previous studies (Flath 1993; Limpahayom and Polwitoon 2004) suggest to be important to bank ownership.

(3) Financial Leverage

$$\text{DABOOK} = \delta + \beta_1 * \text{bank presence} + \beta_2 * \text{Lnasset} + \beta_3 * \text{Largest} + \beta_4 * \text{State} + \beta_5 * \text{Intang} + \beta_6 * \text{Profi} + \Sigma I + \Sigma Y. \quad (3)$$

In Equation (3), the dependent variable is DABOOK, and the most important independent variable for understanding what influences firm capital structure is bank presence. 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 and allows it to avoid the costs of external financing. Therefore, profitable firms should have lower DABOOK.

Other variables may influence bank ownership of listed companies. For example, banks with better reputation or higher quality may be able to extract more information from their interactions with companies and are hence more likely to discern high-quality companies and become share holders. On the other hand, the number of lenders and the concentration of lenders have been shown to be important to bargaining around financial distress, which would potentially alter the decision of banks to own companies (Bris et al. 2006; Welch 1997). Unfortunately, no details on bank reputation or creditor number or concentration are available. Hence, we have to leave such interesting hypotheses for future studies.

4.2 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 the dummy variable of banks 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. As the results indicate, the signs of the coefficients for almost all interested variables are all the same and the magnitude and statistical significance of such variables are similar in most cases.

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. In contrast, 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 4.4.

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. At the same time, such findings in China contrast with existing findings from the developed markets (Gorton and Schmid, 2000) and other emerging markets (Limpahayom and Polwitoon, 2004) that document that bank equity ownership improves firm performance.

We next turn to Equation (2) to understand what influences a bank's decision 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, the finding that performance affects a bank's decision to own company shares confirms that it is important to control the interaction between bank ownership and performance at the same time, as suggested by previous studies (Gorton 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. One potential complication in interpreting the results is causality. We acknowledge that it is possible that bank ownership may be motivated by banks' attempt to control their debtors that have worrisome performance. We lack data to formally test how such considerations matter to the observed positive connection between bank ownership and firm indebtedness.

4.3. Robustness tests

Our main findings, that bank ownership promotes bank capital access and hurts firm performance, remain unchanged among a host of robustness tests. Among all the analyses, we choose to present the following three sets of results in the interest of space.

First, we experiment with alternative definitions of indebtedness. In particular, we replace DABOOK in table 3 and 4 with DAMART and DEBOOK respectively as the measure of leverage in Table 5. As the results indicate, the coefficients for almost all interested variables are in the same directions and of similar magnitude and statistical significance. Consistent with the results in Table 3, the coefficient on bank ownership in the performance regression is negative and statistically significant, confirming that bank ownership hurts corporate performance. The coefficient on bank ownership in both DAMART and DEBOOK specifications is significantly positive, confirming that bank ownership increases company indebtedness.⁸

Next, we perform robustness tests by dividing the observations into sub-samples by period. Table 6 reports the results for the 1994 to 1999 and 2000 to 2004 sub-periods, respectively. The results indicate that although some coefficients give up statistical significance, all the relevant variables turn out significant and in the same direction as our main results. Hence, we conclude that our main findings hold across sub-sample periods.

Finally, we perform additional analyses on sub-samples of industries. Given that there are far more companies in the industrial sector (indeed about one half of the entire sample companies) than in any other sectors, we divide the observations into sub-samples of manufacturing and non-manufacturing sectors. Table 7 reports that most of the results

⁸ We experiment with yet another leverage measure, DEMART, and obtain consistent results. These unreported results are available upon request.

are similar across sub-samples. The results are clearly stronger for manufacturing than non-manufacturing companies. We suspect that this is due to the fact that a large fraction of the manufacturing companies are state-owned enterprises, which are more likely to receive policy-motivated loans from commercial banks.

4.4. Discussions

Our findings so far suggest that bank ownership in China hurts firm performance. Although not the focus of the paper, we feel that it is interesting to explore why, unlike the findings in other countries, bank ownership destroys value. Previous findings from developed markets such as the United States show 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, firm performance, and corporate valuation. We next examine how bank ownership affects firm investment, which in turn influences firm operation. As firm investment and bank presence in the firm may be dependent on each other, we again employ simultaneous regression models to tackle both at the same time.

First, we perform simultaneous regressions of firm investment and bank ownership and present results in the two columns on the left of Table 8. Consistent with our conjecture, we find a significantly positive coefficient on bank presence in the

investment regression, implying that listed companies engage in more investments as a result of bank ownership and the relatively easy access to bank borrowing.

