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Article

External financing and earnings management: Evidence in Vietnam

Cogent Economics & Finance

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Suggested Citation: Phuong Bui; Hai Ngo; Khuong Nguyen Vinh; Nguyen Thanh Liem (2022) : External financing and earnings management: Evidence in Vietnam, Cogent Economics & Finance, ISSN 2332-2039, Taylor & Francis, Abingdon, Vol. 10, Iss. 1, pp. 1-16, <https://doi.org/10.1080/23322039.2022.2147703>

This Version is available at:

<https://hdl.handle.net/10419/303872>

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To cite this article: Phuong Bui, Hai Ngo, Khuong Nguyen & Nguyen Liem (2022) External financing and earnings management: Evidence in Vietnam, Cogent Economics & Finance, 10:1, 2147703, DOI: [10.1080/23322039.2022.2147703](https://doi.org/10.1080/23322039.2022.2147703)

To link to this article: <https://doi.org/10.1080/23322039.2022.2147703>



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Received: 18 August 2022
Accepted: 11 November 2022

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Reviewing editor:
Mohammed M Elgammal, Finance
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GENERAL & APPLIED ECONOMICS | RESEARCH ARTICLE

External financing and earnings management: Evidence in Vietnam

Phuong Bui^{1,2}, Hai Ngo³, Khuong Nguyen^{1,2} and Nguyen Liem^{1,2*}

Abstract: This paper investigates the effect of external financing on earnings management in Vietnam, a bank-dominated economy. Using a sample of 494 listed non-financial firms from 2009 to 2018, we find that external financing is positively related to earnings management, implying that firms have incentives to manage earnings raising external fund. Additionally, earnings are manipulated when firms conduct capital raising by issuing either equity or debt. However, compared to debt financing, earnings are managed more aggressively when firms are involved in equity financing activities. Finally, we extend the literature by showing that equity is especially destructive at high levels. These findings lend credence to the argument that firms issuing equity have stronger incentives to manage earnings than debt issuers and call for thorough monitoring and scrutiny of stakeholders towards this type of issuance.

Subjects: Corporate Finance; Accounting; Corporate Governance

Keywords: Asymmetric information; debt financing; earnings management; equity financing; external financing

JEL code: G30; G32; D82; M41

1. Introduction

In recent years, earnings manipulation has been a topic that attracts much attention of practitioners and researchers. Investors need firms' genuine accounting information, especially information about earnings, to predict future cash flows and assess their risk. However, the bottom line can be distorted as a result of managers' discrete intervention in the financial reporting process to obtain some private benefits. Therefore, accounting information may not reflect the true economic performance of firms.

There are numerous ways to manage earnings such as choosing among alternative depreciation methods or inventory valuation approaches. Alternatively, earnings can be manipulated by timing the recognition of revenues and expenses (Bartov, 1993) and deciding whether to capitalize certain expenses (Muller, 1999).

One of the reasons why firms manage their earnings is to increase the accessibility to external sources of fund (DuCharme et al., 2004; Rangan, 1998; Shivakumar, 2000; Teoh et al., 1998a, b). Previous studies find that firms conduct earnings management around the initial public offerings (Gao et al., 2017; Lo et al., 2017; Nikbakht et al., 2021; Teoh et al., 1998a), seasoned equity offerings (Rangan, 1998; Shivakumar, 2000; Teoh et al., 1998b), debt offerings (Becker et al., 1998; Lazzem & Jilani, 2018; Pappas et al., 2019; Rodríguez-Pérez & van Hemmen, 2010), and bank borrowings (Ahn & Choi, 2009). Firms manage earnings before stock issues to raise more

funds than the fair value of their stock, and prior to bond offerings and bank borrowings to achieve a lower cost of debt (Liu et al., 2010; Teoh et al., 1998a, b; Rangan, 1998).

Although both stockholders and creditors are capital suppliers of firms, the return on investment of creditors is more certain than that of stockholders (La Porta et al., 1998). Moreover, creditors can protect their interests through debt covenants (DeFond & Jiambalvo, 1994). Because information asymmetry exists to a higher extent in the case of stock issuance, raising fund from stock issues could prove more challenging than debt issues (Myers & Majluf, 1984). Therefore, equity issuers are more likely to take advantage of information asymmetry to perform earnings management to falsely attract potential investors.

In Vietnam, banks play an important role in the financial market as they provide the main source of fund for firms (Nguyen et al., 2018; Vo, 2017). The proportion of debt in total funding of most firms is noticeably higher than 50 per cent (Vo & Ellis, 2017), suggesting that banks have a considerable role towards firms' operations. In addition, several firms manage their earnings at different levels and have relatively low transparency and accounting information quality (Thanh et al., 2020). Besides, Vietnamese firms are in the inception and growth phases in their life cycle. Huynh et al. (2020) emphasize that the information asymmetry issue in Vietnam is quite severe, compared to that in the UK.

