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# Credit Ratings and information asymmetry on the Chinese syndicated loan market

Timo Korkeamäki  
Professo, Finance, Hanken School of Economics  
PB 479  
00100 Helsingfors, Finland  
timo.korkeamaki@hanken.fi

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## ABSTRACT

*We study whether local credit ratings alleviate information asymmetry inherent in the fast growing Chinese market by examining the syndicate structure of loans issued by Chinese borrowers in 2003-2011. Despite the common criticism regarding the quality of Chinese credit ratings, our results suggest that they serve an important role in reducing information asymmetry in the market between corporate insiders and outside borrowers.*

JEL classification: G15; G24

Keywords: information asymmetry, syndicated loans, China, credit ratings

## 1. Introduction

Problems of informational asymmetry are fundamental in assessing the viability of various financing arrangements (Holmström, 1979; Holmström and Tirole 1997). In China, the issues relating to information asymmetry are likely to be accentuated due to the country's institutional weaknesses. Despite the rapid growth of the local financial markets, the Chinese financial system continues to suffer from underdeveloped legal investor protection, lack of transparency, and poorly developed corporate governance mechanisms.<sup>1</sup> Market-based metrics, such as exceptionally high stock price synchronicity, have been attributed to poor investor protection that discourages informed trading (Morck et al. 2000, Gul et al. 2010). In this paper, we examine informational asymmetry in China by observing the structure of loan syndicates in the local market. We utilize a comprehensive sample of Chinese syndicated loan deals to examine the role of credit ratings, local stock listings, and cross border listings in reducing information asymmetry.

Syndicated loans are financial arrangements where multiple lenders jointly offer funds to a single borrowing firm on identical terms negotiated by a lead arranger. The lead arranger is later also responsible for monitoring the borrower. Given the nature of the arrangement, it is reasonable to assume that the required due diligence effort and complexity of the borrower's operations affect the optimal outcome of the transaction. The syndicated loans market is a good laboratory for investigating the informational content of various borrower specific characteristics as it allows us to observe the decisions made by professional market participants, namely lenders in the syndicated loan market. Also, our main variable of interest, namely the syndicate structure, is less affected by market noise and imperfections than measures such as stock returns.<sup>2</sup> Previous studies that examine syndicated loan deals on more developed markets indicate that the effects of informational asymmetry are evident when inspecting the structure of the deals (Sufi, 2007; Bosch and Steffen, 2011).

Our work is motivated by the theoretical reasoning by Holmström and Tirole (1997). Their model relies on the assumption that firms with incomplete public information require monitoring by an "informed" lender in order to satisfy the participation constraint of "uninformed" lenders. A moral hazard problem emerges as the "informed" lenders' due

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<sup>1</sup> The studies by Allen et al. (2005, 2009) provide a thorough analysis of the legal framework, institutions, finance and growth in China highlighting the main problems that continue to trouble the financial system.

<sup>2</sup> The informativeness of Chinese stock prices is discussed in Morck et al. (2000) and Gul et al. (2010) who examine the co-movement of stocks highlighting the problems that hinder firm-specific information from being capitalized into prices in an accurate and efficient manner. The effects of liquidity and ownership restrictions are also relevant when discussing Chinese stock prices (Wang and Jiang, 2004).

diligence effort and monitoring is unobservable. Consequently, the “informed” lenders are required to participate in borrowing, in order to align interests with the “uninformed” lenders and thus assuring that they exert effort. Lead arrangers of loans to firms that require more monitoring or due diligence are required to retain a larger share of the loan to attract participant lenders. China offers an ideal setting for testing such hypotheses. The underdeveloped legal framework, paired with a lacking system of information assimilation, should widen the gap between informed and uninformed lenders, while the fast growth and the vast resources of the economy offer strong incentives for financial institutions to participate in the financing of Chinese firms.

We follow the reasoning by Sufi (2007) and Bosch and Steffen (2011) who argue that a larger number of participating banks indicates a lower level of information asymmetry in the loan deal as more banks are willing to participate (and less investment by the informed lead underwriter is required) in deals with less information asymmetry. Our primary measure of syndicate structure is the number of lenders in the syndicate. We find that syndicated loans to firms with credit ratings have a larger number of participants, indicating that ratings alleviate problems pertaining to information asymmetry. Our model specifications control for various borrower specific characteristics, such as public and cross-border listings, that previously have been linked to information asymmetry. However, having a credit rating emerges as the single strongest alleviating factor. We also examine foreign participation in loan syndicates separately. Our examination reveals that foreign banks’ participation in Chinese loan syndicates follows a slightly different pattern compared to that of their domestic counterparts. However, the impact of our main variable is strikingly consistent. Firms with credit ratings, and those with non-state ownership, tend to attract a larger number of both foreign and domestic participants.

When we consider the relative share of foreign lending in Chinese syndicates, we find that it is not related to the credit rating or state ownership of the borrower, implying that the foreigners are not more sensitive to these borrower characteristics. This finding is in contrast with Bosch and Steffen (2011), who report that ratings are particularly important for foreign banks active in the U.K. syndicated loans market. Overall, our results are consistent with prior studies from Western markets (e.g. Sufi, 2007; Lee and Mullineaux, 2004), as they

indicate that syndicate size varies in line with expectations with variables capturing borrower risk and familiarity, such as loan maturity or existence of previous loan issues.<sup>3</sup>

Our finding that Chinese rating agencies provide important information to the market is interesting, as the local rating agencies have been widely accused of disregarding issuers' default risk by putting too much effort on winning business by assigning excessively high ratings to most issuers (Lee, 2006; Asiamoney, 2006). A recent study by Poon et al. (2013) emphasizes quality differences among Chinese credit rating agencies. They indicate an important role for one of the Chinese rating agencies, the Shanghai Far East Credit Rating co., in reducing information asymmetry in Chinese SEOs. In contrast, we find that even ratings from agencies that have been deemed less reliable affect loan syndicate structures in a significant manner.

We contribute to the literature on information asymmetry and its effects in the Chinese market. Gul et al. (2010) find that stock price synchronicity is lower for Chinese firms issuing foreign-investor shares to the more developed Hong Kong market than for firms issuing foreign-investor shares to the less developed mainland exchanges. They argue that the results show that more firm-specific information is priced in the stocks that are cross-listed. Their result, thus, suggests that differences exist in the availability of firm-specific information across firms listed on the exchanges – or perhaps, in the enforcement of disclosure policies across exchanges. We, therefore, re-examine the effect of their variables using similar firm-specific controls on the syndicated loans market.

The paper is structured as follows. Section 2 describes the relevant institutional context. Section 3 discusses the research background. Section 4 describes the data and the empirical methodology. Section 5 presents the results. The robustness of the results is discussed in Section 6. Section 7 concludes.

## **2. Chinese banks as suppliers of corporate financing**

The Chinese banking sector clearly dominates the local stock market as a source of corporate financing. As noted by Allen et al. (2005, 2009), the poor legal protection of minority and outside owners causes external financial markets to remain weak. Privately-held Chinese companies have grown significantly faster than listed companies, and their contribution to the growth of the economy exceeds that of publicly-traded firms, despite the

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<sup>3</sup> To our knowledge, Pessarossi et al. (2012) and Pessarossi and Weill (2012) are the only previous papers to study the Chinese syndicated loans market. Both papers consider the impact of ownership structure on loan syndicates.

limited access to bank financing that privately-held firms face. In a survey study, Cull and Xu (2005) document that only 28% of the private firms in their sample have access to bank loans. They also document considerable geographic variation in access to financing within the country. Overall, external financing is very difficult to obtain.

The Chinese banking sector is dominated by large and inefficient state-owned banks (Berger et al., 2009; Allen et al., 2005). In 1995, 99.45% of the 10 largest commercial banks in China were state owned (La Porta et al., 2002). However, state dominance has decreased since then. In 2010, the share of total banking assets belonging directly to state owned entities dropped below 50% for the first time. However, even if direct state ownership has decreased, the banking sector nevertheless remains dominated by the state since many of the commercial banks are held by firms that are ultimately state-owned.

One of the largest problems with China's banking sector has been the amount of nonperforming loans resulting from poor lending decisions, which in turn partially stemmed from the influence of political or other non-economic reasoning on lending decisions. Bailey et al. (2011) find that poor financial performance increases the likelihood of obtaining a bank loan in China. Also, bank loan approval appears to predict poor subsequent borrower performance and negative bank loan announcement day returns. Their results provide strong evidence of inefficiency of the local banking sector. More specifically, Huang, et al. (2012) report in a recent paper that negative stock reactions to bank loan announcements in China concentrate on deals where the loan is extended by a less efficient bank, and where the risk of expropriation by majority shareholder of the borrowing firm exists. According to PWC (2011), the share of non-performing loans has decreased dramatically in recent years falling from 10.49% in 2005 to 1.31% in 2010. The decrease in non-performing loans has, however, been attributed to reforms aimed at getting the state-owned commercial banks in shape for initial public offerings that involved the strengthening of balance sheets by merely transferring the non-performing loans off the books and then recapitalizing the banks (Fungáčová et al. 2012). Overall, it is clear that improving the banking system and availability of external financing continue to be pivotal tasks for China in the near future, as deficiencies in the market for corporate financing can easily hamper the economy's future economic growth. Our paper sheds light on the functionality of the syndicated loan market and its viability as a source of external bank funding.

