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

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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

1. 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.[1] 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.[2] 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

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[1]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.
[2] 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).

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).

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.[3]

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[3] 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

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 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.[4] In 2013, they comprise 14.7% of the country's total financing amount including bank loans and capital market financing.[5]

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

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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.

[4] 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.

[5] 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.

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 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,[6] 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

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[6] State-owned enterprises (SOEs) tend to have better access to official financing compared to private firms.

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 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. [7]

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.

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[7] 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.

The rest of the paper is organized as follows. Section 2 describes the sample and the data. Section 3 investigates lender characteristics. Section 4 explores loan characteristics and what determines the loan pricing. Section 5 examines the wealth effects of these loans. Section 6 concludes.

2. 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 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 12.6 billion RMB in 2004 to 219.2 billion RMB in 2013. In 2013, our sample accounts for about 10% of the total amount of entrusted loans reported by the central bank.

3. 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 (18.1 billion vs. 5.8 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 21.0 billion RMB vs. 10.6 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 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 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

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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(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, given all other explanatory variables are at their means, when *interbank offered rate* increases from its 25th percentile to 75th percentile, the probability of making a non-affiliated loan increases from 1.15% to 1.94%, and the probability of making an affiliated loan increases from 2.61% to 3.91%.

Several factors have 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, given all other explanatory variables are at their means, when *ROA* increases from its 25th percentile to 75th percentile, the probability of making an affiliated loan increases from 2.87% to 3.24%, and when the *change of debt* increases from its 25th percentile to 75th percentile, the probability of making an affiliated loan increases from 2.88% to 3.25%. Similarly, keeping other variables at their means, the probability of making an affiliated loan is 4.21% for an SOE firm and 2.03% for a non-SEO firm. The probability of making an affiliated loan is 3.75% for a real estate firm and 3.00% 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 1.36%.

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 (0.76%), the ratio of loan to assets increases 2.05% for non-affiliated loans and 1.29% for affiliated loans.

For non-affiliated loans, if *sales growth* increases by one standard deviation (56.9%), the ratio of loan to asset decreases 1.50%. If the ratio of debt to asset increases by one standard deviation (16.9%), the ratio of loan to asset decreases by 2.94%. For affiliated loans, if *ROA* increases by one standard deviation (8.77%) around the mean, the ratio of loan to asset increases 0.98%. 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 4.46% 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.

4. 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.

4.1 Distribution of lending and borrowing industries

Table 4 presents RMB amount of entrusted loans by lender and borrower industry, respectively. Lenders from the coal and mining industry make the largest amount of loans (249 billion RMB, or 36.0% of total amount), followed by industries of utilities (21.2%), real estate and construction (7.7%), auto and auto parts (7.1%), and transportation (5.6%).

Interestingly, the same 5 industries also receive the largest amounts of loans: coal and mining (37.2% of total amount), utilities (19.0%), real estate and construction (14.4%), auto and auto parts (6.7%), and transportation (4.6%). 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 (15.0 billion) and commerce (12.4 billion). The industry that receives the most net borrowing is real estate and construction (46.6 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 (the ratio of the industry's borrowing (or net borrowing) to total loan amount is 14.4% (6.7%)). 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.

The above conclusion, however, is driven by affiliated loans, which constitute the majority of our sample. For non-affiliated loans, a much larger percentage of money flows into the real estate and construction industry. The industry's total borrowing is 21.9 billion RMB, which is 46% of the total amount of the non-affiliated loans and almost 10 times the total borrowing of the second largest borrowing industry—the transportation industry. The net borrowing amount of the real estate and construction industry is 17.7 billion RMB, which is 37.2% of the total amount of non-affiliated loans.

Our study focuses on entrusted loans made by listed firms. It is worth noting that in recent years (starting from 2009, the year of the large stimulus package), another type of lenders—private equity funds has gained increasing market share of entrusted loans. Although we do not have direct data on this group of loans, we would point out that these loans are driven by the pursuit of immediate profits, based on interviews with practitioners and discussion in news articles. Therefore they have characteristics associated with non-affiliated loans—most strikingly, they command high interest rates and are more likely to flow into restricted industries such as real-estate and constructions.