Although internal financing is more preferable in the environment plagued with high information asymmetry (Myers & Majluf, 1984), financially constrained and young firms with high growth rate still have to tap external sources of funds to finance their operations. To meet the requirements of lenders, firms may be induced to manage their earnings. In developed markets, managers have fewer opportunities to act for their private benefits (Leuz et al., 2003; La Porta et al., 1998). In contrast, in a frontier market with lax requirements on financial reporting quality like Vietnam, managers might have more room for the distortion of the bottom line.

This paper investigates whether external financing (both equity and debt) drives firms' earnings management behaviors in Vietnam where the stock market is still young and thin, compared to its banking sector. Using a sample of 494 listed firms on Ho Chi minh and Hanoi Stock Exchanges in the period of 2009–2018, we find that firms manage their earnings when they conduct external financing activities. Specifically, we find that firms engage in earnings management when they raise funds not only from equity but also from debt issuance. However, the effect on earnings management of equity financing is stronger than that of debt financing, implying that stock issuance plays a more important role in driving earnings management behaviors of firms.

This paper contributes to the literature in many fronts. First, we investigate the link between external financing (debt and equity) and earnings management in Vietnam, a developing country. Previous studies tend to focus on developed markets, with less information asymmetry and stronger institutional quality to protect investors/debtholders. Meanwhile, developing countries have more severe information asymmetry and less strict regulations to protect fund providers; as a result, investors are at higher risk. The findings in this study should, therefore, help to crosscheck whether the findings in developed markets hold for a developing market with a more updated dataset. Second, we further document the nonlinearity in the relationship between equity financing and earnings management, while that link in the case of debt financing is not strong. This serves as a channel that explains why equity financing is destructive: at high levels of equity financing, it increases earnings manipulation significantly. The nonlinear relationship between external financing and earnings management has not been investigated before. Finally, we offer a range of robustness checks, after which the main results remain unchanged, which lends credence to our findings.

The remainder of this paper is structured as follows. Section 2 presents the literature review and hypothesis establishment. Section 3 describes data and methodology. Section 4 discusses the empirical results and Section 5 concludes the paper with implications for different stakeholders.

2. Literature review and hypothesis development

Investors tend to rely on accounting figures to assess the performance of a firm before making investment decisions. Because earnings are critical, they can be subject to being manipulated. Earnings management is the practice of using accounting tricks to misrepresent items or reduce transparency of financial statements to facilitate opportunistic behaviors (Healy & Wahlen, 1999; Schipper, 1989). In that case, the quality of managed earnings is low and fails to deliver the true picture of firm performance (Schipper & Vincent, 2003).

There are various factors or events that affect firms' earnings quality. For example, the earnings quality of dividend payers tends to be higher than that of dividend non-payers (Deng et al., 2017; He et al., 2017; Hussain & Akbar, 2022; Skinner & Soltes, 2011; Tong & Miao, 2011). Additionally, firms are more likely to engage in earnings management prior to mergers and acquisitions (Erickson & Wang, 1999; Karim et al., 2016; Vasilescu & Millo, 2016). Corporate diversification is associated with earnings management strategies (Berrill et al., 2021). Firms manage their earnings upward to avoid reporting earnings lower than analysts' forecasts (Abarbanell & Lehavy, 2003; Burgstahler & Eames, 2006). Moreover, earnings management could be incentivized by compensation arrangement for management team (Healy, 1985; P. M. Dechow & Sloan, 1991).

The external financing channel can provide incentives for firms to manage earnings (Bradshaw et al., 2006). Firms can raise new capital from different sources such as initial public offerings (IPOs), seasoned equity offerings (SEOs), debt offerings, and bank borrowings (Cohen & Zarowin, 2010; Rangan, 1998; Shivakumar, 2000; Teoh et al., 1998b). Corporate executives might manipulate earnings when they raise external financing to increase the offering proceeds at a lower cost. Earnings of IPO firms are usually managed more aggressively than that of non-issuers (Gao et al., 2017; Lo et al., 2017; Nagata, 2013; Teoh et al., 1998a). Besides, earnings are less manipulated if firms use reputable investment banks for their IPO. On the contrary, pre-IPO earnings are more managed in firms having large research and development cost (Nikbakht et al., 2021).

Firms manage earnings not only before stock issues but also prior to debt offerings. According to Jensen and Meckling (1976) and Jensen (1986), debt plays a role as a disciplinary device. Thus, managers of leveraged firms have few opportunities to invest free cash flows in negative net present value projects in pursuance of their private benefits (Harris & Raviv, 1991). Because of lower agency costs, leveraged firms are less likely to engage in earnings management. Moreover, firms with high levels of debt are more closely monitored by bondholders/banks. When the magnitude of bank monitoring increases, the earnings management behavior of firms decreases (Ahn & Choi, 2009; Huang et al., 2018). To protect their benefits, lenders are likely to include some terms in the loan contract such as higher interest spreads, shorter maturities, more collateral requirements, and more intensive financial covenants (Pappas et al., 2019).

