Bank loan approval standards and firms' accounting conservatism: Evidence from China

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ABSTRACT

We examine the correlation between bank loan approval standards and accounting conservatism. Using the bank loan approval index in the People's Bank of China as measure of loan standard, we show that accounting conservatism improves when bank loan approval standards are tightened. We then conduct further tests to address the endogeneity and robustness, yielding highly consistent results. Finally, both ownership and the banking connection significantly moderate the relationship between bank loan approval standards and accounting conservatism. Our findings provide policy implications on controlling loan approval standards, which may effectively reduce credit risks and promote accounting conservatism.

1. Introduction

Credit risk uncertainty for banks has increased since the global financial crisis in 2008 and the 2019 outbreak of the Coronavirus disease 2019 (COVID-19) pandemic. This heightened credit risk uncertainty has led commercial banks to focus more on loan issuance, increasing difficulties for enterprises to secure financing (Goodell, 2020). From the perspective of commercial banks, enterprise solvency is a crucial factor in determining whether to lend, reflected in the disclosure of accounting information. Accounting conservatism, an important indicator of accounting information quality, is often considered to reduce credit risks for commercial banks when approving loans. From the perspective of enterprises, bank loan approval standards indicate the availability of loans and determine the loan interest rate and amount, which directly affect the financing costs of enterprises. Therefore, exploring the influence of bank loan approval standards on enterprises' accounting conservatism can reduce information asymmetry between commercial banks and enterprises, decrease credit risk for commercial banks, and help high-quality enterprises obtain more credit support.

This study examines the relationship between bank loan approval standards and corporate accounting conservatism to fill the research gap. Previous studies mainly examine the measurement method of accounting conservatism (Basu, 1997), the causes (Watts, 2003), the determinant factors (Shaw et al., 2021), and the economic consequences (Bonetti et al., 2017). Among them, the earnings-stock return measurement method proposed by Basu (1997) is the most widely used, and its measurement results are more accurate than other measurement methods. Other scholars have also adopted the accrual and NI models based on the accrual basis proposed by Ball and Shivakumar (2005). Watts (2003) found that most extant studies focus on contractual relationships, shareholder litigation, accounting control, and government tax, among which debt contract is the most concentrated research.

This study expands on the determinant factors affecting accounting conservatism and expounds on the different influences of state-

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owned and non-state-owned enterprises when bank loan standards change. We also provide robust evidence for the research direction of "public relations of state-owned enterprises," which has high theoretical and practical research value.

2. Literature review and theoretical analysis

2.1. Literature review

This section's literature review sorts the research achievements of many scholars from different perspectives. First, several factors concerning the determinants of accounting conservatism have been identified in the literature. The previous literature mainly focused on how factors like industrial policies (Lown, Morgan, 2006), uncertain environment (Cui et al., 2023), corporate financing constraints (Biddle et al., 2022), managers' overconfidence (Ahmed and Duellman, 2013), and employee compensation (Shen et al., 2013) can influence corporate accounting conservatism. A few studies discuss the possible economic consequences of accounting conservatism, such as corporate financing costs (Ahmed et al., 2002) and investment activities (Bushman et al., 2004). For example, Kravet and Muslu (2013) focused on the issue of enterprise acquisition, indicating that enterprise management risks would affect accounting robustness. Paolone et al. (2022) examined the financial management work of food and beverage industry enterprises, determining that the most concerned bank index is the loan approval standard, which measures the loan content in the loan contract, reflects the availability of loans, causes changes in the interest rate, and affects the capital structure of the financial market. Kieschnick and Shi (2021) indicated that when bank loan approval standards are relaxed, enterprises use loose accounting confirmation principles to enhance financial data and relax the control of accounting information quality to reduce financing costs and obtain more loans.

Second, the research on the heterogeneity of corporate ownership deserves considerable attention. Studies based on European and American countries usually use all types of listed companies as samples. For example, Ahmed and Duellman (2013) selected 1500 companies from Standard & Poor's without further classifying them; however, Chinese enterprises can be divided into state-owned and non-state enterprises according to their economic types. State-owned enterprises often have better reputations, more government relations, and easier access to bank loans (Yin et al., 2020). Furthermore, differences exist with non-state-owned enterprises regarding government intervention, senior management appointment methods, and supervision and restraint mechanisms, resulting in differences in accounting conservatism among enterprises (Khalilov and Osma, 2020).

Third, the analysis of corporate governance is paramount in the scholarly discourse. According to Hambrick and Mason (1984), because of the unstable business situation and the difference in decision-making information, compared with the background characteristics of the individual chief executive officer (CEO), the management team is more able to influence the relevant decisions of the enterprise. Most current literature focuses on the age (Vroom and Pahl, 1971), ability (Haider et al., 2021), and tenure (Hu et al., 2020) of the managerial team. Additionally, Erkens et al. (2014) suggested that corporate executives with banking backgrounds can use their lending bank as a private channel to provide borrowers with financial information required by the lender for debt monitoring, thus reducing the demand for accounting conservatism. This situation simultaneously provides the borrower with a credit guarantee, which can help them reduce the costs related to accounting conservatism, leading to the decline of enterprises accounting conservatism. Nguyen et al. (2020) suggested that a negative relationship exists between the board of directors' professional knowledge level of banking and the accounting conservatism of enterprises. When an enterprise's bankruptcy risk and level of financial leverage are high, the banking expertise of the board of directors has a more significant impact on the accounting conservatism of enterprises. However, (Bonetti et al., 2017) held the opposite view; namely, a positive relationship exists between accounting conservatism and board of directors with banking experience. In his opinion, enterprises with management teams with bank backgrounds have higher accounting robustness than those without such experience.

Finally, exploring the economic consequences of accounting conservatism represents a crucial aspect of research in this field. For example, Khan and Lo (2019) analyzed the relationship between bank lending standards and borrower accounting conservatism, indicating that banks would choose more stable and reliable loan customers. When the bank loan approval standard tightens, enterprises adjust their accounting recognition and measurement methods to obtain enough loans needed for production and operation and choose the appropriate degree of accounting conservatism. Furthermore, Van der Veer, Hoeberichts (2016) examined the effect of bank lending standards on business lending, finding that using the influence of bank loan approval standards on corporate accounting conservatism could promote the formation of favorable loan transactions between banks and enterprises. This situation can effectively allocate resources in the credit market and improve its efficiency of the credit market, make the financial sector more efficient in serving the real economy, and solve the problem of complex and expensive financing for enterprises (Basu, 2009), thus promoting financial stability and raising the overall level of the economy.

