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and Laurent Weill

Foreign bank lending and information  
asymmetries in China



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All opinions expressed are those of the authors and do not necessarily reflect the views of the Bank of Finland.

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## Foreign bank lending and information asymmetries in China

### Abstract

This paper considers whether information asymmetries affect the willingness of foreign banks to participate in syndicated loans to corporate borrowers in China. In line with theoretical literature, ownership concentration of the borrowing firm is assumed to influence information asymmetries in the relationship between the borrower and the lender. We analyze how ownership concentration influences the participation of foreign banks in a loan syndicate using a sample of syndicated loans granted to Chinese borrowers in the period 2004-2009 for which we have information on ownership concentration. We observe that greater ownership concentration of the borrowing firm does not positively influence participation of foreign banks in the loan syndicate. Additional estimations using alternative specifications provide similar results. As foreign banks do not react positively to ownership concentration, we conclude that information asymmetries are not exacerbated for foreign banks relative to local banks in China. Moreover, it appears that increased financial leverage discourages foreign bank participation, suggesting that domestic banks are less cautious in their risk management.

JEL Codes : G21, P34.

Keywords : Bank, Foreign investors, Information asymmetry, Loan, Syndication, China.

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### Tiivistelmä

Tutkimuksessa tarkastellaan, vaikuttaako asymmetrinen informaatio ulkomaisten pankkien halukkuuteen osallistua syndikoituun lainanantoon Kiinassa oleville yrityksille. Teoreettisen kirjallisuuden mukaan omistuksen keskittymisen aste lainaa ottavassa yrityksessä vaikuttaa asymmetriseen informaatioon lainanottajan ja lainanantajan välillä. Tutkimuksessa analysoidaan, miten omistuksen keskittyminen vaikuttaa ulkomaisten pankkien osallistumiseen lainasyndikaattiin. Työssä käytetään aineistoa, joka on vuosina 2004–2009 kiinalaisille yrityksille myönnettyjä syndikoituja lainoja. Tältä ajanjaksolta tietoa omistuksen keskittymisestä on olemassa. Tulosten mukaan omistuksen keskittyminen lainaa ottavassa yrityksessä ei vaikuta positiivisesti ulkomaisten pankkien osallistumiseen lainasyndikaattiin. Estimoinneista vaihtoehtoisilla spesifikaatioilla saadaan samankaltaisia tuloksia. Koska ulkomaiset pankit eivät reagoi positiivisesti omistuksen keskittymiseen, asymmetrinen informaatio ei vaikuta olevan erityisen ongelmallista Kiinassa oleville ulkomaisille pankeille verrattuna kotimaisiin pankkeihin. Runsaampi lainanotto vähentää ulkomaisten pankkien osallistumista syndikoituihin lainoihin, ja ne näyttävät siten olevan varovaisempia riskienhallinnassa kuin kotimaiset pankit.

Avainsanat: pankki, ulkomaiset sijoittajat, asymmetrinen informaatio, laina, syndikointi, Kiina

# 1 Introduction

The last three decades have witnessed impressive growth in China, yet the prevailing view persists that the Chinese financial system is that it suffers from serious problems that could hamper future economic growth. The Chinese financial system, as noted by Allen et al. (2009), “is currently dominated by a large, but under-developed, banking system.” Specifically, this inefficient banking industry plays an oversized role relative to the financial markets in financing the economy. This is particularly true of the major state-owned banks (Berger, Hasan and Zhou, 2009; Lin and Zhang, 2009), and as a result, private-sector borrowers often find themselves at the back of the line when seeking access to credit.<sup>1</sup> Moreover, despite the huge decline in nonperforming loan (NPL) ratios over the last decade,<sup>2</sup> recent credit growth has renewed fears of an uptick in NPL ratios in the banking industry (OECD, 2010).

These problems are due in part to the state’s strong presence in the banking industry. State involvement in management of Chinese banks, in turn, leads to other problems such as toleration of overstaffing<sup>3</sup> or lending decisions that are guided more by public policy than commercial criteria (Podpiera, 2006).<sup>4</sup>

One can imagine a number of ways the presence of foreign banks in the Chinese financial system might help alleviate this situation. Greater foreign bank lending might enhance bank credit both quantitatively and qualitatively. Foreign banks might also be more averse to making bad loans as they are not pursuing public policy goals and lack the non-economic motivations of state policy-makers when allocating credit. The establishment of foreign banks in China could also conceivably enhance banking sector performance overall as it has been shown that foreign banks are more efficient than local banks (Berger, Hasan and Zhou, 2009) and can enhance profitability in the Chinese banking sector (e.g. Garcia-Herrero and Santabarbara, 2008).