On the other hand, another strand of literature suggests that when debt is relatively high, managers have an incentive to decrease the risk of violating bank debt covenants (DeAngelo et al., 1994; DeFond & Jiambalvo, 1994). Therefore, the reported earnings of high-debt firms are more likely to be managed upward (Lazzem & Jilani, 2018; Trueman & Titman, 1988; Watts & Zimmerman, 1990). In addition, to reduce the cost of borrowing, firms can manage earnings prior to bond offerings (Liu et al., 2010; Rhodes, 2016). However, the more aggressively firms manage their earnings, the higher their litigation risk (DuCharme et al., 2004).

Overall, prior literature finds that firms are induced to manage the reported earnings when they wish to tap external funds. In Vietnam, a large number of listed firms are in the beginning and growth phase in their life cycle. Due to the strong growth rates, firms might be in a constant lack of capital. Nonetheless, those firms face significant barriers in raising capital externally due to their higher levels of information asymmetry with external stakeholders. Thus, Vietnamese listed firms are more likely to engage in earnings management to increase the accessibility to external funds.

Based on the arguments above, it is expected that the amount of external financing affects corporate earnings management. Our first testable hypothesis is as follows:

H1: External financing is positively related to earnings management.

In Vietnam, banks play a dominant role in the financial market, and are also the primary fund suppliers for firms (Thanh et al., 2020; Vo, 2017). In addition to banks, firms can raise funds from alternative sources such as equity. Although the stock market in Vietnam has experienced high growth rates in recent years, it has just been operating for more than twenty years; as a result, this young market is more unstable and rather small compared to other developed ones.

Moreover, compared to debt financing, funds raised through stock issues does not require making interest and principal payments. To exacerbate the problem for stock market investors, corporate governance is not as strict and efficient as in developed markets to protect capital providers that hold the residual claims in a firm's assets. This implies that the investment of stockholders is riskier than that of creditors. Therefore, to increase the possibility of obtaining fund from issuing shares, firms have to demonstrate to the market its good operating performance, and this motivates firms to manipulate their earnings. According to Zhang et al. (2020), there is a positive relationship that is especially stronger for firms that depend on equity, rather than debt, or equity financing generates more incentives for earnings management, compared to debt financing.

To sum up, our second hypothesis is as follows:

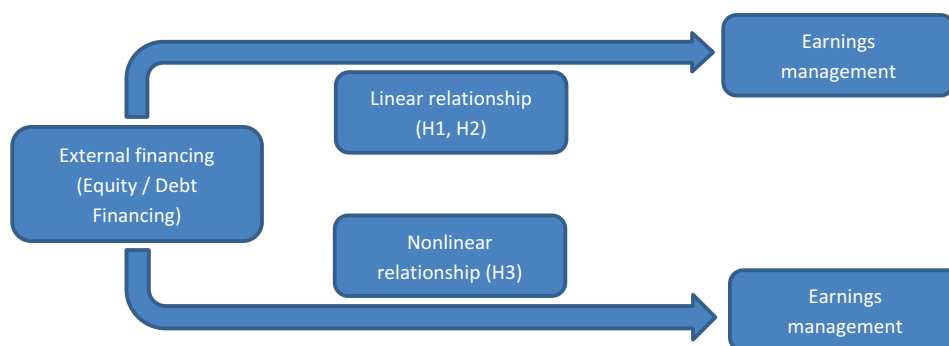
H2: Equity financing is more positively associated with earnings management.

When firms have low levels of debt, financial distress cost tends to be lower, so they are not prone to manage earnings. However, at higher debt levels, a higher financial distress cost can lead to more earnings management due to pressures to meet debt covenant (Thanh et al., 2020). Consistently, Rhodes (2016) points out that bond issuers tend to manage their earnings.

On the other hand, debt holders usually have mechanisms to protect their interests and reduce the reliance on accounting information, e.g., via collateral. Furthermore, regulations rule that debtholders have priority in liability settlement over shareholders in the event of corporate bankruptcy. Meanwhile, shareholders are merely eligible for the residual claims. In addition, at high levels of debt, banks become informed investors that can exert more monitoring over the firms at a relatively low cost (Huang et al., 2018). Therefore, it is unclear whether at high levels, debt can exert a different effect on earnings management as opposed to at low levels.

Shareholders' interest is highly dependent on firm performance. Equity financing at high levels might not be an effective tool to monitor firms if the majority of shareholders are individuals, rather than institutions. In developing countries, as corporate governance is not as strict and efficient to protect shareholders compared to debtholders, high levels of equity might create environment and conditions for more earnings manipulation to falsely impress investors. Furthermore, according to Zhang et al. (2020), there is a positive relationship that is especially stronger for equity-dependent firms. Zhang et al. (2020) suggest that the return of shareholders is more sensitive to firm performance than creditors, effectively increasing the incentives to manage earnings in the case firms have high levels of equity financing. To summarize, it is possible that at different levels, both debt and equity financing can exert different effects on earnings management. Therefore, our final hypothesis is as follows:

Figure 1. Research framework.