The last column of Table 8 reports a firm-level fixed-effect regression of firm performance on firm investment, bank presence, and the interaction of investment with bank presence. We find in this specification that the coefficient on investment is significantly 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, the above analyses in Table 8 indicate 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 avert these unprofitable investment projects. Hence, a bank's monitoring role seems to get compromised by its equity ownership in the same companies.

5. Conclusions

We use detailed information on bank ownership and board composition of Chinese listed companies to understand a bank's decision to directly own shares of listed companies and the resulting implications to firm performance. 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 listed companies, our study provides new insights

into decisions by banks 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 with 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.

Acknowledgements

Part of the work was completed when Zhu was visiting Guanghai School of Management as a special-term professor. The authors wish to thank comments from Stijn Claessens, Katrina Ellis, Joseph Fan, Claudia Giradone (the discussant), Kate Phylaktis (the editor), Huainan Zhao, an anonymous referee, and seminar participants at 2nd EMG Conference at Cass Business School and Peking University. Zhang and Zhu acknowledge financial support from the National Science Foundation of China (70603001). Corresponding author: Ning Zhu.

References

- Allen, F., Qian, J. Qian, M., 2005, Law, Finance, and Economic growth in China, *Journal of Financial Economics*, 77, 57-116.
- Barth, J., Caprio, G., Levine, R., 2006, *Rethinking Bank Regulation, Till Angels Govern*, Cambridge University Press.
- Berlin, M., John, K. Saunders, A., 1996, Bank Equity Stakes in Borrowing Firms and Financial Distress, *Review of Financial Studies*, 9-3. 889-919.
- Bris, A., Baird, D., Zhu, N., 2008, *The Dynamics of Large and Small Chapter 11 Cases: An Empirical Study*, working paper, University of California, Davis.
- Bris, A., Welch, I., Zhu, N., 2006, The Cost of Bankruptcy, Chapter 7 Liquidation vs. Chapter 13 Reorganization, *Journal of Finance*, 56-2, 1253-1303.
- Claessens, S., Klingebiel, D., 2001, Competition and Scope for Financial Services, *World Bank Research Observer*, 16-1, 18-40.
- Cull, R., Xu, L., 2000. Bureaucrats, state banks, and the efficiency of credit allocation: The experience of Chinese state-owned enterprises, *Journal of Comparative Economics* 28, 1-41.
- Cull, R., Xu, L., 2005. Institutions, ownership, and finance: the determinants of profit reinvestment among Chinese firms. *Journal of Financial Economics* 77, 117-146.
- Diamond, D., 1984, Financial Intermediation and Delegated Monitoring, *Review of Economic Studies* 51-2, 393-414.
- Fan, J., Huang, J., Zhu, N., 2007a, *Distress without Bankruptcy: the Case of China*, working paper, University of California, Davis.
- Fan, J., Wong, T.J., Zhang, T., 2007b, Politically Connected CEOs, Corporate Governance and Post-IPO Performance of China's Newly Partially Privatized Firms, *Journal of Financial Economics* 84, 330-357.
- Firth, M., Fung, P., Rui, O., 2006a, Corporate governance and CEO compensation in China, *Journal of Corporate Finance* 12, 693-714..
- _____, 2006 b, Firm performance, corporate governance and CEO turnover in a Transitional Economy, *Journal of Management Studies* 43, 1289-1330.
- Flath, D., 1993, Shareholding in the Keiretsu, Japan's Financial Groups, *Review of Economic Statistics*, 75-2, 249-57.

Fok, R.,Chang, Y-C.,Lee, W-T, 2004, Bank Relationships and Their Effects on Firm Performance around the Asian Financial Crisis, *Financial Management*, 89-112.

Gorton, G.,Schmid, F., 2000, Universal banking and the performance of German Firms, *Journal of Financial Economics* 58, 29-80.

Greene, W. H., *Econometric Analysis*, Prentice Hall, 2002.

Harvey, C.,Lins, K., Roper. A.,, 2004, The Effect of Capital Structure when Expected Agency Costs are Extreme, *Journal of Financial Economics*, 74, 3-30.

Kang, J-K, Shivdasani, A., 1995. Firm performance, corporate governance, and top executive turnovers in Japan, *Journal of Financial Economics* 38, 29-58.