2.2. Theoretical analysis

The principal-agent theory demonstrates that conflicts of interest arise during transactions between principals and agents due to their pursuit of maximizing their interests. This problem is evident in the relationship between banks and borrowing enterprises, where

the bank assumes the principal role, and the borrowing enterprise acts as the agent (Jensen and Meckling, 1976).[1] Information asymmetry is the primary underlying cause of the principal-agent problem in lending relationships between banks and enterprises[2] (Ross, 1973). Such asymmetry can result in adverse selection and moral hazard on the part of borrowing enterprises, ultimately leading to bank credit risk. Consequently, banks must exercise stringent supervision over borrowers throughout the loan process, encompassing pre-loan, during, and post-loan stages. Notably, during the pre-loan supervision phase, the accounting information of enterprises assumes paramount importance, serving as a pivotal foundation for pre-loan assessment and approval, enabling banks to mitigate information asymmetry (Ha, 2021). Furthermore, banks employ the borrowing enterprise's accounting information to calculate financial ratios, predict the probability of bankruptcy, and evaluate its financial standing and solvency (Chung et al., 1993). Thus, ensuring the accuracy and reliability of accounting information becomes imperative in reducing bank credit risk and fostering favorable lending relationships between banks and enterprises. Accounting conservatism, which measures corporate information quality, has become a crucial factor influencing the success of lending transactions between banks and enterprises. Simultaneously, establishing contracts with rationality and appropriateness becomes essential to mitigate conflicts of interest between banks and borrowing enterprises and minimize transactional losses resulting from adverse selection and moral hazard. These contracts align the objectives of banks and borrowing enterprises. Loan approval standards exemplify the guiding principles and foundations for contract formulation, while the specific content and terms govern the behavior of borrowing enterprises and safeguard banks from incurring losses.

Based on the theoretical analysis above, the approval and acquisition of bank loans are closely intertwined with loan approval standards and firms' accounting conservatism. It is crucial for both banks and borrowing enterprises to prioritize attention to loan approval standards and accounting conservatism throughout the loan process. This attention ensures the effective allocation of funds and promotes commercial banks' sustainable and healthy operations. When bank loan approval standards become more stringent, banks are less willing to undertake risks (Bassett et al., 2014). Consequently, banks are more inclined to lend to enterprises with lower bankruptcy risk and more stable corporate financial reports, thereby minimizing the potential for their losses. Enterprises in need of funds proactively enhance their accounting conservatism and demonstrate their sound financial condition and favorable operating conditions to gain the trust and approval of the bank, enabling such enterprises to secure bank loans smoothly. Therefore, this paper proposes the following hypothesis:

H1. When the bank loan approval standards tighten, enterprises improve their accounting conservatism.

3. Data and variables

3.1. Data sources and sample selection

This paper's research sample includes the listed companies in China's Shanghai and Shenzhen stock markets from the first quarter of 2009 to the fourth quarter of 2021. The data used are from the China Stock Market & Accounting Research (CSMAR) database, the Wind database, and the official website of the People's Bank of China. The data are screened and processed through the following operations. First, we eliminate listed companies in the financial industry. Because of the uniqueness of the industry and the differences in accounting principles from general enterprises, this type of enterprise cannot represent enterprises in general industries. Second, we eliminate ST and *ST companies. Such companies have shown negative profits over two consecutive years and have a certain risk of delisting. If these companies are analyzed together with other normal companies, this paper's results may be inaccurate. Third, we eliminate extreme values. Including extreme values in the research analysis may lead to the lack of authenticity and continuity of this paper's results. Finally, we eliminate sample enterprises with partially missing data. Through the above screening and processing operations, we obtained 3066 sample enterprises, totaling 83,927 enterprise-quarter observations.

3.2. Variable definitions

3.2.1. Measure of accounting conservatism

Basu (1997) proposed the first measurement method of accounting conservatism, the earnings and stock return measurement model, which is also one of the most widely used models in this field. Basu (1997) believes that accounting conservatism is reflected in the stronger response of corporate accounting earnings when the market earnings performance is poor; accounting earnings can fully reflect the bad signals sent by the market promptly and are consistent with the "bad news" sent out; however, it is not consistent with the "good news" conveyed. A good signal can be directly detected through the stock price, but accounting earnings take time to reflect a good signal. Therefore, he uses positive (negative) stock returns to represent "good news" ("bad news") and builds the following model:

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[1] When an economic subject (or a group composed of multiple economic subjects) entrusts another economic subject to implement the behavior to achieve a specific purpose through a contractual relationship, a principal-agent relationship is formed between the two economic subjects. Among them, the subject of entrusting the behavior is called the principal, and the subject who performs the behavior on behalf of the principal is called the agent. Agents tend to have more information advantage in transactions.

[2] The theory of information asymmetry means that in market economic activities, various types of people have different understandings of relevant information; those with sufficient information are often in a more favorable position, while those with poor information are in a relatively disadvantaged position.

$$EPS_i/P_i = b_0 + b_1 \quad R_i + b_2 \quad DR_i + b_3 \quad R_i \times DR_i + \delta_i \tag{1}$$

where EPS_i is the earnings per share of enterprise i. P_i is the year-end stock price of enterprise i, R_i is the quarterly capital return rate of enterprise i, and DR_i is a dummy variable. When $R_i < 0$, the value is 1; when $R_i > 0$, the value is 0. In Equation (1), b_1 represents whether the enterprise's accounting earnings reflect "good news" promptly, and $b_1 + b_3$ represents whether the enterprise's accounting earnings reflect "bad news" promptly; thus, b_3 represents the "bad news" and the embodiment of the enterprise's accounting earnings. The gap between the "good news" represents the degree of accounting conservatism. Most literature on accounting conservatism selected the measurement model of earnings and stock returns, which is also more suitable for the Chinese market; therefore, this paper uses the same model as the primary method to measure accounting conservatism.

3.2.2. Measure of loan approval standards

The People's Bank of China conducts a quarterly statistical survey and summarizes it as a "*Banker Survey Report*."[3] The survey includes the statistical results of bankers' judgments on the degree of loan approval per quarter, defined as a bank loan approval index that can indicate the degree of change in bank loan approval standards.

The *Banker Survey Report* uses the diffusion index method to define the index of most items; namely, it calculates the proportion c_i of each item and gives the weights q_i to different items. Among them, the weight of "good or growth" items is defined as 1, an "average or unchanged" item weight is defined as 0.5, and a "poor or declining" item weight is 0. The project proportion c_i is then multiplied by their respective weights, q_i, and summed; the result is the loan approval index. The value range of the loan approval index is 0–100%. A loan approval index greater than 50% indicates that the loan approval index is improving or expanding, while less than 50% indicates that the loan approval index is in a state of deterioration or contraction. In other words, the greater the value of the bank loan approval index, the looser the bank loan approval. Furthermore, this paper chooses 2009 as the starting year because the statistics of the loan approval index in the *Banker Survey Report* began in the first quarter of 2009.

3.2.3. Control variables

This paper selects the company's book-to-market value ratio (*MB*), corporate cash flow (*Cash*), corporate listing time (*Listdt*), and the shareholding ratio of the largest shareholder (*SR*) as control variables to measure the impact of bank loan approval standards on the accounting conservatism of listed companies as accurately as possible. An enterprise's *MB* refers to the ratio of its market value to its total assets, reflecting its growth. *Cash* refers to the operating capital ratio of a company, which reflects the company's liquidity and solvency. *Listdt* refers to the listing date of a company, with years as the statistical unit. The *SR*'s shareholding ratio refers to the shareholding ratio of the shareholder ranking first among all shareholders based on the number of shares held at the end of the year. See Table 1 for the definitions of the main variables.

