

# **Entrusted Loans: A Close Look at China's Shadow Banking System**

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January 2015

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## **Abstract**

We perform transaction-level analyses of an increasingly important type of shadow banking in China - entrusted loans. Using a sample of listed firms that are subject to mandatory disclosure requirement for this type of activity, we examine the lender, borrower and loan characteristics. We find entrusted loans increase when the official credit is tight and therefore are a market solution to credit shortage. Lenders either pursue short-run profits (when making non-affiliated loans) or support affiliated parties (when making affiliated loans). Although the two types of loans differ significantly in their average interest rate levels, the pricing of both incorporates fundamental and informational risks. Moreover, the pricing of loans can predict future loan performance.

**Keywords:** shadow banking, entrusted loans, credit shortage

## **Introduction**

Shadow banking involves financing activities that are not subject to regulatory oversight. The shadow banking system is vast in size and is believed to have contributed significantly to the global financial crisis of 2007-2012.<sup>1</sup> It is a major challenge to understand how the system works and what roles it plays, especially in emerging markets and developing economies.

Shadow banking is particularly prevalent in China after a drastic increase in the last decade and there is no sign the increasing trend will end soon. According to a Moody's report (2013), by the end of 2012, the total value of shadow banking products in China is 39% of its GDP; and the annual growth rate of these products during 2010-2012 is 32% per year.<sup>2</sup> Both demand and supply for such alternative financing are plentiful. On the one hand, official financing (such as bank loans and stock and bond markets) is restricted for many firms, including small- and medium-sized state-owned companies, as well as the majority of private-owned firms (Song, Storesletten and Zilibotti 2011 and the references therein, the Moody's report 2013). On the other hand, investors lack sound investment channels due to interest rate control on deposits and the stagnant domestic stock market performance. Both reasons help fuel the growth of shadow banking.

Proponents see shadow banking as innovations that enrich the economy's financing channels and contribute to a more market-oriented financial system. Critics, however, are concerned that it may lead to higher debt levels and less transparent debt that may impose a major risk to the stability of China's financial system and economy. Regulators trying to weigh the benefits and risks have not come to consensus on how much and how to regulate this booming financial sector (see Wei and Davis, 2014).

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<sup>1</sup>A conservative estimate is 25% of the global financial system, based on "Global Shadow Banking Monitoring Report 2012" by the Financial Stability Board set up by the Group of Seven developed nations.

<sup>2</sup> The Moody's report differentiates core and broader shadow banking activities. The numbers quoted are for the core measure (hence the total value is more conservative).

Researchers worldwide have also debated about the role of shadow banking. Allen, Qian and Qian (2005) argue that alternative financing channels and governance mechanisms support the growth of the private sector in China. Fisman and Love (2003) document that in countries with weaker financial developments, trade credit serve as an alternative financing method and industries dependent on trade credit grow faster. In contrast, Cull, Xu and Zhun (2009) argue that redistribution of bank loans via trade credit was not a major contributor to China's explosive growth. Ayyagari, Demirgüç-Kunt and Maksimovic (2010) find that in China, firms with bank financing grow faster than similar firms without bank financing, and thus question the conclusions of Allen, Qian and Qian (2005). These studies rely on either aggregate summary statistics at the economy or industry level, or survey data voluntarily provided by firms. This paper instead will use loan-level data from listed firms that are under mandatory disclosure requirements. Not only is the information more detailed and of more depth, but also the sample is free of the selection problem that is common to survey data.

Our study focuses on an increasingly important type of shadow banking in China, i.e., the *entrusted loans*. Shadow banking in China has various forms, which are very different from the typical forms in the US such as money market funds or hedge funds. According to the exhibit 1 in the Moody's 2013 report, entrusted loans constitute the largest component of the core shadow banking activities in China (32% of the total RMB size). The other important forms include: 17% in informal lending, 15% in trust loans, 14% in wealth management products, and 11% in credit by financial guaranty companies.<sup>3</sup>

Entrusted loans are loans made by a non-bank party (e.g., an industrial firm, or an entity sponsored by a local government, or a private equity fund) to another, using a bank as a

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<sup>3</sup> Informal lending involves loans between private entities with no payment agents. Trust loans are loans made by trust companies. The trust companies in turn structure these loans into trust schemes or wealth management products and sell them to investors. Wealth management products (excluding entrusted or trust loans as underlying assets) are asset backed securities sold to investors. Underlying assets include bonds, interbank placements, and discounted bills. Banks can be either the entity that structures them or distributor, or both. Guaranty companies provide a guarantee service to borrowers with poor credit profiles to support their bank/trust loans or wealth management issuances.

servicing agent. The bank earns a fee for its service, but does not bear the risk of the investment. According to the central bank, the total size of entrusted loans increased from RMB 60 billion in 2003 to RMB 2,547 billion in 2013.<sup>4</sup> In 2013, they comprise 14.7% of the country's total financing amount including bank loans and capital market financing.<sup>5</sup>

Our study focuses on entrusted loans made by publicly traded firms since they are required to disclose these loans. This sample of firms is also interesting because it is uncommon in other parts of the world that non-financial firms engage in making loans since they typically lack a comparative advantage in doing so. It is an interesting question why the phenomenon exists in China.

We manually collect loan information from public firms' annual reports and interim announcements. Our sample includes 1,107 firm-year observations and 2,995 loan transactions during 2004-2013.

We examine three research questions: (1) what kinds of firms tend to make entrusted loans? What motivates them to allocate funds in areas other than their main businesses? (2) Who are the borrowers? Do these entrusted loans tend to allocate capital in certain types of industries? Do they help ease the segmentation of the official financing system, or alternatively, channel more funds into the red-hot real estate market and hence help fuel the housing bubble which is now a big concern in China? (3) Are these economic- and information-based loans? In other words, are the loans priced commensurate with their risk levels? Further, can the price of a loan (i.e., the interest rate) predict the future loan performance (i.e., the likelihood of default)?

We find lenders of entrusted loans tend to be large firms with high cash holdings. These firms, due to their public status and large size, have privileged access to official financing and

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<sup>4</sup> The exchange rate between USD and RMB changes over time. One USD is worth RMB 8.28, 8.19, 7.97, 7.60, 6.95, 6.83, 6.77, 6.46, 6.31 and 6.20 by the end of each year during 2004-2013, respectively.

<sup>5</sup> The central bank collects data from banks that intermediate these loans. According to practitioners, underreporting is common. Hence these numbers tend to underestimate the real size of the entrusted loans.

hence cheaper capital, and are therefore in a position to lend to other less privileged firms. The volume of these loans increase when credit is tight, measured by the inter-bank offer rate. This suggests that entrusted loans are a market reaction and solution to credit shortage.

Our sample contains two types of entrusted loans: affiliated and non-affiliated loans. Most affiliated loans are made by a parent firm to a subsidiary, and some are between a customer and a supplier. Non-affiliated loans are between two parties without either type of relationship above. Examining the *lender characteristics* suggests different motives behind the two types of loans. Lenders of affiliated loans tend to be high-profitability firms and state-owned enterprises,<sup>6</sup> and they have often raised new debt before they make the entrusted loans. In contrast, lenders of non-affiliated loans tend to have low profitability and low growth rates. The evidence suggests that firms are likely to use non-affiliated loans as an alternative investment channel to their main businesses; whereas lenders make affiliated loans when they can afford to support a subsidiary or build a relationship with a customer or supplier.

