

EARNINGS MANAGEMENT, BANK LOANS AND THE COST OF DEBT IN AN EMERGING COUNTRY: THE CASE OF VIETNAM

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Abstract: *The study investigates the effect of earnings management on banks' lending decisions, namely incremental bank loans and the cost of debt in Vietnam. Analyzing firm-specific data, the regression analysis is conducted using a sample of 119 non-financial listed companies on HOSE and HNX over an 11-year duration (2011-2021). The results indicate a positive, yet insignificant association between earnings management and an increase in bank loans. Regarding the impact of earnings management on the cost of debt, the results confirm a negative relationship between the two factors. However, this relationship is only statistically supported in the case of accruals-based earnings management. This means that Vietnamese banks do not detect firms' earnings-managing behaviors, uncovering a poorly designed loan management mechanism in Vietnam, resulting in high credit risk and an increasing amount of non-performing loans.*

• **Keywords:** earnings management, accruals-based earnings management, real earnings management, bank lending decision, bank loans, cost of debt.

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Tóm tắt: Nghiên cứu kiểm chứng ảnh hưởng của hành vi quản trị lợi nhuận đối với quyết định về việc cho vay của ngân hàng, cụ thể là các khoản vay tăng thêm và chi phí sử dụng nợ vay tại Việt Nam. Với phương pháp phân tích hồi quy được thực hiện trên dữ liệu của 119 doanh nghiệp niêm yết phi tài chính tại Việt Nam trên hai sàn HOSE và HNX trong vòng 11 năm (2011-2021), kết quả cho thấy mối quan hệ cùng chiều nhưng không đáng kể giữa quản trị lợi nhuận và sự gia tăng của các khoản vay ngân hàng. Về ảnh hưởng của quản trị lợi nhuận và chi phí sử dụng nợ vay, kết quả phản ánh mối quan hệ ngược chiều, song chỉ đáng kể trong trường hợp quản trị lợi nhuận được tính dựa trên biến kế toán dồn tích. Những kết luận này cho thấy, hiện nay, các ngân hàng Việt Nam không phát hiện được hành vi quản trị lợi nhuận của doanh nghiệp và cơ chế quản lý khoản vay thiếu hoàn chỉnh, dẫn đến rủi ro tín dụng cao và số lượng các khoản nợ xấu tăng lên. Từ đó, nghiên cứu đề xuất một số giải pháp và khuyến nghị.

• **Từ khóa:** quản trị lợi nhuận, quản trị lợi nhuận thông qua biến kế toán dồn tích, quản trị lợi nhuận thực, cho vay ngân hàng, chi phí sử dụng vốn.

1. Introduction

Earnings management has become a topic of much controversy over decades, given the poor information asymmetry on the capital market (Chandren, 2016; Cohen et al., 2008). On the one hand, managers handle incomes to appear more financially healthy, attracting more resources such as capital, employees, and supplies for firms' operations. This is considered efficient earnings management because it enhances firms' well-being in the long run. On the other hand, researchers criticizing earnings manipulation emphasize the potential destruction of the capital market structure through managers delivering false information and pursuing personal incentives.

External financing, especially bank financing, is a vital source of equity that determines firm performance and unfortunately encourages firms' earnings manipulation in application for favorable loans. Researchers observe income-managing behaviors in both developed and developing markets. However, due to variations in the legal environment, significant differences are spotted across types of markets. In developing markets, regulators have access to superior information, allowing them to keep up with management trends

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and take responsive actions (Kim et al., 2021; Malfrolla and D'Amico, 2017; Palumbo and Rosati, 2022; Pappas et al., 2019; Shen and Huang, 2013). As a consequence, firms manipulating income are penalized with stricter lending contract terms. Whereas, in an emerging market like China, results obtained by Cui (2020) and Li et al. (2018) reflect banks' inefficient loan management which facilitates income-managing behaviors, leading to an increase in non-performing loans as well as high credit risk.