In January 2015, the China Banking Regulatory Commission (CBRC) proposed new rules on entrusted loans. One important change is that debt-financed funds are prohibited from making entrusted loans, which aims to exclude these private equity players from this market. It is yet to see whether this will be included in the final version of the new regulations and whether it will achieve the intended results.

4.2 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 231 million RMB and the average interest rate is 7.9%. If we calculate the difference between the loan rate and the official lending rate specified by the central bank categorized by maturity, we have an average adjusted interest rate of 1.8%. The average maturity is 16 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 13.9% for non-affiliated loans vs. 6.4% for affiliated loans. The average adjusted rate is 7.9% vs. 0.3%. 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 269 million RMB vs. 81 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 (51%) than affiliated loans (36%).

4.3 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 information about them—we know the firm name and industry, and manually collect information on its location and whether it is an SOE. To measure a borrower's business risk, we consider its industry risk and whether the firm is an SOE. We use two variables to measure industry risk: (1) The industry sales growth dispersion, computed as the standard deviation of sales growth of firms in the borrower industry during the year before the loan is made; (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 often considered to be of high risk, as many worry about the bubble in the housing market (e.g., Wu et al., 2012). In addition, despite the general increase in housing prices during our sample period, firm performance in the industry varies widely. For example, its industry sales growth dispersion is 104% and ranks as No.1 among all the industries. The correlation of these two risk measures is 0.70. To measure industry performance, we use (1) the borrower industry's aggregate growth rate of sales in the year before the loan is made; and (2) the industry median of ROA in the year before the loan is made. 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 presents univariate-analysis evidence of the impact of these risk measures on interest rates. Specifically, we compare the mean adjusted interest rates for subsamples of loans differing in these risk measures. For dummy variables, we compare subsamples with and without the respective characteristic. For continuous risk measures, we compare subsamples with above-median vs. below-median values.

In the first two rows of Table 6 are the mean adjusted interest rates for subsamples depending on whether the lender and the borrower are within the same city or within the same industry. The results show that for non-affiliated loans, borrowers located in the same city as lenders pay lower interest rates (the mean adjusted interest rate is 7.2% vs. 8.6% 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 (0.2% vs. 0.4%, 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 loans. It is plausible 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 the 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 6.0% vs. 8.1%) and are less likely to require third-party guarantee (44% vs. 57%, not tabulated). For affiliated loans, within-industry loans also have lower adjusted interest rates (0.1% vs. 1.3%) and are less likely to require collateral or a guarantee (10% vs. 15%, not tabulated). 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 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.

We observe that non-SOE borrowers pay significantly higher adjusted interest rates than SOE borrowers (8.8% vs. 4.2% for nonaffiliated loans, and 0.7% vs. 0.2% for affiliated loans). This reflects non-SEO firms' higher firm risk (they are often smaller firms) as well as their low bargaining power due to their restricted access to official financing. The difference in the 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 5.22%.

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 61 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 sales growth dispersion* and *real estate borrower* are significantly positive. A one-standard deviation increase in the industry *dispersion* (30.3%) leads to a 50 basis point increase in the interest rate for non-affiliated loans, and a 30 basis point increase for affiliated loans. If the borrower is in the real-estate industry, the adjusted rate is higher by 1.78 and 1.98 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 (1.01 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 (2.07 percentage points lower for non-affiliated borrowers and 0.39 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 -0.06 for non-affiliated loans, which means that a one-standard-deviation increase in *borrower industry sales growth* (14.2%) leads to a 82 basis point decrease in the adjusted rate. SOE borrowers are charged significantly less in loan contracts (3.37 percentage points lower for non-affiliated borrowers and 0.26 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.

4.4 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 (1782 affiliated loans and 461 non-affiliated loans). This excludes 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. 13.9%). 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 51, 99, and 139 million RMB, respectively. The average amount for non-problematic loans is 229 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 (5.35%) around the mean, the probability of delinquent, overdue or extended increases from 9.9% to 17.0%. 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*.

