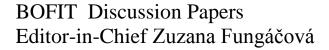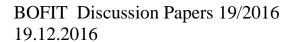Qing He, Jiyuan Huang, Dongxu Li and Liping Lu

Banks as corporate monitors: Evidence from CEO turnovers in China

Bank of Finland, BOFIT
Institute for Economies in Transition

BOFIT Discussion Papers
Editor-in-Chief Zuzana Fungáčová

Qing He, Jiyuan Huang, Dongxu Li and Liping Lu: Banks as corporate monitors:
Evidence from CEO turnovers in China

Contents

Qing He, Jiyuan Huang, Dongxu Li and Liping Lu

Banks as corporate monitors:
Evidence from CEO turnovers in China

Abstract

This paper examines the governance role of banks in replacement of underperforming CEOs in firms listed on Chinese stock exchanges. Under most circumstances, the findings suggest that the presence of outstanding loans does not increase the probability that a poorly performing CEO will be forced out and replaced. However, there is a positive and significant effect if the underperforming firm relies heavily on secured and short-term bank lending. Bank loans increase the likelihood of a forced CEO turnover in private firms, especially where joint-equity banks serve as the main lenders to the firm. There is no similar increase in the probability of a CEO turnover for state-owned firms or firms that borrow mainly from state-owned banks. Thus, where state ownership of banks and listed firms implies inefficiency or reluctance on monitoring borrower performance, there is an opportunity to improve loan contract arrangements to improve the monitoring role of lending banks.

Key words: CEO turnover, bank loans, monitoring, SOE.

JEL classification: G21, G30, G32, G38, K22.

Qing He, orcid.org/0000-0002-6782-099X. Renmin University of China, School of Finance, Zhongguancun Avenue 59, 100872 Beijing, China. Email: qinghe@ruc.edu.cn.

Jiyuan Huang, orcid.org/0000-0002-5456-1482. CentER – Tilburg University, Warandelaan 2, 5037 AB Tilburg, The Netherlands. Email: j.huang_6@uvt.nl.

Dongxu Li, orcid.org/0000-0003-3031-4900. Renmin University of China, School of Finance, Zhongguancun Avenue 59, 100872 Beijing, China. Email: lidongxu2012@gmail.com.

Liping Lu, orcid.org/0000-0002-2625-5795. Corresponding author. VU University Amsterdam, Department of Finance, De Boelelaan 1105, 1081HV Amsterdam, The Netherlands. E-mail: l.lu@vu.nl

1   Introduction

The allocative role of financial intermediaries in enhancing economic development has been a major focus in both academic and policy works (Rajan & Zingales, 1998). The general view is that banks are specialized intermediaries that enjoy information and cost advantages in providing finance (Fama, 1985; Rajan, 1992). By screening and selecting creditworthy borrowers, banks efficiently allocate an economy's savings to the highest value uses (Aghion & Howitt, 1998; Wurgler, 2000).

Lending success, however, depends on the bank's ability to gather and analyze information before issuing the loan, as well as monitor the borrower's performance once the loan is issued. Thus, high-quality information is essential to both good lending decisions and effective monitoring.

In countries with well-developed legal and institutional frameworks, banks can efficiently obtain critical information on borrowers. Moreover, as external agents, banks play a role in corporate governance by requiring the firm to rehearse its plans to pay back the loan. If a borrower seems to be having trouble complying with loan contract terms, banks can call in the loan or seek a modification of the loan terms (Kaplan & Minton, 1994; Santos & Rumble, 2006; Ivashina & Scharfstein, 2010).

Banks may also play a non-contractual governance role in borrowing firms. Recent empirical evidence suggests that banks influence board decisions of borrower firms in such spheres as the market for corporate control (Baird & Rasmussen, 2006) and replacement of misbehaving management teams (Nini et al., 2012).

Since financial and legal systems in emerging market countries tend to be less developed than in advanced economies (Beck et al., 2003), private banks face a double problem of access to borrower information and difficulties in attracting sufficient funds to sustain long-term credit policies. As a result, governments in many developing economies must be deeply involved in the financial sector, retaining such control that it skews capital allocation in its favor. Indeed, La Porta et al. (2002) verify that extensive government ownership of banks is pervasive in countries with poorly developed institutions. Controlling ownership of banks also allows the government to finance inefficient policy projects that may be socially or politically desirable, e.g. employment initiatives (Li et al., 2008), subsidies (Khwaja & Mian, 2005), or rewarding voter groups ahead of political elections (Dinc, 2005). Banks should assume the costs of gathering information about borrowers in such circumstances, but given the weak legal and financial systems and their possible policy roles, do banks assume the role of effectively monitoring and disciplining borrowing firms in developing countries?

In this paper, we investigate the governance role of Chinese banks by investigating their impacts on disciplining poorly performing CEOs of borrowing firms. Replacement of the management team is a significant corporate action that often has profound, long-term impacts on the firm's subsequent operations and internal organization. Several studies show that shifts in bank lending practices substantially affect the decision to replace a CEO, establishing it as an economically important governance mechanism (Ozelge & Saunders, 2011; Nini et al., 2012). Using bank loans outstanding over total assets as a measure of bank governance power, or simply "loan intensity," we examine whether such loan intensity is related to the performance-sensitivity of CEO dismissals in China.

China is an appropriate setting for examination of the influence of banks on corporate governance. First, the Chinese economy exhibits many features typical of an emerging economy such as inadequate protection of property rights and weak legal enforcement mechanisms (Allen et al., 2005; He & Rui, 2016). Thus, studying China helps understand the governance role of banks in emerging markets generally.

Second, banks dominate China's financial sector. Allen et al. (2005) show that the bank credit ratio to GDP in China is 1.11, which is much higher than the world average of 0.73. At the end of 2013, bank credit accounted for over 60 % of total funds raised by Chinese firms. Given the crucial role of banks in credit allocation, their role in motivating corporate governance practices provides an intriguing and valuable area to explore.

Finally, the Chinese government has gradually diminished direct control over state-owned banks since the launch of reforms in 1978. Meanwhile, private banks (including city commercial banks, rural commercial/cooperative banks, and village banks) and foreign banks come to play an increasingly important role in financial markets. Thus, studying a comprehensive look at China's banking sector helps in understanding the relationship between bank ownership and corporate governance.

Previous studies employing logistic models to explore the effect of performance on CEO turnover (e.g. Huson et al., 2001; Parrino et al., 2003; Ozelge & Saunders, 2012) may produce biased estimates due to censoring (Efron, 1977). Here, we use a competing-risk model to analyze factors that might influence CEO tenure, both for voluntary and forced turnovers. The model accounts for the censoring problem and allow the departure probability to depend on CEO tenure, bank loans, firm performance, as well as other time-specific variables (He et al., 2010; Jenter & Kanaan, 2015).

Using a hand-collected dataset on CEO turnover of Chinese listed firms combined with information on the outstanding loans of these firms during the period of 2008-2013, we find that

the sensitivity of CEO turnover to firm performance varies with loan intensity. When all outstanding loans are considered, we find a slight increase in the probability of a forced CEO turnover if the firm is performing poorly. However, if the firm's bank loans have shorter maturities and require collateral, we find a more pronounced and significant increase in the probability of a forced CEO turnover. In addition, where joint equity banks serve as main lender, we find it tends to increase turnover-performance sensitivity. There is no such increase in sensitivity, however, if firms primarily borrow from state-owned banks. Loan intensity reduces the sensitivity of forced CEO turnover to firm performance for state-owned enterprises (SOEs), while increasing this sensitivity for private firms.

Our findings overall suggest that banks generally do not play a role in disciplining underperforming CEOs of Chinese listed firms, particularly in the case of SOEs and firms that borrow mainly from state-owned banks. It is consistent with the finding of Bailey et al. (2011) that state-owned banks have little incentive to monitor borrower firms. Moreover, banks serve a more efficient governance role for private firms than SOEs. As state-led banking system and SOEs are prevalent in emerging economies, our findings on the inefficiency of government ownership of banks and corporations are especially meaningful for policymakers.

Our findings further suggest that collateral and loan maturity may enhance the bank's monitoring role. This comports with the findings of Ranjan and Winton (1995) and Cerqueiro et al. (2016), who show that collateral requirements increase the incentive of banks to monitor borrower firms. Collateralization of loans gives banks access to borrower information and confers the possibility of seizing the collateral when a borrower firm encounters financial distress. Short-term loans also give banks broad bargaining power. They can terminate or renegotiate subsequent loans, as well as demand accelerated loan repayment (Graham et al., 2008). These powers, combined an increased scrutiny of borrowers, improve the effectiveness of bank monitoring.

This paper is among the first to examine the governance role of lending banks in an emerging economy, and thus contributes to the literature by showing that government ownership of banks and corporations weakens the incentives of banks to monitor borrowing firms in a prudent manner. It also adds to the literature on the monitoring role of financial contracts (Nini et al., 2012; Cerqueiro et al., 2016). Unlike these studies, we focus on loan contracts in a country with weak legal and financial systems, showing that bank loan terms can affect the incentives of banks to monitoring borrower performance and limit their access to information for efficient lending. This finding is particularly relevant to banking sector development in emerging economies.

The remainder of this paper is organized as follows. Section 2 introduces institutional background and develops hypotheses. Section 3 describes the data and methodology. Section 4 presents the empirical results. We provide evidence on the relationship between CEO turnover and ex-post bank lending behavior in section 5. Section 6 concludes.

2   Institutional background and hypotheses development

2.1   Banking sector in China

The banking system remains the primary source of financing for the Chinese economy. Even with government reforms to deregulate the banking sector, four massive state-owned banks have dominated the credit market for the past three decades (Allen et al., 2005; Bailey et al., 2011; He et al., 2016).[1]

Before the 1990s, the Chinese banking sector operated in a largely uncompetitive environment. The state treated the banking sector as strategic and thus subject to intensive monitoring and government intervention. Chinese banks, particularly the four giant state-owned banks, faced substantial pressure and put political and social stability ahead of profit maximization in their mission priorities (Bailey et al., 2011; He et al., 2016).

The People's Bank of China (PBOC) has traditionally set base interest rates along with upper and lower bounds for deposits and lending. Although the interest rates have been gradually liberalized in China, restrictions on interest rates that reduced the incentive of banks to monitor risk were still in place during our sample period.

