

“Corporate governance and corporate investment allocation: The moderating role of corporate social responsibility disclosure in Vietnamese listed firms”

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CORPORATE GOVERNANCE AND CORPORATE INVESTMENT ALLOCATION: THE MODERATING ROLE OF CORPORATE SOCIAL RESPONSIBILITY DISCLOSURE IN VIETNAMESE LISTED FIRMS

Abstract

Corporate investment allocation is essential for sustainable firm growth, particularly in emerging markets where firms may shift resources between long-term productive assets and more flexible financial assets under conditions of agency conflicts, weak monitoring, and limited transparency. This study investigates how corporate governance affects real and financial investment in Vietnamese listed non-financial firms and examines whether corporate social responsibility disclosure moderates these relationships. The analysis is based on a balanced panel of 356 firms listed on the Ho Chi Minh City and Hanoi stock exchanges during 2017–2024, yielding 2,848 firm-year observations. The study applies firm- and year-fixed-effects models with clustered standard errors and further addresses endogeneity through lagged-regressor specifications, fixed-effects instrumental-variable estimation, and two-step system generalized method of moments estimation. The results show that larger boards, higher board independence, and greater institutional ownership are associated with higher fixed-asset investment and lower financial investment, whereas chief executive officer duality and ownership concentration are associated with lower fixed-asset investment and higher financial investment. The moderating estimates indicate that corporate social responsibility disclosure strengthens these patterns. Among disclosing firms, the marginal effects of board size, board independence, and institutional ownership on fixed-asset investment increased to 0.556, 0.521, and 0.321, while their corresponding effects on financial investment declined to –0.496, –0.641, and –0.426. Overall, the findings indicate that stronger governance quality and more transparent corporate social responsibility disclosure can jointly improve the orientation and sustainability of corporate capital allocation in Vietnam.

Keywords

corporate governance, corporate investment allocation,
fixed-asset investment, financial investment, CSR
disclosure, Vietnam, listed firms

JEL Classification

G31, G34, M14, C33

INTRODUCTION

Corporate investment plays a central role in shaping firms' long-term performance, growth capacity and competitiveness. In emerging markets, however, investment decisions are often subject to distortions arising from agency conflicts, information asymmetry, and weak monitoring mechanisms. These frictions may lead firms to allocate resources inefficiently, either through underinvestment in productive assets or overinvestment in short-term financial instruments, thereby undermining sustainable value creation.

Corporate governance has been widely recognized as a key institutional mechanism to mitigate such inefficiencies. Through board structures and ownership arrangements, governance systems can en-

hance monitoring, align managerial incentives with shareholder interests and improve the quality of investment decisions. Nevertheless, the effectiveness of governance mechanisms is not uniform across contexts. In environments characterized by concentrated ownership, evolving regulatory frameworks and varying levels of market discipline – such as Vietnam – the impact of governance on corporate investment remains an open empirical question.

At the same time, corporate social responsibility has emerged as an integral component of modern corporate governance, closely associated with transparency, accountability and stakeholder engagement. From a broader institutional and stakeholder perspective, the disclosure of corporate social responsibility activities may alter the functioning of governance mechanisms by increasing external scrutiny and reinforcing reputational concerns. As a result, the relationship between corporate governance and investment decisions may not be purely direct but conditional to the extent to which firms engage in and disclose corporate social responsibility practices.

Vietnam provides a relevant institutional setting for examining the governance–investment relationship. Over the past decade, corporate governance regulations for listed firms have been gradually strengthened, while ownership structures remain relatively concentrated and the role of controlling shareholders continues to be substantial. At the same time, sustainability and corporate social responsibility disclosure have become more visible following regulatory requirements on information disclosure and growing investor attention to environmental and social issues. For non-financial listed firms, the allocation of resources between fixed assets and financial investments is also important because financial assets may provide flexibility but may divert funds from long-term productive capacity.

Despite the growing body of research on corporate governance and investment, several important issues remain unresolved. Existing studies often treat corporate investment as a single aggregate measure, overlooking the fundamental distinction between long-term real investment and more flexible financial investment. Moreover, the role of corporate social responsibility as a conditioning factor in the governance-investment relationship has received limited and mixed empirical support, especially in emerging market settings. These gaps point to a broader scientific problem concerning how governance mechanisms interact with institutional and informational factors to shape firms' capital allocation choices.

1. LITERATURE REVIEW AND HYPOTHESES

Corporate investment has long been examined through the lens of agency theory, which explains why managers may deviate from value-maximizing decisions when monitoring is weak and information asymmetry is high. In such settings, corporate governance is expected to improve capital allocation by constraining managerial discretion, aligning incentives, and enhancing oversight (Jensen & Meckling, 1976). Yet, the governance-investment relationship is not mechanically uniform. Its direction depends on the specific governance mechanism involved and on whether firms allocate resources to long-term productive assets or to more flexible financial assets. This distinction is especially relevant in emerging markets, where ownership concentration, weaker investor protec-

tion and evolving governance standards may alter the effectiveness of internal control mechanisms.

A first stream of literature emphasizes the role of board characteristics in shaping investment decisions. Larger boards may improve decision quality by providing broader expertise, stronger monitoring capacity and more diverse perspectives, thereby supporting more disciplined long-term investment choices. However, excessively large boards may also create coordination problems and reduce decision efficiency, implying that the net effect of board size is ultimately an empirical question (Manu et al., 2019; Zahra et al., 2022). Board independence is generally expected to enhance oversight and reduce managerial opportunism, which should improve investment efficiency and discourage value-destroying allocation behavior (Tachiwou, 2016). Nevertheless, empirical

evidence remains mixed, suggesting that independent directors do not always exercise effective control in environments where governance enforcement is weak or ownership is highly concentrated (Alkhazaleh et al., 2022). Taken together, these findings imply that board effectiveness may influence not only the volume of investment but also its composition between real and financial assets.