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<sup>1</sup> While China’s total bank credit ratios are high (between 100% and 120% of GDP over the past decade) Allen et al. (2009) observe that the size of Chinese banking industry in terms of total bank credit to non-state sectors amounted to just 31% of GDP in 2005. This is considerably less than average of 78% of GDP in the group of countries analyzed in La Porta et al. (1998), but well in line with the share found in major emerging economies (32% of GDP).

<sup>2</sup> Nonperforming loans (NPLs) equaled about 7.3% of GDP in China in 2005. This is far less than the 22.5% NPL ratio of 2000, but considerably higher than the 0.7% NPL ratio in the US in 2005 (Allen et al., 2009). According to China’s Banking Regulatory Commission, total outstanding NPLs in the country’s banking sector (including policy banks, loan companies and postal savings banks) in 2009 amounted to 1.5334 trillion yuan, or about 4.5% of GDP.

<sup>3</sup> Matthews, Xiao and Zhang (2009) describe overstaffing in Chinese banks and show how it leads to cost inefficiency.

<sup>4</sup> In his study on Chinese bank lending, Podpiera (2006) concludes that “banks do not appear to take enterprise profitability into account when making lending decisions.”

In principle, China's accession to the WTO in 2001 opened the Chinese banking system up to foreign investors in two ways. First, it meant foreign banks would be allowed to operate directly through the branches and subsidiaries they themselves established. This expansion was to be facilitated during a five-year transition period in line with China's WTO commitments. Second, foreign strategic participation in domestic banks was allowed in 2003. The foreign strategic investment rules issued by China's Banking Regulatory Commission, however, continue to limit the participation of foreign banks in local banks to a minority stake. The reality today is that the overall market share of foreign banks in China's banking sector remains quite low (OECD, 2010).<sup>5</sup>

Even if direct lending is difficult, foreign banks can grant credit to Chinese companies via the syndicated loan market. Here, foreign banks play a major role. As in other emerging economies in Asia, China's manager league tables in the syndicated loans market were initially foreign dominated and a substantial proportion of loans were issued in foreign currency. Since the global financial crisis and collapse of the market, this tendency (at least temporarily) has been reversed (Chui et al., 2010). With the market rebound, the China Banking Association reports that foreign banks accounted for 7.11% of the volume of loans to companies in 2009.

The key determinant for foreign banks in the financing of the Chinese economy, however, may be the degree of information asymmetries in the bank-borrower relationship relative to local banks. This is a major issue in assessing the prospects for expansion of foreign bank lending in China. At first glance, it would appear local banks have the information advantage. They have easier access to local firm-specific information and likely benefit from a better understanding of the local accounting documents. On the other hand, foreign banks may have informational advantages or at least can get more out of information if they can acquire it from local banks as they have superior skills in monitoring and risk analysis of loans. Indeed, it has been shown that foreign banks operating in emerging economies often leverage their efficiency advantages based on their superior expertise and technology (for China, see e.g. Berger, Hasan and Zhou, 2009; for European transition countries, see e.g. Weill, 2003, or Bonin, Hasan and Wachtel, 2005).

This paper investigates borrower-lender information asymmetries by focusing on the syndicated loan market in China. Numerous researchers have noted that syndicated loans provide a relevant laboratory for analyzing information asymmetries between borrowers and lenders as they can influence the syndicate structure (Lee and Mullineaux, 2004; Sufi, 2007; Bosch and Steffen, 2010). Our goal here is to see whether information asymmetries increase or reduce participation of foreign banks in syndicated loans. If foreign banks suffer from informational disadvantage relative

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<sup>5</sup> PriceWaterhouseCoopers (2010) estimated the market share of foreign banks in May 2010 at 2%.



to local banks, we would expect them to base their lending decisions on characteristics of borrowing firms known to minimize agency risks. Syndicated loans granted to firms with greater information asymmetries would thus be expected to have a lower proportion of foreign banks in the pool of participant banks.

We start by considering ownership concentration as a signal used by foreign banks. Shleifer and Vishny (1997) observe that ownership structure can be used as a signal to solve an information asymmetry problem. Jensen and Meckling (1976) note that agency costs can arise from conflicts of interest between categories of agents inside the firm. When control is distinguished from ownership in the firm, the manager can use private information to extract private benefits at the expense of other stakeholders.