We next examine the *loan characteristics*. Non-affiliated loans command much higher interest rates than affiliated loans (with a mean of 13.9% vs. 6.4%; the mean *adjusted interest rate* benchmarked against the official bank loan rate is 7.9% vs. 0.3%). They also tend to have shorter maturities, and are more likely to have collateral and a third-party guarantee. This is consistent with the previous observation that non-affiliated loans are used as an alternative investment channel and therefore are pursuing immediate profits. The affiliated loans are used to support a subsidiary, a supplier, or a customer. It is possible that they are inefficient fund transfers between affiliated firms, but we also find evidence that they can be a form of investment in the borrowing firm, in hope for long-run returns from equity investment or for stable supplies of raw materials. We are also interested to see whether these loans are economic- and information-based. Specifically, we ask two questions: (1) Are the

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<sup>6</sup> State-owned enterprises (SOEs) tend to have better access to official financing compared to private firms.

loans priced based on the borrowers' risk profiles and the information asymmetry between borrowers and lenders? (2) Can the prices of the loans predict future loan performance, i.e. the likelihood of default? We find evidence that the pricing of both affiliated and non-affiliated loans depend on fundamental and informational risks. For example, the adjusted interest rate increases if the borrower is in the real-estate industry, and decreases if the borrower is an SOE. We use two proxies to measure the asymmetric information between a lender and a borrower: a dummy indicating whether they are located in the same city, and another dummy indicating whether they are in the same industry. The interest rate decreases when both parties are in the same city or industry, suggesting the loans are priced based on informational risk as well. This negative effect is more pronounced for non-affiliated loans. Finally, we find that for non-affiliated loans, the likelihoods of default and extension increase with their interest rates, confirming that the pricing of these loans are risk-based.<sup>7</sup>

This study is the first large-sample transaction-level analysis of China's shadow banking system. We document evidence that entrusted loans made by public firms as a group is a market solution to credit shortage and that they tend to be information-based loans. Although lenders can have different purposes (making profits or subsidizing affiliated businesses), the key factor is that lenders take advantage of their privileged access to the official financing system to provide credit to less privileged firms. On average these loans are *not* more likely to channel credit into real-estate and construction industries than bank loans.

## **1. Sample and Data**

We manually collect our sample and data by conducting keyword-search for different variations of "entrusted loan" in the annual reports and interim announcements of public non-financial firms. We identify the lender and the borrower, and record loan characteristics such

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<sup>7</sup> Although loan extensions can be voluntary by lenders, most cases are due to borrowers' inability to pay back on time, according to interviews with practitioners.

as the loan amount, the interest rate, the maturity, and whether the two parties are affiliated. We then obtain additional information about the lenders from Wind Database, which provides accounting and return data for listed firms. In our sample, the majority of borrowers (99%) are non-listed firms, so we have limited information about them. We identify a borrower's industry, headquarters location and whether it is an SOE based on information provided by the lender or by our own manual search.

Our sample includes 2,995 entrusted loans made by 498 unique firms that correspond to 1,107 firm-years during 2004-2013. In this period, the entire public market of China has 2,467 unique non-financial firms that correspond to 18,003 firm-years.

Table 1 reports by year the number of listed firms that make entrusted loans, the number of loans, and the total loan amount. We observe a fast growing trend of entrusted loans. The number of firms making entrusted loans increases from 55 in 2004 to 220 in 2013. The total amount of loans increases over ten-fold from 9.6 billion RMB in 2004 to 219 billion RMB in 2013. In 2013, our sample accounts for about 10% of the total amount of entrusted loans reported by the central bank.



## 2. The Lenders

First, we examine what types of firms make entrusted loans. What motivates them to lend instead of investing in their main businesses? We compare firms that make loans with those that do not. We also compare lenders of affiliated loans with those of non-affiliated loans.

Table 2 reports the descriptive statistics of lender characteristics. The first two columns show the mean values of variables for firm-years with and without entrusted loans. Firms with loans are much larger than those without in terms of the asset value at the beginning of the year (14.7 billion vs. 5.0 billion). Firms with loans also have higher profitability measured by return on assets (ROA) (7.6% versus 6.9%), and a larger amount of recently issued debt as a percentage of average assets (7.8% versus 4%). These differences are all statistically significant at the 1% level. These financial characteristics of lending companies suggest that larger firms with higher profitability and more external financing are more likely to provide entrusted loans. Moreover, the first two columns also show that state-owned enterprises (SOEs) and firms in the real estate industry are more likely to engage in lending. A high 74% of lenders are SOEs whereas the ratio is 55% for firms without loans. The percentage of lender and non-lenders that are in the real-estate industry is 10% and 8% respectively.

We then examine lenders of affiliated and non-affiliated loans separately in Column (3) and (4) in Table 2. We observe all the differences described above are driven by lenders of affiliated loans, and that there are important differences between the two groups.

The number of firm-year observations with affiliated loans is more than twice those with non-affiliated loans, hence it is not surprising that the differences between lenders and non-lenders are driven by those making affiliated loans. More important, the two types of lenders have significant differences. Compared to firms making non-affiliated loans, firms making

affiliated loans have more assets (a mean of 17.1 billion RMB vs. 8.4 billion RMB), higher sales growth (26.5% vs. 18%), higher debt ratios, more recently issued debt (8.7% vs. 5% of total assets), are more likely to be SOEs (80% vs. 57%) and have a higher percentage in the real estate business (12% vs. 7%).

Similarly to lenders of non-affiliated loans, although to a lesser degree, firms making non-affiliated loans tend to be larger (i.e. more assets) than non-lenders. Unlike lenders of affiliated loans, firms making non-affiliated loans do not differ significantly from non-lenders in ROA, new debt, and the likelihood of being a SOE or a real-estate company. And in contrast to lenders of affiliated loans, they actually have lower growth rate and less new debt than non-lenders.

We then run multivariate regressions to explore the determinants of the loan decisions. In addition to the firm characteristic variable listed in Table 2, we also include a measure for the condition of the economy, namely the interbank offered rate, which measures the overall availability of liquidity and credit in the economy. We obtain daily data on the interbank offered rate from the China Center for Economic Research (CCER) Database, and use the yearly average in the regression. The yearly averages for our sample periods are 2.13%, 1.31%, 1.86%, 2.15%, 2.30%, 1.12%, 1.71%, 3.28%, 2.80%, 3.37%, respectively.

Table 3 reports the results of two types of regressions. In the first three columns, we report logit regressions using *Loan dummy* (an indicator that there is an entrusted loan for the firm-year) as the dependent variable. For each regression, we include both firm-years with and without loans. The loan sample includes firm-years with both types of loans, non-affiliated loans only and affiliated loans only, respectively, in Columns (1)-(3).

