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Do bank loans still convey information to investors? Evidence from the split share structure reform in China

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ABSTRACT

Bank loans can convey information about the borrowing firms that have proper corporate governance systems. Using a sample of bank loan announcements in China, we find that the market reaction is positive after the split share structure reform in 2005, which aligns the interests of large shareholders and minority shareholders, government and public investors, and alleviates their tunneling incentives. We also find that this effect is more pronounced for private firms as the reform mainly enhances corporate governance for private firms. The signaling role of bank loans is less pronounced for firms with less severe information asymmetry after the reform, e.g. higher shareholdings of mutual funds and higher proportion of independent directors. Related party transactions decrease when they obtain bank loans after the reform, which reflects the alleviation of tunneling after the reform.

1. Introduction

Banks provide a substantial proportion of financing for firms in most economies. Obtaining bank loans are often considered as a good signal about the borrowing firms for uninformed investors. Banks can invest in information acquisition of the borrowing firms when processing loan applications, which gives them an information advantage over uninformed investors. Thus, bank loan announcements often bring positive abnormal returns in the stock market in the industrial economies (James, 1987).

However, banks may not be functioning that efficiently in countries like China, where the financial and legal systems are not well developed. State-owned enterprises (SOEs) often suffer from policy burdens and soft budget problems in the country (Dong and Putterman, 2003; Lin and Li, 2008). Local governments have incentives to boost SOEs in order to enhance local employment and economic growth. As a result, bank loans, in particular those granted by state-owned banks, often end up in under-performing SOEs, while they could further continue to perform even worse *ex post* (Bailey et al., 2011). What's more, obtaining bank loans may not be a good signal even for private firms in the context of poor corporate governance. Due to the poorly developed corporate governance and investor protection system, private firms may also misuse bank loans for tunneling activities (Jiang et al., 2010). Thus, bank loan announcements may not be a good signal for the borrowing firms in developing countries such as China (Bailey et al., 2011; Huang et al., 2012).

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Using a sample of bank loans issued to Chinese listed firms during 2001–2015, we find that bank loan announcements have positive market reactions after the split share structure reform in China, while there was no significant market reaction before that. The split share structure reform enhances the corporate governance, which curtails the tunneling behaviors of listed firms and thus enhances the efficiency of bank loans in the country. After the reform, the information content of bank loans is lower for firms with a higher ratio of institutional ownership and independent directors, which were able to alleviate the information asymmetry of these firms initially. These findings show that a proper corporate governance system is essential for the efficient functioning of the banking system in an emerging economy like China. In contrast with Allen et al. (2005), Chinese banking sector may support a high economic growth if the corporate governance system can be designed in a proper way.

We contribute to the literature in three aspects. Firstly, we provide novel evidence on the regulatory reform on the bank efficiency using the loan level data. Hsiao et al. (2015) shows the impact of the financial reform by evaluating the efficiency of Chinese banks, while they employ bank level data during 2007–2012. Secondly, we point to the impact of corporate governance of borrowing firms on the efficiency of banks. Ariff and Can (2008) examines the impact of bank characteristics on the bank efficiency using a sample of Chinese banks during 1995–2004, while our paper examines the role of corporate governance of borrowing firms on top of bank characteristics. Thirdly, our paper provides a proper evaluation of a key regulatory reform in China using loan level data, i.e. the split share reform, which has reformed the capital market in China nowadays. Liang et al. (2020) shows a higher stock crash risk of SOEs after the share split reform, while our paper complements the literature on the impact of this reform with micro-data. Our paper casts light on the efficiency of the banks and borrowing firms after the split share reform in China.

The paper proceeds as follows. Section 2 introduces the banking sector and split share structure reform in China. Section 3 is the literature review and hypotheses. Section 4 introduces data and methodology. Section 5 shows event study results. Section 6 examines the determinants of CARs. Section 7 shows the change of related party transactions before and after the reform. Section 8 concludes.

2. Chinese banking sector and split share structure reform

2.1. Chinese banking sector

The banking sector in China is dominated by the “big five” state-owned banks that account for more than one half of the total banking assets in the country (Barth et al., 2013; Lei, 2014). In addition, there are three policy banks, which often implement the policy goals of the government. Besides, there is a group of eleven joint equity banks, which mainly operate in certain regions of China (Chong et al., 2013). These banks are partially owned by local governments or state-owned entities, while they also have private shareholders. Generally speaking, joint equity banks are more efficient than the “big five” state-owned banks, although they also suffer from the intervention of the central and the local government in their loan decisions.

There is a large group of small local banks such as city commercial banks, rural commercial banks, urban credit cooperatives, rural credit cooperatives, village and town banks, and rural cooperative banks. These banks often operate in a single city/county and are partially owned by local governments.