3.3. Descriptive statistics

Table 2 presents the descriptive statistical results of the variables, showing that the enterprise's average return on capital (*R*) is 0.039. The standard deviation is also 0.270, indicating significant differences in the return on capital among enterprises, i.e., the return on investment (*EPS/P*). The average value of the bank loan approval standard (*Std*) is 45.953, and the standard deviation is 2.408, which is relatively stable. The average value of the enterprise book-to-market value ratio (*MB*) is 2.552, and the standard deviation is 20.055, indicating that the difference between each enterprise's book-to-market value ratios is prominent. The average value of corporate cash flow (*Cash*) is 23.905, and the standard deviation is 25.532, indicating that most companies have relatively sufficient working capital and no cash flow shortage. The largest shareholder's shareholding ratio (*SR*) has a mean of 33.530 and a standard deviation of 14.915, indicating that most enterprises in China have the phenomenon of "one stock dominates."

4. Empirical results

4.1. Baseline model and empirical results

To verify the research hypothesis H1, we use the bank loan approval index in the "*Banker Survey Report*" to measure the bank loan approval standards, select the earnings and stock return measurement model, measure the conservatism of corporate accounting, and refer to the research methods of Ball et al. (2000). We use a new interaction term to establish the following model and test the relationship between bank loan approval standards and firms' accounting conservatism.

$$EPS/P = \beta_0 + \beta_1 R + \beta_2 \quad DR + \beta_3 \quad Std + \beta_4 R \times Std + \beta_5 DR \times Std + \beta_6 R \times DR + \beta_7 R \times DR \times Std + \sum control + \varepsilon_1 \tag{2}$$

where *Std* is the bank loan approval index, indicating the change in bank loan approval standards. Control represents a control variable. According to previous literature research, this paper controls the influence of enterprises' *MB*, *Cash*, *Listdt*, and the largest shareholder's *SR* on accounting conservatism. Other variables are the same as described above. In the regression Eq. (2), β_7 measures

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[3] The survey targets mainly include the heads of headquarters of various banking institutions (including foreign-funded commercial banking institutions) across the country, as well as the presidents of their first-level and second-level branches or vice presidents in charge of credit business.

Table 1
Definition of variables.

	Variables	Definition of variables
Dependent variable	EPS/P	• Earnings per share/ Year-end stock prices
Explanatory variables	Std	Bank loan approval index
	R	• Quarterly corporate return on capital
	DR	When $R_i < 0$, the value is 1; when $R_i > 0$, the value is 0.
	Back	If the corporate executives have banking experience, it is 1; otherwise, it is 0.
Control variables	MB	Market value / Total assets
	Listdt	Enterprise listing time
	SR	The largest shareholder's shareholding ratio
	Cash	The average value of corporate cash flow

Table 2
Summary Statistics.

Variables	Mean	Median	Std. Dev.	Min.	Max.
R	0.039	− 0.010	0.270	− 0.802	17.573
DR	0.512	1.000	0.500	0.000	1.000
EPS/P	0.016	0.012	0.028	− 0.984	0.584
Std	45.953	46.400	2.408	33.000	57.600
MB	2.552	1.677	20.055	0.052	3578.462
Cash	23.905	23.092	25.532	− 128.719	99.972
SR	33.530	30.980	14.915	0.290	93.610
Listdt	5.375	4.000	3.157	1.000	11.000

the impact of bank loan approval standards on firms' accounting conservatism. A significantly negative β_7 indicates that accounting conservatism increases when the bank loan approval standards are tightened. If β_7 is significantly positive, the accounting conservatism will increase when the bank loan approval standards are relaxed. Finally, if β_7 is insignificant, it indicates that bank loan approval standards do not significantly impact accounting conservatism.

Table 3
Bank loan approval standards and accounting conservatism.

Variables	EPS/P
R	0.399
	(0.577)
DR	− 0.011
	(0.359)
Std	0.043***
	(0.007)
R × DR	12.650***
	(2.268)
R × Std	− 0.017
	(0.012)
DR × Std	0.004
	(0.008)
R × DR × Std	− 0.243***
	(0.049)
MB	− 0.001
	(0.001)
Cash	0.016***
	(0.002)
SR	0.014***
	(0.003)
Listdt	− 0.008
	(0.014)
Constant	− 1.274***
	(0.413)
Firm fixed effects	Yes
Observations	83,927
Adjusted R^2	0.018

Notes: The sample interval is 2009Q1–2021Q4; The estimation method is OLS. Cluster standard errors are in parentheses. * ** , * *, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 3 presents the regression results of bank loan approval standards and accounting conservatism, showing that the coefficient β_7 of the three items of $R \times DR \times Std$ is –0.243. This result is significantly negative at the 1% level, indicating that bank loan approval standards are significantly negatively correlated with firms' accounting conservatism; thus, research hypothesis H1 is verified. When bank loan approval standards are tightened, the firms' accounting conservatism improves, indicating a more cautious attitude toward loan issuance. In this situation, enterprises struggle to obtain sufficient loans; thus, they choose to improve their accounting conservatism and enhance the quality of their accounting information. When the bank loan approval standards are relaxed, the enterprise's loan approval is relatively easy to pass. Due to the consideration of cost saving and beautification of financial data, the enterprise may reduce its accounting conservatism appropriately. This research conclusion is consistent with Khan and Lo (2019), who found that "as bank lending standards tightened, borrowers increased asymmetric timely loss recognition."

4.2. Endogenous test

Considering the common endogenous problems in financial research, this paper adopts the instrumental variable method and propensity score matching (PSM) for endogenous testing to ensure the accuracy and robustness of the research results.

4.2.1. Instrumental variable

Some studies found that bank loan approval standards are also reflected in the bond market, mainly through the issuance ratio of high-yield bonds (Greenwood et al., 2017). Kirti (2013) found that if a country has a banker questionnaire, the change in the questionnaire positively correlates with the change in the high-yield bond issuance ratio. Therefore, this paper takes the high-yield bond issuance ratio as an instrumental variable and performs a robustness test by changing the measurement index of the bank loan approval standard, replacing the bank loan approval index with the high-yield bond issuance ratio. Furthermore, we still use the measurement model of earnings and stock returns to measure the conservatism of corporate accounting. We also add the independent variable high-yield bond issuance ratio (RB) and its cross terms with other variables to the model and rebuild the following model for regression analysis.

$$EPS/P = \beta_0 + \beta_1 R + \beta_2 \quad DR + \beta_3 \quad RB + \beta_4 R \times RB + \beta_5 DR \times RB + \beta_6 R \times DR + \beta_7 R \times DR \times RB + \sum control + \varepsilon_0 \tag{3}$$

where RB is the high-yield bond issuance ratio. This refers to the ratio of the issuance amount of speculative-grade bonds to the total bond issuance amount, which represents changes in bank loan approval standards. Other variables are the same as described above. In

Table 4
Alternative the measurement index of the bank loan approval standard.