Consistent with the univariate results in Table 2, different factors may impact firms' decisions to make affiliated and non-affiliated loans differently. Nonetheless, two factors stand out in that they have significant impact on the likelihood of a loan, and that their effects

on both types of loans are similar. The coefficients on  $\ln(\text{assets})$  and *interbank offered rate* are highly significant in both Columns (2) and (3), suggesting that larger firms are more likely to make both affiliated and non-affiliated loans, and that there are more of these loans when the credit is tight in the economy. For the economic significance of the effects, if *interbank offered rate* increases by one standard deviation (0.75%) around the mean, the probability of making a non-affiliated loan increases from 1.43% to 1.80%, and the probability of making an affiliated loan increases from 4.11% to 4.79%.

Several factors have an impact on the decision to make affiliated loans, but not on non-affiliated loans. That is, the likelihood of affiliated loans increases if the firm has higher profitability (measured by ROA), if the firm has raised more debt recently, if the firm is an SOE, and if it is in the real-estate industry. For economic significance, if *ROA* increases by one standard deviation (8.77%) around the mean, the probability of making an affiliated loan increases from 4.20% to 4.81%. If the change of debt level increases by one standard deviation (15.7%) around the mean, the probability of making an affiliated loan increases from 4.15% to 4.67%. For an average firm in the sample, the probability of making an affiliated loan as lender is 5.48% for a SOE firm and 2.70% for a non-SEO firm. The probability of making an affiliated loan as lender is 5.42% for a real estate firm and 4.42% for a non-real estate firm.

The likelihood of non-affiliated loans, on the other hand, decreases with the firm's sales growth rate and its debt ratio. If sales growth increases by one standard deviation (56.9%) around the mean, the probability of making a non-affiliated loan decreases from 1.84% to 1.52%. If the debt to asset ratio increases by one standard deviation (16.9%) around the mean, the probability of making a non-affiliated loan decreases from 1.94% to 1.38%.

In addition to the logit regressions, we also estimate Tobit regressions using the ratio of the amount of loan to total assets as the dependent variable. We use Tobit because many

firms have zero dollars of loans. The last three columns of Table 3 present results of Tobit regressions. These results are consistent with those of the logit regressions. If *interbank offered rate* increases by one standard deviation (0.75%), the ratio of loan to assets increases 1.86% for non-affiliated loans and 1.07% for affiliated loans.

For non-affiliated loans, if *sales growth* increases by one standard deviation (56.9%), the ratio of loan to asset decreases 1.48%. If the ratio of debt to asset increases by one standard deviation (16.9%), the ratio of loan to asset decreases by 2.90%. For affiliated loans, if *ROA* increases by one standard deviation (8.77%) around the mean, the ratio of loan to asset increases 0.97%. If the change of debt level increases by one standard deviation (15.7%) around the mean, the ratio of loan to asset increases 1.10%. The ratio of loan to asset for an SOE lender is 4.54% higher than that for a non-SOE lender, and for a real estate lender is 3.31% higher than that for a non-real estate lender.

Our sample period includes the recent global financial crisis. In 2009, China went through its own version of “Quantitative Easing” and injected four trillion RMB into its banking system. To make sure our results are not driven by such an unusual period, we estimate the logit and Tobit regressions excluding year 2009 (untabulated) and our results are robust.

In summary, the likelihoods of both types of loans increase with the lender’s size and when credit is tight in the economy. However, there are important differences between the two types of lenders. Firms are more likely to make affiliated loans if they are profitable, SOEs, and have raised new debt recently. It indicates that the primary purpose of affiliated loans may not be for profit since these lenders are already profitable. They probably have privileged access to various sources of capital and do not mind raising new capital to finance the loans. On the other hand, lenders of non-affiliated loans tend to have a lower growth rate, less debt, and they do not raise new debt before making the loan. Hence non-affiliated loans are more likely motivated by pursuing a new channel to generate growth and profits.

### 3. The loans

We now examine the entrusted loans at the transaction level, as opposed to the firm-year level. Out of the 2,995 loans in our sample, we can identify the borrower and most loan characteristics in 2,960 cases.

#### *3.1 Distribution of lending and borrowing industries*

Table 4 presents the number and RMB amount of entrusted loans by lender and borrower industry, respectively. Lenders from the utilities industry make the largest number of loans (433 cases, 15% of the total number of loans), followed by industries of transportation (285 cases), auto & auto parts (275 cases), chemicals (261 cases), and real estate and construction (250 cases). In terms of the RMB amount, the top 5 lending industries are coal and mining (242 billion RMB, or 37.1% of total amount), utilities (21.0%), real estate and construction (7.5%), auto and auto parts (6.9%), and transportation (5.5%).

Interestingly, the same 5 industries also receive the largest amounts of loans: coal and mining (38.3% of total amount), utilities (18.9%), real estate and construction (14.0%), auto and auto parts (6.6%), and transportation (4.5%). This is consistent with the fact that many loans are within-industry loans (Table 5 shows that such loans are 67% of the sample).

If we calculate the net lending amount (lending minus borrowing amount) for each industry, only three industries have an absolute value larger than 10 billion RMB. The two industries that lend out the most are utilities (13.3 billion) and commerce (11.3 billion). The industry that receives the most net borrowing is real estate and construction (42.3 billion). This is not surprising given the importance of real-estate and construction industry in China's economy. Based on a recent IMF report on China (IMF 2014), "it directly accounted for 15 percent of 2012 GDP, a quarter of fixed-asset investment, 14 percent of total urban

employment, and around 20 percent of bank loans” (page 22). Benchmarked against these numbers, the amount of entrusted loans going to the real-estate and construction industry is not high (14% of total loan amount and 7% of net borrowing amount). In particular, the percentage of entrusted loans to the industry is lower than that of bank loans. In addition, the rest of the loans have a reasonably diverse distribution among over twenty broadly-defined industries.

### *3.2 Summary statistics of loan characteristics*

Table 5 presents summary statistics for loan characteristics, borrower and lender characteristics. The loan packages have an average size of 220 million RMB and the average interest rate is 7.89%. If we calculate the difference between the loan rate and the official lending rate specified by the central bank, we have an average adjusted interest rate of 1.84%. The average maturity is 16.4 months. About 18% of the loan packages have collateral, while 15% have a guarantee.

We also collect information about the purpose of the loans: 2% of the loans are for debt retirement, 5% are for specified projects, and the majority of loans are for working capital needs or for general purpose. In 67% of cases, the lender and the borrower are from the same industry. And in 39% of cases, the two parties are in the same city.

When comparing affiliated and non-affiliated loans, the most striking difference is in the interest rate: non-affiliated loans command about twice the rate of that for affiliated loans. The average interest rate is 13.87% for non-affiliated loans vs. 6.37% for affiliated loans. The average adjusted rate is 7.89% vs. 0.30%. In other words, non-affiliated loans charge about the same rate as official bank loans. In China, other than a small group of privileged firms (i.e., the large SOE firms), the market cost of borrowing for most firms is much higher than the official bank loan rate (Song, Storesletten, and Zilibotti 2011). Hence the low interest rate

strongly indicates that affiliated loans are not profit-driven but for the purpose to support a subsidiary or build a long term relationship with a supplier or a customer. For example, in 2006, SAIC Motor, the largest listed auto company in China A-share stock market, provided a five-year low interest loan of 94 million RMB to Ningbo Huaxiang Electronic, a major supplier to automotive components. SAIC Motor stated in its annual report that the purpose of the loan was to ensure the supplier to provide quality components on schedule with auto production.

