Finance Research Letters xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Finance Research Letters

journal homepage: www.elsevier.com/locate/frl

Can banks identify firms' real earnings management? Evidence from China

Li Yuanhui[a], Nie Weiqian[a], Xiang Erwei[b,*], Hadrian Geri Djajadikerta[b]

[a] School of Economics and Management, Beijing Jiaotong University, Beijing, 100044, PR China
[b] School of Business and Law, Edith Cowan University, Joondalup, WA, 6027, Australia

ARTICLE INFO

Keywords:
Real earnings management
Bank loans
State ownership
Marketization

ABSTRACT

This paper investigates the impact of real earnings management on bank lending decisions and the moderation effects of state ownership and marketization in China. We find (1) firms with higher real earnings management get more and lower-cost loans, which indicates that banks cannot identify firms' real earnings management; (2) state-owned enterprises (SOEs) with higher real earnings management obtain more loans, while non-SOEs with higher real earnings management are more likely to obtain low-cost loans; (3) firms in regions with lower degree of marketization are more likely to get more and low-cost loans via real earnings management.

1. Introduction

In the borrowing-lending scenario, the literature has shown that banks make lending decisions mainly based on the information disclosed in the firms' financial statements, especially information on profitability (Yeung, 2009; Marquez, 2010). This has created a loophole for firms to obtain more bank loans and/or obtain loans with more favorable terms by manipulating their earnings – a situation which distorts the function of accounting information disclosure (Bharath and Shumway, 2008).

Existing literature has documented two types of earnings management activities: accrual and real earnings management (Cohen et al., 2008; Roychowdhury, 2006; Zang, 2012). However, existing studies on the impact of earnings management on debts have primarily focused on accrual management behavior especially in mature bond markets. Cohen et al. (2008) and Liu et al. (2011) argue that with the introduction of new corporate laws and international accounting standards, managers have gradually changed their earning management approach from accrual to real, partly because it is less vulnerable to the scrutiny of regulators and auditors. It is not clear, however, if this claim holds in the borrowing-lending scenario in emerging economies, such as in China.

In China, debt financing, especially bank financing, is an important source of external funds for firms (Ding et al., 2016). However, statistics show that the non-performing loan (NPL) rate of China's banking sector has been a concern and China has accumulated tremendous credit risk,[1] which calls for investigation on the safety of debts, including on the issue of borrowers' earnings management. As a transition economy, China's capital market still also features the dominance of state-owned enterprises (SOEs). There have been indications that SOEs are usually treated favourably by the government and financial institutions (Qian, 1994). This situation also offers us with an opportunity to investigate the possible impact of ownership type on the relationship between real earnings management and bank loans. Moreover, China has unbalanced market developments among regions, which

* Corresponding author.
E-mail address: e.xiang@ecu.edu.au (E. Xiang).

[1] The market estimates of the true position reaches as high as 15-19% of the loan book (from CLSA) which is very high, if true, but SocGen goes higher and estimates the overall exposure to loss within the banking sector amounts to as much as 12% of 2015 GDP (see http://www.forbes.com/sites/douglasbulloch/2016/06/17/chinas-playing-hot-potato-with-non-performing-loans/#2faf0f8915e2 for more details.).

http://dx.doi.org/10.1016/j.frl.2017.10.005
Received 14 May 2017; Received in revised form 19 September 2017; Accepted 3 October 2017

provides a sound contextual basis to examine the effect of marketization on the borrowing-lending relationship.[2]

Utilizing data from the China Stock Market & Accounting Research (CSMAR) Database, we investigate the impact of real earnings management on bank loans, and how state ownership and marketization moderate the relationship between real earnings management and bank loans in China. Our study finds that firms with higher real activities earnings management get access to more bank loans and obtain bank loans at a lower cost, which indicates that in China banks cannot identify firms' real earnings management. Furthermore, the effect of real earnings management on bank loans is also economically significant. We also find that SOEs with higher real earnings management obtain more bank loans, while non-SOEs with higher real earnings management are able to benefit from low-cost bank loans. In addition, firms located in the regions with lower marketization level are able to increase the amount of their bank loans and reduce the cost of the loans, and thus reduce the cost of the debt more effectively via real earnings management.