In Vietnam, earnings quality is alarmingly low, posing a great threat to the information asymmetry in the capital market (Worldbank, 2016). Although certain improvements have been recognized, Vietnamese banks still struggle against the problems of non-performing loans and high credit risk. This requires deeper investigation into the existing loan management mechanism, especially the banking sector's awareness of earnings management. Regarding the topic of earnings management, literature in Vietnam has investigated factors determining earnings management despite the lack of reverse explorations. While drivers are examined, not much evidence has been found to answer (1) whether firms fulfill their purposes when adopting earnings management, and (2) whether involved parties are able to identify earnings manipulation to avoid harmful effects of the methods. Regarding the studies on the effects of earnings management on lending decisions, there are papers by Le and Vo (2021), as well as Vu (2022) which provide important insight that creditors of Vietnamese firms, in general, are against firms' earnings management by charging these firms with higher interest rates. However, the studies fail to concern the differences among sources of external financing, which raises questions on the applicability of the findings to distinct lending-borrowing relationships. Acknowledging the vital role of bank financing towards the firms' operations and the research gap in prior studies in Vietnam, we aim to extend the existing papers by concentrating on bank financing. In particular, the correlation between earnings management and banks' lending decisions, including incremental bank loans and the cost of debt, will be explored by regression analysis using data from 119 non-financial listed companies on the Vietnamese Stock Exchange over an 11-year period (2011-2021).

This paper is organized into 5 parts. The first part provides an overview of this paper. The second part reviews existing studies, highlighting research gaps and developing hypotheses for the study. Research models and measurement of variables are clarified in the third part. Following, the fourth part provides descriptive analysis and regression analysis along with further discussions. The study will be wrapped up by conclusions and recommendations presented in the final part.

2. Literature review and hypothesis development

To begin with, in terms of earnings management approaches, prior studies uncover two methods: accruals-based earnings management and real earnings management. While the accrual-based approach handles incomes by delaying the recognition of expenses in accrual accounts, the real one deals with operational activities. Noticeably, a study by Cohen et al. (2008) documents that firms begin to adopt real earnings management in place of accounting management due to the detection of regulators and auditors. Nonetheless, empirical research has uncovered either simultaneous or substitute use of the two approaches in different economies (Khunkaew and Qingxiang, 2019; Shah et al., 2020; Zhang, 2012). This brings us to employ both measures to examine whether Vietnamese companies use the measures alternatively or simultaneously to access beneficial lending conditions.

Literature documents that banks' competence to detect and mitigate earnings management varies among types of markets. In developed markets, banks figure out how to gain soft information to facilitate their lending decision and responsive lending conditions. Whereas banks located in emerging countries like China and Vietnam are still struggling against low earnings quality due to weak corporate governance and poor regulations.

In emerging markets, as a result of weak corporate governance and poor compliance of national accounting standards with international ones (Worldbank, 2016), banks are unable to detect earnings management, giving rise to non-performing loans (Li et al., 2018). Research by Li et al. (2018), Cui (2020), and Phung et al. (2018) claims that firms push their incomes upwards to favor their lending contract terms. Particularly,

sampling Chinese companies, Cui (2020) finds that firms get more loans thanks to manipulated ROA ratios. A study by Li et al. (2018) shares the same conclusion when firms manipulating their incomes are granted more loans, with a lower interest rate. Studying energy companies in Vietnam, Phung et al. (2018) uncover a negative, but insignificant relationship between cost of debt and earnings management. This leads the authors to conclude that firms in the energy industry are unable to influence their creditors' decisions through income manipulation. Overall, the studies of emerging countries indicate that their banks are unable to identify and respond to firms' earnings management.

On the contrary, studies in developed economies conclude a negative relationship. Shen and Huang (2013) with their multi-country study emphasize how differently earnings management affects credit ranking in high- and medium-income areas. In short, banks located in high-income countries are able to facilitate their ranking with multiple sources of information. Specifically, besides financial statements as hard information, banks in matured economies also get access to soft information to issue responsive lending terms. Consequently, banks in these countries charged firms managing income with a higher interest rate. This is consistent with the findings of Mafrolla and D'Amico (2017), Pappas et al. (2017), Kim et al. (2021), Palumbo and Rosati (2022) from which earnings management is proven to be penalized with stricter lending contract terms.