A second stream of research focuses on leadership structure and ownership arrangements as determinants of corporate investment. Chief executive officer duality may weaken board oversight by concentrating decision-making power in a single individual, thereby increasing the likelihood of opportunistic or short-term investment choices. From an agency perspective, such concentration of authority can reduce accountability and weaken internal checks, especially in firms with limited external monitoring (Jensen & Meckling, 1976). Ownership concentration creates a more complex governance effect. On the one hand, concentrated shareholders may monitor managers more effectively; on the other hand, they may pursue private benefits of control and influence resource allocation in ways that do not maximize firm value. Institutional ownership is often seen as a more professional monitoring mechanism because institutional investors typically possess greater analytical capacity, stronger incentives to oversee management, and a longer investment horizon. As a result, firms with higher institutional ownership are often expected to make more efficient and strategically oriented investment decisions, although this effect may vary across legal and institutional settings (Alkhazaleh et al., 2022; Asita & Pramesti, 2023).

Another important line of research links corporate governance to corporate social responsibility disclosure. In recent years, corporate social responsibility has increasingly been viewed not merely as a reputational activity but as part of a broader governance architecture associated with transparency, accountability, and responsiveness to stakeholder expectations. Prior studies generally report that firms with stronger governance tend to disclose more corporate social responsibility information, although the evidence is not fully consistent across governance dimensions. Board size is frequently associated with broader stake-

holder representation and more extensive sustainability disclosure, while chief executive officer duality is often linked to weaker accountability and lower disclosure quality (Chouaibi & Zouari, 2022; Masud et al., 2018; Qa'dan & Suwaidan, 2019; Tandoh et al., 2022). The role of board independence is less conclusive: some studies document a positive association with corporate social responsibility reporting, whereas others find weak, negative, or statistically insignificant effects, particularly in contexts where independent directors have limited substantive influence (Akben-Selcuk, 2019; Giang & Hien, 2024). Ownership structure also matters. Institutional investors often encourage broader disclosure because of reputational concerns and longer-term value considerations, while concentrated ownership may reduce disclosure incentives when controlling shareholders prefer opacity or face weaker legitimacy pressure (Waheed et al., 2021; Akben-Selcuk, 2019).

These studies suggest that corporate social responsibility disclosure may play a role beyond being an outcome of governance. From stakeholders and legitimacy perspectives, disclosure can also function as a conditioning mechanism that changes how governance affects corporate decisions. By increasing visibility, strengthening market scrutiny, and raising reputational costs of opportunistic behavior, corporate social responsibility disclosure may reinforce governance discipline and encourage a stronger long-term orientation in investment policy. Firms that disclose social and sustainability information are more exposed to stakeholder evaluation and may therefore face stronger incentives to direct resources toward productive, less discretionary investment. Conversely, governance weaknesses may become more consequential in firms where disclosure is absent or superficial. Recent studies support the view that corporate social responsibility can amplify the effect of governance on firm-level outcomes, including investment and performance, although the sign and strength of this interaction remain context-dependent (Karim et al., 2020; Nasir et al., 2023; Pasko et al., 2022; Zahra et al., 2022).

Although the literature offers important insights, three unresolved issues remain. First, much of the prior research treats corporate investment as a single aggregate construct. This approach obscures a

critical distinction between fixed-asset investment, which reflects long-term productive commitment, and financial investment, which is generally more reversible and potentially more sensitive to short-term incentives. Second, while a growing body of studies examines the links between corporate governance and corporate social responsibility disclosure, the moderating role of disclosure in the governance-investment relationship remains underexplored and empirically mixed. Third, most evidence comes either from developed economies or from studies that focus on performance rather than capital-allocation structure, leaving limited evidence on how governance mechanisms shape different types of investment in emerging markets such as Vietnam, where concentrated ownership and institutional transition may alter governance effectiveness.

To address these gaps, this study aims to examine how corporate governance influences fixed-asset investment and financial investment in Vietnamese listed non-financial firms and whether corporate social responsibility disclosure moderates these relationships. In line with the reviewed literature, the study evaluates the following hypotheses:

- H1a: Board size is positively associated with fixed-asset investment and negatively associated with financial investment.*
- H1b: Board independence is positively associated with fixed-asset investment and negatively associated with financial investment.*
- H1c: Institutional ownership is positively associated with fixed-asset investment and negatively associated with financial investment.*
- H2a: CEO duality is negatively associated with fixed-asset investment and positively associated with financial investment.*
- H2b: Ownership concentration is negatively associated with fixed-asset investment and positively associated with financial investment.*
- H3a: CSR disclosure strengthens the positive effects of monitoring-oriented governance mechanisms, including board size, board in-*

dependence, and institutional ownership, on fixed-asset investment.

H3b: CSR disclosure strengthens the negative effects of monitoring-oriented governance mechanisms on financial investment.

H3c: CSR disclosure amplifies the negative effects of power-concentrating governance mechanisms, including CEO duality and ownership concentration, on fixed-asset investment.

H3d: CSR disclosure amplifies the positive effects of power-concentrating governance mechanisms on financial investment.

2. METHOD

This study examines how corporate governance affects corporate investment and whether corporate social responsibility disclosure moderates this relationship in Vietnamese listed non-financial firms.

