State-ownership and bank loan contracting:

Evidence from corporate fraud

Abstract: This paper explores the effect of borrower and lender state-ownership on the consequences of corporate fraud in the debt market. Fraud revelations can increase a firm's information and credit risk, and are therefore expected to significantly affect future bank loan conditions. The Chinese economy provides a unique setting from which to study the influence of state-ownership on debt contracting because it is dominated by state-owned banks and firms. Using a sample of bank loans and enforcement actions announced between 2001 and 2012, we find that, after fraud announcements, the cost of private debt increases significantly, but not for loans issued by state-owned banks to state-owned enterprises. Moreover, we find evidence that state-owned banks grant, and state-owned enterprises receive, lower interest rates. Additional tests show that state-owned enterprises that received a more favorable interest rate after the announcement of fraud from a state-owned bank perform worse than other firms. These results indicate that despite the bank reforms state-owned banks continue to favor state-owned enterprises and this could lead to sub-optimal lending.

Keywords: State-ownership, corporate fraud, cost of debt, China

JEL Classification: G21, G32, G38

1. Introduction

The Chinese economy is characterized by both a high number of state-owned firms and dominant state-owned banks. This has important implications for the borrower-lender relationship, because state-owned banks (SBs) could presumably favor state-owned enterprises (SOEs). Our paper contributes to this line of research by investigating how an announcement of fraudulent behavior impacts the cost of debt.

The goal of our study is threefold. First, the banking industry has undergone dramatic changes over the past several decades to improve the efficiency of bank contracting. Previous literature prior to the reforms found that SBs favor SOEs by imposing fewer restrictions (Firth, Lin and Wong 2008; Jia 2009). We use the announcement of fraud as a shock to information risk to investigate whether SOEs continue to be granted low-cost loans afterward.

Second, previous literature also provides evidence on the consequences of fraud to equity holders, but evidence on debt contracting is relatively scarce (Graham, Li and Qiu 2008). About 20% of Chinese firms have been subject to an enforcement action by the China Securities Regulatory Commission (CSRC) triggered by a securities law violation. We use loan-level data to investigate how both lender and borrower state-ownership influences the previously found increase in the cost of debt after a revelation of fraud (Graham et al. 2008).

Third, we attempt to shed light on the behavioral and economic factors that influence the moderating effect of state-ownership on the consequences of fraud on the cost of debt.

We choose the Chinese market for several reasons. First, only two decades ago, SBs were not permitted to extend loans to private-sector firms (Firth et al. 2009). After the extensive reforms in the banking industry that allowed such lending, these firms suffered from asymmetric information problems in the lender-borrower relationship. This is because they did not have credit history records to back up loan allocation decisions, and because of the overall weak information environment (Piotroski and Wong 2013).

Second, despite the reforms, Chinese banking is still dominated by a group of Big 4 state-owned banks. SBs in China operate in a non-competitive environment. They generally face a great deal of pressure to contribute to political and social stability, and overall they tend to favor SOEs (Bailey, Huang and Yang 2011).

Third, due to decentralization, SOEs rely more heavily on bank loans. The Chinese economy is still characterized by a high proportion of SOEs, and, although many have been partially privatized, the government retains control of many firms (Chen et al. 2010). In summary, the Chinese market offers an interesting interplay between borrower and lender state-ownership.

To analyze the impact of state-ownership on the borrower-lender relationship, we use corporate fraud revelations via CSRC enforcement actions to identify a change in the cost of debt. We investigate whether and how state-ownership influences the increase in the cost of debt using a sample of Chinese bank loans over the 2001-2012 period. We study data from single loan contracts initiated prior to and after the enforcement action. Moreover, we control for loan characteristics such as loan size, maturity, and collateralization, and firm characteristics such as financial health, size, default risk, and tangibility of assets, that are potentially associated with the cost of debt.

We first confirm prior findings that the cost of debt increases by about 11% after a fraud revelation. Given an average spread of 4% for all loans initiated prior to the fraud revelation and all loans initiated by non-fraudulent firms, this result indicates an increase of around 44 basis points.

Second, comparing spreads of the different combinations of bank and firm state-ownership, we find strong evidence that SOEs continue to receive favorable loan rates even after the revelation of fraud, despite the heavy reforms in the Chinese banking industry. While SB loans to SOEs do not appear to experience interest rate increases after the fraud, we

note that other loans are issued at a higher rate. This result is not driven by the severity of the fraud, and we find evidence that SOE that were granted a loan by a SB perform worse after fraud than other firms. These results imply that there might not be an economic reason for SBs to continue to favor SOE after the revelation of fraud.

We complement our multivariate results by comparing loan spreads after fraud revelations to those of a sample of loans matched by issue date and maturity. In summary, we find consistent results that, after a fraud revelation, firms receive less favorable interest rates, unless the loan was issued by an SB to an SOE.

Our results contribute to the literature in several ways. First, we find evidence that SBs favor SOEs by not increasing the cost of debt after fraud revelations. These results provide interesting insights into the consequences of the Chinese bank reforms on efficient loan contracting. Our results also demonstrate that the ability to raise debt at a lower cost after the revelation of fraud depends on the percentage of state-ownership of both lender and borrower.

Second, we add to the literature on the economic consequences of fraud in the Chinese capital market setting. These consequences are qualified audit opinions, CEO turnover, higher audit fees, and wider bid-ask spreads for fraudulent firms (e.g., Chen et al. 2005). A CSRC enforcement action or a fraud revelation signal worse and/or more uncertain future expected cash flows, which will increase the cost of debt. Given the importance of debt in the Chinese financial system, our results should also be of interest to the literature on debt financing in China (e.g., Firth et al. 2009; Bailey et al. 2011).

Our study provides important implications for policy makers, banks and financial statement users. First, our results show that SBs have a lending bias towards SOEs in terms of loan rates even after the revelation of fraud, suggesting that the government should continue to reform the China's banking industry in order to improve lending efficiency.

Second, as our results show a significant impact of the SB-SOE relationship on bank loan contracting, the reform of China's banking industry and the reform of SOEs should not be considered as independent actions. Instead, these reforms should be carried out simultaneously for the best result. Third, in addition to economic factors, the policy makers should take into account behavioral factors such as social trust and relationship banking in designing and implementing lending policies.

The remainder of this paper is structured as follows. Section 2 describes previous literature and develops our hypothesis. Section 3 discusses our research design, while section 4 presents information on the sample selection and gives our results. Section 5 summarizes and concludes.

2. Literature and hypothesis development

2.1 The Chinese banking sector

The banking industry plays a dominant role in the Chinese economy. In 2012, banks provided the private sector with credit worth 128% of GDP (Elliot and Yan 2013). Moreover, the total value of bank loans is 100 times greater than the total value of stocks and corporate bonds (Cai, Fairchild and Guney 2008).