This study has accordingly makes several contributions. Compared with the existing studies that mostly focus on the developed markets, this study examines the relationship between real earnings management and bank loans in China as an emerging market, which exhibits different capital market environments and management behaviors from its developed country counterparts due to its variations in history, politics, judiciary, culture, and social norms (Xiang et al., 2014). Second, the findings from this study based on the effect of firms' ownership type may have similar implications to the situations in other countries with dominant state ownership (Li and Zhang, 2010), such as Finland, Austria, Singapore and Malaysia (Claessens et al., 2000; Faccio and Lang, 2002). Finally, the findings from this study on whether and how marketization affects the relationship between real earnings management and bank loans in China may be beneficial for the decision-making process made by banks in China and other emerging markets.

2. Research design

2.1. Data and sample

Firm-level data was sourced from the China Stock Market & Accounting Research (CSMAR) Database. The regional marketization index was derived from the 'China's Marketization Index' (Fan et al., 2012). The final sample comprises 6132 firm-year observations from 2009 to 2014.

2.2. Variables definition

2.2.1. Dependent variable: bank loans

We use three measures to proxy for bank loans: (1) stock of bank loans (LOAN), which is the ratio of the total amount of existing bank loans to the total assets at the beginning of the period - this reflects the aggregate situation and level of corporate loans; (2) increment of bank loans (NLOAN), which is the ratio of new loans to the total assets at the beginning of the period; and (3) interest rate, also known as the cost of debt (COD), which is measured by total interest expenses over the average of total debts at the beginning and ending of the period (Pittman and Fortin, 2004).

2.2.2. Independent variables: real earnings management

Following Cohen et al. (2008), Roychowdhury (2006) and Zang (2012), this study uses the sum of the abnormal cash flows from operating activities (AbCFO), the abnormal discretionary expenditures (AbDISX) and the abnormal production costs (AbPROD) to measure real earnings management (RM). First, we calculated the normal cash flows from operating activities, the normal discretionary expenditures and the normal production costs. Then we obtained residuals by running regressions to estimate the abnormal cash flows from operating activities (AbCFO), the abnormal discretionary expenditures (AbDISX) and the abnormal production costs (AbPROD), respectively.[3]

2.2.3. Control variables

To mitigate the omitted-variables problem, we included several control variables in the regression, including the state ownership (STATE), marketization index (Disindex), firm size (SIZE), leverage (LEV), growth rate of main business revenue (GROW), fixed-asset ratio (FA), return on assets (ROA), financial distress (Altman-Z), firm age (LAGE), percentage of independent directors (INDEP), and auditing (BIG4). In addition, year and industry dummies were also controlled. The definitions of the control variables are summarized in Table 1.

To eliminate the possible impacts of outliers, all continuous variables were winsorized at the 5th and 95th percentiles. We also conducted the correlation analysis but the results were not reported for brevity. The correlation analysis shows that the correlation coefficients between the independent variables and control variables and VIF are relatively small indicating that the multicollinearity problem is not a concern.

NLOAN, LOAN, and COD measure bank loans. RM is real earnings management. STATE is a binary indicator that equals one if a firm is owned by the state and zero otherwise. Disindex represents the degree of marketization in the region where a firm locates. SIZE is the natural logarithm of the total assets. LEV is the debt ratio. GROW is the growth rate of the main business revenue. FA is the

[2] Following Li et al. (2009) and Firth et al. (2009), marketization in this paper refers to the regional institutional development and market liberalization.

[3] In this paper, real earnings management (RM) is measured as follows: $RM = (-1) \times AbCFO + AbPROD + (-1) \times AbDISX$. For brevity, we did not specify the regression models used to measure each component of the real earnings management measure, but they are available upon request. We thank an anonymous reviewer for advice on this point.

Table 1
Descriptive statistics.