H3: External financing has a nonlinear effect on earnings management.

Our research framework is summarized in Figure 1

3. Data and methodology

3.1. Sample and data source

The sample covers non-financial listed firms on the Ho Chi minh Stock Exchange and Hanoi Stock Exchange. Data is extracted from Datastream database during the period of 2009–2018. We do not include the period from more recent time to avoid the effects of unprecedented incidence of Covid-19 outbreak on firms' financial decisions. To be included in the sample, firms must have available data to calculate all variables. To screen the outliers, all variables are winsorized at the 1st and the 99th percentiles. The final sample has 3,780 firm-year observations.

3.2. Variables definitions

In this paper, earnings management (EM) is estimated in line with Peasnell et al. (2005) that focuses on working capital accruals. We do not use total accruals since Peasnell et al. (2005) point out several limitations for this practice. However, as a robustness check, we calculate earnings management proxy using Jones model (Jones, 1991) and the modified Jones model as demonstrated in Dechow et al. (1995). These models use total accruals, which could be an adequate complement to our main proxy constructed in line with Peasnell et al. (2005). Nonetheless, we acknowledge that there could be other measures, at least real earnings management (Hashmi et al., 2019; Hussain et al., 2022; Zhang et al., 2020). This might leave room for future investigation.

Following Bradshaw et al. (2006) and Zhang et al. (2020), the net amount of cash flow received from external financing activities (XFIN) is used as a measure of firms' external financing. This measure is calculated as the sum of net cash flow from equity financing activities (EQUITY) and debt financing activities (DEBT), scaled by total assets:

$$XFIN = EQUITY + DEBT$$

Where: EQUITY is the ratio of net cash flow received from the sale (or purchase) of common and preferred stock less cash dividends paid divided by total assets (Zhang et al., 2020). DEBT is the net cash flow received from the issuance (or repayment) of debt (Zhang et al., 2020).

There are confounders that can affect earnings manipulation, for which we further control. Specifically, prior studies state that firm size is related to earnings management (P. Dechow & Dichev, 2002; Deng et al., 2017; He et al., 2017; Saleh & Ahmed, 2005; Vasilescu & Millo, 2016; Zhang et al., 2020). Therefore, we use the natural logarithm of market capitalization to control for firm size. Daniel et al. (2008) and Zhong et al. (2007) suggest that earnings management is affected by firms' growth opportunities. As a result, the market-to-book ratio (MB) is included to

Table 1. Variable definition

Variable	Definition
Dependent variable	
EM	Earnings management measure, defined as the absolute value of residual that is estimated in line with Peasnell et al. (2005). In addition, we use alternative measures as suggested in Jones (1991) and Dechow et al. (1995) for robustness checks.
Main Independent variables	
XFIN	The net amount of cash flow received from external financing divided by total assets (Zhang et al., 2020; Bradshaw et al., 2006)
EQUITY	The net amount of cash flow received from the sale (or purchase) of common and preferred stock less cash dividends paid divided by total assets (Zhang et al., 2020; Bradshaw et al., 2006)
DEBT	The net amount of cash flow received from the issuance (or repayment) of debt divided by total assets (Zhang et al., 2020; Bradshaw et al., 2006)
Control variables	
SIZE	Firm size, measured by the natural logarithm of market capitalization
ROA	Profitability, measured by the ratio of net income to total assets
PPE	Capital intensity, defined as fixed assets scaled by total assets
MB	Growth opportunities, defined as market value of equity scaled by the book value of equity

control for growth prospects. Earnings management may also be affected by performance of firms (Kothari et al., 2005; Saleh & Ahmed, 2005). Thus, this research uses return on assets (ROA) to control for the impact of firms' profitability on earnings management. Finally, according to Cohen (2008), more capital-intensive firms have better earnings quality because capital intensity serves as a barrier to entry for future competitions. To capture this effect, a proxy for capital intensity (PPE) is also included in the model. Definitions of all variables are presented in Table 1.

3.3. Empirical model

To examine the effect of external financing on earnings management, the current research uses the following baseline equation:

$$EM_{it} = \beta_0 + \beta_1 XFIN_{it} + \beta_2 SIZE_{it} + \beta_3 MB_{it} + \beta_4 ROA_{it} + \beta_5 PPE_{it} + \mu_{it} \quad (1)$$

Equation (1) is used to examine the validity of hypothesis H1. To examine the effect of equity and debt financing on earnings management respectively (hypothesis H2), the net amount of cash flow received from external financing activities (XFIN) is separated into equity (EQUITY) and debt (DEBT) components.