Most funds during this period were allocated from state-owned banks to SOEs with relatively little scrutiny or follow-up (Qian et al., 2011). Given these inefficient lending practices, non-performing loans (NPLs) have become a serious threat to the Chinese financial system. Since the late 1990s, the government has adopted various measures to improve the efficiency of state-owned banks and reduce the level of NPLs. Since the early 2000s, most NPLs held by state-owned banks have been sold to state-owned asset management companies. To cover the problem, the government injects a substantial amount of foreign currency reserves into state-owned banks. Following China's entry to the WTO in 2001, banking sector reforms were introduced in anticipation of intensified competition from foreign financial institutions. The "Big Four" state-owned

---

[1] China's central bank, the People's Bank of China (PBoC), controlled 93 % of total banking sector assets when China embarked on economic reforms in 1978. By late 1979, three state-owned banks had established: Bank of China (BOC), China Construction Bank (CCB), and Agricultural Bank of China (ABC). China's fourth giant state bank, Industrial and Commercial Bank of China (ICBC), was set up in 1984.

banks were restructured into modern corporations owned by shareholders with Western-style governance measures such as shareholder meetings and boards of directors. The "Big Four" all staged IPOs, and even foreign investors hold minority stakes in these banks. Nevertheless, the state retains majority control. In hindsight, it appears that the state saw public listing as a way to improve operational efficiency and transparency, rather than raise capital. Several joint-equity banks, as well as city and rural commercial banks have also taken on foreign investors and become publicly traded companies.

To further improve the competitiveness of the banking sector, most Chinese banks implemented a decentralization reform that delegated lending decisions down to the local branch level. Individual loan officers were responsible for the entire lending process, from loan application, internal rating, and the approval of loan contracts.[2] In addition, they were liable for the loan default risk if loans were granted to borrowers based on incorrect ratings. This policy increased the accountability of loan officers and helped improve the quality of lending decisions (Qian et al., 2015).

The Chinese banking sector has made considerable improvements in operational efficiency. Banking market reforms created incentives for bank branch managers to shift their attention to cost control and reduction of overdue loans (Park & Sehrt, 2001). Most banks show a profit and pay substantial dividends to their shareholders. They also managed to avoid much of the fallout from the 2008 global financial crisis. In 2016, the "Big Four" Chinese banks were ranked among the world's top five banks in terms of total assets (1st place: Industrial and Commercial Bank of China; 2nd place: China Construction Bank; 4th place: Agricultural Bank of China; and 5th place: Bank of China).[3] Nevertheless, there are still many problems in this banking system. The state retains majority stakes in the large banks, making them subject to political influence. State-owned banks are often expected to shoulder policy burdens and ignore their disciplinarian role. In contrast, joint equity banks, local banks (city and rural commercial banks, village banks, etc.), and foreign banks have little or no such policy responsibilities.

Another troubling aspect of Chinese banking is a poor enforcement of bankruptcy law and weak creditor protections.[4] The bankruptcy of local SOEs typically needs approval from the local government, which often tries to prevent defaults to avoid blame for increased unemployment and social unrest. State-owned banks often anticipate government bailouts and continue

---

[2] Before this reform, an employee group at a given branch was responsible for the lending process. Individual officers had no incentive to perform due diligence or oversight of borrower performance.
[3] For more, go to http://www.relbanks.com/worlds-top-banks/assets.
[4] China implemented a new bankruptcy law in August 2006, but legal enforcement remains weak and inconsistent.

lending to inefficient SOEs. Non-state owned banks, which typically have fewer SOE borrowers, actively monitor their borrowers and bear the default risks.

2.2   Hypotheses development

How might loan intensity affect CEO turnover? Creditors, of course, risk the default on the principal and interest repayment once the private credit agreement is signed and the funds issued. This tension is further increased as managers in borrowing firms are inclined to put the interests of shareholders ahead of creditor interests (Jensen & Meckling, 1976). The seeking of private benefit is also likely to push managers toward inefficient decisions that thwart timely repayment of loans (Zender, 1991). Given these incentive conflicts, creditors often attempt to mitigate risk-shifting by restricting corporate operations (Roberts & Sufi, 2009).

Poorly performing CEOs put repayments of interest and principal at substantial risk. When lending banks have significant power over the corporations and executives, they can initiate a CEO replacement in order to constrain the downside risk of loans. Ozelge and Saunders (2012) find that the level of loans outstanding has a significant effect on CEO replacement for poorly performing firms. Nini et al. (2012) further show that the likelihood of CEO turnover increases with loan covenant violations.

Banks must rely heavily on public information and information from costly monitoring to monitor borrowers effectively and force out underperforming CEOs as needed. In a transparent financial market, banks have incentives to seek private and valuable information to evaluate and monitor borrowers efficiently (Diamond, 1984). In an emerging economy like China, however, firms often fail to deliver their financial statements and other materially important reports in a timely and accurate manner. Moreover, weak legal frameworks and lack of enforcement allow corporate insiders to engage in undisclosed self-dealing transactions (He & Rui, 2016). Banks receive useful, but noisy, information from a borrower with many outstanding loans. As noted above, state-owned banks may also be compelled by other state actors to put political or social stability ahead of profits in lending decisions. This further reduces the incentive of banks to embrace their role as delegated monitors. Our expectation, therefore, is that Chinese banks have little incentive to discipline CEOs of publicly listed firms. Thus, we propose our first hypothesis:

> *H1: Bank loans play a limited role in forcing out underperforming CEOs*
> *in borrowing firms.*

When a bank lends to a firm, other investors benefit from the bank's monitoring function. Numerous empirical studies have documented a significantly positive market reaction to a firm's qualifying for bank loans (James, 1987; Lummer & McConnell, 1989; He et al., 2016). Where the institutional environment for contract enforcement is weak, the problems arising from asymmetric information between borrowers and lenders are important factors in the bank's role as delegated monitor (Qian & Strahan, 2007). Accordingly, information asymmetry in favor of borrowers incentivizes lenders to monitor, and loan contracts are structured to facilitate the monitoring role of banks (Rajan & Winton, 1995).

Previous studies have shown basic price terms (e.g. interest rate) and non-price terms (e.g. loan maturity) are important aspects of the loan terms that can influence the access to information and evaluation of borrowers (Diamond, 1991). For instance, higher interest rates can price borrower's risk, which may worsen the adverse selection of borrowers in choosing riskier projects (Stiglitz & Weiss, 1981). As the PBOC restricted the interest rate range during our sample period, we focus on non-price terms, particularly collateral and loan maturity.

Collateral is an important contractual feature that affects the behavior of lenders and borrowers (Cerqueiro et al., 2016). Secured lenders can seize collateral to avoid losses in the event of a default. Collateral provides protection against competing claims by other creditors. The ability to inspect collateral allows lenders to learn additional information about borrowers (Picker, 1992). Although collateral grants seniority in recovering payment in a default, banks may not recover the full value of the loan if the value of pledged asset is itself risky. Uncertainty over the liquidated value of collateral increases the incentive of banks to monitor and liquidate firms when firms encounter financial distress.

Consistent with this theory, Ono and Uesugi (2009) and Cerqueiro et al. (2016) suggest that collateral enhances the monitoring capacity of banks and allows them to seize pledged assets when faced with increased uncertainty. Thus, monitoring borrowers includes simultaneous evaluation of the value of pledged collateral. Banks can even include contract terms that allow them to demand additional collateral when the firm displays signs of financial distress. The ability to adjust the collateral requirement based on active appraisal gives lending banks significant power over corporations, including the power to discipline poorly performing CEOs.

However, when banks operate in an environment with weak legal protections and poor contract enforcement as in China, the collateral requirement may be relatively ineffective (Qian & Strahan, 2007). In such conditions, reducing the loan maturity provides the leverage over borrowers (Diamond, 2004). Indeed, short-term loans confer tremendous bargaining power on banks. They can terminate or renegotiate loan agreements, accelerate loan repayments, or

threaten to take actions in case of poor contract performance (Graham et al., 2008). Short-term loans provide a tool for intensive bank monitoring of borrowers by granting lending banks easy access to material non-public information concerning borrower risk. In addition, loan renewal or rollover serve as an effective tool for managing borrower moral hazard. We thus suggest that short-term loans help alleviate the inefficiency of banks in disciplining poorly performing CEOs. Based on the above discussion, we offer our second hypothesis:

> *H2: In the case of poorly performing firms, the presence of secured and short-term loans increase the likelihood of forced CEO turnover.*

State-owned banks dominate China's banking sector with various-level government agencies intervening in their lending decisions. Even with market-oriented reforms, state-owned banks remain largely constrained by the government's need to placate various groups and must shoulder substantial policy burdens. For example, Bailey et al. (2011) show that state-owned banks often extend loans to support employment and avert social instability, and that most of their lending is based on *noisy inside information* of prospective borrowers. In contrast, joint equity banks have no mandate to pursue social policy goals, so their allocation of credit is more likely to be based on commercial judgments. Thus, we suggest that joint equity banks are should be more efficient in monitoring the CEOs of the borrowing firms than state-owned banks that are less likely to monitor or discipline poorly performing CEOs.

Local banks are the direct descendants of urban and rural cooperatives. These banks typically attract deposits from local customers and their lending is concentrated on local firms. Thus, we suggest that local banks have lower bargaining power with their borrowers than joint equity banks and have a weaker ability to affect governance of borrowing firms.

Although we expect foreign banks to be efficient in making loan decisions, their opportunities to conduct business in China is limited. Given a relatively small presence of foreign banks in China's banking system, their involvement in borrower governance is probably not substantial. To reflect this, we propose our third hypothesis:

> *H3: The power of lending banks to discipline poorly performing CEOs is greatest for joint equity banks, moderate for local and foreign banks, and weakest for state-owned banks.*

Like most emerging economies, government ownership is prevalent among China's listed firms. Although China has implemented various waves of privatization reforms by relaxing its control

over SOEs, they still account for more than 40 % of Chinese firms listed in the past decade. Boycko et al. (1996) show that SOEs tend to serve the interests of politicians rather than maximizing earnings for shareholders, and are subject to policy burdens such as boosting employment and economic growth. Further empirical evidence suggests that politicians tend to pursue a government agenda and seek to accumulate personal wealth through SOEs (Shleifer & Vishny, 1989; Lakonishok et al., 1994; Rajan & Zingales, 2003). China is no exception in this sense. The Chinese government pursues its political goals through SOEs and provides funding to them. Most financing for these firms comes in the form of bank loans. State-owned banks, in particular, may be obliged to provide loans to keep struggling SOEs on life support to maintain social stability. Podpiera (2006) finds that poorly performing SOEs are the main borrowers for most commercial banks. Most lending to SOEs reflects political goals instead of maximization of shareholder value. Under these circumstances, banks have little incentive to seek monitoring and thus play a proper role in the governance of SOE borrowers. Meanwhile, following China's privatization reform, many private enterprises have emerged and contributed to the economic growth (Allen et al., 2005). Unlike SOEs, private firms are less subject to government intervention. Due to a lack of repayment guarantee from the government, banks are responsible for the loss for bad loans in case of improper lending practices. Thus, banks have greater incentive to collect borrower information, monitor borrowers, and even pressure corporate boards when CEOs underperform. Based on this discussion, we present our final hypothesis:

> *H4: Bank loans play a larger role on forcing out underperforming CEOs of private firms than CEOs of state-owned enterprises.*

3 Data and methodology

3.1 Data

We use the *China Corporate Governance Research Database* (CCGRD) from GTA Information Technology Co. Ltd. to identify our sample of CEO turnovers. As the loan information (e.g. loan amount, maturity, collateral, etc.) is limited before 2007, we use a sample period of CEO turnover during 2008–2013. We record the date when the turnover was first announced and the reason for the CEO departure. We exclude firms with "special treatment" (ST) status,[5] as well as firms operating in the financial industry. Following the literature (Huson et al., 2001; Chang & Wong,

---

[5] The labeling of firms as "special treatment" (ST) companies a special administrative category for Chinese listed companies that have violated CSRC regulations or encountered serious operational problems. These are designated as ST or ST* firms.

