

Determinants of agency cost: Evidence from listed real estate firms on the Vietnam Stock Exchange

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ABSTRACT

This study investigates the impact of corporate governance factors on agency problems in 42 listed real estate companies on the Vietnam stock exchange from 2013 to 2023, utilizing 462 observations and the Feasible Generalized Least Squares (FGLS) model. Despite growing attention to agency problems globally, research on Vietnam's real estate sector remains limited, particularly regarding the role of governance mechanisms in mitigating these issues. The findings indicate that a higher proportion of board members involved in managerial roles, cash dividend policy, and the total debt-to-total assets ratio helps alleviate agency problems within firms. Conversely, board gender diversity presents challenges to decision-making efficiency, potentially leading to increased agency conflicts. Additionally, the analysis suggests that an optimal board size of 04 to 06 members enhances monitoring effectiveness, thereby strengthening corporate governance. These insights contribute to the understanding of agency costs in Vietnam's real estate sector and offer valuable implications for policymakers and practitioners seeking to refine governance structures and improve corporate oversight.

1. Introduction

Agency costs are the expenses incurred due to the conflict of interest between principals and agents within an organization. The issue of agency cost is one of the fundamental topics in economics because it directly impacts the profitability, financial stability, and overall performance of a business. Agency costs arise as a result of the separation of ownership and control, where managers, acting as agents, may not always act in the best interest of the owners. Especially as the economy grows and develops, this separation becomes even more profound due to increasing specialization and the complexities of managing larger organizations. If not properly managed, agency costs can negatively impact the operational efficiency and decision-making processes of a business (Le et al., 2019; Wang, 2010). Therefore, researching measures to manage agency costs is crucial, with the aim of minimizing these costs within the company, enhancing organizational transparency, aligning the goals of managers and owners, and maximizing the benefits derived from hiring external managers. This ensures the long-term sustainability and competitiveness of the business in dynamic market environments.

The real estate industry is a key driver of economic growth in Vietnam, contributing significantly to the country's overall development. As reported by the General Statistics Office, real estate activities represented 3.46% of Vietnam's GDP in 2022, with that share rising to 3.56% in 2023 (General Statistics Office [GSO], 2024). While the sector holds considerable potential for continued growth, it has also faced several challenges due to the government's tightening of legal requirements and increased inspections of construction projects. Therefore, during this challenging period, it is essential to study the factors that can improve management efficiency and minimize losses for the real estate sector. However, despite its importance, research on agency costs in Vietnam's real estate sector remains limited. Most existing studies focus on developed markets, leaving a gap in understanding how agency costs are influenced by factors unique to Vietnam's economic and regulatory environment. Particularly, issues such as state ownership dominance, weak corporate governance transparency, and evolving financial policies pose unique challenges that merit further investigation. This study aims to fill this gap by examining the determinants of agency costs in listed real estate firms, providing insights that can enhance governance practices and financial decision-making in the sector.

Agency costs in Vietnam's real estate sector are particularly severe due to the industry's capital-intensive nature, long project development timelines, and dependence on land management policies. Many real estate firms have state ownership or close ties to government authorities, leading to a risk that managers prioritize political or group interests over shareholder value maximization, resulting in asset misallocation and reduced business efficiency. Additionally, transparency in the sector remains weak, as many companies fail to disclose financial information adequately or conceal high-risk loans and investments, making it difficult for investors to assess the true financial health of firms. The concentrated ownership structure further exacerbates conflicts of interest, as controlling shareholders may engage in related-party transactions or asset tunneling at the expense of minority shareholders. Given these challenges, studying the factors influencing agency costs in Vietnam's real estate sector is crucial for improving corporate governance, enhancing investment transparency, and ensuring more efficient capital allocation, ultimately contributing to the industry's sustainable growth.

This paper aims to identify the determinants of agency costs in firms, focusing on the case of listed real estate companies on the Vietnam Stock Exchange. Using the Feasible Generalized Least Squares (FGLS) model with a sample of 42 listed real estate companies from 2013 to 2023, comprising 462 observations, the study reveals several important findings. The percentage of board members in managerial positions, cash dividend policy, and the total debt-to-total assets ratio are identified as factors that help mitigate agency problems within firms. This approach provides a comprehensive examination of governance mechanisms and their influence on agency costs in Vietnam's real estate sector.

