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Research Article

Environmental, social, and governance disclosure, financial constraints, and corporate investment efficiency: Empirical evidence from Vietnam

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ABSTRACT

Using a sample of 354 Vietnamese non-financial listed firms from 2010 to 2023, this study examines the intricate relationships among financial constraints, Environmental, Social, and Governance (ESG) factors, and investment efficiency. The study confirms that a lack of financial resources directly leads to inefficient investment decisions, highlighting that access to capital is critical for business growth and sound investment strategy. In contrast, ESG practices are shown to improve investment efficiency through two mechanisms: facilitating disciplined investment evaluations and attracting investors who prioritize sustainability. Compared to over-investment, ESG disclosure has a more pronounced effect on mitigating under-investment. Nonetheless, the study does not validate the hypothesis that ESG disclosure can mitigate the negative effects of financial constraints. Firm size positively correlates with investment efficiency, whereas other factors (leverage, age, operating cash flow, and Tobin's Q) exhibit a negative correlation. Moreover, this study also provides an in-depth analysis of both over-investment and under-investment from a company's internal factors. Factors like firm size, age, and financial leverage are statistically significant drivers of both over-investment and under-investment, suggesting that a company's unique profile heavily influences its investment behavior. Adopting ESG practices and disclosing this information helps firms improve their investment efficiency. This occurs through more rigorous project vetting and attracting a specific group of investors who value sustainability. This research provides insights that enable financial managers to enhance their decision-making processes and, in turn, cultivate stronger financial performance, greater sustainability, and improved economic outcomes, all while the study's conclusions concurrently serve as a valuable resource for stakeholders in navigating corporate activities and addressing complex issues like agency problems and information asymmetry.

Key words: financial constraints, ESG disclosure, investment efficiency, over-investment, under-investment

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INTRODUCTION

Investment decisions are the cornerstone of financial management, acting as the primary engine for an organization's profitability and long-term value creation. A company's profitability, position in the market, and general financial health are all directly impacted by these choices, which include the strategic distribution of resources among different initiatives and assets. Effective investment decisions drive growth, enhance competitiveness, and ensure the organization's financial stability in the dynamic market environment. Under a perfect market, enterprises can easily realize the optimal investment. However, the problems of asymmetric information and principal-agent issues will result in financial constraints and investment inefficiency in the business process. Identifying financial constraints and agency problems as explanations for investment inefficiency offers several fresh policy implications. First, information asymmetry between managers and investors can lead to over-investment in projects that benefit managers at the expense of shareholders. At the same time, agency problems arising from the separation of ownership and control can further incentivize empire-building. Conversely, underinvestment can occur when firms face financial constraints, limiting their ability to pursue valuable projects, or when managers are excessively risk-averse, missing out on profitable opportunities. Furthermore, behavioral biases, such as overconfidence or herding behavior, can lead to irrational investment choices, pushing firms towards excessive or insufficient investment in specific areas. Thus, are there other determinants that moderate the nexus between financing constraints and investment efficiency?

Corporate governance, social responsibility, and environmental performance (ESG) have emerged as key

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indicators for evaluating managerial excellence, risk-reduction skills, and non-financial performance in recent years. Increased investor demand for sustainable goods and regulatory pressure underline the need for firms to integrate ESG operations into their business models. To maximize resource allocation, promote transparency, and increase their attractiveness to investors, businesses must comprehensively improve their ESG performance. ESG factors are increasingly recognized as having a significant relationship with investment efficiency. Companies with strong ESG performance often demonstrate better risk management, operational efficiency, and long-term strategic thinking. By considering ESG factors, companies can attract a wider pool of investors, potentially lowering their cost of capital and further enhancing investment efficiency. This study aims to investigate the impact of financial constraints on corporate investment efficiency with a sample of 354 Vietnamese firms listed on the Ho Chi Minh Stock Exchange (HOSE) between 2009 and 2023. The contributions of this study to the existing literature are significant.

First, Vietnam's rapidly developing economy, with a mix of state-owned industries and private firms and limited access to advanced financial markets, poses unique difficulties to investment efficiency. Understanding how financial constraints, such as inadequate credit access or underdeveloped capital markets, influence Vietnamese enterprises' investment decisions is critical for supporting long-term economic growth. This research can help identify specific bottlenecks hindering efficient capital allocation, provide policy implications to increase firm access to financing, and assist in creating stronger financial markets. Furthermore, it can provide valuable references for domestic and foreign investors looking to understand the Vietnamese investment environment better and make optimal decisions. To the best of my knowledge, this study is one of the first attempts to contribute to the explanation of investment inefficiency induced by financial constraints in the unique Vietnamese context, shedding light on the issue of whether investment efficiency is a signal of financial constraints.