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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 7.5% of same-city loans turn out to be problematic whereas the ratio doubles for non-affiliated loans across cities (20.8%). 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 the in 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 sufficiently. Again this is consistent with the notion that affiliated loans are not driven by short-term profit but to support affiliated parties.

5. Wealth effects of entrusted loans

In this section, we examine the value consequence of the entrusted loans to the lenders. We have shown evidence that non-affiliated entrusted loans charge much higher interest rates than affiliated loans—in particular, the latter type charges rates much lower than the market rate. This evidence alone, however, does not imply that non-affiliated loans create values and affiliated loans destroy values. The lower-than-market rates of affiliated loans can be a form

of long-term investments in its affiliated parties, as opposed inefficient cross-subsidization. For non-affiliated loans, the loans may create value, destroy value, or receive fair compensation depending on whether the interest rates are high enough for the risk.

To address the question whether entrusted loans create value, we examine the stock market reactions to the loan announcement, assuming the market is efficient in incorporating the value consequence. For this analysis, we focus on the 547 cases (358 affiliated loans and 189 non-affiliated loans) where the lending firm makes an announcement about the loan before the annual report. We recognize there is a selection issue since not all firms make interim announcements. We describe and address this issue in multivariate regressions below. We estimate the cumulative abnormal returns (CARs) around the announcement based on the market model, using the index return of stocks traded on Shanghai and Shenzhen stock exchanges as the market proxy and the trading days [-150, -10] as the estimation period, where day 0 is the announcement day.

We first examine whether the announcement returns are significantly different from zero. If they are not, it suggests that these deals neither creates nor destroys values, i.e., they are on average zero-NPV investments. If CARs are significantly positive (negative), there are two possibilities: one possibility is that these loans do create (destroy) values. Alternatively, these loans may not create (or destroy) values, but the fact that the lenders are making these loans may reveal to the market new positive (negative) information about the lenders. To distinguish the value-creation vs. the information-revelation hypothesis, we divide the loans into two groups depending on whether it is the first time a firm announces such a loan during our sample period: first announcements vs. subsequent announcements. If the abnormal returns are concentrated in firms' first loans, then they are more likely due to information revelation as opposed to value creation. In contrast, the value-creation hypothesis predicts that the abnormal returns should be present in both first and subsequent loans.

Table 10 Panel A presents the mean CARs for affiliated loans and non-affiliated loans separately. We compute CARs for 3 time windows, trading days [-1, 1], [-3, 3] and [-5, 5] around the announcement, where day 0 is the announcement days. The results are consistent for all three CAR measures—the mean CAR is non-significant for affiliated loans, while it is significantly negative for non-affiliated loans. This suggests that affiliated loans neither create nor destroy value, but instead are zero-NPV investments. Despite their lower-than-market interest rates, investors view them as a form of investment that receives fair compensation in the future, rather than inefficient subsidization. In contrast, the negative CARs for non-affiliated loans suggest that this type of loans either destroy value, or convey negative lender information to the market.

For each type of affiliated and non-affiliated loans, we then divide them into firms' first vs. subsequent loan announcements. For affiliated loans, there are no significant differences between the two groups of transactions. For non-affiliated loans, interestingly, only the first announcements exhibit negative CARs while the subsequent announcements are associated with non-significant and near-zero CARs: the differences between the two groups are all significant at the 5% level. Take the mean CARs around days [-5, 5] for example. The average CAR for all non-affiliated loans is -1.39%, significant at the 10% level. The mean for firms' first non-affiliated loans is -3.78% and significant at the 1% level, whereas the mean for subsequent non-affiliated loans is a non-significant 0.33% (the difference is significant at the 1% level).

The fact that the negative CAR is concentrated in firms' first announcements of non-affiliated loans is consistent with the information-revelation hypothesis. That is, upon learning a firm's making non-affiliated loans, investors realize that the firm is not performing well and lacks good investment opportunities in their main businesses, which is bad news.

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These loans themselves, on the other hand, may not destroy value, as evidenced by non-significant CARs for subsequent similar transactions.

Next, we estimate multivariate regressions of CARs to explore the determinants of market reactions. We include the dummy of *a firm's first announcement* in the regression as the univariate results show that this is an important factor. In addition, the abnormal returns may also depend on the terms of the loans. So we include logged loan amount, adjusted interest rate, maturity, and the collateral or guarantee dummy.