The market for public debt also remains under-developed, and thus unable to compensate for the shortcomings of the banking sector. As of June 2006, bank loans accounted for 87% of total funds raised by China's non-financial sector (Bailey et al., 2011). Illiquidity and poor

lender protection in bankruptcy proceedings are serious obstacles for the development of a functioning bond market (Bailey et al., 2011). Despite recent efforts to improve regulation, firms owned by the central government are still significantly more likely to access the bond market than privately held firms while financial factors appear to play only a minor role in corporate debt choices (Pessarossi and Weill, 2012). Allen et al. (2005) note that for most firms, internally generated funds remain the primary, and in some cases the only, attainable source of corporate financing.

The Chinese market for syndicated loans has experienced considerable growth in recent years, reaching an annual volume of \$33.6 billion at the end of 2010 according to the Bank of International Settlements. Earlier, the syndicated loan market was dominated by foreign banks and loans were denominated in foreign currencies. However, following the financial crisis, the proportion of syndicated loans issued by local banks has increased considerably. In 2009, the volume issued by foreign banks only corresponded to 9% of total volume (Pessarossi et al., 2012; Chui et al., 2010). In June 2010, 88% of all loans issued in China were arranged by four banks (China Development Bank, Industrial and Commercial Bank of China, China Construction Bank, Bank of China). Despite the recent growth, the syndicated loan market nonetheless remains in its infancy.

In 2007, new regulation was put in place, in order to standardize the practices in China's syndicated loan market. New guidelines were issued by the China Banking Regulatory Commission (CBRC) to reduce risks within the banking sector and to standardize procedures. In practice, it has nevertheless been unclear whether the guidelines should be interpreted as binding regulation or recommendations. The guidelines apply to domestic banks and non-bank financial institutions that are approved by the China Banking Regulatory Commission (CBRC).

### **3. Syndicated loans and information asymmetry**

Despite the importance of the syndicated loan market as a source of corporate funding, previous research on syndicated lending remains relatively limited. Empirical studies that are most relevant to our research question examine the determinants of syndicate structure.

Dennis and Mullineaux (2000) explore factors that influence a lender's decision to syndicate a loan in a sample of public and private U.S. loan transactions. They find that the probability of syndication increases with the transparency of the borrower, reputation of the lead bank, and loan maturity. The lead bank retains a larger share of the syndicated loan when the borrower is more difficult to analyze. Sufi (2007) and Bosch and Steffen (2011) also

examine the impact of informational asymmetry on syndicate structure. The results in Sufi (2007) are consistent with Dennis and Mullineaux (2000). He provides support for theories of moral hazard in monitoring, as he finds that the lead bank holds a larger share of the loan when the borrower requires more monitoring or due diligence effort. A reputable lead bank or borrower alleviates the information asymmetry problem.

In the Chinese context, both credit ratings and cross-listings offer potential solutions to problems related to information asymmetry. By listing abroad, the firm must follow the regulatory requirements of the foreign exchange, and it can thus commit itself to the local norms on transparency (Reese and Weisbach, 2002). Consistent with the idea, Miller (1999) finds that foreign listings in the U.S. are associated with more positive stock reactions if the firms are from emerging countries and if they choose the listing with more stringent disclosure requirements. Credit ratings, on the other hand, are viewed as important means of certifying firm quality (Megginson and Weiss, 1991). Rating agencies also tend to gain access to non-public information (Yi and Mullineaux, 2006). Bosch and Steffen (2011) argue that credit ratings are instrumental in bridging the informational gap between informed and uninformed lenders. In their view, credit ratings alleviate lending-relevant information asymmetry more efficiently than listings, due to the amount of firm-specific information on credit quality that is produced by the rating agencies.

Similar to our approach, Bosch and Steffen (2011) assess the effect of credit ratings and stock listings on information problems, using a sample of UK loan transactions. They exploit the heterogeneity that exists in the UK where companies can be private or public limited liability companies. In addition, credit ratings exist widely in the UK for both public and private firms. Thus, they are able to assess the relative importance of listings versus ratings in alleviating information asymmetry across market participants. They find that the certification effect is largest for private firms and that the marginal effect of being listed disappears once firms are rated. Their results highlight the importance of credit ratings as a mechanism to lessen information frictions between market participants.

To the extent of our knowledge, Pessarossi et al. (2012) is the only previous paper to explore the dynamics of the syndicated loan market in China. Following previous theoretical literature on the link between borrower's ownership concentration and information asymmetry, they test whether ownership concentration impacts foreign participation in syndicated loans to Chinese borrowers in the period 2004-2009 using a sample of 92 deals. They find that ownership concentration fails to impact foreign participation and conclude that information asymmetries are not exacerbated for foreign banks in China. Financial leverage,



however, appears to discourage foreign participation, which may suggest that domestic banks are willing to tolerate a higher risk exposure than foreign banks. While the results in Pessarossi et al. (2012) shed light on the informational advantage of foreign banks in China, plenty of work remains to be done. We extend their research, and examine additional features of the Chinese loan syndicates by testing the potential role of credit ratings in alleviating informational asymmetries across deals while controlling for various firm-specific features. Also, our choice to focus on syndicate structure variables that are based on the number of participant banks in the syndicate allows us to work with a sample that is much larger than theirs, despite the same data source.

Examining the informational value of Chinese credit ratings is particularly interesting since the reliability and skill of local agencies could arguably differ from international rating agencies – especially in the eyes of foreign banks. Qualitative statements that have expressed a skeptical view of Chinese ratings agencies have appeared in numerous industry news publications. For instance, Lee (2006) and Asiamoney (2006) argue that China's fixed income markets are being impeded by the lack of high quality independent credit-rating agencies, claiming that major Chinese agencies tend to put too much emphasis on winning business by giving top ratings to most issuers while disregarding issuer quality.<sup>4</sup> Poon and Chan (2008) examine the certification effect of initial rating announcements and the signaling effect of rating downgrade announcements in China. For initial rating announcements, they find a negative effect of the speculative-grade rating announcement that is much stronger than the positive effect of the investment-grade rating announcement. They suggest that the suspected positive bias among Chinese ratings accentuates the informational value of low ratings to market participants. The announcement effect of a rating downgrade is also negative and significant. Their results imply that Chinese credit ratings carry valuable information despite previous criticism. Poon and Chan (2008) further argue that not all Chinese rating agencies are under pressure from issuers to provide excessively high credit ratings. On a similar note, Larry Lee, chief at Fitch Ratings Ltd., believes that investors do care about Chinese credit ratings if they are from good rating agencies (Asiamoney, 2006).<sup>5</sup>

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<sup>4</sup> As an example, Poon and Chan (2008) mention the online credit-rating reports of Dagong Global Credit Rating Co. All 29 companies in Dagong's sample received a rating of A or above, and 21% of the companies obtained an AAA rating, while none of Dagong's sample companies carries a speculative-grade credit rating. Similarly, China Chengxin International Credit Rating Co. has never assigned a speculative-grade rating on any of the short-term corporate debt issues it covers.

<sup>5</sup> Interestingly, some parts of the Chinese institutional setting has chosen quite ambitious paths, as the country's financial infrastructure has emerged. See e.g. Jentzsch (2008) for early evidence on consumer credit reporting industry in China.

In contrast to the aforementioned criticism on Chinese credit rating agencies, evidence of their role in reducing information asymmetry has recently emerged. Poon et al. (2013) report that local credit ratings reduce SEO underpricing in a significant manner in China. Our empirical examination provides valuable insights into the informational value of local credit ratings – that is, do they influence the decision making of local and foreign financial professionals, such as lenders?

## **4. Sample and methodology**

### **4.1 Data**

We obtain our sample of syndicated loans from Bloomberg. Our original sample is restricted to loans issued by firms domiciled in China in the period 01/2000-07/2011. We convert all loans to renminbi, in order to match the denomination of our financial data.

A syndicated loan may contain more than one loan tranche. Also, as in Sufi (2007), we conduct a deal-level analysis as opposed to a tranche-level analysis. This is done because the actual syndicated loan contract is drawn at the deal level, meaning that the covenants and all lenders are listed together on this contract. This applies even if an individual lender participates only in a single tranche. While maturity and pricing of the loan tranches may differ, all tranches are stipulated in a single contract where all participants are contracting parties. It is thus motivated to consider deals (loan transactions) as observations. As Sufi (2007) points out, considering tranches as observations would result in downward-biased standard errors.

We also obtain financial data on the characteristics of the borrowers from Bloomberg. Similar to Bosch and Steffen (2011) and Haselmann and Wachtel (2011), we match financial data from the fiscal year prior to the issue year. Following Ivashina (2009), Qian and Strahan (2007), and Pessarossi et al. (2012), we exclude all financial sector borrowers from our sample. Whenever the issuer is a subsidiary, we use financial data for the parent firm, as in Sufi (2007).

We further exclude loan transactions where either information about the participant borrowers is missing, or where only one participant is indicated (54 deals excluded). We require the following data items to be available for each transaction: number of participants, loan maturity, size of the deal (loan amount), security and currency of denomination (25 deals excluded). These restrictions leave us with 436 loans in our sample. Financial data is available only for a sub-set of our sample issuers. Requiring accounting variables deteriorates

our sample further to 206 observations.