Second, this study contributes to the existing literature on the determinants of investment efficiency [1–5]. Due to growing demand from international investors and changing local understanding, ESG adoption in Vietnam is currently nascent. The country still has difficulties, though, in attaining thorough and uniform ESG disclosure. Given Vietnam's ambitious sustainable development goals and significant investment needs for continued economic growth, investigating the impact of ESG on investment efficiency is very important. To contribute to Vietnam's sustainable economic development, this research is essential for improving disclosure procedures, guiding policy formulation, and optimizing capital allocation. Moreover, this study provides a strong theoretical framework that integrates theories of information asymmetry and stakeholders, highlighting the strategic importance of ESG practices and offering practical advice to businesses looking to improve their investment plans and support sustainable development objectives.

Third, I apply one of the most widely accepted models developed by [6]. Richardson's model is more thorough and advanced than simpler ones when examining business investment behavior. This enables me to determine the causes of these variations and the degree of over- or underinvestment. This model more accurately reflects corporate investment efficiency under various market conditions by considering various firm-specific factors, including cash flow, financial leverage, industry effects, and capital expenditures and investment returns.

This paper's structure is organized as follows: Section 2 introduces the theoretical framework, literature review, and hypothesis development. Section 3 describes the data and presents the research methodology. The empirical results and discussion are given in Section 4, and Section 5 concludes.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Theoretical framework

Agency Theory

The basic ideas of agency theory were established and developed by [7], who proposed a contractual relationship between the agent and the principal and identified that a conflict of interest invariably exists between them, referred to as the agency problem. Conceptually, agency theory significantly impacts two challenges of decision-making efficiency: excessive investment and underinvestment, arising from the divergence of interests between managers and owners. Over-investment arises from managers' inclination for short-term gains, whereas conservative investment is driven by shareholders' pursuit of value and sustainable profits, particularly among minority shareholders [8,9]. Conversely, underinvestment occurs when managers prioritize short-term objectives, neglecting to pursue profitable long-term portfolios despite their capability to access and select them, primarily due to personal risk aversion or inconsistency with the interests of shareholders [10].

Poulsen [11] discovered that large shareholders also impact underinvestment by issuing a limited number of shares and investing conservatively due to concerns regarding ownership dilution, intensifying underinvestment, and resulting in suboptimal firm performance. Agency theory provides a framework for comprehending how governance mechanisms affect firms' investment decisions. I may avoid overinvestment in low-return projects and underinvestment in profitable possibilities by minimizing agency conflicts.

Asymmetric information theory

According to the theory of information asymmetry developed by Myers [12], when one party possesses significant and more valuable information than another party, it causes inefficiency in market transactions. In financial markets, information asymmetry frequently exists between a company's insiders (managers) and outside investors. Managers with in-depth knowledge of the company's current operations and prospects may make investment decisions that favor their interests over shareholder value maximization. This can result in underinvestment (foregoing desirable initiatives owing to knowledge disadvantages experienced by external financiers) and overinvestment (allocating resources to unprofitable projects due to management biases or private gains). According to [13], asymmetrical information paired with management overconfidence can lead to a series of actions that overly allocate resources to achieve goals and compete in the market, thereby increasing costs without equivalent advantages.

Furthermore, Xie [14] stated that managers tend to over-allocate resources to low-return projects or neglect high-return opportunities when information asymmetry increases. Meanwhile, lower information asymmetry may enhance shareholders' ability to monitor management's investment decisions, motivating managers to refrain from attempting to expropriate the firm's cash flows by engaging in value-destroying investments. Khan [15] also provides empirical evidence to prove that low levels of information asymmetry within a firm drive managers to make optimum investment decisions while reducing incentives for inefficient investment. From this theoretical standpoint, our study seeks to improve and expand on information asymmetry's impact on managers' investment decisions.