4. Empirical findings

4.1. Descriptive statistics

The descriptive statistics of the characteristics of all firms in the sample are presented in Table 2. The mean of earnings management (EM) is 0.092 whereas the means of external financing (XFIN), equity financing (EQUITY), and debt financing (DEBT) are −0.002, −0.018, and 0.015, respectively. This indicates that the sampled firms have net cash outflows from external and equity financing,

Table 2. Descriptive statistics

Variable	Mean	Median	Std. Dev.	Min	Max
EM	0.092	0.059	0.105	0.001	0.620
XFIN	-0.002	-0.010	0.129	-0.423	0.421
EQUITY	-0.018	-0.014	0.062	-0.212	0.276
DEBT	0.015	0.000	0.104	-0.347	0.340
SIZE	12.043	11.901	1.614	7.143	19.528
MB	0.956	0.759	0.732	0.162	4.636
ROA	0.064	0.047	0.074	-0.119	0.353
PPE	0.200	0.143	0.183	0.000	0.789
Number of obs.	3,780				

Source: Authors' calculation from research sample

however, they have the cash inflows from debt financing during the research period. This may effectively reflect the nature of Vietnamese firms, which is their significant reliance on bank financing. Additionally, the means of control variables including firm size (SIZE), firm growth (MB), profitability (ROA), and capital intensity (PPE) are 12.043, 0.956, 0.064, and 0.200, respectively.

Table 3 presents the mean of earnings management and firm characteristics for firms with high and low levels of external financing. Firms with high levels of external financing are those whose XFIN values are higher than the mean of the sample, and vice versa. The last column of Table 3 reports p-values of the t-test for mean difference between these two groups of firms. This t-test values indicate that there are statistically significant differences in earnings management level (EM), profitability (ROA) and capital intensity (PPE) between highly- and low- externally financed firms at the 1% level. Meanwhile, the significance level of the difference in firm growth (MB) is 10%, and there is insignificant difference in firm size (SIZE) between them. Since there is a statistically significant difference in earnings management level (EM), this suggests that highly externally financed firms manipulate their earnings more than low external financed ones. This provides some tentative support for hypothesis H1.

Table 4 presents the pairwise correlations among all variables used in the model. There is a significant positive correlation between earnings management (EM) and three external financing variables (XFIN, EQUITY, and DEBT). This correlation indicates that firms manage earnings when they conduct external financing activities, with both equity and debt financing. In addition, there is a significant positive correlation between earnings management (EM) and firm size (SIZE), firm growth (MB), and profitability (ROA). In contrast, the correlation between earnings management (EM) and capital intensity (PPE) is negative. Additionally, in Table 4, all the correlation coefficients

Table 3. Comparison between highly and low externally financed firms

Variable	Highly externally financed firms		Low externally financed firms		Tests for differences
	NObs.	Mean	NObs.	Mean	
EM	1,765	0.101	2,015	0.083	0.018***
SIZE	1,765	12.077	2,015	12.014	0.064
MB	1,765	0.955	2,015	1.021	-0.066*
ROA	1,765	0.045	2,015	0.080	-0.034***
PPE	1,765	0.180	2,015	0.218	-0.038***

Note: ***, **, and * indicate statistical significance at the 1, 5 and 10 percent level, respectively.

Table 4. Correlation matrix

	EM	XFIN	EQUITY	DEBT	SIZE	MB	ROA
XFIN	0.185***						
EQUITY	0.167***	0.556***					
DEBT	0.104***	0.842***	0.040**				
SIZE	0.042***	0.039**	-0.043***	0.077***			
MB	0.123***	-0.080***	-0.219***	0.046***	0.498***		
ROA	0.106***	-0.210***	-0.394***	-0.008	0.298***	0.392***	
PPE	-0.124***	-0.084***	-0.038**	-0.077***	0.086***	-0.007	-0.006

Note: ***, **, and * indicate statistical significance at the 1, 5 and 10 percent level, respectively.

Table 5. The variance inflation factor (VIF)

Variable	VIF
MB	1.46
SIZE	1.39
ROA	1.26
XFIN	1.07
PPE	1.02
Mean VIF	1.24

are lower than 0.90, thus this model is not the object of severe multicollinearity problem (Gujarati, 2003). We also present the VIF values presented in Table 5 to support this conclusion.

4.2. Multivariate analysis

The regression results of equation (1) are presented in Table 6. The results of all columns suggest that external financing significantly affects earnings management. In column (1), we present the result of the regression when the main independent variable is XFIN. In addition, columns (2) and (3) present the estimated effect of equity and debt financing activities on earnings management, respectively. Finally, column (4) examines the effect of both equity and debt financing on earnings management in one model. All the models in(1), (2), (3), and (4) incorporate control variables, including firm size (SIZE), firm growth (MB), profitability (ROA), and capital intensity (PPE).