Foreign banks have been active in China for decades (Ongena et al., 2015). There are hundreds of foreign banks with branches and offices in China, while the market share of foreign banks is still very low compared with domestic banks in the country. However, the potential competition from the entry of foreign banks is still a big concern for domestic banks in China.

The banking sector in China has witnessed a series of reforms since 1990s. Chen (2006) shows that the banking sector reform is a part of the state-owned enterprises reform in China. With China entering the World Trade Organization (WTO) in 2001, the banking sector reform has been pushed forward to comply with the WTO rules, i.e. the implementation of the Basel requirements on capital ratios. The “big five” banks and joint equity banks have been publicly listed in the stock market one by one, and gradually adopted a modern banking model.

2.2. Split share structure reform

A majority of the stocks of listed firms in China were not tradable before 2005, i.e. more than two thirds, while most non-tradable shareholders are state and legal persons'. It's mainly a legacy of the privatization of state-owned enterprises in China in the late 1990s and early 2000, which ended up in the split share structure in the stock market. Tradable and non-tradable shares used to have the same cash flow and voting rights, while they had different holding costs and liquidity (see Yang et al. (2015) and Liao et al. (2014) for a review on the history of non-tradable shares in China). Large shareholders with non-tradable shares were not sensitive to the stock price, and thus not aligned with the interests of minority shareholders, and often engaged in the tunneling of corporate resources such as bank loans through related party transactions.

China Securities Regulatory Commission initiated the split share structure reform in April 2005 in order to align the interests of (non-tradable) block holders and minority shareholders, which is a precursor of the second privatization in China (Liao et al., 2014). A majority of listed firms with non-tradable shares complied with the reform during 2005–2007, (i.e. 97% as documented in Li et al. (2011)), while the remaining firms completed the process until 2015. We identify the reform time for each firm individually, and Appendix 1 shows the sample distribution of the reform year for these firms.

Non-tradable shares are converted into tradable status, while non-tradable shareholders compensate tradable shareholders (e.g. in terms of stocks and cash) due to a negative impact on share price caused by a higher supply of shares tradable in the market. Thus, all shareholders have the same incentive to monitor the listed firms. As a result, the split share structure reform has alleviated the conflicts of interests between large shareholders and minority shareholders, and also the interests of government and public investors (Liao

et al., 2014), which can further enhance an efficient use of bank loans. The split share structure reform has enhanced the corporate governance of listed firms, and thus the banking sector at large. We aim to investigate whether loan announcements can convey positive information to uninformed investors after the split share structure reform.

The Chinese government has kept liberalizing its financial system during the past few decades. Besides the share split reform, we have witnessed major reforms such as the entry into the WTO, the IPOs of state-owned banks, and the deregulation of bank branching. However, the reform has slowed down recently, especially after the new leadership takes its position since 2012. Thus, we focus on a sample period of 2001–2015 in order to evaluate the impact of the share split reform.

3. Literature review and hypotheses development

Banks often act as insiders and can alleviate information asymmetry especially for small and medium-sized enterprises (Boot, 2000). As a result, investors perceive the receipt of bank loans as a good signal for the borrower due to banks' information advantage, which leads to positive abnormal returns to bank loan announcements (James, 1987). Not only banks, but also non-bank financial institutions can act as insiders in financial markets. Billett et al. (1995) find that loans from non-bank financial institutions are also associated with positive CARs.

Bank loan announcements often bring positive abnormal returns for listed firms in industrial economies. Mikkelsen and Partch (1986) show that the market reaction to straight debt is positive and higher than the offerings of common stock and convertible debt. James (1987) find that bank loan announcements lead to positive two days cumulative abnormal returns of 2 percentage points while other types of corporate financing experience negative market reactions. Lummer and McConnell (1989) find that there is a positive abnormal return if the loan contract is revised in a favorable way, and a negative abnormal return otherwise.

Besides, the abnormal returns are higher for borrowers with more severe information asymmetries (Maskara and Mullineaux, 2011). Slovin et al. (1992) find positive abnormal returns only for small and less prestigious firms. Best and Zhang (1993) find that borrowers with lower accounting earnings have higher market reactions to bank loan announcements. Billett et al. (1995) find that lenders with higher credit rating are associated with higher abnormal returns to bank loan announcements. However, Fields et al. (2006) find that bank loans bring positive market reactions in the 1970–1980s, while there are no significant market reactions afterwards, except for poorly performing small firms.

Chinese banks, however, are essentially different from US banks for their notorious inefficiency in the past few decades. Banks often extend loans to SOEs, while private firms with political connections can also obtain loans with favorable terms. As a result, obtaining bank loans may not necessarily be a good signal for the borrowing firms in China due to political connections, tunneling and expropriation concerns (Bailey et al., 2011). We also note that banks may not play a proper role in screening or monitoring borrowers in emerging economies such as China with poorly developed financial and legal systems (Allen et al., 2012).