Stakeholder theory

The original idea for stakeholder theory was proposed by Freeman [16] in a business context. Stakeholders are defined as any group or individual (including employees, customers, suppliers, communities, and financiers) who are affected by or affect the organization's actions [17]. This theory also states that conflicts of interest between companies and stakeholders can become more intense when internal factors' goals are inconsistent with those of external factors. To meet the expectations and concerns of stakeholders, companies must identify all parties affected by their decisions. When firms prioritize stakeholder relationships, they are more likely to engage in sustainable and long-term value-creation [18]. This can improve investment efficiency by fostering trust and reducing information asymmetry. For instance, strong stakeholder engagement can result in better access to resources, improved risk management, and enhanced innovation, all of which contribute to more efficient investment decisions. Conversely, neglecting stakeholder interests can lead to conflicts, reputational damage, and increased costs, hindering investment efficiency. By managing everyday demands and achieving the parties' effectiveness, the company can resolve disputes, improve its capabilities in the eyes of others, and strengthen trust. If firms respect stakeholder theory, it will help them operate more robustly and efficiently, mitigate financial constraints, and build development capacity during peak periods [19].

Hypothesis development

The impact of financial constraints on investment efficiency

The relationship between financial constraints and investment efficiency has become a central focus in corporate finance research, as imperfections in capital markets can significantly distort firms' investment decisions.

Theoretically, in perfect markets, firms would invest in all projects with positive net present values; however, in reality, information asymmetries and agency problems lead to financial constraints, resulting in underinvestment and overinvestment. Li & Hu [20] demonstrated that financial limitations adversely impacted investment efficiency in 1,309 Shanghai and Shenzhen A-share companies from 2012 to 2016. This study found that non-state-owned corporations and firms located in central and western China encounter larger funding constraints, which put them at a disadvantage in accessing resources and policy support compared to state-owned companies, thus increasing their financial challenges. Using 690 non-financial firms from 15 African countries from 2009

to 2018, Abdurahman Aliyi Ibrahim[21] found that financial constraints negatively impact investment efficiency. Specifically, constrained firms tend to overinvest more than unconstrained firms, driven by internal cash flows, to attract investors, ultimately leading to inefficient investment. Tsai[22] argues that financial restrictions negatively influence corporate investment efficiency. Organizations without constraints and possessing surplus cash are prone to overinvest, whereas constrained firms, restricted in obtaining external capital, tend to underinvest by neglecting positive-NPV projects. Bao[23] analyzed data from 11,624 samples by balanced panel processing of China's listed companies from 2015 to 2021, revealing a nonlinear relationship between financing constraints and investment efficiency using the threshold model. Overall, it was confirmed that as financial constraints worsen, the positive effect on investment efficiency diminishes. Hsiao & Wang[24] found that for the software and IT services industry, the higher the degree of financial constraint, the lower the investment efficiency. This sample was collected in Group A of listed companies in China from 2017 to 2021, in a total sample of 843. Similarly, Tahmooresi[25] also discovered that enterprises experiencing more financial restrictions exhibit more cautious investment behaviors among 129 firms registered on the Tehran Stock Exchange from 2007 to 2017. They frequently refuse portfolios with positive net present value because of high financing costs, thus reducing investment. Using a sample of 30 non-financial companies listed on the Pakistan Stock Exchange from 2013 to 2022, Siddiqui & Aayan[26] found that during an economic recession, financial constraints limit investment efficiency, leading to underinvestment and missed growth opportunities. Financially constrained firms tend to be conservative and under-allocate resources to valuable investments, while unconstrained firms make more efficient decisions due to their access to diverse funding sources.

In contrast, a few studies also reported the positive and nonlinear relationship between financial constraints and investment efficiency. For example, Li & Hu[27] analyzing 5,737 observations from 1,309 Chinese listed companies (2012-2016), found a positive relationship between financial constraint and investment efficiency, and the findings suggest that the investment efficiency of non-state enterprises is more easily improved than that of state-owned enterprises through the reduction of financial constraints; the enterprises in the central and western of China are more easily improved than eastern enterprises. Using the sample of 6,357 Chinese A-share listed non-financial firms over 2008-2017, Tu[1] finds that financing constraints decrease overinvestment but increase underinvestment. Overinvestment is more prevalent in non-state-owned firms, where managers, encountering financing limitations and performance demand, may reduce investment, exacerbating underinvestment. In state-owned enterprises (SOEs), where the government appoints managers and generally possesses few shares, enhanced shareholding can motivate improved investment decisions and alleviate overinvestment and underinvestment issues.

I hypothesize that:

Hypothesis H_{1a}: Firms with financing constraints distort investment decisions, causing investment inefficiency.

