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QUALITY OF FINANCIAL STATEMENTS, FINANCIAL CONSTRAINTS, AND INVESTMENT EFFICIENCY: EVIDENCE IN VIETNAM

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ABSTRACT

The study aims to analyze the impact of the quality of financial statements (FRQ) and financial constraints on the investment efficiency of companies listed on the Ho Chi Minh Stock Exchange (HOSE) and Hanoi Stock Exchange (HNX) from the period of 2010 to 2019. To ensure the stability of the model, this paper will measure FRQ in 5 different methods that were used by many previous studies. The results show that FRQ is positively correlated with investment efficiency, meaning that better FRQ will increase investment efficiency. When examining FRQ with financial constraints. The authors also found the sensitivity between FRQ and financial constraints in reducing investment efficiency. This result can help financial managers to see the role of financial statements quality in relation to financial constraints and investment efficiency of Vietnamese enterprises.

Keywords: *Earnings quality; Financial constraints; Investment efficiency.*

INTRODUCTION

Investment activity is among the key and thorough activities of every business (Bezpalov et al., 2020). Practically, firms need to conduct investment activities to expand profits, to grow and to further develop (Bazigar, 2018). Many recent theories and studies have suggested that the quality of financial statements (FRQ) contributes to improving the investment efficiency (IE) of businesses, limiting excessive investments and distributing funds to enterprises in needs (Faridniya and Faridnia, 2019). The quality of financial statements is also an important factor to minimize information asymmetry and promote the development of financial markets. FRQ can represent the potential growth of a business or the possibility that it will achieve the expected profit growth in the future. The value of a company's stock, therefore, depends not only on its earnings per share but also on the business expected performance and the reliability of that expectations.

In the study of financial constraints, Myers & Majluf (1984), as well as Fazzari, et al. (1988) have shown evidence of a positive correlation between the level of investment and free cash flow. This is caused by information asymmetry between investors and company executives. Because the capital market is not perfect, companies that use external financing through new

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share issuance and debt will have to pay a risk premium to investors and lenders, resulting in a higher cost of funding from the external funding source. Practically, companies will prefer to use internal funding. When there is a shortage or no internal funding, companies facing financial constraints will have to abandon positive NPV investment projects, resulting in underinvestment. On the other hand, Jensen (1986) and Richardson (2006) found that the issue of principal-agent was a factor affecting the sensitivity between free cash flow and the firm's investment decisions. Analysts offer two main types of representative issues: the conflict between the controlling shareholder and minority shareholder; and the conflict between the shareholder and the company administrator. Conflicts of interest between shareholders and corporate executives result in corporate executives pursuing personal interests, making investments in many unprofitable or low-profit projects when free cash of the company becomes abundant, instead of having to use that excess free cash flow to pay dividends to shareholders. This makes the agency costs worse and leads to overinvestment. If the free cash flow gets bigger, the representative issue will lead to the situation of overinvestment and becoming more serious, resulting in lowering the company's value.

In recent years, there have been many studies on the relationship between FRQ affecting IE, such as studies by Gomariz & Ballesta (2014), Cherkasova & Rasadi (2017), De Carvalho, et al. (2014), Li (2011), Houcine (2017), Kim & Verrecchia (1994), Bushman & Smith (2001), Healy & Palepu (2001), Hope & Thomas (2008), Biddle & Hilary (2006), McNichols & Stubben (2008) Biddle, et al. (2009), and Chen, et al. (2011). These studies provide mixed results on whether FRQ is positively or negatively related to IE. For a developing economy such as Vietnam, the problem of information asymmetry is still big. So, should there be an impact of FRQ on IE in the context of financial constraints? Therefore, this study aims at examining the empirical results of the influence of FRQ and financial constraints on IE. Accordingly, this research aims to: (1) Study whether FRQ and financial constraints affect investment efficiency of listed companies in Vietnam and (2) Considering how FRQ influences on investment efficiency when the companies' financially constrained condition changes.

RESEARCH OVERVIEW

Investment efficiency (IE) is all of the benefits brought by the implementation process of the investment, as a result of the difference between the output gains and the input costs. Investment decisions affect the use of capital as well as the benefits and returns, so before deciding to invest, investors need to understand the information through a variety of tools and measures. One of the most convenient, available, and useful sources of information for both organizations and individuals to analyze and appraise an enterprise's investment is via its financial statement. A good financial report will help businesses and investors to best assess the business, thereby selecting projects with appropriate scale and level of investment, bringing high efficiency. There have been some studies on the impact of FRQ on IE.

In recent years, Cherkasova & Rasadi (2017) studied the relationship between FRQ and IE. Research results show that a higher FRQ minimizes both overinvestment and underinvestment. The relationship between FRQ and under-investment is stronger in the industrial sector. Meanwhile, De Carvalho et al. (2014) conducted a study to verify whether the FRQ of Latin

American companies influenced investment efficiency, overinvestment, and underinvestment. The authors used logit modeling and data from companies of seven Latin American countries. The results indicate that poor FRQ reduces the ability of effective investment decisions and increases the likelihood of underinvestment. Li (2011) and Houcine (2017) examined the impact of financial statements quality on company IE and found that certain characteristics of financial information, in particular reliability and stability, were positively associated with IE. On another hand, FRQ was in the principle of prudence and fitness and had no significant influence on the investment decision.