The Chinese banking sector has undergone significant reform over the last few decades. Prior to that, all banking had been done through branches of the state-owned People's Bank of China (PBOC). In the early 1980s, a two-tier system was established, with the PBOC as the central bank, and a group of wholly state-owned specialized banks as the second tier, who took over the PBOC's lending activities. These banks, referred to as the Big 4, are the Bank of China, China Construction Bank, Agricultural Bank of China, and Industrial and Commercial Bank of China.

To overcome SB losses as a consequence of favorable lending between SBs and SOEs, the government in 1994 created three policy banks (Chen et al. 2010), which are expected to fund economic and trade development as well as state-invested projects. Each bank specializes in a different branch: the Agricultural and Development Bank of China funds agricultural projects in rural areas, the China Development Bank specializes in infrastructure financing, and the Export-Import Bank of China specializes in trade financing.

One year after the establishment of these banks, the Central Bank Law of China confirmed PBOC's status as a central bank, and limited the influence of local governments in loan-granting decisions. The Commercial Bank Law of China officially commercialized the operations of the major SBs so that loan-granting decisions would start being made based on risk, profitability, liquidity, and capital (Chen et al. 2010).

In the early 2000s, the government further improved the banking industry by establishing the China Banking Regulatory Commission, and encouraging banks to list on the stock exchange to improve governance. These ownership reforms were also expected to improve long-term SB performance (Lin and Zhang 2009). In 2005, the China Construction bank launched an IPO on the Hong Kong Stock Exchange; in 2006, the Bank of China and the Industrial and Commercial Bank of China followed. The Agricultural Bank of China was the last Big 4 bank to go public, in 2010.

Previous literature discusses three different views considering the role of state-ownership in banking: the social, agency and political view (Sapienza 2004; Chen et al. 2010). First, the social view suggests that while non-state-owned banks (NSBs) aim to maximize profits, SBs are created to serve broader social objectives. More specifically, these public financial institutions are created to overcome market failures in the financial and credit market (Stiglitz and Weiss 1981, Greenwald and Stiglitz 1986, Sapienza 2004, Chen et al. 2010). Consequently, SBs are more inclined to provide funding to projects profiting society

and to firms that are constrained and thus improve general welfare. This might not result in profitable lending (Cull and Xu 2000).

Second, the agency view focuses on the incentives of managers of SBs. Again this view suggests that SBs are created to overcome market failures and to maximize social welfare. However, the managers of SBs will face multiple goals that are hard to measure. Also, managers will find it difficult to balance the incentives based on measurable goals with the non-measurable dimension of social welfare (Tirole 1994). As a result, managers have lower incentives to exert sufficient effort. Ultimately this could lead to diverting more resources to personal benefits and undesirable effects such as corruption and misallocation (Banerjee 1997; Hart, Shleifer and Vishny 1997).

Under the political view, misallocation of funds is also expected. However, unlike the agency view that attributes these changes to lack of managerial incentives, the political view attributes these to political objectives. The political view argues that SBs are created to maximize personal political objectives, such as providing jobs for political supporters and direct resources to friends and supporters (Shleifer and Vishny 1998).

All three views predict that SBs will not base their loan decisions on economic profit and less on loan default risk. SBs rather base their loan decisions on government and policy reasons as well as public social benefits. This leads to a high proportion of non-performing loans in Chinese SBs.

2.2 State-owned enterprises in China

Besides SBs, a key feature of the Chinese economy is the high proportion of SOEs. Different from non-state-owned enterprises (NSOEs), SOEs serve as the government's tool in achieving political and social objectives in addition to create shareholder wealth. SOEs with political burdens often receive ex-ante policy favors from the government such as lower

interest rates. Also, SOEs that are in financial trouble often receive ex-post financial assistance from the government, the so called 'soft budget constraint' (Lin and Tan 1999; Chen et al. 2010). These implicit insurances provided by the government reduce SOEs' default risk. Consistently, Chen et al. (2010) find that SOEs have a lower likelihood of loan default than NSOEs in a sample of listed firms on the Shanghai and Shenzhen Stock Exchanges from 2001 to 2006.

Since the early 1980s, China has instituted a series of economic reforms to transition from a centrally planned economy (with all companies owned by the state) toward a market economy. A minority portion of state shares was publicly offered to non-state parties in order to transform wholly state-owned firms without losing control (Xu, Zhu and Lin 2005; Chen et al. 2010).[1] The government remains in charge of CEO appointments, asset disposal, and mergers and acquisitions. It also provides financial assistance through subsidies and favorable loans, which in turn reduces the financial constraints and bankruptcy risk for state-owned firms (Faccio, Masulis and McConnell 2006; Chen, Lee and Li 2008; Wang, Wong and Xia 2008). Therefore, although the CEOs of SOEs face multiple goals, they have stronger incentives to pursue social and political objectives than operating and financial performance.

Unlike SOEs, NSOEs face substantial capital access barriers, which have become one of the most binding constraints on their growth (Linton 2006). Loan-granting decisions to NSOEs are made on a more competitive basis, and more weight is placed on the content and credibility of their financial information because there are few non-economic reasons to lend to NSOEs (Cull and Xu 2003; Elliot and Yan 2013).

Lenders charge higher rates to borrowers who are less likely to repay loans (Elyasiani and Goldberg 2004). There are three main economic reasons why SBs favor SOEs in

[1] These shares can be traded freely on the Shanghai and Shenzhen Stock Exchanges.

providing credit. First, SBs are less concerned with and less effective at monitoring borrowers' default risk than NSBs (Chen et al. 2010).

Second, SOEs have a lower default risk than NSOEs due to the implicit insurance provided by the government. There is a common perception that the government would not allow large SOEs to default on their loans. Large SOEs are more likely to receive support, even though this might lead to bank losses. Hence, the SBs often play a key role in keeping SOEs from going out of business. This is mainly due to concerns about government's reputation and social stability (Chen et al. 2010; Elliott and Yan 2013).

Third, loan officers in SBs carry more commercial objectives after the SBs went public. Hence, their jobs will be at risk if their borrowers default (Elliott and Yan 2013). As SOEs are unlikely to default due to reasons mentioned above, lending to SOEs is seen as a much safer option than to NSOEs.

We also identify three behavioral reasons for favorable lending between SBs and SOEs. First, the relationship banking literature argues that relationships increase funds availability and reduce interest rates (Petersen and Rajan 1994, 1995; Elyasian and Goldberg 2004). Since SBs mainly provided loans to SOEs in the past, longer and better relationships will exist between SBs and SOEs (Brandt and Li 2003). Cornée, Masclet and Thenet (2012) provide experimentally evidence that a long-term 'lender-borrower' relationship helps mitigate moral hazard problems and reduces information asymmetry. Several other studies also document that the more intense the relationship, the lower the interest rate will be (Berger and Udell 1995; Uzzi 1999; Berger, Rosen and Udell 2007).