2009), we also exclude turnovers due to takeovers, mergers, spinoffs, and interim CEO appointments. This leaves us an initial sample of 1,888 CEO turnovers. Panel A of Table 1 provides the reasons for CEO turnovers. To access the governance role by lending banks, we distinguish forced from voluntary turnovers. It is difficult to distinguish the two types of turnovers based on public information since the press is unlikely to mention whether a replaced CEO was forced out of his or her post.

We use the procedure adopted by many researchers (e.g. Chang & Wong, 2009; Cao et al., 2011) to define forced turnover. First, we take the stated reasons for CEO turnover from the CCGRD to classify them as voluntary or forced. Our voluntary turnover group consists of 1,036 cases where the reasons for turnover are retirement, contract expiration, change in controlling shareholders, resignation, health reasons, personal reasons, corporate governance reform, or completion of active duties. For the remaining 852 cases of CEO turnovers, we trace the destinations of the departing CEOs to assess whether the departure was truly forced. Indeed, there are 232 turnovers where the departing CEOs assumed a better position, including 65 posts as government officers, 119 as chairman or vice chairman of the company board, and 41 comparable managerial positions in the parent firm or another listed firm.

We consider the remaining 620 turnovers to be forced. Among these are 479 cases in which the departing CEO ended up in a less prestigious position, including 134 cases of taking a less prestigious position in the same company and 299 of taking managerial positions in unlisted or smaller firms. CEOs were summarily dismissed in 14 cases, while in 121 cases we were unable to trace the final whereabouts of the departing CEO. Given their important role in managerial positions, it is unlikely that the destination information would be unavailable if the departing CEO had taken up a better or comparable position. Thus, we classify the latter as forced turnover.

Additionally, there are two cases where the CEO departure involved a legal dispute. We classify these as force turnovers. We also categorize four cases as forced turnovers where early retirement (under 60 for men and under 55 for women) was the reason for the CEO departure.

In the end, our sample contains 620 forced turnovers, or 32.84 % of all CEO turnovers in sample. This proportion accords with the turnover rates reported in Chang and Wang (2009) and Cao et al. (2011) for Chinese listed firms (30.98 % and 31.01 %, respectively).

Panel B of Table 1 shows the summary statistics for CEO turnovers. There is some variation in the number of forced and voluntary turnovers. Both forced and voluntary turnovers are higher in 2013 than other years. A possible explanation is that China began its economic recession in early 2013. On average, the unconditional probabilities of a forced turnover and

voluntary turnover are 7.57 % and 15.6 %, respectively. These ratios are higher than those documented by Ozelge and Saunders (2012).

Table 1   Distribution of CEO turnovers by reason for departure

Panel A: Reasons for turnover	# of turnovers	Percentage points
1. Voluntary turnover	**1,268**	**67.16**
Retirement	46	2.44
Contract expiration	358	18.96
Change in controlling shareholders	8	0.42
Resignation	351	18.59
Health	43	2.28
Personal reasons	136	7.20
Corporate governance reforms	52	2.75
Completion of active duties	42	2.22
Promotion	232	12.29
2. Forced turnover	**620**	**32.84**
Demotion	479	25.37
Dismissed	14	0.74
Legal dispute	2	0.11
Early retirement	4	0.21
Details not provided	121	6.41
Total number of turnovers	**1,888**	**100.00**

Panel B: Frequencies of voluntary and forced CEO turnovers

Year	# of listed firms	# of firms with voluntary turnover	% of voluntary turnovers	# of firms with forced turnovers	% of forced turnovers
2008	1,266	177	15.54	105	8.29
2009	1,307	205	16.04	95	7.27
2010	1,348	193	16.55	93	6.90
2011	1,410	239	17.31	93	6.60
2012	1,411	214	17.32	101	7.16
2013	1,404	240	17.24	133	9.47
Total	8,146	1,268	100	620	7.61

The table reports the frequencies of CEO turnovers sorted by reasons for Chinese listed firms over the period 2008–2013. A CEO turnover is categorized as "forced" if it satisfies one of the following conditions: 1) the CEO is fired, forced out, or departed over policy differences; 2) the CEO takes an early retirement, i.e. the departing CEO's age is less than 60 for males and 55 for females, and the announcement does not report that the CEO dies, leaves due to poor health, or accepts another position outside or within the firm; 3) the CEO "retires," but leaves the job within six months of the retirement announcement. A CEO turnover in the third category is categorized as "voluntary" if the incumbent CEO takes a comparable position outside the firm or departs for business reasons that are unrelated to the firm's activities. We categorize three cases as normal turnovers in which the tenure of the departing CEO is no more than one year, and four early retirement cases as forced turnovers.

We retrieve bank loan information from the annual reports of listed firms. The accounting and corporate governance information of firms are taken from China Stock Market & Accounting Research (CSMAR) and Wind databases, two widely used databases in the research on the Chinese economy.

3.2   Methodology

We estimate the sensitivity of CEO turnover to performance and levels of bank loans outstanding using a competing risk method. The model is semi-parametric in the sense that the vector β can be estimated without imposing any assumption on the baseline hazard function.

Suppose that the departure of CEO i can be either voluntarily or forced. The time to departure t_i and the turnover type j are observed. j is an indicator variable that equals 0 if the CEO stays in his (her) position, 1 if there is a voluntary turnover, and 2 if the CEO is forced out. For each type of turnover, there is a latent duration T_j, which is the CEO's tenure before the spell ends via type j. The actual departure time and turnover model can be interpreted as the realizations of random variables T and J, defined as follows:

$$T = \min\left(T_j, j = 1,2\right)$$
$$J = \operatorname{argmin}_j\left(T_j, j = 1,2\right)$$

Hence, the hazard rate for a turnover of type j is defined as:

$$\lambda_j(t) = \lim_{dt \to 0} \frac{\Pr(t \leq T < t + dt, J = j \mid T \geq t)}{dt} \tag{1}$$

The overall hazard function is as follows:

$$\lambda(t) = \lambda_1(t) + \lambda_2(t) \ , \tag{2}$$

where $\lambda_1(t)$ and $\lambda_2(t)$ are the cause-specific hazard functions for voluntary and forced turnover respectively. We further use risk-specific hazard function with the Cox (1972) proportional hazard type. The Cox method flexibly accommodates for the probability of a currently employed CEO departs over the next year and is a function of CEO tenure, bank loans, and other control variables. The functional form is:

$$\lambda_{ji}(t \mid x_{ji}(t), \beta_j) = \lambda_{0j}(t)\exp[x_{ji}(t)'\beta_j], \qquad j = 1,2 \tag{3}$$

where λ_{0j} is the baseline hazard function specific to type j hazard at time t, $x_{ji}(t)$ is a vector of time dependent covariates for CEO i specific to type j hazard at time t, β_j is the vector of unknown regression parameters to be estimated. The partial likelihood function for each specific hazard j is given by:

$$L_j(\beta_j) = \prod_{i=1}^{k_j} \frac{\exp[x_{ji}'(t_{ji})\beta_j]}{\sum_{l \in R(t_{ji})} \exp[x_{jl}'(t_{ji})\beta_j]}, \tag{4}$$

where k_j refers to the number of CEOs in specific hazard j, and $t_{j1} < \cdots < t_{jk_j}$ denotes the k_j ordered failures of hazard j. $R(t_{ji}) = \left\{l \mid t_{jl} \geq t_{ji}\right\}$ is the set of CEOs that have not left their position at time t_{ji}. The likelihood function for the Cox CRM is

$$L(\beta_1, \beta_2) = \prod_{j=1}^{2} \prod_{i=1}^{k_j} \frac{\exp[x_{ji}'(t_{ji})\beta_j]}{\sum_{l \in R(t_{ji})} \exp[x_{jl}'(t_{ji})\beta_j]}. \tag{5}$$

To investigate the sensitivity of CEO turnover to performance and loan intensity, $x_{ji}(t)'\beta_j$ is defined as follows:

$$\begin{aligned} x_{ji}(t)'\beta_j = {} & \beta_{0j} + \beta_{1j} Loan\, intensity_{ji,t} + \beta_{2j} IROA_{ji,t} + \beta_{3j} Loan\, intenisty * IROA_{ji,t} \\ & + \beta_{4j} Controls_{ji,t} + \varepsilon_{i,t} \end{aligned} \tag{6}$$

Since the CEO should be evaluated on a firm-specific component of firm performance (Jenter and Kanaan, 2015), we use *IROA*, industry-adjusted firm performance, measured as the firm's EBIT minus the industry average EBIT over total assets. Following the observation of Parrino et al. (2003) that firm risks can affect CEO turnovers, we use the interaction term between *Loan intensity* and *IROA* to capture the impact of bank loans on the sensitivity of CEO turnover to firm performance. The governance power of lending banks is measured by *Loan intensity*, which is the ratio of total loan outstanding over the borrowing firm's assets. Since 2007, the China Securities Regulatory Commission (CSRC) has required that all listed firms disclose information on their bank loans, including loan maturity, whether the loan is secured or unsecured, and their five largest outstanding loans. Thus, we include several additional measures of loan intensity. The

degree of secured (unsecured) loan intensity, measured as the ratio of secured (unsecured) loan outstanding over the borrowing firm's asset (*secured, unsecured*). The degree of short-term (long-term) loan intensity, measured as the ratio of short-term (long-term) loan outstanding over the borrowing firm's asset (*short-term, long-term*). We identify a firm's largest lender of bank loans based on the information disclosed in top-five outstanding loans. A firm's largest lender is further categorized into *state-owned banks* ("Big Four" banks and three policy banks),[6] *joint equity banks*, and *local banks* (city and rural commercial banks, city and rural credit cooperatives, rural cooperative banks, and village banks), and *foreign banks.*

Following previous studies, we include several control variables. We measure firm risks by the stock return volatility over the 12 months before the CEO turnover, i.e. *Stock volatility*. We use the *Market to book ratio* to control for growth opportunities, i.e. market value of equity plus book value of debt over book value of total assets, and the logarithm of total assets to measure firm size. We also include a set of variables for corporate governance. *Largest shareholder* defines the ownership stake of the largest shareholder; *Board size* is the number of board members; and *Independent director* is the proportion of independent directors in the board of directors (He & Rui, 2016).