Shleifer and Vishny (1986) point out that ownership concentration can exert an impact on this moral hazard behavior of the manager through his incentives for effort. In a concentrated ownership structure, the top shareholder has strong financial incentive to control manager behavior. Concentration reduces the public good problem associated with monitoring of the manager. From the creditor's perspective, ownership concentration reduces the possibilities that managers divert resources or diminish their efforts.

Bebchuk (1999) suggests the benefits of ownership concentration might actually be greater in countries with weak investor protection. Where legal protection is weak, he argues, managers have greater opportunities to redirect resources. As such, a shareholder has greater incentive to take a large controlling stake in the firm to put pressure on managers. As China is characterized by a poor protection of investors (Allen, Qian and Qian, 2005), this would increase the expectation that ownership concentration would reduce agency costs compared to countries with better legal protection.

Our hypothesis is that foreign banks will be more attentive to the ownership structures of Chinese borrowing firms than other banks when they face greater information asymmetries. Indeed, if a particular ownership structure helps minimize agency costs, we would expect it to be favored by foreign investors as it provides a positive signal that reduces their informational disadvantage.

Our empirical investigation analyzes whether ownership concentration of firms using syndicated loans influence the fraction of foreign banks in the participant banks of the syndicate in China. Ownership concentration is taken into account through two variables in line with former literature: the percentage of shares held by the largest shareholder, and the Herfindahl index of the percentages of shares held by all shareholders.

This study contributes to the understanding of foreign bank lending in China. We also broaden the expanding body of research on syndicated loans as this work is the first to the best of our knowledge which investigates issues related to syndicated loans in China.

The remainder of the paper is structured as follows. Section 2 presents related literature. Section 3 describes data and variables, and section 4 shows our results. Section 5 concludes.

## 2 Related literature

As with literature on syndicated loans generally, study of the impacts of information asymmetries on syndicate structure has expanded rapidly in recent years.

The seminal paper of Dennis and Mullineaux (2000) analyzes the factors influencing the proportion of a loan sold by the arranger on a sample of US loans. They observe that a larger share of a loan can be sold by the arranger when the information on the borrower is more transparent (i.e. the borrower is a listed company or has a debt rating).

Lee and Mullineaux (2004) extend the discussion by investigating the determinants of two variables for syndicate structure: the number of banks in the syndicate, and the concentration of banks' retained share of the loan in the syndicate measured by the Herfindahl index. Again using a sample of US syndicated loans, they find that the better information on the borrower (stock market listing or debt rating), the less concentrated the syndicate.

Sufi (2007) explicitly investigates whether information asymmetries influence syndicate structure in the US. Information asymmetries are proxied through an opacity variable defined as a borrower that is privately held and unrated. Syndicate structure is considered in three dimensions: number of participants, number of arrangers, and the percentage of the loan retained by the lead arranger. He provides support to the view that information asymmetries influence syndicate structure by substantially increasing the size of the syndicate.

Extending this strand, Bosch and Steffen (2010) examine the potential role of credit ratings and stock exchange listings in reducing information asymmetries on the structure of syndicated loans in the UK. Their variables for syndicate structure are the number of lenders and the number of foreign lenders. They provide compelling evidence that foreign banks are reluctant to participate in syndicated loans to unrated borrowers.

Looking at syndicated loans in both developed and emerging economies, Aslan and Kumar (2009) confirm that banks use attributes of ownership structure in their screening processes. More

precisely, they show that an increase in the ownership concentration of the top shareholder tends to diminish the loan price, increase the loan maturity, and reduce the number of lenders in the syndicate.<sup>6</sup> Their results are in line with the view that borrower agency risk has an impact on syndicate structure. They also show that ownership structure can play a greater role on loan characteristics and syndicate structure in Asian emerging markets than in developed markets due to greater prevailing agency risks in such Asian countries.

To our knowledge, Lee et al. (2010) offer the first paper examining the role of information asymmetries on syndicate structure in an Asian country (Japan). They investigate how borrower characteristics affect syndicate structure, considered as the total number of banks participating in a syndicate for a sample of Japanese syndicated loans. They give special care to variables related to financial distress such as leverage and Altman's Z-score, and find that the size of the syndicate is smaller when borrowers are more prone to financial distress or bigger in size.

In summary, literature supports the view that information asymmetries influence syndicate structure. This accords with our hypothesis that information asymmetries can influence the participation of foreign banks in the syndicate. Our study differs, however, from the literature in two respects. First, we focus on participation of foreign banks, a widely neglected topic with the notable exception of Bosch and Steffen (2010). Second, we analyze the syndicated loan market in the context of a major emerging economy (China).