Second, personal relationships are likely to play a role. Elliott and Yan (2013) argue that political and social connections remain significant factors in lending decisions. Engelberg, Gao and Parsons (2012) find evidence that personal relationships between employees at firms and their lenders lead to more favorable financing terms, reflected by

lower interest rates. Such personal connections provide an incremental effect in addition to the effect of past banking relationships argued by Petersen and Rajan (1994). Taking political connections into account, Houston et al. (2014) find that the cost of bank loans is significantly lower for companies that have board members with political ties. This is because political connections increase the value of the companies and reduce monitoring costs and therefore the credit risk faced by the banks. We extend both Engelberg et al. (2012) and Houston et al. (2014) by investigating a situation where both the borrower and lender are politically connected (i.e. state-owned).

The third reason relates to the social banking literature. Social identity drives behavior and plays a vital role in the lender-borrower relationship. Overall, SOEs act as motivated borrowers that engage in social projects and SBs act as social/ethical banks that grant lower interest rates as a way to support motivated SOEs. SBs and SOEs share similar social identity and hence mutual trust and common commitments in achieving social and political objectives. This will lead to reciprocity in the credit market. This implies that borrowers consider themselves as treated fairly by the lenders and are therefore motivated to repay their debt (Cornée and Szafarz 2014). Cornée and Szafarz (2014) show that banks charge lower interest rates for social projects and that motivated borrowers' respond to such premium with a lower probability of default. Consistently, Gana and Ayari (2013) show that social interactions increase the access to credit. Similarly, Barigozzi and Tedeschi (2015) find that socially motivated entrepreneurs obtain a nonmonetary premium when they undertake an ethical project, and such premium is higher if an ethical bank finances the project. Fairchild (2011a; 2011b) argues that an entrepreneur is more inclined to obtain funding from an angel investor, even though venture capitalists have higher value-creating abilities because the entrepreneur anticipates a closer, more empathetic and trusting relationship with the angel investor.

Taken together, SBs tend to grant loans to SOEs at lower interest rates. Previous

literature on borrower and lender state-ownership confirms that SBs favor SOEs, creating an overinvestment bias in those firms. Firth et al. (2009) show that Chinese SBs impose fewer restrictions on the capital expenditure investments of low growth and high state-ownership firms. Jia (2009) finds similar results, and concludes that lending by SBs is less prudent than lending by joint equity banks due to accountability issues.

Note that such lending bias has potential positive and negative effects. On the one hand, if both parties are ethical, such relationship can improve social welfare, as discussed above. On the other hand, such relationship creates distortions in the credit market by providing soft budget constraints to the SOEs, which leads to losses and impedes access to capital by more productive NSOEs (Wei and Wang 1997).

2.3 State-ownership and the consequences of fraud

There is an extensive extant literature on the consequences of fraud, but most studies have focused on the consequences to equity holders (Anderson and Yohn 2002; Hribar and Jenkins 2004; Palmrose, Richardson and Scholz 2004). Chen et al. (2005) and Yang and Xie (2008) explore the economic consequences of fraud in a Chinese context, and document a wealth loss of approximately 1%–2% over the five days surrounding the fraud announcement.

The cost to firms of engaging in corporate fraud is diverse and significant. Legal penalties can be very large, but are only a small part of the total cost (Karpoff, Lee and Martin 2008; Johnson, Xie and Sangho 2014). Market value tends to decrease to incorporate changes in expectations that were based on past financial data. And adjustments must be made to firm value to account for the misreporting of financial statements. Moreover, after a fraud revelation, firms suffer reputational losses that can lead to large drops in market value. As Karpoff et al. (2008) note, the magnitude of that effect is up to 7.5 times larger than that of legal fines.

Chen, Zhu and Wang (2011) find that the Chinese stock market is less efficient than those in developed countries. Thus, other measures are potentially important to investigate because Chinese stock prices could be biased. Previous literature finds that fraudulent firms experience higher rates of auditor change, much higher incidences of qualified audit opinions, increases in CEO turnover, and higher audit fees (Anderson and Yohn 2002; Palmrose et al. 2004; Chen et al. 2005).

Our study focuses on the impact on the cost of debt, as the banking industry plays a key role in the Chinese economy. Under competitive terms, we expect the cost of debt to increase after a fraud revelation for two reasons. First, banks will only engage in contracts if they believe the firm can pay back the loan at the agreed upon terms. Fraud revelations make previously disclosed information on profitability and cash flows questionable, and trigger adjustments to forecasts and valuations (Palmrose et al. 2004; Graham et al. 2008; Karpoff, et al. 2008). Moreover, the specific fraudulent activity itself may lead to future litigation, again increasing the bank's risk (Graham et al. 2008). Due to this increase in credit risk, we expect the cost of debt to increase for fraudulent firms.

Second, a fraud revelation can indicate other problems in a firm, and therefore increase information asymmetry between borrower and lender (Anderson and Yohn 2002; Palmrose et al. 2004; Graham et al. 2008; Chen et al. 2011). This can lead to higher forecast dispersion, an increase in bid-ask spreads, and, consequently, an increase in the cost of capital (Easley and O'Hara 2004).

Farber (2005) shows that fraud firms subsequently tend to suffer from credibility issues, as shown by analyst following and institutional holdings. Even if firms improve corporate governance after the detection of fraud, analyst following and institutional holdings do not increase. In summary, the increased monitoring costs will lead to an increase in the cost of debt (Bharath, Sunder and Sunder 2008; Dongling 2009; Firth, Rui and Wu 2011).

These expectations are confirmed by previous research. Graham et al. (2008) provide evidence that a loan granted after a restatement will have a significantly higher spread, a shorter maturity, is more likely to be secured, and more covenant restrictions than a loan granted before a restatement. Chen et al. (2011) look at the average yearly interest expense as a percentage of total debt, and show that fraud firms encounter more difficulty obtaining low-cost loans. Haß, Müller and Zhang (2014) extend this research by investigating loan contract data in China. They confirm Graham, Li and Qiu's (2008) results. However, the role of state ownership has been neglected; we therefore intend to fill this void in the literature. More specifically, we expect that state-ownership will moderate these economic consequences.

Bijapur (2000) predicts that firm credit ratings improve over time and that aggregate shocks have a smaller impact on the risk of default in long-term relationship lending. However, the announcement of fraud might trigger the hold-up effect in long-term relationship lending, as the fraudulent firms are likely to encounter limited funding availability. The hold-up effect occurs when the lender utilizes his bargaining power in increasing the interest rate when the borrower faces limited funding availability (Cornée et al. 2012). According to both relationship banking and the social banking literature, we expect the hold-up effect to be stronger in NSOEs compared to SOEs, as NSOEs operate in a market with fewer funding opportunities, and this situation deteriorates after a fraud announcement. We also expect the hold-up effect to be stronger in NSBs compared to SBs, as NSBs are more sensitive to commercial factors such as default risk. They are therefore more likely to take advantages of their bargaining power in fraudulent firms, while SBs focus more on social and political considerations.