2.1. Data and sample

The empirical analysis is based on an annual balanced panel of Vietnamese non-financial firms listed on the Ho Chi Minh City Stock Exchange and Hanoi Stock Exchange over the period 2017–2024. Financial firms, including banks, securities companies, insurance firms, and other regulated financial institutions, are excluded because their balance-sheet structure, leverage behavior, and regulatory environment differ substantially from those of non-financial firms, making investment indicators not directly comparable. The final sample consists of 356 firms and 2,848 firm-year observations. This sample period is suitable for examining the governance-investment relationship because it captures a stage in which corporate governance regulation and sustainability disclosure practices in Vietnam became more visible and increasingly relevant for listed firms.

The sample is constructed in three steps. First, audited annual financial statements, annual reports, corporate governance reports, and major shareholder disclosures are collected for all listed non-financial firms. Second, observations with miss-

ing data on investment, governance, corporate social responsibility disclosure, and control variables are removed. Third, continuous variables are winsorized at the 1st and 99th percentiles to reduce the influence of extreme observations. This treatment is important because investment and market-based indicators often display substantial dispersion in firm-level panel data. The resulting balanced panel allows the study to compare firms consistently across time and to apply estimators that exploit both the cross-sectional and time-series dimensions of the data.

2.2. Variable measurement

The dependent variables capture two distinct dimensions of corporate investment. This distinction is central to the study because firms may allocate capital differently between productive long-term assets and financial assets. Fixed-asset investment reflects commitment to productive capacity and long-term operations, whereas financial investment is generally more flexible and may be more sensitive to short-term incentives. Accordingly, the study employs one main and one alternative proxy for each investment type.

Fixed-asset investment is first measured by FA_INV1, defined as expenditure on fixed assets and other long-term operating assets scaled by average total assets. As a robust measure, FA_INV2 is calculated as the annual change in net property, plant, and equipment scaled by total assets. Financial investment is first measured by FIN_INV1, defined as total short-term and long-term financial investments scaled by total assets. As an alternative measure, FIN_INV2 is constructed as the annual change in the firm's financial investment portfolio scaled by total assets. These alternative measures are used to verify whether the main findings remain stable under different operationalizations of investment.

The independent variables represent key corporate governance mechanisms. BSIZE denotes board size and is measured as the natural logarithm of the number of board members. BIND measures board independence and is computed as the proportion of independent directors on the board. DUAL is a dummy variable equal to 1 if the chief executive officer simultaneously serves as board

chair, and 0 otherwise. OWNC measures ownership concentration as the aggregate shareholding of major shareholders holding at least 5% of outstanding shares. INST captures institutional ownership as the proportion of shares held by institutional investors. These governance variables are selected because they reflect the main dimensions of internal governance emphasized in the hypotheses: board structure, leadership concentration, and ownership monitoring. The governance information is hand-collected and coded from annual reports, governance reports, and shareholder disclosures.

The moderating variable is CSR_DISC, a dummy indicating whether the firm discloses corporate social responsibility or sustainability information. A firm is coded as 1 if it provides a dedicated corporate social responsibility or environmental, social, and governance section, or a separate report, and discloses at least two of the following content areas: environment, employees, community or social issues, and supply chain, customers, or products. Otherwise, the variable is coded as 0. This coding rule is intended to avoid overclassification based on generic statements and to capture meaningful disclosure rather than symbolic references. The classification follows the disclosure context applicable to Vietnamese listed firms and is aligned with Circular 96/2020/TT-BTC.

Following standard corporate finance research, the control variables include TOQ, GROWTH, SIZE, LEV, and CF. TOQ is Tobin's Q, measured as the sum of the market value of equity and the book value of debt divided by the book value of total assets, and is used as a proxy for growth opportunities. GROWTH is annual revenue growth. SIZE is firm size, measured as the natural logarithm of total assets. LEV is leverage, calculated as total debt divided by total assets. CF is operating cash flow scaled by total assets. These controls capture differences in investment opportunity, financing capacity, financial constraints, and internal liquidity that may also affect investment behavior.

2.3. Model specification

To test the direct effect of corporate governance on investment, the study first estimates a baseline fixed-effects model for each investment outcome:

$$INV_{it} = \alpha + \beta_1 CG_{it} + \beta_2 Controls_{it} + \mu_i + \lambda_t + \varepsilon_{it}, \quad (1)$$

where INV_{it} denotes either fixed-asset investment or financial investment of firm i in year t ; CG_{it} is the set of corporate governance variables, including board size, board independence, chief executive officer duality, ownership concentration, and institutional ownership; $Controls_{it}$ is the vector of control variables; μ_i captures unobserved firm-specific effects; λ_t captures year effects; and ε_{it} is the error term. Standard errors are clustered at the firm level to account for within-firm serial correlation and heteroskedasticity. This specification is appropriate because corporate governance and investment are both likely to be influenced by persistent firm characteristics that are not directly observable.

To test the moderating role of corporate social responsibility disclosure, the baseline model is extended to include interaction terms between each governance variable and CSR_DISC :

$$INV_{it} = \alpha + \beta_1 CG_{it} + \beta_2 CSR_DISC_{it} + \beta_3 (CG_{it} \cdot CSR_DISC_{it}) + \beta_4 Controls_{it} + \mu_i + \lambda_t + \varepsilon_{it}. \quad (2)$$

In this model, the coefficients on the interaction terms indicate whether corporate social responsibility disclosure strengthens or weakens the effect of governance on investment. For interpretation, the marginal effect of each governance variable for firms with disclosure is computed as the sum of the direct governance coefficient and the corresponding interaction coefficient. This approach is consistent with the moderation design used in empirical corporate finance research and allows the analysis to distinguish between governance effects in disclosing and non-disclosing firms.

2.4. Endogeneity treatment

Endogeneity is a central empirical concern in research on corporate governance and investment. Governance structures may respond to investment policy, and both may be jointly determined by omitted time-varying firm characteristics.