Kang, J-K.,Shivdasani, A., Yamada, T., 2000, The Effect of Bank Relations on Investment Decisions: An Investigation of Japanese Takeover Bids, *Journal of Finance*, 2197-2218.

Kaplan, S. NMinton, B. A., 1994. Appointments of outsiders to Japanese boards: Determinants and implications for managers, *Journal of Financial Economics* 36, 225-258.

Kroszner, R. S.,Strahan, P.E., 2001. Bankers on boards: monitoring, conflicts of interest, and lender liability, *Journal of Financial Economics* 62, 415-452.

Laeven, L. 2001, Insider Lending and Bank Ownership: The Case of Russia *Journal of Comparative Economics*, 29-2, 207-229.

Limpahayom, P., Polwitoon, S., 2004, Bank Relationship and Firm Performance: Evidence from Thailand before the Asian Financial Crisis, *Journal of Business Finance & Accounting*, 31-9, 306-68.

Mahrt-Smith, J., 2006, Should Banks Own Equity Stakes in their Borrowers? A contractual solution to hold-up problems, *Journal of Banking and Finance* 30, 2911-2929.

McConnell, J.,Servaes, H., 1995, Equity Ownership and the Two Faces of Debt, *Journal of Financial Economics* 39, 131-157.

Petersen, M. A.,Rajan, R., 1994. The benefit of firm-creditor relationships: evidence from small business data, *Journal of Finance* 49, 3-37.

Santos J., Rumble, A. S., 2006, The American Keiretsu and Universal Banks: Investing, Voting and Sitting on Non Financials' Corporate Boards, *Journal of Financial Economics*, forthcoming.

Sun, Q., Tong, J., Tong, W., 2002, How Does Government Ownership Affect Firm Performance? Evidence from China's Privatization Experience, *Journal of Business Finance & Accounting* 29, 1-27.

Sun, Q., Tong, W., 2003, China share issue privatization: The extent of its success, *Journal of Financial Economics* 70, 183-222.

Tian, L., 2004, Debt Governance, Soft Budget Constraints, and Performance of China's Public Listed Companies, *China Economic Quarterly*, 3-Supp, 15-26.

Tian, L., Estrin, S., 2007, Debt Financing, Soft Budget Constraint, and Government Ownership, *Economics of Transitions*, 15-3, 461-81.

Welch, I., 1997, Why is Bank Debt Senior? A Theory of Priority Based on Influence Costs, *Review of Financial Studies*, 10-4, 1203-36.

Wooldridge, J. M., 2000, *Introductory Econometrics: A Modern Approach*, South-Western Publishing.

Table 1. Sample Description

Panel A reports the number of firms with and without bank ownership over the sample years. Panel B reports the number of firms with and without bank ownership across the industries. Firms “with banks” are those companies at which at least one commercial bank is among the company’s top 10 shareholders. Firms “without banks” are those companies at which no commercial bank is among the company’s top 10 shareholders.

Panel A: Summary by Year				Panel B: Summary by Industry			
Year	total	with banks	without banks	Industry	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. The numbers of observations differ across variables because some variables (especially growth-related variables) are not available during early sample years before 1995. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