We note there is a selection issue in examining the announcement returns since not all firms make such announcements. Instead many of them make the required disclosure in their annual reports, together with other important disclosures, such as earnings announcements. The regulatory requirement on making interim announcements is vague—firms need to make announcements for "material" investments and events, although there is no technical definition for what is considered material. To address is, we investigate whether the choice of loan announcement depends on loan amount and lender characteristics. We then estimate a two-stage Heckman test, where the first-stage is a logit regression of whether or not a loan announcement is made, and the second-stage is a regression of CARs.

Table 10 Panel B reports the regression of CARs for affiliated and non-affiliated loans, respectively. The dependent variable is the 11-day CARs. Results are similar when using the 3-day or 7-day CARs. We report both the OLS and the Heckman 2nd-stage regression results, which yield similar results. For non-affiliated loans, the most important determinants of CARs is the dummy of *a firm's first announcement.* It has a highly significant and negative coefficient, suggesting that firms' first non-affiliated loan announcements are associated with much more negative abnormal returns, which is consistent with the univariate results. We do not find evidence that loan characteristics such as loan amount or interest rate have significant impact on market reaction, consistent with the notion that these loan terms are

endogenously chosen. For affiliated loans, the only coefficient significant at the conventional levels is that on *a firm's first announcement* in the OLS regression. The significance disappears in the Heckman regression.

The bottom portion of Panel B displays the results of Heckman's first-stage regressions for affiliated and non-affiliated loans, respectively. For both types of loans, we observe that the likelihood of loan announcements increases with the loan amount, and decreases with the firm size in terms of assets. This makes sense since the larger the loan size relative to the lender's asset value, the more "material" the transaction is. In addition, for affiliated loans, SOE lenders are less likely to make announcements.

In summary, the results in this section suggest that both affiliated and non-affiliated loans are fair investments. Despite the lower-than-market interest rates, affiliated loans do not destroy value. Firms' first non-affiliated loans reveal lenders' poor investment opportunities in their main businesses, to which investors respond negatively.

6. 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.

Finally, our investigation of announcement returns suggests that both affiliated and non-affiliated loans are fair-compensated investments. Thus, the lower-than-market interest rates of affiliated loans should be viewed as a form of investments rather than inefficient subsidization.

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.

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Table 1 Entrusted Loans over Time

The sample includes 2,995 entrusted loans during 2004-2013. All RMB values are adjusted to constant year 2013 RMBs.

	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)	12.6	9.3	12.6	23.6	38.2	32.5	41.1	100.5	202.2	219.2	691.8
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. All RMB values are adjusted to constant year 2013 RMBs. Financial variables are winsorized at 1% and 99%.

	(1) Loan dummy=0 (n=16896)	(2) Loan dummy=1 (n=1107)	(3) Non-affiliated loan (n=289)	(4) Affiliated loan (n=800)	(2)-(1)	(3)-(1)	(4)-(1)	(4)-(3)
Asset (billion RMB)	5.8	18.1	10.6	21.0	12.3***	4.8***	15.2***	10.4***
ROA (%)	6.9	7.6	7.4	7.6	0.7***	0.5	0.7**	0.2
Sales growth (%)	23.6	24.4	18.0	26.5	0.8	-5.6*	2.9	8.5**
Debt/asset (%)	20.7	21.6	16.7	23.5	0.9*	-4.0***	2.8***	6.8***
Change of debt (%)	4.0	7.8	5.0	8.7	3.8***	1.0	4.7***	3.7***
SOE lender (%)	55	74	57	80	19***	2	25***	23***
Real estate lender (%)	8	10	7	12	2**	-1	4***	5**

Table 3 Determinants of Loan Decisions

The sample includes all the 18,003 firm-years during 2004-2013. We run logit regressions using *Loan dummy* as the dependent variable, and run Tobit regressions using *Loan amount/asset* as the dependent variable. Variables definitions are in Appendix. Financial variables are winsorized at 1% and 99%.