The present study addresses endogeneity in three ways. First, it re-estimates the fixed-effects mod-

els using lagged governance regressors. Second, it applies fixed-effects instrumental-variable estimation in which deep lags of governance variables and interaction terms are used as instruments. Third, it estimates a dynamic specification using two-step System Generalized Method of Moments with Windmeijer-corrected standard errors. The dynamic model includes the lagged dependent variable to account for investment persistence arising from project cycles, adjustment costs, and multi-period capital allocation decisions:

$$INV_{it} = \rho INV_{i,t-1} + \beta_1 CG_{it} + \beta_2 CSR_DISC_{it} + \beta_3 (CG_{it} \cdot CSR_DISC_{it}) + \beta_4 Controls_{it} + \lambda_t + \varepsilon_{it}. \quad (3)$$

In the System Generalized Method of Moments framework, the governance variables and their interaction terms are treated as endogenous, because they may respond to past and current firm conditions. Corporate social responsibility disclosure and slower-adjusting controls such as operating cash flow and revenue growth are treated as predetermined, while year dummies are treated as exogenous. For the differenced equation, lagged levels dated $(t - 2)$ and deeper are used as instruments; for the level equation, lagged differences are used. To avoid instrument proliferation, the study limits lag depth and collapses the instrument matrix so that the number of instruments remains comfortably below the number of firms.

Model validity is evaluated using the Arellano-Bond serial-correlation tests, the Hansen test of overidentifying restrictions, and the Difference-in-Hansen test for the additional level moment conditions. The absence of second-order serial correlation and the failure to reject the Hansen-based tests are interpreted as supporting the validity of the dynamic specification and the instrument set.

2.5. Robustness procedure

To verify the stability of the findings, the study conducts robust checks by replacing the main investment measures with their alternative proxies. Specifically, the fixed-effects interaction models are re-estimated using FA_INV2 instead of $FA_$

INV1 and FIN_INV2 instead of FIN_INV1. The results are considered robust if the signs and statistical significance of the main governance variables, the moderator, and the interaction terms remain broadly unchanged across alternative measures.

3. RESULTS

3.1. Descriptive statistics and preliminary diagnostics

This section reports the empirical findings on the relationship between corporate governance and corporate investment allocation. The analysis first presents descriptive statistics and diagnostic tests, followed by fixed-effects estimates, moderation results, endogeneity-robust estimations, and robustness checks using alternative investment measures.

Table 1 presents the definitions, measurements, expected signs, and key references for all variables used in the empirical analysis. The variables are grouped into three categories, including dependent variables capturing corporate investment, indepen-

dent variables representing corporate governance mechanisms, and control variables reflecting firm-specific characteristics. This classification ensures consistency with the theoretical framework and facilitates the interpretation of the estimated results.

The final sample consists of 356 non-financial firms listed on the Ho Chi Minh City Stock Exchange and Hanoi Stock Exchange during 2017–2024, yielding a balanced panel of 2,848 firm-year observations. As reported in Table 2, the average value of fixed-asset investment (FA_INV1) is 0.247, whereas the average value of financial investment (FIN_INV1) is 0.395, indicating that financial asset allocation represents a substantial component of corporate investment among Vietnamese listed firms. The descriptive statistics also show that 47.3% of firm-year observations disclose corporate social responsibility information, suggesting that sustainability disclosure is present but not yet universal in the sample. Governance characteristics display plausible variation across firms: the average board size in logarithmic form is 1.717, the mean proportion of independent directors is 0.233,

Table 1. Variable definitions and measurement

Variable category	Variable	Symbol	Measurement
Dependent variables (main measures)	Fixed-asset investment	FA_INV1	Expenditure on fixed assets and other long-term operating assets scaled by average total assets
	Financial investment	FIN_INV1	Total short-term and long-term financial investments scaled by total assets
Dependent variables (alternative measures for robustness)	Fixed-asset investment (alternative)	FA_INV2	Annual change in net property, plant and equipment scaled by total assets
	Financial investment (alternative)	FIN_INV2	Annual change in the firm's financial investment portfolio scaled by total assets
Corporate governance variables	Board size	BSIZE	Natural logarithm of the number of board members
	Board independence	BIND	Number of independent directors divided by total board members
	CEO duality	DUAL	Dummy variable equal to 1 if the CEO simultaneously serves as board chair, and 0 otherwise
	Ownership concentration	OWNC	Aggregate shareholding of major shareholders holding at least 5% of outstanding shares
	Institutional ownership	INST	Percentage of shares held by institutional investors
Moderating variable	CSR disclosure	CSR_DISC	Dummy variable equal to 1 if the firm discloses CSR/sustainability information and satisfies the disclosure criteria, and 0 otherwise
Control variables	Growth opportunities	TOQ	Tobin's Q, measured as (market value of equity + book value of debt) / book value of total assets
	Revenue growth	GROWTH	Annual percentage growth in sales revenue
	Firm size	SIZE	Natural logarithm of total assets
	Leverage	LEV	Total debt divided by total assets
	Operating cash flow	CF	Operating cash flow divided by total assets

Notes: FA_INV1 and FIN_INV1 are the primary investment measures used in the baseline analysis. FA_INV2 and FIN_INV2 are employed in robustness tests. Governance variables capture board structure, leadership concentration, and ownership monitoring. CSR_DISC measures the presence of substantive CSR/sustainability disclosure. Control variables account for differences in growth opportunities, financing conditions, and internal liquidity.

chief executive officer duality is observed in 50.1% of observations, ownership concentration averages 0.593, and institutional ownership averages 0.248. Overall, these patterns indicate sufficient cross-sectional variation to identify the relationship between governance mechanisms, disclosure behavior, and investment choices.

