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Bank lending decisions and earnings management: Evidence from China

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Bank lending decisions and earnings management: Evidence from China

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CERTIFICATION

I, Huanyu Cui, declare that this thesis, submitted in partial fulfilment of the requirements for the award of Master of Philosophy, in the School of Accounting, Economics and Finance, Faculty of Business, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. This document has not been submitted for qualifications at any other academic institution.

Huanyu Cui

16 March 2020

DEDICATION

This thesis is dedicated to my parents and wife

who encouraged me to pursue research.

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I wish to thank various people for their contribution which made the completion of this research project possible.

First of all, I would like to express my very great appreciation to my principal supervisor Dr. Xiaofei Pan for his consistent support and guidance throughout my study. His support and invaluable guidance were very evident throughout the whole process from establishing the research topic and writing up the thesis. His supervision was essential to the completion of this thesis and he taught me countless lessons on how the research process works. Furthermore, when I experienced the most difficult time during my study, Dr. Pan gave me his full support. He showed me the right way to go and helped me to get through several difficulties. Not only is he a great supervisor who helps me develop skills, knowledge and experience; he is also a trusted friend who can give me support when I am experiencing difficult times.

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ABBREVIATIONS

CSMAR   China Stock Market and Accounting Research Database

CSRC   China Securities Regulatory Commission

WTO   World Trade Organization

CBRC   China Banking Regulatory Commission

SOEs   state-owned enterprises

SBs   state-owned commercial banks

SMBs   small-and-medium state-owned commercial banks

FBs   foreign banks

ICBC   Industrial and Commercial Bank of China

CCB   China Construction Bank

BOC   Bank of China

ABC   Agricultural Bank of China

BCOM   Bank of Communications

CARs   cumulative abnormal returns

ROA   return on assets

ST   special treatment

IPO   initial public offering

SEO   seasoned equity offering

LIST OF PUBLICATIONS

Refereed Conference Proceedings

Cui H, Pan X, Tian G., 2016. Bank Lending Decisions and the Value Effect of Loan Announcements: New Evidence from the Sensitivity between Bank Loans and Firm Performance Adjusted for Earnings Management in China. 29th Australasian Finance and Banking Conference (AFBC), December, Sydney, Australia

Cui H, Pan X, Tian G., 2017. How Bank Lending Decisions Link to Market Responses to Loan Announcements: The Impact of Earnings Management. 29th Asian Finance Association (AsianFA) conference, July, Seoul, South Korea

ABSTRACT

This study explores the bank lending decision puzzle in Chinese listed firms. Banks are known to play a certification role for borrowing firms, reflected by loan announcements generating abnormal positive returns for borrowing firms in stock markets. In contrast, negative market reactions towards the bank loan announcements exist when Chinese firms borrow. If Chinese banks make efficient lending decisions, why do Chinese banks not provide certification for borrowing firms? This thesis focuses on whether and how banks treat earnings management in borrowing firms when they make lending decisions. I predict that banks may not always exert effort to detect earnings management and the observed positive relationship between loan size and firm profitability is due to earnings management.

Using firm performance before and after adjustment for earnings management, I am able to investigate whether banks examine the credibility and reliability of reported earnings of borrowing firms. I find that, when firm performance is adjusted for earnings management, it is no longer related to bank loan size in some cases. Specifically, the positive relationship between bank loan size and firm performance disappears for loans by state owned banks to state owned enterprises (SOE) and loans by small and medium sized banks to both SOEs and non-SOEs.

These findings show that bank-lending decisions vary according to bank-firm ownership relationships and without real screening effort, banks fail to provide certification value to borrowers.

Chapter 1: Introduction

1.1 Background and Motivation

Conventional wisdom states that banks play a certification role because they act as a delegated monitor (Diamond, 1984) and they have informational advantages in the form of "inside debt" (Fama, 1985; Rajan and Winton, 1995). Hence, researchers predict that bank loan announcements should convey a positive signal to stock markets due to their certification value on borrowers' creditworthiness. However, the empirical evidence is mixed. For example, Mikkelson and Partch (1986) and James (1987) find that loan announcements are associated with positive abnormal returns for borrowers, but public debt is associated with neutral or slightly negative abnormal returns. Billett et al. (1995) find no significant difference between the market's response to bank and non-bank loans. To reconcile these mixed results and understand the certification role of banks clearly, recent studies have explored bank loan announcement effects from the perspective of the characteristics of lenders and borrowers (e.g., Fields et al., 2006; Demiroglu and James, 2007; Bailey et al., 2011; Herbohn et al., 2019)[1]. Li and Huang (2018) find that improving firm accounting conservatism can reduce the negative market reaction to the announcement of bank loans. However, whether and how banks play a certification role remains an empirical question.

This study is motivated by the lack of empirical evidence on the bank loan

[1] Loan announcement effects are particularly significant for smaller and weaker borrowers (Fields et al., 2006), and loans with particularly demanding covenants (Demiroglu and James 2007). Bailey et al. (2011) find loan announcement effects vary from loans granted by banks with different types of ownership.

announcements puzzle which has contrary findings in other markets. I aim to provide additional evidence by exploring the variations in bank lending decisions to understand the different effects on loan announcements. Prior studies on bank loan announcement effects have implicitly assumed that bank lending decisions depend largely on firm profitability because banks are fixed-income investors and concerned about borrowers' repayment commitment. Bertrand et al. (2007) provides empirical evidence by linking bank loan size to firm profitability to show an efficient lending decision. Pan and Tian (2018) find that firms' bank connections can improve banks' lending decisions by reinforcing the positive relationship between bank loan size and firm profitability but firms' political connection weaken the relationship (e.g., Cull and Xu, 2003; Firth et al., 2009, Zheng and Zhu, 2013). Therefore, I investigate whether bank loan announcement effects reflect the bank lending decision, i.e., to what extent is the size of the bank loan linked to firm profitability?

1.2 Research questions

The Chinese market is an ideal setting because it provides sufficient tension from the perspective of institutional environment and empirical findings. "On the one hand, the Chinese government continues to control the banking industry and corporate sector, leading to a heterogeneous ownership structure of banks and firms. This cross-sectional variation in ownership structure allows an examination of lending decisions which are likely to vary according to bank-firm ownership relationships (e.g. state-owned banks (SBs) or foreign banks (FB) grant loans to SOEs) and non-SOEs." On the other hand, in contrast to findings in developed markets, borrowers' stock value typically decreases around loan announcements in China (Bailey et al., 2011). Nevertheless, an increasing

body of empirical evidence shows that Chinese banks on average use commercial judgement to make efficient lending decisions based on borrower profitability, and documents a positive relationship between bank loan size and firm profitability (e.g., Cull and Xu, 2003; Firth et al., 2009, Zheng and Zhu, 2013). These inconsistent findings regarding efficient bank lending decisions and negative market reactions to bank loan announcements challenge the classic bank monitoring theory and existing findings on bank certification value.

A plausible explanation for the inconsistency is that Chinese banks may not exert effective monitoring when making lending decisions, and the documented positive relationship between bank loan size and firm profitability is merely cosmetic due to the effects of earnings management. A reasonable commercial bank should maximize return on capital and allocate and price loans according to borrowers' risk profiles and profitability (Dinç, 2005). In the presence of severe government intervention on the banking industry, Chinese banks, especially SBs usually follow the objectives set by politicians to serve political objectives and tend to allocate and price loans according to political preferences. Moreover, compared with non-SOEs, SOEs in China are more favored by banks due to state ownership and implicit government guarantees (usually known as soft budget constraints), which may further alleviate banks' concern about repayments (Lin and Tan, 1999; Lu et al., 2012). Hence, to address the puzzle, this study focuses on determining whether banks in China perform treatment of earnings management on borrowing firms when they make lending decisions and explore whether those treatment on borrowing firms' earnings management relates to loan announcements effects.

Prior studies implicitly assume that banks exert effective monitoring through lending,

and generally use the relationship between loan terms and reported performance[2] as a proxy for bank lending decisions. This measurement can only test whether banks use quantitative measures (e.g., firm profitability) in the credit evaluation process but cannot capture whether banks pay attention to qualitative measures (e.g., the reliability of firms' profitability). Yet if Chinese banks do not exert effective monitoring in lending decisions as mentioned previously, the relationship between bank loan size and reported performance may not effectively capture banks' monitoring efforts. In addition, there is an extensive literature documenting earnings management is prevalent in Chinese listed firms (e.g., Aharony et al., 2000; Chen and Yuan, 2004; Liu and Lu, 2007; Jian and Wong 2010; Aharony et al., 2010; Qi et al., 2017). Hence, since firm profitability can be managed, it is doubtful whether the previously documented positive relationship between bank loan size and firm profitability demonstrates that lending activities also take into consideration the reliability of firms' profitability and other qualitative measures. Collectively, I contend that the positive relationship between bank loan size and firm profitability is largely influenced by earnings management in China, and the negative market reactions to bank loan announcements reflect inefficient lending decisions.

To capture whether banks exert effective monitoring in lending decisions by detecting earnings management, I follow Cornett et al. (2008) where they argue that firms' reported profitability actually reflects the adjustment of earnings management, and firms' real profitability can be obtained by extracting earnings management from their reported profitability. I use the sensitivity between bank loan size and profitability adjusted for earnings management, which allows me to determine whether banks pay attention to both

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[2] As earnings are employed as a summary measure of firm performance by various users (Dechow, 1994), to a great extent firm performance reflects a borrower's debt capacity and level of credit risk.

quantitative and qualitative measures. If banks do not detect firms' earnings management, bank loan size should not relate to the firm's unmanaged profitability, and negative stock price reactions will occur.

1.3 Results of study

Using a sample of listed firms in China between 2003 and 2014, I document the following main findings. First, consistent with my expectation, bank loan size is positively related to reported return on assets ratio (ROA) which is the proxy for firm profitability. However, when reported ROA is adjusted for earnings management, the positive relationship disappears. Specifically, this observation holds for lending to SOEs but not for lending to non-SOEs. When I further distinguish lending by bank types, I find that the abovementioned observation holds when SOEs receive loans from SBs. Moreover, loans from FBs are positively related to adjusted ROA for all types of borrowers. Regarding the market reactions to bank loan announcements, the negative effects of bank loan announcements occur when loan size is not related to unmanaged ROA, which is consistent with my predictions. My results could be affected by bias in earnings management. To ensure my findings are robust, I employ two alternative measures of earnings management. One is earnings management after netting out the effects of large external financing cash flows, and the other one is Dechow and Dichev (2002) model. Consistency across these two alternative measures indicate my results are less likely to be driven by bias in earnings management measurement. My main findings are also robust to a series of alternative tests, including firm fixed effects regression, and regression using the stimulus package as an exogenous shock.