	Logit regression			*Tobit regression*		
	Loan Dummy			*Loan amount/asset (%)*		
	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
Ln (asset)	0.49***	0.39***	0.52***	3.37***	2.85***	3.37***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Interbank offered rate (%)	0.28***	0.34***	0.27***	2.09***	2.70***	1.70***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ROA (%)	0.01**	-0.00	0.02***	0.08**	-0.004	0.11***
	(0.02)	(0.81)	(0.00)	(0.03)	(0.95)	(0.00)
Sales growth (%)	-0.001**	-0.003**	-0.001	-0.01***	-0.03**	-0.01
	(0.04)	(0.03)	(0.25)	(0.00)	(0.02)	(0.13)
Debt/asset (%)	-0.01***	-0.02***	0.00	-0.07***	-0.17***	-0.01
	(0.01)	(0.00)	(0.74)	(0.00)	(0.00)	(0.50)
Change of debt (%)	0.01***	0.00	0.01***	0.08***	0.03	0.07***
	(0.00)	(0.44)	(0.00)	(0.00)	(0.32)	(0.00)
SOE lender	0.47***	-0.12	0.75***	3.04***	-1.05	4.46***
	(0.00)	(0.36)	(0.00)	(0.00)	(0.32)	(0.00)
Real estate lender	0.10	-0.25	0.23**	2.21***	-1.53	3.31***
	(0.36)	(0.28)	(0.05)	(0.01)	(0.39)	(0.00)
Cons.	-14.5***	-12.7***	-15.9***	-105.9***	-105.6***	-108.5***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
N	18003	17185	17696	18003	17185	17696

Pseudo R2	0.088	0.039	0.110	0.038	0.024	0.052

Table 4 Industry Distribution of Entrusted Loans

All RMB values are adjusted to constant year 2013 RMBs.

	Lenders		Borrowers	
	Number of Loans	Total amount (billion RMB)	Number of Loans	Total amount (billion RMB)
Real estate & Construction	250	53.1	633	99.7
Coal & Mining	135	249.0	160	257.6
Nonferrous metal	30	4.8	25	6.6
Utility	433	146.6	392	131.6
Building materials	52	10.0	61	10.7
Steel	80	12.1	35	4.3
Chemicals	261	25.5	187	21.2
Pharmacy	166	11.5	136	9.7
Transportation	285	38.6	256	31.5
Auto & Auto parts	275	48.8	214	46.4
Machinery	167	15.0	157	13.5
Electrical household appliances	47	3.6	44	2.5
Electronics & IT	146	10.3	91	5.7
Culture & Media	27	5.0	8	0.3
Commerce	214	16.9	59	4.5
Hotel & Tourism	14	1.1	54	4.6
Food	177	11.7	163	10.7
Agriculture	8	0.5	14	1.3
Textile & Garment	99	6.8	70	2.3
Paper & Printing	61	7.6	60	7.2
Other light industry	25	2.0	13	0.3
Conglomerate	43	11.3	106	11.8
Education, Finance, and Others	-	-	22	2.0
Borrower is unknown	-	-	35	5.8
Total	2995	691.8	2995	691.8

Table 5 Descriptive Statistics for Entrusted Loans

The sample includes 2,960 entrusted loans during 2004-2013. Non-missing observations for *(Adjusted) Interest rate* or *Maturity* are 2,812 and 2,863, respectively. Variables definitions are in Appendix. All RMB values are adjusted to constant year 2013 RMBs. Financial variables are winsorized at 1% and 99%.

	All sample	Non-affiliated loan	Affiliated loan	Diff
Loan characteristics				
Loan amount (million RMB)	231	81	269	-188*
Interest rate (%)	7.9	13.9	6.4	7.5***
Adjusted interest rate (%)	1.8	7.9	0.3	7.6***
Maturity (Month)	16	12	18	-6***
Collateral or Guarantee	24%	74%	11%	63%***
Collateral	18%	55%	9%	46%***
Guarantee	15%	56%	5%	51%***
Purpose of loan – debt retirement dummy	2%	0%	3%	-3%***
Purpose of loan – specified project dummy	5%	3%	6%	-3%***
Borrower characteristics				
Same city	39%	51%	36%	15%***
Same industry	67%	10%	81%	-71%***
SOE borrower	66%	20%	78%	-58%***
Real estate borrower	22%	46%	16%	30%***
Borrower industry sales growth dispersion (%)	62	79	58	21***
Borrower industry sales growth (%)	22	24	21	3***
Lender characteristics				
SOE lender	79%	64%	83%	-19%***
Real estate lender	8%	5%	9%	-4%***
Asset (billion RMB)	35	13	40	-27***
Debt/asset (%)	23	16	25	-9***
Change of debt (%)	8	5	9	-4***
N	2960	587	2373	