Kim & Verrecchia (1994) suggested that voluntary disclosure of information in the financial statements of enterprises contributes to reducing information asymmetry, helping investors capture and better understand the financial situation of the business. Therefore, for businesses with a high level of information transparency, investors can be relatively confident that any securities transaction taking place at a fair price level increases the stock liquidity of firms. According to the above authors, financial statement is a bridge to help investors assess and review the business cash flows, and information on the financial statement has wide application because the revenue disclosures in these reports play a key role in determining the stock price as well as capturing the management of the company and the implementation of investment projects (Dehcheshmeh et al., 2020). In addition, studies suggest that the disclosure of a stock's liquidity on financial statements will be associated with an increase in investment in that stock. Moreover, according to the representation cost theory, there are many different control mechanisms to minimize information asymmetry and information risk in order to better monitor management activities, thereby reducing administrative managerial opportunities such as FRQ tools and information disclosure. This has been theorized and analyzed in detail in papers by Bushman & Smith (2001), Healy & Palepu (2001), and Hope & Thomas (2008).

In addition to these studies, a number of other studies have debated and found evidence that FRQ reduces the sensitivity to cash flow (Biddle and Hilary, 2006), as well as restricting excessive investment due to managing information distortion (McNichols and Stubben, 2008). Accordingly, the study by Biddle & Hilary (2006) suggested that the quality of financial statements helps strengthen IE by reducing the information asymmetry between managers and investors. The effect may be stronger in the economy where financing is provided primarily through independent transactions (such as the stock market), so investment decisions are often based on widely published financial statements. The study also found that cash flows generated internally and from investment was less when FRQ was higher. The authors, therefore, conclude that FRQ has a strong influence on the sensitivity of capital investment by cash in an economy where financing is provided primarily through independent transactions. In addition, reducing information asymmetry will help investors and managers better understand the same business situation, thereby helping to make better internal decisions and thus increase IE. To make this clear, McNichols & Stubben (2008) reviewed the investment in fixed assets and capital expenditure for a large sample of businesses during 1978-2002 dividing in three groups: (i) businesses that allegedly distorted corporate income according to the investigation of the securities inspection committee for violations in accordance with accounting regulations; (ii) businesses that were sued by shareholders due to irregular accounting reports; and (iii) businesses which re-created the financial statements because of overinvestment in the

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false reporting period. The results show that, after the reporting period, businesses no longer overinvest and the adjusted information will make investment more effective. The authors also stated that the low quality of financial statements could cover the projected revenue and profit growth. Therefore, an overestimated profit due to failure to understand the financial statements may lead to overinvestment.

Biddle et al. (2009), and Chen et al. (2011) examined the effectiveness of financial statements quality on both overinvestment and underinvestment scenarios. The results once again confirm that the higher quality of the financial statements helps companies to increase or reduce their investment accordingly. In addition, previous studies have suggested that financial statement quality is higher in public companies than in private companies (Ball and Shivakumar, 2005), (Burgstahler et al., 2006) as well as in countries where protection and law enforcement are higher (Leuz et al., 2003; Holthausen, 2009). Accordingly, Ball & Shivakumar (2005) in their paper on English law argued that the financial statements of private enterprises must be audited and complied with accounting standards as well as business tax laws. With the assumption that the financial statements of private enterprises are of lower quality than that of public enterprises, the authors conclude that private enterprises can improve their financial statements to reduce the information asymmetry between managers and other relevant parties. In addition, the quality of financial statements also affects a part of corporate income as stated by Bhattacharya et al., (2003).

While, Myers & Majluf (1984), Fazzari et al. (1988), and many other studies found the effects of asymmetric information on investment, some others focused on the impact of the representative cost of cash flow on investment. Jensen (1986), Cleary (1999) showed that firms' investment decisions are very sensitive to the firm's liquidity, implying that internal financing is the main source of funding for all companies. In addition, Cleary (1999) pointed out that the least financially constrained firms have the greatest level of liquidity sensitivity. This result can be explained by arguing that companies increase their investment in response to the availability of cash flow. As a result, managers are motivated to drive the company to grow beyond the optimal size because growth will increase the power of executives by increasing the resources that managers hold (Jensen, 1986). In recent times, instead of focusing on the study of the effects of financial constraints or representative costs on investment, there are several studies that provide evidence of the impacts from both causes through seeking the impact of financial constraints on firm's underinvestment and the impact of representative cost on firms' overinvestment (Guariglia and Yang, 2016).