The structure of this paper is organized as follows: Section 2 presents the literature review. Section 3 outlines the methodology, including research hypotheses, model, and variables, and data. Section 4 provides the results, starting with descriptive analysis, followed by regression results, and a discussion of the impact of board size on agency costs. Finally, Section 5 concludes the paper with key findings and implications.

2. Literature review and research hypothesis

2.1. Literature review

There have been numerous studies on the factors influencing agency costs globally, particularly in developed countries, which have proposed measures to enhance corporate governance. Foreign studies are quite diverse, focusing on four main groups of factors: (i) characteristics of the board of directors (Davidson et al., 2006; Siddiqui et al., 2013, Songini & Gnan, 2015); (ii) characteristics of managers (Mcknight & Weir, 2009); (iii) ownership structure (Fleming et al., 2005; Singh & Davidson III, 2003); and (iv) other factors (Jurkus et al., 2011; Schäuble, 2019).

Smith (1937) was one of the first authors to recognize the issue of the principal-agent problem due to the separation of ownership and control in businesses. He argued that company executives are merely managers of other people's money, rather than their own resources. This difference in interests can lead to neglect and waste, whether to a greater or lesser extent. Although not fully developed into a theory, this observation laid the groundwork for the later formulation of principal-agent theory. Jensen and Meckling (1976) later developed it into a theory, stating that the principal-agent problem between owners and managers in firms primarily arises from the differences in control and management rights. Specifically, business owners typically do not directly participate in the day-to-day operations of the business; instead, they hire managers and delegate the responsibility for running the business to them. The ultimate goal of the owners is to maximize the business's performance, thereby maximizing the value for the shareholders.

However, the traditional agency theory has since been extended in various ways to account for more complex corporate structures, diverse governance mechanisms, and differing institutional environments. In particular, recent studies have explored how internal governance mechanisms (e.g., board independence, board composition, ownership concentration) (Burkart & Panunzi, 2006; Jurkus et al., 2011; Rashid, 2015), external market pressures (Baggs & De Bettignies, 2007), and regulatory quality influence agency costs. Moreover, agency costs also arise from relationships beyond the classic owner-manager dynamic, such as between owners and debtholders (Anderson et al., 2003) or across hierarchical levels of management (Gogineni et al., 2022). These issues are common in modern corporate governance, especially in companies operating in emerging markets like Vietnam, where institutional weaknesses, concentrated ownership, limited investor protection, and complex internal hierarchies create unique conditions for agency conflicts.

In recent years, as businesses have become more complex, researchers have looked for other ways to explain how companies are managed, beyond the traditional agency theory. Alongside its extensions, some alternative theories have also been proposed to better understand how managers behave and how governance affects firm performance. For example, *stewardship theory* argues that managers are motivated by the success of the organization, not just by personal gain, which can reduce agency problems. Meanwhile, *resource dependence theory* focuses on how the structure and connections of the board of directors help the company access important resources and improve performance. These theories offer different viewpoints from agency theory and can be especially useful when studying companies in emerging markets, where ownership is often concentrated and formal institutions may be weaker.

Some examples of agency problems in firms include managers investing in high-risk projects to generate short-term personal gains or ignoring projects with the highest Net Present Value (NPV) in favor of projects with lower NPV but greater personal benefits to the manager, thus exposing the owners to risks. Another example is the misuse of company funds to secure the manager's position and power in the firm, such as increasing salaries, bonuses, and benefits, or spending on personal interests. Panda and Leepsa (2017) summarized several main causes of agency problems in firms, including the separation between management and ownership, information asymmetry, and differences in the length of commitment to the firm between owners and managers.

There are no official measurements of agency cost. However, recent scholars have proposed several ways to measure agency problems in firms (Ang et al., 2000; McKnight & Weir, 2009; Mustapha & Ahmad, 2011; Singh & Davidson III, 2003; Schäuble, 2019; Wang, 2010). Among them, the most commonly used indicators are the inverse ratio of total asset efficiency (Ang et al., 2000; Siddiqui et al., 2013; Singh & Davidson III, 2003) and the selling, general, and administrative expense ratio (Fleming et al., 2005; Florackis, 2008; Singh & Davidson III, 2003).

For the first measurement, the inverse of the asset turnover ratio, this measure is used to assess the effectiveness of managers in utilizing the company's assets. A high asset utilization ratio indicates that the total assets are generating significant economic benefits for the business, serving the interests of the owners. In contrast, a low ratio suggests that management is using assets inefficiently, which may potentially destroy the company's value. This could stem from causes such as making investments that do not provide good economic returns, a lack of effort in business operations, or spending on personal benefits by purchasing non-profitable and unnecessary assets, such as office decorations, company furniture, or vehicles for personal use.