Firms may suffer from the so-called tunneling problem in developing countries (Friedman et al., 2003; Gao and Kling, 2008). Jiang et al. (2010) find that controlling shareholders of Chinese listed firms can expropriate resources through inter-corporate loans from these firms. However, these inter-corporate loans to controlling shareholders have been gradually banned until 2006, so the tunneling by controlling shareholders has become less severe afterwards (Jiang et al., 2010). Still, controlling shareholders can tunnel the resources away from listed firms through related party transactions. For example, Cheung et al. (2006) show that controlling shareholders can expropriate listed firms in Hong Kong through related party transactions.

However, the split share structure reform has changed the situation substantially in the Chinese stock market. The split share structure reform aligns the interests of controlling shareholders and minority shareholders, and the government and public investors (Liao et al., 2014), which alleviates the tunneling and expropriation concerns by the controlling shareholders. Thus, it can prevent these Chinese listed firms from misusing bank loans. As the inefficiency of bank loans documented by Bailey et al. (2011) may be alleviated, it can end up in a positive market reaction of bank loan announcements. Put it differently, we expect that banks can play a proper screening and monitoring role as their counterparties in industrial economies, where bank loan announcements have been documented to possess positive market reactions. Thus, we propose hypothesis 1 as follows:

Hypothesis 1. Cumulative abnormal returns (CARs) are positive after the split share structure reform.

Controlling shareholders can tunnel corporate resources and expropriate minority shareholders, which can lead to a mis-use of bank loans by the borrowers. After the split share structure reform, large shareholders' interests are more aligned with those of minority shareholders, which can alleviate the tunneling behavior. Liao et al. (2014) also show that the performance of SOEs indeed improves more than non-SOEs after the split share structure reform, which is caused by the government agents' supportive activities. However, it does not enhance the corporate governance of SOEs. In contrast, corporate governance of private firms has been enhanced substantially after the split share structure reform, which can facilitate the screening and monitoring of banks. Put it differently, the split share reform mainly enhances corporate governance of private firms, which can lead to a more efficient use of bank loans and less tunneling behavior. Thus, market reactions of bank loan announcements are higher for private firms than SOEs. In addition, Liang et al. (2020) shows that SOEs have a higher crash risk of stock price than private firms after the split share reform in China. Thus, investors may react more mildly to the loan announcements if they account for this higher crash risk.

However, political influence might be essential for the performance of banks. Hung et al. (2017) show that politically connected banks have higher performance due to a better access to high yield assets and higher likelihood of bail out in case of distress. However, the rent seeking in this process makes the lending behavior inefficient to some extent. Also, banks are fully or partially controlled by the central or local government in China, which suffer from the government intervention in the lending decisions. Berger et al. (2009) document that big four banks are less efficient than foreign banks as they experience the most the political influence and mainly lend to

state-owned firms. After the split share reform, the capital market becomes more efficient, which undermines the benefits of political influence for firms (e.g. better access to high yield assets) while the costs increase accordingly (e.g. rent seeking behavior). In a word, bank loans to state-owned firms are less efficient than those to private firms after the split share reform due to a liberalization of the lending market.

Thus, we propose [hypothesis 2](#) as follows:

Hypothesis 2. After the split share structure reform, CARs are lower for state-owned firms than for private firms.

The signaling role of bank loans may be quite different across different types of borrowers. Firms with more severe information asymmetries may benefit proportionally more from loan announcements, e.g. smaller firms ([Maskara and Mullineaux, 2011](#)). In addition, the information conveyed by loan announcements is more pronounced for firms with lower profitability ([Wansley et al., 1992](#); [Frankel and Li, 2004](#); [McLaughlin et al., 1998](#)). Furthermore, firms with better corporate governance typically use the funds more efficiently ([Gao and Kling, 2008](#)), which can lead to higher market reactions to the loan announcements. Specifically, firms with higher proportion of independent directors have better performance *ex post* bank loan announcements ([Claessens et al., 2000](#)).

Institutional investors can screen listed firms and mitigate the information asymmetry, and thus undermine the information content of bank loan announcements. In addition, independent directors can make the firm more transparent through releasing more reliable information to uninformed investors, which can also undermine the signaling role of bank loan announcements. However, neither institutional investors nor independent directors can access reliable insider information, monitor the use of bank loans or curtail the tunneling behavior in the context of poor corporate governance before the split share structure reform. The split share structure reform has alleviated large shareholders' incentives to tunnel corporate resources, which makes them less likely to hide information from institutional investors and independent directors. Put it differently, after the split share structure reform, institutional investors and independent directors can make firms more transparent for uninformed investors, alleviate information asymmetry and undermine the signaling role of bank loan announcements. We propose [hypothesis 3](#) as follows:

Hypothesis 3. After the split share structure reform, CARs are lower for firms with better corporate governance, e.g. higher proportion of independent directors and institutional investors, etc.