Table 6 Interest Rate of Non-affiliated Loans vs. Affiliated Loans

The sample includes 2,812 entrusted loans that have interest rate information during 2004-2013. Variables definitions are in Appendix.

	Non-affiliated loans			Affiliated loans		
	Yes	*No*	Diff	*Yes*	*No*	Diff
Same city	7.2	8.6	-1.4***	0.2	0.4	-0.2*
Same industry	6.0	8.1	-2.1***	0.1	1.3	-1.2***
SOE Borrower	4.2	8.8	-4.6***	0.2	0.7	-0.5***
Real estate borrower	9.5	6.6	2.9***	2.8	-0.2	3.0***
	High	Low	Diff	High	Low	Diff
Borrower industry sales growth dispersion	8.5	6.8	1.7***	0.8	-0.2	1.0***
Borrower industry sales growth	7.7	8.0	-0.3	0.5	0.2	0.3*

Table 7 Determinants of Interest Rates of Entrusted Loans

The sample includes 2,808 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%.

Adjusted interest rate (%)	All sample	Non-affiliated loans	Affiliated loans	Affiliated loans
Loan characteristics				
Affiliated loan	-5.22***			
	(0.00)			
Maturity (Month)	-0.014***	-0.13***	-0.005*	-0.005
	(0.00)	(0.00)	(0.09)	(0.13)
Collateral or Guarantee	1.05***	1.78***	0.79***	0.72***
	(0.00)	(0.00)	(0.00)	(0.00)
Purpose of loan – debt retirement dummy	-0.11		-0.13	-0.17
	(0.73)		(0.56)	(0.47)
Purpose of loan – specified project dummy	-0.65***	-0.57	-0.61***	-0.59***
	(0.00)	(0.55)	(0.00)	(0.00)
Borrower characteristics				
Same city	-0.64***	-1.01***	-0.50***	-0.53***
	(0.00)	(0.00)	(0.00)	(0.00)
Same industry	-0.33**	-2.07***	-0.39**	-0.40*
	(0.02)	(0.00)	(0.04)	(0.07)
SOE borrower	-1.81***	-3.37***	-0.26	-0.38**
	(0.00)	(0.00)	(0.11)	(0.04)
Real estate borrower	2.07***	1.98***	1.78***	1.84***
	(0.00)	(0.00)	(0.00)	(0.00)
Borrower industry sales growth dispersion (%)	0.01***	0.02***	0.01***	0.01***
	(0.00)	(0.01)	(0.00)	(0.00)
Borrower industry sales growth (%)	-0.01***	-0.06***	0.00	0.00
	(0.01)	(0.00)	(0.45)	(0.85)
Borrower industry median ROA (%)	0.04	0.13	-0.00	0.01
	(0.24)	(0.25)	(0.99)	(0.75)
Ownership				-1.04***
				(0.00)
Trade relationship				-1.26***
				(0.00)
Lender characteristics				
SOE lender	1.56***	1.40***	0.22	0.37*
	(0.00)	(0.00)	(0.22)	(0.06)
Real estate lender	0.55***	-0.38	0.98***	1.00***
	(0.01)	(0.46)	(0.00)	(0.00)
Ln (asset)	-0.20***	0.35**	-0.26***	-0.22***
	(0.00)	(0.04)	(0.00)	(0.00)
Debt/asset (%)	0.02***	0.05***	0.01***	0.005*
	(0.00)	(0.00)	(0.00)	(0.06)
Change of debt (%)	0.02***	0.03**	0.01***	0.01***
	(0.00)	(0.03)	(0.00)	(0.00)
Year fixed effect	Yes	Yes	Yes	Yes
N	2808	566	2242	2225
Adj R2	0.643	0.443	0.325	0.338

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Table 8 Performance of Entrusted Loans

The sample includes 2,243 entrusted loans during 2004-2013. We exclude loans that are not due by the end of year 2013.