Hypothesis H_{1b}: Firms with financing constraints reduce investment inefficiency.

The impact of ESG disclosure on investment efficiency

The traditional corporate finance and accounting literature argues that the economic consequences of ESG (Environmental, Social, and Governance) affect investment efficiency. ESG disclosure improves investment efficiency in the following ways, following the asymmetric information theory and stakeholder theory:

First, companies with strong ESG performance had a lower cost of capital and higher profitability[28]. This suggests that ESG integration can lead to more efficient allocation of capital and improved investment outcomes. In their analysis of a sample of 919 companies from 2010 to 2019, Raimo[29] Raimo et al. (2021) discovered that ESG disclosure has a detrimental impact on the cost of debt financing. The findings show that companies may get third-party financial resources under more favorable terms when they are more transparent in how they provide ESG information.

Second, according to the stakeholder hypothesis, companies with strong ESG performance can increase their appeal to investors due to positive signals of their sound and sustainable growth. They also enjoy a better reputation among stakeholders, establish a good social image, and have easier access to capital[28,30]. Moreover, positive ESG information reduces the negative influence of media coverage, buffers external pressures, reduces agency costs, and improves investment efficiency. Additionally, positive ESG data lowers agency costs, buffers external pressures, increases investment efficiency, and lessens the negative impact of media coverage[31]. Lian & Weng[32] investi-

gate the effect of corporate ESG performance on investment efficiency in Chinese A-share listed companies from 2010 to 2022. They found that ESG performance enhances investment efficiency by reducing performance volatility and mitigating inefficient investment through increased market attention. Similarly, Donghui[33] found that high ESG performance reduces agency costs and eases financial constraints, enhancing investment efficiency by using data from 3380 non-financial Chinese firms from 2010–2021.

Third, by disciplining and monitoring management's operations, improved ESG performance may lower agency costs and lessen information asymmetry. Samet & Jarboui[34] demonstrated that firms with socially responsible practices are better positioned to secure funding in the capital markets by lowering agency costs and market frictions, using a panel data set of 398 European companies listed in the STOXX Europe 600 between 2009 and 2014. By analyzing a sizable sample of American businesses, Kim & Park[35] also presented empirical evidence that ESG performance reduces information asymmetry. Bilyay-Erdogan[35] investigate the link between ESG engagement and investment efficiency in European firms. Using data from 1,094 companies across 21 countries between 2002 and 2019, the authors found that stronger ESG engagement improves investment efficiency, primarily by reducing overinvestment. However, when firms underinvest, ESG engagement only helps those with significant information asymmetry.

However, some researchers also argue that ESG performance negatively impacts investment efficiency. For example, Gao[36] found a negative relationship between inefficient investment and a firm's performance, and stronger ESG performance exacerbates this effect by attracting more institutional research, which reveals more problems. ESG transparency crowds out fundamental information from stock prices, making them less useful for investment decisions. Moreover, firms face pressure to improve ESG performance, leading to increased ESG investments but reduced regular investments, potentially deviating from shareholder value maximization. According to[37,38], ESG debates dramatically affect investment efficiency, resulting in underinvestment. Using a new ESG Controversy Score database of US firms (2012-2022), this detrimental effect is particularly noticeable in larger corporations with greater analyst coverage, highlighting the actual impact of ESG misbehavior on corporate sustainability and investment decisions.

I hypothesize that:

Hypothesis H_{2a}: ESG practices improve a firm's investment efficiency.

Hypothesis H_{2b}: ESG practices improve a firm's investment efficiency by mitigating financing constraints.

DATA AND RESEARCH METHODOLOGY

Data

I used a comprehensive sample of 392 listed companies on the Ho Chi Minh City Stock Exchange (HOSE) to conduct our analysis. Through a post-screening process, I identified 354 companies and collected a dataset of 4712 observations. My data covers the period from 2010 to 2023. I excluded companies from the financial sector and included only non-financial companies. In addition, to fit my model requirements, all continuous variables were "winsorized" at the upper percentile level of 98% and the lower percentile level of 2%.