We control a set of CEO characteristics following Hazarika et al. (2012). *Duality* equals one if the CEO is also the chairman of the board, 0 otherwise; *Tenure* is the annualized duration for the CEO in the position; *CEO shareholding* is the proportion of the equity held by the CEO; *Education* is a categorical variable ranging from one to five (a higher value indicates more education). All explanatory and control variables are lagged by one year before the CEO turnover, and variable definitions are listed in Appendix 1.

4   Empirical results

4.1   Descriptive statistics

Table 2 presents the descriptive statistics of key variables in our regression models. All financial variables are winsorized at the 1st and 99th percentile. The average loan intensity for China's listed firms is about 0.27, which is much higher than that reported by Ozelge and Saunders (2012) for US listed firms (0.09). Secured loan and short-term loan ratios are 0.20 and 0.16, respectively. This finding suggests that most bank loans are short-term and borrowers are obliged to produce collateral to secure loans. More than half of listed firms borrowed primarily from state-owned

---

[6] China's three main policy banks are China Development Bank, China Agriculture Development Bank, and China Import-Export Bank.

banks. Only a tiny proportion of listed firms used foreign banks as their main loan providers (0.96 %).

Our sample firms have a high stock market volatility, 52.19 % (on average), which is much higher than the average of 15.20 % reported in Hazarika et al. (2012). The average market to book ratio (MB) and leverage are 2.39 and 0.61, respectively. The average ROA for the listed firms is 0.03. The average tenure of CEOs was 3.22 years, which is similar with Cao et al. (2011). About 15 % of CEOs served in dual roles of both CEO and board chairman.

Table 2   Summary statistics

Variable	# of Obs.	Mean	Std. Dev.	Median
Loan intensity				
Loan intensity	8,146	0.2696	2.3087	0.2025
Secured loan	8,146	0.1979	2.2673	0.1201
Unsecured loan	8,146	0.0717	0.3467	0.0101
Short-term loan	8,146	0.1559	0.4602	0.1078
Long-term loan	8,146	0.1137	2.2583	0.0302
Bank type				
State-owned banks	6,348	0.5618	0.4962	1
Joint equity	6,348	0.3527	0.4779	0
Local	6,348	0.0759	0.2649	0
Foreign	6,348	0.0096	0.0976	0
Financial variables				
ROA	8,146	0.0344	0.2068	0.0337
IROA	8,146	0.0001	0.2062	0
Stock volatility	8,146	52.1887	31.766	48.3841
Firm size	8,146	21.7265	1.399	21.6354
Leverage	8,146	0.6083	1.3104	0.5149
MB	8,146	2.3938	7.4234	1.5331
Corporate governance				
SOE	8,146	0.3392	0.4735	0
Largest shareholder	8,146	0.3593	0.1563	0.3375
Board size	8,146	2.2994	0.9647	2.1972
Independent director	8,146	0.3647	0.0518	0.3333
CEO characteristics				
Tenure	8,146	3.2243	2.6678	2.589
Education	8,146	3.5195	0.808	4
Duality	8,146	0.1494	0.3565	0

This table shows the summary statistics for key variables. Variable definitions provided in Appendix 1.

To gain an insight on the impact of bank loan on CEO turnover, we examine the average CEO turnover rates over different ranges of firm performance and bank loan intensity. The results of forced and voluntary turnover rates are reported in Panel A and Panel B of Table 3. For firms whose performance is in the bottom third, we see that the proportion of CEO forced turnovers increases from 9.54 % to 15.24 % as bank loan intensity increases from the bottom to top percentile. As the voluntary CEO turnover rate does not materially change with loan intensity for low-performance firms, it suggests that voluntary turnover does not increase with loan intensity. To further investigate the impact of loan contract terms on forced CEO turnover, we divide loan intensity into secured / unsecured, and short-term / long-term loan intensity to examine their impact on the forced CEO turnover-performance sensitivity. The results in Panel C and Panel D show that the average turnover rate for poorly performing firms increases with secured loan intensity, but there is less change with unsecured loan intensity. In Panel E and Panel F, we also find for firms in bottom performance percentile that the percentage of forced CEO turnover increases by 4.56 % (3.08 %) as short-term (long-term) loan intensity increases from the lowest to highest percentile. These results suggest that loan contract terms have an essential impact on a bank's governance role in CEO turnover.

Table 3 also gives a second interesting result. If we compare changes of average forced CEO turnover rate between best and worst-performing firms against lowest to highest loan intensity, we see the forced turnover rate increases by 7.23 % and 9.1 %, respectively, for firms in the lowest and highest percentiles. The difference in the increased turnover rate is 1.87 %, implying the sensitivity of forced CEO turnover to performance increases slightly with loan intensity. When we look at different types of loans, we find that the differences in increased turnover rates are 2.24 % (0.88 %) for secured (unsecured) loan intensity, and 2.78 % (0.29 %) for short-term (long-term) loan intensity. Consistent with our hypothesis, forced CEO turnover-performance sensitivity primarily increases with secured and short-term loan intensity.

Table 3   Forced and voluntary CEO turnovers over loan intensity and IROA

| | IROA | | | | | | | | |
| | Bottom 1/3 | | | Middle 1/3 | | | Top 1/3 | | |
	# of obs.	# of turnover	Percentage	# of obs.	# of turnover	Percentage	# of obs.	# of turnover	Percentage
Panel A. Forced turnover in loan intensity									
Bottom 1/3	587	56	9.54	758	46	6.07	1,344	31	2.31
Middle 1/3	809	89	11.00	1,054	68	6.45	905	25	2.76
Top 1/3	1,293	197	15.24	956	81	8.47	440	27	6.14
Panel B. Voluntary turnover in loan intensity									
Bottom 1/3	587	111	18.91	758	117	15.44	1,344	264	19.64
Middle 1/3	809	107	13.23	1,054	164	15.56	905	156	17.24
Top 1/3	1,293	164	12.68	956	108	11.30	440	77	17.50
Panel C. Forced turnover in secured loan									
Bottom 1/3	569	55	9.67	784	46	5.87	1,336	31	2.32
Middle 1/3	853	104	12.19	1,016	70	6.89	899	30	3.34
Top 1/3	1,267	183	14.44	968	79	8.16	454	22	4.85
Panel D. Forced turnover in unsecured loan									
Bottom 1/3	1,135	131	11.54	992	71	7.16	1,173	32	2.73
Middle 1/3	689	94	13.64	760	50	6.58	708	20	2.82
Top 1/3	865	117	13.53	1,016	74	7.28	808	31	3.84
Panel E. Forced turnover in short-term loan									
Bottom 1/3	563	57	10.12	865	54	6.24	1,261	35	2.78
Middle 1/3	866	100	11.55	1,000	68	6.80	902	24	2.66
Top 1/3	1,260	185	14.68	903	73	8.08	526	24	4.56
Panel F. Forced turnover in long-term loan									
Bottom 1/3	851	94	11.05	781	48	6.15	1,131	28	2.48
Middle 1/3	819	104	12.70	924	66	7.14	951	23	2.42
Top 1/3	1,019	144	14.13	1,063	81	7.62	607	32	5.27

This table shows the number and proportion of forced turnovers sorted by loan intensity and IROA. Loan intensity is measured by overall loan, secured loan, unsecured loan, short-term loan, and long-term loan over total assets, respectively. IROA is industry-adjusted EBIT over total assets.

4.2   Loan intensity and CEO turnovers

To assess the statistical and economic importance of loan intensity on forced CEO turnovers, we estimate a series of competing risk models. The estimates for the standard Cox CRM model under forced and voluntary turnovers are reported in Table 4. We include financial variables of firms in column (1), as well as other corporate governance variables and CEO characteristics in columns (2) and (3). The variable of interest is the interaction term between various measures of *Loan intensity* and *ROA*. Panel A reports the results of overall loan intensity, and, consistent with our earlier findings, shows that the likelihood of forced CEO turnover is negatively associated with *IROA*. Unremarkably, CEOs in under-performing firms face a higher chance of forced turnover.

The coefficients of the interaction terms, *IROA*Loan intensity*, are negative, but statistically insignificantly. The coefficients of *IROA*Loan intensity* are positive and insignificant for voluntary turnovers. The results indicate that banks play no disciplining role in the average sense for the poorly performing CEOs in forced turnovers. Bank loans also have no effect on voluntary turnovers. In addition, we find that CEOs are more likely to be ousted in small-sized firms with concentrated ownership structures. Lower stock price volatility and higher growth (high MB ratio) firms make a forced CEO turnover less likely.

Next, we examine whether loan contract terms influence the bank's role in monitoring the borrowing firms. In the first alternative specification, we divide loan intensity into secured loan intensity (secured) and non-secured loan intensity (non-secured), and add these variables into our CRM model along with control variables. In the second alternative specification, we classify bank loans into short and long-term loans, and both short-term loan intensity (short) and long-term loan intensity (long) into our CRM model. The results are reported in Panel B and Panel C of Table 4.

In Panel B, the coefficient of the interaction term, *IROA*Secured*, is significantly negative for forced turnovers, and significantly positive for voluntary turnovers. In addition, the interaction variable *IROA*Unsecured*, is statistically insignificant for forced turnovers, and significantly negative for voluntary turnovers. This indicates that secured, rather than unsecured, loans are determinative for replacement of a poorly performing CEO. Indeed, secured loans play a *much* more important role in forced turnover decisions. It also suggests that bank lending is more effective in disciplining CEOs when it extends a higher proportion of secured loans. Securing the loan lets the bank collect necessary information about collateral, and, as the value of collateral may fluctuate, adds incentive to monitor the borrower firm actively. In contrast, unsecured bank

loans are often issued as part of policy-related lending that is implicitly guaranteed by the government. In such cases, banks have little incentive to monitor borrowing firms. The coefficients of other variables are qualitatively similar to Panel A and unaffected by including secured and non-secured loan intensity.