We will test the above three hypotheses in the following sections using an event study method by investigating the bank loan announcements data for Chinese listed firms. The following sections will present the data, methodology and empirical results to reveal the underlying mechanisms for the market reactions.

4. Data and methodology

We use all bank loan announcements for Chinese listed firms during 2001–2015, which are retrieved from CSMAR (China Stock Market and Accounting Research) database. Chinese listed firms are required by regulatory authorities to make announcements when they file applications for bank loans, or when they obtain big loans. Generally speaking, firms have already coordinated with banks before they announce their intent for loan applications, while they rarely fail to obtain these loans after announcing the loan applications. Thus, the information conveyed by the announcements of loan applications can be treated as comparable with actual loans. We include both loan applications and the actual loans in our event study, while a majority of the announcements is for the loan applications. In order to avoid confounding news, we exclude announcements on the date for the release of annual reports. [Table 1](#) shows the sample distribution for all announcements and actual loans over the years 2001–2015.

We use a standard event study method to examine the bank loan announcements, i.e. a market model ([James, 1987](#)) to calculate abnormal returns. The market return is measured by the A shares stock market index in China (i.e. domestic shares held by domestic investors in China, equally weighted index). We also try value-weighted market return as an alternative, but the results are

Table 1
Distribution of loan announcements and listed firms over 2001–2015.

Year	# of loan announcement	# of actual loans	# of listed firms with loan announcement	# of listed firms
2001	161	73	108	1130
2002	350	174	199	1199
2003	303	158	189	1259
2004	218	131	135	1349
2005	60	36	54	1355
2006	30	10	24	1398
2007	305	42	191	1507
2008	809	135	403	1581
2009	802	129	425	1678
2010	709	80	376	2041
2011	734	59	389	2320
2012	1321	137	706	2472
2013	1922	159	896	2468
2014	2216	175	976	2592
2015	948	80	605	2808
Total	10,888	1578	5676	–

qualitatively similar and omitted for brevity. In order to predict the expected return, we run regressions over the estimation window of $[-120, -21]$. The abnormal return is calculated as follows:

$$\text{Abnormal return}_{it} = r_{it} - (a_i + b_i r_{mt}) \quad (1)$$

where r_{it} is the daily individual stock return, r_{mt} is the daily market return. a_i and b_i are estimated from a market model ranging from 120 to 21 days before the bank loan announcement dates. The average abnormal return on date t for N bank loan announcements is calculated as follows:

$$\text{Average abnormal return}_t = \frac{1}{N} \sum_{i=1}^N \text{Abnormal return}_{it} \quad (2)$$

And the cumulative abnormal return (CAR) for N bank loan announcements is calculated over the event window $[t_1, t_2]$:

$$\text{CAR}[t_1, t_2] = \frac{1}{N} \sum_{i=1}^N \sum_{t=t_1}^{t_2} \text{Average abnormal return}_{it} \quad (3)$$

Following MacKinlay (1997), we use a t -test for the significance of CARs:

$$t\text{-stat} = \text{CAR}[t_1, t_2] / \sqrt{\text{var}(\text{CAR}[t_1, t_2])} \quad (4)$$

The CARs are also linked to the firm characteristics. Firms with smaller size, lower leverage, and lower profitability face more severe information asymmetries (Gomes and Phillips, 2012; Frankel and Li, 2004; McLaughlin et al., 1998; Leary and Roberts, 2010). Thus, we include firm size, leverage and profitability when explaining CARs. Besides, we include the percentage of shareholdings by mutual funds and the proportion of independent directors to measure the information asymmetry. Finally, we include the state ownership to measure the efficiency of the use of bank loans (Bailey et al., 2011). The variable definitions are listed in Appendix 2.

5. Event study of bank loan announcements

Fig. 1 shows the CARs for the event window $[-10, 10]$. The CARs increase substantially on the event day. The loan announcements indeed convey positive information to the uninformed investors. Fig. 2 shows the average abnormal returns in the event window $[-10, 10]$. The average abnormal returns increase suddenly on the event date, which indicate a positive market reaction. In sum, loan announcements bring positive abnormal returns on the event date.

Table 2 shows CARs for various event windows around bank loan announcements, i.e. all announcements and actual loans. For the sample period 2001–2015, average $\text{CAR}[-1, 0]$ is 0.24 percentage points and significant at the 1% level, which is qualitatively similar for other event windows. We find qualitatively similar results when we restrict the sample to actual bank loans, although the number of observations is much smaller than the full sample of all announcements.