Variable Construction

Dependent variables

Corporate investment efficiency, the primary independent variable, was calculated by using Richardson's model. While Richardson[6] and Biddle[39] offer the most widely used approaches to measure investment efficiency, Richardson's approach was selected due to its broader scope. Because it accounts for multiple financial and industry variables like cash flow, debt levels, and sector-specific trends, and is highly adaptable, this model offered superior investment efficiency measurement for this study. Following Richardson's[6] approach, the specific model is displayed as follows:

$$Invest_{i,t} = \beta_0 + \beta_1 TobinQ_{i,t-1} + \beta_2 LEV_{i,t} + \beta_3 FCF_{i,t-1} + \beta_4 AGE_{i,t\ 1} + \beta_5 SIZE_{i,t\ 1} + \beta_6 EPS_{i,t\ 1} + \beta_7 Invest_{i,t\ 1} + Industry\ FE_i + Year\ FE_t + \varepsilon_{i,t}$$

Where:

Invest represents investment, which is calculated as follows: Invest = (cash paid for acquisition of fixed assets, intangible assets, and other long-term assets - cash recovered from disposal of fixed assets, intangible assets, and other long-term assets)/total assets; TobinQ is a measure of the company's market value divided by its book value. LEV shows the ratio of debt to assets. Free cash flow is referred to as FCF. AGE stands for the firm's age; SIZE indicates the size of the company; EPS shows the earnings per share ratio. Variable measurement and descriptive statistics are displayed in Tables 1,2.

β_0 is a constant term, β_1-β_7 is the coefficient of explanatory variables;

e is the residual from Model (1); Underinvest and Overinvest represent the under-investment and the over-investment, respectively. Both underinvestment and overinvestment are considered inefficient investments.

Independent variables

Table 3 illustrates the correlation coefficients between the independent variables in our model. The direction and proportion of the linear relationship between the variables are measured by the expected correlation coefficients. The maximum correlation coefficient is 0.29 between SIZE and LEV. All variance inflation factors (VIFs) are between 1 and 10, indicating no serious multicollinearity problem.

Research Methodology

This paper investigates the relationship between ESG, financing constraints, and the efficiency of investment, and the main models constructed are as follows:

$$Ineff_{i,t} = \beta_0 + \beta_1 Ineff_{i,t-1} + \beta_2 ESG_{i,t} + \beta_3 KZ_{i,t} + \beta_4 ESG_{i,t} + \beta_{5-9} Control_{i,t} + \varepsilon it \quad (2)$$

$$UnderInvest_{it} = \beta_0 + \beta_1 UnderInvest_{i,t-1} + \beta_2 ESG_{i,t} + \beta_3 KZ_{i,t} + \beta_4 ESG_{i,t} + \beta_{5-9} Control_{i,t} + \varepsilon it \quad (3)$$

$$OverInvest_{it} = \beta_0 + \beta_1 OverInvest_{i,t-1} + \beta_2 ESG_{i,t} + \beta_3 KZ_{i,t} + \beta_4 ESG_{i,t} + \beta_{5-9} Control_{i,t} + \varepsilon it \quad (4)$$

Where: i denotes firm, t denotes year; In models (2), (3), and (4), Ineff represents the firm's inefficient investment; UnderInvest and OverInvest represent the under-investment and the over-investment, respectively; The variable KZ refers to the financing constraints; ESG denotes the Environmental, Social, and Governance disclosure; Control$_{it}$ stands for a series of control variables including SIZE, AGE, LEV, TobinQ, and OCF; and ε_{it} reflects the error term.

To address potential endogeneity of explanatory variables and account for firm-specific, time-invariant heterogeneity, this study employs the dynamic system Generalized Method of Moments (GMM). This approach is chosen for several key reasons: First, GMM is generally more efficient than both Fixed Effect Models (FEM) and Pooled Ordinary Least Squares (POLS). It minimizes estimation bias by estimating parameters using all available moment conditions. Moreover, when the number of instruments is proportional to the sample size, GMM is more likely to yield reliable estimates compared to POLS and FEM. Second, GMM offers greater flexibility than POLS and FEM, as it can estimate a variety of models with differing specifications, including those with autocorrelations and heteroskedasticity.

EMPIRICAL RESULTS

Following Richardson [6], I measure investment inefficiency using the residual from Model (1). Subsequently, Model (2) examines the direct effects of financial constraints and ESG practices on this inefficiency. Models (3) and (4) explore how financial constraints and ESG disclosure affect the over-investment and under-investment, respectively.