MODELS AND RESEARCH METHODS

This study uses regression models proposed by Gomariz & Ballesta (2014), Cleary (1999), Guariglia & Yang (2016) to clarify the relationship between FRQ, financial constraints and IE of companies as discussed in the literature overview, specifically as follows:

$$\text{Model 1: } INVEFF_{i,t} = \beta_0 + \beta_1 FRQ_{i,t} + \gamma Controlt_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$\text{Model 2: } INVEFF_{i,t} = \beta_1 FRQ_{i,t} + \beta_2 DFC_{i,t} + \beta_3 FRQ^{*}DFC + \gamma Controlt_{i,t} + \varepsilon_{i,t} \quad (2)$$

In which:

$INVEFF_{i,t}$: is the dependent variable representing IE of the enterprise in year t.
As specified in the literature review, IE is defined and measured in various ways. According to Biddle et al. (2009), IE is measured by the residuals in the regression between investment and growth opportunities (calculated by revenue growth). Because the authors argue that the bias in the relationship between investment and revenue growth is a proxy for investment inefficiency, the investment efficiency variable in this paper is determined as follows:

$$Investment_{i,t} = \beta_0 + \beta_1 SalesGrowth_{i,t-1} + \varepsilon_{i,t} \quad (3)$$

In which:
$Investment_{i,t}$: is the total investment of enterprise i in year t and is measured by the difference of fixed assets between two consecutive years on the total assets of the previous year, specifically as follows:

$$Investment_{i,t} = (Fixed\ assets_{i,t} - Fixed\ assets_{i,t-1}) / Fixed\ assets_{i,t-1}$$

$SalesGrowth_{i,t-1}$: is the change in turnover of enterprise i from year t-2 to year t-1, determined as follows:

$$SalesGrowth_{i,t-1} = (Sales_{i,t-1} - Sales_{i,t-2}) / Sales_{i,t-2}$$

$\varepsilon_{i,t}$: is the remainder of the regression model. This residual reflects the deviation from the expected investment and therefore, it is used as the basis for measuring IE (INVEFF variable). This dependent variable is defined as the absolute value of the remainder from equation (3) times (-1).

$$INVEFFi,t = -|\ \varepsilon_{i,t}\ |$$

Estimates the independent variable FRQ:
To estimate FRQ, the authors use 5 different methods. The model is estimated by a group of years and industry as follows:

- ***The first measurement method according to the research model by McNichols & Stubben (2008):***

  $$\Delta AR_{i,t} = \beta 0 + \beta 1\ \Delta Sales_{i,t} + \varepsilon_{i,t} \quad (4)$$

  $\Delta AR_{i,t}$: Changes in annual receivables from the company i in year t.
  $\Delta Sales_{i,t}$: The change in annual sales of company i in year t.

Outstanding revenue (as a representative of income management) is the remainder of model (4), which represents the change in accounts receivable that is not explained by the growth in sales revenue. The variable FRQ is the absolute value of the remainder multiplied by -1, so the higher the value, the higher the *FRQ* ($FRQ\_MNST_{i,t} = -|\ \varepsilon_{i,t}\ |$).

- ***The second measurement method is based on the research model of Kasznik (1999)***

  $$TA_{i,t} = \beta 0 + \beta 1\ \Delta Sales_{i,t} + \beta 2\ PPE_{i,t} + \beta 3\ \Delta CFO_{i,t} + \varepsilon_{i,t} \quad (5)$$

  $TA_{i,t}$: Total amount of accruals of company i in year t.
  $PPE_{i,t}$: Property, machinery and equipment.

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$\Delta CFO_{i,t}$: Change in operating cash flow. All items are reduced by the lag of total assets.

The second representative variable of FRQ is the absolute value of the remainder from the model (5) times -1, $(FRQ\_KASZ_{i,t} = - \mid \varepsilon\hat{i},t \mid)$.

- ***The third measurement method is based on the research model of Jones (1991)***

Estimate the parameters of each company through the following model in the estimation period:

$$\frac{TA_{it}}{A_{it-1}} = a_1 \frac{1}{A_{it-1}} + a_2 \frac{\Delta REV_{it}}{A_{it-1}} + a_3 \frac{PPE_{it}}{A_{it-1}} + \varepsilon \quad (6)$$

ΔREV_{it}: Sale revenues$_t$ – Sale revenues$_{t-1}$
PPE_{it}: Historical cost of fixed assets at the end of the year t.
A_{it-1}: Total assets at the end of year t -1.
a_1, a_2, a_3 Estimated a_1, a_2, a_3, through OLS.
TA_{it}: Total accruals in year t of company i.
ε: Residual equivalent to discretionary accruals.

The independent variable FRQ_EM is defined as the absolute value of the residual from model (6) times i -1. $FRQ\_EM = - \mid \hat{\varepsilon}i,t \mid$.