## 3 Data and variables

### 3.1 Data

Our data on syndicated loans, borrowers, and banks are taken from Bloomberg. Ownership-related data are supplemented from other data sources, including company websites and annual reports. Our initial requirement for data on financial characteristics and ownership structure of borrowing firms considerably reduces the size of our initial sample. Following Qian and Strahan (2007) and Ivashina (2009), our sample shrinks further as we omit loans to financial companies on the view that the financing needs of such companies are different than those of non-financial companies. Thus, starting from an initial sample of 427 facilities for the period from 1999 to 2009, our sample

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<sup>6</sup> Their study also looks at the impact of deviation of control to cash flow rights of the principal shareholder on loan characteristics and syndicate structure.

based on information availability and limitation to non-financial borrowers reduces to 92 syndicated loans in the period 2004-2009.

Some 372 banks were involved in the syndicated loans in our final sample. As banks in Hong Kong and Taiwan experienced a different development path in recent decades than mainland Chinese banks, we treat them as foreign. The sample of participant banks includes 79 Chinese banks (21%), and 293 foreign banks (79%). Among foreign banks, 56 are incorporated in Hong Kong and Taiwan (i.e. 24% of foreign banks).

### 3.2 Variables

We focus on the potential impact of the ownership concentration of borrowing firms on the presence of foreign banks in syndicated loans. The explained variable in our regressions is the fraction of foreign bank lenders in the syndicate, computed as the ratio of the number of foreign banks in the syndicate to the total number of lenders (Fraction of Foreign Banks).

Our crucial explanatory variables concern ownership concentration. In line with earlier studies on China (Xu and Wang, 1999; Gul, Kim and Qiu, 2010), we use two alternative variables: the percentage of shares held by the largest shareholder (*Top Shareholder*),<sup>7</sup> and the Herfindahl index of the percentages of shares held by the shareholders (*HHI Concentration*).<sup>8</sup>

We control for state ownership as this type of ownership can exert an influence on the propensity of foreign banks to participate in the syndicate. On the one hand, the potential collusion between Chinese banks and borrowers may be more likely if the main shareholder is owned by the state, as the Chinese state owns a majority of shares in the largest Chinese banks. On the other hand, foreign banks may prefer to lend money to state-owned firms for safety reasons. In this case, they may perceive the default risk of such borrowers as lower than that of privately-held firms and consequently, as they may care more for the performance of the loan, they would positively value this type of ownership. We test the role of state ownership with the variable *Top State* which is a dummy variable equal to one if the main shareholder is the State or a state-owned company.

We also test the potential influence of characteristics of the borrowing firm and the loan. The selection of these characteristics is based on earlier papers on syndicate structure (Bosch and Steffen, 2010; Lee et al., 2010).

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<sup>7</sup> Gul, Kim and Qiu (2010) also measure ownership concentration with the percentage of shares held by the largest borrower in their analysis of the link between ownership concentration and stock price synchronicity for Chinese listed firms.

<sup>8</sup> Xu and Wang (1999) use the Herfindahl index of the percentages of shares held by the shareholders, next to the proportion of shares held by the top ten shareholders to measure ownership concentration.

In line with the existing literature on syndicated loans, we include five variables for the firm characteristics.<sup>9</sup> Profitability is accounted for by return on assets (*ROA*). We expect a positive coefficient for this variable as foreign banks are expected to care more for the performance of borrowing firms than local banks constrained by official objectives in their lending decisions. Term structure of liabilities is taken into account with the ratio of short-term debt to total debt (*Short Term Debt*) and the ratio of total debt to total assets (*Leverage*). Two opposite effects can be suggested for these debt variables. A higher value for either of these variables suggests a greater likelihood of financial distress. However, a greater share of short-term debt in total debt may force managers to employ prudent management practices in order to regularly repay debt. This reduces agency costs and is positively valued by foreign banks. In a similar vein, greater leverage can raise the pressure of managers to perform as it reduces “free cash-flow” at the disposal of managers (Jensen, 1986) as it implies interest payment obligations that must be satisfied.

We also consider tangibility of assets with the ratio of tangible assets to total assets (*Tangibility*). This is commonly used as a proxy for collateral value. We expect a positive coefficient for this variable as it indicates a greater liquidation value in the event of default (even if this effect may be lowered by the weak protection of creditors in China). The market-value to book-value ratio (*Market to Book*) is also considered to gauge the growth potential of the borrowing firm (Smith and Watts, 1992). It is expected to favor the presence of foreign banks in the loan syndicate.