Looking at forced turnovers in Panel C, we see the coefficients for the interaction of short-term loan intensity and performance, *IROA*Short*, are significantly negative, while the coefficients for the interaction of long-term loan intensity and performance, *IROA*Long*, are positive and statistically insignificant. For the voluntary turnovers, we find no significant results for the interactions between short-term (long-term) loan intensity and performance. This finding likely indicates that banks are more efficient in disciplining CEOs if they extend a higher proportion of short-term loans. Banks are likely to engage in more frequent investigations of borrowing firms when extending short-term loans, e.g. information acquisition during loan rollovers, which makes short-term lenders more efficient in disciplining CEOs. The coefficients of other control variables also show similar magnitude in Panel A with the addition of short-term and long-term loan intensity.

From the above results, we conclude that outstanding bank loans usually have no role on average in forcing out poorly performing CEOs. Loan contract terms may enhance the bank's monitoring role, provided some discipline for poor CEO performance. Secured loan intensity and short-term loan intensity increase the sensitivity of forced CEO turnover to industry-adjusted performance. Poor performance increases the likelihood of a forced CEO turnover, while higher secured and short-term loan intensity strengthens this relationship.

Table 4   A competing risk analysis of CEO turnover

Panel A: Overall loan intensity

	Forced turnover			Voluntary turnover		
	(1)	(2)	(3)	(1)	(2)	(3)
IROA	−1.3946***	−1.4296***	−1.4403***	−0.3197*	−0.3443*	−0.3304*
	(0.3631)	(0.3748)	(0.3708)	(0.1830)	(0.1807)	(0.1810)
Loan intensity	0.0053	0.0054	0.0051	−0.2330	−0.1473	−0.1406
	(0.0052)	(0.0052)	(0.0052)	(0.2072)	(0.1728)	(0.1732)
IROA*Loan intensity	−0.0051	−0.0054	−0.0054	0.0636	0.0344	0.0323
	(0.0183)	(0.0181)	(0.0182)	(0.0609)	(0.0513)	(0.0513)
Stock volatility	0.0029**	0.0027**	0.0027**	0.0003	0.0005	0.0007
	(0.0012)	(0.0012)	(0.0012)	(0.0016)	(0.0014)	(0.0013)
Firm size	−0.1509***	−0.1765***	−0.1920***	−0.2155***	−0.2567***	−0.2480***
	(0.0399)	(0.0404)	(0.0407)	(0.0281)	(0.0277)	(0.0284)
Leverage	−0.0617	−0.0724	−0.0709	0.0288	0.0138	0.0110
	(0.0548)	(0.0561)	(0.0557)	(0.0323)	(0.0318)	(0.0319)
MB	−0.0131	−0.0130	−0.0138	−0.0078	−0.0064	−0.0059
	(0.0086)	(0.0083)	(0.0085)	(0.0057)	(0.0053)	(0.0052)
SOE		0.1221	0.1112		−0.0842	−0.0757
		(0.1028)	(0.1028)		(0.0700)	(0.0702)
Largest shareholder		0.5726**	0.5551*		1.4192***	1.4358***
		(0.2853)	(0.2845)		(0.2052)	(0.2056)
Board size		−0.0142	−0.0144		0.0864***	0.0872***
		(0.0454)	(0.0455)		(0.0189)	(0.0192)
Independent director		0.7929	0.7985		0.9362*	0.9113*
		(0.7533)	(0.7526)		(0.5322)	(0.5315)
Duality			−0.0866			0.1946***
			(0.1172)			(0.0737)
Education			0.1050**			−0.0044
			(0.0509)			(0.0368)
Year and industry	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,140	8,140	8,140	8,140	8,140	8,140
Log likelihood	−4857.9958	−4854.2874	−4851.8995	−9980.8171	−9948.3743	−9944.9028

Panel B: Secured loans

	Forced turnover			Voluntary turnover		
	(1)	(2)	(3)	(1)	(2)	(3)
IROA	–2.0271***	–2.0478***	–2.0509***	–0.0412	–0.0914	–0.0858
	(0.4261)	(0.4407)	(0.4402)	(0.1844)	(0.1858)	(0.1864)
Secured	–0.0079	–0.0072	–0.0073	–0.4766**	–0.3246	–0.3228
	(0.0076)	(0.0077)	(0.0078)	(0.2041)	(0.2005)	(0.2021)
IROA*Secured	–0.4320*	–0.4130*	–0.4085*	0.5626***	0.5117***	0.5123***
	(0.2257)	(0.2329)	(0.2360)	(0.1315)	(0.1297)	(0.1291)
Unsecured	0.6682***	0.6619***	0.6511***	–0.0192	–0.0534	–0.0464
	(0.1600)	(0.1653)	(0.1646)	(0.1108)	(0.1191)	(0.1192)
IROA*Unsecured	–0.0090	–0.0182	–0.0188	–0.1923***	–0.1861***	–0.1875***
	(0.0579)	(0.0584)	(0.0591)	(0.0384)	(0.0376)	(0.0372)
Stock volatility	0.0032***	0.0030***	0.0030***	0.0005	0.0007	0.0008
	(0.0012)	(0.0011)	(0.0011)	(0.0015)	(0.0013)	(0.0012)
Firm size	–0.1573***	–0.1821***	–0.1965***	–0.2187***	–0.2557***	–0.2469***
	(0.0383)	(0.0387)	(0.0390)	(0.0274)	(0.0272)	(0.0279)
Leverage	–0.1572***	–0.1654***	–0.1636***	0.0571*	0.0401	0.0366
	(0.0524)	(0.0543)	(0.0542)	(0.0318)	(0.0317)	(0.0320)
MB	–0.0169	–0.0168	–0.0175	–0.0072	–0.0057	–0.0052
	(0.0110)	(0.0106)	(0.0109)	(0.0057)	(0.0052)	(0.0052)
SOE		0.1030	0.0927		–0.0878	–0.0796
		(0.1028)	(0.1028)		(0.0703)	(0.0705)
Largest shareholder		0.5729**	0.5543*		1.3871***	1.4040***
		(0.2855)	(0.2848)		(0.2071)	(0.2074)
Board size		–0.0156	–0.0158		0.0832***	0.0840***
		(0.0457)	(0.0457)		(0.0192)	(0.0194)
Independent director		0.6941	0.6940		0.9774*	0.9493*
		(0.7625)	(0.7622)		(0.5317)	(0.5313)
Duality			–0.0647			0.1941***
			(0.1156)			(0.0735)
Education			0.1029**			–0.0052
			(0.0512)			(0.0368)
Year and industry	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,140	8,140	8,140	8,140	8,140	8,140
Log likelihood	–4850.4785	–4847.1347	–4844.97	–9974.5392	–9943.7588	–9940.297

Panel C: Loan maturity

	Forced turnover			Voluntary turnover		
	(1)	(2)	(3)	(1)	(2)	(3)
IROA	–1.7602***	–1.8092***	–1.8172***	–0.2613	–0.2895	–0.2759
	(0.3326)	(0.3399)	(0.3424)	(0.1877)	(0.1837)	(0.1837)
Short	0.4993***	0.5056***	0.5008***	–0.3802	–0.2902	–0.2815
	(0.0992)	(0.0985)	(0.0984)	(0.2490)	(0.2265)	(0.2261)
IROA*Short	–0.1267***	–0.1302***	–0.1303***	0.1050	0.0743	0.0716
	(0.0377)	(0.0379)	(0.0393)	(0.0735)	(0.0669)	(0.0667)
Long	0.0015	0.0023	0.0018	–0.1690	–0.0463	–0.0382
	(0.0165)	(0.0175)	(0.0177)	(0.4836)	(0.4556)	(0.4575)
IROA*Long	0.1500	0.1705	0.1611	0.9195	0.8210	0.8261
	(0.6094)	(0.6470)	(0.6588)	(0.9106)	(0.8430)	(0.8520)
Stock volatility	0.0031***	0.0030**	0.0030**	0.0003	0.0006	0.0007
	(0.0012)	(0.0012)	(0.0012)	(0.0016)	(0.0013)	(0.0013)
Firm size	–0.1388***	–0.1654***	–0.1795***	–0.2161***	–0.2582***	–0.2495***
	(0.0397)	(0.0400)	(0.0402)	(0.0308)	(0.0303)	(0.0308)
Leverage	–0.1648***	–0.1795***	–0.1788***	0.0346	0.0193	0.0165
	(0.0489)	(0.0506)	(0.0511)	(0.0327)	(0.0322)	(0.0323)
MB	–0.0149	–0.0145	–0.0151	–0.0077	–0.0063	–0.0059
	(0.0151)	(0.0143)	(0.0147)	(0.0058)	(0.0053)	(0.0053)
SOE		0.1223	0.1122		–0.0880	–0.0797
		(0.1025)	(0.1026)		(0.0701)	(0.0703)
Largest shareholder		0.6094**	0.5920**		1.4251***	1.4413***
		(0.2869)	(0.2860)		(0.2054)	(0.2058)
Board size		–0.0149	–0.0148		0.0856***	0.0864***
		(0.0453)	(0.0453)		(0.0190)	(0.0192)
Independent director		0.8035	0.8020		0.9512*	0.9288*
		(0.7507)	(0.7501)		(0.5331)	(0.5322)
Duality			–0.0634			0.1941***
			(0.1149)			(0.0737)
Education			0.1012**			–0.0035
			(0.0509)			(0.0369)
Year and industry	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,140	8,140	8,140	8,140	8,140	8,140
Log likelihood	–4846.2206	–4842.2125	–4840.1159	–9979.0331	–9946.46	–9943.0097

This table reports the estimates for the standard Cox CRM model under forced and voluntary turnovers. All variable definitions are in Appendix 1. Heteroscedasticity robust standard errors are in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels.

4.3   Types of lending banks

In this section, we test the impact of different types of banks on monitoring borrowing firms by identifying each firm's largest bank loan provider as its main bank. Bank are categorized as *state-owned banks* ("Big Four" and three policy banks), joint *equity banks*, *local banks,*[7] and *foreign banks.*[8]

Table 5 report our CRM estimates of turnover-performance sensitivity for firms that borrowed primarily from state-owned banks, joint equity banks, or local and foreign banks. For the sake of brevity, we only report the results of forced CEO turnovers.[9] We see that the coefficients for the interaction terms, *IROA*Loan intensity, IROA*Secured* and *IROA*Short* are positive and statistically insignificant when firms primarily borrow from state-owned banks. This suggests that when state-owned banks are the primary lenders, performance-turnover sensitivity decreases. Consistent with our hypothesis and recognizing that state-owned banks are subject to government intervention, we see that a large proportion of bank loans are extended for political goals rather than profit maximization. Thus, state-owned banks have little incentive to play a proper role in monitoring borrowing firms.