However, we find heterogeneous patterns for CARs before and after the split share structure reform. $\text{CAR}[-1, 0]$ is 0.27 percentage points and significant at the 1% level after the reform, while it is -0.02 percentage points and insignificant before the reform. The negative market reactions before the reform are consistent with Bailey et al. (2011), which is due to the inefficiency of lending to poorly performing SOEs. Bailey et al. (2011) find that $\text{CAR}[-1, 1]$ is -0.39% for a sample of more than 200 bank loan announcements during 1999–2004 in China. The difference of CARs between before and after the split share structure reform is significant at the 1% level, which shows that bank loans indeed become more efficient after split share structure reform. We also find qualitatively similar

Fig. 1. Average cumulative abnormal returns in the event window $[-10, 10]$.

Fig. 2. Average abnormal returns in the event window $[-10, 10]$.

Table 2
Cumulative abnormal returns (CARs).

Time	Full sample			Actual loan		
	CARs	Value	# obs.	CARs	Value	# obs.
2001–2015	CAR[−1,0]	0.0024***	10,888	0.0019**	2.0561	1578
	CAR[−1,1]	0.0037***	10,888	0.0031***	2.6202	1578
	CAR[−2,2]	0.0046***	10,888	0.0035**	2.2574	1578
	CAR[−3,3]	0.0047***	10,888	0.0049***	2.6299	1578
	CAR[−4,4]	0.0050***	10,888	0.0054**	2.4592	1578
After reform	CAR[−1,0]	0.0027***	9826	0.0031**	2.3591	1016
	CAR[−1,1]	0.0042***	9826	0.0050***	2.9057	1016
	CAR[−2,2]	0.0052***	9826	0.0055**	2.4388	1016
	CAR[−3,3]	0.0053***	9826	0.0077***	2.8588	1016
	CAR[−4,4]	0.0057***	9826	0.0093***	2.9197	1016
Before reform	CAR[−1,0]	−0.0002	1062	−0.0003	−0.3148	562
	CAR[−1,1]	−0.0011	1062	−0.0003	−0.2206	562
	CAR[−2,2]	−0.0011	1062	−0.0000	−0.0152	562
	CAR[−3,3]	−0.0006	1062	−0.0002	−0.1299	562
	CAR[−4,4]	−0.0014	1062	−0.0017	−0.8043	562
Difference	CAR[−1,0]	0.0029**		0.0034*		
	CAR[−1,1]	0.0053***		0.0053**		
	CAR[−2,2]	0.0063***		0.0055*		
	CAR[−3,3]	0.0059**		0.0079**		
	CAR[−4,4]	0.0071**		0.0110**		

Statistical significance * at 10%, ** at 5%, and *** at 1% level.

results for the subsample of announcements of actual bank loans, which further support that the announcements of loan applications and actual loans convey comparable information to the investors.

SOEs can easily obtain bank loans with more preferential terms than private firms, while bank loans can also easily be misused by SOEs. In order to examine the heterogeneity across SOEs and private firms, we split bank loan announcements into those extended to

Table 3
CAR[−1,1] by ownership.

Time	Ownership	CAR	Value	T-stat	# of obs.
After reform	State	CAR[−1,1]	0.0028***	3.52	4179
	Private	CAR[−1,1]	0.0052***	6.93	5633
	Difference	CAR[−1,1]	0.0024**	2.19	
Before reform	State	CAR[−1,1]	0.0014	0.48	166
	Private	CAR[−1,1]	−0.0016	−1.58	896
	Difference	CAR[−1,1]	−0.0029	−1.12	

State and private indicates an ultimate control right by the state and private entities respectively. Statistical significance * at 10%, ** at 5%, and *** at 1% level.

SOEs versus private firms. Table 3 tabulates the $CAR[-1,1]$ by SOEs versus private firms before and after the split share structure reform. $CAR[-1,1]$ is insignificant before the split share structure reform for either SOEs or private firms. However, it is 0.28 and 0.52 percentage points respectively for SOEs and private firms after the reform (statistically significant at the 1% level). The split share structure reform improves the use of bank loans for both SOEs and private firms, while the effect is more pronounced for private firms.