Panel A: Frequency of 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	51
Overdue	32	13	19	99
Extended (on average by 11 months)	159	114	45	139
Total	194	130	64	
	(8.6%)	(7.3%)	(13.9%)	

Panel B: adjusted interest rates (%) for non-problematic loans vs. problematic loans

	(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 Loan Performance: Logistic Regressions

The sample includes 2,093 entrusted loans with the information of interest rate and maturity during 2004-2013. We exclude loans that are not due by the end of 2013. Variables definitions are in Appendix. Financial variables are winsorized at 1% and 99%.

	Extend dummy			Delinquent or Overdue dummy			Delinquent or Overdue or Extend dummy		
	(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
Loan characteristics									
Affiliated loan	0.22			-2.21***			-0.12		
	(0.51)			(0.00)			(0.70)		
Adjusted interest rate (%)	**0.07***	**0.12***	**0.05**	**0.13***	**0.16**	**-0.03**	**0.08***	**0.14***	**0.06**
	(0.00)	**(0.01)**	**(0.30)**	**(0.01)**	**(0.04)**	**(0.84)**	**(0.00)**	**(0.00)**	**(0.18)**
Maturity (Month)	-0.00	0.04	-0.02	0.02	0.12**	0.02	0.00	0.07**	-0.01
	(0.67)	(0.33)	(0.11)	(0.28)	(0.02)	(0.43)	(0.90)	(0.02)	(0.19)
Guarantee or Collateral	-0.12	-0.07	-0.53	0.21	2.20**		-0.12	0.30	-0.69*
	(0.65)	(0.89)	(0.20)	(0.71)	(0.05)		(0.62)	(0.49)	(0.09)
Purpose of loan – debt retirement	-0.70		-0.93				-0.73		-0.95
	(0.35)		(0.22)				(0.33)		(0.21)
Purpose of loan – specified project	0.91***	0.43	1.12***	1.68***	1.96**	1.38*	1.08***	1.28*	1.21***
	(0.00)	(0.56)	(0.00)	(0.00)	(0.04)	(0.10)	(0.00)	(0.07)	(0.00)
Lender characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj R2	0.067	0.222	0.066	0.213	0.319	0.105	0.072	0.227	0.062
N	2093	440	1653	2093	440	1653	2093	440	1653

Table 10 Market Reaction to Entrusted Loan Announcements

The cumulative abnormal return (CAR) is calculated based on the market model, where the index return of stocks traded on Shanghai and Shenzhen stock exchanges is used as the market proxy and the estimation period is during trading days [-150, -10], where day 0 is the announcement day.

Panel A: Univariate analysis

	CAR [-1, +1] *(%)*	CAR [-3, +3] *(%)*	CAR [-5, +5] *(%)*
Affiliated loans (n=358)	0.16	0.34	0.47
A firm's first announcement (n=134)	0.47	0.87	1.36*
Subsequent announcements (n=224)	-0.02	0.02	-0.06
Difference	0.49	0.85	1.42
Non-affiliated loans (n=189)	-0.73**	-1.26**	-1.39*
A firm's first announcement (n=79)	-1.62***	-2.78***	-3.78***
Subsequent announcements (n=110)	-0.10	-0.17	0.33
Difference	-1.52**	-2.61***	-4.11***