As shown in Model 2, the estimated coefficient for financial constraint (KZ) is positive and statistically significant at the 10% level. This indicates that firms that are more financially constrained are more prone to making inefficient investment decisions. When enterprises are unable to obtain external capital, they are forced to rely on limited internal finances, which frequently results in overinvestment in less efficient ones merely because of available resources. This limitation is worsened by the increased uncertainty and risk associated with financial constraints, which causes enterprises to take a more conservative approach and miss out on good chances, as seen in Model (3). My findings accept hypothesis H_{1a} and reject H_{1b}, and are supported by [22,25].

Model (4) shows a negative relationship between ESG disclosure and under-investment at the 1% level. These results indicate that ESG practices help prevent underinvestment by making it easier for companies to get funding and by lowering the cost of that funding. This is because good ESG practices show investors that the company is less risky and more transparent, which attracts more capital and builds trust, allowing the company to pursue profitable investments. My findings are consistent with the previous studies [33,35]. Thus, I accept the hypothesis H_{2a}.

In terms of the control variables, I found the negative impact of the firm's size (SIZE) on the investment inefficiency at the 1% significance level. My research demonstrates how larger firms can reduce investment inefficiency by taking advantage of economies of scale, easy capital access, and management expertise. Their stable cash flows and numerous investment opportunities allow them to pursue high-return projects while minimizing risk. Furthermore, investor and analyst scrutiny encourages better financial governance and transparency, resulting in less wasteful spending

Table 1: Variable construction [Source: Authors' compilation from empirical studies]

Variable	Variable name	Measurement
Ineff	Investment inefficiency	The residual from Model (1) follows Richardson [6]
Underinvest	Under Investment	A negative residual from Model (1) means that the real investment is less than expected, so the firm is underinvesting. Taking the absolute value of the negative residual of Richardson's investment efficiency measure
Overinvest	Over Investment	A positive residual from Model (1) means that the firm is investing at a higher degree than expected, so the firm is overinvesting.
ESG	Environmental, Social, and Governance disclosure	It is a dummy variable equal to 1 if the firm has ESG activities displayed in the annual report, and 0 if otherwise
KZ	Kaplan – Zingales Index	KZ= -1.001909 * OCF/Asset +3.139193 * Lev -39.3678 * Dividends/Asset -1.314759 * Cash/Asset +0.2826389 *MBVA (Kaplan & Zingales, 1997)
SIZE	Firm's size	Natural logarithm of the company's total assets
LEV	Leverage	Total liabilities / Total assets
TobinQ	Market-to-book ratio	The market value of equity to shareholders' equity
AGE	Firm's life	Current year – Established year
OCF	Operating Cash Flow	Net cash flows from operating activities / Total assets at the end of the year.

Table 2: Descriptive statistics [Author'scalculation]

Variable	Obs	Mean	Std. dev.	Min	Max
INEFF	4712	0.214	0.393	-0.427	6.504
Overinvest	4712	0.268	0.399	0.0004	6.504
Underinvest	4712	0.106	0.094	0.0001	0.427
KZ	4712	-0.721	5.870	-134.975	64.869
ESG	4712	0.579	0.494	0	1
SIZE	4712	28.121	1.472	19.885	34.135
AGE	4712	24.270	15.865	1	133
LEV	4712	0.477	0.213	0.000	0.993
TobinQ	4712	1.317	5.937	0.020	241.810
OCF	4712	0.056	0.138	-1.374	0.970

Table 3: Pearson Correlation matrix [Author'scalculation]

No.	Variables	KZ	ESG	SIZE	AGE	LEV		OCF	VIF
1	KZ	1							1.21
2	ESG	-0.087	1						1.13
3	SIZE	0.225	0.224	1					1.23
4	AGE	-0.088	0.130	-0.066	1				1.06
5	LEV	0.275	-0.134	0.297	-0.212	1			1.30
6	TobinQ	0.263	0.002	0.039	-0.023	0.095	1		1.08
7	OCF	-0.153	0.075	-0.108	0.125	-0.291	0.019	1	1.11

and more effective resource allocation. However, the conservative and rigorous management strategy can lead to under-investment and reduce over-investment as a result of Models (3) and (4).

The firm's age (AGE) coefficient is positive and statistically significant. This result supports the view that long-established firms can suffer from increased investment inefficiency due to organizational inertia and resistance to change. Established practices create rigid structures and restrict innovation, leading to suboptimal investment choices. Complacency from previous accomplishments can also lead to poor investment decisions, as managers may overlook new opportunities and over-invest in outdated projects, reducing investment efficiency.