6. Determinants of CAR

The market reactions to bank loan announcements are quite different across different types of firms. We examine the difference of CARs before and after the split share structure reform by including a dummy variable for the reform year of each listed firm. We link the CARs to a set of firm characteristics. On the one hand, the market reaction is higher for firms with more severe information asymmetries, e.g. smaller firms, higher leverage, and lower profitability. We include firm size, leverage, and profitability to measure the information asymmetries associated with the borrowers. On the other hand, the corporate governance of borrowers may affect the efficiency of bank loans *ex post*. Thus, we include the state ownership to measure the efficient use of bank loans by the borrowers, and the shareholdings by mutual funds and the proportion of independent directors to measure the transparency of the borrowers for the uninformed investors. All variable definitions are in Appendix 2. We show summary statistics in Appendix 3, and correlation matrix in Appendix 4. The average $CAR[-4,4]$ is positive and statistically significant, while the median of $CAR[-4,4]$ is negative although statistically insignificant in a Wilcoxon signed-rank test (i.e. 46.6% of $CAR[-4,4]$ are positive). Thus, there are still negative market reactions to many bank loan announcements even after the split share structure reform (see the histogram of $CAR[-4,4]$ in Fig. 3), which reflects an existence of widespread inefficiency in the banking market. As a robustness check, we have excluded outliers through winsorizing the sample at the 95th and 5th percentiles, which yields qualitatively similar results (omitted for brevity and available upon request).

We run a regression of $CAR[-4, 4]$ on firm characteristics. Table 4 shows the regression of $CAR[-4, 4]$ on a set of borrower characteristics. Model (1) shows that $CAR[-4, 4]$ increases by 0.41 percentage points after the split share structure reform, which reflects a higher efficiency of bank loans *ex post*. Model (2) includes firm size, leverage and profitability, which yields similar results for the split share structure reform. Model (3), (4) and (5) includes state ownership, independent directors and shareholding by mutual funds respectively. State ownership is not significant on average. Firms with higher proportion of independent directors have lower CARs, which indicates that independent directors alleviate the information asymmetry for uninformed investors. Similarly, firms with higher shareholdings by mutual funds have lower CARs, indicating a lower informational content of loans for those firms. We also include loan terms as additional control variables in Model (6) such as loan amount, maturity, collateralization and state bank, while we yield qualitatively similar results with a higher R-squared, i.e. higher explanatory power with additional control variables. Model (7) further includes the interest rate and yields similar results, which leads to a higher R-squared although the number of observations drops a lot due to missing values.

The firm size is negative though imprecisely estimated (Gomes and Phillips, 2012). Smaller firms face more severe information asymmetries, which may end up in a higher market reaction. In addition, firms with lower profitability also benefit proportionally more from bank loan announcements (Frankel and Li, 2004). Obtaining bank loans may serve a good signal for poorly performing firms in reducing information asymmetry that ends up in higher market reactions. Furthermore, firms with higher leverage benefit proportionally more from bank loan announcements due to same reasoning. In sum, firms with more severe information asymmetries are associated with higher market reactions to bank loan announcements.

We examine the heterogeneous effect of the reform in Table 5 across firm characteristics on $CAR[-4, 4]$. Model (1) of Table 5 shows that the reform is positive and significant at the 1% level, while the interaction term of the reform and state ownership is negative and

Fig. 3. Histogram of $CAR[-4,4]$.

Table 4
Determinants of CAR[−4,4].

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Reform	0.0061*** (0.0017)	0.0079*** (0.0016)	0.0081*** (0.0017)	0.0200*** (0.0031)	0.0206*** (0.0032)	0.0225*** (0.0039)	0.0282** (0.0129)
State			−0.0007 (0.0020)	−0.0003 (0.0022)	−0.0004 (0.0022)	0.0048 (0.0031)	0.0069*** (0.0016)
Independent directors				−0.0178*** (0.0028)	−0.0175*** (0.0028)	−0.0195*** (0.0042)	−0.0106*** (0.0035)
Mutual fund					−0.0040*** (0.0010)	−0.0024 (0.0020)	−0.0014 (0.0046)
Size		−0.0017 (0.0015)	−0.0017 (0.0017)	−0.0014 (0.0018)	−0.0005 (0.0018)	−0.0059*** (0.0018)	−0.0132** (0.0053)
Leverage		−0.0194*** (0.0036)	−0.0191*** (0.0035)	−0.0145*** (0.0029)	−0.0151*** (0.0028)	−0.0231*** (0.0051)	−0.0130 (0.0160)
Profitability		−0.0757*** (0.0217)	−0.0761*** (0.0224)	−0.0683*** (0.0220)	−0.0595*** (0.0199)	−0.0798** (0.0366)	−0.2907*** (0.0314)
Loan amount						0.0015 (0.0011)	0.0029 (0.0027)
Maturity						0.0010 (0.0006)	−0.0012 (0.0017)
Collateral						0.0004 (0.0031)	0.0056 (0.0050)
State bank						−0.0025 (0.0018)	0.0041 (0.0051)
Interest rate							−0.0027 (0.0030)
Constant	−0.0059*** (0.0016)	0.0049*** (0.0016)	0.0050*** (0.0016)	0.0070*** (0.0017)	0.0081*** (0.0018)	−0.0132 (0.0167)	−0.0369 (0.0625)
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10,873	10,873	10,873	10,873	10,873	4911	786
R-squared	0.0026	0.0060	0.0061	0.0085	0.0089	0.0168	0.0701

Industry dummies are included but coefficients are not reported. Robust standard errors are in parentheses. Statistical significance by *** at 1%, ** at 5%, and * at 10% level.

significant at the 1% level. It seems that obtaining bank loans are relatively better for the SOEs than private firms before the split share structure reform. However, the efficiency of bank loans is higher for private firms than SOEs after the reform. It seems that the split share structure reform has more pronounced enhancing effect in curtailing the tunneling of private firms than SOEs, which is consistent with [Fan et al. \(2007\)](#) on the efficiency of bank loans for private firms versus SOEs.