For the second measurement, the selling, general, and administrative expense ratio, if this ratio is abnormally high, it could be because managers have exploited their authority to record their personal expenses as company costs. For example, expenses for the manager's trip and meals could be booked as part of the company's management expenses. In addition, Singh and Davidson (2003) suggest that it could also indicate that managers may use advertising or selling expenses to "disguise" their personal spending needs.

Research on agency costs in Vietnam has gained increasing attention in recent years, although the number of studies remains limited. Prior studies have primarily focused on a few key aspects of agency costs. First, the negative impact of agency costs on firm performance has been well documented (Le et al., 2019; Nguyen et al., 2022), aligning with agency theory, which suggests that higher agency costs reduce firm value. Second, the role of corporate governance in mitigating agency costs has been examined by Nguyen et al. (2020), who found that effective governance mechanisms significantly influence agency costs. However, their study does not provide a detailed analysis of how these mechanisms function within the real estate sector.

In the Vietnamese real estate industry, several notable studies have explored related topics. Capital structure has been identified as a determinant of firm performance in real estate firms (Le et al., 2025; Nguyen et al., 2023), yet its direct relationship with agency costs has not been thoroughly examined. Additionally, research on corporate liquidity in the real estate sector has emphasized the role of profitability and capital expenditure in

determining cash holdings (Truong & Phan, 2016), but the interplay between liquidity management and agency costs remains an open question. Other studies have explored the relationship between ownership structure and earnings management (Nguyen et al., 2020), indicating that state ownership may exacerbate earnings management, whereas managerial ownership can mitigate it.

Despite these valuable insights, a significant research gap remains in understanding the key determinants of agency costs in Vietnam's listed real estate firms. This study aims to fill this gap by examining the primary drivers of agency costs in the real estate sector, providing empirical evidence that can contribute to the development of corporate governance practices and financial policies to enhance firm performance.

2.2. Research hypotheses

One of the functions of the board of directors is to supervise the managers. Therefore, board members can influence the effectiveness of managerial supervision, which in turn affects agency costs. However, the impact of board size on agency costs remains controversial. On the one hand, several studies have provided evidence of a positive relationship between board size and agency costs. Florackis (2008), with a sample of listed UK companies, found that the larger the board, the more severe the agency problems firms have to face. Other studies in developing countries also found that larger boards are associated with higher agency costs (Garanina & Kaikova, 2016; Siddiqui et al., 2013; Yegon et al., 2014). This supports the view that the larger the board, the more complex the governance structure becomes, making communication and decision-making more difficult, thus reducing monitoring effectiveness (Lipton & Lorsch, 1992). Additionally, Songini and Gnan (2015) argue that the more members there are on the board, the more likely the "free rider" problem will occur, where members assume that others will carry out the management duties, leading them to lack motivation to fulfill their own governance responsibilities.

In contrast, there is also evidence that a larger board size can help reduce agency issues. Singh and Davidson III (2003) were one of the first to find that board size can limit the agency problem and that the relationship is statistically significant at the 5% level. Several scholars found similar results (Hastori et al., 2015; McKnight & Weir, 2009). The reason is that each board member has their own strengths, weaknesses, and skills, so a larger board can better optimize these strengths, minimize weaknesses in management, and enhance governance effectiveness (Abor & Fiador, 2013; Klein, 2002). Therefore, we set the hypothesis as follows:

H1: Board size has a positive effect on agency costs

Jurkus et al. (2011), in their study of listed firms in the UK, found that the presence of women on the board can enhance the monitoring function of the board and reduce agency problems. Moreover, the paper also found that for firms with poor governance systems, gender diversity on the board could be particularly beneficial in management and operations. This evidence supports the view that women tend to be more meticulous, disciplined, and careful in management tasks, and as a result, they supervise the behavior of managers more effectively and limit opportunistic behaviors (Adams & Ferreira, 2009; Huse & Solberg, 2006).