1.4 Contribution

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This study contributes to the literature in several ways. First, prior studies typically use the relationship between bank loan size and reported performance to proxy bank lending decisions (e.g., Cull and Xu, 2003; Firth et al., 2009, Zheng and Zhu, 2013). By exploring the earnings management adjustment on firm profitability, this study uses a new measure by linking bank loan size to the unmanaged profitability to investigate the monitoring role of banks. Specifically, I show that the positive relationship between bank loan size and unmanaged profitability can indicate the effectiveness of banks' monitoring, while the relationship between bank loan size and reported profitability is merely cosmetic mainly for government-related loans, which complements the findings of prior studies that Chinese banks use commercial judgement in making lending decisions (Cull and Xu, 2003; Firth et al., 2009).

Second, prior studies have exploited the characteristics of banks or loans to analyse the effects of bank loan announcements, and my study complements these studies by exploiting the bank lending decision to understand the effects of bank loan announcements. My results show that negative reactions to bank loan announcements occur when bank lending decisions are not commercially based, i.e., bank loan size is not associated with firm unmanaged profitability. In reference to studies by Diamond (1984) and Fama (1985), my analysis suggests that even though there is a positive relationship between bank loan size and firm reported performance, bank loans lose their certification value if they do not make effective efforts to screen and monitor borrowers through lending. Results of this study provide an additional perspective on conflicting evidence in the literature on bank loan announcement effects in the Chinese market.

Third, the existing literature on the information role of banks consists typically of event-driven studies (e.g., James 1987; Billett et al. 1995; Fields et al. 2006; Ross 2010;

Herbohn et al., 2019). My study adds to the literature by connecting loan announcement effects with bank lending practice. Furthermore, unlike the US, disclosure of bank loan information is mandatory for Chinese listed firms, and their decisions on announcing bank loans are in most cases not discretionary. Hence, my study to a large extent alleviates selection bias, which is a common problem in the literature with reference to the the effects of bank loan announcements (Maskara and Mullineaux, 2011).

1.5 Structure of this study

The structure of the study proceeds as follows. Chapter 1 provides an overview introducing the background and motivation, research questions, results and contribution. Then, Chapter 2 presents a literature review and hypothesis development. The data and research design are discussed in Chapter 3 while in Chapter 4 the empirical results are reported, including summary statistics, regression results and outcomes on bank loan announcement effects. Chapter 5 presents a battery of additional tests, which deal with the bias in earnings management and the endogeneity issue and includes an additional robustness test. Finally, Chapter 6 concludes the research and discusses the implications and limitations.

Chapter 2: Literature review and hypothesis development

2.1 China's banking sector

China's banking sector plays a critical role in supporting its growing economy. Despite the fact that the Chinese stock market has developed rapidly in recent years, raising external equity capital is difficult and bank loans still remain the main source for external financing (Jiang et al. 2017). By the end of 2017, bank loans accounted for approximately 58% of total fundraising for the non-financial sector, and it is still significantly larger than the share of the stock market (8%) and corporate bond market (11%). The banking and credit industry has developed rapidly over the last few decades in tandem with country's economic growth. The China Banking Regulatory Commission (CBRC) reports that the total assets of China's banking institutions reached RMB 282.5 trillion (about US\$ 39.98 trillion) at the end of 2019. In recent years, due to interest rate liberalization and the rapid growth of shadow banking, the banking sector has expanded at a modest rate. However, compared with 2018, the total assets of China's banking sector in 2019 still increased by 8.1%.

The banking sector in China can be classified into three groups, namely, SBs, small and medium state-owned commercial banks (SMBs) and FBs. First, SBs consist of the five largest commercial banks, these being the Industrial and Commercial Bank of China (ICBC), China Construction Bank (CCB), the Bank of China (BOC), Agricultural Bank of China (ABC) and Bank of Communications (BCOM). These banks jointly account for about 36.67% of the assets of the Chinese banking system by the end of 2018.

Second, SMBs comprise 13 joint-equity banks and more than 133 city commercial banks. The joint-equity banks are jointly owned by local governments, SOEs and private investors. With the development of China's economy and banking reforms, the market share of joint-equity banks increased from 14% at the end of 2003 to 17.53% in 2018. Furthermore, city commercial banks are generally owned by local governments. These city commercial banks were formerly not allowed to expand beyond their civic boundaries. However, after 2004, they were freed from this geographical restriction and several city commercial banks have since merged. Over the past few years, the city commercial banks have grown at a very rapid rate. Their market share has increased from less than 1% in 2003 to 12.80% in 2018. Thus, compared with previous studies, I can explore foreign banks' lending decisions by using firm-level data. Third, after joining the World Trade Organization (WTO) in 2001, China committed itself to opening the banking sector to foreign banks by 2006, when FBs were granted access to the Chinese market. The business of FBs has expanded quickly, and their total assets increased sharply from 416 billion RMB in 2003 to 3.24 trillion RMB (about US$430.8 trillion) in 2017. However, the market share of foreign banks has not changed much and remained at 1.2% at the end of 2017, although their assets have expanded rapidly during the past decade. Finally, the Chinese government launched a pilot program in 2014, in which the establishment of five new privately owned banks was permitted.[3] The advent of more privately owned banks has intensified the competitiveness of China's banking sector.

With the implementation of financial reforms and private sector firms taking a greater

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[3] The CBRC will allow privately owned banks to be established in the cities of Shanghai and Tianjin and in Guangdong and Zhejiang provinces. A total of ten firms, including Alibaba, Tencent and Fosun, will participate in the project. By 2014, WeBank and Shanghai Huarui Bank were established.

proportion of China's economy, some argue that credit discrimination against private sector firms in China has been mitigated, because Chinese banks currently grant loans based on commercial criteria, which was not the case during the planned economy era (e.g., Chen et al. 2013). For example, the China Construction Bank, one of the five largest state-owned banks, announced that its total loans to private firms increased significantly from 18.4% in 2007 to 35% in 2011, while Minsheng Bank, a private bank, stated that it granted more than 62% of its total loans to private sector firms in 2010. However, another view is that Chinese banks' lending decisions in regard to private firms are largely determined by bribery or political connections, rather than business performance (e.g., Lu et al. 2012). Collectively, whether Chinese banks really follow commercial criteria and have begun to play a monitoring role is still an empirical question.

2.2 Literature on earnings management

Healy and Wahlen (1999) define earnings managements as follows: "Earnings management arises when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying firm performance or to impact contractual results which rely on reported accounting numbers." Prior studies document that firms' earnings management is related a number of financial activities. Teoh et al. (1998a) find that firms manage earnings upward prior to initial public offering (IPO) and that such earnings management is negatively related to post-issue return performance. Teoh et al. (1998b) document similar findings on abnormal accruals before seasoned equity offerings (SEO). Kim and Park (2005) show that seasoned equity offering firms conduct earnings management when they issue new shares at inflated prices. Moreover, Liu et al. (2010) find that firms manage earnings upward before issuing public bonds and achieve a lower cost of borrowing. In

regard to banks, Shen and Huang (2013) find in their cross-country data that firms' earnings management is negatively associated with credit rating and increases borrowing costs. Mafrolla and D'Amico find (2017) that private firms are engaged in earnings management to achieve better borrowing capacity. Lennox et al., (2018) find that auditors make larger downward adjustment to firms' earnings before stock-financed acquisitions. Beladi et al. (2018) find that corporate tax avoidance has a negative effect on is positively related to bank loans and the interest on bank loans and loan interests in Chinese listed firms. Li et al. (2018) find that Chinese listed firms with lower level of real earnings management receive more low interest loans. Apart from fund raising activities, previous studies document that firms are engaged in earnings management to avoid a decrease in earnings, and to meet sell side analyst' earnings expectations (e.g., Graham et al., 2005). These studies indicate that investors and creditors greatly depend on firms' reported financial information in investment decisions; firms have a strong incentive to conduct earnings management to influence investors' perceptions of their performance and risk.

In regard to China, a number of studies document that Chinese firms' earnings management is associated with tunnelling activities. Liu and Lu (2007) provide evidence that earnings management by Chinese listed firms is significantly related to the tunnelling activities of controlling shareholders. Ding et al. (2007) explore the relation between ownership structure and firms' earnings management behaviours and document that there is an inverted U-shape pattern. Jian and Wong (2010) provide evidence that Chinese listed firms manipulate earnings through related-party transactions. Aharony et al. (2010) provide evidence that earnings management behaviours are driven by the expectation of tunnelling opportunities after the firm goes public.

Apart from conventional incentives to engage in earnings management, Chinese

firms have strong incentives to manage earnings to satisfy regulatory requirements (Aharony et al., 2000). First, a special delisting regulation was introduced by the China Securities Regulatory Commission (CSRC) in 1998. Specifically, a listed firm that reports a net loss for two consecutive years will be flagged with ST (special treatment), and with *ST if the ST firm cannot turn loss into gain over the next year. Furthermore, the CSRC requires that a listed firm must have made profits in the past three years if it is to issue new shares. Thus, Chinese firms have strong incentives to manage earnings to avoid being capped with ST or *ST or to obtain the right to issue new shares. Collectively, these studies show earnings management behaviour is prevalent in Chinese listed firms. Despite the fact that earnings management behaviour may not necessarily be illegal in China, it distorts the accounting information and may mislead some stakeholders.

Finally, a number of studies employ earnings management as a proxy for firms' quality of corporate governance (e.g., Kim et al., 2016; Dai et al., 2017). Considering that firms' corporate governance quality is an important factor for financing (Lin et al., 2011), how earnings management influences financing activities is still under-researched.