According to Worldbank (2016), although actions have been taken, earnings quality in Vietnam is quite low, as a result of weaknesses in internal and external mechanisms. In terms of internal factors, Vietnam is ranked poorly for weak corporate governance which lays a harmful impact on the quality of financial information. With regard to external mechanisms, although accounting standards in Vietnam undergo certain improvements, the fact that they are not in line with international ones creates opportunities for earnings management. Besides, it is noted that the limited proficiency of users of financial statements also results in the rise of income-manipulating behaviors. Particularly, in spite of recognized improvements in the legal environment addressing non-performing loans and loan loss

provisions, Vietnamese banks still struggle against poor earnings quality (Worldbank, 2016). As a consequence, loan management is not well-designed enough, triggering opportunistic behaviors of firms to gain preferable treatments. Studies by Nguyen (2021) and Phung (2020) discuss banks' overuse of financial reports. This adversely encourages firms to manage their incomes to pass banks' pre-approval evaluation for loans with low-interest rates. Besides, information asymmetry in Vietnam has been a concerning matter, especially in the magnitude of the capital market.

Combining the context of Vietnamese market with interpretations of above-discussed studies, research hypotheses are proposed as follows:

H1. Degree of earnings management positively influences increase in bank loans.

H2. Degree of earnings management negatively influences cost of debt.

H3. Banks do not detect earnings management before accepting loan application.

3. Methodology

3.1. Sampling, and data collection

Research data is mostly sourced from FiinPro platform which is a well-known software launched in 2008, and visioned as an application-based platform gathering accurate, timely, and in-depth data supporting professional analysis. Data on bank loans are collected from notes of audited financial statements. The final sample contains 1,309 firm-year observations from 119 non-financial listed companies on HOSE and HNX Exchange during a 11-year period (2011-2021).

3.2. Research model

3.2.1. Measuring accruals-based, and real earnings management

In this study, measures of two approaches are employed for multivariate regression models.

To estimate degree of accruals-based earnings management, following Modified Jones model proposed by Dechow et al. (1995), DA is computed as residuals of the model (1):

$$\frac{ACC_{it}}{TA_{it-1}} = \alpha_0 \frac{1}{TA_{it-1}} + \alpha_1 \frac{\Delta Sales_{it} - \Delta Rec_{it}}{TA_{it-1}} + \alpha_2 \frac{PPE_{it}}{TA_{it-1}} + \epsilon_{it} \quad (1)$$

Where:

DA_{it}: Measure of accruals-based earnings management based on Modified Jones model of

firm i in year t

ACC_{it} : Total accruals equal change in current assets minus change in current liabilities minus depreciation of firm i in year t

TA_{it-1} : Total assets of firm i in year $t-1$

$\Delta Sales_{it}$: Change in sales of firm i in year t

PPE_{it} : Property, plant, and equipment of firm i in year t

When it comes to real earnings management, based on study of Roychowdhury (2006), abnormal costs recorded from real activities, namely expenses, production, and cash flow are estimated respectively by the three following regression models:

$$\frac{DISX_{it}}{TA_{it-1}} = \alpha_0 + \alpha_1 \frac{1}{TA_{it-1}} + \alpha_2 \frac{Sales_{it}}{TA_{it-1}} + \epsilon_{it} \quad (2)$$

$$\frac{PROD_{it}}{TA_{it-1}} = \alpha_0 + \alpha_1 \frac{1}{TA_{it-1}} + \alpha_2 \frac{Sales_{it}}{TA_{it-1}} + \alpha_3 \frac{\Delta Sales_{it}}{TA_{it-1}} + \alpha_4 \frac{\Delta Sales_{it-1}}{TA_{it-1}} + \epsilon_{it} \quad (3)$$

$$\frac{CFO_{it}}{TA_{it-1}} = \alpha_0 + \alpha_1 \frac{1}{TA_{it-1}} + \alpha_2 \frac{Sales_{it}}{TA_{it-1}} + \alpha_3 \frac{\Delta Sales_{it}}{TA_{it-1}} + \epsilon_{it} \quad (4)$$

Where:

$DISX_{it}$: Sum of research and development expense, selling expense, general and administrative expense of firm i in year t

$PROD_{it}$: Sum of cost of goods sold and change in inventory of firm i in year t