To account for individual heterogeneity, we employ conventional panel data estimation strategies (fixed effects, random effects methods). However, the fixed effects model is chosen based on the Hausman test.

The result of column (1) shows that external financing activities are positively and significantly associated with earnings management. This indicates that firms engage in earnings management when they conduct external financing activities. These results are in line with DuCharme et al. (2004), Gao et al. (2017), and Lazzem and Jilani (2018), Teoh et al. (1998a, 1998b), and Zhang et al. (2020). Therefore, the hypothesis H1 is supported.

Additionally, when external financing activities are broken down to equity and debt financing, the regression results show that these two components positively affect earnings management. Specifically, the coefficients of equity financing (EQUITY) are significantly positive at 1 percent level in both columns (2) and (4). The reported earnings tend to raise the proceeds that firms obtain from issuing new stock; as a result, they have the incentive to manipulate their earnings upward before stock issues (Chang & Lin, 2018; Lo et al., 2017; Nagata, 2013; Shivakumar, 2000; Zhang et al., 2020).

Table 6. The effect of external financing on earnings management

	(1)	(2)	(3)	(4)
XFIN	0.173*** (0.019)			
EQUITY		0.401*** (0.054)		0.404*** (0.054)
DEBT			0.111*** (0.020)	0.114*** (0.020)
SIZE	0.001 (0.006)	−0.002 (0.006)	0.005 (0.006)	−0.003 (0.006)
MB	0.016** (0.007)	0.021*** (0.008)	0.014* (0.008)	0.020*** (0.007)
ROA	0.189*** (0.040)	0.207*** (0.040)	0.171*** (0.041)	0.209*** (0.040)
PPE	−0.047* (0.027)	−0.062** (0.026)	−0.064** (0.027)	−0.046* (0.026)
Constant	0.066 (0.063)	0.101 (0.063)	0.021 (0.067)	0.105* (0.062)
R ²	0.070	0.070	0.041	0.083
F test	25.50***	19.15***	17.99***	23.76***
Number of obs.	3,780	3,780	3,780	3,780
Number of groups	494	494	494	494
Firm FE	Yes	Yes	Yes	Yes

Note: Column (1) presents the regression results of Equation (1) with XFIN representing total external financing. Column (2) present the regression results of Equation (1) with XFIN representing equity financing. Column (3) present the regression results of Equation (1) with XFIN representing debt financing. Column (4) present the regression results of Equation (1) with XFIN representing both equity and debt financing. The values reported in parentheses are robust standard errors. ***, **, and * indicate statistical significance at the 1, 5 and 10 percent level, respectively.

Also, the coefficients of debt financing (DEBT) are significantly positive at 1 percent level in two columns (3) and (4). This positive effect indicates that firms are more likely to manage earnings when debt level increases. Firms can manage their earnings by selecting accounting methods to meet the expectation of creditors. Consequently, they can borrow more debt with lower cost. This finding is consistent with prior studies of Becker et al. (1998), Lazzem and Jilani (2018), Liu et al. (2010), and Rangan (1998).

The results presented in columns (2), (3) and (4) also indicate that compared to debt financing, firms manage earnings more when dealing with equity financing. Unlike creditors, stockholders do not receive the periodic interest and principal. Additionally, bondholders can ensure their benefits through debt covenants. Thus, to increase the possibility of obtaining the external fund from stock issues, firms have to demonstrate a decent financial performance. As a result, they have motive to manipulate their earnings to impress investors.

These results support the hypothesis 2, showing that the larger effect of equity financing on earnings management exists in Vietnam, which is a bank-dominated economy. This result is highly consistent with the descriptive statistics in Table 1 and the findings of Zhang et al. (2020), which notes the dominating effect of equity financing over debt financing for a large sample of firms in 43 countries from 2002–2014. Furthermore, Wang et al. (2018) also note that, for a sample of US firms, managers use both types of earnings management prior to SEO issuances, while reducing earnings manipulation when they tap external debt financing.

Besides, Table 6 shows that the coefficients of the control variables are consistent with those of prior studies. Specifically, firm growth (MB) and profitability (ROA) are positively related to earnings management. This indicates that firms having more growth opportunities and higher profitability are more likely to manage earnings, consistent with Daniel et al. (2008), Deng et al. (2017), Saleh and Ahmed (2005), and Zhong et al. (2007). In contrast, earnings are less manipulated in firms with higher capital intensity, which is consistent with the findings of Cohen (2008), He et al. (2017), and Tong and Miao (2011).

5. Robustness check

To test the robustness of the above findings, several techniques are employed. First, two alternative measures of earnings management are used as dependent variables. These measures are estimated in line with Jones (1991) abnormal accruals model and the modified Jones model of Dechow et al. (1995). To conserve space, the coefficients of control variables are not reported in Table 7. Again, it is clear that external financing affects positively earnings management. The results reconfirm the validity of hypotheses H1 and H2.