Compared to non-affiliated loans, affiliated loans also tend to be larger (with a mean of 255 million RMB vs. 76 million RMB), longer maturity (18 months vs. 12 months), are less likely to need collateral and guarantee (11% vs. 74%). In addition, only affiliated loans may be used to retire earlier debt (3% vs. 0%). Affiliated loans are also more likely to be used for specified projects (6% vs. 3%). These findings are consistent with prior studies that borrowers with relationship with lenders receive favorable terms such as greater credit availability and lower collateral requirements (Petersen and Rajan 1994, Berger and Udell 1995).

Lenders of affiliated loans are more likely to be SOE firms (83% vs. 64%). Since a SOE's subsidiaries tend to be SOE firms too, the proportion of borrowers of affiliated loans being SOEs is also high (78%). In contrast, the percentage of SOE borrowers for non-affiliated loans is much lower (20%). This suggests that it is the least privileged firms – the small non-SOE firms that are taking entrusted loans from non-affiliated parties at interest rates without a subsidy. Another interesting difference is that borrowers of affiliated loans are much less likely to be in the real-estate industry (16% vs. 46%). The percentages of lenders in the real-estate industry are low for both types of loans (9% for affiliated loans and 5% for non-affiliated loans).

Moreover, a high percentage of affiliated loans (81%) are made within industry. This is not surprising since the loans are between either between parent firms and subsidiaries, or between customers and suppliers. The proportion of same-industry loans for non-affiliated parties is low (10%). Interestingly, non-affiliated loans are much more likely to be made to borrowers in the same city as the lenders (52%) than affiliated loans (36%).

### *3.3 Do loan rates depend on risk?*

In this section, we investigate what determines the pricing of the entrusted loans, i.e., the interest rate. Allen et al. (2013) argue that constructive (information-based) informal financing plays an important role in the financial market of China. We are interested to see for the entrusted loans in our sample, whether the pricing depends on the borrower's fundamental and informational risks.

Since most of the borrowers are private firms, we have limited firm-specific information about them. To measure a borrower's business risk and its ability to pay back, we consider its industry risk, industry performance, and whether the firm is a SOE. To measure industry risk, we use two measures: (1) the average stock return volatility in the borrower's industry in the previous year; (2) a dummy variable indicating whether the firm is in the real estate and construction industry. Firms in the real estate and construction industry are of high risk. The correlation of these two variables is 0.70. To measure industry performance, we use (1) the industry median of the average annual sales growth rate during the previous three years; and (2) the industry median of the average ROA during the previous 3 years. The correlation of these two variables is 0.23. Finally, compared to non-SOEs, SOEs tend to have access to more sources of capital and therefore may have higher abilities to meet the debt obligation.

We use two variables to measure the extent of information asymmetry between the borrower and the lender: a dummy variable indicating whether they are in the same city, and



a dummy indicating whether they are from the same industry. Prior research on bank loans documents that banks located closer to borrowing firms incur lower information production and monitoring costs (e.g. Degryse and Ongena 2005, Mian 2006). It is also reasonable to think that lenders understand borrowers from the same industry better.

Table 6 compares the adjusted interest rate between loans within the same city, or within the same industry. Panel A shows that for non-affiliated loans, borrowers located in the same city as lenders pay lower interest rates (the mean adjusted interest rate is 7.18% vs. 8.62% if they are not in the same city, the difference is statistically significant at the 1% level). For affiliated loans, the rate is also lower for same-city loans but the difference is much smaller (0.20% vs. 0.36%, the difference significant at the 10% level). In other words, for affiliated loans, geographic distance is not as important a factor compared to non-affiliated loan. It is reasonable that lenders have more information about affiliated parties than non-affiliated ones and hence rely less on the condition that the borrower is from the same city. In addition, we recall that the percentage of same-city loans is higher for non-affiliated loans. This is consistent with the notion that firms are more willing to lend to a non-affiliated firm if it is in the same city hence presents lower informational risk.

Consistent with the informational risk hypothesis, the interest rate is also lower if both parties are from same industry. In our sample, 81% of affiliated loans and 10% of non-affiliated loans occur between two firms in the same industry. The high proportion of within-industry loans for affiliated loans is determined by the nature of the ownership or business affiliations. For non-affiliated loans, within-industry loans command lower interest rates (the average adjusted rate is 6.01% vs. 8.10%) and less likely to require third-party guarantee (44% vs. 57%). For affiliated loans, within-industry loans also have lower adjusted interest rates (0.08% vs. 1.25%), and are less likely to require collateral or a guarantee (10% vs. 15%). The same-industry factor seems to have a much larger impact on the interest rate than the

same-city factor for affiliated loans, but again the impact is smaller than that for the non-affiliated loans.

Table 6 also reports the mean adjusted interest rate conditional on whether the lender or the borrower is a SOE. In China, SOEs usually enjoy better access to bank loans as major banks are also state-owned. As discussed in the previous subsection, the majority of the lenders of both affiliated loans and non-affiliated loans are SOEs (83% and 64%, respectively), but for non-affiliated loans, only 20% borrowers are SOEs, suggesting borrowers of non-affiliated firms are underprivileged firms that have restricted access to official financing.

Table 6 shows that non-SOE borrowers pay significantly higher adjusted interest rates than SOE borrowers (4.6% vs. 0.4%). The adjusted interest rate is the highest when non-SOEs borrow from SOEs (6.8%), which reflects the substantial market power of state-owned companies and the higher firm risk associated with non-SOE borrowers – non-SOE borrowers tend to be smaller firms and have less access to official financing. The difference in interest rate caused by state ownership is smaller for affiliated loans.

Next we estimate multivariate regressions to see whether and how much these variables explain the variation in interest rate after controlling other factors. The dependent variable is the adjusted interest rate. In addition to the measures for fundamental and informational risks, we also include in the regressions the same other loan characteristics and lender characteristics as those listed in Table 6.

Column 1 of Table 7 reports the regression results for the whole sample, in which we also include a dummy indicating whether a loan is an affiliated loan. Consistent with the previous observation that affiliated loans charge lower rates, the coefficient on *affiliated loan* is significantly negative. Controlling for other factors, the adjusted interest rates of affiliated loans are on average lower than non-affiliated loans by 5.15%.

We then estimate the regressions for non-affiliated loans and affiliated loans, separately. For both types of loans, maturity is negatively related to the adjusted interest rate and there is a positive correlation between collateral or guarantee and the rate. This suggests that these contract terms are used simultaneously as complements to each other to control the investment risk. That is, in addition to charge higher rates, lenders will limit their exposure by forcing riskier borrowers to take shorter-term loans and to secure the debt with collateral or a guarantee (e.g. Flannery 1986, Dennis et al. 2000). The effects of maturity and use of collateral are significantly stronger for non-affiliated loans than that for affiliated loans. In addition, for affiliated loans, if the entrusted loan is used for a specified project, the adjusted rate on average decreases by 60 basis points, but there is no similar effect for non-affiliated loans.

For the borrower's characteristics, we find its industry risk has a positive impact on the interest rate of both types of loans. The coefficients on both *borrower industry volatility* and *real estate borrower* are significantly positive. A one-standard deviation increase in the industry volatility (30.3%) leads to a 36 basis point increase in the interest rate for non-affiliated loans, and a 33 basis point increase for affiliated loans. If the borrower is in the real-estate industry, the adjusted rate is higher by 1.99 and 2.25 percentage points for non-affiliated loans and affiliated loans, respectively.