Moreover, the increased level of default risk will not influence SB/SOE reciprocity as severe, as both parties look beyond financial returns and focus on social aims. In addition, Guiso, Sapienza and Zingales (2004) suggest that the role of social trust is larger in financial

transactions when the quality of legal enforceability of contracts is low. China is an emerging market that has relatively poor investor protection and weak legal enforcement (Chen, Liu and Wang 2016). Hence, we expect such reciprocity to remain between SBs and SOEs even after the revelation of corporate fraud.

Note that a great deal of prior research was conducted using data from before the Big 4 banks went public or some of the other major bank reforms. It is therefore unclear whether lending became more efficient afterward. Jia (2009) finds an improvement in prudential lending behavior for SBs over time due to the bank reforms. Moreover, the proportion of SBs lending principally to large SOEs has declined over the years. Interviews with SB managers also reveal that their compensation is based partially on the quality of their lending. Although they make many lending decisions under government intervention, bank managers still have economic incentives to identify good credit risks (Cull and Xu 2000; 2003). Consequently, it is somewhat unclear whether SBs continue to favor SOEs, and whether these effects are reflected in the cost of debt.

We hypothesize that, despite the reforms, borrower and lender state-ownership will still impact the economic consequences of fraud, because of both economic and behavioral reasons. We expect the cost of debt to increase after a fraud revelation, but we expect different results depending on the extent of both borrower and lender state-ownership. SBs favor SOEs, and economic factors play less of a role in the loan granting between them and we thus posit the following:

Hypothesis: The increase in the cost of debt after fraud is lower for loans issued by state-owned banks to state-owned enterprises.

3. Research design

In order to investigate the effect of fraud on the cost of debt for SBs and other bank loans to SOEs and other firms, we estimate the following model:

$$Spread_i = \alpha_0 + \alpha_1 Post_Fraud_i + \alpha_2 SB_NSOE_i + \alpha_3 SB_SOE_i + \alpha_4 NSB_SOE_i + \alpha_5 Post_SB_NSOE_i + \alpha_6 Post_SB_SOE_i + \alpha_7 Post_NSB_SOE_i + \alpha_8 ROA_i + \alpha_9 Assets_i + \alpha_{10} MTB_i + \alpha_{11} Leverage_i + \alpha_{12} Tangibility_i + \alpha_{13} Z\text{-}score_i + \alpha_{14} Loan\ Size_i + \alpha_{15} Loan\ Term_i + \alpha_{16} Security_i + Industry\ fixed\ effects_j + \varepsilon_i$$

We estimate an OLS regression, and each observation represents a single firm-loan (subscript *i*) observation. We control for several firm and loan characteristics as well as for industry fixed effects.[2]

We use two measures for the cost of debt. First, in line with Graham et al. (2008), we use the natural logarithm of the annual interest rate charged by the lending bank minus the risk-free rate (*Spread*). Second, we use the percent difference between the annual interest rate charged by the lending bank and the benchmark rate issued by the PBOC (*Spread Benchmark*) following Chen and Zhu (2013). This variable measures the extent to which the interest rate is up- or down-floating compared to the annual benchmark rate for that maturity.

To identify the effect of an enforcement action, we include a binary variable, *Post_Fraud*, which takes a value of 1 if the loan occurs after the enforcement action announcement and 0 otherwise. Consequently, we benchmark loans after a fraud revelation with loans issued to firms that have not been accused of fraud and loans issued to firms prior to a revelation. We expect an increase in the cost of debt after a fraud revelation.

To test our hypothesis we include indicator variables for the type of loan: *SB_NSOE* takes a value of one if the loan is between a SB and a NSOE, zero otherwise; *SB_SOE* takes a

[2] Utilities, Properties, Conglomerates, Industry, Commerce; as provided by the China Stock Market Trading Database.

value of one if the loan is between a SB and a SOE, zero otherwise; *NSB_SOE* takes a value of one if the loan is between a NSB and a SOE, zero otherwise. *NSB_NSOE* our reference category takes a value of one if the loan is between a NSB and a NSOE. We interact these indicator variables with *Post_Fraud* to test the difference in spreads after the revelation of fraud for the different types of loans. Our hypothesis predicts a negative significant coefficient for *Post_SB_SOE*. *SB* is a binary variable if the lender bank is state-owned, and includes the Big 4 banks,[3] the state-controlled policy banks,[4] and the national state-controlled joint stock banks.[5,6] The Chinese central bank sets credit quotas that allow SBs to charge higher lending rates, but these quotas become more flexible over time. We do not predict a sign for SBs.

SOE is a binary variable that takes a value of 1 if the borrowing firm's state-ownership is above the sample median. Prior literature within a Chinese context documents favorable lending to SOEs (Wei and Wang 1997; Brandt and Li 2003). We thus expect a lower cost of debt for SOEs.

Next, we include several firm characteristics that can influence the cost of debt. First, we include return on assets to control for firm profitability (*ROA).* Profitable firms have a lower cost of debt due to their lower default risk. Second, we include the natural logarithm of total assets to control for size and information environment (*Assets)*, as larger firms have lower information asymmetry and easier access to external financing. Third, we include the market to book ratio (*MarketToBook)* to control for growth opportunities. On the one hand, larger differences between market and book value indicate a higher liquidation value in case

[3] Bank of China, Industrial and Commercial Bank of China, Agricultural Bank of China, and China Construction bank.
[4] China Development Bank, Agricultural Development Bank of China, and Export-Import Bank of China.
[5] Bank of Communications, Shanghai Pudong Development Bank, China CITIC Bank, China Everbright Bank, China Merchants Bank, China Huaxia Bank, Guangdong Development Banks, Shenzhen Development Bank, and Fujian Development and Industrial Bank.
[6] NSBs are the China Minsheng Bank, Bank of Taizhou, foreign bank branches, and joint ventures. We also note there are several smaller banks owned by regional and city governments, but our focus is on larger state-owned banks as defined above.

of default. But, on the other hand, higher growth opportunities can be related to higher information asymmetry. Fourth, we include the leverage ratio (*Leverage)*, because firms with higher leverage generally have higher default risk. Fifth, we include the ratio of fixed assets to total assets, in order to control for asset tangibility *(Tangibility)*. Tangible assets are easier to recover in the event of default. This should lower the cost of debt. Finally, we include the adjusted Altman's (1968) Z-score following Graham et al. (2008) to control for default risk *(Altman)*. Firms with a higher Z-score have lower default risk.[7]

Besides firm characteristics, we also control for loan characteristics, in line with Graham et al. (2008). We include the natural logarithm of loan size *(Loan Size)*. Not only can larger loans reflect economies of scale in bank lending, but riskier firms also tend to receive smaller loans. We also include the natural logarithm of loan maturity in years *(Term*). Lenders require a liquidity premium for longer maturities, which will increase the cost of debt. Finally, we include an indicator variable that is equal to 1 if a loan is against collateral and 0 otherwise *(Security*), in order to control for default risk.