Variables	EPS/P
R	− 0.910***
	(0.193)
DR	0.905***
	(0.135)
RB	− 0.201**
	(0.081)
R × DR	5.427***
	(0.414)
R × RB	0.714***
	(0.177)
DR × RB	− 0.740***
	(0.126)
R × DR × RB	− 4.813***
	(0.443)
MB	− 0.000
	(0.001)
Cash	0.021***
	(0.002)
SR	0.006**
	(0.003)
Listdt	0.142***
	(0.005)
Constant	− 1.568***
	(0.185)
Firm fixed effects	Yes
Observations	60,043
Adjusted R²	0.026

Notes: The sample interval is 2009Q1–2021Q4; The estimation method is OLS. Cluster standard errors are in parentheses. * **, * *, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Eq. (3), β_7 represents the impact of bank loan approval standards on firms' accounting conservatism. If β_7 is significantly negative, the accounting conservatism will increase when the bank loan approval standards are tightened. If β_7 is significantly positive, the accounting conservatism will increase when the bank loan approval standards are relaxed. If β_7 is insignificant, bank loan approval standards have no significant impact on accounting conservatism. According to the regression results in Table 4, the coefficient β_7 of the multiplication of $R \times DR \times RB$ is –4.813, which is significantly negative at the 1% level. This result is consistent with the previous conclusion, which strongly proves that a significant negative relationship exists between bank loan approval standards and firms' accounting conservatism.

4.2.2. PSM

This paper conducts an endogeneity test using the PSM method to determine whether enterprises relying on bank loans may affect their accounting conservatism. In the process of analyzing the influence of bank loan approval standards on firms' accounting conservatism, if the overall bank loan approval standards are used as a variable for regression, without considering whether the capital operation of the enterprise depends on bank loans to a large extent, the analysis will be insufficient. This deficiency can lead to problems such as sample selection bias and parameter estimation bias, and the empirical results obtained on this basis will also have biases. Awan et al. (2020) used the PSM method to deal with this potential issue and alleviate the self-selection bias to a certain extent.

According to whether enterprises rely on banks to obtain loans, this paper divides the sample enterprises into bank-dependent enterprises and non-bank-dependent enterprises to construct matching samples. The specific operation is as follows. First, if the bank loans account for more than 50% of its total liabilities, the enterprise is a bank-dependent enterprise; otherwise, it is a non-bank-dependent enterprise. Second, the treatment group comprises bank-dependent enterprises, while the non-bank-dependent enterprises represent the control group. The probability of bank-dependent enterprises is calculated through the Logit model. Among them, the explained variable is whether the enterprise is bank-dependent (*RB*), and the explanatory variables are bank loan approval index (*Std*), book-to-market ratio (*MB*), cash flow (*Cash*), listing time (*Listdt*), and the shareholding ratio of the largest shareholder (*SR*). Finally, one-to-one matching is conducted, and the absolute difference of propensity score after matching is controlled within 0.05 to ensure the accuracy and adequacy of estimation analysis. By observing whether the matched sample observations are in the common value range, 38,310 observations are finally obtained, including 38,282 within the common value range, 17 from the treatment group, and 11 from the control group outside the common value range.

The balance test results in Table 5 show that after the matching, the control variables in the control and treatment groups have no significant difference. The absolute value of most variables' standardized difference (%bias) is less than 10%. Figs. 1 and 2 present the common propensity score value range and each variable's standardized deviation diagram. After PSM, the standardized deviations of most variables decrease, indicating that the matching results improve. This paper uses matched samples and again uses the method described above for empirical analysis. The regression results are shown in Table 6. The coefficient of the three-item cross product of the overall sample $R \times DR \times Std$ is –0.449, which is significantly negative at the 1% level; the coefficient of $R \times DR \times Std$ for bank-dependent enterprises is –0.611, which is still significantly negative at the 1% level. The coefficient of bank-dependent enterprises is significantly greater than that of non-bank-dependent enterprises. The explanation is consistent with the previous analysis conclusion; in the impact of changes in bank loan approval standards on the soundness of corporate accounting, bank-dependent companies will be more obvious. This result also supports the conclusion that a negative relationship exists between bank loan approval standards and firms' accounting conservatism, further strengthening the robustness of this conclusion.

4.3. Robustness checks

4.3.1. Alternative measures of accounting conservatism

In addition to Basu's model, the accrual-based NI and ACC models of Ball and Shivakumar (2005) can also measure accounting conservatism. To further prove that this paper's conclusion is accurate and reasonable (combined with the actual situation of the Chinese market), we select the NI model to measure the accounting conservatism and perform regression again with the remaining variables unchanged. The measurement model is as follows:

$$\Delta NI_t = \alpha_0 + \alpha_1 D\Delta NI_{t-1} + \alpha_2 \Delta NI_{t-1} + \alpha_3 D\Delta NI_{t-1} \times \Delta NI_{t-1} + \varepsilon_t \tag{4}$$

where ΔNI_t is the return on assets in year t minus the return on assets in year $t − 1$; $D\Delta NI_{t-1}$ is a dummy variable. If $\Delta NI_{t-1} < 0$, then $D\Delta NI_{t-1} = 1$, otherwise $D\Delta NI_{t-1} = 0$. α_3 in Eq. (4) represents the accounting conservatism level of the enterprise, and its results are generally negative and significant, mainly because losses are less persistent and more likely to reverse than gains. This paper verifies

Table 5
Results of the balance test.

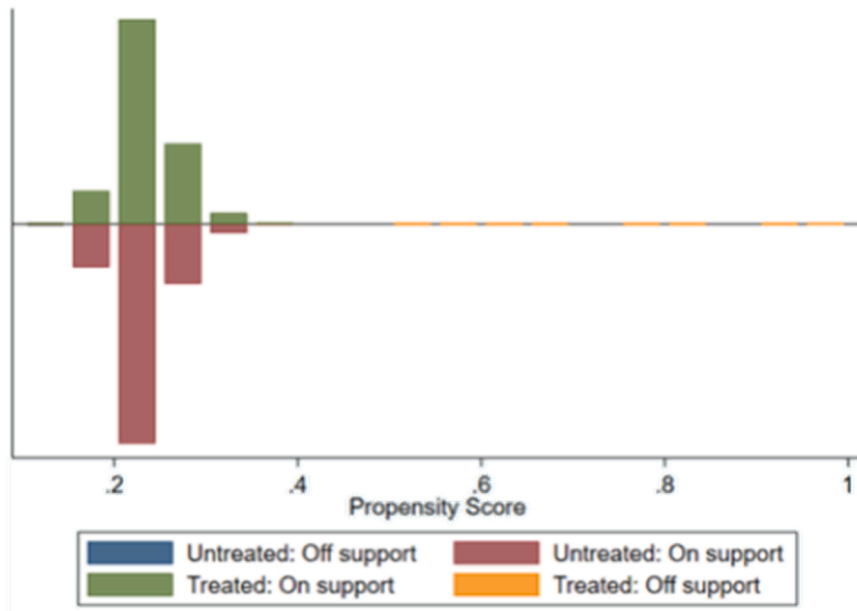| concomitant variable	treatment group		control group		%bias		t-value		P-value	
U/M	U	M	U	M	U	M	U	M	U	M
Std	45.365	45.364	45.721	45.405	− 12.1	− 1.4	− 10.14	− 0.91	0.000	0.365
MB	4.781	2.7464	2.9646	2.8554	4.1	− 0.2	4.99	− 2.69	0.000	0.007
Cash	27.802	27.718	30.135	27.643	− 9.1	0.3	− 7.46	0.20	0.000	0.845
SR	32.721	32.744	31.948	32.714	5.5	0.2	4.51	0.14	0.000	0.889
Listdt	33.654	33.675	33.033	34.013	2.4	− 1.3	1.99	− 0.86	0.046	0.392