However, Garanina and Kaikova (2016) in the Norwegian market found that women on the board can reduce the monitoring function and lead to higher agency costs. This

evidence aligns with the opinion of Wellalage and Locke (2013), who argue that women often pose more critical questions, which can lead to conflicts within the board of directors. Such conflicts could slow down decision-making and decrease effectiveness, thus exacerbating agency problems. In this paper, we set the hypothesis as follows:

H2: Gender diversity on the board has a positive impact on agency costs

The agency cost arises from the problem of asymmetric information, where managers, who are directly involved in the daily operations of the firm, possess more information than the owners, potentially leading to opportunistic behavior. Board members who also hold executive roles are in a unique position to bridge this information gap, thereby mitigating agency problems. Raheja (2005) highlights that such dual-role individuals can improve internal monitoring, while Mustapha and Ahmad (2011) provide empirical evidence that managerial board participation helps limit agency conflicts. Although McKnight and Weir (2009) raise concerns that combining board and managerial roles may result in excessive power concentration, potentially undermining board independence, the overall effect may still be beneficial. This relationship is particularly relevant in the real estate sector of emerging markets, where projects involve long development cycles, substantial sunk costs, and are often exposed to opaque regulatory environments. These features intensify the information asymmetry between managers and outside investors. Therefore, having executive board members who possess both strategic oversight and operational knowledge-can help reduce agency costs by improving transparency and decision alignment in complex investment projects.

H3: Executive board members have a negative impact on agency costs

There is considerable evidence suggesting that debt financing can help reduce agency costs within firms (Ang et al., 2000; Fleming et al., 2005; Singh & Davidson III, 2003; Siddiqui et al., 2013). Fleming et al. (2005) argue that financial leverage benefits firms in at least three ways: First, it encourages owners to become more actively involved in monitoring the use of capital. Second, the obligation to pay debt helps reduce excess cash flow within the firm, thereby limiting unnecessary or non-productive investment projects. Third, issuing debt is more favorable than issuing equity because it avoids diluting the ownership stake of managers. Moreover, as firms take on more debt, the risk of default increases, which places managers at risk of losing their jobs. This situation motivates managers to limit investments in unnecessary projects and focus on maximizing operational efficiency (Khan et al., 2012). Based on this, the study hypothesizes as follows:

H4: Leverage has a negative impact on agency costs

Rozeff (1982) argues that dividend payouts serve as a mechanism to reduce agency costs, similar to the role of debt financing. Paying cash dividends limits the excess cash within the firm, thereby reducing the potential for managers to misuse funds for personal activities. Additionally, when firms pay cash dividends, they may face a shortage of internal funds to support business operations, prompting them to consider external financing options. This process can help reduce information asymmetry between managers and shareholders. Hastori et al. (2015) also highlight that dividend payouts are an effective way to mitigate the problem of free cash flow, thus limiting the resources available for managers to pursue personal objectives. Based on these insights, the study proposes the following hypothesis:

H5: Cash dividends have a negative impact on agency costs

3. Methodology

3.1. Description of variables

The summary of variable measurement is presented in the following table:

Table 1

Variable Measurement

Variable	Abbreviation	Measurement	Reference
<i>Dependent variable</i>			
Agency cost	ATR	Revenue/Total assets	Ang et al. (2000), Singh and Davidson III (2003)
	SGA	Total expense for selling goods and administration/Revenue	Ang et al. (2000), Florackis (2008)
<i>Independent variable</i>			
Board size	BSIZE	Total number of members on board	Singh and Davidson III (2003) Florackis (2008)
Gender diversity on the board	PWOM	Total number of women members on board/Board size	Jurkus et al. (2011), Wellalage and Locke (2013)
Executive board member	PEXD	Total number of board members in the position of managers/Board size	McKnight and Weir (2009), Mustapha and Ahmad (2011)
Leverage	LEV	Total debt/Total asset	Fleming et al. (2005)
Cash dividend	DIV	Cash dividend per share	Hastori et al. (2015)

Note. Own by research

3.2. Empirical model

To empirically test the proposed hypotheses, the following regression models are specified:

$$\begin{aligned}
 AC_{it} &= \beta_1 + \beta_2 BSIZE_{it} + \beta_3 PWOM_{it} + \beta_4 PEXD_{it} + \beta_5 LEV_{it} + \beta_6 DIV_{it} + \varepsilon_{it} \\
 SGA_{it} &= \beta_1 + \beta_2 BSIZE_{it} + \beta_3 PWOM_{it} + \beta_4 PEXD_{it} + \beta_5 LEV_{it} + \beta_6 DIV_{it} + \varepsilon_{it}
 \end{aligned}
 \tag{1}$$

Where:

i represents firm i in the sample.

t represents year t in the study period.

ε_{it} is the error term.