	Firms with bank ownership			Firms 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	1188	0.590	0.426	7575	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	1188	34.76	32.20	7575	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 held 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 at least one bank is among the company's top 10 shareholders, and 0 otherwise. Bankshare is the percentage of equity ownership held by the banks among the company's top 10 shareholders. 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)			-11.32*** (-4.36)	
Bank	-0.363*** (-6.79)		0.972*** (5.96)			
Bankshare				-0.082*** (-5.91)		0.063*** (2.72)
DABOOK	-0.411*** (-13.81)	-0.503 (-0.79)		-0.422*** (-11.17)	-4.767*** (-3.34)	
Lnasset	0.025*** (14.39)	0.046* (1.85)	-0.006 (-1.02)	0.018*** (8.49)	0.201*** (3.34)	0.014*** (4.55)
Age	0.007*** (10.47)	0.014** (2.23)		0.006*** (8.29)	0.088*** (5.50)	
Largest	-0.001*** (-4.59)	-0.002*** (-5.54)	0.002*** (3.50)	-0.001*** (-4.60)	-0.017*** (-9.98)	0.000 (0.44)
State	-0.014*** (-4.00)	-0.031* (-1.77)	0.001 (0.12)	-0.004 (-0.89)	-0.038 (-0.56)	-0.025*** (-3.73)
Fix		0.124*** (3.32)			-0.072 (-1.51)	
Intang			-0.236* (-1.84)			0.118* (1.89)
Profi			-0.228*** (-6.53)			-0.327*** (-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 ²	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 at least one bank is among the company's top 10 shareholders, and 0 otherwise. Bankshare is the percentage of equity ownership held by the banks among the company's top 10 shareholders. 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		-0.215** (-2.47)			-0.507* (-1.80)	
Bank	-1.661** (-2.44)		2.357*** (9.47)			
Bankshare				-0.414*** (-3.01)		0.419*** (5.53)
DABOOK	0.161 (0.68)	-2.786** (-2.51)		0.179*** (0.94)	-7.342** (-2.06)	
Roa		-4.081*** (-2.82)			-12.416*** (-2.66)	
Lnasset	-0.990*** (-44.78)	-0.106* (-1.72)	-0.035*** (-3.12)	-1.016*** (-51.15)	-0.261 (-1.26)	0.017 (1.50)
Age	0.012 (1.48)	0.035*** (3.04)		0.010 (1.55)	0.088*** (5.50)	
Largest	0.005** (2.47)	-0.000 (-0.17)	0.007*** (6.90)	0.002 (0.52)	-0.013*** (-3.47)	0.008*** (4.57)
State	-0.208*** (-4.60)	-0.106*** (-2.83)	0.035 (1.51)	-0.159*** (-3.62)	-0.179 (-1.42)	-0.030 (-1.19)
Fix		-0.207** (-2.26)			-0.693** (-2.31)	
Intang			-1.120*** (-4.84)			-0.429* (1.91)
Profi	1.249*** (10.23)		-0.071 (-1.11)	1.217*** (9.40)		-0.125* (-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 ²	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. Robustness Tests: Simultaneous Regressions of ROA, Bank Presence, and Alternative Measures of Leverage

Three-stage least squares analysis of the jointly determined system (ROA, DABOOK, and Bank). ROA is return on assets. Bank is a dummy variable that equals 1 if the bank holds shares in the firm, and 0 otherwise. DAMART is debt to book value of debt plus market value of equity. DEBOOK is debt to equity (book value). All other variables are defined in Appendix 1. Zstatistics 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) DAMART	Eq. (1) ROA	Eq. (2) Bank	Eq. (3) DEBOOK
ROA		-2.85*** (-3.79)			-1.67*** (-2.71)	
Bank	-0.342*** (-5.73)		1.18*** (5.52)	-0.501*** (-6.97)		4.11*** (5.47)
DAMART	-0.294*** (-12.23)	-0.831*** (-2.98)				
DEBOOK				-0.078*** (-9.29)	-0.111 (-1.55)	
Lnasset	0.065*** (16.85)	0.18*** (3.46)	0.129*** (16.26)	0.033*** (12.58)	0.0551*** (2.90)	0.052* (1.85)
Age	0.0054*** (6.55)	0.015** (5.13)		0.008*** (7.54)	0.0127*** (3.82)	
Largest	-0.001*** (-5.41)	-0.003*** (-7.99)	0.0016** (2.00)	-0.001*** (-4.73)	-0.0236*** (-6.27)	0.009*** (3.31)
State	-0.014*** (-3.20)	-0.040*** (-2.70)	-0.0028 (-0.18)	-0.0215*** (-4.16)	-0.038** (-2.32)	-0.065 (-1.17)
Fix		0.019 (1.36)			0.084*** (3.12)	
Intang			-0.518*** (-3.01)			-1.71*** (-2.85)
Profi			-0.367*** (-8.12)			-1.08*** (-6.78)
Industry	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Number of observations	8763	8763	8763	8763	8763	8763
Chi ²	708.02	1537.26	2045.07	482.05	1325.87	420.76
p-value	0.000	0.000	0.000	0.000	0.000	0.000

Table 6. Robustness Tests: Simultaneous Regressions of ROA, Bank Presence, and Leverage in Years 1994-1999 and 2000-2004