Table 2. Descriptive statistics

Variable	N	Mean	Std. Dev.	Min	Max
FA_INV1	2,848	0.247	0.232	0.000	0.788
FIN_INV1	2,848	0.395	0.260	0.000	0.716
BSIZE	2,848	1.717	0.250	1.099	2.565
BIND	2,848	0.233	0.075	0.000	0.667
DUAL	2,848	0.501	0.500	0.000	1.000
OWNC	2,848	0.593	0.203	0.000	1.000
INST	2,848	0.248	0.299	0.000	0.999
CSR_DISC	2,848	0.473	0.499	0.000	1.000
TOQ	2,848	0.657	0.416	0.000	2.421
GROWTH	2,848	0.098	0.443	-1.279	1.908
SIZE	2,848	28.073	1.391	23.712	32.618
LEV	2,848	0.483	0.216	0.001	0.619
CF	2,848	0.231	0.204	-0.317	0.935

Notes: SIZE is measured as $\ln(\text{total assets})$. CSR_DISC is a binary variable.

The pairwise correlations (Table 3) further support the empirical design. Fixed-asset investment and financial investment are negatively correlated, with a coefficient of -0.491 , suggesting a partial trade-off between long-term productive allocation and financial asset allocation. Monitoring-oriented governance variables such as board size, board independence and institutional ownership are positively

correlated with fixed-asset investment and negatively correlated with financial investment, whereas chief executive officer duality and ownership concentration show the opposite pattern. These correlations are directionally consistent with the hypotheses and provide preliminary support for the expected governance-investment relationships.

Multicollinearity does not appear to be a concern. The mean variance inflation factor (Table 4) is 1.06 and no individual variance inflation factor exceeds conventional thresholds, indicating that the estimates are unlikely to be distorted by excessive collinearity among regressors.

Table 4. Multicollinearity diagnostics (VIF)

Table	VIF
BSIZE	1.06
BIND	1.04
DUAL	1.02
OWNC	1.02
INST	1.01
CSR_DISC	1.03
TOQ	1.09
GROWTH	1.00
SIZE	1.23
LEV	1.14
CF	1.01
Mean VIF	1.06

Notes: Variance Inflation Factors (VIFs) are reported to assess potential multicollinearity among the explanatory variables. All VIF values are well below the conventional threshold of 10, with a mean VIF of 1.06, indicating that multicollinearity is not a concern in the regression models.

Table 3. Correlation matrix

Variable	FA_INV1	FIN_INV1	BSIZE	BIND	DUAL	OWNC	INST	CSR_DISC	TOQ	GROWTH	SIZE	LEV	CF
FA_INV1	1.000												
FIN_INV1	-0.491***	1.000											
BSIZE	0.171***	-0.131**	1.000										
BIND	0.112***	-0.121***	0.153***	1.000									
DUAL	-0.127***	0.123***	0.108***	0.153***	1.000								
OWNC	-0.122***	0.106***	0.102***	-0.138***	0.148***	1.000							
INST	0.104***	-0.113**	-0.114**	-0.111***	0.126***	0.105***	1.000						
CSR_DISC	0.157***	-0.115**	-0.177***	0.124***	0.121***	0.127***	-0.163***	1.000					
TOQ	0.139***	0.118***	-0.119**	-0.104***	-0.116***	-0.105***	-0.132***	-0.159***	1.000				
GROWTH	0.111***	0.108***	0.114***	-0.101***	0.109***	-0.101***	0.118***	0.114***	0.024	1.000			
SIZE	0.174***	0.104***	0.122***	0.102***	-0.188***	0.177***	0.143***	-0.106***	-0.237***	-0.017	1.000		
LEV	0.161***	0.148***	0.175***	0.135**	-0.107***	0.123***	-0.112***	-0.168***	-0.011	-0.038	0.329***	1.0	
CF	0.061***	0.042*	0.149***	-0.101***	-0.105***	-0.113***	-0.104***	0.162***	0.006	-0.015	0.003	0.123***	1.0

Notes: Pearson correlation coefficients are reported. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively.

3.2. Fixed-effects results

Table 5 reports the fixed-effects estimates for the main investment measures. The baseline models reveal a clear two-direction pattern across the two investment types. For fixed-asset investment, board size, board independence, and institutional ownership carry positive coefficients, whereas chief executive officer duality and ownership concentration are negative. For financial investment, the pattern is reversed: board size, board independence and institutional owner-

ship are negatively associated with financial investment, while chief executive officer duality and ownership concentration are positive. These findings indicate that stronger internal monitoring is associated with a greater orientation toward long-term productive investment, whereas concentration of managerial or controlling-shareholder power is associated with greater allocation toward financial assets. CSR disclosure appears to increase overall investment capacity and transparency, thereby supporting both investment categories. However,