4. Data and results

The China Securities Regulatory Commission (CSRC) is the main monitoring authority in China's capital markets. It regulates financial reporting and the share trading of listed companies, and enforces securities laws and regulations. When a financial statement fraud is discovered, the CSRC issues an enforcement action as a sanction on the listed company and its management. Enforcement actions are issued when a firm (or individual) makes a false or seriously misleading presentation or omission of information that leads investors to make decisions with incorrect information (Chen et al. 2005).

[7] The reported Z-scores are obtained by using the modified Z-score following Graham et al. (2008). This modified Altman's (1968) *Z*-score ((1.2 working capital+1.4 retained earnings+3.3 EBIT+0.999sales)/total assets) does not include the ratio of market value of equity to book value of total debt, because a similar term, market-to-book, is included in our main models as a control variable. Our results remain unchanged if we use the Altman's Z-score including the ratio of market value of equity to book value of debt.

The results of CSRC investigations are made public if wrongdoing is found, and they generally take four forms: public criticism, public condemnation, official warnings, and monetary fines. This study uses these enforcement actions to identify fraudulent behavior. The majority of violations are related to non-disclosure or delayed disclosures, false statements, and inflated earnings reports. However, the role of private enforcement in China is very limited (Allen, Qian and Qian 2005; Jiang, Lee and Yue 2010).

4.1 Sample selection

Our sample consists of loans issued between January 1 2001, and December 31, 2012, to listed firms traded on the Shanghai and Shenzhen stock exchanges. We use data from five different sources: corporate governance data from the China Listed Firm's Corporate Governance Research Database, financial performance data from the China Stock Market Trading Database, accounting data from the China Stock Market Financial Statement Database, key variables of interest from the China Listed Firm's Bank Loan Research Database, and enforcement actions from the CSRC's Enforcement Actions Research to identify fraud firm observations.

The bank loan database provides information on the loan's announcement date, amount, interest rate, and whether it was issued against collateral. The database contains data from 1996 onward for 19,273 loans issued by 1,720 listed firms. For our sample, we retain 1,252 loans that have all the necessary variables to test our hypotheses. After merging the datasets with the loan database, we retain 1,036 observations, which we use to estimate the multivariate regressions. The enforcement actions database includes 730 enforcement actions (431 firms). Our final sample includes 221 (815) loans made to fraudulent (non-fraudulent)

firms. These observations represent 77 (259) firms with (without) 81 enforcement actions. These loans relate to 298 unique firms and 149 banks.[8]

4.2 Sample description and univariate comparisons

Panel A of Table 1 gives the distribution of fraud firm loan observations over time. We note a lower coverage of interest rate information for the 2005-2008 period in both the fraud and non-fraud samples. However, including an indicator variable for those years did not change our main results.

Panel B gives the distribution of violation types mentioned in the enforcement action within our sample. Our 221 loan observations from fraud firms relate to 81 separate enforcement actions on 138 violations. About two-thirds pertain to disclosure-related fraud cases (disclosure postponement, major failure to disclose information, and false statements), while one-tenth relate to inflated profits, in line with prior research (e.g., Chen et al. 2005). Panel C shows the distribution by industry. About half of our fraud loan observations originate from the properties industry, followed by industry with 40%. Table 1 Panel B indicates that illegal share buybacks, illegal guarantees, unauthorized fund usage, price manipulation and violations in capital contribution are more common with NSOE than SOEs. Panel C shows a similar distribution of fraud firms across industries, but the percentage of firms in utilities is higher for NSOE and lower for Industry and Commerce.

[Insert Table 1 about here]

Table 2 shows the frequencies of borrower and lender ownership across our sample. 569 (467) loans were granted by SBs (NSBs). Among those, the majority were granted to

[8] The number of loans issued per bank ranges from 1 to 186.

SOEs (enterprises with a percentage of state-ownership larger than the median) (316 as opposed to 197). Among loans granted by NSBs, 133 are to SOEs and the remaining 254 are to NSOEs. These statistics indicate that SBs are more likely to lend money to SOEs, in line with previous research.

Table 2 also includes the spread for all groups. First, as expected, we notice a higher spread for loans issued after a fraud announcement (0.05 > 0.04). This result holds for all combinations of borrowers and lenders, but is smaller for SBs. We also note that SBs lend to SOEs at lower interest rates than NSBs or to NSOEs, indicating a favorable relationship between both.

[Insert Table 2 about here]

Table 3 documents descriptive statistics for the variables used in the multivariate regression across all loan observations used in our primary regression. The average loan has a 4% spread, with ranges from 2%-11%. The average increase in the interest rate corrected for the benchmark rate equals 8%. 55% of our sample loans were issued by SBs, and the average state-ownership is 31%.

Moreover, the average return on assets equals 4%, and average firm size is 21.30. The average market to book ratio is 4.08, while firms on average have a 53% ratio of total liabilities to total assets. The average ratio fixed over total assets equals 29%; the average adjusted Altman Z-score is 0.80.

With respect to loan-specific variables, the average loan size is ¥90 million, the average loan maturity is 1.33 years, and 47% of loans were issued against collateral.

Panels B and C compare the subsample of post-fraud observations (136) with pre-fraud and no-fraud observations (900). The results indicate higher post-fraud spreads (5% >

4%) and a higher percentage mark-up (0.27 > 0.05). We document a lower percentage of SB loans in the fraud sample (57% versus 41%), and no change in state-ownership.

For our control variables, post-fraud, we detect a lower profitability (0.03 < 0.04), a lower market to book ratio (3.99 < 4.09), higher leverage (0.63 > 0.52), less tangible assets (0.16 < 0.31), and a lower adjusted Altman Z-score (0.71 < 0.82). The average loan size is larger for fraud observations (¥ 130 million > ¥ 90 million). More loans were also issued against collateral (0.67 > 0.44), and the maturity is slightly higher (1.40 > 1.32).

[Insert Table 3 about here]

Table 4 provides descriptive statistics on bank loan characteristics. In Panel A we document a difference in Spread and Spread Benchmark. More specifically, the utilities industry is charged a lower interest rate on average, and the properties and commerce industry is charged a higher interest rate, on average. Panel B reports on the change in loan size over time and the loan size by maturity. As expected, larger loans have a longer maturity. We also detect and increase in loan size after 2007.