Second, we acknowledge that macro conditions (which are not controlled for in the models) could affect the issuance decisions of firms. Therefore, in an effort to account for the macro effects (such as GDP growth/business cycle/interest rates), we add the year dummies to the models. The results are not changed compared to Table 6. To save the space, we do not present this robustness check here.

Finally, we control for the potential endogeneity issue which might be the result of the two-way relationship between earnings management and external financing. This is in fact a highly potential issue since inflated earnings could lead to higher proceeds from external financing activities, if such act is not uncovered by external stakeholders. Furthermore, the earnings management activity might feature a dynamic pattern, since previous choice of activities might affect the

Table 7. Alternative measures of earnings management

	Jones (1991)				Modified Dechow et al. (1995)			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
XFIN	0.100*** (0.020)				0.114*** (0.021)			
EQUITY		0.190*** (0.046)		0.193*** (0.046)		0.218*** (0.046)		0.221*** (0.046)
DEBT			0.084*** (0.022)	0.085*** (0.022)			0.096*** (0.023)	0.097*** (0.023)
Constant	0.159*** (0.046)	0.171*** (0.045)	0.134*** (0.048)	0.174*** (0.045)	0.167*** (0.047)	0.180*** (0.046)	0.138*** (0.048)	0.184*** (0.045)
R ²	0.036	0.03	0.027	0.04	0.039	0.032	0.028	0.043
F test	13.38***	12.41***	10.84***	12.30***	14.08***	13.16***	10.98***	13.30***
No of obs.	3,780	3,780	3,780	3,780	3,780	3,780	3,780	3,780
No of firms	494	494	494	494	494	494	494	494
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: Table 7 provides robustness check with alternative measures of earnings management. Column (1) presents the regression results of Equation (1) with XFIN representing total external financing. Column (2) present the regression results of Equation (1) with XFIN representing equity financing. Column (3) present the regression results of Equation (1) with XFIN representing debt financing. Column (4) present the regression results of Equation (1) with XFIN representing both equity and debt financing. 2. The values reported in parentheses are robust standard errors adjusted for heteroskedasticity. ***, **, and * indicate statistical significance at the 1, 5 and 10 percent level, respectively.

activities/level of earnings management in the future periods. Consequently, to control for the potential two-way relationship and/or the dynamic evolution of earnings management, we use dynamic models where the one-period lagged dependent variable is introduced as an additional explanatory variable. To estimate the dynamic models, we utilize System Generalized Method of Moments (GMM) due to the superior ability to handle endogeneity caused by two-way relationship between dependent and independent variables and the use of lagged dependent variables. This technique is also able to solve common defects in panel data, including heteroskedasticity and autocorrelation with its two-step approach (Roodman, 2009).

Table 8 presents the estimation results using System GMM. The p-values of the conventional tests under System GMM (autocorrelation of order 2 and over identification tests) are all larger than 10%, indicating that the set of instruments are valid (Roodman, 2009). Furthermore, all the lagged dependent variables are significant at 1% significance level, confirming the appropriateness and necessity of the dynamic model. We again find that the results are generally similar to those in Tables 6 and 7, confirming hypotheses H1 and H2.

To test hypothesis H3 about whether there is any nonlinear relationship between external financing and earnings management, we present the estimation results in Table 9. The results of fixed effects model and System GMM are almost identical, except for the insignificant squared DEBT variable in the case of System GMM. The insignificant DEBT variable in the case of System

Table 8. System GMM estimates

	(1)	(2)	(3)	(4)
L.EM	0.126*** [8.62]	0.100*** [5.21]	0.136*** [7.77]	0.125*** [9.86]
XFIN	0.168*** [5.69]			
EQUITY		0.454*** [4.04]		0.575*** [7.03]
DEBT			0.0811*** [2.84]	0.0730*** [3.01]
SIZE	0.006 [1.32]	0.01 [0.74]	0.006 [1.01]	0.003 [0.51]
MB	0.00983** [2.45]	0.0111* [1.90]	0.00729* [1.79]	0.0118** [2.50]
ROA	0.327*** [6.83]	0.271*** [3.84]	0.332*** [5.41]	0.326*** [6.64]
PPE	-0.143*** [-3.00]	-0 [-0.15]	-0.129** [-2.16]	-0.155*** [-3.50]
CONSTANT	0.006 [0.12]	-0.000 [-0.04]	0.003 [0.04]	0.057 [1.00]
No of obs	3286	3286	3286	3286
AR(1) test p-value	0.000	0.000	0.000	0.000
AR(2) test p-value	0.479	0.448	0.530	0.469
Hansen test p-value	0.168	0.317	0.192	0.111

Note: Table 8 provides robustness check with System GMM estimator. Column (1) presents the regression results of Equation (1) with XFIN representing total external financing. Column (2) present the regression results of Equation (1) with XFIN representing equity financing. Column (3) present the regression results of Equation (1) with XFIN representing debt financing. Column (4) present the regression results of Equation (1) with XFIN representing both equity and debt financing. The values reported in parentheses are test statistics. ***, **, and * indicate statistical significance at the 1, 5 and 10 percent level, respectively.