Data limitations restrict us to two variables for loan characteristics: the amount (*Loan Size*) and the maturity of the loan facility (*Maturity*). We expect both variables to be negatively associated with the presence of foreign banks as both are associated with increased risk.

We include several dummy variables for borrowers having multiple loans in the sample. We also include dummy variables for the industry according to the industry classification in the Bloomberg database and for the year to control for yearly effects.

Table 1 reports summary statistics for the variables. The fraction of foreign bank lenders in the syndicate on average is 65%. This is in line with the fact that the syndicated loan market is globalized (see Carey and Nini, 2007) and with former evidence on emerging markets.<sup>10</sup> Interestingly,

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<sup>9</sup> We do not control for size in these estimations as correlation of this variable with the *Government* variable was too strong. The fact that we take into account the amount of the loan allows us to control at least partly for the impact of borrower size.

<sup>10</sup> In the case of Russia, Fungacova, Godlewski and Weill (2011) show that the vast majority of syndicated loans granted to companies does not include a single Russian bank among the syndicate participants.

dispersion is high with a standard deviation of 37%, which results from the fact that foreign banks use to be either almost the unique participants of the syndicate or to be almost absent.

Ownership concentration appears to be high for borrowing firms. The mean percentage of shares held by the top shareholder is equal to 48%, while the mean Herfindahl index for ownership concentration is 31%. It accords with the theoretical prediction from Bebchuk (1999), who, as mentioned earlier, argues that weaker investor protection favors concentrated ownership structure.

The analysis of financial characteristics of borrowing firms tends to show that Chinese borrowers on the syndicated loan market have a satisfactory financial situation. Their indebtedness is limited with a mean leverage of 35.9%, while their profitability is rather high with a mean ROA of 6.1% and the tangibility of assets is strong (53%).

The average loan size is \$1.4 billion with an average maturity close to seven years. Do syndicated loans in China differ from the rest of the world? Carey and Nini (2007) point out that the mean loan size is \$370 million in the US and \$340 million in Europe, whereas the median maturity is 48 months in the US and 60 months in Europe. Godlewski and Weill (2008) observe that syndicated loans in emerging markets have a mean amount of \$218 million and a mean maturity of 54 months. In this respect, syndicated loans to Chinese firms are much larger and have longer maturities than those granted to other firms.

It is fair to ask whether our sample of syndicated loans is representative of the syndicated loan market in China as our data requirements on borrower characteristics lead us to reduce the full sample of loans from 428 to 92. In response, we compare the loan characteristics of the full sample with our final sample. The mean maturity and the mean loan amount are respectively 7.67 years and \$3.04 billion for the full sample compared to 7.30 years and \$1.4 billion for the final sample used in the estimations. Thus, the syndicated loans of our sample have approximately the same maturity but are somewhat smaller (even if the order of magnitude of loan amounts is comparable). Our final sample apparently does not suffer from major differences with the full sample of syndicated loans.

## 4 Results

This section displays our results. We present the main estimations and some additional tests.

### 4.1 Main estimations

We perform regressions of the fraction of foreign bank lenders in the syndicate on a set of variables including ownership concentration and control variables. Table 2 displays the results. We present two estimations differing with the tested measure for ownership concentration (*Top Shareholder* or *HHI Concentration*). We observe that *Top Shareholder* is not significant, whereas *HHI Concentration* is significantly negative. Consequently, we provide evidence that greater ownership concentration does not enhance the willingness of foreign banks to participate in the loan syndicate. As foreign banks consider ownership concentration as a positive signal, we find no support for the view that they suffer from greater information asymmetries than local banks. Indeed, our results tend to suggest the opposite.

How does one interpret this finding? We suggest two complementary explanations. The first is based on the behavior of foreign banks and the other deals with the behavior of local banks in China. On the one hand, foreign banks may not suffer from an informational disadvantage and may even have informational advantages as they benefit from superior skills in loan monitoring and risk analysis. This line of reasoning is supported by empirical evidence. For example, when comparing efficiency of banks in China, Berger, Hasan and Zhou (2009) show that the majority of foreign banks are more efficient than local banks and that minority foreign ownership contributes to enhanced efficiency of Chinese banks. The authors attribute these results to the fact that foreign banks possess superior risk management skills.