[Insert Table 4 about here]

4.3 Multivariate results

Table 5 column 1 and 2 display our base model, where we replicate previous research by estimating OLS regressions with robust standard errors including industry fixed effects. Column 1 shows the impact of fraud on the cost of debt adjusted for the risk-free interest rate (*Spread*). We note a statistically and economically significant effect of fraud on the interest rates. In line with previous research, the average cost of debt increases by 11% after a fraud

revelation (e.g., Haß et al. 2014). Moreover, SOEs receive more favorable loan rates as we detect a negative and significant coefficient.

In column 2, we use the percent change in the benchmark loan interest rate (*Spread Benchmark*), and again find a significantly higher rate after a fraud revelation, as well as consistent evidence across our regressions that SOEs receive lower rates. SB interest rates are also significantly lower than those of NSBs.

Also in line with predictions, we find that distressed firms with fewer tangible assets have a lower cost of debt. Firms with a higher market to book ratio have a higher cost of debt. However, contrary to our predictions, we find that larger firms and firms with a lower leverage ratio have a higher cost of debt.[9] Furthermore, loans issued against collateral and with a longer maturity have a higher interest rate.

Columns 3 and 4 provide results for our main hypothesis including interaction terms. We continue to find a significant increase in the cost of debt post-fraud for both dependent variables. We find significant evidence that NSBs interest rates to NSOE are higher than the three other types of loans, as indicated by the significant negative coefficients on SB_NSOE, SB_SOE and NSB_SOE. More importantly, we find a significant negative coefficient on Post_SB_SOE. This indicates that SBs continue to favor SOEs even after a fraud revelation.[10]

[Insert Table 5 about here]

4.4 Additional tests

[9] If we separate Leverage into a short-term and long-term debt ratio, we find a positive and significant coefficient for long-term debt, and a negative significant coefficient for short-term debt.

[10] Results are robust to using the natural logarithm of the interest rate charged by the bank (i.e., not correcting for the risk-free rate or the benchmark rate), and including the benchmark rate as an additional control variable. Results remain unchanged when we use the percentage change between the interest rate charged by the bank and the risk-free interest rate.

We hypothesize that SBs will favor SOEs for political and social reasons, under this scenario's this would lead to sub-optimal lending. An alternative explanation would be that SBs possess soft information on SOEs and are therefore able to better estimate the impact of the fraud announcement on the SOE. In order to disentangle this alternative explanation, we compare the ROA of non-fraudulent/pre-fraud firms to the ROA of post-fraud firms for the different levels of ownership. Table 6 documents a reduction of the return on assets from 4% to 3% post fraud (significant at the 1% level). This reduction is larger for SBs (4% to 2%, significant at the 1% level), and non-existing for NSBs (remains at 4%). These results are in line with the idea that SB lending is based on political and social motives and are not value-enhancing. This confirms that SBs are less sensitive to commercial factors such as default risk. Results are even more pronounced for SOB_SOE loans compared to other loans (4% to 1%, significant at the 1% level), again confirming that SBs favor SOEs for political and behavioral reasons and this is not value-enhancing. We also document no (a moderate) significant difference in ROA for SB loans (SB_SOE) in the pre-fraud/on-fraud sample (not significant and at the 10% level respectively), but a significant difference in the post-fraud sample (at the 5% and 1% respectively). These results are not in line with the possibility that SBs possess soft information on SOEs and therefore grant loans at a lower interest rate.

[Insert Table 6 about here]

One could argue that SOE and NSOE engage in different types of fraud and therefore the increase in interest rate after the fraud announcement will differ. We therefore repeat our main analyses including an indicator variable equal to 1 if the violation was related to disclosure, and zero otherwise, to control for the severity of the fraud. Our results remain unchanged and we fail to find a significant effect of the type of violation on the cost of debt.

Finally, we separate our indicator for Security to control for different types of collateral. We use indicator variables for guaranteed loans, mortgage loans and hypothecated loans. Our results indicate that especially hypothecated loans are issued at a higher cost of debt.

4.5 Matched sample design

In Table 7, we test the difference in means between our 136 fraud loan observations and 136 loan observations matched on announcement date (year and month) and maturity (full sample). This is done to reduce differences between fraud and non-fraud observations on potentially confounding variables. We find higher interest rates for loans issued to fraud firms than for non-fraud firms. More specifically, we find higher interest rates corrected for the risk-free rate.

We also match the 38 loan observations issued by SBs to SOEs on announcement date (year and month) and maturity (SBs to SOEs sample). In line with our multivariate analysis, we find that SBs do not increase the cost of debt to SOEs after a fraud announcement.

Finally, we match the ninety-eight other loans on announcement date (year and month) and maturity (other loans sample), and again find strong evidence of an increase in the cost of debt after a fraud announcement.[11]

[Insert Table 7 about here]

5. Conclusion

[11] Due to the small sample size and the number of variables needed to estimate our main model we do not run regressions on the matched samples.

Approximately 17% of listed firms in China have faced enforcement actions by the China Securities Regulatory Commission (CSRC), a substantial number. These enforcement actions have severe consequences for the accused firms, which routinely incur losses in market value as well as increases in information asymmetry. The literature has also demonstrated an increase in the cost of debt to these firms post-fraud. The goal of our research is to investigate how both borrower and lender state-ownership influence the cost of debt as a response to fraud revelations for Chinese firms.

Consistent with prior literature, we find that loans initiated after enforcement actions have a higher cost of debt than those initiated before, and compared to loans to non-fraud firms. More importantly, we find evidence that SOEs have a lower cost of debt, and that SBs do not increase spreads to SOEs after fraud revelations. These results hold for a sample of firms matched on loan announcement year, month, and maturity. Additional tests show that the firms that received these favorable loans perform worse than other firms. This could imply that this leads to sub-optimal lending and confirms that these loans are granted based on political and social motivations.

Note that our paper is subject to several limitations that could provide fruitful avenues for future research. First, our study uses the cost of debt as a potential consequence of fraud to investigate the impact of borrower and lender ownership. But it could be instructive to examine other aspects of the loan-contracting relationship. Second, we have a low number of observations for certain combinations of borrowers and lenders, which can certainly influence the power of our tests. Third, an increase in the cost of debt can be related to increases in both credit risk and information risk. Graham et al. (2008) use analyst data to disentangle both effects. Unfortunately, the low amount of analyst data does not allow us to disentangle this effect any further. Moreover, Engelberg et al. (2012) find in a US setting that deals between personally connected firms and syndicate banks are less likely to involve

covenants. It would be an interesting research question to investigate the difference in usage of covenants between state-owned enterprises and state-owned banks as this could shed further light on whether state-owned bank favoring state-owned enterprises leads to sub-optimal lending. Finally, our results also raise other interesting questions: whether state ownership allows banks to make better loan decisions; and whether SB/SOE relationship are beneficial to the society. We leave this to future research.