Table 9. Nonlinear relationship between external financing and earnings management

	FE-EQUITY	FE-DEBT	GMM-EQUITY	GMM-DEBT
L.EM			0.132***	0.129***
			[7.68]	[7.93]
EQUITY	0.373***		0.330**	
	[4.15]		[2.46]	
EQUITY2	0.484**		0.954*	
	[2.18]		[1.83]	
DEBT		0.0968***		0.0888*
		[3.11]		[1.72]
DEBT2		0.0967*		0.527
		[1.65]		[1.32]
SIZE	0.016	0.0254*	0.002	0.00859*
	[1.43]	[1.96]	[0.36]	[1.79]
MB	0.0126**	0.00910*	0.00993*	0.00766**
	[2.24]	[1.93]	[1.89]	[2.13]
ROA	0.154**	0.148**	0.197***	0.326***
	[2.48]	[2.29]	[2.61]	[5.23]
PPE	-0.111	-0.1	-0.0996*	-0.120**
	[-1.41]	[-1.41]	[-1.87]	[-2.12]
_cons	-0.098	-0.2	0.050	-0.038
	[-0.78]	[-1.44]	[0.70]	[-0.67]
No of Obs	3780	3780	3780	3780
AR(1) test p-value			0.000	0.000
AR(2) test p-value			0.467	0.528
Hansen test p-value			0.125	0.195

Note: Table 9 provides results of nonlinear test. FE-EQUITY and FE-DEBT columns show results of fixed effects model. GMM-EQUITY and GMM-DEBT columns show results of System GMM model. The values reported in parentheses are test statistics. ***, **, and * indicate statistical significance at the 1, 5 and 10 percent level, respectively.

GMM and the marked increase in the magnitude of the coefficients of squared EQUITY effectively and at least partly explain why equity financing leads to higher level of earnings manipulation on average. This is somehow in line with the finding from Thanh et al. (2020) for Vietnamese firms from 2006–2017 also claim that at high levels of debt, firms do not show higher levels of earnings management. Zhang et al. (2020) suggest that the return of shareholders is more sensitive to firm performance than creditors, effectively increasing the incentives to manage earnings in the case firms have high levels of equity financing. Meanwhile, debt holders can have more protection from debt covenants, collateral and regulations, which makes accounting-based measures less important, compared to shareholders. To sum up, there is evidence supporting hypothesis H3 on the nonlinearity in the relationship between external financing and earnings management, at least in the case of equity financing.

6. Conclusions

This study investigates the effect of external financing activities on earnings management in Vietnam, a bank-dominated economy. Using a dataset comprising 494 non-financial firms listed on the Ho Chi minh Stock Exchange and Hanoi Stock Exchange during the period of 2009–2018, the research indicates that firms are more likely to manipulate earnings when conducting external financing activities. This result implies that investors can be misled by the managers' use of accounting methods to improve their firms' reported earnings. There is evidence suggesting that compared to debt issuers, the earnings management of equity issuers is affected more largely by

external financing. These results are robust to alternative measures of earnings management and specifications and estimation strategies.

We extend the literature by highlighting the difference in the effect of external financing on earnings management between equity and debt financing. The results suggest that information asymmetry and inadequate regulatory framework to protect shareholders are conducive to earnings manipulation when firms seek equity financing. Also, excessive equity financing leads to even more extreme earnings management. As a result, investors should be cautious when relying on financial statements to evaluate firm performance, and regulatory bodies should introduce more stringent measures to curb the opportunistic behavior of equity issuers. Furthermore, to protect their interests, shareholders of firms with high dependence on equity financing should establish monitoring board/internal audit team to ensure that the financial statement reporting process is largely free of intentional biases introduced by managers.

Our paper is subject to some limitations. First, it only examines one type of earnings management, which is accruals-based one. Future studies could examine real earnings management in this context to verify whether the results hold for real earnings management proxies. Furthermore, another research avenue is to incorporate corporate governance mechanisms to see if any type of corporate governance can alleviate the positive link between external financing and earnings management.

Acknowledgements

This research is funded by University of Economics and Law, Vietnam National University Ho Chi Minh City, Vietnam

Funding

This work is supported by University of Economics and Law, Vietnam National University Ho Chi Minh City, Vietnam.

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Disclosure statement

No potential conflict of interest was reported by the author(s).

Citation information

Cite this article as: External financing and earnings management: Evidence in Vietnam, Phuong Bui, Hai Ngo, Khuong Nguyen & Nguyen Liem, *Cogent Economics & Finance* (2022), 10: 2147703.

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