Three-stage least squares analysis of the jointly determined system (ROA, DABOOK, and Bank) in year 1994-1999 and 2000-2004, respectively. ROA is return on assets. Bank is a dummy variable that equals 1 if at least one bank is among the company's top 10 shareholders, and 0 otherwise. 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) 1994- 1999			Three-stage least squares (2) 2000- 2004		
	Eq. (1) ROA	Eq. (2) Bank	Eq. (3) DABOOK	Eq. (1) ROA	Eq. (2) Bank	Eq. (3) DABOOK
ROA		-0.389 (-0.60)			-5.24*** (-2.64)	
Bank	-0.789*** (-7.18)		0.331* (1.81)	-0.189*** (-3.14)		0.883*** (6.80)
DABOOK	-0.428*** (-6.58)	0.0314 (0.08)		-0.387*** (-12.52)	-2.03** (-2.27)	
Lnasset	0.047*** (7.56)	0.0326 (1.55)	0.0387*** (4.58)	0.021*** (12.64)	0.11*** (2.82)	-0.019*** (-3.61)
Age	0.0125*** (7.48)	0.013*** (2.74)		0.006*** (7.03)	0.029*** (3.55)	
Largest	-0.0026*** (-5.01)	-0.0036*** (-6.42)	0.001 (1.33)	-0.0003*** (-2.13)	-0.0014*** (-2.72)	0.0005 (1.10)
State	-0.035*** (-3.26)	-0.045** (-2.23)	0.017 (1.16)	-0.011*** (-3.18)	-0.057** (-2.11)	-0.023** (-2.03)
Fix		0.092*** (3.57)			0.0099 (0.26)	
Intang			-0.098 (-0.73)			0.26** (2.28)
Profi			-0.296*** (-8.65)			-0.277*** (-8.18)
Industry	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Number of observations	3554	3554	3554	5209	5209	5209
Chi ²	458.30	515.78	1103.23	846.71	4269.94	557.68
p-value	0.000	0.000	0.000	0.000	0.000	0.000

Table 7. Robustness Tests: Simultaneous Regressions of ROA, Bank Presence, and Leverage of Manufacturing and Non-manufacturing Firms

Three-stage least squares analysis of the jointly determined system (ROA, DABOOK, and Bank). ROA is return on assets. Bank is a dummy variable that equals 1 if at least one bank is among the company's top 10 shareholders, and 0 otherwise. DABOOK is debt to assets. All other variables are defined in Appendix 1. Zstatistics 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) Manufacturing firms			Three-stage least squares (2) Non-manufacturing firms		
	Eq. (1) ROA	Eq. (2) Bank	Eq. (3) DABOOK	Eq. (1) ROA	Eq. (2) Share	Eq. (3) DABOOK
ROA		1.606 (0.75)			-2.373* (-1.79)	
Bank	-0.593*** (-5.34)		1.628*** (3.28)	-0.307*** (-6.68)		0.241*** (3.04)
DABOOK	-0.380*** (-8.28)	1.432 (1.11)		-0.306*** (-10.92)	-0.562 (-1.19)	
Lnasset	0.021*** (9.04)	-0.048 (-0.93)	0.010 (1.08)	0.027*** (9.14)	0.075*** (3.42)	0.001*** (0.18)
Age	0.007*** (7.78)	-0.010 (-0.72)		0.007*** (6.58)	0.017*** (3.53)	
Largest	-0.001*** (-4.01)	-0.003*** (-4.17)	0.003** (2.27)	-0.001*** (-3.78)	-0.03*** (-4.38)	-0.000 (-0.06)
State	-0.011** (-2.05)	-0.000* (-0.02)	0.007 (0.31)	-0.015*** (-2.82)	-0.051** (-2.20)	-0.041*** (-3.97)
Fix		0.278*** (3.20)			0.155*** (2.86)	
Intang			-0.037 (-0.13)			-0.208** (2.26)
Profi			-0.142* (-1.77)			-0.344*** (-15.75)
Industry	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Number of observations	4856	4856	4856	3907	3907	3907
Chi ²	509.65	332.44	95.71	364.82	379.66	540.09
p-value	0.000	0.000	0.000	0.000	0.000	0.000

Table 8 Regression of Investment, Bank Presence, and Firm Performance

A two-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 at least one bank is among the company's top 10 shareholders, 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.