Table 5. Fixed-effects regression results

Panel A. Main effects and moderation estimates				
Variable	Model 1 FA_INV1	Model 2 FA_INV1 + CSR Interactions	Model 3 FIN_INV1	Model 4 FIN_INV1 + CSR Interactions
BSIZE	0.172** (0.081)	0.186** (0.084)	-0.122* (0.071)	-0.181** (0.079)
BIND	0.227*** (0.074)	0.276*** (0.092)	-0.271*** (0.089)	-0.310*** (0.103)
DUAL	-0.259** (0.118)	-0.329*** (0.121)	0.242*** (0.078)	0.235*** (0.081)
OWNC	-0.326*** (0.095)	-0.399*** (0.118)	0.235*** (0.064)	0.177** (0.072)
INST	0.132* (0.073)	0.158** (0.077)	-0.128* (0.072)	-0.147*** (0.053)
CSR_DISC	0.189** (0.081)	0.232*** (0.076)	0.149** (0.069)	0.177** (0.074)
TOQ	0.135** (0.061)	0.138** (0.062)	0.130** (0.057)	0.124** (0.060)
GROWTH	0.246*** (0.082)	0.258*** (0.084)	0.230*** (0.077)	0.228*** (0.078)
SIZE	0.135** (0.061)	0.149** (0.064)	0.145*** (0.052)	0.151*** (0.054)
LEV	0.465** (0.214)	0.648*** (0.229)	0.556*** (0.183)	0.477*** (0.176)
CF	0.485*** (0.109)	0.489*** (0.110)	0.415*** (0.078)	0.405*** (0.073)
BSIZE × CSR_DISC		0.370*** (0.106)		-0.315*** (0.095)
BIND × CSR_DISC		0.245*** (0.082)		-0.331*** (0.093)
DUAL × CSR_DISC		-0.135* (0.078)		0.270*** (0.087)
OWNC × CSR_DISC		-0.166*** (0.052)		0.171*** (0.048)
INST × CSR_DISC		0.163* (0.073)		-0.279*** (0.089)
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Clustered SE	Yes	Yes	Yes	Yes
N	2,848	2,848	2,848	2,848
R ²	0.435	0.490	0.466	0.498

Table 5 (cont.). Fixed-effects regression results

Panel B. Marginal effects of governance variables when CSR_DISC = 1		
Variable	FA_INV1 (Model 2)	FIN_INV1 (Model 4)
BSize	0.556***	−0.496***
BIND	0.521***	−0.641***
DUAL	−0.464***	0.505***
OWNC	−0.565***	0.348**
INST	0.321***	−0.426***

Notes: This table reports firm- and year-fixed-effects regression estimates. Standard errors clustered at the firm level are reported in parentheses. Panel B reports marginal effects calculated as the sum of the direct governance coefficient and the corresponding interaction coefficient. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

the interaction results indicate that CSR disclosure changes the allocation pattern by strengthening the influence of governance mechanisms on the distribution of resources between fixed and financial investments.

More specifically, in the fixed-effects model for fixed-asset investment, board size has a positive coefficient of 0.172, board independence 0.227, and institutional ownership 0.132, while chief executive officer duality and ownership concentration have coefficients of −0.259 and −0.326, respectively. In the corresponding financial-investment model, board size, board independence and institutional ownership have coefficients of −0.122, −0.271 and −0.128, while chief executive officer duality and ownership concentration are positive at 0.242 and 0.235. The direction of these estimates suggests that governance quality affects not only the amount of investment but also its allocation structure. In other words, governance mechanisms appear to influence whether firms commit capital to long-term productive assets or divert resources toward more flexible financial holdings.

Among the control variables, Tobin's Q, firm growth, firm size, leverage and operating cash flow are generally positively associated with both investment types, although their magnitudes differ across specifications. This result is consistent with the view that firms with stronger growth opportunities, better internal cash generation, and greater scale possess broader investment capacity. At the same time, the stronger coefficient on operating cash flow suggests that internal liquidity remains an important determinant of corporate investment in the Vietnamese market,

where external financing conditions may still be imperfect.

3.3. Moderating role of corporate social responsibility disclosure

The interaction models show that corporate social responsibility disclosure significantly moderates the effect of governance on investment decisions. For fixed-asset investment, the interaction terms between disclosure and board size, board independence, and institutional ownership are positive and significant, with coefficients of 0.370, 0.245, and 0.163, respectively. This indicates that disclosure strengthens the capacity of monitoring-oriented governance mechanisms to encourage long-term productive investment. By contrast, for financial investment, the same interaction terms are negative and significant, with coefficients of −0.315, −0.331, and −0.279, suggesting that disclosure strengthens the restraining effect of governance on financial asset allocation.

The interaction terms associated with chief executive officer duality and ownership concentration follow the opposite pattern. In the fixed-asset investment model, the coefficients of DUAL × CSR_DISC and OWNC × CSR_DISC are −0.135 and −0.166, whereas in the financial-investment model they are 0.270 and 0.171. These signs imply that corporate social responsibility disclosure does not neutralize the unfavorable influence of power-concentrating governance mechanisms. Rather, it makes the allocation pattern more pronounced. Firms characterized by dual leadership or concentrated ownership continue to allocate less to fixed assets and more

to financial assets, and this difference becomes stronger when they disclose social responsibility information.

The marginal effects reported in Panel B of Table 5 provide additional support for this moderating interpretation. For firms that disclose corporate social responsibility information, the marginal effect of board size on fixed-asset investment rises to 0.556, and the corresponding effect on financial investment falls to -0.496 . The same pattern appears for board independence, with marginal effects of 0.521 on fixed-asset investment and -0.641 on financial investment, and for institutional ownership, with 0.321 and -0.426 , respectively. Conversely, chief executive officer's duality and ownership concentration continue to reduce fixed-asset investment and increase financial investment among disclosing firms. These results indicate that disclosure sharpens the governance-related differentiation in capital allocation and is therefore an economically meaningful moderator rather than a merely symbolic attribute.

3.4. Endogeneity-robust results

To assess whether the fixed-effects findings are sensitive to endogeneity, the study re-estimates the models using fixed-effects instrumental-variable estimation and dynamic System Generalized Method of Moments. The fixed-effects instrumental-variable results, reported in Table 6, remain broadly consistent with the baseline estimates. Board size, board independence, and institutional ownership continue to be positively associated with fixed-asset investment and negatively associated with financial investment, while ownership concentration retains the opposite sign. The interaction terms with corporate social responsibility disclosure also remain significant and direction-

ally unchanged. This consistency suggests that the core findings are unlikely to be driven solely by reverse causality or omitted firm characteristics.