2.3 Hypothesis development

As previously mentioned, earnings management behaviour is prevalent in Chinese listed firms (e.g., Liu and Lu, 2007; Chen et al., 2008; Jian and Wong, 2010; Qi et al., 2017), and reported earnings performance may not reflect the real financial status. To assess precisely borrowers' credit risks and protect their own interests through making efficient lending decisions, it is expected that a reasonable commercial bank will take into account the effects of earnings management, which should be an important consideration

in banks' assessment of credit risk[4]. Thus, if banks make efficient lending decisions, there should be a positive relationship between bank loan size and unmanaged performance.

However, banks may exhibit different lending patterns towards SOEs and non-SOEs. SOEs are controlled by the governments and usually have multiple goals to satisfy politicians' personal and social objectives, such as maintaining social stability and regional employment (Borisova and Megginson, 2011). In this sense, SOEs are less likely to become bankrupt and financially distressed SOEs are likely to receive government financial support, due to the implicit government guarantee and soft budget constraints (Kornai, 1986; Qian and Roland, 1998; Lin and Tan, 1999). Apart from these, the government intervention in the banking industry causes some bankers to maintain good relationships with the political authorities, since they are broadly controlled by the government (Lu et al., 2012). Under these circumstances, banks are expected to have a weaker incentive to screen or monitor SOE borrowers, especially when lending banks are controlled by the government. Given a loan approval process, banks' loan officers may place less weight on qualitative assessment and make SOEs muddle through the credit risk assessment. Therefore, I contend that banks may implement less monitoring efforts when lending to SOEs, and do not pay attention to SOEs' earnings management behavior or the credibility of their earnings. Accordingly, my first hypothesis is as follows:

H1: Bank loan size has no relationship with unmanaged profitability in SOEs, especially when lending banks are government controlled.

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[4] Under the law, Chinese banks must have independent departments for evaluating the credit risk (Chen et al., 2013). The credit department estimates a borrowing firm's credit risk by analysing in detail its accounting information and credit history. In short, Chinese banks are able to detect borrowing firms' earnings management.

Unlike SOEs, non-SOEs do not enjoy implicit government guarantee, which makes banks feel less secure about their lending (Brandt and Li, 2003; Lu et al., 2012). Furthermore, banks suffer less pressure from the government when lending to non-SOEs (Chen et al., 2010). Hence, I should expect that banks will follow commercial criteria and exert efforts to detect earnings management behaviours in lending decisions, because they will face losses if non-SOEs encounter financial distress and cannot generate adequate profits to cover loan repayments. Consequently, it is expected that banks will be more concerned about true performance in non-SOEs. On this basis the following hypothesis is proposed:

H2: Bank loan size has a positive relationship with unmanaged performance in non-SOEs.

The traditional finance theory suggests that banks play a unique certification role for borrowers because they are delegated monitoring (Diamond, 1984) and a form of "inside debt" (Fama, 1985). Thus, bank loan announcements should convey a positive signal to the stock market and certify the creditworthiness of borrowers. Hence, when a bank makes an efficient lending decision, there should be positive bank loan announcements. Accordingly, my third hypothesis is as follows:

H3: Bank loan announcements generate a positive return for borrowing firms if bank loan size has a positive relationship with unmanaged performance.

However, an inefficient lending decision indicates that less effort has been made for screening and monitoring by lenders, which could stir investors' uncertainty about borrowers' creditworthiness (Bailey et al. 2011). Hence, banks' inefficient lending decisions may relate to unfavourable value effects of bank loan announcements.

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Accordingly, negative bank loan announcements effects should be aligned with inefficient bank lending decisions, and my fourth and last hypothesis is as follows:

H4: Bank loan announcements generate a negative return for borrowing firms if bank loan size has no or a negative relationship with unmanaged performance.

Chapter 3: Data and research design

3.1 Sample selection

The initial sample consists of all firms listed on both Shanghai and Shenzhen Stock Exchanges for the period 2003-2014, and the data is obtained from the China Securities Markets and Accounting Research (CSMAR) database. The sample period begins in 2003 because China adopted new accounting and auditing standards in 2002. My study requires splitting the sample into SOEs and non-SOEs. The classification of firm type is based on the attributes of the largest shareholder in the firm. Shareholder information is also obtained from CSMAR. To form the sample, I eliminate observations flagged with ST or *ST because labeling special treatment (ST) is due to irregularities in their financial statements and loss for two or three consecutive years. Furthermore, because the finance industry is very different compared to other industries, observations from the financial industry is deleted. I also exclude firm-year observations with missing information, which leaves us with a sample of 1,599 firms with 16,622 firm-year observations.

3.2 Method

3.2.1 Banks' lending decisions

To achieve an optimal lending decision and ensure that potential borrowers are able to satisfy their loan repayment commitment, banks should decide the amount of the loans based on the borrower's profitability (Firth et al., 2009). Thus, following Bertrand et al. (2007) and Zheng and Zhu (2013), I use the sensitivity between newly granted bank loans and firm profitability to proxy for banks' lending decisions. The specific model is as

follows:

$$\Delta DEBT_{it} = \alpha + \beta_1 ROA_{it-1} + \beta_2 Size_{it-1} + \beta_3 Tangibility_{it-1} +$$

$$\beta_4 Leverage_{it-1} + \beta_5 Board_{it} + \beta_6 Indep_{it} + \beta_7 Political_{it} + \beta_8 Banker_{it} +$$

$$IndustryFixed + YearFixed + \varepsilon_{i,t}$$

(1)

where $\Delta DEBT$ is the change in the ratio of bank loans to total assets in the current year. *ROA* is return on assets, which is measured as the ratio of net income to total assets. *Size* is firm size, which is measured as the one-year lagged natural log of total assets. *Tangibility* is one-year lagged net fixed assets divided by total assets. *Leverage* is one-year lagged total liabilities divided by total assets. *Board* is the natural log of the total number of directors on the boards in the current year. *Indep* is the number of independent directors to the total number of directors on the boards. *Political* is a dummy variable equal to one if the CEO or director on a firm's board has a government background which is including government official, military official, deputy of National People's Congress (NPC), member of the National Committee of the Chinese People's Political Consultative Conference (CPPCC) in the current year and zero otherwise. The industry effect and year effect are also controlled in the model. *i, t* are firm and year index, respectively.

As banks should evaluate borrowers' credit risks based on their prior performance in the credit assessment process, I employ one-year lagged profitability which is consistent with prior studies (e.g., Firth et al., 2009; Chen et al., 2013). I include *Board* and *Indep* to control for borrowing firms' corporate governance, as previous studies suggest that a firm's corporate governance is closely linked to its performance (e.g., Jensen, 1993; Yermack, 1996; Core et al., 1999). Moreover, a number of studies suggest that politically

connected firms have an advantage in obtaining more bank loans (Faccio et al., 2006). To control for the effects of borrowers' political connections, I include *Political*, which is a dummy variable equal to one if the CEO or director on a board has a government background and zero otherwise. Moreover, Allen et al. (2005) suggest that relationships play an important role in firms' financing channels in China. At the same time, hiring people with a banking background as members of the board is typical in Chinese listed firms. So, it is possible these firms may benefit from this situation when they borrow from banks. Accordingly, I include *Banker,* which is a dummy variable equal to one if the CEO or director of the board comes from a banking background.

3.2.2   Firms' unmanaged performance

As mentioned earlier, I use a firm's reported ROA as a measurement of a firm's reported performance. It is widely employed to measure firm performance and is documented as a key determinant in obtaining bank loans. Nevertheless, managers may camouflage firm performance by adjusting sales and accounts receivable. Thus, it is necessary to remove the impact of possible management on relevant accruals to obtain unmanaged performance.

Following Cornett et al. (2008), I measure firms' unmanaged performance by removing the impact of accruals management from reported performance. There are several earnings management measures which may be employed to capture the impact of accruals management. However, by taking into account the bank lending process and Chinese institutional features, I employ the modified Jones model (Jones, 1991; Dechow et al., 1995) in this study. First, when banks' lending process starts, banks need to collect and evaluate borrowing firms' past financial information first, and then estimate whether

the firm could generate sufficient cash flow to repay the loan in the future. Thus, the model which measures accruals based on future information cannot be employed as banks can only obtain present and past information about firms when they start a credit assessment. For example, Dechow and Dichev (2002) in their approach measure accruals based on past, present and future cash flows. Since the modified Jones model measures accruals based on present and past information, it fits the actual state of banks' lending process. Furthermore, consistent with lenders' prudence on the quality of accounts receivable, the cross-sectional version of the modified Jones model is employed to estimate discretionary accruals.

The modified Jones model to estimate normal accruals is as follows:

$$\frac{TA_{it}}{Asset_{it-1}} = \beta_0 \frac{1}{Asset_{it-1}} + \beta_1 \frac{\Delta Rev_{it} - \Delta AR_{it}}{Asset_{it-1}} + \beta_2 \frac{PPE_{it}}{Asset_{it-1}} \qquad (2)$$

where TA_{it} is total accruals in year t, calculated as [change in current assets $-$ change in current liabilities $-$ change in cash $-$ change in debt in current liabilities $-$ depreciation and amortization expense], $Asset_{it-1}$ is one-year lagged total assets, ΔRev_{it} is the change in revenue in year t, PPE_{it} is property, plant, and equipment, while *i, t* are firm and year index, respectively. These definitions follow those of Kothari et al. (2005).

The modified Jones model to calculate discretionary accruals is written here:

$$\%DA_{it} = \frac{TA_{it}}{Asset_{it-1}} - (\hat{\beta}_0 \frac{1}{Asset_{it-1}} + \hat{\beta}_1 \frac{(\Delta Rev_{it} - \Delta AR_{it})}{Asset_{it-1}} + \hat{\beta}_2 \frac{PPE_{it}}{Asset_{it-1}}) \qquad (3)$$

where $\hat{\beta}_0$, $\hat{\beta}_1$ and $\hat{\beta}_2$ are estimated from regression Eq. (2)[5]. ΔAR_{it} is the change in accounts receivable, $\%DA_{it}$ is discretionary accruals as a fraction of assets. Other variables are defined as in Eq. (2).

Since %DA is measured as a fraction of assets which can be subtracted from ROA, this study uses unmanaged ROA as the proxy of a firm's unmanaged performance. Due to the discretionary accrual being removed from reported ROA, unmanaged ROA should capture firms' unmanaged performance rather than managed accounting performance.