- ***The fourth measurement method is based on the research model of Dechow & Dichev (2002)***

$$WCA_{i,t} = \beta 0 + \beta 1 CFO_{i,t-1} + \beta 2 CFO_{i,t} + \beta 3 CFO_{i,t+1} + \varepsilon_{i,t} \quad (7)$$

In which:
$WCA_{i,t}$ is the dependent variable, representing the working capital of company i in time t and is determined as follows:
$WCAi, t = (Short\ term\ assets - Money)_{i,t} - (Short\ term\ assets - Money)_{i,t-1} - (Short\text{-}term\ debt_t - Short\text{-}term\ debt_{t-1}) + (Short\text{-}term\ debt\ of\ bank\ i_t - Short\text{-}term\ debt\ of\ bank\ i_{t-1})] / [(Total\ assets_t + Total\ assets_{t-1}) / 2]$
$CFOi_{t-1}$, $CFOi_t$, $CFOi_{t+1}$ are independent variables, representing the net cash flow from operating activities of the enterprise i in year t - 1, year t and year t +1.
$\hat{\varepsilon}_{i,t}$ is the remainder of the regression model (7). This surplus reflects the difference between the expected rotating capital and the achieved cash flow, therefore it is used as a basis for measuring the quality of the financial statements (variable FRQ_DD). The independent variable FRQ_DD is determined as the absolute value of the residual from model (5) times i -1. $FRQ\_DD = - \mid \hat{\varepsilon}i,t \mid$.

- ***The fifth measurement method is based on Gomariz & Ballesta (2014).***

FRQ is calculated by averaging the standard values of the four variables FRQ_MNST, FRQ_KASZ, FRQ_EM, and FRQ_DD are determined as follows:

$$FRQ\_Indexi,t = \frac{FRQ\_MNST + FRQ\_KASZ + FRQ\_EM + FRQ\_DD}{5}$$

FRQ_MNST, FRQ_KASZ, A FRQ_EM + FRQ_DD, FRQ_Index are expected to have a positive correlation with investment efficiency because the honesty of accounting data will improve investment efficiency by minimizing asymmetric information, improving asset efficiency, encouraging investment in high-profit projects (Myers and Majluf, 1984; Biddle and Hilary, 2006). We, therefore, formulate hypothesis 1 as follows:

Hypothesis H_1: FRQ is statistically significant and has a positive impact on the IE of the business.

To conduct the verification of the problem on financial constraints, based on the expansion model (model 2), the authors first grouped companies according to the extent of financial constraints that the company encountered. The index denoted KZ (Kaplan and Zingales, 1997) used by a number of studies including those by Cleary (1999), Guariglia & Yang (2016) and is calculated as follows:

*KZ = -1.002*CFt/Kt-1 + 0.283*Qt + 3.139*Debtt/TKt - 39.368*(DIVt/Kt-1) - 1.315*Casht/Kt-1*

In which:

CF_t: is the sum of net income and depreciation in period t of the company.

DIV_t: is the total dividend value in the period t of the company.

$Cash_t$: is cash and cash equivalents at the end of year t of the company.

K_{t-1}: is the difference of the company's total asset value at the end of year t - 1 and the company's short-term asset value at the end of year t - 1, in other words, *K_{t-1}* represents the company's long-term asset value at the end of year t – 1.

Q_t: is calculated by dividing the market capitalization of the company by the end of year t by the book value of the company's equity at the end of year t.

$Debt_t$ is the total of long-term debt and short-term debt of the company at the end of year t

TK_t: is the company's total debt and equity at the end of year t.

The authors examine whether companies with higher financial constraints will be more sensitive to investment efficiency. First, the authors classify companies according to their financial constraints (low, high) based on Kaplan & Zingales (KZ). The authors then performed a model 2 regression to examine whether the regression coefficients of the $FRQ_{i,t}$ * DFC interaction variables increased when the financial constraint range was low to high. If the results show that the regression coefficients of the FRQ_i interaction variables $FRQ_{i,t}$ * DFC is negative when going from low to high financial constraint, this indicates that companies that have a higher financial constraint, their investment efficiency is more sensitive to the quality of financial statements. We formulate hypothesis 2 as follows:

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Hypothesis H2: Financial constraints is statically significant and has a negative impact on the IE of the business.

For the control variables in the research model, additional control variables are estimated to increase the model's sustainability. In the study, the authors included the control variables according to Gomariz & Ballesta (2014) including size (LnSales), tangible (Tang), standard deviation of cash flow (StdCFO), standard deviation of revenue (StdSales), financial capability (ZZ), average of cash flows (CFO_ATA).

This research studies the impact of FRQ and financial constraints on the IE of businesses listed on Vietnam's stock market in the period of 2010-2019 with 4459 observations. The data of the above companies is collected from the financial statements provided by Vietstock. From the beginning, the paper collected data from companies between 2008 and 2019. However, based on recommendations by Gomariz & Ballesta (2014) on how to measure IE variables as well as converting capital flows based on cash flows in years t-2, t-1, this study ended up with 10-year study period from 2010 to 2019. The original data will be aggregated and recalculated according to the method of determining the variable, in which some variables will be regressed to get the residual and initialize new variables respectively via Stata 14.0 software. As such, the final sample of the study will have 4459 enterprise observations over the period of 2010-2019.