3.3. Data

The research focuses on selecting publicly listed real estate companies on the Ho Chi Minh Stock Exchange (HOSE) and the Hanoi Stock Exchange (HNX), utilizing data from 2013 to 2023. Data was sourced from FiinGroup, a prominent provider of financial data and

business insights, and followed by a data cleaning process, where companies lacking adequate disclosure of essential information for the study were identified and excluded. Firms with missing or inconsistent data for key variables over the observation period were removed to ensure the reliability of the analysis. As a result, a total of 42 companies were deemed suitable for analysis during the 2013 - 2023 period. Although the sample size is limited, it represents the full population of listed real estate firms with sufficient and reliable data, reflecting the actual structure of the market.

The selected time frame captures a decade of significant regulatory and market developments in Vietnam. In particular, this period witnessed major corporate governance reforms aimed at improving transparency and aligned with key economic and political cycles in the country, especially following the 11th National Congress of the Communist Party (held in 2011), which emphasized institutional reform, sustainable development, and the restructuring of state-owned enterprises. Combined with the real estate market’s rapid expansion and volatility during this decade, these contextual factors make the selected period particularly relevant for analyzing agency costs and corporate governance dynamics in Vietnam’s real estate sector.

4. Result and discussion

4.1. Descriptive analysis

Table 2

Statistic Analysis

	N	Mean	p25	p75	p90	Min	Max	Std. Dev.
ATR	462	0.231	0.118	0.314	0.449	0.002	0.765	0.159
SGA	462	0.174	0.074	0.192	0.357	-0.008	1.324	0.198
BSIZE	462	6.496	5.000	7.000	9.000	4.000	11.00	1.634
PWOM	462	0.180	0.000	0.286	0.400	0.000	0.600	0.157
PEXD	462	0.305	0.167	0.400	0.500	0.000	0.800	0.169
LEV	462	0.152	0.034	0.240	0.334	0.000	0.464	0.125
DIV	462	600.0	0.000	1,000	1,900	0.000	4,000	904.0

Note. Prepared by authors

The descriptive analysis of variables used in this paper is presented in Table 2. For the dependent variable, the mean of the asset turnover ratio of firms in the sample is 0.231, with the maximum value is 0.765 and minimum is 0.002. This indicates that on average, for every one VND of asset, the company can generate VND 0.231 of sales. For the SG&A variable, the average value is 0.18, with the highest value being 1.324 and the lowest value being -0.008. This ratio illustrates that, on average, the total expense of selling and general administration accounts for 18% of a firm’s revenue. The size of the board of the firms in the sample ranges from 04 to 11 people. On average, women members account for 18% of the board size, and the maximum percentage of firms in the sample is 60%. Board members in the position of managers account for 30.5% of the board size, with the highest and lowest ratio, and range from 0% to 80%. Normally, companies in the sample often pay a cash dividend of VND 600, with the highest cash dividend amount being VND 4,000 and the lowest being 0. For the

leverage variable, the total debt to asset ratio of companies in the sample ranges from 0% to 46.4%, with an average value is 15.2%.

Table 3*Pairwise Correlations*

Variables	ATR	SGA	BSIZE	PWOM	PEXD	LEV	DIV
ATR	1.000						
SGA	-0.375	1.000					
BSIZE	-0.008	0.057	1.000				
PWOM	-0.055	0.017	-0.040	1.000			
PEXD	0.096	-0.056	-0.328	-0.002	1.000		
LEV	-0.018	-0.099	0.085	0.106	-0.018	1.000	
DIV	0.196	-0.098	0.055	0.123	0.024	-0.264	1.000

Note. Prepared by authors

With the dependent variable ATR, there are two independent variables that have a positive correlation, which are PEXD and DIV. Additionally, the remaining independent variables have a negative correlation with this dependent variable. The dependent variable SGA has a positive correlation with BSIZE and PWOM, and a negative correlation with the remaining independent variables, including PEXD, LEV, and DIV. Furthermore, there is no correlation between any variables with a value greater than 0.8, indicating that there is no high multicollinearity among the variables in the model.