In contrast, firms borrowing primarily from joint equity banks show the coefficients for our measures of interactions, *IROA*Loan intensity, IROA*Secured* and *IROA*Short* that are negative and statistically significant at conventional confidence levels. Notably, the coefficients of the interaction variables, *IROA*Secured* and *IROA*Short*, are also negative and statistically significant at the 1 % and 5 % level, respectively. This suggests that joint equity banks rely more on loan contract terms to enhance their roles in monitoring borrowing firms. These results are consistent with our hypothesis that joint equity banks have greater incentive to discipline the CEO of a borrowing firm in the event the firm's performance deteriorates.

For the tiny group of firms borrowing from local or foreign banks, we find similar results as those firms that borrow mainly from state-owned banks. Almost all interaction variables are positive and statistically insignificant. However, the coefficients of the interaction *IROA*Unsecured*, are negative. This suggests that local or foreign banks are more likely to discipline underperforming CEOs than state-owned banks, perhaps because they are less constrained by government policy goals. Nevertheless, given the limited bargaining power of local and foreign banks,

---

[7] Local banks include city and rural commercial banks, city and rural credit cooperatives, rural cooperative banks, and village banks.

[8] As there are so few firms borrowing from foreign banks, we combine firms borrowing from local banks and foreign banks into the same category.

[9] Our results for voluntary turnovers are available upon request.

they are unable to monitor borrowing firms properly. Thus, joint equity banks seem to be most efficient in disciplining poor-performing CEOs.

Table 5   Impact of main banks

Panel A: Loan intensity with different main bank

| | Different main bank | | |
	State-owned	Joint equity	Local or foreign
IROA	–0.9120	–4.7786§***	0.0218
	(1.4495)	(1.2499)	(1.2108)
Loan intensity	0.0241	–0.3111	0.7778
	(0.0257)	(0.4097)	(1.0968)
IROA*Loan intensity	0.9330	–4.7439*	2.8891
	(0.9902)	(2.4361)	(2.5006)
Stock volatility	0.0031*	0.0028*	0.0096
	(0.0016)	(0.0015)	(0.0079)
Firm size	–0.1529**	–0.2516***	–0.0792
	(0.0602)	(0.0918)	(0.1533)
Leverage	0.0121	0.1909	1.2475***
	(0.1401)	(0.2000)	(0.3331)
MB	–0.0015	–0.1420***	–0.0268
	(0.0250)	(0.0460)	(0.0322)
SOE	0.2390	–0.1039	–0.7828
	(0.1679)	(0.2023)	(0.5257)
Largest shareholder	1.2029***	–0.0060	–1.8636
	(0.4447)	(0.5030)	(1.6371)
Board size	–0.0841	–0.0443	–0.0468
	(0.1049)	(0.0827)	(0.1325)
Independent director	0.3458	–0.2541	0.9533
	(1.1900)	(1.6066)	(2.6436)
Duality	–0.0033	0.1077	–0.4332
	(0.1826)	(0.2064)	(0.5993)
Education	0.0944	–0.0386	0.1588
	(0.0846)	(0.1010)	(0.3061)
Year and industry	Yes	Yes	Yes
Observations	3,564	2,237	542
Log likelihood	–1882.8632	–1200.0087	–212.2446

Panel B: Loan secured with different main bank

	Different main bank		
	State-owned	Joint equity	Local or foreign
IROA	–0.6981	–4.9428***	–1.5262
	(1.6363)	(1.1892)	(1.4683)
Secured	0.0146	–0.2549	1.0359
	(0.0300)	(0.4623)	(0.9153)
IROA*Secured	0.5851	–3.5591*	0.0960
	(1.1627)	(1.9477)	(2.7832)
Unsecured	0.9376*	–0.1544	–6.3740***
	(0.5376)	(0.8514)	(2.3657)
IROA*Unsecured	7.6862***	–18.5327***	–62.3011
	(2.4094)	(4.4381)	(79.1705)
Stock volatility	0.0031*	0.0029**	0.0046
	(0.0017)	(0.0014)	(0.0085)
Firm size	–0.1795***	–0.2352**	0.1000
	(0.0602)	(0.0981)	(0.1731)
Leverage	0.0326	0.1164	1.8045***
	(0.1445)	(0.2279)	(0.3762)
MB	0.0005	–0.1457**	–0.0204
	(0.0275)	(0.0647)	(0.0342)
SOE	0.2353	–0.0854	–0.9776**
	(0.1695)	(0.2021)	(0.4959)
Largest shareholder	1.0851**	0.0099	–1.1882
	(0.4518)	(0.5062)	(1.5761)
Board size	–0.0899	–0.0441	–0.0778
	(0.1120)	(0.0827)	(0.1239)
Independent director	0.2690	–0.6189	0.9765
	(1.1985)	(1.6604)	(2.8833)
Duality	0.0221	0.1057	–0.4837
	(0.1827)	(0.2099)	(0.5833)
Education	0.1043	–0.0525	0.3682
	(0.0864)	(0.1014)	(0.3318)
Year and industry	Yes	Yes	Yes
Observations	3,564	2,237	542
Log likelihood	–1875.3787	–1196.6324	–205.2680

Panel C: Loan maturity with different main bank

| | Different main bank | | |
	State-owned	Joint equity	Local or foreign
IROA	–1.0226	–5.5477***	0.7202
	(1.5369)	(1.4806)	(0.9620)
Short	1.1610***	–0.1208	2.0842
	(0.3188)	(0.4769)	(1.3198)
IROA*Short	0.3069	–3.7252*	1.9463
	(0.2711)	(2.2593)	(2.8659)
Long	0.0381	–0.4936	–1.9697
	(0.0729)	(0.6726)	(2.2673)
IROA*Long	1.6659	–10.7207**	44.2099
	(2.8262)	(5.4088)	(38.4485)
Stock volatility	0.0036**	0.0028*	0.0070
	(0.0016)	(0.0015)	(0.0079)
Firm size	–0.1463**	–0.2338**	–0.0023
	(0.0631)	(0.1020)	(0.1637)
Leverage	–0.1230	0.1676	0.9397*
	(0.2439)	(0.2191)	(0.5077)
MB	0.0075	–0.1485***	–0.0084
	(0.0301)	(0.0475)	(0.0325)
SOE	0.2585	–0.1084	–0.8019
	(0.1670)	(0.2039)	(0.4930)
Largest shareholder	1.2586***	–0.0227	–1.6006
	(0.4492)	(0.5060)	(1.6626)
Board size	–0.0825	–0.0497	–0.0458
	(0.1067)	(0.0833)	(0.1239)
Independent director	0.1610	–0.2894	0.6529
	(1.1905)	(1.6099)	(2.7250)
Duality	0.0357	0.1159	–0.5427
	(0.1809)	(0.2059)	(0.6151)
Education	0.0813	–0.0471	0.1257
	(0.0857)	(0.1004)	(0.3105)
Year and industry	Yes	Yes	Yes
Observations	3,564	2,237	542
Log likelihood	–1874.9	–1198.8851	–210.3728

This table reports the estimates of the standard Cox CRM model under forced CEO turnover for different main banks. All variable definitions are in Appendix 1. White heteroscedasticity robust standard errors are in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels.

4.4 Types of borrowing firms

We categorize borrowing firms as SOEs or private firms, and then examine the bank relationship. SOEs are ultimately controlled by the government, which, as stated, often has political objectives such as boosting employment or economic growth. Banks generally should be more willing to finance SOEs due to implicit government guarantees. We thus expect that loan intensity reduces the sensitivity of forced CEO turnover to firm performance for SOEs, while bank loans are relatively more efficient for private firms.

Table 6 reports our estimates of turnover-performance sensitivity for SOEs and private firms. In the private firm sample, the coefficients of our three interaction variables, *IROA*Loan intensity, IROA*Secured* and *IROA*Short*, are negative and statistically significant at the 1 % confidence level when there is a forced CEO turnover. While the magnitude of these coefficients is much larger than those reported in Table 4, we find no significant results for SOEs when CEOs are forced out. In addition, the coefficients for these interaction variables are much larger for private firms than for SOEs. This implies that banks play a much more important governance role for private firms. Banks are more likely to discipline CEOs of private firms.

Turning to voluntary turnovers, we obtain similar results as those reported in Table 4. Bank loans seem to have no impact on voluntary turnover for SOEs or private firms.

Table 6   SOEs and private firms

Panel A: Loan intensity with different firm type

	Forced turnover		Voluntary turnover	
	Private	SOEs	Private	SOEs
IROA	−2.6302***	−0.4394	−0.2413	−0.8567
	(0.3519)	(1.2124)	(0.2074)	(0.5426)
Loan intensity	1.1475***	−0.0104	−0.0541	−1.1077***
	(0.2353)	(0.0069)	(0.1576)	(0.3243)
IROA*Loan intensity	−0.7274***	−0.1394	0.0086	0.8753**
	(0.1691)	(0.2137)	(0.0451)	(0.3888)
Stock volatility	0.0018	0.0049***	0.0010	−0.0009
	(0.0020)	(0.0016)	(0.0012)	(0.0048)
Firm size	−0.1768***	−0.2197***	−0.3042***	−0.1137**
	(0.0497)	(0.0731)	(0.0348)	(0.0509)
Leverage	−0.5091***	0.1911	0.0121	0.1497**
	(0.1521)	(0.1205)	(0.0355)	(0.0642)
MB	0.0038	−0.0658	−0.0089	−0.0124
	(0.0135)	(0.0773)	(0.0065)	(0.0112)
Largest shareholder	0.5567	1.0227**	1.4238***	1.7870***
	(0.3702)	(0.4711)	(0.2552)	(0.3690)
Board size	−0.1489	0.0402	0.1149***	0.0715**
	(0.1475)	(0.0489)	(0.0274)	(0.0281)
Independent director	−0.3929	2.4243**	0.3921	1.8788**
	(1.0006)	(1.1589)	(0.6585)	(0.8918)
Duality	−0.1669	0.2554	0.2072**	0.1433
	(0.1420)	(0.2110)	(0.0841)	(0.1606)
Education	0.0849	0.0964	−0.0147	0.0455
	(0.0633)	(0.0952)	(0.0434)	(0.0703)
Year and industry	Yes	Yes	Yes	Yes
Observations	5,378	2,762	5,378	2,762
Log likelihood	−2902.8929	−1494.2548	−6522.9726	−2606.4077