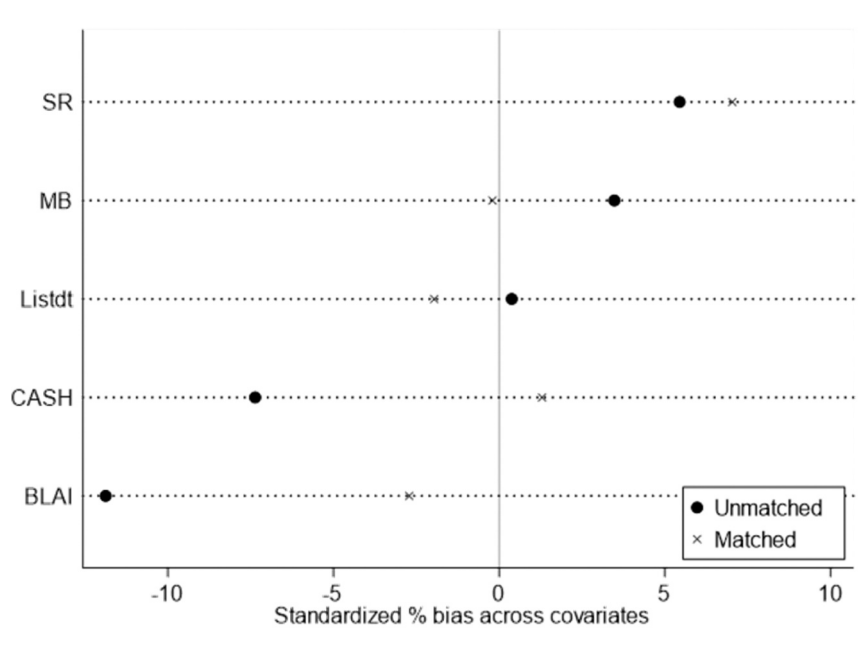**Fig. 1.** The common value range of propensity score.

Fig. 2. The standardized deviation diagram of each variable.

the negative relationship between bank loan approval standards and firms' accounting conservatism by interacting with other variables and adding *Std*—based on Eq. (4)—which can represent bank loan approval standards. Through cross-multiplication, we construct the following model:

$$\Delta NI_t = \alpha_0 + \alpha_1 D\Delta NI_{t-1} + \alpha_2 \Delta NI_{t-1} + \alpha_3 Std + \alpha_4 D\Delta NI_{t-1} \times \Delta NI_{t-1}$$

$$\alpha_5 D\Delta NI_{t-1} \times Std + \alpha_6 \Delta NI_{t-1} \times Std + \alpha_7 D\Delta NI_{t-1} \times \Delta NI_{t-1} \times Std + \varepsilon_t \tag{5}$$

where the relevant definitions of ΔNI_t and $D\Delta NI_{t-1}$ are the same as above. *Std* is the bank loan approval index, indicating changes in

Table 6
PSM matches the sample regression results.

Variables	EPS/P		
	Total sample	bank-dependent enterprises	non-bank-dependent enterprises
R	0.235	1.150	− 0.156
	(1.002)	(1.670)	(1.090)
DR	− 0.660	− 1.519	− 0.382
	(0.568)	(0.952)	(0.629)
Std	0.014	− 0.027**	0.026**
	(0.008)	(0.011)	(0.010)
R × DR	22.040***	30.290**	19.030***
	(3.884)	(6.584)	(4.335)
DR × Std	0.014	0.030*	0.009
	(0.012)	(0.018)	(0.013)
R × Std	− 0.012	− 0.026	− 0.004
	(0.020)	(0.030)	(0.023)
R × DR × Std	− 0.449***	− 0.611***	− 0.394***
	(0.080)	(0.122)	(0.093)
MB	0.001 * **	0.041	0.000
	(0.000)	(0.035)	(0.000)
Cash	0.015***	5.675***	0.019***
	(0.003)	(1.184)	(0.0023)
SR	0.011**	0.010	0.010*
	(0.005)	(0.029)	(0.005)
Listdt	− 0.004	0.004	− 0.007
	(0.011)	(0.016)	(0.011)
Constant	0.283	1.139	− 0.360
	(0.459)	(0.873)	(0.549)
Firm fixed effects	Yes	Yes	Yes
Adjusted R^2	0.017	0.027	0.017

Notes: The sample interval is 2009Q1–2021Q4. The estimation method is OLS. Cluster standard errors are in parentheses. * ** , * *, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

bank loan approval standards. This paper also controls the influence of enterprise book-to-market value ratio (*MB*), cash flow (*Cash*), enterprise size (*Size*), enterprise listing time (*Listdt*), and the shareholding ratio of the largest shareholder (*SR*) on accounting conservatism. The fixed effects model controls for firm fixed effects.

In Eq. (5), the coefficient α_7 of the multiplication of $D\Delta NI_{t-1} \times \Delta NI_{t-1} \times Std$ represents the impact of bank loan approval standards on firms' accounting conservatism. If α_7 is significantly negative, accounting conservatism will be enhanced when bank loan approval standards are tightened. If α_7 is significantly positive, accounting conservatism will be enhanced when bank loan approval

Table 7
Regression results based on the NI model.

Variables	ΔNI_t
ΔNI_{t-1}	0.192***
	(0.031)
$D\Delta NI_{t-1}$	17.370***
	(2.777)
Std	0.128***
	(0.040)
$\Delta NI_{t-1} \times D\Delta NI_{t-1}$	1.092***
	(0.044)
$D\Delta NI_{t-1} \times Std$	− 0.349***
	(0.059)
$\Delta NI_{t-1} \times Std$	− 0.003***
	(0.001)
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times Std$	− 0.026***
	(0.001)
Constant	− 6.898***
	(1.906)
Control variables	Yes
Firm fixed effects	Yes
Adjusted R^2	0.030

Notes: The sample interval is 2009Q1–2021Q4. The estimation method is OLS. Cluster standard errors are in parentheses. * ** , * *, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

standards are relaxed. If α_7 is not significant, it indicates that bank loan approval standards do not significantly impact accounting conservatism.

We also use unbalanced panel data, add clustering standard errors, and use the fixed effect model to regress Eq. (5); the results are shown in Table 7. The multiplication coefficient of $D\Delta NI_{t-1} \times \Delta NI_{t-1} \times Std$ is the coefficient α_7 in Eq. (5), which measures the impact of bank loan approval standards on firms' accounting conservatism. Table 7 shows that the coefficient α_7 of the multiplication of $D\Delta NI_t$ $_{-1} \times \Delta NI_{t-1} \times Std$ is –0.026, which is significantly negative at the 1% level; This finding is consistent with the previous results. A significant negative relationship exists; therefore, the conclusions of this paper can be considered robust.