## 4.2 Summary statistics

In this section, we present an overview of our sample. Figure 1 shows the number and volume of our sample issues by year. Figure 1 indicates that the amount of syndicated loans has increased considerably since 2003. It is interesting to note that despite the global financial crisis, the Chinese syndicate loan market reached its peak in 2009, with an annual loan volume of approx. 325 billion RMB (\$52 billion). The highest amount of contracts was signed in 2010 and the growth appears to have continued in 2011 with 50 loans issued as of July, 2011. The loan issuers (436 observations) in our sample represent all sectors of the economy with 28% representing industrial manufacturing, 17% commodities and materials, 16% consumer products, 8% communication and technology and 31% other sectors.

[INSERT FIGURE 1]

Our sample of 436 syndicated loans is issued by 409 different firms. One third of the firms are cross-listed outside mainland China, and 9% of them have a credit rating issued by one of the local rating agencies. Of the 136 firms listed outside China, 60% are listed in Hong Kong, 15% in Taiwan, 10% in Japan and 10% in the U.S. The overlap between rated and cross-listed firms is small; only 4 firms are both rated and cross-listed.<sup>6</sup>

The number of banks participating in the loan syndicates is 431. Out of them, 75% are foreign (not including banks from Hong Kong and Taiwan), 11% are from Taiwan or Hong Kong and 14% are domestic Chinese banks. Pessarossi et al. (2012) report a similar breakdown, with 79% foreign and 21% Chinese banks in their Chinese syndicated loan sample.

Table 1 presents summary statistics for the syndicated loans and borrowing firms in our sample. The average number of participants in a loan syndicate is 11.47 with an average foreign participation of 58%. The number of participants varies from 2 to 80, with a standard deviation that is greater than 10.

[INSERT TABLE 1]

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<sup>6</sup> Bosch and Steffen (2011) note that listings and credit ratings function as alternative means of reducing information asymmetry between the firm and syndicate lenders. In that light, it is not surprising that we do not observe much overlap between cross-listed and rated firms.

The average deal size is 2.52 billion RMB (approx. \$402 million) with an average maturity of 68 months. Maturity varies considerably across loans (min. 5 months, max. 528 months). In comparison, Carey and Nini (2007) report an average deal size of \$370 million for the U.S., and €340 million for Europe, with an average maturity of 48 and 60 months respectively. According to Godlewski and Weill (2008), the average deal size is \$218 million dollars for loan syndicates of borrowers from developing markets with an average maturity of 54 months. Loans in our sample are thus fairly large in an international comparison and have long maturities.

In an earlier study on the Chinese syndicated loan market, Pessarossi et al. (2012) report an even larger average deal size of \$1.4 billion and longer average maturity at 80 months. However, their sample is significantly smaller than ours (92 observations). While we use a similar sample period and the same data source (Bloomberg), the difference in sample size is explained by their requirement of data availability regarding each bank's percentage of the deal.

We obtain data on Chinese credit ratings from the Wind database, and from the websites of Chinese credit rating firms. The distribution of the ratings across levels and ratings agencies are reported in Table 2. The Chinese credit ratings are highly homogenous. All the rated firms in our sample have a rating between AA and AAA. The information value thus stems from having a rating – rather than from the level of the rating. The lack of variation in credit ratings is in line with the findings in Poon and Chan (2008). While Poon et al. (2013) report a wider spectrum for ratings from Shanghai Far East Credit Rating co. than from other Chinese rating agencies, the four issuers in our sample that are rated by that agency all have an AAA rating. Our observations of firms with a rating by Shanghai Far East Credit Rating co. are more restricted as we also require the firms to have issued syndicated loans.

[INSERT TABLE 2]

### **4.3 Methodology**

To test the impact of information asymmetry on syndicate structure, we run a regression of the syndicate structure against characteristics expected to impact the level of information asymmetry while controlling for various firm-specific variables. We follow Bosch and Steffen (2011) and test the following model:

$$\text{SYNDICATE}_{i,b,t} = c + \beta(\text{INFORMATION ASYMMETRY}_{b,t}) + \gamma(\text{LOAN}_{i,b,t}) + \delta(\text{FIRM}_{b,t}) + \varepsilon_{i,b,t}$$

As in Bosch and Steffen (2011), we define  $\text{SYNDICATE}_{i,b,t}$  as the number of participants in a loan syndicate  $i$  issued by firm  $b$  at time  $t$ . The more there are participating lenders, the larger the pool of market participants willing to lend to the firm. The variable thus serves as a proxy for information asymmetry between the issuing firm and potential borrowers. The key explanatory variables are dummy variables intended to capture issuer-specific variation in the information asymmetry between borrowers and lenders.<sup>7</sup>

In separate tests, also consistent with Bosch and Steffen (2011), we study the determinants of foreign participation in the Chinese loan syndicates. In those regressions, the dependent variable is defined as the number of foreign banks participating in the syndicate ( $\text{NUMBER FOREIGN}$ ) and proportional share of foreigners ( $\text{SHARE FOREIGN}$ ) which is defined as foreign participation divided by the total number of participating banks.

We follow Bosch and Steffen (2011), Lee and Mullineaux (2004) and Sufi (2007) in defining our information asymmetry proxies. In our first set of regressions using a sample consisting of privately and publicly held firms, we employ three different variables to capture the variation. The dummy variable  $\text{PRIVATE}$  takes the value one for privately held firms, and zero otherwise. This is to control for any effects that might arise due to differences in disclosure and corporate governance requirements between privately held and public firms. Following the same reasoning, we also control for cross-listings as information disclosure requirements and corporate governance procedures may differ between the local and foreign exchanges, which can have an effect on the information asymmetry between firm insiders and outsiders. The dummy variable  $\text{CROSS-LISTED}$  takes the value of one for firms that are listed on a foreign stock exchange and zero otherwise. Our main variable of interest,  $\text{CREDIT RATING}$ , takes the value of one for firms that have a credit rating issued by a Chinese credit agency and zero otherwise. We do not consider ratings by international rating agencies since only very few firms in the sample have an international rating.

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<sup>7</sup> Besides the number of participants, Sufi (2007) also uses other measures such as the proportion of the loan retained by the lead arranger and the Herfindahl index of banks' participation in the loan. In the Sufi (2007) paper, the information on the proportions held by each syndicate lender is available for about 35% of the loans. Given the large size and longer history of the U.S. syndicated loan market, the data requirements still leave 4,414 loans to analyze. Requiring availability of each bank's percentage of the deal would deteriorate our sample to below 100 observations of which only 11 have a credit rating. We thus use the number of participants as our main metric of the syndicate structure.

We also include other loan specific control variables denoted by  $LOAN_{b,t}$ . And finally, we control for relevant firm level characteristics depicted in the above model by the vector  $FIRM_{b,t}$ . Due to data restrictions on privately held firms, we begin by estimating a regression without firm-level controls. In the regressions with firm-level controls, we are forced to drop loans issued by privately held firms and, hence, we also only include two of the information asymmetry variables, **CROSS-LISTED** and **CREDIT RATING**.

We also include a dummy variable that equals one for firms that have issued multiple syndicated loans (**PREVIOUS ISSUES**). Following Sufi (2007), we postulate that firms with repeated issues are better known to market participants and are thus less affected by information asymmetries. This is particularly relevant in the Chinese context, as Bharath, et al. (2011) note that prior lending is an especially important information channel if borrower transparency is low. However, unlike Sufi (2007), we are unable to control for whether previous syndicated loans had the same participating borrowers or lead agent – the variable should thus be interpreted with some caution.

To assess the impact of state ownership on the issuing firm, we include a dummy variable, **STATE**, that equals one if the state is the majority owner in the borrowing firm. We define our state ownership dummy as in Pessarossi et al. (2012), i.e. the state is the largest owner. Our data on state ownership is from the Wind database. State ownership may decrease credit risk since the state has an ability to bail-out a firm in need. However, state ownership may also be seen as a potential risk factor, since state owned firms can base their decision making on political rather than economic reasoning. Furthermore, state ownership can aggravate problems relating to information asymmetry. Gul et al. (2010) report that governmental ownership in Chinese firms reduces the informativeness of their stock returns. For domestic banks however, we would expect the political threats to be less of a concern since both the borrower and lender are often ultimately owned by the same entity.

We include a number of loan specific controls in our regressions. Firstly, we include **MATURITY** of the loan, measured in months. As argued in Pessarossi et al. (2012), a longer maturity may increase credit risk. We also include the **SIZE** of the loan – as in previous studies, we expect larger loans to have a higher number of participating lenders. **RMB** is a currency dummy that equals one if the loan is issued in RMB. The dummy variable **TERM** equals one if the contract stipulates a fixed interest rate as opposed to a floating rate. The variable **SECURED** is equal to one if the loan is secured with collateral. According to Lee

and Mullineaux (2004), the impact of having securing collateral is unclear since loans that require securing tend to have a higher credit risk to begin with. Thus, even if collateral decreases the potential loss to a borrower in case of a default, it also serves as a signal for higher credit risk (Rajan and Winton, 1995). Secured loans also tend to require a more thorough due diligence process and closer monitoring (Smith and Warner, 1979). Given these conflicting factors, we view the connection between the number of participating borrowers and collateral as an empirical issue. We also control for the domicile of the ultimate parent of the borrower (DOMESTIC PARENT). We choose to control for the nationality of the ultimate owner since a firm can have a foreign ultimate owner without being cross-listed if the company has a large international shareholder. These firms are likely to differ in the eyes of lenders from entirely domestic borrowers.