4.2. Regression result**Table 4***Model Selection and Model Deficiency Test*

Test	P-value	Conclusion
Breuch and Pagan Lagrangian multiplier test	P-value = 0.0000	Panel model (FEM or REM) is preferred over Pooled OLS
Jarque - Bera	Prob. = 0.0000	Residual is not normally distributed
Wooldridge	Prob. = 0.0296	No autocorrelation
Breusch - Pagan - Godfrey	Prob. = 0.0000	Variance is not constant
VIF	VIF _{BSIZE} = 1.19 VIF _{PWOM} = 1.06 VIF _{PEXD} = 1.16 VIF _{LEV} = 1.15 VIF _{DIV} = 1.17	No high multicollinearity

Note. Prepared by authors

To estimate the determinants of agency costs among listed real estate firms in Vietnam, we initially estimate the model using pooled OLS, random effects (REM) and fixed effects

(FEM) approaches. These estimations serve as benchmarks and allow us to assess whether the results are sensitive to different model specifications. However, our sample includes almost all real estate companies listed on the Vietnam Stock Exchange from 2013 to 2023. In this context, firm-specific unobserved characteristics such as governance practices, ownership structure, or land access-are likely correlated with explanatory variables. Therefore, we adopt FEM as the primary specification. FEM controls these time-invariant unobservable firm-level effects and focuses on within-firm variations over time, thereby reducing potential omitted variable bias and improving the consistency of the estimates.

Table 3 presents the correlation matrix among the independent variables. The results show no strong correlations, indicating that multicollinearity is not a major concern. Table 4 summarizes the results of several key diagnostic tests conducted to assess the validity of classical regression assumptions.

These diagnostics reveal that there is no serious multicollinearity (as confirmed by low VIF values) and no autocorrelation, but the residuals exhibit both heteroscedasticity (Breusch-Pagan-Godfrey test, $p = 0.0000$) and non-normality (Jarque-Bera test, $p = 0.0000$). While the non-normal distribution of residuals is less problematic in large samples due to the central limit theorem, heteroscedasticity can seriously distort standard errors, leading to biased inference and unreliable significance tests.

To address these concerns, we apply the Feasible Generalized Least Squares (FGLS) estimator. FGLS is specifically designed to correct for heteroscedasticity by estimating the variance structure of the residuals and transforming the regression model accordingly. This transformation enhances the efficiency of coefficient estimates and ensures that standard errors are robust and inference is valid. Although FGLS does not directly solve the issue of non-normal residuals, correcting heteroscedasticity helps mitigate its effects on hypothesis testing, particularly in large-sample contexts like ours. Therefore, FGLS is an appropriate and reliable estimation method for this study. The regression result is shown in the following table:

Table 5

Regression Results

ATR	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
BSIZE	0.0001	0.005	0.06	0.956	-0.009	0.009	
PWOM	-0.0880	0.047	-1.88	0.060	-0.179	0.004	*
PEXD	0.0870	0.045	1.93	0.053	-0.001	0.176	*
LEV	0.0640	0.061	1.06	0.288	-0.054	0.183	
DIV	.00003	0.000	4.57	0.000	.00001	.00005	***
Constant	0.1860	0.039	4.72	0.000	0.109	0.263	***
Mean dependent var		0.231		SD dependent var		0.159	
Number of obs		462		Chi-square		27.208	
Prob > chi2		1.000		Akaike crit. (AIC)		-403.565	

Note. *** $p < .01$, ** $p < .05$, * $p < .1$. Prepared by authors

Table 6*Regression Results*

SGA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
BSIZE	0.008	0.006	1.43	0.152	-0.003	0.020	
PWOM	0.067	0.059	1.15	0.250	-0.047	0.182	
PEXD	-0.037	0.057	-0.66	0.511	-0.148	0.074	
LEV	-0.238	0.076	-3.12	0.002	-0.387	-0.089	***
DIV	-0.00004	0.00003	-3.06	0.002	-0.0001	.00002	***
Constant	0.174	0.049	3.51	0.000	.077	0.271	***
Mean dependent var		0.174		SD dependent var		0.198	
Number of obs		462		Chi-square		17.308	
Prob > chi2		1.000		Akaike crit. (AIC)		-193.575	

Note. *** p < .01, ** p < .05, * p < .1. Prepared by authors

4.3. Discussion of factors affecting agency costs in real estate firms listed in Vietnam

4.3.1. Gender diversity on the board and agency costs

PWOM has a negative effect on ATR and is statistically significant at the 10% level, with a coefficient of -0.088, indicating that a 1% increase in the proportion of women on the board leads to a 0.088 decrease in the firm's asset turnover ratio. This result suggests that gender diversity on the board, in the same direction, could exacerbate the principal-agent problem within the firm.

The relationship between board gender diversity and agency costs remains a contentious issue, as previous studies have reported mixed findings. Some research, such as Wellalage and Locke (2013), suggests that female participation on the board may intensify agency problems due to slower decision-making and increased internal conflicts. Conversely, other studies, including Jurkus et al. (2011) argue that gender diversity enhances board oversight and reduces agency costs through more effective monitoring mechanisms.