CFO_{it} : Cash flow from operations of firm i in year t

TA_{it-1} : Total assets of firm i in year $t-1$

$Sales_{it}$: Sales of firm i in year t

$\Delta Sales_{it}$: Change in sales of firm i in year t

$\Delta Sales_{it-1}$: Change in sales of firm i in year $t-1$

After that, ABN_DISX , ABN_PROD , and ABN_CFO are estimated as residuals of the above equations. Proxy representing degree of real earnings management is acquired following Li et al. (2018) in which the level of real earnings management increases in the combination:

$$REM = -ABN_DISX + ABN_PROD - ABN_CFO \quad (5)$$

3.2.2. Measuring banks' lending decision

In order to quantify banks' lending decision, following Le and Vo (2021), Li et al. (2018), as well as Palumbo and Rosati (2022), two proxies are used which are increase in bank loans (NLOAN), and cost of debt (COD).

$$NLOAN_{it} = \frac{Bank\ loans_{it} - Bank\ loans_{it-1}}{Total\ assets_{it}} \quad (6)$$

$$COD_{it} = \frac{Interest\ expense_{it}}{\frac{Total\ debts_{it} + Total\ debts_{it-1}}{2}} \quad (7)$$

3.2.3. Multivariate regression models

To investigate effect of earnings management on banks' lending decision, I follow multivariate models utilized by Li et al. (2018) as below:

$$NLOAN_{it} = \beta_0 + \beta_1 EM_{it-1} + \beta_2 SIZE_{it-1} + \beta_3 CFOA_{it-1} + \beta_4 GROW_{it-1} + \beta_5 LEV_{it-1} + \beta_6 ROA_{it-1} + \beta_7 IC_{it-1} + \beta_8 Z_{it-1} + \epsilon_{it} \quad (8)$$

$$COD_{it} = \beta_0 + \beta_1 EM_{it-1} + \beta_2 SIZE_{it-1} + \beta_3 CFOA_{it-1} + \beta_4 GROW_{it-1} + \beta_5 LEV_{it-1} + \beta_6 ROA_{it-1} + \beta_7 IC_{it-1} + \beta_8 Z_{it-1} + \epsilon_{it} \quad (9)$$

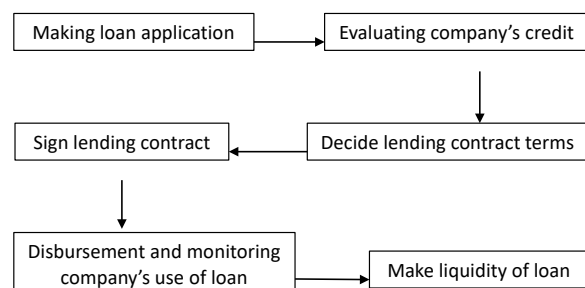
Where NLOAN and COD account for ratio of incremental bank loans, and cost of debt respectively which are representers of banks' lending decisions. EM refers to measures of accruals-based and real earnings management. To avoid potential collinearity, each measure of earnings management will be examined in separate models. Besides, all variables to the right of equal sign are computed as lagged value in order to prevent endogenous issue. Control variables are added which are suggested by previous studies (Bae et al., 2009; Cui, 2020; Hsieh and Wu, 2012; Kim et al., 2021; Li et al., 2018; Mafrolla and D'Amico, 2017; Palumbo and Rosati, 2022; Pappas et al., 2019); Shen and Huang, 2013). Computations of the variables are detailed in appendix 1.

4. Results and discussions

4.1. Loan management mechanism in Vietnam

Bank loans have become one of the major external finances that is supposed to be determinants of firms' economic survival in Vietnam. However, in such an emerging market like Vietnam, weaknesses in bank mechanism especially lending process itself give rise to the issue of non-performing loans, thus lead to higher level of credit risk.

Figure 1: Common lending process in Vietnam



Source: Dang (2022)

Many problems arise from the loan management process, questioning the efficiency and effectiveness of loan management in Vietnamese banks. In terms of pre-approval steps, inefficient planning leads to poor predictability and readiness for possible credit risk. Nguyen (2021) argues that planning is not made tactically and practicably. Instead, targets are set based on the current year's indices and the bank's future direction, rather than focusing on customer demand and management competency. Additionally, CEO assignments matter more to their plan, which uncovers a passive and inefficient planning in the loan management mechanism.