I estimate sets of regressions to examine whether and how firms' reported, as well as unmanaged, performance affects the bank loan size, and whether and how the ownership structures of banks and borrowers influence these relationships. I first estimate model (1) to examine the relationship between bank loan size and a firm's reported performance, and then replace reported ROA with unmanaged ROA to test whether a firm's unmanaged performance relates to bank loan size. Moreover, I further conduct analysis for subsamples divided according to lender and borrower ownership.

3.2.3   Event study methodology

To investigate whether bank loan announcements effects are aligned with bank lending decisions, I employ a conventional event-study methodology. Following Harvey et al. (2004) and Bailey et al. (2011), I examine cumulative abnormal returns (CARs) by using market model. Considering that a firm may borrow from banks more than once a year, longer estimation windows may bear the risk of covering structural breaks (e.g., due to confounding events). Hence, consistent with Bailey et al. (2011), the estimation window, [−120,−21], is employed for calculating the market model parameters.

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[5] Dechow, Sloan, and Sweeney (1995) suggest that that "modified Jones (1991) model" provides the most power for detecting earnings management by comparing several models of accruals management. Bartov, Gul, and Tsui (2001) also suggest employing the modified Jones model, estimated in a cross-section using other firms in the same industry. Consistent with prior studies, a minimum of 10 observations is required for each industry-year in the model (Kothari et al., 2005; Chen et al., 2011).

Chapter 4: Empirical results

4.1 Summary statistics

Table 1 presents the summary statistics for change in total bank loan, a firm's reported ROA, unmanaged ROA and other variables about firm characteristics. The mean change in total bank loans is 0.030, which is similar to prior studies (Zheng and Zhu, 2013). The mean reported ROA is 0.030 and this is similar to the 0.033 reported by Lu et al. (2012). The average unmanaged ROA is 0.02. The average of discretionary accruals on assets is 0.01, the same as that reported by Liu and Lu (2007). However, Cornett et al. (2008) reported mean discretionary accruals on assets in their US sample as 0.0039. Not surprisingly, earnings management activities in China are more severe than in a more developed economy. Definitions of these variables are summarized in Appendix. Table 2 presents the univariate tests of change in total bank loan, a firm's reported ROA, unmanaged ROA and other variables about firm characteristics. for SOE and non-SOE samples. We can observe that the average of discretionary accruals on assets size is significantly higher for non-SOEs, indicating that non-SOEs are more engaged in earnings management activities than SOEs.

Table 1

Descriptive Statistics

Variable	Mean	Median	Std.	25th	75th	N
ΔDEBT	0.030	0	0.130	-0.030	0.070	16622
Reported ROA	0.030	0.030	0.080	0.010	0.060	16622
%DA	0.010	0.010	0.110	-0.050	0.060	16622
Unmanaged ROA	0.020	0.020	0.110	-0.040	0.080	16622
Size	21.58	21.46	1.250	20.74	22.28	16622
Tangibility	0.280	0.250	0.190	0.140	0.410	16622
Leverage	0.220	0.210	0.160	0.090	0.330	16622
Board	9.220	9	1.920	9	10	16622
Indep	0.360	0.330	0.050	0.330	0.380	16622
Political	0.380	1	0.490	1	1	16622
Banker	0.260	0	0.440	0	1	16622

This table presents descriptive statistics for the full sample of 16,622 firm-year observations over the 2003-2014 period. Definitions of variables are listed in Appendix.

Table 2
Comparison of SOE and non-SOE samples

Variable	SOE=0	SOE=1	Mean-diff	t
	(n=7096)	(n=9372)		
ΔDEBT	0.261	0.116	0.145	0.915
Reported ROA	3.143	0.024	3.119	1.077
%DA	0.010	0.004	0.006***	3.321
Unmanaged ROA	3.133	0.020	3.113	1.075
Size	21.131	21.891	-0.760***	-38.572
Tangibility	0.253	0.306	-0.053***	-18.086
Leverage	0.307	0.221	0.086	1.513
Board	8.779	9.560	-0.781***	-25.905
Indep	0.363	0.357	0.006***	7.007
Political	0.404	0.370	0.034***	4.423
Banker	0.291	0.226	0.066***	9.626

Definitions of variables are listed in Appendix. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

4.2 Regression results

4.2.1 Bank lending decisions and borrowers' earnings management

Table 3 presents results concerning the regressions of the relationship between a firm's reported performance, unmanaged performance and bank loan size. The first two columns report the results for the full sample, and the remaining columns report the results for both SOE and non-SOE subsamples. I observe that the coefficient on firms' reported ROA is positive and significant for the full sample in column 1, which is consistent with prior studies (Cull and Xu, 2003; Zheng and Zhu, 2013). Moreover, column 3 and 5 show that the positive relationship holds for both SOE and non-SOE subsamples, indicating banks' lending patterns do not vary for different types of borrowers when effects of earnings mangement are not taken into account. This suggests that banks tend grant more loans to more profitable firms without considering firms' earnings management behaviors. However, the coefficient on firms' unmanaged ROA is insignificant in column 2, which implies that the observed positive relationship in column 1 is merely cosmetic. This suggests that banks in China generally do not use qualitative measures in lending decisions, as they do not generally enact effective efforts to detect firms' earnings management behaviours. After dividing the full sample into SOE and non-SOE subsamples, I observe firms' unmanaged ROA is negatively and insignificantly related to bank loan size in column 4 for the SOE subsample. It is, however, positively and significantly related to bank loan size for the non-SOE subsample in column 6.

These results suggest that the bank loan size is positively related to firm unmanaged profitability in non-SOEs, but has no relationship with firms' unmanaged profitability in SOEs. These results support H1 and H2 and are consistent with previous results (Firth et

al., 2009), which suggests that banks extend credit based on commercial judgements in loan decisions for non-SOE borrowers. Collectively, my findings from Table 3 suggest that banks do not always exert effective monitoring through lending, and they exhibit different patterns of lending decisions for different types of borrowers when considering earnings management adjustment on firm profitability. Specifically, they only exert effective monitoring in lending decisions for non-SOE borrowers because they assess both quantitative and qualitative measures. Although bank loan size is positively related to firms' reported performance for SOEs, results of this study suggest that banks do not use qualitative measures and overlook the credibility of SOEs' profitability since bank loan size is not associated with unmanaged profitability significantly. Therefore, banks do not use commercial judgement when make lending decisions to SOEs.

With respect to other control variables, *Size* is positively related to bank loan size but is insignificant for the SOE subsample, which is consistent with Zheng and Zhu (2013) and suggests that banks tend to grant larger loans to large firms. *Tangibility* is negatively related to bank loan size, which indicates that firms with a lower level of tangible assets and relatively larger total assets have higher demand for bank loans. *Leverage* is negatively related to bank loan size, suggesting that banks are willing to allocate larger loans to firms with a lower level of debt. *Board* is positively related to bank loan size, which suggests that banks tend to grant larger loans to firms with more board directors. None of the other variables are significant.

Table 3
Reported firm performance, unmanaged performance and bank loan size

	Full Sample		SOEs		Non-SOEs	
	(1)	(2)	(3)	(4)	(5)	(6)
Reported ROA	**0.167***		**0.189***		**0.179***	
	(11.98)		**(8.32)**		**(11.30)**	
Unmanaged ROA		**-0.010**		**-0.019**		**0.047***
		(-1.08)		**(-1.42)**		**(3.37)**
SIZE	0.002**	0.005***	0.000	0.003**	0.002	0.005***
	(2.23)	(5.07)	(0.05)	(2.11)	(1.21)	(3.00)
Tangibility	-0.021***	-0.025***	-0.030***	-0.034***	-0.028**	-0.040***
	(-3.11)	(-3.78)	(-3.49)	(-3.96)	(-2.45)	(-3.45)
Leverage	-0.083***	-0.115***	-0.059***	-0.091***	-0.001**	-0.001***
	(-12.10)	(-17.21)	(-6.82)	(-10.86)	(-2.45)	(-3.19)
Board	0.002***	0.002***	0.002***	0.003***	0.003**	0.003***
	(4.01)	(4.21)	(3.46)	(3.63)	(2.46)	(2.88)
Indep	0.033	0.029	0.007	0.003	0.068*	0.070*
	(1.59)	(1.41)	(0.27)	(0.10)	(1.90)	(1.93)

Political	0.002	0.002	0.003	0.003	0.001	0.001
	(0.82)	(0.80)	(0.88)	(0.96)	(0.27)	(0.21)
Banker	0.002	0.001	0.004	0.003	-0.004	-0.004
	(0.73)	(0.61)	(1.16)	(0.83)	(-1.02)	(-1.06)
Constant	-0.008	-0.051**	0.033	-0.007	-0.030	-0.093**
	(-0.40)	(-2.46)	(1.23)	(-0.27)	(-0.77)	(-2.38)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.045	0.037	0.044	0.038	0.038	0.022
N	16622	16622	9372	9372	7096	7096

The dependent variable, bank lending decisions, is measured as the change in the ratio of bank loans to total assets at current year. Definitions of other variables are listed in Appendix. I split the full sample of firms into SOEs and non-SOEs, and repeat the same regressions as for the full sample. T-statistics are in parentheses, while ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

4.2.2 Bank lending decisions under different bank-firm ownership relationships

My evidence so far suggests that the positive relationship between bank loan size and performance does not hold for SOEs, which is driven by the attribute of borrowers' ownership. In this section, I further explore how bank lending decisions vary according to the lending bank ownership. The heterogeneity of the ownership structure of Chinese banks provides cross-sectional variation for examining lending decisions by banks which are likely to vary according to bank-firm ownership relationships. I identify the types of banks that extend loans to my sample firms, and repeat regression analysis for each type of bank. To represent the monitoring incentive of banks appropriately, I partition banks into three groups, namely, SBs, SMBs and FBs.

I hand-collect the information of the lending bank types from the Notes to the Financial Statement dataset of the CSMAR, which provides the loan balance for each firm in each year as well as the lending banks, then I add up the loans balances together according to the lending bank types. To clearly and precisely identify the lending banks that I define above, I exclude syndicated loans and loans where the lending bank is not available. It is worth noting that the missing information of the lending bank types on loan balance and excluded syndicated loans lead to the sample size dropping and constrain explanatory power. Empirically, I re-estimate equation (1) by replacing dependent variables with the change of loans from year t-1 to year t, scaled by firm total assets, and run the equation for each type of bank.