A positive and significant relationship exists between leverage (LEV) and investment inefficiency. High leverage reduces investment efficiency by creating financial constraints and risk. Debt payment prevents cash from productive investments, and the risk of financial distress discourages outside investors. The pressure to pay debt obligations drives short-term, cash-focused decisions that sacrifice long-term growth, while rising risk raises the cost of capital, making profitable ventures less enticing. Analysis of models (3) and (4) reveals that firms facing debt pressure are characterized by higher levels of underinvestment and lower levels of overinvestment.

Moreover, the positive coefficient of operating cash flow (OCF) illustrates that high operating cash flow can increase overinvestment due to agency problems. The abundance of internal funds gives managers more freedom to pursue personal interests over shareholder value, leading to over-investment in poor projects or a reluctance to distribute profits. This result is consistent with [4].

Finally, Table 4 showed that a high Tobin's Q can be associated with higher investment inefficiency due to managerial overconfidence and information asymmetry. This indicates perceived growth potential, which might cause managers to overinvest in ventures that are not genuinely profitable. Furthermore, managers' informational advantage can incentivize them to pursue projects that benefit themselves rather than shareholders, resulting in inefficient capital allocation and a preference for personal agendas over optimal investment choices. My findings are in line with the results of [40] .

CONCLUSIONS

My empirical results support the hypothesis that financial constraints negatively impact investment efficiency. Companies with financial constraints often overspend on less productive projects simply because they have the internal funds. This problem is exacerbated by the heightened uncertainty associated with economic limitations, causing businesses to become overly cautious and miss valuable investment opportunities. The novel finding of ESG as a significant factor suggests that integrating ESG initiatives enhances investment efficiency. This improvement is demonstrated by adopting rigorous and transparent investment evaluation processes, which reduce the likelihood of over-investment motivated by short-term financial gains. Secondly, companies with robust ESG profiles attract investors who value sustainability, which eases capital constraints and reduces under-investment, even when traditional financial indicators suggest otherwise.

Besides, while LEV, AGE, OCF, and TobinQ have a negative relationship with investment efficiency, SIZE is the only factor with a positive relationship. Larger firms invest more efficiently than smaller ones. This is because they have advantages like economies of scale, better access to capital, and strong management. These advantages, combined with greater scrutiny from investors, result in better investment decisions, lower risk, and less waste. In contrast, firms with high leverage, an abundance of operating cash flow, and

Table 4: Regression results [Source: Author's calculation]

	Model (2)	Model (3)	Model (4)
	Inefficiency	Overinvestment	Underinvestment
	Coefficient	Coefficient	Coefficient
	(Std.err)	(Std.err)	(Std.err)
L1.Ineff	0.5670***		
	(0.0767)		
L1.OverInvest		0.7360***	
		(0.1760)	
L1.UnderInvest			0.1390*
			(0.0761)
KZ	0.0006*	-0.0002*	-0.0026
	(0.0003)	(0.0004)	(0.0016)
ESG	0.0193	0.0169	-0.0426***
	(0.0156)	(0.0242)	(0.0159)
SIZE	-0.0484***	-0.0519***	0.0833***
	(0.0094)	(0.0101)	(0.0112)
AGE	0.0021***	0.0022***	-0.0043***
	(0.0004)	(0.0005)	-0.0004
LEV	0.1980***	-0.1610***	0.2690***
	(0.0353)	(0.0388)	(0.0401)
TOBINQ	0.0095***	0.0102***	-0.0041
	-0.0055	(0.0111)	(0.0008)
OCF	-0.112	0.233***	0.0202
	(0.0914)	(0.0632)	(0.0911)
Constant	1.298***	0.335	-2.660***
	(0.2620)	(0.6670)	(0.3500)
No. of observations	4712	4712	4712
Number of Instruments	20	20	20
AR (1)	0.022	0.015	0.078
AR (2)	0.959	0.135	0.869
Hansen Test	0.802	0.922	0.490
Different-in-Hansen Test	0.560	0.800	0.898

This table shows theGMM estimation of the impact of financial constraints and ESG disclosure on afirm's investment efficiency. The numbers in parentheses are standard errors.***, **, and * denote statistical significance at the 1%, 5%, and 10% levels,respectively. *** p<0.01, ** p<0.05, * p<0.1.

higher shareholder constraints tend to experience investment inefficiency due to debt obligations, agency problems, managerial overconfidence, and information asymmetry.