Table 6. Fixed-effects instrumental variable (FE-IV) results

Variable	FA_INV (2SLS-FE)	FIN_INV (2SLS-FE)
BSIZE	0.216*** (0.080)	-0.273*** (0.017)
BIND	0.195*** (0.019)	-0.224*** (0.036)
DUAL	-0.108 (0.125)	0.142 (0.211)
OWNC	-0.291*** (0.077)	0.312*** (0.090)
INST	0.328*** (0.099)	-0.307*** (0.087)
CSR_DISC	0.246*** (0.090)	0.239** (0.097)
BSIZE × CSR_DISC	0.311*** (0.082)	-0.293*** (0.085)
BIND × CSR_DISC	0.282*** (0.071)	-0.275*** (0.078)
DUAL × CSR_DISC	-0.196*** (0.064)	0.204*** (0.067)
OWNC × CSR_DISC	-0.241*** (0.036)	0.227*** (0.078)
INST × CSR_DISC	0.303*** (0.067)	-0.291*** (0.056)
Controls	Yes	Yes
Firm FE / Year FE	Yes / Yes	Yes / Yes
Cluster SE (firm)	Yes	Yes
N Cross-sections	356	356
N	2,492	2,492

Notes: Diagnostic tests are reported in Table 7. Standard errors are reported in parentheses. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively.

The diagnostic tests further justify the treatment of endogeneity. The Durbin-Wu-Hausman test (Table 7) rejects the null hypothesis of exogeneity for the governance block in both investment

Table 7. Endogeneity tests

Test / Indicator	FA_INV1 (2SLS-FE)	FIN_INV1 (2SLS-FE)	Interpretation
Kleibergen-Paap rk Wald F (first-stage F-statistic)	F = 12.00	F = 13.00	$F \geq 10$ indicates sufficiently strong instruments.
Durbin-Wu-Hausman (DWH) test (p-value)	0.000	0.000	Reject the null of exogeneity → the CG block is endogenous.
Hansen test (P-value)	0.312	0.325	$p > 0.10$: do not reject instrument validity (overidentifying restrictions)
Number of instruments	48	48	Acceptable

Notes: Results confirm endogeneity of governance variables.

models, with p-values of 0.000. At the same time, the Kleibergen-Paap Wald F-statistics of 12 and 13 indicate that the instruments are sufficiently relevant, and the Hansen p-values of 0.312 and 0.325 do not reject instrument validity. These results support the use of instrumental-variable estimation and confirm that governance and its interaction terms should not be treated as strictly exogenous in this setting.

The dynamic System Generalized Method of Moments estimates reported in Table 8 provide additional evidence. The lagged dependent variable is positive and significant in both models, with coefficients around 0.40, confirming that investment is persistent over time. More importantly, the signs and significance of the main governance variables and interaction terms remain consistent with both the fixed-effects and fixed-effects instrumental-variable results. The Arellano-Bond AR(2) tests do not indicate second-order serial correlation, and the Hansen and Difference-in-Hansen tests support the validity of the instrument set. The number of instruments also remains well below the number of firms, reducing the risk of instrument proliferation. Taken together, these results indicate that the main findings are robust to dynamic endogeneity treatment.

Table 8. System GMM results

Variable	Model 1 FA_INV1	Model 2 FIN_INV1
INV_L1	0.402*** (0.078)	0.397*** (0.076)
BSIZE	0.355*** (0.056)	−0.337*** (0.045)
BIND	0.314*** (0.035)	−0.322*** (0.038)
DUAL	−0.393*** (0.139)	0.387*** (0.135)
OWNC	−0.285*** (0.023)	0.276*** (0.068)
INST	0.283*** (0.072)	−0.298*** (0.081)
CSR_DISC	0.294*** (0.026)	0.271*** (0.065)
BSIZE × CSR_DISC	0.389*** (0.067)	−0.352*** (0.051)
BIND × CSR_DISC	0.302*** (0.030)	−0.344*** (0.048)

Variable	Model 1 FA_INV1	Model 2 FIN_INV1
DUAL × CSR_DISC	−0.275*** (0.067)	0.298*** (0.081)
OWNC × CSR_DISC	−0.283*** (0.022)	0.292*** (0.026)
INST × CSR_DISC	0.260*** (0.058)	−0.297*** (0.081)
TOQ	0.315*** (0.091)	0.309*** (0.088)
GROWTH	0.284** (0.122)	0.301** (0.135)
SIZE	0.251*** (0.079)	0.242*** (0.072)
LEV	0.377*** (0.194)	0.362*** (0.182)
CF	0.350*** (0.113)	0.346*** (0.110)
Controls	Yes	Yes
Year FE	Yes	Yes
Arellano-Bond test AR(1) (P-value)	0.000	0.000
Arellano-Bond test AR(2) (P-value)	0.319	0.312
Hansen test (P-value)	0.325	0.327
Difference- Hansen test (P-value)	0.338	0.342
Instruments	47	48
Instruments/Firms	0.132	0.135
N Cross-sections	356	356
Wald test (P-value)	0.000	0.000

Notes: No second-order autocorrelation detected. Standard errors are reported in parentheses. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively.

3.5. Robustness checks

The robustness analysis replaces the main investment proxies with alternative measures, namely FA_INV2 and FIN_INV2. The estimates reported in Table 9 confirm that the principal findings are stable. Board size, board independence, and institutional ownership remain positively associated with fixed-asset investment and negatively associated with financial investment, while chief executive officer duality and ownership concentration continue to display the opposite pattern. The interaction terms between governance variables and corporate social responsibility disclosure also preserve their original signs. This stability across alternative definitions suggests that the results are not an artifact of a particular investment proxy.