Panel B: Regression

CAR [-5, +5] *(%)*	Non-affiliated loans		Affiliated loans	
	OLS	Heckman 2nd stage	OLS	Heckman 2nd stage
A firm's first announcement	-4.94***	-4.89***	1.62*	1.51
	(0.00)	(0.00)	(0.08)	(0.12)
Ln (loan amount)	-0.07	0.02	-0.44	-0.47
	(0.94)	(0.98)	(0.22)	(0.21)
Adjusted interest rate (%)	-0.28	-0.27	0.22	0.21
	(0.16)	(0.16)	(0.22)	(0.26)
Maturity (Month)	-0.05	-0.05	0.04	0.04
	(0.68)	(0.68)	(0.25)	(0.25)
Collateral or Guarantee	-2.07	-2.00	-0.42	-0.50
	(0.42)	(0.42)	(0.68)	(0.63)
Inverse Mills Ratio		0.62		-0.55
		(0.79)		(0.75)
Adj R2	0.031		0.004	
N	189		353	
		Heckman 1st stage		*Heckman 1st stage*
Ln (loan amount)		0.46***		0.19***
		(0.00)		(0.00)
Ln (asset)		-0.67***		-0.32***
		(0.00)		(0.00)
ROA (%)		-0.02**		-0.003
		(0.05)		(0.65)
Debt/asset (%)		-0.001		0.002
		(0.76)		(0.48)
SOE lender		-0.03		-0.18**
		(0.82)		(0.03)
Wald chi2		56.8		64.9
Sigma		9.71		8.34
N		587		2373

Appendix: Variables Definition

ROA	Return on assets in the year before the entrusted loan is made
Sales growth	The sales growth rate in the year before the entrusted loan is made
Asset (billion RMB)	Total assets at the beginning of the year when the loan is made, adjusted to constant year 2013 RMBs
Debt/asset	The ratio of total debt to assets at the beginning of the year when the loan is made
Change of debt	Change of total debt in the year before when the loan is made, divided by the average of assets at the beginning and the end of the year
SOE lender	A dummy equal to one if the lender is a state owned enterprise, and zero otherwise
Real estate lender	A dummy equal to one if the lender if in the real estate and construction industry, and zero otherwise
Interbank offered rate (%)	The daily average of China's official interbank offered rate in the year when the loan is made
Loan amount/assets	The total loan amount a firm made during a year, divided by firm assets at the beginning of the
Loan dummy	A dummy equal to one if a firm made a loan in a certain year, and zero otherwise
Affiliated loan	A dummy equal to one if a firm made a loan to an affiliated party, and zero otherwise
Loan amount (Million RMB)	The RMB amount of a loan, adjusted to constant year 2013 RMBs
Adjusted interest rate (%)	A loan's Interest rate minus the official bank lending rate of same maturity
Maturity (Month)	The maturity of a loan
Collateral or Guarantee	A dummy equal to one if a loan requires collateral or third-party guarantee, and zero otherwise
Collateral	A dummy equal to one if a loan requires collateral, and zero otherwise
Guarantee	A dummy equal to one if a loan requires third-party guarantee, and zero otherwise
Purpose of loan – debt retirement dummy	A dummy equal to one if the stated purpose of a loan is for debt retirement, and zero otherwise
Purpose of loan – specified project dummy	A dummy equal to one if the stated purpose of a loan is for a specific investment project, and zero otherwise
Extend or Overdue dummy	A dummy equal to one if a loan is extended or overdue, and zero otherwise
Extend dummy	A dummy equal to one if a loan is extended, and zero otherwise
Overdue dummy	A dummy equal to one if a loan is overdue, and zero otherwise
Same city	A dummy equal to one if the borrower is in the same city as the lender, and zero otherwise
Same industry	A dummy equal to one if the borrower is in the same industry as the lender, and zero otherwise
SOE borrower	A dummy equal to one if the borrower is a state owned enterprise, and zero otherwise
Real estate borrower	A dummy equal to one if the borrower if in the real estate and construction industry, and zero

	otherwise
Borrower industry sales growth	The borrower industry's aggregate growth rate of sales in the year before the loan is made
Borrower industry sales growth dispersion	The standard deviation of sales growth in the borrower industry during the year before the loan is made
CAR [-5, +5] (%)	The cumulative abnormal return 11 days around the loan announcement, calculated based on the market model, where the estimation period is during trading days [-150, -10], where day 0 is the announcement day
A firm's first announcement	A dummy equal to one if it is the first time a firm announces to a (affiliated or non-affiliated) entrusted loan, and zero otherwise