On the other hand, anecdotal evidence suggests that local banks are reluctant to get involved in syndicated loans (Caijing Magazine, 2009), suggesting they are at a disadvantage in risk monitoring. As a consequence, local banks may be more sensitive to the degree of information asymmetries and more prone to participate in a syndicated loan when information asymmetries are lower.

The Top State variable is not significant, meaning that the presence of the state as the largest shareholder does not influence the willingness of foreign banks to participate in a syndicate. We now turn to the analysis of the other determinants of the presence of foreign banks in loan syndi-

cates. Only one borrower characteristic is significant: Leverage. We observe that this variable is negatively linked to the fraction of foreign banks involved in the loan syndicate. This finding can be explained by the fact that higher leverage is associated with a greater likelihood of financial distress. This result is in line with literature on the lending behavior of Chinese domestic banks that are driven by political considerations rather than financial ones. As foreign banks are more likely to care about the repayment chances of the loan than local banks, their participation in loan syndicates is reduced in the presence of increased leverage.

When investigating loan characteristics, we observe a negative coefficient for Loan Size and Maturity that is significant in most cases. This means that larger loans and loans with longer maturities are associated with a lower presence of foreign banks in the syndicate. This finding accords with the fact that such loans are perceived as riskier. All other tested variables are not significant in the estimations.

In summary, it appears from our results that ownership concentration does not favor the participation of foreign banks in loan syndicates. This defies the view that foreign banks face greater information asymmetries than local banks. Furthermore, we find that foreign banks participate more in loan syndicates to borrowing firms with lower leverage and that they prefer to participate to syndicated loans for smaller amounts and shorter maturities. In a nutshell, foreign banks do not suffer from greater information asymmetries than local banks and are sensitive to factors that increase default risk.

To determine whether these results have been influenced by our methodological choices, we perform a few robustness tests.

## 4.2 Robustness checks

We check the robustness of our results in several ways. First, we consider the fraction of foreign banks among arrangers rather than among participant banks in the syndicate. The literature supports the view that information asymmetries can exist between arrangers and other participants in the syndicate (e.g. Ivashina, 2009). By focusing on the arrangers, we exclude the potential effects of information asymmetries between arrangers and other participants in the syndicate. The dependent variable is here the *Fraction of Foreign Arrangers* defined as the number of foreign banks as arrangers in the syndicate divided by the total number of arrangers. Table 3 displays the results. We observe in all estimations that greater ownership concentration significantly reduces the fraction of foreign arrangers in the syndicate. Hence, these results corroborate those obtained with the fraction



of foreign banks among participant banks in the syndicate, i.e. greater ownership concentration does not favor the participation of foreign banks in loan syndicates. We even observe a significantly negative relationship for both concentration measures. In other words, information asymmetries appear to play a stronger role for local banks when participating as arranger in a syndicated loan than as a junior bank. This can be explained by the fact that foreign banks have at their disposal better skills in the administration of a loan as pointed out by Gadanecz (2004), who observes that local banks are usually present as junior banks rather than arrangers in syndicated loans in emerging markets.

Second, we test an alternative definition of foreign banks when considering the fraction of foreign banks in the syndicate. We initially treated Hong Kong and Taiwanese banks as foreign in recognition of the different economic and institutional evolutionary paths of these financial institutions. Arguably, the information asymmetries here may be weaker owing to the geographic and cultural links of Hong Kong and Taiwanese banks with mainland China than for other foreign banks. To test this assumption, we redo our estimations by treating Hong Kong and Taiwan banks as local. We display the results in Table 4. The findings are similar to our main results with a significantly negative coefficient for ownership concentration measures.

Third, we check the robustness of our results as to the choice of control variables. To this end, we run our estimations again with a different set of control variables. As profitability is taken into account through a various set of variables in the empirical studies, we alternatively use the ratio of EBITDA to total assets (EBITDA) instead of ROA in the estimations. We also test the inclusion of the Altman's Z-score (Z-Score) which predicts bankruptcy. This variable provided by the Bloomberg database is a linear combination of weighted financial ratios (Altman, 1968, 2000). In our original model, bankruptcy risk was measured through the Leverage variable as greater leverage enhances the likelihood of financial distress. The Z-score is then used as an alternative measure. All these new estimations are provided in Table 5. Here again we point out that ownership concentration still exerts a negative impact on the presence of foreign banks in the syndicate.

Overall, our main findings survived all these robustness tests. We find evidence that the presence of foreign banks in the loan syndicates is not favored by ownership concentration.