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Table 1: Distribution of fraud firms

Our sample consists of 221 loan observations by firms accused of fraud. 136 pertain to observations after the announcement of an enforcement action, and 85 pertain to observations before an enforcement action. Our 221 observations relate to 81 separate enforcement actions, which are related to 138 violations.

Panel A: Distribution over time

	count
2001	15
2002	49
2003	38
2004	21
2005	7
2007	2
2008	3
2009	24
2010	16
2011	7
2012	39
Total	221

Panel B: Type of violation

	Full Sample (%)	SOE (%)	Non-SOE (%)
Disclosure Postponement	28.8	34.17	24.07
Major Failure to Disclose Information	20.6	19.58	21.48
False Statement	17.6	16.67	18.52
Profit Make-Up	9.8	10	9.63
Major Shareholder Embezzlement	4.7	4.17	5.19
Illegal Share Buyback	3.3	1.67	4.81
Illegal Guarantee	2.4	0.42	4.07
Asset Fabrication	1.4	2.5	0.37
Unauthorized Fund Usage	0.8	0	1.48
Price Manipulation	0.8	0	1.48
Violation in Capital Contribution	0.2	0	0.37
Other	9.6	10.83	8.52
Total	100	100	100

Panel C: Distribution by industry

	Full Sample (%)	SOE (%)	Non-SOE (%)
Utilities	3.17	1.03	4.84
Properties	50.68	48.45	52.42
Conglomerates	5.43	4.12	6.45
Industry	40.27	45.36	36.29
Commerce	0.45	1.03	0
Total	100	100	100

Table 2: Sample size and interest rates by bank/borrower

This table displays the frequencies of firm-loan observations by borrower and lender state-ownership. Average interest rates minus the risk-free rate are in parentheses. Our sample consists of 1,036 loan-firm observations, 136 of which are post-fraud. We define SOEs (NSOEs) as firms with a higher (lower) percentage of state-ownership than the median. We define SBs (NSBs) as banks with a (no) significant state-ownership. This includes the Big 4 banks, the policy banks, and the national state-controlled joint stock banks.

	SB		NSB		
	SOE	NSOE	SOE	NSOE	Full Sample
Post-fraud	38	18	31	49	136
	(0.04)	(0.05)	(0.05)	(0.06)	(0.05)
Non-fraud/pre-fraud	316	197	133	254	900
	(0.03)	(0.04)	(0.03)	(0.04)	(0.04)
Total	354	215	164	303	1036
	(0.03)	(0.04)	(0.04)	(0.05)	(0.04)

Table 3: Descriptive statistics: Full sample

This table displays descriptive statistics for our dependent variable, ownership data, and firm and loan characteristics. Our sample consists of 1,036 loan-firm observations, 900 pre-fraud and 136 post-fraud.

	N	Mean	St. dev.	Q1	Median	Q3
Spread	1036	0.04	0.02	0.03	0.03	0.04
Spread Benchmark	1036	0.08	0.31	-0.08	-0.02	0.07
ROA	1036	0.04	0.04	0.02	0.04	0.06
Assets	1036	21.30	1.07	20.48	21.05	21.99
MarketToBook	1036	4.08	2.61	2.18	3.28	4.92
Leverage	1036	0.53	0.16	0.42	0.57	0.65
Tangibility	1036	0.29	0.22	0.11	0.26	0.45
Altman	1036	0.80	0.50	0.45	0.83	1.12
Loan Size	1036	0.09	0.12	0.03	0.05	0.10
Term	1036	1.33	0.88	1.00	1.00	1.00
Security	1036	0.47	0.50	0.00	0.00	1.00
SOE_%	1036	0.31	0.27	0.00	0.35	0.56
SB	1036	0.55	0.50	0.00	1.00	1.00
Observations non-fraud/pre-fraud						
Spread	900	0.04	0.02	0.03	0.03	0.04
Spread Benchmark	900	0.05	0.28	-0.08	-0.02	0.06
ROA	900	0.04	0.04	0.02	0.05	0.06
Assets	900	21.27	1.05	20.48	21.04	21.90
MarketToBook	900	4.09	2.58	2.24	3.30	4.92
Leverage	900	0.52	0.16	0.40	0.55	0.63
Tangibility	900	0.31	0.22	0.14	0.28	0.45
Altman	900	0.82	0.50	0.44	0.83	1.13
Loan Size	900	0.09	0.11	0.02	0.04	0.10
Term	900	1.32	0.89	1.00	1.00	1.00
Security	900	0.44	0.50	0.00	0.00	1.00
SOE_%	900	0.31	0.26	0.00	0.34	0.56
SB	900	0.57	0.50	0.00	1.00	1.00
Observations post-fraud						
Spread	136	0.05	0.03	0.03	0.04	0.07
Spread Benchmark	136	0.27	0.45	-0.03	0.06	0.67
ROA	136	0.03	0.04	0.01	0.03	0.05
Assets	136	21.49	1.13	20.54	21.32	22.46
MarketToBook	136	3.99	2.83	2.07	3.23	4.78
Leverage	136	0.63	0.15	0.48	0.67	0.75
Tangibility	136	0.16	0.17	0.02	0.12	0.22
Altman	136	0.71	0.52	0.47	0.77	1.08
Loan Size	136	0.13	0.14	0.03	0.07	0.15
Term	136	1.40	0.82	1.00	1.00	2.00
Security	136	0.67	0.47	0.00	1.00	1.00
SOE_%	136	0.31	0.27	0.00	0.39	0.61
SB	136	0.41	0.49	0.00	0.00	1.00

Table 4: Descriptive statistics: Bank loan details

This table displays descriptive statistics for our dependent variable, and loan characteristics. Our sample consists of 1,036 loan-firm observations, 900 pre-fraud and 136 post-fraud. *Spread* is the annual interest rate charged by the lending bank minus the risk-free rate. *Spread Benchmark* is the percent change between the annual interest rate and the benchmark rate.

Panel A: Loan characteristics by industry

	Spread	Spread Benchmark	Loan Size	Term	Security
Utilities	0.03	-0.03	0.10	1.48	0.56
Properties	0.05	0.23	0.12	1.31	0.56
Conglomerates	0.04	0.06	0.06	1.27	0.45
Industry	0.04	0.01	0.09	1.37	0.43
Commerce	0.05	0.20	0.09	1.21	0.24

Panel B: Loan size by year and term

Year	Loan Size	Term	Loan Size
2001	0.06	<= 1 year	0.07
2002	0.06	1 < Term <= 3 years	0.15
2003	0.06	> 3 years	0.20
2004	0.06		
2005	0.08		
2006	0.06		
2007	0.10		
2008	0.12		
2009	0.14		
2010	0.11		
2011	0.14		
2012	0.19		

Table 5: Fraud and the cost of debt

Our sample consists of 1,036 firm-loan combinations. *Spread* is the natural logarithm of the annual interest rate charged by the lending bank minus the risk-free rate. *Spread Benchmark* is the percent change between the annual interest rate and the benchmark rate. Standardized beta coefficients are given, and t-statistics are in parentheses. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.