Model (2) shows that CAR[−4, 4] is lower for firms having more independent directors in the board after the reform. After the split share structure reform, independent directors can release more reliable information to uninformed investors, which alleviates information asymmetry for these borrowing firms. Thus, the information content of bank loan announcements is lower for the uninformed investors. Model (3) of [Table 5](#) shows the interaction term of the reform and mutual funds, which indicates that institutional investors can better alleviate information asymmetry after the split share structure reform.

7. Tunneling before and after the reform

We examine the tunneling behavior using *ex post* loan announcements before and after the split share structure reform. Specifically, we tabulate the change of related party transactions over total assets for one and two years after bank loan announcements, and sort it by the top and bottom tercile of the variables mutual funds and independent directors. [Table 6](#) documents that before the reform, related party transactions increase *ex post* bank loans, in particular for firms in the bottom tercile of independent directors and mutual funds. In contrast, related party transactions decrease *ex post* bank loans after the reform for all firms irrespective of the independent directors and mutual funds. In a word, the split share structure reform indeed reduces the incentives of large shareholders to tunnel resources away from the firm, which help to enhance the efficiency of bank loans *ex post*.

8. Conclusion

While the Chinese banking system has been inefficient for a few decades since 1980s, the reform in the corporate sector can help in supporting the role of banks. We document that the split share structure reform in China was able to alleviate the tunneling incentives of large shareholders, and thus ended up in positive market reactions to bank loan announcements. This effect is more pronounced for private firms than SOEs. The information content of bank loan announcements is lower for firms with good corporate governance, i.e. firms held by mutual funds and firms with a higher proportion of independent directors. These factors are associated with reduced information asymmetry for these borrowing firms. Related party transactions increase with granted bank loans before the split share structure reform, while it decreases after the reform, which indicates that the reform alleviates tunneling incentives of large shareholders.

Table 5
Heterogeneous effect of the reform on CAR[−4,4].

	(1)	(2)	(3)
Reform	0.0244*** (0.0039)	0.0320*** (0.0052)	0.0221*** (0.0032)
Reform × State	−0.0148*** (0.0040)		
Reform × Independent directors		−0.0232*** (0.0049)	
Reform × Mutual funds			−0.0065* (0.0036)
State	0.0135*** (0.0035)	−0.0010 (0.0022)	−0.0004 (0.0022)
Independent directors	−0.0193*** (0.0031)	−0.0020 (0.0017)	−0.0176*** (0.0028)
Mutual fund	−0.0040*** (0.0010)	−0.0039*** (0.0010)	0.0021 (0.0029)
Size	−0.0004 (0.0018)	−0.0003 (0.0017)	−0.0005 (0.0018)
Leverage	−0.0143*** (0.0027)	−0.0132*** (0.0027)	−0.0150*** (0.0028)
Profitability	−0.0595*** (0.0201)	−0.0573** (0.0209)	−0.0586*** (0.0196)
Constant	0.0062*** (0.0017)	0.0034* (0.0018)	0.0070*** (0.0017)
Industry	Yes	Yes	Yes
Observations	10,873	10,873	10,873
R-squared	0.0093	0.0099	0.0090

Industry dummies are included but coefficients are not reported. Robust standard errors are in parentheses. Statistical significance by *** at 1%, ** at 5%, and * at 10% level.

Table 6
Related party transactions (RPT) ex post loan announcements.

RPT by group (t-statistics in parenthesis)				
	RPT(+1)-RPT(0)	RPT(+2)-RPT(0)	RPT(+1)-RPT(0)	RPT(+2)-RPT(0)
Panel A: Bottom 1/3 mutual funds			Panel C: Bottom 1/3 independent directors	
2001–2015	−0.06 (−0.66)	0.12 (0.85)	−0.04 (−0.74)	0.25*** (2.69)
Before reform	3.43*** (3.90)	7.84*** (3.88)	0.82* (1.81)	2.32*** (3.52)
After reform	−0.36*** (−6.83)	−0.56*** (−8.14)	−0.27*** (−6.92)	−0.28*** (−5.67)
Panel B: Top 1/3 mutual funds			Panel D: Top 1/3 independent directors	
2001–2015	−0.24*** (−5.45)	−0.17*** (−3.00)	−0.16*** (−2.77)	−0.33*** (−3.72)
Before reform	1.11*** (5.04)	1.98*** (3.82)	1.36 (1.46)	0.36 (0.43)
After reform	−0.31*** (−8.06)	−0.27*** (−5.26)	−0.24*** (−5.29)	−0.46*** (−7.68)

The change of RPT over total assets from the announcement year to one / two years ex post. The change is sorted by the proportion of shares held by mutual funds, and the proportion of independent directors in the board. Statistical significance by *** at 1%, ** at 5%, and * at 10% level.