Similarly, information risk also has significant impact on the interest rate of both types of loans, and the effects are stronger for non-affiliated loans. If located in the same city as the lender, a borrower on average pays a lower interest rate (1.04 percentage points lower for non-affiliated borrowers and 0.50 percentage point lower for affiliated borrowers). A borrower in the same industry as the lender is also charged a lower rate (2.23 percentage points lower for non-affiliated borrowers and 0.23 percentage points for affiliated borrowers).

Borrowers in industries with strong growth rates tend to have lower borrowing costs among non-affiliated loans. The coefficient on *borrower industry sales growth* is significantly negative at -0.05 for non-affiliated loans, which means that a one-standard-deviation increase in *borrower industry sales growth* (14.2%) leads to a 74 basis point decrease in the adjusted rate. SOE borrowers are charged significantly less in loan contracts (3.26 percentage points lower for non-affiliated borrowers and 0.34 percentage points lower for affiliated borrowers). These results are consistent with the notion that borrowers with higher abilities to pay back pay lower interest rate, and the effects are stronger for non-affiliated loans.

In summary, Table 7 shows that the pricing of both non-affiliated loans and affiliated loans take into account the borrowers' fundamental risk and information risk. Nonetheless, the rates of non-affiliated loans are much more sensitive to the informational risk (whether the borrower is in the same city or same industry as the lender). As there is more information asymmetry for the non-affiliated loans, being in the same city or in the same industry is more helpful to reduce information asymmetry for parties involved in non-affiliated loans. A SOE borrower also provides stronger assurance to non-affiliated lenders.

### *3.4 Loan rate and loan performance*

As an alternative way to test whether the pricing of entrusted loans incorporates risk in an efficient way, we examine whether the pricing can predict the future performance of loans. That is, if riskier loans command higher rates, then higher rates should be associated with higher likelihoods of default or other payback difficulty.

We manually collect information about the outcome of entrusted loans from firms' annual reports and interim announcements. The lending firm needs to make disclosure in its annual report or make an announcement if a loan is delinquent, overdue or extended. By

interviewing practitioners, we learned that loan extensions are usually due to borrowers' difficulty of paying back on time. We include 2,243 loans in the performance analysis (1780 affiliated loans and 463 non-affiliated loans). This includes 717 loans that are not due by the end of 2013.

Panel A of Table 8 presents the number of incidences of loan delinquency, overdue and extended by 2013 for our sample loans, and the distribution of these cases between affiliated and non-affiliated loans. There are a total of 194 such cases, 130 for affiliated loans and 64 for non-affiliated loans. Thus, the percentage of problematic affiliated loans is smaller than that of non-affiliated loans (7.3 vs. 13.8%). Interestingly, when there is a problem, a higher proportion of affiliated loans are extended (88%) than non-affiliated loans (70%). Panel A also reports the average loan amount for each type of problematic loans. The average amounts for delinquent, overdue and extended loans are 40, 80, and 120 million RMB, respectively. The average amount for non-problematic loans is 210 million RMB. This may be due to either or both of the following reasons: (1) lenders tend to lend smaller amounts to riskier borrowers; and (2) when large amounts are involved, lenders may have more incentive to extend the loans.

Panel B of Table 7 compares the adjusted interest rate between problematic and non-problematic loans. For the subsample of non-affiliated loans, the ex ante interest rates are higher for problematic loans than for non-problematic loans. The average adjusted interest rate for loans that are overdue and extended are 10.2% and 10.9%, respectively. In contrast, the average adjusted rate for non-problematic loans is 7.8%. The difference in rate is statistically significant between each group of problematic loans and the non-problematic loans.

In contrast, such differences are absent for affiliated loans. The average adjusted interest rate for loans that are delinquent, overdue, extended are 0.5%, -0.1%, and 0.6%, respectively.

None of them is significantly different from the rate for non-problematic loans, which is 0.3%. This seems to suggest that the pricing of the affiliated loans, although taking into account borrowers' risk to some extent, does not incorporate risk in a full and efficient way.

We then estimate multivariate logit regressions to examine the determinants of loan performance. The dependent variable is a dummy equal to 1 if the loan is delinquent, overdue or extended. Our main variable of interest is the adjusted interest rate. We also control for other loan characteristics, borrower characteristics and lender characteristics.

Table 9 reports the regression results. In Columns (1)-(3), the dependent variable is a dummy equal to 1 if the loan is extended and 0 otherwise. In Columns (4)-(6), the dependent variable is a dummy equal to 1 if the loan is delinquent or overdue and 0 otherwise. In Columns (7)-(9), the dependent variable is a dummy equal to 1 if the loan is delinquent, overdue, or extended and 0 otherwise.

Consistent with the univariate results, Table 9 shows that the adjusted interest rate is significantly positively correlated with the likelihood of the loan being extended, overdue or delinquent. Its coefficient is significantly positive in Columns (2), (5) and (8). Take Column (8) for example, the coefficient is 0.14 and significant. If the adjusted interest rate increases by one standard deviation (5.34%) around the mean, the probability of delinquent, overdue or extended increases from 9.98% to 16.92%. Thus the interest rate of non-affiliated loans can predict future loan performance. This is consistent with the notion that riskier loans are charged higher interest rate *ex ante* and end up with worse performance *ex post*.

In addition, Table 9 shows that after including the interest rate, borrowers' characteristics mostly have no predicting power for loan performance. This indicates that the interest rate has incorporated the risk information contained in these variables. Thus non-affiliated loans are priced in a fairly efficient way.

The only exception is with *same-city dummy* which has a significant and negative coefficient in Column (9), suggesting that likelihood of problematic loans is smaller if the borrower is in the same city as the lender. In untabulated results, we observe that 28% of same-city loans turn out to be problematic whereas the ratio doubles for non-affiliated loans across cities (56%). This is consistent with the notion that there is less information asymmetry if lenders and borrowers are in the same geographical location. When in the same city, a lender is better at either screening borrowers, or enforcing the loan payment, or both. Previous results in Table 7 show that same-city loans receive lower interest rates. Table 9 suggests that the interest rate under-reacts to the information whether the borrower is in the same city as in the lender.

The results are very different for affiliated loans. The adjusted interest rate has no predictive power for loan performance. This seems to suggest that the pricing of this type of loans does not incorporate risk information efficiently. Again this is consistent with the observation that affiliated loans are not profit driven but for subsidization.

#### **4. Conclusions**

We conduct the first large-sample transaction-level study of China's shadow banking system. Specifically, we examine the entrusted loans made by listed firms. These non-financial firms engage in these loans because they can take advantage of their privileged access to the official financing system (such as bank loan and stock market) to provide credit to less privileged firms. The likelihood and the amount of entrusted loans increase when the credit is tight in the economy, thus is a result of the market adjusting to the change in the official financing system.

There are important differences between two types of entrusted loans – non-affiliated loans and affiliated loans. Lenders of non-affiliated loans suffer low growth rates and hence

use the loans as an alternative investment channel to boost their earnings. In contrast, lenders of affiliated loans are highly profitable and use the loans to support their subsidiaries, suppliers, or customers. By doing so, they might gain long-term benefit such as returns from equity investment of subsidiaries, stable and quality supplies from suppliers, or stable demand from customers.