Variable	N	Mean	Median	SD	Min	Max
NLOAN	6132	0.095	0.067	0.088	0.001	0.319
LOAN	6132	0.296	0.283	0.191	0.014	0.694
COD	6132	0.164	0.086	0.208	0.036	0.894
RM	6132	0.009	0.020	0.239	−0.495	0.488
STATE	6132	0.558	1.000	0.497	0.000	1.000
Disindex	6132	8.963	9.020	2.094	0.380	11.800
SIZE	6132	22.068	21.903	1.183	20.271	24.553
LEV	6132	0.510	0.519	0.191	0.163	0.821
GROW	6132	0.177	0.130	0.287	−0.269	0.904
FA	6132	0.253	0.218	0.182	0.000	0.920
ROA	6132	0.041	0.036	0.072	−1.135	2.677
Altman-Z	6132	1.218	2.000	0.874	0.000	2.000
LAGE	6132	2.637	2.708	0.366	1.099	3.584
INDEP	6132	0.368	0.333	0.055	0.091	0.714
BIG4	6132	0.072	0.000	0.259	0.000	1.000

fixed assets of a firm over its total assets. ROA is the ratio of return on assets. Altman-Z is the Z-score defined by Altman (1968). LAGE is the natural logarithm of the duration since a firm is listed on the stock exchange, then plus 1. INDEP is the percentage of independent directors. BIG4 is a binary variable that equals one if the financial statements of a firm are audited by one of the 'big four' accounting firms and zero otherwise.

2.3. Estimation models

To test the impact of real earnings management on bank loans, we specified the following empirical model:

$$BANKLOAN_{it} = \alpha_0 + \alpha_1 RM_{it-1} + Controls + \varepsilon_{it} \quad (1)$$

where *BANKLOAN* was measured by $NLOAN_{it}$, $LOAN_{it}$, and COD_{it}, and real earnings management was measured by RM_{it-1}. To avoid the potential endogeneity issue, all the right-hand-side variables took the lagged value.

To test the impact of state ownership on the relationship between real earnings management and bank loans, we specified the following empirical model:

$$BANKLOAN_{it} = \beta_0 + \beta_1 RM_{it-1} + \beta_2 STATE_{it-1} + \beta_3 RM_{it-1} \times STATE_{it-1} + Controls + \varepsilon_{it} \quad (2)$$

where $STATE_{it-1}$ is a dummy variable indicating whether the firm is a SOE and $RM_{it-1} \times STATE_{it}$ captures the interaction effect between real earnings management and state ownership.

To test the impact of marketization on the relationship between real earnings management and bank loans, we specified the following empirical model:

$$BANKLOAN_{it} = \gamma_0 + \gamma_1 RM_{it-1} + \gamma_2 Di\sin dex_{it-1} + \gamma_3 RM_{it-1} \times Di\sin dex_{it-1} + Controls + \varepsilon_{it} \quad (3)$$

where $Disindex_{it-1}$ measures the degree of marketization of region where a firm locates and $RM_{it-1} \times Disindex_{it-1}$ captures the interaction effect between the degree of marketization and real earnings management. Both ordinary least squares (OLS) and panel regressions are used to test the models.[4]

3. Results

3.1. Real earnings management and bank loans

Table 2 reports the results regarding the impact of real earnings management on bank loans. We find that NLOAN and LOAN are both positively associated with real earnings management suggesting that the larger the magnitude of real earnings management, the more loans firms obtain from banks. COD is negatively associated with RM indicating that real earnings management enables firms to obtain bank loans at a lower level of interest rate, which is consistent with Jiang's (2008) study. Furthermore, the effect of real earnings management on bank loans is also economically significant. For example, a one standard deviation increase in RM causes a 51.25%, 17.68%, and −12.36% change in NLOAN, LOAN, and COD, respectively, when the panel regression is used. Similar results are found for the OLS regression. Our results indicate that banks are unable to identify firms' real earnings management in China.

[4] We thank an anonymous reviewer for advice on this point.

Table 2
Regression analysis on the impact of real earnings management on bank loans.