We follow prior literature in our choice of borrower specific control variables (e.g. Sufi, 2007, Bosch and Steffen, 2011 and Pessarossi et al., 2012). We include firm profitability (ROA, earnings after tax over total assets), total assets (TA, the natural logarithm of total book assets) and book leverage (LEVERAGE, book value debt over book value of assets).

Most of our model specifications include controls for year and industry effects. We also include dummy variables for the reported the two most common purposes of issuing the loan, namely working capital and refinancing, as reported by Bloomberg.<sup>8</sup>

Previous studies (Bosch and Steffen, 2011; Lee and Mullineaux, 2004; Lee et al., 2010) estimate Poisson regressions when using a similar model specification. However, the maximum likelihood procedure necessary to derive the coefficient estimates and provide standard error estimates in a Poisson regression makes a strong assumption about the distribution of the outcomes in the sample – i.e. that the conditional variance equals the conditional mean of the data. Our sample fails to meet this condition. We test the Poisson restriction as in Wooldridge (1997) and Cameron and Trivedi (1986) and find that the data is overdispersed. Estimating a Poisson model could still result in consistent coefficient estimates but overdispersion tends to cause the standard errors to be too small, resulting in an upward bias in statistical significance. Therefore, we use an extension to the Poisson regression, called negative binomial regression, which accounts for overdispersion and is based on the

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<sup>8</sup> 127 loans are issued for working capital purposes, and 83 for refinancing. The omitted class in our regressions includes project-specific financing, acquisition financing, and miscellaneous purposes.

negative binomial distribution. We also estimate Poisson and OLS regressions to assure robustness of our results.

Besides studying the determinants of the size of the syndicate, we also consider the factors that impact foreign participation in a loan syndicate in a separate set of regressions. The dependent variable is the number of foreign lenders participating in the syndicate ( $\text{NUMBER FOREIGN}_{b,i,t}$ ). Furthermore, we examine the determinants that impact the share of foreign lenders participating in the loan syndicate ( $\text{SHARE FOREIGN}_{b,i,t}$ ) measured as the number of foreign participants divided by the total number of participants in the syndicate. We define the explanatory variables in the model as previously using all available information asymmetry variables while controlling for loan and firm specific characteristics available for publicly listed firms. The models are estimated using a negative binomial regression for the models with  $\text{NUMBER FOREIGN}_{b,i,t}$  as dependent variable. A Tobit regression is used in the models with  $\text{SHARE FOREIGN}_{b,i,t}$  as dependent variable since it is both left- and right-censored.

## **5. Regression results**

In this section, we present regression evidence regarding determinants of syndicate structure in the Chinese syndicated loan market. We consider our full sample, and the sample that is restricted due to financial data availability in respective tests. Furthermore, in section 5.2., we explore the determinants of foreign participation in Chinese loan syndicates.

### **5.1. Determinants of syndicate size**

In Table 3, we present the results from our first set of regressions. At this point, we exclude the borrower-specific accounting variables in order to include a larger sample and also to test the impact of being privately held on information asymmetry.

[INSERT TABLE 3]

In this model specification, our key variable of interest is the dummy for privately held firms – a variable that is dropped from subsequent regressions that employ a sample of only publicly-traded firms. The results show that the coefficient for PRIVATE is negative which is in line with our expectations. Privately held firms issuing loans appear to have more concentrated loan syndicates, which implies that being privately held amplifies the information asymmetry between lenders and borrowers. However, the statistical significance



of the coefficient seems to depend on whether CREDIT RATING is included in the specification or not, indicating that the effect of a Chinese rating dominates the effect of a stock listing. This is consistent with Bosch and Steffen (2011) findings. CREDIT RATING enters with a positive and significant sign, which is in line with the findings in Bosch and Steffen (2011), Sufi (2007) and Lee and Mullineaux (2004). The strong impact of having a credit rating on syndicate structure also confirms the informational value of Chinese credit ratings despite the criticism they have received. Since the borrowers in the sample all have an AA or AAA rating, the credit rating can also be interpreted as a general signal of quality.

The control variable depicting if a firm is listed abroad, CROSS-LISTED, is contrary to expectations negative albeit not statistically significant. This result is consistent with the findings in Bosch and Steffen (2011), who report that the informational value of a credit rating significantly exceeds the informational value of being publicly listed. Among our three measures capturing factors that alleviate informational asymmetry, only CREDIT RATING gives consistent results across specifications in Table 3.

Among our other control variables, loan maturity has a negative and significant impact on syndicate size. This is in line with Pessarossi et al. (2012). However, a positive impact has also been found in similar empirical specifications (Bosch and Steffen, 2011; Lee and Mullineaux, 2004; Lee et al., 2010). A positive coefficient would imply that only firms that have a lower credit risk can attain loans with a longer maturity. Our results and the results in Pessarossi et al. (2012) can be interpreted as indicating that credit risk or monitoring need increase with maturity for Chinese syndicated loans. The coefficient for the size of the issue is positive, as expected. The coefficient for the dummy variable indicating if the loan is secured is negative indicating that only borrowers with higher credit risk are required to provide security. The result is consistent with previous studies (Sufi, 2007; Bosch and Steffen, 2011; Lee and Mullineaux, 2004, Smith and Warner, 1979). In line with our expectations, having previous issues (PREVIOUS ISSUES) appears to alleviate the problems relating to informational asymmetry. Fixed rate loans (TERM) have more concentrated syndicates. Interestingly, the dummy variable indicating state ownership, STATE, is negative and significant at the 5% level, and the indicator for firms with a Chinese parent company (DOMESTIC PARENT) also enters with a significant negative sign. Our other control variables do not appear to impact syndicate structure.

[INSERT TABLE 4]

In Table 4, we include the borrower characteristics as additional controls in our regression. As mentioned above, this deteriorates our sample size as it forces us to exclude observations for privately held borrowers. However, our results are highly similar between Tables 3 and 4. The coefficient for CREDIT RATING continues to exhibit a strong positive sign also in Table 4, across all variations of the model specification.

With regards to the control variables, cross listings continue to have a negative but mainly statistically insignificant effect on syndicate size. Among the financial variables that we introduce, profitability (ROA) and leverage (LEVERAGE) have no effect on syndicate size. However, size of the issuing firm (measured by total assets, TA) is connected to smaller syndicates. This is a somewhat surprising finding, as it indicates that larger firms present a greater credit risk, which limits participation in their syndicated loans.

Our control variables behave in a very consistent manner between Tables 3 and 4. The only marked differences are that the fixed rate indicator (TERM) and the purpose of borrowing (REFINANCING and WORKCAP) lose their significance when accounting variables are introduced in Table 4.

In column 5 of Table 4, we estimate the model using a Poisson regression. The results in column 5 confirm the positive impact of CREDIT RATING on syndicate size. It is also noteworthy that overdispersion appears to have the expected effect, as our results gain statistical significance when Poisson regression is used.

## **5.2. Foreign participation in Chinese loan syndicates**

Previous literature provides a number of different reasons for why foreign banks may base their participation decisions on factors that differ from those used by local banks, especially in an emerging market like China. Mian (2006) suggests that international banks can mitigate local financing constraints either by providing capital through foreign participation in local financing arrangements, or through setting up local branches. We discussed earlier the potential learning benefits for the Chinese banking sector from foreign participants in local loan syndicates. This idea further supports the role of foreign banks in alleviating financing constraints in China, even beyond the amount of capital that they provide. In emerging market lending, Haselman and Wachtel (2011) suggest that the technology advantage over domestic banks may explain foreign participation in local loans. Bosch and Steffen (2011) consider foreign bank participation in quite a different setting, as

their sample borrowers are from the U.K. They view their foreign participants as uninformed lenders.

In Tables 5 and 6, we explore the factors that impact foreign participation in a loan syndicate. In Table 5, we estimate a regression with the number of foreign participants in the loan syndicate ( $\text{NUMBER FOREIGN}_{b,i,t}$ ) as our dependent variable. We employ the same explanatory variables as in the previous models that are applicable to publicly listed firms. The model is estimated using a negative binomial regression.

[INSERT TABLE 5]

Table 5 shows that our key variables impact foreign participation in a similar manner as total participation in Table 4. The coefficient for CREDIT RATING continues to exhibit a strong positive effect on the number of foreign participants meaning that the previous result is not driven by its impact on domestic participation in loan syndicates. Loans issued by firms with local credit ratings have a higher number of foreign participant lenders than other loans. The variable STATE is also consistently negative; this is also in line with the results in Table 4.

In Table 6, we use the proportion of foreign lenders in the loan syndicate ( $\text{SHARE FOREIGN}_{b,i,t}$ ) as our dependent variable with the same explanatory variables as previously. Since the outcomes of the proportion of foreign lenders in the syndicate are censored at zero and one,<sup>9</sup> the model is estimated using a tobit regression. Examining the impact of our independent variables on the proportion of foreign participant lending allows us to examine whether the impact of our key variable, CREDIT RATING, is stronger for foreign or domestic participation since the variable has the same sign in Tables 4 and 5. If the effect is stronger for foreign participants, we would expect the foreign share to be greater in this case. If the impact on information asymmetry of a dummy variable such as CREDIT RATING would be perceived identically by foreign and domestic lenders, we would not expect them to have an effect on the relative share of foreign versus domestic lenders.