## 5 Conclusions

This study analyzed whether foreign banks suffer more than local banks from information asymmetries when lending to Chinese corporate borrowers. We consider whether ownership concentration of borrowing firms influences the willingness of foreign banks to participate in syndicated loans, and observe no positive link between ownership concentration and participation of foreign banks in syndicated loans to Chinese borrowing firms. Instead, the results suggest a negative relationship. As ownership concentration can be considered as a signal of reduced agency costs, we interpret this as evidence that there is no informational disadvantage facing foreign banks relative to local banks in China. We attribute this finding to the superior skills of foreign banks in risk analysis and management. This explanation is further supported by the fact that factors associated with greater default risk reduce the participation of foreign banks in loan syndicates. We again interpret this as evidence that foreign banks are better at risk analysis and management than local banks.

Our findings are in line with former studies showing the role of information asymmetries in the structure of syndicated loans (e.g. Sufi, 2007). However, only the recent paper from Bosch and Steffen (2010) investigates the impact of information asymmetries on the participation of foreign banks in loan syndicates. They reach the opposite conclusion: that greater information asymmetries lead to lower foreign bank participation. Significantly, their paper applies to UK syndicated loans, while ours investigates syndicated loans in an emerging economy. Our findings suggest foreign banks from developed countries may benefit from their superior skills relative to local banks in an emerging economy. This explanation accords with the conclusion of the literature devoted to comparative efficiency of foreign and local banks: while local banks dominate foreign banks in developed countries (Berger et al., 2000), the studies show the opposite result in emerging countries (e.g. Bonin, Hasan and Wachtel, 2005).

The main normative implication of this result is that greater involvement of foreign banks could enhance financial development of China, so measures favoring the participation of foreign banks in the Chinese economy should be promoted.

Finally, in spite of the poor institutional framework in China, we show that foreign banks do not face barriers from greater information asymmetries. In other words, the limited participation of foreign banks in the financing of the Chinese economy appears to be largely due to legal obstacles imposed by the Chinese state.

This paper provides a point of departure for further research on syndicated loans in China. Deeper analysis of the structure of these facilities would be an excellent first step. .

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Table 1  
Descriptive statistics

	Description	N	Mean	Std. Dev.
<b>Dependent variables</b>				
Fraction of Foreign Banks	Number of foreign banks in the syndicate to total number of lenders	92	0.65	0.37
Fraction of Foreign Arrangers	Number of foreign arrangers in the syndicate to total number of arrangers	89	0.69	0.37
<b>Firm characteristics</b>				
Top Shareholder	Percentage of shares held by the largest shareholder of the firm	92	0.48	0.21
HHI Concentration	Herfindahl index of the percentages of shares held by the shareholders	91	0.31	0.23
Top State	Dummy variable equal to one if the largest shareholder is the state	92	0.62	0.49
ROA	Profit after tax to total assets	92	6.10	7.68
Leverage	Total debt to total assets	92	35.87	18.51
Short Term Debt	Short-term debt to total debt	92	0.49	0.29
Market to Book Value	Market value of assets to book value of assets	92	1.92	2.07
EBITDA	Earnings before interest, taxes, depreciation and amortization divided by total assets	92	0.11	0.06
Altman Z-score	Weighted average of financial ratios compounded by Bloomberg database	69	3.45	5.55
<b>Loan characteristics</b>				
Loan Size	Logarithm of the size of the loan in USD billion	92	1.40	3.61
Maturity	Maturity of loan in years	92	7.30	8.00

Table 2  
Main results

Explanatory variables	Regressions	
	(1)	(2)
Intercept	2.799*** (5.14)	2.779*** (5.10)
Top Shareholder	-0.304 (1.45)	-
HHI Concentration	-	-0.382* (1.85)
Top State	-0.029 (0.26)	-0.023 (0.21)
ROA	0.001 (0.18)	0.004 (0.58)
Leverage	-0.006** (1.97)	-0.005* (1.86)
Short Term Debt	0.085 (0.54)	0.047 (0.29)
Tangibility	0.209 (0.93)	0.156 (0.68)
Market to Book	0.026 (1.56)	0.022 (1.30)
Loan Size	-0.073*** (2.57)	-0.075*** (2.57)
Maturity	-0.010** (2.00)	-0.007 (1.16)
Number of observations	92	91
Adjusted R <sup>2</sup>	0.45	0.45

Definitions of variables appear in table 1. The dependent variable is *Fraction of Foreign Banks*. This table reports coefficients with t-statistics in brackets. \*, \*\* and \*\*\* denote an estimate significantly different from 0 at the 10%, 5% or 1% level. Dummy variables for industry and year are included in the regressions, but not reported.