	OLS			Panel regression		
	(1) NLOAN	(2) LOAN	(3) COD	(4) NLOAN	(5) LOAN	(6) COD
RM	0.0351***	0.0844***	−0.1121***	0.2037***	0.2190***	−0.0848***
	(7.13)	(10.01)	(−8.17)	(3.72)	(4.02)	(−3.46)
SIZE	−0.0023*	−0.0027	−0.0017	−0.9061***	−0.8952***	0.0104
	(−1.84)	(−1.26)	(−0.50)	(−26.45)	(−26.22)	(0.75)
LEV	0.0977***	0.5252***	−0.5171***	−0.3930**	0.0914	−0.9419***
	(11.13)	(34.95)	(−21.15)	(−2.56)	(0.60)	(−11.53)
GROW	0.0143***	0.0212***	−0.0480***	0.0500	0.0391	−0.0127
	(3.50)	(3.03)	(−4.23)	(1.30)	(1.02)	(−0.50)
FA	0.0160**	0.1713***	−0.1959***	−0.4768***	−0.4317***	−0.3377***
	(2.10)	(13.13)	(−9.22)	(−3.27)	(−2.97)	(−4.60)
ROA	0.0806**	−0.1279**	1.8471***	−0.9844**	−1.0078**	1.8947***
	(2.24)	(−2.07)	(18.40)	(−2.22)	(−2.28)	(6.85)
Altman-Z	0.0015	−0.0133***	−0.0321***	0.0056	0.0060	−0.0572***
	(0.76)	(−3.85)	(−5.68)	(0.24)	(0.26)	(−3.81)
LAGE	−0.0046	−0.0056	−0.0456***	1.6334***	1.5707***	−0.0633*
	(−1.43)	(−1.02)	(−5.12)	(16.00)	(15.43)	(−1.71)
INDEP	0.0221	0.0722**	−0.1409**	0.0416	0.0392	0.1382
	(1.11)	(2.13)	(−2.55)	(0.13)	(0.12)	(0.73)
BIG4	−0.0081*	−0.0539***	0.0007	0.0803	0.0787	−0.0792
	(−1.78)	(−6.92)	(0.05)	(0.71)	(0.70)	(−1.39)
Year	Yes	Yes	Yes			
Industry	Yes	Yes	Yes	No	No	No
Firm & Year FE/RE				Yes	Yes	Yes
_cons	0.1205***	0.1743***	0.5412***	16.1640***	16.0344***	0.7562**
	(4.05)	(3.43)	(6.54)	(25.80)	(25.67)	(2.57)
N	6132	6132	6132	6132	6132	6132
Adj R^2	0.1006	0.4413	0.2972	0.1717	0.1610	0.0137

T-values are reported in parentheses. ***, **, and * denote statistical significance at 1%, 5%, and 10%, respectively. The significance of the test results are based on the two-tailed tests. Firm and year fixed effects (FE) or random effects (RE) estimators are used in the panel regression based on Hausman test (Hausman, 1978).

3.2. Impact of state ownership on the relationship between real earnings management and bank loans

Table 3 reports the results regarding the relationships among real earnings management, ownership type and bank loans. Consistent with the results from Table 2, real earnings management is positively associated with NLOAN and LOAN, and negatively associated with COD. The estimated coefficients of the interaction between real earnings management and state ownership are positive when bank loans was measured by $NLOAN_{it}$ and $LOAN_{it}$. Consistent with Qian's (1994) study, this result may indicate that since banks, especially state-owned banks, normally give more loose screenings to SOEs, SOEs could obtain more bank loans due to their real earnings management activities. When bank loans was measured by COD_{it}, the estimated coefficient of the interaction term is also positive. This result may be due to the stronger sensitivity of non-SOEs on financing costs and stronger incentive of non-SOEs to negotiate for a lower interest rate. It might also be possible that banks actually can detect real earnings management of SOEs. However, due to political or other reasons, banks choose to lend more funds to SOEs. To compensate the increased credit risk caused by real earnings management of SOEs, banks raise the cost of debt as a response.[5]

3.3. Impact of marketization on the relationship between real earnings management and bank loans

Chen et al. (2013) argue that an outstanding feature of China's economy is the imbalanced marketization and development of the banking sector among different regions. Table 4 presents the results regarding the relationships among real earnings management, marketization and bank loans. We find negative coefficients of the interaction variable when bank loans was measured by $NLOAN_{it}$ and $LOAN_{it}$ and a positive coefficient of the interaction variable when bank loans was measured by COD_{it}, which implies a weaker impact of real earnings management on securing bank loans in regions with higher degree of marketization. These results may be due to the fact that the market is more mature in regions with higher degree of marketization, where real earnings management activities are not popular and banks have both stronger incentives and capacities to identify those activities if there were applied.