Another issue stems from information used to examine a customer's ability and trustworthiness, as Vietnamese banks still heavily depend on information provided by their customers, defined as hard information (Nguyen, 2021; Phung, 2020). This causes unbalanced information asymmetry, giving rise to non-performing loans (Tran, 2022). Besides, soft information is still regarded as a crucial input for monitoring, as banks usually conduct field examinations or require local lending. Nevertheless, those are not efficiently performed due to the shortage of professional and experienced credit staff, as well as a deficient loan management system that is overdependent on top managers (Phung, 2020).

The last problem originates from the poor design of management. Firstly, criteria and standards for assessing customers' well-being are not well-prepared, preventing credit staff from correctly evaluating firms' situations. Secondly, the monitoring role of top managers on their employees still suffers from ineffectiveness (Ngo et al., 2022). Lastly, the adoption of technologies facilitating monitoring is still in trials, which has not delivered a solution for the issue. These result in inefficient and ineffective monitoring, hindering necessary and timely actions against credit risk.

4.2. Descriptive statistics

Table 1: Descriptive statistics

Variable	Observation	Mean	Std. Dev.	Min	Max
<i>Banks' lending decision</i>					
NLOAN	1309	0.0339	0.2084	-0.6227	4.5326
COD	1309	0.0393	0.0250	0.0004	0.2691
<i>Earnings management</i>					
DA	1309	0.0000	0.2076	-0.5703	5.1585
REM	1309	0.0000	0.4398	-1.3840	9.6344

Variable	Observation	Mean	Std. Dev.	Min	Max
<i>Control variables</i>					
SIZE	1309	27.3433	1.3228	24.0294	31.3623
CFOA	1309	0.0593	0.1402	-0.6958	1.1892
GROW	1309	0.0871	0.4031	-3.4225	2.5252
LEV	1309	0.5445	0.1859	0.00391	1.2944
ROA	1309	0.0594	0.0686	-0.6455	0.3610
IC	1,309	-19.9783	115.5506	-3181.141	10.39903
Z	1309	7.1805	4.8806	-5.2171	81.8490

Source: STATA 16

Regarding variables representing banks' lending decisions, it is noticeable that firms are accepted diverse amount of loans, but charged similar interest rate. In terms of earnings management measures, all values of standard deviation are much larger than their means which illustrate remarkable fluctuation and broad distribution of data portraying firms' earnings manipulation. When it comes to control variables, as shown in variables of SIZE, LEV, and Z, sampling firms tend to depend on its liabilities to fund their operations, while healthy financial well-being of firms are spotted (Altman, 2017). With regards to remaining ratios, is noted the diversity of firms' efficiency, and profitability.

4.3. Correlation matrix

Table 4.2 presents correlation coefficients of the variables. Apart from multicollinearity of earnings management measures, all of other variables obtain correlation coefficients which are smaller than 0.8, indicating no collinearity in the regression models.

Table 2: Pairwise correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) NLOAN	1.000										
(2) COD	-0.026	1.000									
(3) DA	0.029	-0.062	1.000								
(4) REM	-0.008	-0.009	0.339	1.000							
(5) SIZE	-0.068	-0.011	0.016	-0.080	1.000						
(6) CFOA	0.048	-0.143	-0.094	-0.387	-0.058	1.000					
(7) GROW	0.004	0.076	0.190	0.029	-0.002	-0.096	1.000				
(8) LEV	-0.112	0.249	-0.091	-0.054	0.253	-0.276	0.053	1.000			
(9) ROA	0.079	-0.205	0.125	0.149	-0.052	0.253	0.231	-0.490	1.000		
(10) IC	0.016	0.174	-0.001	0.006	0.056	-0.125	-0.001	0.215	-0.182	1.000	
(11) Z	0.140	-0.244	0.115	0.087	-0.126	0.200	0.036	-0.653	0.572	-0.379	1.000

Source: STATA 16

4.4. Multivariate regression results

Multivariate regressions are conducted to investigate the impacts of earning managements, namely accruals and real approaches on banks' lending decision. Variance inflation factor values (VIF) of all independent variables are smaller than 3 indicating that multicollinearity does not exist in

my regression models (Kock and Lynn, 2012).