Panel B: Loan secured with different firm type

	Forced turnover		Voluntary turnover	
	Private	SOEs	Private	SOEs
IROA	−2.5990***	−0.2454	0.0540	−0.6376
	(0.3637)	(1.2683)	(0.2166)	(0.5622)
Secured	1.2722***	0.0089	−0.2491	−1.0558***
	(0.2365)	(0.0478)	(0.2255)	(0.3977)
IROA*Secured	−0.7300***	0.7045	0.4736***	1.7259*
	(0.1764)	(1.8121)	(0.1518)	(1.0390)
Unsecured	0.9904***	0.0300	0.0508	−1.0948**
	(0.2903)	(0.4443)	(0.1724)	(0.5182)
IROA*Unsecured	−0.1011	−0.4443	−0.2167***	−0.7809
	(0.2121)	(0.4288)	(0.0610)	(0.5165)
Stock volatility	0.0018	0.0050***	0.0010	−0.0010
	(0.0021)	(0.0015)	(0.0011)	(0.0048)
Firm size	−0.1722***	−0.2250***	−0.3020***	−0.1113**
	(0.0498)	(0.0821)	(0.0343)	(0.0513)
Leverage	−0.4993***	0.1663	0.0402	0.1443**
	(0.1565)	(0.1305)	(0.0355)	(0.0650)
MB	0.0040	−0.0883	−0.0080	−0.0079
	(0.0138)	(0.1178)	(0.0064)	(0.0119)
Largest shareholder	0.5588	0.9910**	1.3855***	1.7829***
	(0.3701)	(0.4795)	(0.2567)	(0.3715)
Board size	−0.1449	0.0369	0.1147***	0.0663**
	(0.1441)	(0.0515)	(0.0276)	(0.0292)
Independent director	−0.3963	2.4229**	0.4620	1.9224**
	(0.9995)	(1.1615)	(0.6557)	(0.8948)
Duality	−0.1765	0.2516	0.2064**	0.1266
	(0.1431)	(0.2097)	(0.0840)	(0.1647)
Education	0.0823	0.0983	−0.0166	0.0496
	(0.0632)	(0.0951)	(0.0433)	(0.0711)
Year and industry	Yes	Yes	Yes	Yes
Observations	5,378	2,762	5,378	2,762
Log likelihood	−2901.5777	−1494.1018	−6518.9162	−2605.9593

Panel C: Loan maturity with different firm type

	Forced turnover		Voluntary turnover	
	Private	SOEs	Private	SOEs
IROA	–2.7944***	–0.0024	–0.1550	–0.8358
	(0.5644)	(1.1776)	(0.2165)	(0.7297)
Short	1.3100***	0.3530	–0.2804	–0.9761**
	(0.2775)	(0.4361)	(0.2462)	(0.4783)
IROA*Short	–0.7746***	–0.2060	0.0719	0.7221
	(0.2287)	(0.3722)	(0.0722)	(0.5598)
Long	0.9781***	0.0862	0.2582	–1.2739**
	(0.2761)	(0.3257)	(0.2425)	(0.5028)
IROA*Long	–1.1481	4.6627	0.3563	1.2811
	(1.0023)	(6.6636)	(0.3922)	(3.3369)
Stock volatility	0.0019	0.0050***	0.0010	–0.0009
	(0.0020)	(0.0015)	(0.0012)	(0.0048)
Firm size	–0.1654***	–0.2292***	–0.3117***	–0.1101**
	(0.0534)	(0.0802)	(0.0350)	(0.0514)
Leverage	–0.5511***	0.0480	0.0219	0.1485**
	(0.1888)	(0.2980)	(0.0360)	(0.0642)
MB	0.0047	–0.1000	–0.0090	–0.0118
	(0.0132)	(0.1320)	(0.0064)	(0.0146)
Largest shareholder	0.5381	0.9764**	1.4339***	1.7806***
	(0.3723)	(0.4786)	(0.2552)	(0.3704)
Board size	–0.1492	0.0359	0.1151***	0.0716**
	(0.1468)	(0.0521)	(0.0274)	(0.0281)
Independent director	–0.3948	2.4393**	0.4139	1.8536**
	(0.9993)	(1.1609)	(0.6612)	(0.9062)
Duality	–0.1746	0.2572	0.2093**	0.1449
	(0.1422)	(0.2112)	(0.0843)	(0.1623)
Education	0.0843	0.0992	–0.0138	0.0458
	(0.0636)	(0.0956)	(0.0435)	(0.0709)
Year and industry	Yes	Yes	Yes	Yes
Observations	5,378	2,762	5,378	2,762
Log likelihood	–2902.2669	–1493.383	–6520.4911	–2606.3145

This table reports the estimates of the standard Cox CRM model under forced and voluntary turnovers for SOEs and private firms. All variable definitions are in Appendix 1. Heteroscedasticity robust standard errors are in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels.

5   Bank actions

We have shown that loan intensity, particularly secured and short-term loan intensity, can serve as a proxy for the effectiveness of banking monitoring. Banks can influence board decisions and encourage disciplining of top executives when firms severely underperform.

As mentioned, banks potentially can threaten to accelerate loan repayments or cut the firm off from future lending. They may also extract concessions that could impact the firm's investment policies. Previous studies suggest that investment policy can be impacted by tightened credit constraints (Gorton & Kahn, 2000). Lending after a loan covenant violation typically results in an interest rate penalty (Beneish & Press, 1993), as well as lower borrowing ceilings and shorter loan maturities (Chava & Roberts, 2005).

Thus, if the firm heeds bank advice and forces out its poorly performing CEO, we would expect the bank to reciprocate with willingness to keep its original lending terms in place and give the firm time to improve its performance. If the firm ignores bank advice, we would expect the bank to retaliate by reducing credit to the firm or imposing more onerous contract terms.

To examine this, we compare the changes of loan size and loan terms around forced turnovers. We conduct a propensity score matching procedure to control for possible endogeneity. For every firm subject to forced turnovers ("treated"), we find a firm without forced turnovers ("control") with a similar likelihood of forcing out the CEO in the same year. We conduct the matching procedure based on all covariates in column (3) of Panel A of Table 4, and further require the treatment and control groups to have the same CSRC industry classification. This matching procedure creates a quasi-natural experiment in which both the treated and control firms have an equal propensity to force out CEOs. The former listen to their bank's advice and replace their CEO, while the latter ignore their bank's advice. Hence, the changes in bank loans of the treatment and control groups can only be attributed to bank actions.

Table 7 reports the change of bank loans one year before and after the forced turnovers. It shows that both treated and control firms have a decline in outstanding loans overall. The mean difference between the two group firms is statistically insignificant, indicating that banks do not reduce lending limits to firms that ignore their advice. Interestingly, when we divide loans into secured and unsecured loans and short-term and long-term loans, we find that unsecured loan intensity increases for treated firms, but decreases for control firms after a forced turnover. The difference of changes in unsecured loan intensity between treated and control firms is 0.81 % and statistically significant at the 5 % confidence level. This suggests that banks may lower their collateral demands on firms that force out poor-performing CEOs. In addition, treated firms experience an increase in the long-term loan intensity after a forced CEO turnover, but long-term

loan intensity declines for control firms. The difference of changes in this loan intensity is 1.43 %, and statistically significant at 1 % level. This suggests that banks extend more long-term loans to firms with forced CEO turnovers.

Our analysis here provides colorable evidence that banks retaliate against firms that ignore their advice. Banks are more likely to tighten collateral requirements and shorten loan maturities on firms that ignore their recommendation to oust an underperforming CEO than firms that comply with bank wishes.

Table 7   Loan terms after forced turnover

	Loan intensity	Secured	Unsecured	Short	Long
Treated	–0.0312	–0.0255	0.0051	–0.0217	0.0012
Control	–0.0223	–0.0590	–0.0030	–0.0217	–0.0130
Difference	–0.0090	0.0335**	0.0081**	0.0000	0.0143***
	(–0.6666)	(2.1832)	(2.0245)	(0.0003)	(2.6022)

The variable of interest is the difference of one year before and after for the loan intensity, secured loan intensity (*secured*), unsecured loan intensity (*unsecured*), short-term loan intensity (*short*), and long-term loan intensity (*long*). For every firm with forced turnovers ("treated"), we find a firm without a forced turnover ("control") that has same likelihood to force out a CEO in the same year. . ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels.

6   Conclusions

In this paper, we investigated the role of lending banks in forced turnovers of under-performing CEOs for a sample of Chinese listed firms. We find that a higher intensity of bank loans only slightly increase the sensitivity of the forced CEO turnover to firm performance. This indicates that Chinese banks, on average, are inefficient in disciplining CEOs. To enhance their monitoring role, banks typically rely on the collateral requirements and more frequent investigations of the borrowing firms through shortening loan maturity. We find that secured loan and short-term loan outstanding increases the likelihoods of a forced CEO turnover in the case of CEOs that under-perform relative to their industry peers.

In addition, we find that joint equity banks as main banks are most efficient in disciplining CEOs when they underperform relative to their peers. In contrast, poorly performing CEOs are less likely to be forced out when a state-owned bank serve as the main bank for the firm. Furthermore, turnover-performance sensitivity increases with secured loans and long-term loan intensity for private firms. There is no such relationship in the case of SOEs. Thus, our results

indicate that Chinese banks, on average, fail to monitor borrower firms effectively, but this is mainly a reflection of the fact that the state owns controlling interests in both the banks and listed firms in our sample.

The channels through which banks exert pressure seem to rely on ex post restrictive loan contract terms. There is anecdotal evidence that banks require more secured assets and are more reluctant to extend long-term loans to firms that do not heed their calls to force out underperforming CEOs. While the Chinese banking system has gradually been liberalized with the expansion of joint equity banks, as well as city and rural commercial banks, the monitoring roles of banks have been enhanced substantially, thereby improving the overall efficiency of the banking sector. Thus, the regulators should give priority to non-state-owned banks – particularly joint-stock banks – in expanding their business to listed firms. This would promote better corporate governance of listed firms. Due to soft-budget constraints and perverse incentives, China's state-owned banks today are still inefficient in monitoring performance the CEOs of listed firms. The entry of foreign banks, which was supposed to enhance the efficiency of the banking system, has yet to show much impact as foreign banks still have rather limited geographical footprint and business scope in the country.