Table 4 reports the results by focusing on bank loans from SBs. I observe that the coefficient on firms' reported ROA is significant and positive in column 1 but the coefficient on unmanaged ROA is positive and significant only at the 10% level. When I

look at the results for the SOE subsample in columns 3 and 4, I notice that bank loan size is not closely related to either reported ROA or unmanaged ROA, which suggests that: firstly, SBs generally do not consider firms' earnings management behaviour when lend to SOE borrowers; and secondly, do not pay much attention to their unmanaged performance. This outcome strongly supports my H1 and is consistent with Bai et al. (2006), who argue that SBs in China still have considerable responsibility to support SOEs. When I look at the results for the non-SOE subsample in columns 5 and 6, I find that the coefficients on both reported ROA and unmanaged ROA are positive and significant. These results are broadly consistent with H2, indicating that SBs pay attention to both qualitative and quantitative measures when allocating capital to non-SOEs. This result also emphasizes that SBs do not only focus on the reported profitability but also consider the credibility of accounting performance for non-SOE borrowers. Overall, these results reveal that SBs' due diligence and monitoring in lending operations vary between SOE and non-SOE borrowers.

Table 4
Reported firm performance, unmanaged performance and SBs' loan size

	Full Sample		SOEs		Non-SOEs	
	(1)	(2)	(3)	(4)	(5)	(6)
Reported ROA	**0.317***		**-0.006**		**0.298***	
	(3.15)		**(-0.04)**		**(3.69)**	
Unmanaged ROA		**0.140***		**-0.021**		**0.291***
		(1.95)		**(-0.26)**		**(3.11)**
SIZE	-0.031***	-0.028***	-0.022***	-0.022***	-0.021	-0.018
	(-4.44)	(-4.07)	(-3.41)	(-3.48)	(-1.05)	(-0.88)
Tangibility	0.095**	0.076	0.118**	0.119**	-0.018	-0.029
	(1.97)	(1.57)	(2.46)	(2.49)	(-0.15)	(-0.25)
Leverage	0.191***	0.170***	0.030	0.028	0.275***	0.283***
	(5.22)	(4.76)	(0.56)	(0.56)	(6.39)	(6.55)
Board	0.006	0.006	0.005	0.005	0.007	0.007
	(1.43)	(1.36)	(1.21)	(1.22)	(0.50)	(0.54)
Indep	-0.039	0.014	-0.102	-0.101	-0.063	0.108
	(-0.22)	(0.08)	(-0.61)	(-0.61)	(-0.14)	(0.23)

Political	0.020	0.027	-0.004	-0.004	0.053	0.060
	(0.87)	(1.17)	(-0.15)	(-0.17)	(1.09)	(1.23)
Banker	0.003	0.002	0.024	0.023	-0.013	-0.005
	(0.18)	(0.12)	(1.18)	(1.18)	(-0.32)	(-0.13)
Constant	0.653***	0.588***	0.674***	0.673***	0.242	0.137
	(4.04)	(3.64)	(4.24)	(4.31)	(0.52)	(0.29)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.122	0.113	0.059	0.060	0.359	0.348
N	603	603	357	357	246	246

The dependent variable, bank lending decisions, is measured as the change in the ratio of bank loans from SBs to total assets at current year. Firms' loan balance from SBs is disclosed in the note to financial statements. Definitions of other variables are listed in Appendix. T-statistics are in parentheses, while ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 5 reports the relationship between a firm's reported performance and unmanaged performance and FBs' loan size. As reported in columns 1 and 2, both firm reported ROA and firm unmanaged ROA are positive and significant for the full sample. This suggests that FBs assess both qualitative measures and quantitative measures, and exert effective efforts to detect borrowers' earnings management in lending decisions. It is consistent with previous studies (e.g. Berger et al., 2009; Lin and Zhang, 2009) which document that FBs perform better and are more efficient than local Chinese banks. In regard to the SOE and non-SOE subsamples, firms' reported ROA and unmanaged ROA are all significant and positive for both the SOE and non-SOE subsamples in columns 3, 4, 5 and 6, suggesting that FBs seek to detect borrowers' earnings management in lending decisions, regardless of whether the borrower is an SOE or non-SOE. These results indicate that the patterns of FB's lending decisions do not vary for different types of borrowers. As the evidence shows FBs exert effective monitoring efforts in lending decisions, I expect that negative bank loan announcement effects will not occur when loans are granted by FBs.

Table 5

Reported firm performance, unmanaged performance and FBs' loan size

	Full Sample		SOEs		Non-SOEs	
	(1)	(2)	(3)	(4)	(5)	(6)
Reported ROA	0.229***		0.187**		0.168***	
	(4.63)		(2.27)		(3.28)	
Unmanaged ROA		0.096***		0.118**		0.089**
		(2.65)		(2.26)		(2.11)
SIZE	-0.012***	-0.010***	-0.010***	-0.010***	-0.016***	-0.011**
	(-3.87)	(-3.29)	(-3.43)	(-3.28)	(-2.99)	(-2.15)
Tangibility	-0.030	-0.037*	-0.008	-0.003	-0.053*	-0.066**
	(-1.44)	(-1.76)	(-0.34)	(-0.14)	(-1.76)	(-2.11)
Leverage	0.092***	0.082***	-0.029	-0.044*	0.160***	0.148***
	(4.28)	(3.71)	(-1.13)	(-1.79)	(5.96)	(5.40)
Board	0.000	0.000	0.001	0.001	-0.002	-0.001
	(0.07)	(0.26)	(0.51)	(0.75)	(-0.73)	(-0.35)
Indep	0.111*	0.116*	0.182**	0.184**	0.062	0.100
	(1.70)	(1.70)	(2.28)	(2.30)	(0.78)	(1.20)
Political	0.016*	0.019*	0.015	0.014	0.010	0.018
	(1.69)	(1.97)	(1.31)	(1.17)	(0.91)	(1.55)
Banker	0.014*	0.016**	0.012	0.009	0.010	0.009
	(1.88)	(2.00)	(1.34)	(0.98)	(0.97)	(0.86)
Constant	0.225***	0.191***	0.185***	0.173***	0.244*	0.116
	(3.42)	(2.82)	(2.99)	(2.79)	(1.90)	(0.94)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.203	0.147	0.134	0.134	0.631	0.603
N	226	226	123	123	103	103

The dependent variable, bank lending decisions, is measured as the change in the ratio of bank loans from FBs to total assets at current year. Firms' loan balance from FBs is disclosed in the note to financial statements. Definitions of other variables are listed in Appendix. T-statistics are in parentheses, while ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 6 reports the results of the regressions for the relationship between firms' reported performance and unmanaged performance and SMBs' loan size. I note that coefficients on firms' reported ROA are all significant and positive for bank loan size for the full sample, and the SOE and non-SOE subsamples in columns 1, 3 and 5. However, the coefficients on firms' unmanaged ROA are all insignificant for bank loan size for the full sample, and SOE and non-SOE subsamples in columns 2, 4 and 6. These results support H1, indicating that SMBs do not use qualitative measures and disregard the credibility of borrowing firms' accounting information, and therefore they do not carry out effective monitoring in lending decisions, regardless of whether the borrower is an SOE or non-SOE. These results support the view that SMBs still suffer intensive government intervention in lending decisions. My results are consistent with the findings reported by Chen et al., 2005, who state that on average SMBs are less efficient than SBs. In addition, my findings are robust when I examine exclusively the loans issued by joint-equity banks.

Table 6

Reported firm performance, unmanaged performance and SMBs' loan size

	Full Sample		SOEs		Non-SOEs	
	(1)	(2)	(3)	(4)	(5)	(6)
Reported ROA	**0.058***		**0.033***		**0.099***	
	(0.82)		**(0.28)**		**(0.90)**	
Unmanaged ROA		**0.002**		**-0.056**		**0.030**
		(0.04)		**(-1.00)**		**(0.32)**
SIZE	-0.019***	-0.018***	-0.014***	-0.014***	-0.027**	-0.025**
	(-4.21)	(-4.12)	(-3.01)	(-3.01)	(-2.51)	(-2.40)
Tangibility	-0.060*	-0.064*	-0.003	-0.002	-0.134*	-0.143*
	(-1.70)	(-1.82)	(-0.09)	(-0.07)	(-1.66)	(-1.77)
Leverage	0.135***	0.129***	0.028	0.017	0.132***	0.125***
	(5.17)	(5.05)	(0.75)	(0.47)	(4.06)	(3.95)
Board	-0.002	-0.002	-0.001	-0.001	-0.006	-0.005
	(-0.61)	(-0.60)	(-0.58)	(-0.49)	(-0.82)	(-0.79)
Indep	0.185*	0.185*	-0.054	-0.054	0.578***	0.593***
	(1.82)	(1.81)	(-0.54)	(-0.54)	(2.72)	(2.75)

Political	0.014	0.014	-0.002	-0.001	0.018	0.017
	(0.91)	(0.94)	(-0.14)	(-0.09)	(0.61)	(0.58)
Banker	0.022*	0.023*	0.008	0.009	0.040	0.042*
	(1.78)	(1.84)	(0.64)	(0.71)	(1.61)	(1.69)
Constant	0.354***	0.343***	0.359***	0.360***	0.362	0.326
	(3.37)	(3.29)	(3.60)	(3.63)	(1.35)	(1.21)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.144	0.143	0.050	0.054	0.302	0.299
N	433	433	257	257	174	174

The dependent variable, bank lending decisions, is measured as the change in the ratio of bank loans from SMBs to total assets at current year. Firms' loan balance from SMBs is disclosed in the note to financial statements. Definitions of other variables are listed in Appendix. T-statistics are in parentheses, while ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

4.3 Bank loan announcement effect

4.3.1 Univariate analysis

My study so far has focused on bank lending decisions. I find the positive relationship between bank loan size and firms' reported performance is merely cosmetic when state-owned banks extend loans to SOEs, when the effect of earnings management is considered. These findings indicate that banks do not always exert effective monitoring through lending. According to the "inside debt" theory, banks' due diligence and monitoring constitute the premise behind bank certification value. Hence, I would expect that unfavourable market responses to bank loan announcement should occur when there is a disconnection between bank loan size and firms' reported performance as it reflects ineffectiveness of bank monitoring. To test the hypotheses, I borrow insights from studies on the effects of loan announcements[1], which suggest that the valuation effects of bank loan announcements may indicate whether banks make optimal lending decisions, or subsidize loans to borrowers for non-profitable reasons (Bailey et al., 2011).