Table 3: Variance inflation factor values of multivariate regressions

Equation	(11)		(12)	
Dependent variable	NLOAN		COD	
Independent variable	DA	REM	DA	REM
Z	2.27	2.27	2.27	2.27
LEV	2.02	2.01	2.02	2.01
ROA	1.74	1.83	1.74	1.83
IC	1.18	1.18	1.18	1.18
CFOA	1.15	1.42	1.15	1.42
GROW	1.15	1.13	1.15	1.13
SIZE	1.08	1.09	1.08	1.09
EM	1.07	1.30	1.07	1.30
Mean VIF	1.46	1.53	1.46	1.543

Source: STATA 16

Table 4: Multivariate regression results of equation 8 on the impacts of earnings management on change in bank loans

	DA			REM		
	OLS	FEM	REM	OLS	FEM	REM
EM	0.0144 (0.6111)	0.0239 (0.4178)	0.0144 (0.6110)	-0.0098 (0.5047)	0.0109 (0.5097)	-0.0098 (0.5046)
Control variables						
SIZE	-0.0078 (0.0835)	-0.0567*** (0.0000)	-0.0078 (0.0832)	-0.0079 (0.0771)	-0.0547*** (0.0001)	-0.0079 (0.0769)
CFOA	0.0380 (0.3824)	0.1017* (0.0250)	0.0380 (0.3823)	0.0208 (0.6677)	0.1167* (0.0256)	0.0208 (0.6676)
GROW	0.0012 (0.9384)	-0.0026 (0.8638)	0.0012 (0.9384)	0.0016 (0.9147)	0.0002 (0.9886)	0.0016 (0.9147)
LEV	-0.0146 (0.7382)	-0.3229*** (0.0000)	-0.0146 (0.7382)	-0.0164 (0.7057)	-0.3240*** (0.0000)	-0.0164 (0.7056)
ROA	-0.0425 (0.6979)	0.0679 (0.6068)	-0.0425 (0.6979)	-0.0237 (0.8328)	0.0645 (0.6274)	-0.0237 (0.8328)
IC	0.0001** (0.0055)	0.0001 (0.0551)	0.0001** (0.0054)	0.0002** (0.0051)	0.0001 (0.0523)	0.0002** (0.0050)
Z	0.0068*** (0.0001)	0.0080*** (0.0005)	0.0068*** (0.0001)	0.0068*** (0.0001)	0.0082*** (0.0004)	0.0068*** (0.0001)
_cons	0.2086 (0.0836)	1.6938*** (0.0000)	0.2086 (0.0833)	0.2144 (0.0765)	1.6386*** (0.0000)	0.2144 (0.0763)
N	1309	1309	1309	1309	1309	1309
R ²	0.0290	0.1062	0.0631	0.0291	0.1061	0.0622
F-test		0.0000			0.0000	
Breusch and Pagan test		0.0000			0.0000	
Hausman test		0.0000			0.0000	

*, **, *** denote significance at 0.1, 0.05, 0.01; Source: STATA 16

Table 5: Multivariate regression results of equation 9 on the impact of earnings management on cost of debt

	DA			REM		
	OLS	FEM	REM	OLS	FEM	REM
EM	-0.0066* (0.0452)	-0.0066* (0.0202)	-0.0078** (0.0067)	-0.0008 (0.6462)	-0.0021 (0.1818)	-0.0019 (0.2403)
Control variables						
SIZE	-0.0012*	-0.0104***	-0.0043***	-0.0013*	-0.0109***	-0.0045***