4.3.2. Replace part of the explanatory variables

This paper uses the measurement model of income and stock return to measure firms' accounting conservatism; however, we replace some explanatory variables (i.e., the company's return on capital R) while other variables remain unchanged. Then, regression analysis is conducted to observe whether the regression results are consistent. The basic calculation formula of market return is

$$R(t) = \frac{\sum_{i=1}^{n} w_i(t) r_i(t)}{\sum_{i=1}^{n} w_i(t)} \tag{6}$$

In the above formula, the market capitalization-weighted market rate of return ($Rtmv$) and total market value-weighted market rate of return (Rmc) are used to replace the company's return on capital (R); the stock price is multiplied by the marketable share capital to obtain (t − 1) daily market value. Among them, the weight of $Rtmv$ is $w_i(t) = p_i(t\text{-}1) \times s_i(t\text{-}1)$, $p_i(t\text{-}1)$ is the stock price on $(t-1)$ day, $s_i(t\text{-}1)$ is the tradable share capital on $(t-1)$ day, and the stock price is multiplied by the tradable share capital to get (t − 1) daily market capitalization. $Rtmv$ refers to buying all the tradable shares at the close of the previous day, then selling all the stocks in hand at the close of the day, and calculating the investment income of the portfolio based on the cash flow of the two days. The weight of the total Rmc is $w_i(t) = p_i(t\text{-}1) \times s_i(t\text{-}1)$, $p_i(t\text{-}1)$ is the stock price on $(t-1)$ day, $s_i(t\text{-}1)$ is the total share capital on $(t-1)$ day, and the total market value on $(t-1)$ day is the multiplication of the two. Rmc refers to buying all the stocks at the previous day's close, then selling all the stocks at the end of the day, and calculating the portfolio's investment income based on the two days' cash flow.

4.3.2.1. Rtmv replaces R.

This paper replaces the quarterly return on capital (R) with the weighted average market quarterly rate of return ($Rtmv$) of market capitalization. We follow Ball et al. (2000) and Ball and Shivakumar (2005) to form a new model based on the measurement model of earnings and stock returns. We add bank loan approval standards and make cross-multiplication with other variables to verify the negative relationship between bank loan approval standards and firms' accounting conservatism.

$$EPS/P = \beta_0 + \beta_1 Rtmv + \beta_2 \ DRtmv + \beta_3 \ Std + \beta_4 Rtmv \times Std + \beta_5 DRtmv \times Std + \beta_6 Rtmv \times DRtmv + \beta_7 Rtmv \times DRtmv$$
$$\times Std + \sum control + \varepsilon \tag{7}$$

where EPS is the company's earnings per share. P is the company's stock price at the end of the year; $Rtmv$ represents the weighted average market quarterly return rate of the company's circulating market value. $DRtmv$ is a dummy variable. When $Rtmv < 0$, the value is 1; otherwise, the value is 0. Std is the bank loan approval index, indicating changes in bank loan approval standards. At the same

Table 8
Rtmv replaces R.

Variables	EPS/P
Rtmv	20.890***
	(2.677)
DRtmv	− 0.314
	(0.397)
Std	0.083***
	(0.010)
Rtmv × DRtmv	− 15.800***
	(3.920)
DRtmv × Std	0.010
	(0.009)
Rtmv × Std	− 0.485***
	(0.058)
Rtmv × DRtmv × Std	− 0.418***
	(0.086)
Constant	− 2.809***
	(0.556)
Control variables	Yes
Firm fixed effects	Yes
Adjusted R^2	0.026

Notes: The sample interval is 2009Q1–2021Q4. The estimation method is OLS. Cluster standard errors are in parentheses. * ** , * *, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

time, this paper controls the impact of the company's book-to-market value ratio (*MB*), cash flow (*Cash*), company size (*Size*), company listing time (*Listdt*), and the largest shareholder's *SR* on accounting conservatism. The fixed effect model is adopted to control the enterprise's fixed effect.

For Eq. (7), β_7 is still used to measure the impact of bank loan approval standards on firms' accounting conservatism. If β_7 is significantly negative, the accounting conservatism will increase when the bank loan approval standards are tightened. If β_7 is significantly positive, the accounting conservatism will increase when the bank loan approval standards are relaxed. If β_7 is not significant, bank loan approval standards do not significantly affect accounting conservatism.

The regression results of Eq. (7) are shown in Table 8. The coefficient β_7 of the multiplication of $Rtmv \times DRtmv \times Std$ represents the impact of bank loan approval standards on firms' accounting conservatism. Table 8 shows that the coefficient β_7 of the multiplication of $Rtmv \times DRtmv \times Std$ is –0.418, which is significantly negative at the 1% level. This finding is consistent with the previous results, indicating a significant negative relationship between bank loan approval standards and firms' accounting conservatism; therefore, the above conclusions are robust.

4.3.2.2. Rmc replaces R. This paper selects the weighted average market quarterly rate of return (*Rmc*) of the total market value to replace the enterprise's quarterly capital rate of return (*R*). We combine the Basu (1997) measurement model of earnings and stock return after replacement and use the methods of the research above, adding bank loan approval standards and cross terms of other variables to construct the following model. This approach allows us to verify the negative relationship between bank loan approval standards and firms' accounting conservatism.

$$EPS/P = \beta_0 + \beta_1 Rmc + \beta_2 \quad DRmc + \beta_3 \quad Std + \beta_4 Rmc \times Std + \beta_5 DRmc \times Std + \beta_6 Rmc \times DRmc + \beta_7 Rmc \times DRmc$$
$$\times Std + \sum control + \gamma \tag{8}$$

where *EPS* is the earnings per share of the enterprise. *P* is the stock price of the enterprise at the end of the year, and *Rmc* represents the weighted average market quarterly return rate of the total market value of the enterprise. *DRmc* is a dummy variable. When $Rmc < 0$, the value is 1; otherwise, the value is 0. *Std* is the bank loan approval index, indicating changes in bank loan approval standards. *Control* means that the company's book-to-market value ratio (*MB*), cash flow (*Cash*), company size (*Size*), company listing time (*Listdt*), and the largest shareholder's *SR* are controlled; the fixed effect model is used to fix the company's effect.

For Eq. (8), β_7 is also used to measure the impact of bank loan approval standards on firms' accounting conservatism. If β_7 is significantly negative, the accounting conservatism will increase when the bank loan approval standards are tightened. If β_7 is significantly positive, the accounting conservatism will increase when the bank loan approval standards are relaxed. If β_7 is insignificant, bank loan approval standards have no significant effect on accounting conservatism.

The regression results of Eq. (8) are shown in Table 9. Focus on the coefficient of $Rmc \times DRmc \times Std$, which is the coefficient β_7 in Eq. (8), representing the impact of bank loan approval standards on firms' accounting conservatism. Table 9 shows that the coefficient β_7 of the multiplication of $Rmc \times DRmc \times Std$ is –0.394, which is significantly negative at the 1% level and consistent with the previous results; therefore, the conclusion of a significant negative relationship is robust.

Table 9
Rmc replaces R.