Information on loan announcements is obtained from the CSMAR database. Unlike the U.S. SEC rules, the CSRC (China Securities Regulatory Commission) rules require Chinese listed firms to disclose bank loans worth more than 10 million yuan (about US$1.5 million) and those greater than 10% of equity book value. Hence, firms' decisions to report bank loan information are in most cases not discretionary.[2] As investors usually ignores small loans, I eliminate those loans worth less than 10 million yuan. Moreover, many loan announcements are not validated as signed loan contracts. For example, some

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[1] Kang and Liu (2008) explore the effects of bank loan announcements on banks' stock returns in the Japanese market. However, my sample is not suitable for conducting a standard event study for effects of loan announcements on lenders, as one bank often grants several loans in a very short period.
[2] Maskara and Mullineaux (2011) suggest that loan announcements may be selective, and that self-selection bias may influence extant loan announcement research.

loans only indicate firms receiving a line of credit. I exclude those loan announcements because they do not convey sure signs to investors. Finally, to eliminate the influence of other events, I exclude observations surrounded by other events announced within five trading days before and after the loan announcements. My final sample consists of 922 loan announcements between 2003 and 2014, corresponding to 482 listed firms. The sample size corresponds to prior studies (Huang et al., 2012). Table 7 presents the empirical results CARs around loan announcements for borrowing firms. The CAR in Panel A is showed in percentage points and raw value in Panel B. Panel A presents CARs for various event windows around loan announcement dates. The mean [-5, -2] CAR is negative but not significantly different from 0, suggesting there is no severe information leakage prior to the loan announcement. When the event window approaches the announcement date, CARs become significantly negative. This supports my prior findings and my H3 which negative market reactions to bank loan announcement occur if bank loan size has no relationship with firms' unmanaged performance.

Panel B of Table 7 reports values of average CAR [-1, 4] on borrowing firms for different types of banks[3]. I observe that CARs are significantly negative for bank loans to the full sample and SOE subsample, but they are insignificant for non-SOEs. These results are consistent with my previous finding and H3, indicating negative bank loan announcement effects occur when bank loan size has no relationship with firm unmanaged performance. For loans by SMBs, CARs are significantly negative for the full sample and SOE subsample, which are consistent with my previous results and H3. For loans by FBs, CARs are significantly positive for all samples. These results strongly

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[3] It is possible that some loan announcements may be leaked just prior to the official announcement date, so we use the [-1, 4] CARs, which is consistent with previous research (e.g. Harvey et al., 2004; Bailey et al., 2011).

confirm my prior findings, indicating that whether bank loan size has a relationship with firms' unmanaged performance is aligned with bank loan announcement effects. Collectively, these results suggest if banks effectively monitor lending decisions and this relates to their certification value to the stock market. They also are consistent with Bailey et al. (2011), who suggest that Chinese market participants understand that bank lending decisions vary across different banks and borrowers.

Table 7

Cumulative abnormal returns (CARs) around bank loan announcements on borrowing firms.

Panel A. Average CAR over various event windows

Event window (0: announcement day)	No. of observations	Average CAR (%)	Percentage of positive CARs	t-test
[-10, -2]	922	-0.2713	47.35	-0.72
[-5, -2]	922	-0.2549	47.03	-1.53
[-2, 2]	922	-0.1886	43.41	-1.50
[-1, 1]	922	-0.1253	43.73	-1.17
[-1, 2]	922	-0.2970	43.49	-1.78**
[-1, 4]	922	-0.3747	45.21	-2.61***
[-1, 6]	922	-0.5669	44.36	-2.53**
[-1, 10]	922	-0.7462	44.03	-2.59***

Panel B. Values of CAR [-1, 4] on borrowing firms for three types of banks

Type of banks	No. of loans to full sample	CAR (t-statistic)	No. of loans to SOEs	CAR (t-statistic)	No. of loans to non-SOEs	CAR (t-statistic)
All banks	922	-0.004*** (-2.61)	499	-0.005*** (-2.87)	423	-0.002 (-0.98)
SBs	517	-0.005*** (-3.13)	291	-0.006*** (-2.67)	226	-0.005* (-1.80)
Non-SBs	93	0.013*** (3.37)	39	0.012** (2.12)	54	0.013** (2.59)
SMBs	312	-0.006** (-2.06)	169	-0.009** (-2.27)	143	-0.004 (-0.86)

The sample consists of 922 loan announcements between 2003 and 2014 from 482 firms. Average cumulative abnormal returns (CARs) are calculated by using the market model. The estimation window for estimating the expected returns of the borrowing firm is [-120, -21]. T-statistics are in parentheses, while ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

To better understand the certification role of banks and the anomalous effects of bank loan announcements in China, I further conduct univariate analyses. In particular, I categorize CARs by characteristics of borrowing firms, lenders and loans. Due to some missing information on some variables, the sum of the number of observations is not always equal to total sample size. Table 8 presents the results of the univariate tests on CARs sorted by characteristics of borrowing firms. Studies on bank loan announcements in developed markets suggest the positive effects of bank loan announcements are pronounced for weak and informationally opaque borrowers (Field et al., 2006; Ross, 2010). Bushman and Wittenberg-Moerman (2012) suggest that banks can certify borrowers' accounting quality and ease the concerns of investors. Hence, how bank loan announcement effects vary with firms' accounting quality is worth to explore in China. I use the absolute value of borrowing firms' discretionary accruals, which is one year preceding the loan announcement, to proxy firms' accounting information quality. As reported in Table 8, I divide firms based on the median level of earnings management. The negative effect of bank loan announcements is significantly greater for firms with higher earnings management levels than for firms with a lower level.

This suggests that bank loan announcements in China even stir investors' concerns when borrowers' accounting profitability is weak. This aligns with my prior finding that Chinese banks generally overlook the credibility of borrowers' accounting information. Compared to SBs, SMBs appear to be less concerned about borrowers' earnings quality. Firstly, SMBs struggle to compete with SBs due their smaller size, especially when borrowers are listed firms. Hence, SMBs have incentives to lower their credit rating standard to win clients from SB competitors. Furthermore, the SMBs are jointly owned by local governments, SOEs and private investors. Owing to the ownership structure,

these banks could face political pressure from local governments and SOEs, and have weaker incentives to perform monitoring activities on borrowing firms. As my previous results suggest that both SBs and SMBs overlook the credibility of borrowing firms' accounting information, and their loan announcements yield negative loan announcement effects, I divide lenders into domestic banks and foreign banks for comparison. Table 8 shows that loans by domestic banks have significantly negative CARs, but loans by foreign banks have positive CARs (significant at the 5% level). The difference between domestic and foreign banks is also significant. These results confirm my prior findings and suggest that the certification value of domestic banks is small but that of foreign banks is large. The other pair-wise comparisons, including RPT, ROA, percentage of largest shareholder's ownership, borrowing firm's ownership, market cap, loan size, loan maturity and pledge, are insignificant.

Table 8

Cumulative Abnormal Returns (CARs) categorized by characteristics of borrowing firms, lenders and loans

Category	No. of observations	CAR [−1, 4]	T-test of CAR=0	Signed rank test	Difference in CARs	Positive CARs (%)
The level of earnings management of borrowing firms						
Above median	432	-0.009	-3.60***	-2.739***	-0.008*	43.75
Below median	428	-0.002	-0.88	-1.162		47.66
RPT						
Above median	433	-0.006**	-2.26**	-1.809*	-0.002	45.96
Below median	427	-0.004	-1.55	-1.725*		45.43
Firm performance (ROA)						
Increased	374	-0.005**	-2.23**	-2.328**	-0.000	46.26
Not increased	486	-0.005**	-2.44**	-1.600		45.27
Percentage of largest shareholder's ownership						
Above median	407	-0.007***	-2.90***	-2.821***	-0.004	-0.004
Below median	407	-0.003	-1.22***	-0.641		46.93
Borrowing firm's ownership						
SOEs	499	-0.006***	-2.96***	-1.924*	-0.002	43.69
Non-SOEs	423	-0.004	-1.58	-1.953*		48.46
Market cap						
Above median	461	-0.006***	-2.71***	-2.075**	-0.002	44.69
Below median	461	-0.004*	-1.83*	-1.695*		47.07
Lender's type						
Domestic banks	829	-0.006***	-3.74***	-3.198***	-0.011**	45.24
Foreign banks	93	0.010**	2.40**	2.388*		51.61

Loan size						
Above median	499	-0.004*	-1.75*	-0.882	0.003	45.49
Below median	423	-0.007***	-2.83***	-2.884***		46.34
Loan maturity						
More than 1 year	451	-0.003	-1.60	-1.599	0.003	46.56
Equal or less than 1 year	471	-0.006***	-2.91***	-2.192**		45.22
Pledge						
With pledge	84	-0.010*	-1.93*	-1.599	-0.005	39.29
With no pledge	838	-0.005***	-2.77***	-2.192**		46.54

The sample consists of 922 loan announcements between 2003 and 2014 from 482 firms. Sample size decreases as data for some firms' financial information and loan characteristics are unavailable. T-statistics are in parentheses, while ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

4.3.2 Multivariate analysis

In this section I carry out regression analysis to explore banks' certification role on firms' accounting information. The dependent variable is CARs for the six-day event window of [-1, 4]. Following prior studies (e.g., Chaney et al., 2011), I use the absolute value of borrowing firms' discretionary accruals, which is one year preceding the loan announcement, to proxy firms' accounting information quality. The absolute value of discretionary accruals is widely used as a measure of earnings quality (Dechow et al., 2010). Consistent with prior studies, I also control for characteristics of firms and loans. The definitions and measurement information for the variables are reported in Appendix.