Regulators can also facilitate the registration of collateral to promote secured loans (e.g. treat accounts receivable as collateral, simplify procedures, and lower related costs, etc.). Furthermore, the regulatory framework can be designed to facilitate short-term lending policies in lieu of long-term loans. In the context of China's underdeveloped financial and legal system, short-term loans give banks considerable leverage to negotiate with the borrowing firms, including cutting borrowers off cold. Even though long-term lending is essential for the economic growth, CEOs of borrowing firms often abuse their access to long-term credit without facing any immediate consequences or harm to their careers. This alone should be an argument for the state to reduce a heavy reliance on inefficient long-term lending policies.

While Chinese banks exert an important role in monitoring the CEOs of listed firms, bankers rarely sit in the boards of listed firms in the country. If Chinese regulators allow bankers to sit on the boards of listed firms, banks would play a greater role than at present in directly promoting good governance policies.

References

Aghion, P., and Howitt, P. (1998). A Schumpeterian perspective on growth and competition. In *New Theories in Growth and Development* (pp. 9–49). Palgrave Macmillan UK.

Allen, F., Qian, J., and Qian, M. (2005). Law, finance, and economic growth in China. *Journal of Financial Economics*, 77(1), 57–116.

Bailey, W., Huang, W., and Yang, Z. (2012). Bank loans with Chinese characteristics: some evidence on inside debt in a state-controlled banking system. *Journal of Financial and Quantitative Analysis*, 46(6), 1795–1830.

Baird, D.G., and Rasmussen, R.K. (2006). Private debt and the missing lever of corporate governance. *University of Pennsylvania Law Review*, 1209–1251.

Beck, T., Demirguc-Kunt, A., and Levine, R. (2003). Bank concentration and crises. *National Bureau of Economic Research*, w9921.

Beneish, M. D., and Press, E. (1993). Costs of technical violation of accounting-based debt covenants. *Accounting Review*, 68, 233–257.

Boycko, M., Shleifer, A., and Vishny, R. W. (1996). A theory of privatization. *The Economic Journal*, 106(435), 309–319.

Cao, J., Pan, X., and Qian, M. (2011). Political connection and managerial entrenchment: evidence from CEO turnovers in China. *Available at SSRN 1786103*.

Cerqueiro, G., Ongena, S., and Roszbach, K. (2016). Collateralization, bank loan rates and monitoring. *Journal of Finance*, Forthcoming.

Chang, E.C., and Wong, S.M. (2009). Governance with multiple objectives: Evidence from top executive turnover in China. *Journal of Corporate Finance*, 15(2), 230–244.

Chava, S., and Roberts, M.R. (2005). Is financial contracting costly? An empirical analysis of debt covenants and corporate investment. *University of Pennsylvania*, Working paper.

Diamond, D.W. (1984). Financial intermediation and delegated monitoring. *Review of Economic Studies*, 51(3), 393–414.

Diamond, D.W. (1991). Debt maturity structure and liquidity risk. *Quarterly Journal of Economics*, 709–737.

Diamond, D.W. (2004). Presidential address, Committing to commit: Short-term debt when enforcement is costly. *Journal of Finance*, 59(4), 1447–1479.

Dinc, I. S. (2005). Politicians and banks: Political influences on government-owned banks in emerging markets. *Journal of Financial Economics*, 77(2), 453–479.

Efron, B. (1977). The efficiency of Cox's likelihood function for censored data. *Journal of the American Statistical Association*, *72*(359), 557–565.

Fama, E.F. (1985). What's different about banks? *Journal of Monetary Economics*, 15(1), 29–39.

Gorton, G., and Kahn, J. (2000). The design of bank loan contracts. *Review of Financial Studies*, 13(2), 331–364.

Graham, J.R., Li, S., and Qiu, J. (2008). Corporate misreporting and bank loan contracting. *Journal of Financial Economics*, 89(1), 44–61.

Hazarika, S., Karpoff, J.M., and Nahata, R. (2012). Internal corporate governance, CEO turnover, and earnings management. *Journal of Financial Economics*, 104(1), 44–69.

He, Q., Chong, T.T.L., Li, L., and Zhang, J. (2010). A competing risks analysis of corporate survival. *Financial Management*, 39(4), 1697–1718.

He, Q., and Rui, O. (2016). Ownership structure and insider trading: The evidence from China. *Journal of Business Ethics.* 134(4), 553–574.

He, Q., Xue, C., and Zhu, C. (2016). Financial Development and the Patterns of Industrial Specialization: The Evidence from China. *Review of Finance*. Forthcoming.

Huson, M.R., Parrino, R., and Starks, L.T. (2001). Internal monitoring mechanisms and CEO turnover: A long-term perspective. *Journal of Finance*, 56(6), 2265–2297.

Ivashina, V., and Scharfstein, D. (2010). Bank lending during the financial crisis of 2008. *Journal of Financial Economics*, 97(3), 319–338.

James, C. (1987). Some evidence on the uniqueness of bank loans. *Journal of Financial Economics*, 19(2), 217–235.

Jensen, M.C., and Meckling, W.H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360.

Jenter, D., and Kanaan, F. (2015). CEO turnover and relative performance evaluation. *Journal of Finance*, 70(5), 2155–2184.

Kaplan, S.N., and Minton, B.A. (1994). Appointments of outsiders to Japanese boards: Determinants and implications for managers. *Journal of Financial Economics*, 36(2), 225–258.

Khwaja, A.I., and Mian, A. (2005). Do lenders favor politically connected firms? Rent provision in an emerging financial market. *Quarterly Journal of Economics*, 120(4), 1371–1411.

La Porta, R., Lopez-deSilanes, F., and Shleifer, A. (2002). Government ownership of banks. *Journal of Finance*, 57, 265–301.

Li, H., Meng, L., Wang, Q., and Zhou, L.A. (2008). Political connections, financing and firm performance: Evidence from Chinese private firms. *Journal of Development Economics*, 87(2), 283–299.

Lummer, S.L., and McConnell, J.J. (1989). Further evidence on the bank lending process and the capital-market response to bank loan agreements. *Journal of Financial Economics*, 25(1), 99–122.

Nini, G., Smith, D.C., and Sufi, A. (2012). Creditor control rights, corporate governance, and firm value. *Review of Financial Studies*, 25(6), 1713–1761.

Ono, A., and Uesugi, I. (2009). Role of collateral and personal guarantees in relationship lending: Evidence from Japan's SME loan market. *Journal of Money, Credit and Banking*, 41(5), 935–960.

Ozelge, S., and Saunders, A. (2012). The role of lending banks in forced CEO turnovers. *Journal of Money, Credit and Banking*, 44(4), 631–659.

Parrino, R., Sias, R.W., and Starks, L.T. (2003). Voting with their feet: Institutional ownership changes around forced CEO turnover. *Journal of Financial Economics*, 68(1), 3–46.

Podpiera, R. (2006). Progress in China's banking sector reform: Has bank behavior changed? *IMF Working Paper*, March, pp. 1–25.

Qian, J., and Strahan, P.E. (2007). How laws and institutions shape financial contracts: The case of bank loans. *Journal of Finance*, 62(6), 2803–2834.

Qian, X.H., Cao, T.Q., and Li, W.A. (2011). Promotion pressure, official's tenure and lending behavior of the city commercial banks. *Economic Research*, 12, 72–85.

Qian, J.Q., Strahan, P.E., and Yang, Z. (2015). The impact of incentives and communication costs on information production and use: Evidence from bank lending. *Journal of Finance*, 70(4), 1457–1493.

Rajan, R.G. (1992). Insiders and outsiders: The choice between informed and arm's‐length debt. *Journal of Finance*, 47(4), 1367–1400.

Rajan, R., and Zingales, L. (1998). Financial dependence and growth. *American Economic Review*, 88, 559–586.

Rajan, R., and Winton, A. (1995). Covenants and collateral as incentives to monitor. *Journal of Finance*, 50(4), 1113–1146.

Rajan, R.G., and Zingales, L. (2003). The great reversals: the politics of financial development in the twentieth century. *Journal of Financial Economics*, 69(1), 5–50.

Roberts, M.R., and Sufi, A. (2009). Renegotiation of financial contracts: Evidence from private credit agreements. *Journal of Financial Economics*, 93(2), 159–184.

Santos, J.A., and Rumble, A.S. (2006). The American keiretsu and universal banks: Investing, voting and sitting on nonfinancials' corporate boards. *Journal of Financial Economics*, 80(2), 419–454.

Shleifer, A., and Vishny, R.W. (1989). Management entrenchment: The case of manager-specific investments. *Journal of Financial Economics*, 25(1), 123–139.

Lakonishok, J., Shleifer, A., and Vishny, R.W. (1994). Contrarian investment, extrapolation, and risk. *Journal of Finance*, 49(5), 1541–1578.

Stiglitz, J.E., and Weiss, A. (1981). Credit rationing in markets with imperfect information. *American Economic Review*, 71(3), 393–410.

Wurgler, J. (2000). Financial markets and the allocation of capital. *Journal of Financial Economics*, 58(1), 187–214.

Zender, J.F. (1991). Optimal financial instruments. *Journal of Finance*, 46(5), 1645–1663.

Appendix 1   Variable definitions

Variable	Definition
Dependent variable	
Forced turnover	Equals 1 if 1) the CEO was fired, assigned to a lower position (or demotion), or departed due to legal dispute; 2) the departing CEO is younger than 60 for males and 55 for females, and the announcement does not report that the CEO died, left because of poor health, or accepted another position elsewhere or within the firm; or 3) the CEO "retires" but leaves the job within six months of the "retirement" announcement. The CEO turnovers in the third group are reclassified as voluntary if the incumbent takes a comparable position outside the firm or departs for business reasons that are unrelated to the firm's activities. Equals 0 otherwise.
Explanatory variables	
Loan intensity	Proportion of bank loans to total assets
Secured (Unsecured)	Proportion of secured (unsecured) loan to total assets
Short (Long)	Proportion of short-term (long-term) loans to total assets
IROA	Industry adjusted EBIT over total assets, i.e. (EBIT – industry average of EBIT) / total assets
Stock volatility	Volatility of firm's daily stock returns in the 12 months before CEO turnover
Firm size	Natural logarithm of total assets
Leverage	Total liabilities over total assets
MB	Total book value of liabilities plus the market value of equity over the book value of total assets
Largest shareholder	Proportion of equity ownership held by the largest shareholder
Board size	Natural logarithm of number of directors on board
Independent director	Proportion of independent directors on board
Tenure	Annualized duration of CEO in his or her position
Education	Categorical value ranging from 1 to 5; increases with level of education
Duality	Equals 1 if CEO is also chairman of the board, 0 otherwise.

BOFIT Discussion Papers

A series devoted to academic studies by BOFIT economists and guest researchers. The focus is on works relevant for economic policy and economic developments in transition / emerging economies.