[5] We thank an anonymous reviewer for advice on this alternative interpretation.

Table 3
Regression analysis on the impact of state ownership on the relationship between real earnings management and bank loans.

	OLS			Panel regression		
	(1) NLOAN	(2) LOAN	(3) COD	(4) NLOAN	(5) LOAN	(6) COD
RM	0.0025*	0.0041*	−0.0834***	0.0026*	0.0429***	−0.1378***
	(1.74)	(1.66)	(−7.92)	(1.80)	(4.22)	(−2.78)
RM × STATE	0.0317***	0.0901***	0.0096*	0.0152***	0.0012	0.1024
	(3.83)	(6.34)	(1.76)	(2.61)	(0.07)	(1.26)
SIZE	−0.0024**	−0.0031	−0.0016	−0.0048***	−0.0207***	0.0106
	(−1.96)	(−1.47)	(−0.46)	(−3.41)	(−7.98)	(0.76)
LEV	0.0982***	0.5264***	−0.5148***	0.0954***	0.3906***	−0.9431***
	(11.15)	(34.90)	(−21.04)	(10.34)	(17.73)	(−11.48)
GROW	0.0137***	0.0201***	−0.0510***	0.0068*	−0.0081	−0.0080
	(3.36)	(2.87)	(−4.48)	(1.72)	(−1.52)	(0.31)
FA	0.0136*	0.1662***	−0.1919***	0.0028	0.1617***	−0.3302***
	(1.78)	(12.69)	(−9.05)	(0.38)	(11.70)	(−4.47)
ROA	0.0392	−0.2181***	1.8944***	0.0622*	−0.0710	1.9000***
	(1.11)	(−3.60)	(19.13)	(1.69)	(−1.25)	(6.84)
Altman-Z	0.0017	−0.0131***	−0.0321***	0.0000	−0.0002	−0.0569***
	(0.83)	(−3.75)	(−5.69)	(0.02)	(−0.06)	(−3.79)
LAGE	−0.0048	−0.0060	−0.0456***	−0.0017	−0.0116*	−0.0618*
	(−1.49)	(−1.09)	(−5.12)	(−0.49)	(−1.74)	(−1.66)
INDEP	0.0224	0.0739**	−0.1415**	0.0134	−0.0248	0.1289
	(1.13)	(2.17)	(−2.56)	(0.60)	(−0.67)	(0.68)
BIG4	−0.0088**	−0.0554***	0.0004	−0.0046	−0.0164	−0.0793
	(−1.92)	(−7.08)	(0.03)	(−0.83)	(−1.54)	(−1.38)
STATE	−0.0143***	−0.0360***	0.0331***	−0.0078***	−0.0048	−0.0112
	(−5.77)	(−8.47)	(4.80)	(−2.75)	(−0.84)	(−0.35)
Year	Yes	Yes	Yes			
Industry	Yes	Yes	Yes	No	No	No
Firm & Year FE/RE				Yes	Yes	Yes
_cons	0.1256***	0.1872***	0.5323***	0.1495***	0.4858***	0.7537**
	(4.22)	(3.67)	(6.43)	(4.66)	(8.58)	(2.54)
N	6132	6132	6132	6132	6132	6132
Adj R^2	0.0965	0.4369	0.2969	0.0019	0.0731	0.0133

T-values are reported in parentheses. ***, **, and * denote statistical significance at 1%, 5%, and 10%, respectively. The significance of the test results are based on the two-tailed tests. Firm and year fixed effects (FE) or random effects (RE) estimators are used in the panel regression based on Hausman test (Hausman, 1978).

3.4. Robustness tests[6]

3.4.1. Alternative measures of real earnings management

To ensure that our results are robust to alternative measures of real earnings management, we used each component (i.e., AbCFO, AbPROD, and AbDISEXP) of the aggregated real earnings management measure in the main regressions to proxy for real earnings management. The results are collectively consistent with our main results.