Table 9. Robustness check (alternative measures)

Variable	Model 1 FA_INV2 + CSR × CG	Model 2 FIN_INV2 + CSR × CG
BSIZE	0.213*** (0.066)	−0.204*** (0.059)
BIND	0.150*** (0.017)	−0.179*** (0.040)
DUAL	−0.129** (0.062)	0.323** (0.152)
OWNC	−0.189*** (0.047)	0.206*** (0.061)
INST	0.299*** (0.082)	−0.159** (0.077)
CSR_DISC	0.143*** (0.012)	0.217*** (0.069)
TOQ	0.316*** (0.092)	0.117** (0.051)
GROWTH	0.133** (0.061)	0.163** (0.079)
SIZE	0.125 (0.078)	0.137 (0.086)
LEV	0.106* (0.063)	0.276** (0.115)
CF	0.484*** (0.108)	0.386*** (0.066)
BSIZE × CSR_DISC	0.387*** (0.135)	−0.291*** (0.077)
BIND × CSR_DISC	0.416*** (0.079)	−0.482*** (0.107)
DUAL × CSR_DISC	−0.197*** (0.054)	0.177*** (0.038)
OWNC × CSR_DISC	−0.109** (0.046)	0.272*** (0.065)
INST × CSR_DISC	0.324** (0.151)	−0.157*** (0.022)
N	2,837	2,835
R ²	0.313	0.306

Notes: Results remain consistent across alternative investment proxies. Standard errors are reported in parentheses. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively.

Overall, the empirical evidence consistently supports two conclusions. First, corporate governance affects capital allocation differently across

investment types. Stronger monitoring-oriented governance is associated with a shift toward fixed-asset investment and away from financial investment, whereas power-concentrating governance mechanisms are associated with the reverse pattern. Second, corporate social responsibility disclosure acts as a conditioning factor that changes the strength of these governance effects. The results therefore support the view that disclosure improves the effectiveness of governance in shaping firms' investment orientation.

4. DISCUSSION

The findings indicate that corporate governance mechanisms influence not only the overall level of investment but also the allocation of resources between fixed assets and financial assets. Board size, board independence, and institutional ownership are associated with higher fixed-asset investment and lower financial investment, suggesting that monitoring-oriented governance mechanisms encourage firms to commit resources to long-term productive capacity. This result is consistent with agency theory and broadly supports Guariglia and Yang (2016) that effective governance can reduce managerial discretion and improve capital allocation decisions.

The negative effects of CEO duality and ownership concentration on fixed-asset investment provide further evidence that concentrated decision-making power may weaken internal monitoring. In the Vietnamese context, this result is particularly relevant because ownership concentration remains common among listed firms and controlling shareholders may have considerable influence over strategic investment choices. Such governance characteristics may increase the tendency to hold more flexible financial assets rather than commit resources to irreversible productive investments.

Table 10. Hypotheses testing results

Hypothesis	Expected relationship	Result
H1a	BSIZE → FA_INV (+), FIN_INV (−)	Supported
H1b	BIND → FA_INV (+), FIN_INV (−)	Supported
H1c	INST → FA_INV (+), FIN_INV (−)	Supported
H2a	DUAL → FA_INV (−), FIN_INV (+)	Supported
H2b	OWNC → FA_INV (−), FIN_INV (+)	Supported
H3a	CSR moderates CG-investment links	Supported
H3b	CSR moderates CG-investment links	Supported
H3c	CSR moderates CG-investment links	Supported
H3d	CSR moderates CG-investment links	Supported

The moderating role of CSR disclosure suggests that transparency and stakeholder scrutiny shape the effectiveness of governance mechanisms. CSR disclosure strengthens the positive role of monitoring-oriented governance in promoting fixed-asset investment and reinforces its negative association with financial investment. However, CSR disclosure does not eliminate the adverse effects of CEO duality and ownership concentration. This implies that disclosure works as a complementary governance mechanism, but it cannot substitute for effective board oversight and balanced ownership structures.

Several alternative interpretations should also be acknowledged. First, financial investment by non-financial firms is not necessarily inefficient; it may reflect liquidity management, precautionary savings, or temporary investment of idle cash. Second, CSR disclosure is measured as a binary indicator, which captures the presence rather than the quality or credibility of disclosure. Third, although the study applies fixed effects, instrumental-variable estimation, and System GMM, endogeneity cannot be completely ruled out because governance, disclosure, and investment policies may be jointly determined by unobserved managerial quality or firm strategy.

CONCLUSION

This study examines how corporate governance influences fixed-asset and financial investment in Vietnamese listed non-financial firms and whether corporate social responsibility disclosure moderates these relationships. The findings reveal a clear allocation pattern: monitoring-oriented governance mechanisms, including board size, board independence, and institutional ownership, are associated with higher fixed-asset investment and lower financial investment, whereas chief executive duality and ownership concentration exhibit the opposite effect. These results indicate that governance quality affects not only the level but also the composition of corporate investment.

The analysis further shows that corporate social responsibility disclosure strengthens these relationships, reinforcing the role of governance in directing firms toward more long-term and productive investment. However, disclosure does not offset the adverse effects of concentrated power, suggesting that its effectiveness depends on the underlying governance structure.

This study contributes to corporate governance literature in three ways. First, it distinguishes between real and financial investment rather than treating corporate investment as a single construct. Second, it introduces CSR disclosure as a moderating mechanism linking governance and investment allocation. Third, it provides evidence from Vietnam, an emerging market characterized by concentrated ownership and evolving governance institutions.

From a practical perspective, improving board effectiveness and institutional monitoring, together with promoting substantive corporate social responsibility disclosure, may enhance capital allocation efficiency. The study is limited to using a binary disclosure measure and the focus on listed non-financial firms. Future research may examine disclosure quality and explore heterogeneity across industries and ownership structures.

AUTHOR CONTRIBUTIONS

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