[INSERT TABLE 6]

Table 6 indicates that factors affecting the share of foreign participation in Chinese loan syndicates differ strikingly from the factors that we report as determinants of the overall syndicate structure and number of foreign participants of the same loans in our previous

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<sup>9</sup> Note from Table 1 that both extreme values are present in the sample.

tables. Chinese credit ratings fail to affect foreign banks' share in Chinese loan syndicates. The coefficient on the CREDIT RATING dummy is positive, but far from statistical significance. Hence, the effect seen in Table 4 on overall participation in loan syndicates is not driven by the effect of credit ratings on foreign or domestic lenders alone.

Interesting contrasts between Tables 4, 5 and 6 exist among control variables. First, foreign banks seem to participate more readily in loans issued by firms that are cross listed. Also, while the overall syndicate structures results in Table 4 suggested that larger loans (SIZE) by smaller firms (TA) are connected with larger syndicates, those results are opposite when foreign relative participation is considered separately (as in Table 6). The results in Table 5 showed an inconsistent impact for size on overall foreign participation that is not statistically significant. On a relative basis, foreign banks tend to participate more in small loans by large firms. Pessarossi et al. (2012) also find that foreign participation is higher for smaller loans. They, however, do not control for firm size. Our result on the share of foreign participation is also consistent with the finding in Haselmann and Wachtel (2011) that in emerging markets, foreign banks are more likely to lend to large firms with more 'hard' information available. This result holds in our setting when foreign banks are in a more dominant position as lenders. Concentration in smaller loans is consistent with Mian (2006) notion that as foreign banks are likely to be concerned about the potential loss of franchise value stemming from large exposures to project-specific risks, they tend to curb such risks.

Furthermore, in contrast to Table 4 findings, foreign banks are more likely to dominate in loans to borrowers that have higher leverage, and that do not have a foreign parent company. These findings can be viewed as supporting Haselmann and Wachtel (2011), as they note that in large financial markets, which China arguably is, banks are drawn by their risk appetite. Apparently, foreign banks that are active in the Chinese syndicated loan market prefer local risks and are willing to assume credit risks in the process.<sup>10</sup> Our finding differs from the results in Pessarossi et al. (2012) who find that the fraction of foreign participants decreases with the leverage of the borrower. The inconsistency between our results and the results in Pessarossi et al. (2012) may be due either to differences in sample size or to the inclusion of additional control variables in the model.

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<sup>10</sup> Haselmann and Wachtel (2011) draw a distinction between poorly developed emerging markets and large financial systems. Our results suggest that the Chinese syndicated loan market is somewhere between these two groups, as the international lenders in China exhibit some characteristics that are consistent with China being a small emerging market, while other characteristics would place the country as a large financial market.

Government ownership (STATE) and prior syndicated loans (PREVIOUS ISSUES) do not affect the relative foreign participation in Chinese syndicates. Pessarossi et al. (2012) also report that the variable for state ownership is insignificant.

## **6. Robustness tests**

We find strong evidence suggesting that credit ratings impact syndicate structure in the Chinese market. However, the Chinese market could have special characteristics regarding information assimilation, which affect syndicate structure, and, thus, our results could be affected by unobserved heterogeneity. Gul et al. (2010) investigate the effects of foreign ownership and audit quality on the amount of firm-specific information incorporated into share prices of Chinese firms. They find that state ownership is connected to opaqueness in the Chinese market, whereas foreign ownership, and foreign listings increase the amount of firm-specific information in the firm's stock price. In our previous tests, we control for these effects through STATE, DOMESTIC PARENT, and CROSS-LISTED variables. Gul et al. (2010) suggest audit quality as an additional factor affecting assimilation of firm-specific information into stock prices in China. They measure audit quality with a dummy variable that takes the value of one if the firm has employed a Big Four auditing firm (Deloitte, KPMG, Ernst & Young, PwC). We are able to obtain auditor information from the Thomson OneBanker database for issuers of 137 of the loans in our sample. About 60% of those firms are audited by a Big Four firm. In the first column of Table 7, we include the BIG4 indicator as an additional control variable.

[INSERT TABLE 7]

In contrast to Gul, et al. (2010), we fail to find evidence suggesting that having a Big Four auditor affects information asymmetry of Chinese firms. As Column (1) of Table 7 indicates, inclusion of the BIG4 indicator leaves our findings intact. No marked differences between these results and those reported in Table 4 exist. The positive effect of CREDIT RATING is about as strong as that reported in Table 4.

It is important to note that in order to be included in the regression in Column (1) of Table 7, the firm has to be covered by the Thomson OneBanker database, which reduces our sample size from 206 to 137. The sample excludes subsidiaries of foreign firms, which is why the DOMESTIC PARENT variable drops out of the specification. However, the local sample is sufficient to test whether the credit rating dummy captures other information related

characteristics such as audit quality. Column (1) of Table 7, thus, also shows that the presence of foreign-owned subsidiaries in our main sample does not affect our findings.<sup>11</sup>

As mentioned above, new regulation regarding syndicated loans was introduced in China in 2007. Next, we assess the impact of the regulation change by considering the pre-regulation and the post-regulation time periods in separate sub-samples. The results are reported in columns (2) and (3) of Table 7. Given the recent growth in the Chinese syndicated loan market, the pre-regulation sub-sample suffers from small sample size. It is therefore not surprising that only few of the variables reach conventional levels of statistical significance in column (2). Only loan size, borrower size, currency denomination, and domestic parent are statistically significant at the 5% level or better. The post-regulation sample behaves in the manner that is very similar to that reported in Table 4. This is no surprise, given that about 78% of our sample comes from the post-regulation time period. Having a Chinese credit rating grows the syndicate in a significant manner, whereas a cross-listing has no effect on the syndicate size.

As an additional test of robustness, we re-estimate the models using alternate variable definitions for our dependent and independent variables. The variable definitions for syndicate size vary across previous studies (see e.g. Lee et al., 2010; Bosch and Steffen, 2011; Sufi, 2007), which justifies confirming our results using an alternate definition of syndicate structure.

In our main model, we define syndicate size as the number of participants in a loan issue. We replace this definition with the number of lenders (i.e. participants that lend to the issuing firm). The variables may vary in cases where some participants are involved in arranging the syndicate but do not take part in the actual issue. Alternatively, the same party may participate in multiple functions. In un-tabulated results, we confirm that our reported results are robust to using this alternate definition of syndicate size. Furthermore, we follow Pessarossi et al. (2012) and alternatively classify lenders from Taiwan and Hong Kong as domestic lenders. This has no effect on our findings.

Also within China, significant variation in the institutional setting exists. Cull and Xu (2005) report geographic variation in access to financing, and Hasan, et al. (2013) indicate that differences in legal infrastructure between the Chinese provinces are reflected in the level of firm-specific information present in stock returns. Also, Pessarossi and Weill (2012) find that distance from Beijing affects information asymmetry in borrowing relations in

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<sup>11</sup> We obtain very similar results when we use our full sample and assume that none of the firms that are not covered by the Thomson OneBanker database has a Big4 auditor.

China. This geographic heterogeneity motivates us to specify a dummy variable that takes the value of one if the borrower is located outside the main economic zones along the coastal regions of China (Beijing-Tianjin-Hebei Region, Yangtze River Delta, Pearl River Delta) or the Sichuan-Chongqing Region. However, our un-tabulated results show that the geographic indicator is not a significant determinant of syndicate size, while its inclusion leaves our results intact.

Our tests may suffer from endogeneity, as variables determining syndicate structure may also directly affect the firm's likelihood of being rated. To reduce concerns that endogeneity biases our main results, we estimate an instrumental variable Poisson model, using Nichols (2007). In essence, we follow the set up in Wooldridge (2002), and applications by Faulkender and Petersen (2006) and Sufi (2007), and proceed in two steps. In the first step, we estimate the likelihood of being rated with a probit model, where the independent variables are ROA,  $\ln(\text{total assets})$ , debt to assets, industry dummies, and year dummies.<sup>12</sup> In the second step, we estimate an instrumental Poisson model, similar to our main models in Table 3, with the fitted likelihood of being rated from the first step as an instrument for the rating dummy.<sup>13</sup> The results in Table 7 confirm that the effect of Chinese credit ratings on syndicate structure is not driven by an endogeneity-driven bias as our main results hold also in this model specification.

While a number of previous studies use the number of banks in the loan syndicate as a measure of information asymmetry, one might question whether this assumption is valid in the Chinese market. To alleviate this concern, we test whether pricing of the loans in our sample varies systematically by the number of syndicate lenders. We regress the original yield over benchmark on the number of syndicate members, while controlling for issue-specific variables such as maturity, loan type, and year of issuance. The yield variable is available only for a small subset of our sample, but the non-tabulated results within this subsample indicate that yield is inversely related to the number of participants. This result is consistent with the suggestion that information asymmetry is higher in loans with fewer participants.

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<sup>12</sup> Our variable choices are motivated by Poon et al. (2012).

<sup>13</sup> As noted by Faulkender and Petersen (2006), since the dependent variable in the first stage is a binary variable (CREDIT RATING), standard instrumental variables estimation is not appropriate as it assumes the first stage is a linear probability model. Hence, we estimate the first stage as a probit. We then use the predicted probability from the probit regression as an instrument for credit rating in the second stage of the estimation. The method gives consistent coefficients and correct standard errors (Wooldridge, 2002).