3.4.2. Endogeneity

There is a potential endogeneity problem in our findings since it is possible that when firms increase the level of bank loans, they are then more inclined to engage in greater real earning management activity (possibly in an effort to avoid violating debt covenants associated with the loans). If this is true, then causation could also be working in the opposite direction to that posited by us. To address the concern of endogeneity, we used both a dynamic model including the second period lags of the independent variable and a two-stage least squares (2SLS) model including the industry mean of the independent variable (excluding the observation itself) as the instrumental variable. The results remained virtually unchanged for our key variables, which indicates that our findings held after the endogeneity problem was addressed.

4. Conclusions

This study provides empirical evidence on the relationship between real earnings management behaviors and bank loans in China, and the moderation effect of state ownership and marketization on the above relationship. We find that banks cannot identify firms' real earnings management. SOEs with higher real earnings management obtain more bank loans, while non-SOEs with higher real earnings management are able to benefit from low-cost bank loans. We also find that firms in regions with lower degree of

[6] For brevity, we did not present the results in this paper, but they are available upon request. We thank anonymous reviewers for their comments and suggestions on the robustness tests.

Table 4
Regression analysis on the impact of marketization on the relationship between real earnings management and bank loans.

	OLS			Panel regression		
	(1) NLOAN	(2) LOAN	(3) COD	(4) NLOAN	(5) LOAN	(6) COD
RM	0.0423***	0.0984***	−0.0970***	0.7210**	0.7849***	−0.1379**
	(6.85)	(9.31)	(−6.84)	(2.53)	(2.76)	(−2.32)
RM × Disindex	−0.0005*	−0.0010**	0.0017*	−0.0734**	−0.0778**	0.0092
	(−1.93)	(−2.20)	(1.95)	(−2.34)	(−2.49)	(0.98)
SIZE	−0.0023	−0.0027	−0.0016	−0.4416***	−0.4430***	0.0099
	(−1.85)	(−1.27)	(−0.46)	(−18.68)	(−18.79)	(0.71)
LEV	0.0980***	0.5257***	−0.5158***	0.0194	0.5054***	−0.9275***
	(11.17)	(35.00)	(−21.08)	(0.15)	(3.83)	(−11.33)
GROW	0.0141***	0.0208***	−0.0510***	−0.0691*	−0.0762**	−0.0135
	(3.46)	(2.99)	(−4.48)	(−1.82)	(−2.02)	(−0.53)
FA	0.0160*	0.1713***	−0.1928***	−0.2256*	−0.1227	−0.3195***
	(2.10)	(13.13)	(−9.09)	(−1.85)	(−1.01)	(−4.33)
ROA	0.0847**	−0.1201*	1.8834***	−0.9907**	−0.9882**	1.9195***
	(2.35)	(−1.95)	(18.98)	(−2.33)	(−2.33)	(6.91)
Altman-Z	0.0014	−0.0135***	−0.0321***	0.0195	0.0153	−0.0575***
	(0.71)	(−3.90)	(−5.69)	(0.85)	(0.67)	(−3.83)
LAGE	−0.0045	−0.0055	−0.0460***	0.4677***	0.4440***	−0.0562
	(−1.41)	(−1.00)	(−5.17)	(7.15)	(6.80)	(−1.51)
INDEP	0.0229	0.0739**	−0.1432**	0.2031	0.1931	0.1449
	(1.16)	(2.18)	(−2.59)	(0.68)	(0.65)	(0.77)
BIG4	−0.082*	−0.0540***	0.0005	0.3139***	0.2951***	−0.0861
	(−1.79)	(−6.94)	(0.04)	(3.32)	(3.13)	(−1.51)
Disindex	−0.0031***	−0.0045***	0.0044**	−0.0404**	−0.0424**	0.0206**
	(−5.74)	(−4.87)	(2.92)	(−2.39)	(−2.51)	(2.41)
Year	Yes	Yes	Yes			
Industry	Yes	Yes	Yes	No	No	No
Firm & Year FE/RE				Yes	Yes	Yes
_cons	0.1200***	0.1733***	0.5357***	8.9518***	8.9943***	0.5475*
	(4.04)	(3.41)	(6.47)	(17.57)	(17.70)	(1.79)
N	6132	6132	6132	6132	6132	6132
Adj R^2	0.1012	0.4417	0.2969	0.1504	0.1358	0.0141

T-values are reported in parentheses. ***, **, and * denote statistical significance at 1%, 5%, and 10%, respectively. The significance of the test results are based on the two-tailed tests. Firm and year fixed effects (FE) or random effects (RE) estimators are used in the panel regression based on Hausman test (Hausman, 1978).

marketization are able to increase the amount of the bank loans and reduce the cost of the loans more effectively via real earnings management.