Table 9 presents the results of the multivariate analyses. All models show EM is significantly and negatively related to CARs, indicating that investors react more negatively to borrowing firms with a higher level of earnings management. Unlike the findings in developed markets that bank loans play the certification role, I find that Chinese banks granting loans to firms with poor quality of financial information amplifies investors' uncertainty. This result is consistent with prior findings that Chinese banks overlook the credibility of borrowers' accounting information. Moreover, for comparison, I use the interaction term FB×EM to explore whether foreign banks exert a certifying function on borrowing firms' accounting information. As reported in column 4, the coefficient of FB×EM is significantly positive, indicating that borrowing firms with poorer quality of earnings receive more favourable market reactions when they borrow from FBs. This result supports my prior findings that FBs exert effective monitoring through lending. I also introduce an interaction term SOE×EM to estimate if SOEs impact the relationship between CARs and EM. Perhaps because of the small sample, SOE×EM

is not significant. My findings also imply that, in a developing economy such as China, firms can ease investors' concerns over their accounting information quality by choosing foreign banks and not domestic banks.

Referring to other variables, all models show the coefficient on RPT is significant and negative, which is consistent with Bailey et al. (2011) and Huang et al. (2012). This result indicates that the negative effect of loan announcements is stronger for firms involved with more tunnelling activities. The coefficient on MKT is negative and significant for all models, suggesting that investors react more negatively to larger firms. LOANSIZE is positive and marginally significant. None of the other control variables are significant.

Table 9

Cumulative Abnormal Returns (CARs): Multivariate regression analysis

	(1)	(2)	(3)	(4)	(5)
EM	-0.0626***	-0.0583***	-0.0795***	-0.1423***	-0.1042***
	(0.0205)	(0.0213)	(0.0249)	(0.0274)	(0.0309)
ROA		0.1131**	0.0258	0.0168	0.0366
		(0.0489)	(0.0620)	(0.0607)	(0.0615)
RPT		-0.1374***	-0.2224***	-0.2340***	-0.2052***
		(0.0390)	(0.0457)	(0.0447)	(0.0456)
MKT		-0.0081***	-0.0129***	-0.0121***	-0.0137***
		(0.0021)	(0.0026)	(0.0026)	(0.0026)
LAR_RIGHT		-0.0034	-0.0016	-0.0039	-0.0025
		(0.0041)	(0.0048)	(0.0047)	(0.0047)
SOE		0.0046	-0.0012	-0.0022	0.0016
		(0.0045)	(0.0052)	(0.0051)	(0.0070)
Tangibility		0.0125	-0.0017	0.0022	-0.0019
		(0.0138)	(0.0159)	(0.0155)	(0.0157)
ROA_UP		0.0060	-0.0031	-0.0028	-0.0017
		(0.0044)	(0.0052)	(0.0051)	(0.0052)
LOANSIZE			0.0039*	0.0036*	0.0046**
			(0.0021)	(0.0021)	(0.0021)
TERM			0.0006	0.0003	0.0002
			(0.0011)	(0.0011)	(0.0011)
FB			0.0405***	-0.0074	0.0403***
			(0.0078)	(0.0123)	(0.0077)
FB×EM				0.3552***	
				(0.0716)	
SOE×EM					-0.0359
					(0.0450)
Constant	0.0005	0.1048***	0.1447***	0.1448***	0.1437***
	(0.0028)	(0.0344)	(0.0502)	(0.0491)	(0.0497)
Adjusted R2	0.0120	0.0938	0.1759	0.2135	0.1932
N	770	770	547	547	547

The dependent variable is CAR [-1, 4]. Definitions of other variables are listed in Appendix. Sample size decreases as data for some firms' financial information and loan characteristics are unavailable. T-statistics are in parentheses, while ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

Chapter 5: Additional tests

5.1 Bias in earnings management

It is possible that my results do not hold because of bias in earnings management measure. First, the modified Jones model may overestimate the level of earnings management. For this reason, I employ the Dechow and Dichev (2002)[1] model and repeat my analysis of bank lending decisions to mitigate this concern. The results of the regressions are reported in Table 10, which are consistent with my previous results. Second, Shan et al. (2013) find that unexpected accruals can be biased for firms with large external financing cash flows. This could lead to misjudgment of firms' earnings management behavior and cause my results biased. To address this, I employ a model controlling for the effect of external financing on unexpected accruals[2] and repeat the previous analysis. Results of the regressions are reported in Table 11 which are consistent with my previous results.

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[1] Dechow and Dichev (2002) model is as follows,

$$\frac{TA_{it}}{Asset_{it-1}} = \beta_0 + \beta_1 \frac{\Delta Rev_{it}}{Asset_{it-1}} + \beta_2 \frac{PPE_{it}}{Asset_{it-1}} + \beta_3 \frac{CFO_{it-1}}{Asset_{it-1}} + \beta_4 \frac{CFO_{it}}{Asset_{it-1}} + \beta_5 \frac{CFO_{it+1}}{Asset_{it-1}}$$

where TA_{it} is total accruals in year t, calculated as [change in current assets − change in current liabilities − change in cash − change in debt in current liabilities − depreciation and amortization expense], $Asset_{it-1}$ is one-year lagged total assets, ΔRev_{it} is change in revenue in year t, PPE_{it} is property, plant, and equipment, CFO_{it-1}, CFO_{it} and CFO_{it+1} are past, present, and future cash flow, *i, t* are firm and year index, respectively.

[2] Following Shan et al. (2013), we employ the model as follows:

$$\frac{TA_{it}}{Asset_{it-1}} = \beta_0 \frac{1}{Asset_{it-1}} + \beta_1 \frac{\Delta Rev_{it} - \Delta AR_{it}}{Asset_{it-1}} + \beta_2 \frac{PPE_{it}}{Asset_{it-1}} + \beta_3 \frac{XFIN_{it}}{Asset_{it-1}}$$

where $XFIN_{it}$ is net external financing, defined as the sum of net debt financing and net equity financing in year t, other variables are defined as in Eq. (2).

Table 10
Reported firm performance, unmanaged performance and bank loan size when firms' earnings management is measured utilizing the Dechow and Dichev (2002) model.

Panel A: Reported firm performance, unmanaged performance and bank loan size

	Full Sample		SOEs		Non-SOEs	
	(1)	(2)	(3)	(4)	(5)	(6)
Reported ROA	**0.175***		**0.206***		**0.185***	
	(12.53)		**(9.25)**		**(11.44)**	
Unmanaged ROA		**-0.000**		**-0.297***		**0.173***
		(-0.78)		**(-3.21)**		**(7.56)**
Adjusted R^2	0.034	0.063	0.029	0.006	0.038	0.022
N	16583	16583	9360	9360	7096	7096

Panel B: Reported firm performance, unmanaged performance and SBs' loan size

Reported ROA	**0.266***		**-0.004**		**0.264***	
	(2.59)		**(-0.03)**		**(3.11)**	
Unmanaged ROA		**0.422**		**4.554**		**0.252****
		(0.23)		**(0.67)**		**(2.58)**
Adjusted R^2	0.110	0.008	0.088	0.016	0.304	0.295
N	603	603	357	357	246	246

Panel C: Reported firm performance, unmanaged performance and FBs' loan size

Reported ROA	**0.225***		**0.147****		**0.216***	
	(4.68)		**(2.03)**		**(4.96)**	

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	(1)	(2)	(3)	(4)	(5)	(6)
Unmanaged ROA		**0.091***		**0.082***		**0.115***
		(2.66)		**(1.72)**		**(2.72)**
Adjusted R^2	0.260	0.274	0.199	0.191	0.628	0.564
N	226	226	123	123	103	103

Panel D: Reported firm performance, unmanaged performance and SMBs' loan size

	(1)	(2)	(3)	(4)	(5)	(6)
Reported ROA	**0.052***		**0.048***		**0.061***	
	(3.76)		**(4.58)**		**(3.02)**	
Unmanaged ROA		-0.011		0.012		-0.048
		(-0.1)		(0.14)		(-0.45)
Adjusted R^2	0.194	0.145	0.096	0.168	0.217	0.252
N	433	433	257	257	174	174

The dependent variable, bank lending decisions, is measured as the change in the ratio of bank loans to total assets at current year. Firms' loan balance from different types of banks is disclosed in the note to financial statements. Definitions of other variables are listed in Appendix. T-statistics are in parentheses, while ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 11
Reported firm performance, unmanaged performance and bank loan size when firms' earnings management is measured by a model which controls for the effect of external financing on unexpected accruals.

Panel A: Reported firm performance, unmanaged performance and bank loan size

	Full Sample		SOEs		Non-SOEs	
	(1)	(2)	(3)	(4)	(5)	(6)
Reported ROA	0.152***		0.156***		0.173***	
	(9.62)		(6.17)		(9.73)	
Unmanaged ROA		0.007		0.003		0.055***
		(0.60)		(0.19)		(3.38)
Adjusted R^2	0.038	0.032	0.039	0.035	0.031	0.018
N	14260	14260	7960	7960	6149	6149

Panel B: Reported firm performance, unmanaged performance and SBs' loan size

Reported ROA	0.302***		-0.013		0.231***	
	(2.80)		(-0.09)		(2.88)	
Unmanaged ROA		0.981		0.044		0.236**
		(0.51)		(0.50)		(2.53)
Adjusted R^2	0.149	-0.019	0.057	0.058	0.394	0.389
N	593	593	351	351	242	242

Panel C: Reported firm performance, unmanaged performance and FBs' loan size

Reported ROA	0.171***		**0.129****		0.128**	
	(4.13)		**(2.03)**		(2.21)	
Unmanaged ROA		**0.089****		**0.155****		0.075**
		(3.27)		**(2.55)**		**(2.24)**
Adjusted R^2	0.089	0.097	0.040	0.031	0.177	0.145

N	226	226	123	123	103	103

Panel D: Reported firm performance, unmanaged performance and SMBs' loan size

Reported ROA	**0.092***			**0.029***		**0.076***	
	(4.74)			**(5.63)**		**(6.28)**	
Unmanaged ROA		-0.011		**-0.076***		-0.048
		(-0.16)		**(-1.72)**		(-0.45)
Adjusted R^2	0.111	0.109	0.035	0.074	0.189	0.146
N	430	430	249	249	174	174

The dependent variable, bank lending decisions, is measured as the change in the ratio of bank loans to total assets at current year. Firms' loan balance from different types of banks is disclosed in the note to financial statements. Definitions of other variables are listed in Appendix. T-statistics are in parentheses, while ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectivel

5.2 Endogeneity issue

My findings that bank lending decisions vary across borrowers with different ownership structure are consistent with the results of market reaction to bank loan announcements. Apart from this robustness check, I also conduct a firm fixed-effects regression to further deal with the endogeneity issue. First, I consider that bank lending decisions may be impacted by unobserved firm characteristics. Specifically, firms might have other characteristics unconsidered in our model that influence both firm performance and loan finance. Hence, I apply the firm fixed-effects regression to control for unobservable time-invariant firm-specific effects. The results of the regressions are reported in Table 12. After controlling for firm fixed effects, the positive relationship between bank loan size and firm reported performance is still merely cosmetic for both the full sample and SOE subsample.