Consistent with the different motivations, the average interest rate for non-affiliated loans is about twice of that for affiliated loans. Nonetheless, we find evidence that the pricing of both types of loans depends on borrowers' fundamental and information risks, although the pricing of non-affiliated loans are more sensitive to risk. Finally, we find the interest rates of *non-affiliated loans* have predicting power for future loan performance, i.e., the likelihood that a loan is delinquent, overdue or extended increases when the interest rate is high. This suggests the price of the loan incorporates risk efficiently. But the interest rates of *affiliated loans* have no predictive power of future loan performance.

One caveat of our study is that we focus on a specific form of shadow banking in China. Other types of shadow banking may have their own unique mechanisms. More research is needed to the roles and functions of different types of shadow banking.



## References

- Allen, F., Qian, J., Qian, M., 2005. Law, Finance, and Economic Growth in China. *Journal of Financial Economics*, 77(1), 57-116.
- Allen, F., Qian, M., & Xie, J. (2013). Understanding Informal Financing, working paper
- Ayyagari, M., Demirgüç-Kunt, A., Maksimovic, V., 2010. Formal versus Informal Finance: Evidence From China. *Review of Financial Studies* 23, 3048–3097.
- Berger, A.N., Udell, G.F., 1990. Collateral, Loan Quality, and Bank Risk. *Journal of Monetary Economics* 25, 21–42.
- Berger, A., Udell, G., 1995. Relationship Lending and Lines of Credit in Small Firm Finance. *Journal of Business* 68, 351–381.
- Bharath, S., Dahiya, S., Saunders, A., Srinivasan, A., 2007. So What Do I Get? The Bank's View of Lending Relationships. *Journal of Financial Economics*, 85(2), 368-419.
- Cull, R., Xu, L.C., Zhu, T., 2009. Formal Finance and Trade Credit during China's Transition. *Journal of Financial Intermediation* 18, 173–192.
- Dennis, S., D. Nandy, and I.G. Sharpe, 2000. The Determinants of Contract Terms in Bank Revolving Credit Agreements. *Journal of Financial and Quantitative Analysis* 35, 87–110.
- Degryse, H., Ongena, S., 2005. Distance, Lending Relationships, and Competition. *Journal of Finance*, 60(1), 231-266.
- Fisman, R., Love, I., 2003. Trade Credit, Financial Intermediary Development, and Industry Growth. *Journal of Finance*, 58(1), 353-374.
- Flannery, M., 1986. Asymmetric Information and Risky Debt Maturity Choice. *Journal of Finance* 41, 18–38.
- International Monetary Fund, 2014, IMF Country Report No. 14/235 People's Republic of China.
- Mian, A., 2006. Distance Constraints: The Limits of Foreign Lending in Poor Economies. *Journal of Finance*, 61(3), 1465-1505.
- Moody's, 2013. Risks to China's Lenders from Shadow Banking: Frequently Asked Questions.
- Song, Z., K. Storesletten, and F. Zilibotti, 2011. Growing Like China. *American Economic Review*, 101(1), 196-233.
- Petersen, M.A., Rajan, R.G., 1994. The Benefits of Lending Relationships: Evidence from Small Business Data. *Journal of Finance* 49, 3–37.

Wei, L., B. Davis, January 14 2014, Regulators at Odds on Reining In China's Shadow Lending. Wall Street Journal.

**Table 1 Entrusted Loan over Time**

The sample includes 2995 entrusted loans during 2004-2013.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
Loan firms	55	51	53	65	99	95	116	176	177	220	1107
Loan sample	116	98	102	151	209	208	280	530	626	675	2995
Aggregate loan amount (Billion RMB)	9.56	7.29	10.08	19.15	32.57	29.28	36.77	92.98	197.08	219.17	653.93
Aggregate loan amount/Aggregate asset (%)	4.83	2.64	2.83	2.27	2.44	2.17	1.68	1.91	3.37	2.96	2.65

**Table 2 Summary statistics**

The sample includes all the 18003 firm-years observations for all the listed non-finance Chinese firms between 2004 and 2013. Variables definitions are in Appendix. Financial variables are winsorized at 1% and 99%.

	(1) <i>Loan dummy=0</i> (n=16896)	(2) <i>Loan dummy=1</i> (n=1107)	(3) Non-affiliated loan (n=290)	(4) Affiliated loan (n=799)	(2)-(1)	(3)-(1)	(4)-(1)	(4)-(3)
<i>Asset (billion RMB)</i>	5.0	14.7	8.4	17.1	9.7***	3.4***	12.1***	8.7***
<i>ROA (%)</i>	6.9	7.6	7.4	7.6	0.7***	0.5	0.7**	0.2
<i>Sales growth (%)</i>	23.6	24.4	18.0	26.5	0.8	-5.6*	2.9	8.5**
<i>Debt/asset (%)</i>	20.7	21.6	16.7	23.5	0.9*	-4.0***	2.8***	6.8***
<i>Change of debt (%)</i>	4.0	7.8	5.0	8.7	3.8***	1.0	4.7***	3.7***
<i>SOE lender (%)</i>	55	74	57	80	19***	2	25***	23***
<i>Real estate lender (%)</i>	8	10	7	12	2**	-1	4***	5**

**Table 3 Determinants of Loan Decisions**

The sample includes all the 18003 firm-years during 2004-2013. We run logit regressions using *Loan dummy* as the dependent variable, and run tobit regressions using *Loan amount/asset at the year beginning* as the dependent variable. Variables definitions are in Appendix. Financial variables are winsorized at 1% and 99%.

	<i>Logit regression</i>			<i>Tobit regression</i>		
	<i>Loan Dummy</i>			<i>Loan amount/asset (%)</i>		
	All firms	Non-affiliated loan firms and firms without entrusted loans	Affiliated loan firms and firms without entrusted loans	All firms	Non-affiliated loan firms and firms without entrusted loans	Affiliated loan firms and firms without entrusted loans
<i>Ln (asset)</i>	0.49*** (0.00)	0.39*** (0.00)	0.52*** (0.00)	3.39*** (0.00)	2.91*** (0.00)	3.37*** (0.00)
<i>Interbank offered rate (%)</i>	0.24*** (0.00)	0.31*** (0.00)	0.22*** (0.00)	1.83*** (0.00)	2.48*** (0.00)	1.43*** (0.00)
<i>ROA (%)</i>	0.01** (0.02)	-0.00 (0.82)	0.02*** (0.00)	0.08** (0.03)	-0.01 (0.94)	0.11*** (0.00)
<i>Sales growth (%)</i>	-0.001** (0.05)	-0.003** (0.03)	-0.001 (0.29)	-0.01*** (0.00)	-0.03** (0.02)	-0.01 (0.15)
<i>Debt/asset (%)</i>	-0.01*** (0.01)	-0.02*** (0.00)	0.001 (0.76)	-0.07*** (0.00)	-0.17*** (0.00)	-0.01 (0.49)
<i>Change of debt (%)</i>	0.01*** (0.00)	0.00 (0.46)	0.01*** (0.00)	0.08*** (0.00)	0.03 (0.34)	0.07*** (0.00)
<i>SOE lender</i>	0.47*** (0.00)	-0.13 (0.33)	0.77*** (0.00)	3.08*** (0.00)	-1.08 (0.30)	4.54*** (0.00)
<i>Real estate lender</i>	0.09 (0.38)	-0.26 (0.27)	0.23** (0.05)	2.19*** (0.01)	-1.60 (0.37)	3.31*** (0.00)
<i>Cons.</i>	-14.4*** (0.00)	-12.7*** (0.00)	-15.7*** (0.00)	-105.3*** (0.00)	-105.8*** (0.00)	-107.6*** (0.00)
N	18003	17186	17695	18003	17186	17695
Pseudo R2	0.088	0.040	0.111	0.038	0.024	0.053