	Spread	Spread Benchmark	Spread	Spread Benchmark
Post_Fraud	0.107***	0.140***	0.122*	0.175***
	(2.83)	(3.53)	(1.85)	(2.68)
SOE	-0.131***	-0.136***		
	(-4.22)	(-4.46)		
SB	-0.041	-0.076**		
	(-1.36)	(-2.46)		
SB_NSOE			-0.093**	-0.110***
			(-2.36)	(-2.79)
SB_SOE			-0.134***	-0.163***
			(-3.27)	(-4.11)
NSB_SOE			-0.162***	-0.140***
			(-4.28)	(-4.00)
Post_SB_NSOE			0.052	0.059
			(1.05)	(1.04)
Post_SB_SOE			-0.107**	-0.125***
			(-2.50)	(-2.61)
Post_NSB_SOE			0.048	0.013
			(0.98)	(0.26)
ROA	-0.000	-0.021	-0.014	-0.039
	(-0.00)	(-0.43)	(-0.27)	(-0.78)
Assets	0.175***	0.256***	0.172***	0.256***
	(3.65)	(5.29)	(3.64)	(5.35)
MarketToBook	0.048	0.063*	0.058*	0.075**
	(1.37)	(1.92)	(1.66)	(2.27)
Leverage	-0.083*	-0.122***	-0.092**	-0.129***
	(-1.92)	(-3.03)	(-2.12)	(-3.21)
Tangibility	-0.238***	-0.221***	-0.228***	-0.214***
	(-6.05)	(-5.58)	(-5.71)	(-5.34)
Altman	-0.172***	-0.124**	-0.156***	-0.105**
	(-3.10)	(-2.29)	(-2.85)	(-1.97)
Loan Size	-0.015	-0.010	-0.006	-0.005
	(-0.37)	(-0.27)	(-0.15)	(-0.12)
Term	0.080***	-0.026	0.084***	-0.022
	(2.64)	(-0.90)	(2.76)	(-0.76)
Security	0.096***	0.058**	0.111***	0.074***
	(3.37)	(2.08)	(3.99)	(2.76)
Industry FE	YES	YES	YES	YES
N	1036	1036	1036	1036
adj. R^2	0.202	0.220	0.217	0.235
F	16.27	13.45	14.02	11.35

Table 6: Performance around fraud by bank and lender ownership

This table displays descriptive statistics for the return on assets, by bank and lender ownership. Our sample consists of 1,036 loan-firm observations, 900 pre-fraud and 136 post-fraud. T-statistics on the difference in mean for non-fraud/pre-fraud and post-fraud are reported and significance levels are in parentheses. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.

ROA	non-fraud/pre-fraud	post-fraud	t-statistic (p-value)
All loans	0.04	0.03	2.88*** (0.004)
SB loans	0.04	0.02	3.97*** (0.000)
NSB loans	0.04	0.04	0.57 (0.566)
t-statistic	-0.36	2.48**	
(p-value)	(0.719)	(0.014)	
SB_SOE loans	0.04	0.01	3.66*** (0.000)
Other loans	0.04	0.04	1.32 (0.189)
t-statistic	1.66*	3.17***	
(p-value)	(0.097)	(0.002)	

Table 7: Borrower and lender state-ownership and the cost of debt post-fraud

Our full sample consists of 136 firm-loan combinations post-fraud, and 136 firm-loan observations matched based on the year and month of the loan announcement and years to maturity. Our SB to SOE sample consists of thirty-eight firm-loan combinations post-fraud, and thirty-eight firm-loan observations matched based on year and month of loan announcement and years to maturity. Our other loans sample consists of 98 firm-loan combinations post-fraud, and 98 firm-loan observations matched based on year and month of loan announcement and years to maturity. The means of the cost is provided. Spread is the annual interest rate charged by the lending bank minus the risk-free rate. Sample sizes are in parentheses below. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.

Panel A: Descriptive statistics

	Post_Fraud = 1	Post_Fraud = 0	t-statistic
Interest			
All loans	0.050	0.045	-2.05**
	(136)	(136)	
SB-SOE loans	0.037	0.035	-1.38
	(38)	(38)	
Other loans	0.055	0.047	-2.38**
	(98)	(98)	

Appendix: Variable Definitions

Variable is the name as used in all tables. Database refers to the database used. Variable ID is the identifier in the respective database. Description and calculation describe the variable and how it is derived or calculated.

Variable	Database	Variable ID	Description and Calculation
Leverage	CSMAR China Stock Market Financial Statements Database	A002000000/ A001000000	Total liabilities/Total assets
MarketToBook	CSMAR China Stock Market Financial Statements Database	Msmvttl / A003000000	Market Value/Total Shareholder Equity
Assets	CSMAR China Stock Market Financial Statements Database	A001000000	Natural logarithm of total assets
Tangibility	China Listed Firm's Bank Loan Research Database	a001212000/ a001000000	Net fixed assets/Total assets
Altman	China Listed Firm's Bank Loan Research Database		Modified Altman's (1968) Z-Score: $\frac{(1.2\times working\ capital + 1.4\times retained\ earnings + 3.3\times EBIT + 0.999\times Sales)}{Total\ Assets}$
ROA	CSMAR China Stock Market Financial Statements Database	B001000000 / A001000000	Total profits/Total assets
SB	China Listed Firm's Bank Loan Research Database	Bank_en	Indicator variable equal to 1 if the lending bank is a Big 4 bank, a state-controlled policy bank, or a national state-controlled joint stock bank
SOE	China Listed Firm's Corporate Governance Research Database	Nshrglea/Nshrttl	Indicator variable equal to 1 if percentage share of state-owned entities is larger than the median.
Spread	China Listed Firm's Bank Loan Research	Interest	Natural logarithm of the annual interest rate charged

	Database		by the lending bank minus the risk-free rate
Spread Benchmark	China Listed Firm's Bank Loan Research Database	Interest	Percentage difference between the annual interest rate charged and the benchmark loan interest rate
Term	China Listed Firm's Bank Loan Research Database	Term	Natural logarithm of number of years of loan maturity
Money	China Listed Firm's Bank Loan Research Database	Money	Natural logarithm of amount of loan or borrowing
Security	China Listed Firm's Bank Loan Research Database	Type	Binary variable that takes the value of 1 if the loan is against collateral, and 0 otherwise