Variables	*EPS/P*
Rmc	21.290[***]
	(2.693)
DRmc	0.001
	(0.419)
Std	0.085[***]
	(0.010)
Rmc × *DRmc*	− 14.190[***]
	(3.925)
DRmc × *Std*	0.004
	(0.009)
Rmc × *Std*	− 0.495[***]
	(0.059)
Rmc × *DRmc* × *Std*	− 0.394[***]
	(0.086)
Constant	− 2.898[***]
	(0.559)
Control variables	Yes
Firm fixed effects	Yes
Adjusted R^2	0.027

Notes: The sample interval is 2009Q1–2021Q4. The estimation method is OLS. Cluster standard errors are in parentheses. * **, * *, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

4.3.3. Select different sample interval

Systemic financial risks continue to increase, and China's macro leverage ratio continues to rise. Therefore, China implemented deleveraging policies to prevent systemic financial risks in 2016 and special governance and targeted strikes to control financial risks. Considering that the deleveraging policies may lead to bias in the research results, this paper shortens the sample interval of the regression analysis to the first quarter of 2009 to the fourth quarter of 2015. We then return it in the same way, aiming to pass the method of shortening the time window and exclude the impact of deleveraging policies on the relationship between bank loan approval standards and firms' accounting conservatism. We then test the robustness of the previous conclusions.

This paper uses the measurement model of earnings and stock return to measure the conservatism of corporate accounting and adds the explanatory variable bank loan approval standard and its cross terms with other variables. That is, we regressed the sample data from the first quarter to the fourth quarter of 2009–2015, according to Eq. (2). The regression results are shown in Table 10. We focus on the coefficient of $R \times DR \times Std$ multiplication, that is, the significance and positive or negative of coefficient β_7 in Eq. (2), and check whether it is significant. Table 10 shows that the coefficient β_7 of the multiplication of $Rmc \times DRmc \times Std$ is –0.335, which is significantly negative at the 5% level; the regression result is consistent with the previous article. This shows that after excluding the influence of deleveraging policies, bank loan approval standards still negatively impact firms' accounting conservatism. This result further strengthens the robustness of this paper's conclusions.

4.3.4. Generalized method of moments (GMM) model

This paper adopts the GMM estimation to test the reliability of the previous conclusions; that is, we conduct empirical research on the samples with the GMM model. Specifically, based on the measurement model of earnings and stock returns, the company's quarterly capital rate of return (R) is selected as the rate of return indicator, and the independent variable bank loan approval standard (Std) and its cross terms with other variables are added to construct the model. The sample interval and specific variable selection are the same as those above.

The focus is still on the coefficient of the $R \times DR \times Std$ three-term multiplication, and we observe whether it is significant, positive, or negative, and the same as the previous conclusions. Table 11 shows that the multiplication coefficient of $R \times DR \times Std$ is –0.106, which is significantly negative at the 1% level; the regression result is consistent with the above. This result shows that a negative relationship indeed exists between bank loan approval standards and firms' accounting conservatism; therefore, this paper's research hypothesis H1 remains valid.

5. Heterogeneity analysis

5.1. Heterogeneity analysis based on the property rights

Differences exist in the market structures between China and the West, mainly reflected in two types of state-owned and non-state-owned enterprises in China. Specific differences also arise concerning management and decision-making between the two. Furthermore, this paper argues that differences in property rights can impact the relationship between bank loan approval standards and firms' accounting conservatism. First, compared with non-state-owned enterprises, it is easier for state-owned enterprises to obtain

Table 10
Select different sample intervals.

Variables	EPS/P
R	-0.015^{***}
	(0.002)
DR	0.007^{***}
	(0.001)
Std	-0.111^{***}
	(0.037)
$R \times DR$	0.046^{***}
	(0.003)
$DR \times Std$	0.022
	(0.039)
$R \times Std$	0.206^{***}
	(0.067)
$R \times DR \times Std$	-0.335^{**}
	(0.140)
$Constant$	0.019^{***}
	(0.001)
Control variables	Yes
Firm fixed effects	Yes
Adjusted R^2	0.008

Notes: The sample interval is 2009Q1–2021Q4. The estimation method is OLS. Cluster standard errors are in parentheses. * ** , * *, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 11
Generalized method of moments.

Variables	EPS/P
R	− 0.648
	(0.601)
DR	− 0.882***
	(0.320)
Std	0.014***
	(0.004)
R × DR	7.665***
	(1.760)
DR × Std	0.023***
	(0.007)
R × Std	− 0.002
	(0.012)
R × DR × Std	− 0.106***
	(0.037)
Constant	− 0.006
	(0.212)
Control variables	Yes
Firm fixed effects	Yes
Adjusted R^2	0.014

Notes: The sample interval is 2009Q1–2021Q4. The estimation method is OLS. Cluster standard errors are in parentheses. * ** , * *, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

funds from banks (Goodell et al., 2021). Second, state-owned enterprises have more government support and guidance and are in a leading position among enterprises; thus, state-owned enterprises will make greater efforts to avoid disclosing violations; Finally, state-owned enterprises are more compliant with regulatory standards and policy and pay more attention to the protection of accounting conservatism. In this regard, this paper puts forward the second research hypothesis:

H2. When the bank loan approval standards tighten, the accounting conservatism of state-owned enterprises is higher.

This paper defines local state-owned enterprises and central state-owned enterprises as state-owned enterprises. We define private enterprises as non-state-owned and divide them into two experimental groups: state-owned enterprises (A experimental group) and non-state-owned enterprises (B experimental group). We then conduct regression analysis on these two experimental groups and observe the sign of the correlation coefficient and its significance. With the tightening of bank loan approval standards, we determine

Table 12
Based on the property rights.

Variables	EPS/P	
	A	B
R	− 0.762	1.164
	(0.873)	(0.755)
DR	0.295	− 0.197
	(0.537)	(0.482)
Std	0.061***	0.031***
	(0.012)	(0.007)
R × DR	16.870***	7.799***
	(3.141)	(2.982)
DR × Std	− 0.002	0.008
	(0.011)	(0.010)
R × Std	0.010	− 0.033**
	(0.019)	(0.016)
R × DR × Std	− 0.335***	− 0.140**
	(0.068)	(0.064)
Constant	− 1.565**	− 0.847**
	(0.772)	(0.406)
Control variables	Yes	Yes
Firm fixed effects	Yes	Yes
Observations	35,958	46,814
Adjusted R^2	0.027	0.013

Notes: The sample interval is 2009Q1–2021Q4. The estimation method is OLS. Cluster standard errors are in parentheses. * ** , * *, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

whether differences arise in the performance of the two types of enterprises in accounting conservatism. All variable definitions are the same as previously described. The regression model is as follows:

$$EPS_i/P_i = \beta_0 + \beta_1 R_i + \beta_2 \quad DR_i + \beta_3 \quad Std + \beta_4 R_i \times Std + \beta_5 DR_i \times Std + \beta_6 R_i \times DR_i + \beta_7 R_i \times DR_i \times Std + \sum control + \varepsilon_i \tag{9}$$

According to Eq. (9), state-owned and non-state-owned enterprises are regressed. We focus on the sign and significance of the coefficient β_7 of the multiplication of the three items of $R \times DR \times Std$. Comparing the $R \times DR \times Std$ of the state-owned enterprises, the coefficients of the three items of Std multiplication and the coefficients of the three items of $R \times DR \times Std$ multiplication of non-state-owned enterprises, allows us to determine the degree of accounting conservatism of the two experimental groups A and B in the face of the tightening of bank loan approval standards.