The Chinese economy has witnessed a rapid change due to the anti-corruption movements in the country that undermines the government's role in the real economy. The government has initiated the financial liberalization since 1980s (Hsiao et al., 2015), e.g. the set-up of the big four commercial banks, etc. The SOEs have undergone a widespread privatization in the late 1990s, which has formulated the ownership structure in the Chinese economy. As the government still strives to deepen the reform of the financial system, SOEs may be partially privatized further in the future, and the political connections may have a lower influence in the economic relationships. Furthermore, the legal system has been undergoing a rapid reform in China that may enhance the investor protection mechanisms accordingly.

The corporate governance system may also be improved in the coming future, which would enable banks to better monitor the borrowers and which would make it less likely for firms to misuse the bank loans *ex post*. For example, loan officers are responsible for the loan performance during their lifetime in case of loan defaults in their earlier career period. Also, corporate loan defaults, in particular discredit behavior towards court verdicts, can lead to a restriction of everyday life of senior managers of these firms, e.g. restriction of travelling by airplane and luxury consumptions, etc. With the reform in the corporate governance of the borrowing firms,

the efficiencies of the banking sector will also be improved with the gradual liberalization of the banking market in China in the coming future. For example, the Chinese government has put restrictions on the compensation schemes and corporate perks for senior managers, which alleviates their tunneling behaviors and enhance the loan performance of the borrowing firms accordingly. In sum, the regulatory reforms towards enhancing the corporate governance of the lending banks and borrowing firms will lead to a higher efficiency in the banking market.

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Appendix 1. Sample distribution of reform year

Year	# of firms
2005	242
2006	904
2007	113
2008	35
2009	18
2010	4
2011	7
2012	1
2013	7
2014	3

Appendix 2. Variable definitions

Variable name	Definitions
CAR[a, b]	The cumulative abnormal returns in the event window [a, b] where a and b are integers
Reform	Reform equals 1 if the loan announcements are made after split share structure reform, 0 otherwise
State	State equals 1 if the list firm is controlled by the state, 0 otherwise
Independent directors	Equals 1 if the proportion of independent directors in the board is higher than 1/3
Mutual fund	Equals 1 if the proportion of shares held by mutual funds is above sample median, 0 otherwise
Size	Equals 1 if the total assets is above sample median, 0 otherwise
Leverage	Leverage is the total liabilities over total assets
Profitability	Profitability is the EBIT (Earnings before interest and tax) over total assets
Loan amount	The logarithm of the loan amount
Maturity	The number of years for the loan maturity
Collateralization	Equals 1 if the loan has some collateral or guarantee, 0 otherwise
State bank	Equals 1 if the lender is a state-owned bank
Interest rate	The interest rate in percentage points of the loan

Appendix 3. Summary statistics

	N	Mean	Median	St.dev	Min	Max
CAR[−4,4]	10,888	0.005	−0.004	0.085	−0.190	0.386
Reform	10,888	0.902	1	0.297	0	1
State	10,874	0.400	0	0.490	0	1
Independent directors	10,874	0.886	1	0.318	0	1
Mutual funds	10,888	0.500	1	0.500	0	1
Size	10,874	0.500	1	0.500	0	1
Leverage	10,874	0.523	0.542	0.206	0	0.920
Profitability	10,874	0.052	0.051	0.049	−0.152	0.196

Appendix 4. Correlation coefficients

(continued on next page)

(continued)

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
		[1]	[2]	[3]	[4]	[5]	[6]	[7]
CAR[−4,4]	[1]	1						
Reform	[2]	0.0218*	1					
State	[3]	−0.0064	0.163***	1				
Independent directors	[4]	−0.0314**	0.648***	0.173***	1			
Mutual fund	[5]	−0.0295**	0.198***	0.00702	0.168***	1		
Size	[6]	−0.0167	0.245***	0.242***	0.250***	0.234***	1	
Leverage	[7]	−0.0298**	0.0286**	0.247***	0.172***	−0.0245*	0.424***	1
Profitability	[8]	−0.0332***	0.0494***	−0.0738***	0.0613***	0.263***	0.0702***	−0.219***

Statistical significance by *** at 1%, ** at 5%, and * at 10% level.

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