Table 3  
Results with fraction of foreign banks among arrangers

Explanatory variables	Regressions	
	(1)	(2)
Intercept	2.928*** (5.17)	2.891*** (5.09)
Top Shareholder	-0.383* (1.77)	-
HHI Concentration	-	-0.457* (2.16)
Top State	0.022 (0.20)	0.023 (0.20)
ROA	0.003 (0.40)	0.005 (0.74)
Leverage	-0.004 (1.36)	-0.004 (1.26)
Short Term Debt	0.091 (0.56)	0.058 (0.36)
Tangibility	0.217 (0.95)	0.162 (0.69)
Market to Book	0.022 (1.26)	0.018 (1.04)
Loan Size	-0.084*** (2.85)	-0.085*** (2.83)
Maturity	-0.012** (2.30)	-0.010 (1.41)
Number of observations	89	89
Adjusted R <sup>2</sup>	0.45	0.44

Definitions of variables appear in table 1. The dependent variable is *Fraction of Foreign Arrangers*. This table reports coefficients with t-statistics in brackets. \*, \*\* and \*\*\* denote an estimate significantly different from 0 at the 10%, 5% or 1% level. Dummy variables for industry and year are included in the regressions, but not reported.

Table 4  
Alternative definition of foreign bank

Explanatory variables	Regressions	
	(1)	(2)
Intercept	2.176*** (3.55)	2.078*** (3.35)
Top Shareholder	-0.475** (2.01)	-
HHI Concentration	-	-0.469** (1.99)
Top State	0.104 (0.84)	0.095 (0.76)
ROA	0.003 (0.46)	0.005 (0.63)
Leverage	-0.003 (0.76)	-0.002 (0.63)
Short Term Debt	-0.066 (0.37)	-0.079 (0.43)
Tangibility	0.324 (1.27)	-0.293 (1.12)
Market to Book	0.034* (1.77)	0.031 (1.58)
Loan Size	-0.061* (1.91)	-0.062* (1.87)
Maturity	-0.011* (1.95)	-0.009 (1.28)
Number of observations	92	91
Adjusted R <sup>2</sup>	0.33	0.31

Definitions of variables appear in table 1. The dependent variable is *Fraction of Foreign Banks*, but here banks originating from Hong Kong and Taiwan are treated as local banks. This table reports coefficients with t-statistics in brackets. \*, \*\* and \*\*\* denote an estimate significantly different from 0 at the 10%, 5% or 1% level. Dummy variables for industry and year are included in the regressions, but not reported.



Table 5  
Alternative set of control variables

Explanatory variables	Regressions			
	(1)	(2)	(3)	(4)
Intercept	2.794*** (5.01)	2.747*** (4.94)	2.254*** (3.62)	2.127*** (3.39)
Top Shareholder	-0.306 (1.43)	-	-0.473* (1.83)	-
HHI Concentration	-	-0.395* (1.87)	-	-0.621** (2.29)
Top State	-0.030 (0.27)	-0.024 (0.22)	0.090 (0.75)	0.072 (0.60)
ROA	-	-	0.004 (0.64)	0.004 (0.45)
EBITDA	0.130 (0.17)	0.543 (0.62)	-	-
Leverage	-0.006** (1.98)	-0.005* (1.87)	-	-
Altman Z-score	-	-	0.007 (0.80)	0.006 (0.71)
Short Term Debt	0.087 (0.55)	0.055 (0.34)	0.121 (0.65)	0.095 (0.49)
Tangibility	0.208 (0.90)	0.142 (1.60)	0.186 (0.77)	0.150 (0.56)
Market to Book	0.027* (1.65)	0.024 (1.44)	0.016 (0.86)	0.016 (0.84)
Loan Size	-0.074*** (2.61)	-0.075*** (2.62)	-0.045 (1.32)	-0.041 (1.17)
Maturity	-0.010** (1.98)	-0.007 (1.06)	-0.016*** (2.60)	-0.017* (1.90)
Number of observations	92	91	69	69
Adjusted R <sup>2</sup>	0.45	0.45	0.49	0.49

Definitions of variables appear in Table 1. The dependent variable is *Fraction of Foreign Banks*. This table reports coefficients with t-statistics in brackets. \*, \*\* and \*\*\* denote an estimate significantly different from 0 at the 10%, 5% or 1% level. Dummy variables for industry and year are included in the regressions, but not reported.

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