In the real estate sector, the relationship between gender diversity and agency costs may be influenced by industry-specific factors. Investment decisions in real estate typically involve large-scale projects, require long-term capital, and are highly impacted by land management policies, credit regulations, and market fluctuations. This necessitates swift and effective decision-making at the board level to optimize asset utilization and cash flow management. The current study finds that a higher proportion of female directors negatively correlates with ATR, implying that an increase in board gender diversity slows down asset utilization and, in turn, raises agency costs. This could be attributed to the tendency of female directors to be more cautious and meticulous when approving investment projects, leading to delays in decision-making, which subsequently affects capital efficiency and project execution timelines. Additionally, a greater presence of female board members may also increase differences in perspectives and prolong consensus-building within the board, especially in the highly complex and multi-stakeholder-driven real estate industry.

4.3.2. Board size and agency costs

PEXD has a positive effect on ATR and is statistically significant at the 5% level, with a coefficient of 0.087, suggesting that a higher proportion of board members involved in business operations enhances asset turnover and reduces agency costs. In the real estate sector, this effect can be explained by industry-specific characteristics.

Real estate is a capital-intensive industry with long project development cycles and a high degree of information asymmetry. Therefore, having board members with deep knowledge of internal operations can significantly improve operational efficiency. When board members take an active role in management, they can make faster decisions regarding investment, project management, and capital mobilization, thereby optimizing asset utilization speed. Additionally, their involvement helps reduce information asymmetry, as those directly involved in operations have better insights into project progress, cash flow, and long-term strategy, limiting the potential for managers to withhold information or make self-serving decisions.

Moreover, in the real estate sector, relationships with regulatory authorities, financial institutions, and key stakeholders play a crucial role. Board members who participate in daily operations can leverage these connections to facilitate regulatory approvals, secure financing, and improve overall business efficiency. Thus, in this context, having a board that is actively engaged in management can serve as a mechanism to enhance corporate governance and mitigate agency problems.

4.3.3. Cash dividend policy and agency costs

The research findings indicate that DIV (cash dividend policy) is statistically significant at the 1% level and has a positive effect on the dependent variable, implying that dividend policy plays a role in reducing agency costs in real estate firms. This aligns with the theory of Rozeff (1982), which suggests that dividend payments help limit excess cash holdings within firms, thereby reducing the likelihood of managers misusing funds inefficiently or for personal gain. Additionally, when a company maintains a consistent dividend policy, the board of directors must closely monitor the firm's financial status, particularly when the company needs to raise capital from external sources to ensure its dividend obligations. This enhanced oversight contributes to greater transparency and stronger corporate governance.

4.3.4. Leverage on agency costs

The research findings indicate that LEV (leverage ratio) has a negative effect on SG&A (selling, general, and administrative expenses), reinforcing the argument that financial leverage serves as a crucial mechanism for reducing agency costs within firms.

Specifically, LEV is statistically significant at the 1% level with a coefficient of -0.5356, suggesting that as firms increase their debt levels, SG&A expenses tend to decline, which in turn lowers agency costs. This result aligns with prior studies by Rozeff (1982), Fleming et al. (2005), Li and Cui (2003), which suggest that debt financing acts as a disciplinary mechanism that restrains managerial opportunism.

The reason behind this is that higher debt levels impose financial pressure on managers, requiring them to tightly control expenditures and optimize resource allocation to avoid job loss or reputational damage. Additionally, using debt instead of equity prevents ownership dilution among executives, thereby strengthening their commitment to shareholder interests.

This effect is particularly relevant in the real estate sector, where large-scale borrowing is a primary source of capital for long-term projects. Lenders often enforce stricter financial

oversight, ensuring that companies curb unnecessary administrative and operational expenses, ultimately leading to lower SG&A costs.

Overall, these findings confirm that leverage plays a key role in mitigating agency costs by enhancing financial discipline and optimizing operational expenses. This underscores that real estate firms can utilize financial leverage as a strategic tool to control costs, improve governance efficiency, and maximize shareholder value.