RESULTS AND DISCUSSION

Table 2 presents the statistical results describing the variables included in the regression model. The average investment efficiency of Vietnamese enterprises in the period of 2010-2019 was -0,932, which is compatible with the studies of Chen et al. (2011), and Gomariz & Ballesta (2014).

Meanwhile, overinvestment has an average value of -1,137 and underinvestment has an average value of -0,809. These values are compatible with the studies of Chen et al. (2011), and Gomariz & Ballesta (2014). Going further, Table 2 shows that about 62.6% of enterprises are in the over-investment group, so it can be concluded that the majority of enterprises fall into the situation of over-investment.

Table 2 also provides a general description of FRQ measurement variables, whereby these variables have average values as respectively -0.147, -0.302, -0.694, - 0.023, and -0.292 when measured in 5 different models. When considering the problem of financial restrictions based on the average value, 42.7% of businesses have financial constraints. The average debt tenor is 0.820, including businesses that do not use short-term debt and some businesses choose to use all short-term debt in their debt structure. In general, Vietnamese enterprises have a high ratio of short-term debt to total debt, accounting for nearly 82%, showing that the demand for debt to supplement working capital and investment in small and short-term projects are relatively large. On the other hand, the ratio of fixed assets to total assets of Vietnamese enterprises has an average value of 19.7% with the highest value is 96.6%. The standard deviation of cash flow from operating activities averages 10.7% and of revenue is 23.6%, the financial ratio is 1,212 and cash flow to investment efficiency is -2.4%.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std.Dev	Min	Max
LnvEff	4459	-0.932	1.270	-18.563	0.000
OVerinvest	2790	-0.809	1.011	-16.396	0.000
Underinvest	1669	-1.137	1.593	-18.563	-0.001
FRQ_MNST	4459	-0.147	0.313	-16.029	0.000
FRQ_KASZ	4459	-0.302	0.373	-16.111	0.000
FRQ_EM	4459	-0.694	1.002	-7.425	-0.005
FRQ_DD	4459	-0.023	0.023	-0.259	0.000
FRQ_Index	4459	-0.292	0.319	-9.172	-0.012
DFCKZ	4459	0.427	0.495	0.000	1.000
STDebt	4459	0.820	0.225	0.031	1.011
LnSale	4459	26.905	1.575	18.729	32.888
Tang	4459	0.197	0.197	0.000	0.962
StdCFO	4459	0.107	0.627	0.000	41.092
StdSales	4459	0.236	0.863	0.000	44.822
ZZ	4459	1.212	1.170	-0.048	12.740
CFO_ATA	4459	-0.024	0.113	-0.946	0.981

Source: Authors' calculation using Stata 14

Table 2 presents the auto-correlation matrix, showing the direction of impact among the study variables. First, it can be seen that the FRQ variable is positively related to the company's IE. In contrast, the control variables in the model are negatively correlated with IE, except for the Tang variable. At the same time, the purpose of checking the close correlation between independent variables and dependent variables is to eliminate factors that may lead to multicollinearity before running regression models. The correlation coefficient between the independent variables in the model does not have any pair greater than 0.8, so it is less likely to have multi-collinear phenomena when using the regression model of the authors group VIF to test Investigate.

Table 2: Auto-correlation Matrix

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1)	LnvEff	1												
(2)	FRQ_MNST	0.566	1											
(3)	FRQ_KASZ	0.312	0.671	1										
(4)	FRQ_EM	0.219	0.194	0.145	1									
(5)	FRQ_DD	0.046	0.054	0.085	-0.02	1								
(6)	FRQ_Index	0.402	0.594	0.572	0.875	0.041	1							
(7)	DFCKZ	0.132	0.066	0.034	0.192	-0.163	0.174	1						
(8)	LnSale	-0.068	-0.031	0.04	0.465	-0.048	0.368	0.1	1					
(9)	Tang	0.083	0.082	0.125	0.042	-0.314	0.084	0.284	0.069	1				
(10)	StdCFO	-0.037	-0.035	-0.117	-0.024	-0.002	-0.062	-0.003	-0.015	-0.039	1			
(11)	StdSales	-0.252	-0.158	-0.126	-0.061	-0.011	-0.124	-0.048	0.036	-0.056	0.789	1		

(12)	ZZ	-0.383	-0.233	-0.102	-0.161	-0.054	-0.214	-0.281	0.301	-0.019	0.002	0.152	1	
(13)	CFO_ATA	-0.029	-0.023	-0.045	0.005	0.158	-0.012	-0.047	0.015	-0.174	-0.007	0.003	-0.044	1