Table 12
Bank loan size and firm performance: Firm fixed effects regression

	Full sample		SOE		Non-SOE	
	(1)	(2)	(3)	(4)	(5)	(6)
Reported ROA	**0.095*****		**0.094*****		**0.163*****	
	(6.26)		**(3.63)**		**(9.16)**	
Unmanaged ROA		**-0.027*****		**-0.047*****		**0.057*****
		(-2.75)		**(-3.38)**		**(3.81)**

Results of other variables, which include Size, Tangibility, Leverage, Board, Indep, PC, BT and year and industry fixed effects, are not reported.   Definitions of variables are listed in Appendix.

Constant	0.615***	0.609***	0.946***	0.953***	0.780***	0.741***
	(15.90)	(15.71)	(17.37)	(17.46)	(11.65)	(10.98)
Adjusted R2	0.022	0.020	0.012	0.012	-0.106	-0.119
N	16622	16622	9372	9372	7096	7096

The dependent variable, bank lending decisions, is measured as the change in the ratio of bank loans to total assets at current year. I split the full sample of firms into SOEs and non-SOEs and repeat the same regressions as for the full sample. Firm fixed effect regression with standard errors is adjusted for heteroskedasticity and clustering within firms. T-statistics are in parentheses, while ***, **, and * indicate significance levels at the 1%, 5% and 10%, respectively.

5.3 Additional robustness test

Finally, I implement an additional robustness test by examining bank lending practice after the China's economic stimulus package. In 2008, due to the global financial crisis, China encountered a sharp contraction in exports and foreign direct investment and launched an economic stimulus package to minimize the impact (Hsu et al., 2015). The economic stimulus package aims to increase the loan supply and encouraging investment by firms, which is more pronounced in SOEs (Burdekin and Weidenmier, 2015). Moreover, because of the policies that eased provision of credit, the lending expanded rapidly, and bank loan officers were not liable for loans they granted if the loans were made in support of the stimulus package (Naughton, 2009). Hence, this event represents us with an opportunity to test whether bank lending decisions worsen in the post-financial crisis period. During the economic stimulus package period, the relationship between bank loan size and firm reported performance will be weakened, which is more pronounced in SOEs. Liu et al. (2018) find that the economic stimulus packages cause weaker relationships between bank loans and firm performance and SOEs receiving more loans than non-SOEs.

To test the impact of the shock, I include *Post,* which is a dummy variable equal to 1 for firm-year observations during the economic stimulus package period between 2009 and 2010 and 0 otherwise and repeat the previous analysis of bank lending decisions. The results are reported in Table 13. I observe that the interaction term *Post*Reported ROA* is significantly negative for the SOE subsample in column 3, indicating that banks overlook firms' reported performance when lending decisions are being made. I also observe that *Post*Reported ROA* is insignificant, and the interaction term *Post*Unmanaged ROA* is negative and significant for the non-SOE subsample in columns

5 and 6, suggesting that banks extend more credit to firms exhibiting poor unmanaged performance during the economic stimulus package period. In sum, these robustness tests confirm my main finding that the positive relationship between bank loan size and firms' reported performance is cosmetic. Furthermore, the relationship between bank loan size and firms' unmanaged performance reflects ineffectiveness of banks' monitoring of lending practices.

Table 13

Additional robustness test: The impact of stimulus package on the relationship between bank loan size and firm performance

	Full sample		SOE		Non-SOE	
	(1)	(2)	(3)	(4)	(5)	(6)
Post	0.011***	0.010***	0.013***	0.008**	0.008*	0.012***
	(3.71)	(3.79)	(3.51)	(2.39)	(1.67)	(2.64)
Post*Reported ROA	**-0.111****		**-0.214****		**-0.027**	
	(-2.48)		**(-3.22)**		**(-0.44)**	
Post*Unmanaged ROA		**-0.099****		**-0.049**		**-0.170****
		(-3.68)		(-1.31)		(-4.23)
Reported ROA	0.188***		0.239***		0.183***	
	(12.39)		(9.67)		(10.71)	
Unmanaged ROA		0.009		-0.006		0.074***
		(0.90)		(-0.39)		(4.82)

Results of other variables are not reported, which includes Size, Tangibility, Leverage, Board, Indep, PC, BT and year and industry fixed effects. Definitions of variables are listed in Appendix.

Constant	-0.053***	-0.098***	-0.017	-0.062***	-0.072**	-0.139***
	(-2.82)	(-5.23)	(-0.71)	(-2.64)	(-1.99)	(-3.85)
r2	0.027	0.018	0.020	0.010	0.024	0.010
N	16622	16622	9372	9372	7096	7096

The dependent variable, bank lending decisions is measured as the change in the ratio of bank loans to total assets at current year. I split the full sample of firms into SOEs and non-SOEs and repeat the same regressions as for the full sample. T-statistics are in parentheses, while ***, **, and * indicate significance levels at the 1%, 5% and 10%, respectively.

Chapter 6: Conclusion

6.1 Firms' earnings management behaviour and bank lending and announcement effects

This paper explores bank certification value from the perspective of bank lending decisions by considering the effects of earnings management. Although a number of studies documents that Chinese banks extend loans based on borrowers' profitability and indicates they make efficient lending decisions, negative bank loan announcement effects are still prevalent in China. Hence, I posit that banks may not always implement effective monitoring through lending, and it should matter for bank loan announcement effects.

Consistent with my hypotheses, I find that bank loan size is positively associated with firm reported profitability, but has no relationship with firms' unmanaged profitability Specifically, this case appears when state-owned banks lend to SOEs. Moreover, in alignment with the notion that banks' unique certification value is based on the effectiveness of bank monitoring, my analysis reveals that negative bank loan announcement occurs when there is a disconnection between bank loan size and firm reported profitability. These findings suggest that the extent to which banks carry out effective monitoring through lending greatly affect the certification value on borrowers' quality in the perspective of investors in the stock markets.

Overall, there are two main suggestions that can be drawn from findings of this study. The first suggestion is that banks do not always exert effective monitoring

through lending. The second suggestion is that banks effective monitoring efforts in lending decisions relate to bank certification role to stock markets. My study contributes to the existing literature on effects of bank loan announcement and bank lending decisions and helps us to better comprehend certain puzzling factors in the Chinese banking sector. This study is of great interest to academics, practitioners and regulators, and contributes to issues ranging from bolstering the efficiency of bank loan allocation to reshaping banking regulations, such as the privatization of banking in China.

6.2 Implications of this study

My findings offer important implications in several ways. First, in emerging markets where investor protection is weak, earnings management is prevalent and state ownership of bank and firm is prominent, the positive relationship between firm performance and bank loan size is merely cosmetic in some case and banks do not always exert efforts to screen borrowing firms. Hence, this finding emphasizes the importance of banks' real monitoring efforts in quantitative measures in credit evaluation process and call for actions to strengthen quantitative measures. Furthermore, my evidence shows that bank lending decisions are likely to vary according to bank-firm ownership relationships. This suggests that some policies should be formed ad hoc for specific bank-firm ownership relationship. Finally, this study implies that without real screening efforts, approval of bank loan could amplify investors uncertainty over borrowers.

6.3 Limitations of this study

One limitation of this study was the sample of bank loan announcements. Although disclosure of bank loan information is mandatory for Chinese listed firms, firms did not

always specify whether the loan announcements are validated as signed loan contracts. Accordingly, this study excludes those loan announcements that cannot be determined as signed contracts. Hence, my sample of bank loan announcements was relatively small. With the development of the Chinese capital market and information disclosure, the information on bank loan announcements in listed firms could be more complete. A future study exploring bank loan announcement effects could benefit from a larger sample size. Moreover, I admit that the impact of endogeneity cannot be completely ruled out. Hence, readers should be cautious when applying the results of this research.

Appendix
Definitions of variables

Variables	Definition
ΔDEBT	The change in bank loans to total assets at current year.
Reported ROA	One-year lagged performance in the rate of return on assets.
%DA	One-year lagged discretionary accruals as a fraction of assets.
Unmanaged ROA	A measure of a firm's unmanaged performance, calculated as Reported ROA-%DA
Size	Firm size, which is measured as one-year lagged natural log of total assets.
Tangibility	One-year lagged net fixed assets divided by total assets.
Leverage	One-year lagged total liabilities divided by total assets.
Board	The natural log of total number of directors on the boards at current year.
Indep	The number of independent directors to total number of directors on the boards.
Political	A dummy variable equal to one if the CEO or director on the boards has a government background at current year and zero otherwise.
Banker	A dummy variable equal to one if the CEO or director on boards has bank background at current year and zero otherwise.
EM	The absolute value of a borrowing firm's discretionary accrual to total assets of the year preceding the loan announcement.
ROA_UP	A dummy variable equal to one if a borrowing firm's ROA in announcement year increased compared with the previous year.
RPT	Other receivables to total assets of the year preceding the loan announcement.
LA_RIGHT	A dummy variable if the percentage of shares outstanding owned by the largest shareholder is greater than the median value.
MKT	The natural logarithm of market value of borrowing firms' tradable shares.
SOE	A dummy variable equal to one if a loan is borrowed by SOEs.
LOANSIZE	The natural logarithm of a bank loan.
TERM	The maturity of a bank loan.
FB	A dummy variable equal to one if a loan is granted by foreign banks.
FB×EM	An interaction term computed by FB multiplying by EM.

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