	Two-stage least squares (1)		Fixed effects regressions (2)
	Eq. (1) Investment	Eq. (2) Bank	ROA
Inv		-0.071** (-2.78)	0.018*** (6.19)
Bank	3.033** (3.52)		-0.010* (-1.76)
Bank× Inv			-0.027** (-2.45)
DABOOK		0.052*** (3.48)	-0.227*** (-42.08)
Q	0.036*** (2.70)	-0.012*** (-4.70)	
Lnasset		0.002 (0.89)	
Age	-0.033*** (-3.40)	0.009*** (6.65)	
Largest	0.007** (3.21)	-0.003*** (-10.43)	0.001** (5.08)
State	0.063* (1.81)	-0.106** (-2.83)	-0.009** (-2.48)
Fix		0.114*** (8.28)	
Sales	-0.016* (-1.73)		
Cash	0.482*** (11.43)		
Industry	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled
Number of observations	7709	7709	7709
Chi ²	1017.36	238.65	
R ²			0.2769
p-value	0.000	0.000	0.000

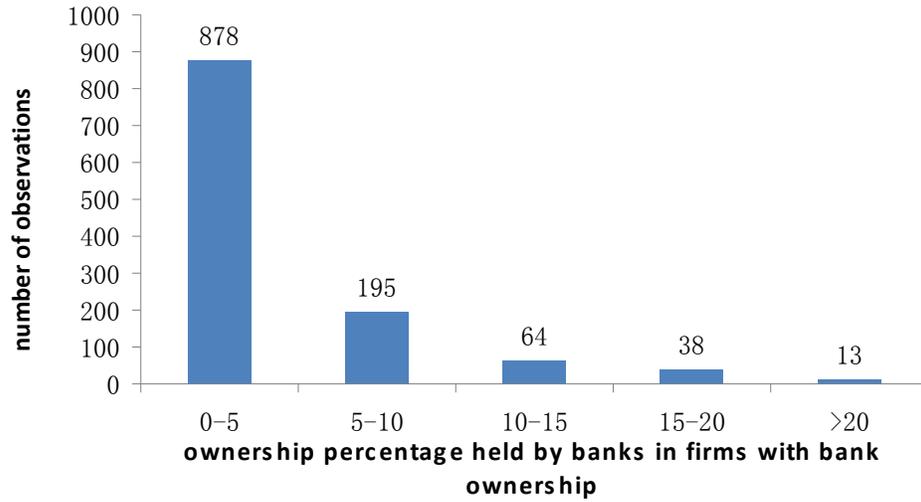


Figure 1. Distribution of Bank Ownership in Listed Firms with Bank Ownership



Figure 2. Distribution of Number of Bankers on Board of Directors in Firms with Bank Equity Ownership

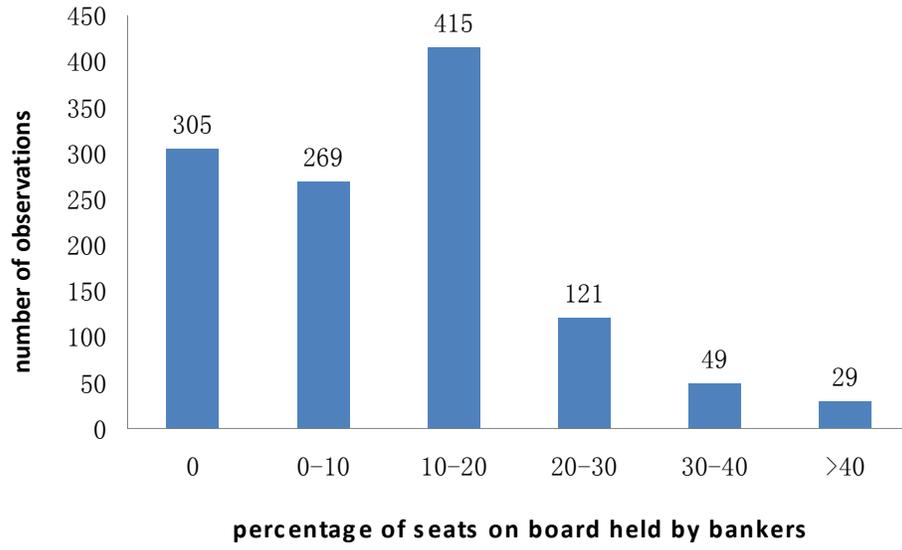


Figure 3. Distribution of Bank-Affiliated Board Directors in Firms with Bank Equity Ownership

Appendix 1. Description of Variables

Variables	Descriptions
Bank participation (Bank)	Dummy variable that equals 1 if at least one bank is among the company's top 10 shareholders
Bank ownership (Bankshare)	Percentage of equity ownership held by banks among a company's top 10 shareholders
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	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 (Lnasset)	Natural logarithm of total assets
Profitability (Profi)	Ratio of operating profit to sales
Intangible asset (Intang)	Ratio of intangible assets to total assets
Net fixed asset	Fixed assets minus depreciations
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 asset	Inventory and gross fixed assets/total assets
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