Source: Authors' calculation using Stata 14

Table 3: Regression Results of Investment Efficiency - Model 1

VARIABLES	MNST	KASZ	EM	DD	Index
FRQ	**1.459****	**0.778*****	**0.672*****	**4.228****	**2.276*****
STDebt	-0.237*	-0.248**	-0.164	-0.105	-0.308**
LnSale	0.146***	0.127**	0.0159	0.101*	0.071
Tang	-0.359*	-0.428**	-0.203	0.0404	-0.592***
StdCFO	1.310***	1.698***	1.589***	1.653***	1.487***
StdSales	-1.242***	-1.577***	-1.508***	-1.572***	-1.382***
ZZ	-0.101	-0.131	0.0332	-0.119	0.0149
CFO_ATA	-0.0816	-0.025	-0.0157	-0.143	0.0664
_cons	-4.175***	-3.546***	-0.509	-3.232**	-1.572
Firm fixed effect	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes
N	4459	4459	4459	4459	4459
R-sq	0.354	0.265	0.268	0.2	0.37
t statistics in brackets * p<0.1, ** p<0.05, *** p<0.01					

Source: Authors' calculation using Stata 14

The study carried out FRQ regression measured in 5 different models with control variables according to the Cluster-controlled OLS method. The regression results of this model are presented in Table 3 with different FRQ variables showing the results. Equation (1) uses different FRQ interface variables. The first column presents the results using FRQ_MNST measured by the model of McNichols & Stubben (2008); The second column presents the results using FRQ_KASZ developed by Kasznik (1999); The third column uses FRQ_EM following the model of Jones (1991); The fourth column using FRQ_DD determined by the model of Dechow & Dichev (2002); and finally, the fifth column is the result using FRQ_Index, which is the calculated value based on the combination of the above variables.

To measure the influence of FRQ on the IE of enterprises, the study uses model 1. The regression results presented in Table 3 show that the positive relationship between FRQ and IE is statistically significant at 1% and 5% according to different models. IE has a positive correlation with FRQ and is statistically significant at 1% for all five models, so higher FRQ will increase investment efficiency, consistent with hypothesis H_1 and findings of Chen et al. (2011), Gomariz & Ballesta (2014). A higher FRQ will make managers more accountable, such as allowing greater scrutiny from shareholders, thereby reducing information asymmetry as well as reducing adverse selection and moral hazard.

For the audit variables, accordingly, the standard deviations of revenue and Tang are negatively correlated with IE, supplementing the argument of Chen et al. (2011) but contrary

to Gomariz & Ballesta (2014). With control variables, LnSales, StdCFO, StdSales are all statistically significant at 1% and have a great influence on investment efficiency.

Table 4: Regression Results under Financial Constraint-Model 2

VARIABLES	MNST	KASZ	EM	DD	Index
FRQ	**4.727*** **	**1.233*** **	**0.691*** **	**5.517*** **	**3.181*** **
DFC	**-0.559*** **	**-0.164** **	**-0.037**	**-0.0192**	**-0.419*** **
FRQ*DFC	**-3.956*** **	**-0.669*** **	**-0.0884**	**-2.561**	**-1.561*** **
STDebt	-0.227*	-0.148	-0.133	-0.0337	-0.271**
LnSale	0.119***	0.120**	0.0149	0.0986*	0.0413
Tang	-0.277*	-0.371*	-0.216	0.0411	-0.595***
StdCFO	0.952***	1.733***	1.591***	1.651***	1.484***
StdSales	-0.905***	-1.604***	-1.509***	-1.570***	-1.377***
ZZ	-0.0336	-0.13	0.0334	-0.12	0.0534
CFO_ATA	0.00901	0.0674	-0.0112	-0.132	0.163
_cons	-3.014***	-3.307**	-0.5	-3.204**	-0.542
Firm fixed effect	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes
N	4459	4459	4459	4459	4459
R-sq	0.549	0.277	0.269	0.201	0.4
t statistics in brackets * p<0.1, ** p<0.05, *** p<0.01					

Source: Authors' calculation using Stata 14

In the previous sections, the authors found a statistically significant relationship between FRQ and IE. In this section, the authors conducted a more in-depth analysis of whether companies with higher financial constraints will have IE more sensitive to FRQ. We continue to expand the above analysis by checking whether the company that has financial constraints will increase or reduce the impact of FRQ on corporate IE. To investigate, we put in model 2 a financial constraint dummy variable measured by Kaplan & Zingales (KZ). This variable has a value DFC equal to 1 when an enterprise has a KZ index greater than the average of all companies in the sample. This case is considered as an enterprise using a lot of short-term debt. In contrast, for businesses with a KZ less than the average value of the entire sample, DFC has a value of zero, meaning that the businesses are less financially constrained. We perform model 2 regression to consider whether the regression coefficients of $FRQ_{i,t}$ * DFC interactive variables will increase when enterprises have financial constraints.

The results in Table 4 show that, for enterprises with financial constraints, the reduction in investment efficiency is evidenced by the measurement of FRQ under 3 models FRQ_MNST, FRQ_KASZ and FRQ_Index with a statistical significance of 1% and 5 %. However, when measuring FRQ according to FRQ_EM and FRQ_DD, financial constraints also make investment efficiency decrease but not statistically significant. This further supports the hypothesis H_2. The results of how financial restrictions affect the sensitivity movement of

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investment performance and FRQ show that: In companies facing higher financial constraints, the sensitivity of investment efficiency to FRQ will be greater than those facing lower financial constraints. This result is consistent with the result indicated by Guariglia & Yang (2016).