**Table 4 Industry Distribution of Loan Sample**

	Lenders		Borrowers	
	Number of Loans	Total amount (billion RMB)	Number of Loans	Total amount (billion RMB)
Real estate & Construction	250	48.99	633	91.30
Coal & Mining	135	242.44	160	250.52
Nonferrous metal	30	4.47	25	5.81
Utility	433	137.18	392	123.88
Building materials	52	9.43	61	9.87
Steel	80	11.28	35	4.13
Chemicals	261	23.73	187	19.60
Pharmacy	166	10.88	136	9.19
Transportation	285	36.16	256	29.56
Auto & Auto parts	275	45.26	214	43.06
Machinery	167	14.14	157	12.62
Electrical household appliances	47	3.47	44	2.41
Electronics & IT	146	9.51	91	5.22
Culture & Media	27	4.84	8	0.33
Commerce	214	15.49	59	4.17
Hotel & Tourism	14	1.00	54	4.23
Food	177	10.04	163	9.26
Agriculture	8	0.50	14	1.21
Textile & Garment	99	6.17	70	2.18
Paper & Printing	61	6.72	60	6.35
Other light industry	25	1.95	13	0.27
Conglomerate	43	10.25	106	11.23
Education, Finance, and Others	-	-	22	1.97
Borrower is unknown	-	-	35	5.56
<b>Total</b>	<b>2995</b>	<b>653.93</b>	<b>2995</b>	<b>653.93</b>

**Table 5 Descriptive Statistics for Entrusted Loans**

The sample includes 2960 entrusted loans during 2004-2013. For variables *Extend or Overdue*, *Extend*, *Overdue*, we exclude loans which are not due by the disclosure day of annual reports of 2013, and the sample includes 2243 entrusted loans. In some cases, *Interest rate* or *Maturity* are not disclosed, and the sample is reduced to 2812 and 2863, respectively. Variables definitions are in Appendix. Financial variables are winsorized at 1% and 99%.

	All sample	Non-affiliated loan	Affiliated loan	Diff
<u>Loan characteristics</u>				
<i>Loan amount (million RMB)</i>	218	76	255	-179*
<i>Interest rate (%)</i>	7.89	13.87	6.37	7.50***
<i>Adjusted interest rate (%)</i>	1.84	7.89	0.30	7.59***
<i>Maturity (Month)</i>	16.4	12	18	-6***
<i>Collateral or Guarantee</i>	24%	74%	11%	63%***
<i>Collateral</i>	18%	55%	9%	46%***
<i>Guarantee</i>	15%	56%	5%	51%***
<i>Purpose of loan – debt retirement dummy</i>	2%	0%	3%	-3%***
<i>Purpose of loan – specified project dummy</i>	5%	3%	6%	-3%***
<u>Borrower characteristics</u>				
<i>Same city</i>	39%	52%	36%	16%***
<i>Same industry</i>	67%	10%	81%	-71%***
<i>SOE borrower</i>	66%	20%	78%	-58%***
<i>Real estate borrower</i>	22%	46%	16%	30%***
<i>Borrower industry volatility (%)</i>	62	79	58	21***
<i>Borrower industry sales growth (%)</i>	22	24	21	3***
<u>Lender characteristics</u>				
<i>SOE lender</i>	79%	64%	83%	-19%***
<i>Asset (billion RMB)</i>	26	11	30	-19***
<i>Debt/asset (%)</i>	23	16	25	-9***
<i>Change of debt (%)</i>	8	5	9	-4***
<i>N</i>	2960	589	2371	

## Table 6 Loan Characteristics

The sample includes 2812 entrusted loans during 2004-2013. Variables definitions are in Appendix.

*Panel A: Adjusted interest rate (%):*

Non-affiliated loans			Affiliated loans			Non-affiliated loans			Affiliated loans		
<i>Same city</i>	<i>Not same city</i>	Diff	<i>Same city</i>	<i>Not same city</i>	Diff	<i>Same industry</i>	<i>Not same industry</i>	Diff	<i>Same industry</i>	<i>Not same industry</i>	Diff
7.18	8.62	-1.44***	0.20	0.36	-0.16*	6.01	8.10	-2.09***	0.08	1.25	-1.17***

*Panel B: Adjusted interest rate (%): Non-SOE vs. SOE firms*

	All sample				Non-affiliated loan				Affiliated loan			
	All Lender	Non-SOE Lender	SOE Lender	Diff	All Lender	Non-SOE Lender	SOE Lender	Diff	All Lender	Non-SOE Lender	SOE Lender	Diff
All Borrower		2.8	1.6	1.2***		6.7	8.5	-1.8***		0.5	0.2	0.3
Non-SOE Borrower	4.6	2.7	6.8	-4.1***	8.8	7.4	9.6	-2.2***	0.7	0.6	1.1	-0.5*
SOE Borrower	0.4	3.2	0.3	2.9***	4.2	4.5	4.0	0.5	0.2	-0.5	0.2	-0.7
Difference	4.2***	-0.5	6.5***		4.6***	2.9***	5.6***		0.5***	1.1*	0.9***	



**Table 7 Determinants of Interest Rates of Entrusted Loans**

The sample includes 2808 entrusted loans that the information of interest rate and maturity are available during 2004-2013. Variables definitions are in Appendix. Financial variables are winsorized at 1% and 99%.

<i>Adjusted interest rate (%)</i>	All sample	Non-affiliated loans	Affiliated loans
<u>Loan characteristics</u>			
<i>Affiliated loan</i>	-5.15*** (0.00)		
<i>Maturity (Month)</i>	-0.014*** (0.00)	-0.126*** (0.00)	-0.005 (0.13)
<i>Collateral or Guarantee</i>	1.03*** (0.00)	1.78*** (0.00)	0.76*** (0.00)
<i>Purpose of loan – debt retirement dummy</i>	-0.12 (0.71)		-0.16 (0.50)
<i>Purpose of loan – specified project dummy</i>	-0.64*** (0.01)	-0.77 (0.42)	-0.60*** (0.00)
<u>Borrower characteristics</u>			
<i>Same city</i>	-0.65*** (0.00)	-1.04*** (0.00)	-0.50*** (0.00)
<i>Same industry</i>	-0.25* (0.07)	-2.23*** (0.00)	-0.23** (0.04)
<i>SOE borrower</i>	-1.83*** (0.00)	-3.26*** (0.00)	-0.34** (0.04)
<i>Real estate borrower</i>	2.24*** (0.00)	1.99*** (0.00)	2.25*** (0.00)
<i>Borrower industry volatility (%)</i>	0.011*** (0.00)	0.012* (0.07)	0.011*** (0.00)
<i>Borrower industry sales growth (%)</i>	-0.01*** (0.01)	-0.05*** (0.00)	0.003 (0.50)
<u>Lender characteristics</u>			
<i>SOE lender</i>	1.58*** (0.00)	1.54*** (0.00)	0.30* (0.10)
<i>Ln (asset )</i>	-0.20*** (0.00)	0.29* (0.09)	-0.26*** (0.00)
<i>Debt/asset (%)</i>	0.02*** (0.00)	0.06*** (0.01)	0.01*** (0.00)
<i>Change of debt (%)</i>	0.02*** (0.00)	0.03** (0.05)	0.02*** (0.00)
<i>Year fixed effect</i>	Yes	Yes	Yes
<i>N</i>	2808	568	2240
<i>Adj R2</i>	0.642	0.436	0.316