In our final robustness check, we use the OLS in place of Tobit regressions, and Poisson regressions in place of negative binomial regressions. Both variations in methodology leave our findings intact.

## **7. Conclusion**

The Chinese economy is characterized by a state dominated banking sector, an underdeveloped market for external funding and a dysfunctional legal system. Yet, the expansion of the private sector is identified as a major contributor to the remarkable economic growth that has been witnessed over the past decades in China. Allen et al. (2005) identify alternate financing mechanisms relying on reputation and connections as having enabled smaller firms to grow despite the lack of a functional market for external funding. These mechanisms can nevertheless not provide adequate funding for larger firms. In this paper, we study the previously under-explored Chinese market for syndicated loans. Given the international importance of syndicated loans, we believe it is of fundamental importance to understand the functionality and the dynamics of this market in China.

The strongest finding from our empirical investigation is that loan syndicates to firms with credit ratings have a larger number of participants, both foreign and domestic. This indicates that ratings alleviate problems pertaining to information asymmetry. While the result might be unsurprising in most institutional contexts, the expectation is more ambiguous in China. As pointed out in the industry media (see e.g. Lee, 2006; Asiamoney, 2006), Chinese credit ratings are suspiciously optimistic. Given the homogeneity of Chinese ratings, it is natural to question the ability and the effort of the local rating agencies to assess the credit risk of their clients. Our results nevertheless provide evidence of the informational value of Chinese credit ratings.

This result is significant in two respects. Firstly, it shows that similar dynamics are present in the Chinese syndicated loans market as those that are found in developed markets, despite the underdeveloped banking sector and the institutional context. Secondly, the result provides encouraging evidence that the only available credit ratings for Chinese firms are useful. Our empirical specifications enable us to evaluate the usefulness of the ratings from the perceived attitudes of professional market participants.

The Chinese government has acknowledged the importance of a functioning market for external funding. A new regulation for syndicated loans was introduced in 2007, underlining the increasing significance of this type of funding. While we find evidence that the dynamics



on the Chinese market do resemble the results found in the US and other developed economies, it is nevertheless important to further examine the development of this economy. While syndicated loans have become more popular, the market still differs from its western counterparts in many respects - e.g. the loans market is largely controlled by state owned entities. The apparent informational value of local credit ratings, despite their obvious limitations, can also be seen as evidence of the opacity of Chinese firms.

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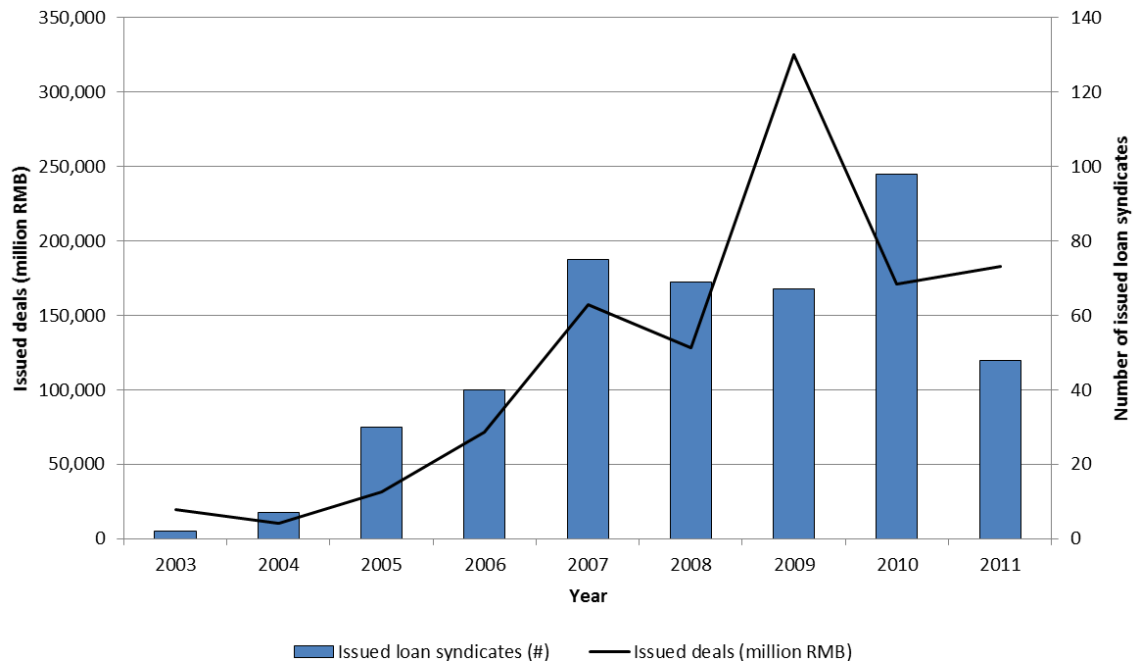
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### Figure 1. Syndicated loans 2003-2011

The figure shows the number of issued loan deals in China over the period 2003-2011 and corresponding volumes in million RMB. The data is extracted from Bloomberg.



### Table 1: Descriptive Statistics

The table shows descriptive statistics for syndicated loan deals in our sample issued in China in the period 2003-2011. Our sample of loans and financial data are extracted from Bloomberg. All loans are converted to renminbi in order to match the denomination of our financial data. We compare syndicate structures by comparing the number of participants (PARTICIPANTS) in the loans and the foreign participation (SHARE FOREIGN), measured as the number of foreign banks divided by the total number of participating banks. The maturity, MATURITY, of the loans is measured in months. The size of the loans, SIZE, is included in our tests as the natural logarithm of the issue size in renminbi. SECURED is a dummy variable equal to one if the loan secured with collateral. RMB is a dummy equal to one for loans issued in local currency. The dummy variable TERM is equal to one if the loan terms stipulate a fixed interest rate as opposed to a floating rate loan. ROA is measured as earnings after tax over total assets (TA) for the previous accounting year. LEVERAGE is the book value of total over book value of total assets. CREDIT RATING is a dummy variable equal to one if the borrower has a credit rating issued by a local agency. CROSS LISTING is a dummy variable equal to one if the firm is listed on a foreign exchange (Hong Kong and Taiwan are treated as foreign exchanges). The dummy variable PRIVATE is equal to one for firms that are privately held. The dummy variable STATE is equal to one if the firm is majority owned by the state as reported by the People's Bank of China. PREVIOUS ISSUES is equal to one if the borrower has previously issued syndicated loans as reported by Bloomberg. DOMESTIC PARENT is a dummy variable equal to one if the domicile of the ultimate parent of the company is equal to China also as reported in Bloomberg.

Descriptive stats.	Unit	Average	Max.	Min.	St.dev.	Skewness	Kurtosis	Obs.
PARTICIPANTS	Nr	11.47	80.00	2.00	10.54	2.57	9.68	436
SHARE FOREIGN	%	0.58	1.00	0.00	0.39	-0.50	-1.36	436
MATURITY	months	68.43	528.00	5.00	53.45	2.81	14.11	436
SIZE of loan	ln	20.68	25.00	17.03	1.21	0.59	1.24	436
SECURED	D	0.38	1.00	0.00	0.49	0.49	-1.77	436
RMB	D	0.45	1.00	0.00	0.50	0.21	-1.96	436
TERM	D	0.85	1.00	0.00	0.36	-1.96	1.82	436
ROA	%	5.58	26.31	-5.50	5.88	1.02	0.96	206
Total assets (TA)	ln	10.32	17.50	5.30	2.33	0.76	1.05	206
LEVERAGE	%	33.64	86.99	0.00	17.96	0.36	0.31	206
CREDIT RATING	D	0.09	1.00	0.00	0.28	2.94	6.66	436
CROSS-LISTED	D	0.39	1.00	0.00	0.49	0.46	-1.80	436
PRIVATE	D	0.33	1.00	0.00	0.47	0.72	-1.48	436
STATE	D	0.25	1.00	0.00	0.44	1.13	-0.73	436
PREVIOUS ISSUES	D	0.38	1.00	0.00	0.49	0.50	-1.76	436
DOMESTIC PARENT	D	0.75	1.00	0.00	0.43	-1.18	-0.62	436
SIZE of loan	RMB	2,518,500	72,199,775	25,000	6,690,668	6.54	51.40	436
Total assets (TA)	RMB	1,071,715	39,992,765	200	4,960,957	5.96	37.68	206

## Table 2: Credit Ratings

The table shows descriptive statistics for the firms in our sample that issued syndicated loan deals in China in the period 2003-2011 and had a credit rating issued by a domestic agency. Our sample of firms includes ratings issued by four Chinese rating agencies: China Lianhe Credit Rating Co. (Lianhe Credit Rating), China Chengxin International Credit Rating Co. (CCXI), Dagong Global Credit Rating (Dagong) and Shanghai Brilliance Credit Rating & Investors Service Co. (Shanghai Brilliance Credit Rating). The sample of loans and financial data are extracted from Bloomberg.