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

Using a sample of 4459 observations of companies listed on the Vietnamese stock market in the period of 2010-2019 to examine the relationship between FRQ and financial constraints to investment efficiency of businesses, research results show that the quality of financial statements contributes to the improvement of corporate IE. Accordingly, when FRQ is high, companies will have a basis for assessing the business situation, financial health, creditworthiness, cash flow projection, and estimated risks, thereby better perform project planning and bringing higher investment efficiency. In addition, good financial reports will reduce information asymmetry and be an effective tool to help shareholders and creditors to strengthen their control over the business management board, thereby limiting the representative costs. Besides, good FRQ will be the best, most intuitive, simplest, and the most popular means to attract outside investors who want to invest in the company when businesses need to raise capital for upcoming projects. For financial constraints, the regression results show that the financial constraint ratio reduces the firm's IE. When businesses have a high KZ, it will be difficult for them to pay their capital and interest.

The research provides similar results compared to many studies in the world on the impact of FRQ and financial constraints on investment activities. For instance, Myers & Majluf (1984), Fazzari et al. (1988), and Gomariz & Ballesta (2014) pointed out that asymmetric information causes financial constraints and thereby influences the firm's investment decisions, and Jensen (1986) and Cleary (1999) indicated that agency costs have an impact on investment. This research provides evidence on the impact of FRQ and financial constraints on IE similar to those of Guariglia & Yang (2016). That means there are similarities between Vietnam and many countries in the world regarding this matter, thereby supporting more firmly for the thesis about the impacts of the FRQ factor, financial limitations on the investment decision of companies around the world.

Recommendations

This paper will also provide some suggestions and recommendations related to the evaluation of project IE for Vietnamese enterprises as follows:

- Companies need to focus on ensuring the quality of their financial statements, ensuring accurate input and output figures as well as conforming to Vietnamese and international accounting standards. In addition, the financial statement audit should be conducted by reputable auditing companies in order to guarantee the trust of investors and the public. In order to improve FRQ, auditors need to detect early unusual fluctuations in financial statements. This is a sign of financial instability, reflecting the current business performance or showing signs of fraud. Therefore, the auditor is required to properly assess the risk of material misstatement of the financial statements.

- Business investment planning needs to be done closely on the basis of considering and calculating all relevant risk factors. In particular, the enterprise cannot underestimate the importance of evaluating financial statement quality because the information in this report will help businesses to evaluate the effectiveness of investment projects, avoid making type I or type II error.
- Businesses should build a reasonable capital structure based on the specific characteristics of the business sector as well as the financial health and position of the company in the market. There should be flexible coordination between short-term debt and long-term debt on the basis of ensuring the repayment ability of the business as well as helping businesses take advantage of the benefits of borrowing.
- In addition to focusing on their financial statements and debt structure, businesses need to improve their own financial capacity, focusing on building measures to prevent potential risks to improve the financial health as well as the company's ability to adapt to changes in the market in the process of investing and implementing projects.

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References

Ball, R., & Shivakumar, L. (2005). Earnings quality in UK private firms: comparative loss recognition timeliness. *Journal of accounting and economics, 39*(1), 83-128. doi: https://doi.org/10.1016/j.jacceco.2004.04.001.

Bazgir, B. (2018). Study and Analysis of Peresent Situation of Productivity and Prediction of Future Situation in Hormozgan Gas Company in Order to Promote the Company Level among Others, *Journal of biochemical technology,* 9(2), 117-126.

Bezpalov, V. V., Tsvetkova, A. B., Shilina, M. G., Golovina, V. V., & Avtonomova, S. A. (2020). PR support in strategic investor relations at retail companies. *Journal of Advanced Pharmacy Education and Research*, *10*(2), 84-90.

Bhattacharya, U., Daouk, H., & Welker, M. (2003). The world price of earnings opacity. *The Accounting Review, 78*(3), 641-678. doi: https://doi.org/10.2308/accr.2003.78.3.641

Biddle, G. C., & Hilary, G. (2006). Accounting quality and firm-level capital investment. *The Accounting Review, 81*(5), 963-982. doi: https://doi.org/10.2308/accr.2006.81.5.963

Biddle, G. C., Hilary, G., & Verdi, R. S. (2009). How does financial reporting quality relate to investment efficiency? *Journal of accounting and economics, 48*(2-3), 112-131. doi: https://doi.org/10.1016/j.jacceco.2009.09.001

Burgstahler, D. C., Hail, L., & Leuz, C. (2006). The importance of reporting incentives: Earnings management in European private and public firms. *The Accounting Review, 81*(5), 983-1016. doi: https://doi.org/10.2308/accr.2006.81.5.983

Bushman, R. M., & Smith, A. J. (2001). Financial accounting information and corporate governance. *Journal of accounting and economics, 32*(1-3), 237-333. doi: https://doi.org/10.1016/S0165-4101(01)00027-1

Cleary, S. (1999). The relationship between firm investment and financial status. *The journal of finance, 54*(2), 673-692.