4.4. Examine the impact of board size on agency cost

This section is separated from the previous one because many studies have shown that the relationship between board size and monitoring effectiveness is not linear (Abor & Fiador, 2013). Specifically, when the board size is small, it leads to positive management outcomes because the governance structure is not yet complex, and board members can coordinate their skills to optimize strengths and enhance management effectiveness. In contrast, when the board size becomes too large, the governance structure becomes cumbersome, and conflicts between members may arise, negatively impacting governance effectiveness. In general, the relationship between board size and monitoring effectiveness is U-shaped, meaning there is an optimal range for the number of board members that positively influences management effectiveness, and exceeding this range will reduce management effectiveness. This optimal range varies from country to country, with studies suggesting 07 - 08 members or between 02 - 19 members. The optimal range suggested in previous research may not be applicable in the context of Vietnam, as the maximum board size can vary from country to country. Therefore, in this section, we aim to explore the optimal range of board size in the Vietnamese context.

To determine this relationship, the author divides the sample into two sub-samples, based on the 50th and 100th percentiles of the BSIZE value, corresponding to board sizes of 04 - 06 members and 07 - 12 members. Then, model (1) will be regressed based on these two sub-samples. The observation of each sub-sample is displayed in Table 7.

Table 7

Sub-Sample Division

	Range of board size	Observations
Sub-sample 1	04 - 06	258
Sub-sample 2	07 - 12	204

Note. Authors' calculation

Table 8

Regression Result for Each Sub-Sample

Sub-sample	ATR		SG&A	
	Sub-sample 1	Sub-sample 2	Sub-sample 1	Sub-sample 2
BFSIZE	-0.0149	0.005	-0.069**	-0.064
PWOM	-0.1357**	0.042	0.264	-0.212
PEXD	0.112**	0.071	0.147	-0.323
DIV	0.461*	0.271**	-0.105	-0.483
LEV	0.042	0.0932	-0.080	-1.125**

Note. *, **, *** presents the 1%, 5% and 10% significant level. Authors' calculation

The regression results show that, for the Asset Turnover Ratio (ATR), the variable BSIZE has no effect on the dependent variable in both sub-samples. For the SG&A expense ratio, the variable BSIZE has a negative effect on the dependent variable at the 5% significance level in sub-sample 1, while no relationship was found between the independent variable BSIZE and the dependent variable in sub-sample 2. These results imply that when the board size is between 04 - 06 members, it positively impacts management effectiveness, thereby reducing the principal-agent problem within the firm. The statistical significance of BSIZE at the lower percentile indicates that a smaller board size helps board members coordinate and communicate better, reducing conflicts and the cumbersome decision-making process, thereby achieving optimal governance effectiveness and controlling the agency problem.

5. Conclusions and recommendations

5.1. Limitations and future research

Previous studies have indicated that there are various measures for agency costs, including: asset turnover ratio (Ang et al., 2000), the ratio of selling, general, and administrative expenses (Singh & Davidson III, 2003), the correlation between growth rate and cash flow (McKnight & Weir, 2009), the ratio of advertising and R&D expenses (Wang, 2010), and inefficiency measurement using the SFA method (Schäuble, 2019). However, due to certain limitations, this study only utilizes two of the most common measures: the asset turnover ratio and the ratio of selling, general, and administrative expenses. The use of a diverse range of measures simultaneously could yield different results and insights. Additionally, the sample used in this study is limited, comprising only 42 listed real estate companies from 2013 to 2023, without extending to research on listed companies in other industries. Based on these limitations, the study suggests several directions for future research. First, expanding the range of measures for agency costs would provide more varied results, strengthening the validity of the research. Second, expanding the sample data set would enable the analysis of the impact of various factors on agency issues in listed companies from industries other than real estate in the Vietnamese stock market.

5.2. Conclusions

Using data from a sample of 42 listed real estate companies on the HOSE and HNX stock exchanges from 2013 to 2023, this study, through the FGLS regression method, identified the relationship between a range of factors influencing agency costs in firms. Among these, the gender diversity ratio on the board of directors exacerbates the agency problem. In contrast, the involvement of board members in managerial positions, dividend policy, and the debt ratio helps mitigate the agency problem.

SCIENTIFIC CONTRIBUTION

The manuscript clearly identifies a research gap; the manuscript provides new datasets or empirical evidence; the manuscript opens new directions for further research.

AUTHOR CONTRIBUTIONS

CRedit: **Nguyen Tuan Anh**: Conceptualization, Methodology, Data Curation, Formal Analysis, Writing Original Draft, Supervision; **Tran Thi Thuy Dung**: Data collection, Validation, Writing Review; **Vuong Tuan Anh**: Visualization, Literature Review, Data Collection.

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All authors declare that they have no conflict of interest.

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