	(0.0168)	(0.0000)	(0.0000)	(0.0124)	(0.0000)	(0.0000)
CFOA	-0.0103* (0.0408)	-0.0142** (0.0013)	-0.0138** (0.0018)	-0.0103 (0.0665)	-0.0169*** (0.0009)	-0.0158** (0.0018)
GROW	0.0060*** (0.0007)	0.0050*** (0.0006)	0.0055*** (0.0002)	0.0053** (0.0022)	0.0043** (0.0031)	0.0047** (0.0014)
LEV	0.0182*** (0.0003)	0.0322*** (0.0000)	0.0250*** (0.0001)	0.0187*** (0.0002)	0.0323*** (0.0000)	0.0250*** (0.0001)
ROA	-0.0327** (0.0097)	0.0109 (0.3948)	-0.0001 (0.9950)	-0.0322* (0.0132)	0.0109 (0.4003)	0.0001 (0.9963)
IC	0.0000*** (0.0003)	0.0000*** (0.0003)	0.0000*** (0.0002)	0.0000*** (0.0004)	0.0000*** (0.0004)	0.0000*** (0.0002)
Z	-0.0003 (0.1306)	-0.0000 (0.9573)	-0.0001 (0.6118)	-0.0003 (0.1078)	-0.0001 (0.8082)	-0.0001 (0.4878)
_cons	0.0679*** (0.0000)	0.3063*** (0.0000)	0.1448*** (0.0000)	0.0695*** (0.0000)	0.3205*** (0.0000)	0.1517*** (0.0000)
N	1309	1309	1309	1309	1309	1309
R ²	0.1041	0.0997	0.0827	0.1015	0.0969	0.0787
F-test		0.0000			0.0000	
Breusch and Pagan test		0.0000			0.0000	
Hausman test		0.0000			0.0000	

*, **, *** denote significance at 0.1, 0.05, 0.01; Source: STATA 16

Rejecting H1, the results demonstrate the positive, yet, insignificant impact of earnings management on change in reported bank loans. Consistent with findings of Li et al. (2018), Cui (2020), and Palumbo and Rosati (2022), positive associations are withdrawn between DA, as well as REM and change in bank loans with the estimated coefficients at 0.0239, and 0.0109. Coefficient value of DA is slightly higher than REM's which indicates that banks likely perceive real earnings management more detrimental than accruals one. Mainly, it can be concluded that firms manage income upward to appear more profitable so that more bank financing can be obtained.

With regard to cost of debt, similar to findings of Li et al. (2018), it is noted that Vietnamese banks also ignore earnings management when deciding interest rate incurred by firms. Particularly, both earnings management variables are negatively correlated with COD. However, the correlation is only significant in the presence of accruals-based earnings management, partly confirming H2. This means that accounting manipulation is a popular choice which guarantees firms to apply for bank loans with lower cost. Furthermore, this finding is also opposite to that of studies of Le and Vo (2021), and Vu (2022) on cost of all external debts. In other words, although creditors in Vietnam generally perceive earnings management as detrimental, this interpretation is not fixed across different types of creditors.

Regarding control variables, significant roles of SIZE, CFOA, LEV, and Z towards the relationship

between earnings management, and incremental bank loans are obtained. When it comes to the impact on COD, it is clarified that SIZE, CFOA, GROW, LEV, and IC are all relevant to the interaction between earnings management and cost of debt. Coefficients of SIZE are all negative which states that banks tend to allocate larger loans with lower cost to small firms compared to large ones. On the contrary, while high CFOA secure more loans offered, it is usually attached with higher interest rate. In terms of GROW, it is suggested that profitable firms are more likely charged higher interest rate. Furthermore, coefficient values of LEV are opposite in both examining models. Specifically, while higher leverage prevents firm to apply for new loan, it also decrease the cost that firms are contracted to acquire. This means that banks tend to avoid granting loans for firms with high level of debt. Nevertheless, if an application is accepted, firms are likely granted low degree of interest which encourages constant cash flow. Concerning interest coverage, the results reveal the positive association between IC and COD, however combined with almost zero coefficient values. In other words, firms' ability to pay interest matter in banks' lending decision, yet is not a critical determinant. Finally, the regression analysis also argues that ignorance on earnings management may result in high credit risk which is uncovered by coefficient values of Z. Particularly, high level of firms' financial constraints is positively associated with increase in bank loan size with statistical power.

All in all, the results provide evidence for weak correlation between earnings management and banks' lending decision. Only significant effect of accruals-based earnings management on cost of debt is revealed. Besides, it is also claimed that Vietnamese banks do not identify earnings management behaviours before granting loans which is consistent with prediction of H3. Last but not least, the results also suggests a simultaneous use of both accruals-based, and real earnings management in Vietnam. This confirms previous findings of studies sampling in other emerging markets (Zang, 2012). In particular, in these markets, accruals-based earnings management are not detected and thus, not effectively tackled. Whereas, the launch of new approach which is real one also promise more favorable treatments which lead to a simultaneous adoption of both approaches among firms in these countries.