Chen, F., Hope, O.-K., Li, Q., & Wang, X. (2011). Financial reporting quality and investment efficiency of private firms in emerging markets. *The Accounting Review, 86*(4), 1255-1288. doi: https://doi.org/10.2308/accr-10040

Cherkasova, V., & Rasadi, D. (2017). Earnings quality and investment efficiency: evidence from Eastern Europe. *Review of Economic Perspectives, 17*(4), 441-468. doi: DOI: 10.1515/revecp-2017-0023

De Carvalho, F. L., Kalatzis, A. E. G., & De Albuquerque, A. A. (2014). The relationship between earnings quality and the probability of efficient investment decisions in Latin America. *Latin American Journal of Management for Sustainable Development, 1*(2-3), 229-250. doi: https://doi.org/10.1504/LAJMSD.2014.065481

Dechow, P. M., & Dichev, I. D. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review, 77*(s-1), 35-59. doi: https://doi.org/10.2308/accr.2002.77.s-1.35.

Dehcheshmeh, N. F., Dashti, R., Moradi-Joo, E., & Khiavi, F. F. (2020). Association between Social Capital and Quality of Health Services from the Perspective of Hospital Managers. *Entomology and Applied Science Letters, 7*(1), 14-19.

Faridniya, A., & Faridnia, M. (2019). Providing a model for allocating resources and choosing investment type using Data Envelopment Analysis (DEA)(Case Study: Social Security Organization). *Journal of Advanced Pharmacy Education & Research| Jul-Sep, 9*(S2), 112-124.

Fazzari, S., Hubbard, R. G., & Petersen, B. (1988). Investment, financing decisions, and tax policy. *The American economic review, 78*(2), 200-205.

Gomariz, M. F. C., & Ballesta, J. P. S. (2014). Financial reporting quality, debt maturity and investment efficiency. *Journal of Banking & Finance, 40 (1)*, 494-506. doi: https://doi.org/10.1016/j.jbankfin.2013.07.013

Guariglia, A., & Yang, J. (2016). A balancing act: managing financial constraints and agency costs to minimize investment inefficiency in the Chinese market. *Journal of Corporate Finance, 36(2)*, 111-130.

Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of accounting*

and economics, 31(1-3), 405-440. doi: https://doi.org/10.1016/S0165-4101(01)00018-0

Holthausen, R. W. (2009). Accounting standards, financial reporting outcomes, and enforcement. *Journal of accounting research, 47*(2), 447-458. doi: https://doi.org/10.1111/j.1475-679X.2009.00330.x

Hope, O. k., & Thomas, W. B. (2008). Managerial empire building and firm disclosure. *Journal of accounting research, 46*(3), 591-626. doi: https://doi.org/10.1111/j.1475-679X.2008.00289.x

Houcine, A. (2017). The effect of financial reporting quality on corporate investment efficiency: Evidence from the Tunisian stock market. *Research in International Business and Finance, 42(12)*, 321-337. doi: https://doi.org/10.1016/j.ribaf.2017.07.066

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American economic review, 76*(2), 323-329.

Jones, J. J. (1991). Earnings management during import relief investigations. *Journal of accounting research, 29*(2), 193-228. doi: DOI: 10.2307/2491047

Kaplan, S. N., & Zingales, L. (1997). Do investment-cash flow sensitivities provide useful measures of financing constraints? *The quarterly journal of economics, 112*(1), 169-215. doi: https://doi.org/10.1162/003355397555163

Kasznik, R. (1999). On the association between voluntary disclosure and earnings management. *Journal of accounting research, 37*(1), 57-81.

Kim, O., & Verrecchia, R. E. (1994). Market liquidity and volume around earnings announcements. *Journal of accounting and economics, 17*(1-2), 41-67. doi: https://doi.org/10.1016/0165-4101(94)90004-3

Leuz, C., Nanda, D., & Wysocki, P. D. (2003). Earnings management and investor protection: an international comparison. *Journal of financial economics, 69*(3), 505-527. doi: https://doi.org/10.1016/S0304-405X(03)00121-1

Li, F. (2011). Earnings quality based on corporate investment decisions. *Journal of accounting research, 49*(3), 721-752. doi: https://doi.org/10.1111/j.1475-679X.2010.00397.x

McNichols, M. F., & Stubben, S. R. (2008). Does earnings management affect firms' investment decisions? *The Accounting Review, 83*(6), 1571-1603. doi: https://doi.org/10.2308/accr.2008.83.6.1571

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of financial economics, 13*(2), 187-221.

Richardson, S. (2006). Over-investment of free cash flow. *Review of Accounting Studies, 11*(2-3), 159-189.