<b>Rating agency</b>	<b># Firms</b>	<b>AAA</b>	<b>AA+</b>	<b>AA</b>
Lianhe	16	10	4	2
CCXI	10	4	3	3
Dagong	3	0	0	3
Shanghai Brilliance Rating	5	0	2	3
Shanghai Far East Credit Rating	4	4	0	0
<b>Sum</b>	<b>38</b>	<b>18</b>	<b>9</b>	<b>11</b>

**Table 3: Information Asymmetries and Loan-Specific Variables**

The table reports the results of our regressions of the syndicate structure measured as the number of participant lenders against characteristics expected to impact information asymmetry (PRIVATE, CROSS-LISTED, CREDIT RATING) and a number of control variables. Our sample of loans and financial data are extracted from Bloomberg. The sample includes all the issues in our sample by public and private firms with sufficient available data in Bloomberg. All the regressions control for industry- and year effects. The models are estimated using negative binomial regressions except Model (6) that is estimated using a Poisson regression. The table shows negative binomial regression coefficients for each of the variables along with z-scores; \*, \*\* and \*\*\* denote an estimate significantly different from 0 at the 10%, 5% or 1% level. We report the McFadden's pseudo R-squared for each model. The units of the variables are stated in the table (dummy variables are denoted D). See Table 1 for the variable definitions.

	(1)	(2)	(3)	(4)	(5)
Dependent variable	SYNDICATE (Nr_Participants)				
MATURITY (months)	-0.0023*** (-3.287)	-0.0022*** (-3.180)	-0.0024*** (-3.308)	-0.0023*** (-3.262)	-0.0024*** (-3.398)
SIZE (ln)	0.2093*** (7.000)	0.2116*** (7.115)	0.2117*** (7.037)	0.2115*** (7.065)	0.2157*** (7.269)
SECURITY (D)	-0.2079*** (-2.977)	-0.2026*** (-2.916)	-0.2101*** (-2.987)	-0.2092*** (-2.989)	-0.2139*** (-3.062)
RMB (D)	-0.2692*** (-3.731)	-0.2772*** (-3.843)	-0.2743*** (-3.783)	-0.2620*** (-3.638)	-0.2747*** (-3.875)
TERM (D)	-0.2014** (-2.349)	-0.2145** (-2.516)	-0.1922** (-2.231)	-0.2073** (-2.418)	-0.2115** (-2.466)
REFINANCING (D)	0.2495*** (2.855)	0.2510*** (2.870)	0.2562*** (2.918)	0.2390*** (2.744)	0.2374*** (2.722)
WORKCAP (D)	0.1893** (2.492)	0.1819** (2.396)	0.1900** (2.485)	0.1925** (2.533)	0.1912** (2.514)
CREDIT RATING (D)	0.2683** (2.365)	0.2563** (2.260)		0.2967*** (2.665)	0.3145*** (2.863)
PRIVATE (D)	-0.1334 (-1.466)	-0.1333 (-1.466)	-0.1870** (-2.106)	-0.0768 (-0.967)	
CROSS-LISTED (D)	-0.1086 (-1.281)	-0.1092 (-1.288)	-0.1501* (-1.794)		
STATE (D)	-0.1668** (-2.072)	-0.1569** (-1.966)	-0.1352* (-1.695)	-0.1621** (-2.016)	-0.1460* (-1.855)
PREVIOUS ISSUES (D)	0.2104*** (3.123)	0.2090*** (3.104)	0.2051*** (3.031)	0.1957*** (2.945)	0.2100*** (3.237)
DOMESTIC PARENT (D)	-0.3057*** (-3.611)	-0.3080*** (-3.641)	-0.2864*** (-3.374)	-0.2799*** (-3.400)	-0.3105*** (-4.086)
Constant	-0.9244 (-1.432)	-0.8025 (-1.044)	-0.9634 (-1.483)	-0.8025 (-1.613)	-0.9996 (-1.322)
Industry controls	Yes	No	Yes	Yes	Yes
Model	neg bin	neg bin	neg bin	neg bin	neg bin
Pseudo R <sup>2</sup>	0.0698	0.0691	0.0679	0.0692	0.0689
N	436	436	436	436	436



**Table 4: Information Asymmetries, Loan and Firm-Specific Variables**

The table reports the results of our regressions of the syndicate structure measured as the number of participant lenders against characteristics expected to impact information asymmetry (CROSS-LISTED, CREDIT RATING) and a number of control variables. Our sample of loans and financial data are extracted from Bloomberg. In Table 3, we include additional firm-level financial control variables (ROA, TA, and LEVERAGE). The sample includes all the issues in our sample by public firms with sufficient available data in Bloomberg. The regressions control for year effects. The models are estimated using negative binomial regressions. The table shows negative binomial regression coefficients for each of the variables along with z-scores; \*, \*\* and \*\*\* denote an estimate significantly different from 0 at the 10%, 5% or 1% level. We report the McFadden's pseudo R-squared for each model. The units of the variables are stated in the table (dummy variables are denoted D). See Table 1 for the variable definitions.

	(1)	(2)	(3)	(4)	(5)
Dependent variable	SYNDICATE (Nr_Participants)				
MATURITY (months)	-0.0044*** (-3.484)	-0.0041*** (-3.253)	-0.0044*** (-3.508)	-0.0046*** (-3.747)	-0.0047*** (-7.851)
SIZE (ln)	0.2594*** (4.939)	0.2507*** (4.668)	0.2688*** (5.119)	0.2765*** (5.348)	0.2798*** (12.010)
SECURITY (D)	-0.3737*** (-3.462)	-0.3909*** (-3.555)	-0.3684*** (-3.394)	-0.3786*** (-3.586)	-0.3848*** (-7.763)
RMB (D)	-0.1873 (-1.603)	-0.1741 (-1.465)	-0.1531 (-1.321)	-0.1856* (-1.710)	-0.2549*** (-4.885)
TERM (D)	-0.1238 (-0.934)	-0.1475 (-1.093)	-0.1393 (-1.048)	-0.1316 (-0.992)	-0.1037* (-1.938)
ROA (%)	-0.0071 (-0.723)	-0.0040 (-0.405)	-0.0083 (-0.842)	-0.0096 (-0.991)	-0.0104** (-2.564)
TA (Total Assets, ln)	-0.0848*** (-3.080)	-0.0654** (-2.394)	-0.0863*** (-3.126)	-0.0903*** (-3.331)	-0.0947*** (-8.137)
LEVERAGE (%)	-0.0017 (-0.526)	-0.0009 (-0.263)	-0.0017 (-0.521)	-0.0022 (-0.676)	-0.0025* (-1.797)
REFINANCING (D)	0.1281 (0.934)	0.1838 (1.330)	0.1075 (0.783)		0.2085*** (3.828)
WORKCAP (D)	0.0082 (0.072)	0.0238 (0.203)	0.0201 (0.174)		0.0767 (1.562)
CREDIT RATING (D)	0.4809*** (2.922)		0.5404*** (3.339)	0.5545*** (3.436)	0.4031*** (6.037)
CROSS-LISTED (D)	-0.2281* (-1.698)	-0.3147** (-2.365)			-0.2089*** (-3.526)
STATE (D)	-0.3209*** (-2.801)	-0.3078*** (-2.674)	-0.2731** (-2.451)	-0.2879*** (-2.614)	-0.3196*** (-6.210)
PREVIOUS ISSUES (D)	0.2696*** (2.598)	0.2185** (2.105)	0.2327** (2.286)	0.2319** (2.272)	0.1934*** (4.374)
DOMESTIC PARENT (D)	-0.3926*** (-2.868)	-0.3122** (-2.278)	-0.3327** (-2.495)	-0.3379** (-2.545)	-0.2894*** (-4.977)
Constant	-1.4919 (-1.462)	-1.4927 (-1.431)	-1.9073* (-1.914)	-1.9574** (-1.965)	-1.7664*** (-3.917)
Industry controls	No	No	No	No	No
Model	neg bin	neg bin	neg bin	neg bin	poisson
Pseudo R <sup>2</sup>	0.0750	0.0691	0.0731	0.0726	0.298
N	206	206	206	206	206

**Table 5: Foreign Lenders, Loan and Firm-Specific Variables**

The table reports the results of our regressions of the syndicate structure measured as the number of foreign participants (NUMBER FOREIGN) against characteristics expected to impact information asymmetry (CROSS-LISTED, CREDIT RATING) and a number of control variables. Our sample of loans and financial data are extracted from Bloomberg. The sample includes all the issues in our sample by public firms with sufficient available data in Bloomberg. The regressions control for year effects. The models are estimated using negative binomial regressions. The table shows the negative binomial regression coefficients for each of the variables along with t-statistics; \*, \*\* and \*\*\* denote an estimate significantly different from 0 at the 10%, 5% or 1% level. We report the Adjusted R-squared for each model. The units of the variables are stated in the table (dummy variables are denoted D). See Table 1 for the variable definitions.