### Table 8 Performance of Entrusted Loans

The sample includes 2243 entrusted loans during 2004-2013. We exclude loans which are not due by the disclosure day of annual reports of 2013.

#### Panel A: Loan delinquency or extension or overdue

	N	Affiliated loans	Non-affiliated loans	Average loan amount (million RMB)
Delinquency due to borrower bankruptcy	3	3	0	41
Overdue	32	13	19	82
Extended (on average by 11 months)	159	114	45	122
Total	194 (8.6%)	130 (7.3%)	64 (13.8%)	

#### Panel B: Extend or Overdue: t-test on Adjusted interest rate (%)

	(1) Delinquent loans	(2) Overdue loans	(3) Extended loans	(4) Non-problematic loans	(1)-(4)	(2)-(4)	(3)-(4)
Non-affiliated loan	/	10.2	10.9	7.8	/	2.4*	3.1***
Affiliated loan	0.5	-0.1	0.6	0.3	0.2	-0.4	0.3
All sample	0.5	6.1	3.5	1.8	-1.3	4.3***	1.7***

**Table 9 Determinants of Extension and Overdue on Loan Payments: Logistic Regressions**

The sample includes 2093 entrusted loans with the information of interest rate and maturity during 2004-2013. We exclude loans which are not due by the disclosure day of annual reports of 2013. Variables definitions are in Appendix. Financial variables are winsorized at 1% and 99%.

	<i>Extend dummy</i>			<i>Delinquent or Overdue dummy</i>			<i>Delinquent or Overdue or Extend dummy</i>		
	(1) All sample	(2) Non- affiliated loan	(3) Affiliated loan	(4) All sample	(5) Non- affiliated loans	(6) Affiliated loans	(7) All sample	(8) Non- affiliated loans	(9) Affiliated loans
<u>Loan characteristics</u>									
<i>Affiliated loan</i>	0.22 (0.51)			-2.21*** (0.00)			-0.12 (0.71)		
<b><i>Adjusted interest rate (%)</i></b>	<b>0.08*** (0.00)</b>	<b>0.12*** (0.01)</b>	<b>0.05 (0.29)</b>	<b>0.13*** (0.01)</b>	<b>0.16** (0.04)</b>	<b>-0.03 (0.83)</b>	<b>0.08*** (0.00)</b>	<b>0.14*** (0.01)</b>	<b>0.06 (0.18)</b>
<i>Maturity (Month)</i>	-0.00 (0.67)	0.04 (0.33)	-0.02 (0.11)	0.02 (0.28)	0.12** (0.02)	0.02 (0.42)	0.00 (0.91)	0.07** (0.02)	-0.01 (0.19)
<i>Guarantee or Collateral</i>	-0.12 (0.65)	-0.06 (0.89)	-0.53 (0.20)	0.21 (0.71)	2.16* (0.06)		-0.12 (0.62)	0.30 (0.49)	-0.69* (0.10)
<i>Purpose of loan – debt retirement</i>	-0.70 (0.35)		-0.94 (0.22)				-0.73 (0.33)		-0.96 (0.21)
<i>Purpose of loan – specified project</i>	0.91*** (0.00)	0.42 (0.57)	1.12*** (0.00)	1.68*** (0.00)	1.95** (0.04)	1.38* (0.10)	1.08*** (0.00)	1.28* (0.07)	1.21*** (0.00)
<u>Lender characteristics</u>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<u>Borrower characteristics</u>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Year fixed effect</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj R2	0.067	0.223	0.066	0.213	0.319	0.106	0.072	0.228	0.062
N	2093	442	1651	2093	442	1651	2093	442	1651

## Appendix: Variables Definition

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<i>ROA</i>	ROA one year before entrusted loan was made
<i>Sales growth</i>	Growth of sales one year before entrusted loan was made
<i>Asset (billion RMB)</i>	Total asset at the beginning of the year when entrusted loan was made
<i>Debt/asset</i>	The ratio of debt to total asset at the beginning of the year when entrusted loan was made
<i>Change of debt</i>	Change of debt level of the year before entrusted loan was made divided by average asset
<i>SOE lender</i>	1 if a firm is controlled by the state, and 0 otherwise
<i>Real estate lender</i>	1 if a firm is in the real estate industry, and 0 otherwise
<i>Interbank offered rate (%)</i>	China's official interbank offered rate in the same time period
<i>Loan amount/assets</i>	The loan amount/assets at the year beginning
<i>Loan dummy</i>	1 if a firm made a trusted loan in a certain year, and 0 otherwise
<i>Affiliated loan</i>	1 if a firm made a trusted loan to an affiliated party, and 0 otherwise
<i>Non-affiliated loan</i>	1 if a firm has a trusted loan to a non-affiliated party, and 0 otherwise
<i>Loan amount (Million RMB)</i>	The amount of each trusted loan
<i>Adjusted interest rate (%)</i>	Interest rate of loan minus the official lending rate of bank
<i>Maturity (Month)</i>	The maturity of loan
<i>Collateral or Guarantee</i>	1 if a loan has collateral or guarantee, and 0 otherwise
<i>Collateral</i>	1 if a loan has collateral, and 0 otherwise
<i>Guarantee</i>	1 if a loan has guarantee, and 0 otherwise
<i>Purpose of loan – debt retirement dummy</i>	1 if a borrower uses the loan for debt retirement, and 0 otherwise
<i>Purpose of loan – specified project dummy</i>	1 if a borrower uses the loan for a specific project investment, and 0 otherwise
<i>Extend or Overdue dummy</i>	1 if a loan is extended or overdue, and 0 otherwise
<i>Extend dummy</i>	1 if a loan is extended, and 0 otherwise
<i>Overdue dummy</i>	1 if a loan is overdue, and 0 otherwise
<i>Same city</i>	1 if a borrower is in the same city as its lender, and 0 otherwise
<i>Same industry</i>	1 if a borrower is in the same industry as its lender, and 0 otherwise
<i>SOE borrower</i>	1 if a borrower is an State-owned enterprise, and 0 otherwise
<i>Real estate borrower</i>	1 if a borrower is in real estate industry, and 0 otherwise
<i>Borrower industry volatility</i>	Borrower's industry's standard deviation of sales growth one year before loan was made
<i>Borrower industry sales growth</i>	Borrower's industry's growth of sales one year before loan was made

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