This paper predicts that two situations may arise. First, if the result of the empirical analysis of experimental group A is significant but that of experimental group B is not, state-owned enterprises are more robust in accounting conservatism in the face of tightening bank loan approval standards. In contrast, if the result of the empirical analysis is significant for Group B but not for Group A, non-state-owned enterprises have a more pronounced response to accounting conservatism than state-owned enterprises when facing tightened bank loan approval standards. Second, the two regression results for groups A and B are significant, but their $R \times DR \times Std$ three cross-product coefficients differ in size. If the $R \times DR \times Std$ three-term cross-multiply coefficient of group A is greater than the $R \times DR \times Std$ three-term, cross-multiply coefficient of group B, the accounting conservatism of the state-owned enterprises increases with the tightening of bank loan approval standards. If the $R \times DR \times Std$ three-term delivery coefficient of group A is smaller than the $R \times DR \times Std$ three-term delivery coefficient of the B group, the tightening of bank loan approval standards causes non-state-owned firms to increase accounting conservatism.

The regression results are shown in Table 12, where the coefficient β_7 of the $R \times DR \times Std$ three-item multiplication of group A is −0.335. This result is significantly negative at the 1% level, indicating that the impact of bank loan approval standards on firms' accounting conservatism is more significant than that of state-owned enterprises. However, the coefficient β_7 of $R \times DR \times Std$ in group B is −0.140, which is significantly negative at the 5% level; thus, when bank loan approval standards are tightened, state-owned enterprises show a higher degree of accounting conservatism. This research conclusion is consistent with Khan and Lo (2019) and Gissler et al. (2016), who found that the financial reports of state-owned enterprises are more robust than non-state-owned enterprises.

5.2. Heterogeneity analysis based on executive banking background

According to Hambrick and Mason (1984), enterprises have different operating conditions and decision-making information; thus, compared with the background characteristics of the individual CEO, the management team can affect the performance and behavioral decisions of the company more. Many studies have examined the influence of factors such as gender, age, ability, education, and tenure of the managerial team on accounting conservatism. This paper chooses a less researched perspective, that is, the employment experience of corporate executives, to further explore and analyze whether the banking background of corporate executives affects firms' accounting conservatism.

The corporate executives in this article include the company's chairman, supervisor, general manager, secretary to the chairman, deputy general manager, and financial director. The background of corporate executives' influence can be transmitted to the enterprise through the executives themselves and affect all aspects of the enterprise through internal connections, such as investment decisions, financing decisions, and accounting policies. However, executives with bank experience provide companies with a "simple channel" when borrowing from banks; thus, such companies can obtain the same trust and approval quota from banks with relatively low accounting conservatism (Erkens et al., 2014). Therefore, we assume that the accounting conservatism of enterprises is weak when senior executives have banking experience.

This paper introduces a new explanatory variable, "executive background in banking," and counts whether the current executives of the sample companies have worked or are currently working in banking institutions. We define enterprises with current executives who have worked in banking institutions as "enterprises with bank background," and other enterprises are defined as "enterprises without bank background." Referring to the methods adopted in the literature introduced above, we use the "background of executives in banking" as a dummy variable, which is added to Basu's earnings and stock return measurement model and multiplied with other variables. The regression model is as follows:

$$EPS/P = \beta_0 + \beta_1 R + \beta_2 \quad DR + \beta_3 \quad Back + \beta_4 R \times Back + \beta_5 DR \times Back + \beta_6 R \times DR + \beta_7 R \times DR \times Back + \sum control + \varepsilon_3 \tag{10}$$

where the dummy variable $Back$ is used to represent the banking background of the executives. If the corporate executives have banking experience, it is 1; otherwise, it is 0. Other variables are the same as described above. β_7 indicates the impact of the bank background of senior executives on firms' accounting conservatism. If β_7 is significantly negative, corporate executives have banking backgrounds, and firms' accounting conservatism is low. If β_7 is significantly positive, the company does not have corporate executives with banking backgrounds; thus, corporate accounting is relatively robust.

The regression results of Eq. (10) are shown in Table 13. We focus on the positive and negative sign of the coefficient β_7 multiplied by the three terms of $R \times DR \times Back$ and its significance to determine the impact of corporate executives having a bank background on the robustness of corporate accounting. The coefficient β_7 of the multiplication of $R \times DR \times Back$ is − 0.751, which is significantly negative at the 5% level. For enterprises, when their executives have banking experience, their accounting conservatism will be lower than that of enterprises without such executives. A possible explanation is that if the current executives have worked in a bank, it can enhance the credit of the company when the company borrows from the bank; thus, the company can also obtain bank loans when the

Table 13
Based on executive bank background.

Variables	EPS/P
R	− 0.891***
	(0.108)
DR	0.234***
	(0.044)
Back	− 0.347***
	(0.074)
R × DR	3.444***
	(0.261)
DR × Back	− 0.003
	(0.065)
R × Back	0.177
	(0.128)
R × DR × Back	− 0.751**
	(0.310)
Constant	1.843***
	(0.051)
Control variables	Yes
Firm fixed effects	Yes
Adjusted R^2	0.006

Notes: The sample interval is 2009Q1–2021Q4. The estimation method is OLS. Cluster standard errors are in parentheses. * **, * *, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

accounting conservatism is at a low level. This research conclusion is consistent with Erkens et al. (2014), who found that "executives with bank experience can obtain the same trust and approval quota from banks with relatively low accounting conservatism requirements."

6. Conclusions

This paper presents an empirical analysis of the impact of bank loan approval standards on firms' accounting conservatism. The research findings reveal the following insights.

1. Bank loan approval standards can affect firms' accounting conservatism, and these two variables have a significant negative correlation. As bank loan approval standards increase in stringency, commercial banks exhibit a declining willingness to lend, consequently reducing the success rate of enterprise loan approvals. To obtain the required loans, enterprises must enhance the quality of accounting information and improve accounting conservatism.
2. State-owned enterprises demonstrate a higher level of accounting conservatism. State-owned enterprises possess unique characteristics and relatively strong creditworthiness, resulting in lower credit risks for banks than non-state-owned enterprises. Given their social responsibilities, capital requirements, and the desire to maintain favorable access to bank loans, state-owned enterprises proactively adopt more robust financial reporting methods to ensure higher-quality accounting information.
3. The background of senior executives in the banking sector can influence the integrity of corporate accounting practices to a certain extent. When corporate executives possess banking experience, their inclination toward accounting conservatism tends to be weaker than executives from other industries. Executives with banking experience foster higher trust between banks and enterprises, leading to relaxed lending requirements and expanded loan availability. As a result, accounting conservatism decreases in these circumstances.

Based on the research above findings, this paper posits the following conclusions.

First, commercial banks should set loan approval standards at a high level to ensure the safety and profitability of loan funds. Furthermore, commercial banks should leverage financial technology to establish collaborative channels, facilitate information exchange, and mitigate information asymmetry. These actions enable accurate loan assessments, comprehensive supervision throughout the process, and fulfillment of the financing requirements of enterprises.

Second, enterprises, especially non-state-owned ones, must prioritize the quality of accounting information in their daily management practices. Non-state-owned enterprises should continuously enhance the quality of their accounting information to bolster their financing capabilities. Furthermore, regulatory authorities can play a pivotal role by emphasizing the significance of accounting conservatism through appropriate laws and regulations, thus ensuring that enterprises transmit accurate accounting information and preventing misguided risk evaluations by banks.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data Availability

The authors do not have permission to share data.

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