This study acknowledges its limitations. We do not investigate the relationship between accrual and real earnings management. Future studies may also examine the possible impact of ownership type of banks on the relationship between earnings management and bank loans.

Acknowledgements

Funding: This work was supported by the National Natural Science Foundation of China (grant numbers 71372012, 71272055), Beijing Municipal Social Science Foundation (grant number 16YJB014), and Beijing Natural Science Foundation (grant number 9164035).

References

Bharath, S.T., Shumway, T., 2008. Forecasting default with the Merton distance to default model. Rev. Financ. Stud. 21 (3), 1339–1369.
Chen, Y., Liu, M., Su, L., 2013. Greasing the wheels of bank lending: evidence from private firms in China. J. Bank. Finance 37 (7), 2533–2545.
Claessens, S., Djankov, S., Lang, L.H., 2000. The separation of ownership and control in East Asian corporations. J. Financ. Econ. 58 (1), 81–112.
Cohen, D.A., Dey, A., Lys, T.Z., 2008. Real and accrual-based earnings management in the pre-and post-Sarbanes–Oxley periods. Accounting Rev. 83 (3), 757–787.
Ding, X., Wu, M., Zhong, L., 2016. The effect of access to public debt market on Chinese firms leverage. Chin. Econ. 49 (5), 327–342.
Faccio, M., Lang, L.H., 2002. The ultimate ownership of Western European corporations. J. Financ. Econ. 65 (3), 365–395.
Fan, G., Wang, X., Zhu, H., 2012. NERI Index of Marketization of China's Provinces 2011 Report. Economics Science Press, Beijing (in Chinese).
Firth, M., Lin, C., Liu, P., Wong, S.M.L., 2009. Inside the black box: Bank credit allocation in China's private sector. J. Bank. Finance 33 (6), 1144–1155.
Hausman, J.A., 1978. Specification tests in econometrics. Econometrica 46, 1251–1271.
Jiang, J., 2008. Beating earnings benchmarks and the cost of debt. Accounting Rev. 83 (2), 377–416.
Li, W., Zhang, R., 2010. Corporate social responsibility, ownership structure, and political interference: Evidence from China. J. Bus. Ethics 96 (4), 631–645.
Li, K., Yue, H., Zhao, L., 2009. Ownership, institutions, and capital structure: evidence from China. J. Compar. Econ. 37 (3), 471–490.
Liu, Q., He, W., Luo, L., 2011. Mandatory adoption of IFRS, implementation of new laws, and accrual and real earnings management. China Accounting Finance Rev. 13, 88–121.
Marquez, R., 2010. Informed lending as a deterrent to predation. Finance Res. Lett. 7 (4), 193–201.

Pittman, J.A., Fortin, S., 2004. Auditor choice and the cost of debt capital for newly public firms. J. Accounting Econ. 37 (1), 113–136.
Qian, Y., 1994. A theory of shortage in socialist economies based on the 'soft budget constraint'. Am. Econ. Rev. 84 (1), 145–156.
Roychowdhury, S., 2006. Earnings management through real activities manipulation. J. Accounting Econ. 42 (3), 335–370.
Xiang, E., Tian, G.Y., Yang, F., Liu, Z., 2014. Do mutual funds have information advantage? Evidence from seasoned equity offerings in China. Int. Rev. Financ. Anal. 31, 70–79.
Yeung, G., 2009. How banks in China make lending decisions. J. Contemp. China 18 (59), 285–302.
Zang, A.Y., 2012. Evidence on the trade-off between real activities manipulation and accrual-based earnings management. Accounting Rev. 87 (2), 675–703.