	(1)	(2)	(3)	(4)
Dependent variable				
MATURITY (months)	-0.0121*** (-5.073)	-0.0121*** (-5.073)	-0.0126*** (-5.140)	-0.0127*** (-5.297)
SIZE (ln)	-0.0012 (-0.014)	-0.0009 (-0.011)	0.0038 (0.046)	0.0338 (0.416)
SECURITY (D)	-0.4178** (-2.441)	-0.4159** (-2.430)	-0.4505*** (-2.596)	-0.4139** (-2.455)
RMB (D)	-0.3908** (-2.210)	-0.3835** (-2.197)	-0.3978** (-2.203)	-0.5173*** (-3.009)
TERM (D)	-0.2381 (-1.180)	-0.2410 (-1.196)	-0.2629 (-1.280)	-0.2607 (-1.270)
ROA (%)	-0.0052 (-0.359)	-0.0054 (-0.373)	-0.0039 (-0.266)	-0.0096 (-0.649)
TA (Total Assets, ln)	-0.0136 (-0.333)	-0.0137 (-0.335)	0.0058 (0.141)	-0.0260 (-0.646)
LEVERAGE (%)	0.0079 (1.484)	0.0079 (1.480)	0.0088 (1.631)	0.0058 (1.083)
REFINANCING (D)	0.3900* (1.917)	0.3889* (1.912)	0.4388** (2.152)	
WORKCAP (D)	-0.0810 (-0.469)	-0.0768 (-0.447)	-0.0710 (-0.405)	
CREDIT RATING (D)	0.5705** (2.177)	0.5893** (2.342)		0.6328** (2.387)
CROSS-LISTED (D)	-0.0528 (-0.255)		-0.1860 (-0.926)	-0.0146 (-0.071)
STATE (D)	-0.4534** (-2.542)	-0.4445** (-2.544)	-0.4265** (-2.390)	-0.4919*** (-2.738)
PREVIOUS ISSUES (D)	0.2147 (1.375)	0.2071 (1.351)	0.1474 (0.954)	0.2198 (1.376)
DOMESTIC PARENT (D)	-0.0270 (-0.128)	-0.0119 (-0.059)	0.0630 (0.297)	-0.0495 (-0.233)
Constant	2.2633 (1.415)	2.2032 (1.392)	2.0682 (1.273)	1.9186 (1.179)
Industry controls	No	No	No	No
Model	neg bin	neg bin	neg bin	neg bin
Pseudo R <sup>2</sup>	0.0918	0.0917	0.0879	0.0875
N	206	206	206	206

**Table 6: Foreign Participation, Loan and Firm-Specific Variables**

The table reports the results of our regressions of the syndicate structure measured as the share of foreign participants over total participants (SHARE FOREIGN) against characteristics expected to impact information asymmetry (CROSS-LISTED, CREDIT RATING) and a number of control variables. Our sample of loans and financial data are extracted from Bloomberg. The sample includes all the issues in our sample by public firms with sufficient available data in Bloomberg. The regressions control for year effects. The models are estimated using Tobit regressions. The table shows the Tobit regression coefficients for each of the variables along with t-statistics; \*, \*\* and \*\*\* denote an estimate significantly different from 0 at the 10%, 5% or 1% level. We report the Adjusted R-squared for each model. The units of the variables are stated in the table (dummy variables are denoted D). See Table 1 for the variable definitions.

	(1)	(2)	(3)	(4)
Dependent variable				
MATURITY (months)	-0.0029*** (-3.304)	-0.0028*** (-3.166)	-0.0029*** (-3.301)	-0.0030*** (-3.324)
SIZE (ln)	-0.1516*** (-4.638)	-0.1577*** (-4.791)	-0.1525*** (-4.653)	-0.1400*** (-4.289)
SECURITY (D)	-0.0367 (-0.548)	-0.0413 (-0.612)	-0.0376 (-0.561)	-0.0390 (-0.589)
RMB (D)	-0.0795 (-1.135)	-0.1142* (-1.654)	-0.0797 (-1.134)	-0.1222* (-1.796)
TERM (D)	-0.0967 (-1.190)	-0.0858 (-1.049)	-0.1019 (-1.257)	-0.0773 (-0.944)
ROA (%)	0.0080 (1.370)	0.0086 (1.464)	0.0082 (1.402)	0.0059 (1.008)
TA (Total Assets, ln)	0.0499*** (3.008)	0.0516*** (3.078)	0.0519*** (3.181)	0.0461*** (2.786)
LEVERAGE (%)	0.0056*** (2.622)	0.0057*** (2.655)	0.0057*** (2.676)	0.0047** (2.219)
REFINANCING (D)	0.1273 (1.558)	0.1350 (1.634)	0.1319 (1.616)	
WORKCAP (D)	-0.0687 (-0.991)	-0.0728 (-1.042)	-0.0659 (-0.951)	
CREDIT RATING (D)	0.0617 (0.598)	0.0131 (0.128)		0.0690 (0.663)
CROSS-LISTED (D)	0.1814** (2.225)		0.1717** (2.144)	0.1935** (2.342)
STATE (D)	-0.0054 (-0.075)	-0.0374 (-0.522)	-0.0027 (-0.037)	-0.0195 (-0.267)
PREVIOUS ISSUES (D)	0.0225 (0.361)	0.0492 (0.795)	0.0189 (0.303)	0.0156 (0.247)
DOMESTIC PARENT (D)	0.2316*** (2.790)	0.1850** (2.290)	0.2412*** (2.950)	0.2351*** (2.804)
Constant	2.7566*** (4.387)	3.0539*** (4.912)	2.7587*** (4.376)	2.6036*** (4.126)
Industry controls	No	No	No	No
Model	tobit	tobit	tobit	tobit
Pseudo R <sup>2</sup>	0.359	0.345	0.358	0.344
N	206	206	206	206

**Table 7: Robustness Tests**

The table reports the results with the number of participant lenders as dependent variable. Our sample of loans and financial data are extracted from Bloomberg. The sample in Model (1) includes all deals in our sample issued by public firms. Model (1) includes an additional variable, BIG4, that equals 1 if the issuing firm is audited by a Big Four audit firm as extracted from the Thomson OneBanker database. Models (2) and (3) the same independent variables are included as in Table 4. Model (2) includes all loans issued prior to 2007 and Model (3) all loans issued 2007 and later. All regressions control for industry effects, Model (1) also controls for year effects. In models (4), (5) we instrument for having a bond rating. We estimate an instrumental variable poisson regression using a first step probit regression to instrument for the rating. We use the predicted probability from the probit as an instrument in the second stage. The table shows negative binomial and poisson regression coefficients; \*, \*\* and \*\*\* denote an estimate significantly different from 0 at the 10%, 5% or 1%. We report the McFadden's pseudo Rsquared for each model. The units of the variables are stated in the table (dummy variables are denoted D). See Table 1 for the additional variable definitions.

	(1)	(2)	(3)	(4)	(5)
	BIG4	-2007	2007-	IVPOIS	IVPOIS
Dependent variable	SYNDICATE (Nr_Participants)				
MATURITY (months)	-0.0050*** (-3.649)	-0.0072* (-1.704)	-0.0036*** (-2.752)	-0.0032** (-2.270)	-0.0032** (-2.252)
SIZE (ln)	0.3289*** (4.690)	0.3556*** (3.345)	0.2966*** (5.162)	0.2650*** (4.245)	0.2715*** (4.401)
SECURITY (D)	-0.4640*** (-3.620)	-0.3655* (-1.701)	-0.3705*** (-3.139)	-0.2686** (-2.230)	-0.2662** (-2.210)
RMB (D)	-0.0284 (-0.182)	-0.6293** (-2.180)	-0.0905 (-0.774)	-0.3109** (-2.434)	-0.2905** (-2.293)
TERM (D)	0.1229 (0.702)	-0.4949 (-1.460)	0.0013 (0.009)	-0.1616 (-0.980)	-0.1729 (-1.048)
ROA (%)	0.0176 (1.362)	-0.0252 (-1.144)	0.0159 (1.419)	-0.0087 (-0.836)	-0.0090 (-0.872)
TA (Total Assets, ln)	-0.0774 (-1.637)	-0.1586*** (-2.634)	-0.0832*** (-2.939)	-0.1088*** (-3.444)	-0.1093*** (-3.560)
LEVERAGE (%)	-0.0007 (-0.158)	-0.0075 (-0.700)	-0.0030 (-0.807)	-0.0013 (-0.365)	-0.0009 (-0.247)
REFINANCING (D)	0.2974* (1.788)	-0.1278 (-0.265)	0.2229 (1.615)	0.0829 (0.485)	0.0735 (0.438)
WORKCAP (D)	-0.0080 (-0.055)	-0.0425 (-0.181)	0.1475 (1.171)	0.1273 (1.084)	0.1370 (1.168)
CREDIT RATING (D)	0.4599*** (2.770)	0.3038 (0.796)	0.7643*** (4.293)	0.8283* (1.926)	0.8466** (2.019)
CROSS-LISTED (D)	-0.4002** (-2.431)	-0.7149 (-1.413)	-0.1567 (-1.110)	-0.1509 (-0.936)	
STATE (D)	-0.3245** (-2.519)	-0.2704 (-1.153)	-0.2223* (-1.706)	-0.2575** (-2.205)	-0.2318** (-2.113)
BIG4 (D)	0.1107 (0.703)				
PREVIOUS ISSUES (D)	0.4994*** (3.673)	0.3740 (1.573)	0.3909*** (3.543)	0.3082** (2.436)	0.2847** (2.281)
DOMESTIC PARENT (D)		-0.8745** (-2.551)	-0.3847*** (-2.751)	-0.5986*** (-4.333)	-0.5525*** (-4.060)
Constant	(-2.329) -3.2855**	(0.097) 0.1957	(-2.157) -2.4304**	-0.8099 (-0.585)	-1.0986 (-0.815)
Industry controls	Yes	Yes	Yes	Yes	Yes
Model	neg bin	neg bin	neg bin	ivpoisson	ivpoisson
Pseudo R <sup>2</sup>	0.117	0.127	0.0738		
N	137	44	162	206	206