My research provides a comprehensive analysis of different determinants of investment efficiency while focusing more on the financial constraints and ESG practices. It could provide insights to help stakeholders make more informed decisions, leading to better financial performance, increased sustainability, and improved overall economic outcomes. Future research on ESG performance can benefit from using comprehensive, globally recognized indices rather than simple dummy variables. This approach offers a much broader and more nuanced understanding of ESG effectiveness, providing insights beyond just Vietnam to offer global evidence.

ABBREVIATIONS

ESG: Environmental, Social, and Governance
HOSE: Ho Chi Minh City Stock Exchange
VIF: Variance Inflation Factors
GMM: Generalized Method of Moments
FEM: Fixed Effect Models
POLS: Pooled Ordinary Least Squares

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflicts of interest.

AUTHOR CONTRIBUTIONS

PhD Le Bao Thy: Responsible for Conceptualization, Data curation, formal analysis, investigation, methodology, software, supervision, validation, writing – review & editing.

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Bài nghiên cứu

Công bố thông tin về môi trường, xã hội và quản trị, hạn chế về tài chính, và hiệu quả đầu tư của doanh nghiệp: Bằng chứng thực nghiệm từ Việt Nam

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TÓM TẮT

Sử dụng mẫu dữ liệu gồm 354 công ty phi tài chính niêm yết Việt Nam trong giai đoạn 2010 – 2023, nghiên cứu này đã kiểm tra mối quan hệ phức tạp giữa các yếu tố hạn chế tài chính, công bố thông tin về Môi trường, Xã hội và Quản trị (ESG), và hiệu quả đầu tư. Nghiên cứu cho thấy việc thiếu hụt các nguồn lực tài chính trực tiếp dẫn đến các quyết định đầu tư kém hiệu quả, nhấn mạnh rằng khả năng tiếp cận vốn là một yếu tố quan trọng đối với sự tăng trưởng kinh doanh và chiến lược đầu tư đúng đắn. Ngược lại, các thông lệ ESG được chứng minh là cải thiện hiệu quả đầu tư thông qua hai cơ chế: tạo điều kiện thuận lợi cho việc đánh giá đầu tư có kỷ luật và thu hút các nhà đầu tư ưu tiên sự bền vững. So với đầu tư vượt mức, việc công bố ESG có ảnh hưởng rõ rệt hơn trong việc giảm thiểu đầu tư dưới mức. Tuy nhiên, nghiên cứu không xác nhận giả thuyết rằng việc công bố ESG có thể giảm thiểu các tác động tiêu cực của các hạn chế tài chính. Quy mô công ty có mối quan hệ cùng chiều với hiệu quả đầu tư, trong khi các yếu tố khác (đòn bẩy, tuổi đời, dòng tiền hoạt động và Tobin's Q) lại có tương quan ngược chiều. Hơn nữa, nghiên cứu này cũng cung cấp một phân tích chuyên sâu về cả đầu tư vượt mức và đầu tư dưới mức từ góc độ các yếu tố nội tại của công ty. Các yếu tố như quy mô công ty, tuổi đời và đòn bẩy tài chính được chứng minh là có ý nghĩa thống kê đối với cả hai vấn đề đầu tư vượt mức và đầu tư dưới mức, cho thấy hồ sơ đặc thù của một công ty có ảnh hưởng lớn đến hành vi đầu tư của nó. Việc áp dụng các thông lệ ESG và công bố thông tin này giúp các công ty cải thiện hiệu quả đầu tư của họ. Điều này xảy ra thông qua việc sàng lọc dự án chặt chẽ hơn và bằng cách thu hút một nhóm nhà đầu tư cụ thể coi trọng sự bền vững. Nghiên cứu này cung cấp những hiểu biết sâu sắc giúp các nhà quản lý tài chính nâng cao quá trình ra quyết định của họ và, từ đó, thúc đẩy hiệu quả tài chính, bền vững và cải thiện kết quả kinh tế. Đồng thời, các kết luận của nghiên cứu cũng đóng vai trò là tài liệu tham khảo hữu ích cho các bên liên quan trong việc điều hướng các hoạt động của công ty và giải quyết các vấn đề phức tạp như vấn đề đại diện và bất cân xứng thông tin.

Từ khoá: hạn chế tài chính, công bố thông tin ESG, hiệu quả đầu tư, đầu tư vượt mức, đầu tư dưới mức

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