5. Conclusions and recommendations

5.1. Conclusions

The findings provide evidence supporting a common lending-borrowing scenario in emerging economies, wherein earnings management is adopted for favorable loan contract terms. Consistent with studies in emerging markets (Cui, 2020; Li et al., 2018; Palumbo and Rosati, 2022; Phung et al., 2018), this study also observes that firms managing their income are granted more loans and incur lower costs of debt. However, it is unable to strengthen most of the findings with statistical power, except for the relationship between accruals-based earnings management and the cost of debt. Furthermore, it is found that Vietnamese banks do not detect either approach of earnings management before finalizing lending decisions, explaining their high proportion of non-performing loans and a high level of credit risk.

Moreover, in comparison with prior studies sampling Vietnamese companies exploring how earnings management can influence the general cost of debts (Le and Vo, 2011; Vu, 2022), we obtain contrasting results. This means that, in general, creditors of Vietnamese firms view earnings management as detrimental behavior. However, the finding is not fixed in the case of bank financing, while banks are proven not to be against income-manipulating behaviors, thus accepting beneficial lending conditions.

Lastly, the results also suggest a simultaneous use of both accruals-based and real earnings management among Vietnamese firms. This is because the accruals-based method has not been identified and effectively mitigated by responsible agencies, there is no need to give up on the method. Besides, the effectiveness of real earnings management is also proven. Thus, instead of shifting from the traditional approach to the newly-introduced one, Vietnamese firms adopt both approaches simultaneously.

5.2. Recommendations

5.2.1. Recommendations for banks

Provided that bank is an essential component in lending-borrowing scenario, strengthening bank efficiency is a plausible solution for the problem of high credit risk, and non-performing loans. In the very first step, banks should enhance their competency in evaluating customer profile

through specializing assessment criteria, as well as diversifying information sources. Specifically, criteria based on which customers are assessed must be clearly provided. Furthermore, banks are advised to improve the quality of their monitoring by enhancing employee competence, and flexibility in monitoring, and detecting opportunistic behaviors. Last but not least, Vietnamese banks should pay attention to borrowers' income-managing behaviours when they apply for loans. Specifically, we would like to suggest an addition to current lending process with a earnings management-detecting step once a loan request is delivered.

5.2.2. Recommendation for Vietnamese government, and regulators

Besides banks, government, and regulators also pose significant impacts on lending activities. In developed economies, bank efficiency is facilitated with the launch of national database. This database collects and present all financial data, non-financial data, and default information so that banks, and other involved institutions can access and gain input for their decision-making process. This helps to balance information asymmetry between firms and their stakeholders which resultedly ensure sustainable collaborations.

5.2.3. Recommendation for Vietnamese listed companies

As for listed companies in Vietnam, they should be aware that earnings management is a trade off between risk, and opportunities. On the one hand, in the view of efficient management, the method can help to attract necessary resources for operations which boosts their profitability, and efficiency. On the other hand, providing untrue information of their current situation could triggers potential risks. Specifically, stakeholders especially banks who are users of financial reports may become victims of accounting deception. As a consequence, they are unable to estimate risk, as well as to respond to underlying problems which lead to poor returns, and conflicts with managers.

5.3. Limitations and future research directions

This study acknowledges its limitations. Firstly, due to difficulties in accessing to data relating to bank loans, the size of research sample is quite small compared to studies on the same topic. This limits statistical power of the findings. Secondly, the study has not considered potential endogeneity

problem arising from the interaction between earnings management, and banks' lending decision.

Despite its certain limitations, the study provides important basis for future research directions. To begin with, further investigation may be specilized on types of bank loans. Besides, more lending contract terms could be added to explorations such as collateral requirements, loan spread, etc. Lastly, discovery on mediating effects of ownership structure, or marketization degree, etc. towards the relationship of earnings management, and banks' lending decision is also worth being carried out.

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