



Research on the Impact of Governance Structure on the Cost of Equity Capital of Food Businesses Listed on the Vietnam Stock Market

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ABSTRACT

In this article, the author analyzes the relationship between corporate governance and the cost of equity capital at businesses. The study's data is based on a sample of 55 food businesses listed on the Vietnamese stock market in the period 2015-2022. In this study, the author focuses on the Vietnamese market with the expectation that differences in the economy and characteristics of market mechanisms in other countries will have different impacts on corporate governance, business and cost of equity capital. The author measures the characteristics of corporate governance through: the number of independent members of the board of directors, concurrent CEOs, the CEO's tenure, the number of board meetings and the presence of committees, nomination committee. The author focuses on food businesses because this is a conditional business that directly affects the health of consumers and is supervised by authorities. Research results have shown that management Corporate governance has a negative impact on the Cost of Equity (COE), which means that when the role of corporate governance is enhanced, businesses will enjoy a reduced COE level.

Keywords: Cost of Equity; Corporate governance; Listed enterprises

1. INTRODUCTION

Based on an overview of research works, the author finds that most of the previous research results have shown quite consistent results because most of the research was conducted in strong economic markets, and developed like England, France, America, Italy,... and there is almost no difference in the structure of variables used in research. Therefore, the author has a basis to expect an improvement in research results when there are changes in variables in the model and research in a newly developed market like Vietnam. The authors researched the food processing industry because, in recent times, the food processing market has recorded many major fluctuations related to issues of management and leadership of businesses. For example, in 2020, the State Audit of Vietnam listed 28 enterprises under the management of Ho Chi Minh City People's Committee with a series of violations related to auditing and settlement of the value of State capital at the official time, transformed into a joint stock company. Among them, Vietnam Animal Industry Company Limited (now Vietnam Animal Industry Joint Stock Company - Vissan) is involved in a series of land violations. The violation here for Vietnam Animal Industry Joint Stock Company - Vissan is the audit report before deciding to announce the actual value of the State capital at the time of officially transforming into a joint stock company of the Company, Vietnam Animal Industry Limited Company. Request approval of financial settlement, settlement of equitization costs, settlement of support funds for redundant employees, settlement of proceeds from equitization according to regulations.

In addition, in the period 2015-2022, many cases of poor quality food production affected the health of consumers, the most prominent being the 2023 Mid-Autumn Festival, after eating banh anh, 61 people became ill, poisoning and a 6-year-old child died. At that time, administrators play a very important role in the success of businesses and ensuring the safety of society. The topic "Impact of governance structure on COE" is not a new topic and is an update on the effects of market trends, but this is an important issue for each business and its impact. How, there is no exact answer. For example, the following issues: Is large-scale enterprises better than small-scale enterprises, is it good to have many meetings of the Board of Directors, or will the CEO also be the chairman of the Board of Directors? positive or negative impact on businesses and COE... The above issues are eternal problems and there is no ideal and completely accurate answer. Therefore, the author decided to research "The impact of governance structure on COE at food processing enterprises listed on the Vietnamese stock market" to learn about the impact of corporate governance on COE, to this group in the period 2015-2022 combined with changes in some model variables and research in the Vietnamese market.

In addition to the independent variables included in the research model, such as: (1) size of the Board of Directors, (2) independence of members of the Board of Directors, (3) concurrent CEO (refers to the CEO also holding the position of Chairman of the Board of Directors), (4) liquidity, growth rate, (5) return on assets, (6) number of transactions Board of Directors meeting, and (7) financial leverage. However, based on the interview results, the author finds that the variables of CEO tenure and compensation committees have a direct impact on the relationship between the governance mechanism and the COE used.

2. METHODOLOGY

2.1. Collect samples and data

The author's research sample includes 55 food processing enterprises listed on the Vietnamese stock market, selected enterprises comply with the listing requirements of the two above exchanges and basic rules on management. Vietnam's corporate governance. Data on variables related to corporate governance (CG) in the study were collected from the annual reports of nearly 55 businesses over a period of 8 years from 2015 to 2022. Previously, when Collecting data, the author will proceed to discard data for businesses that do not have all the necessary data on independent and dependent variables. The author produced a final research sample consisting of nearly 55 businesses with 440 observations.

Description of data collection method: For the CG measurement data set, there are variables such as: (1) Board size; (2) number of independent members, (3) number of meetings, the author relies on available data from the annual reports of food processing enterprises in each year. Variables such as CEO duality and nomination committee will also be collected based on information obtained from the annual reports of these businesses, however the author has assigned them values to facilitate running, modeling and calculations. Specifically, the variable (4) CEO duality is assigned the value 0 if the CEO is also the chairman of the board of directors and the value 1 if the CEO is not also the chairman of the board of directors; (5) The nominating committee variable will take the value 1 if the enterprise has a nominating committee and 0 if the enterprise does not have this department. Regarding variable (6) about CEO tenure, this is an unavailable data set, so the author had to search and calculate manually to come up with a specific number.

To measure the cost of equity, the author collected data from 55 food processing enterprises listed on the Vietnam stock exchange based on the main source FiinGroup. We collect monthly data on stock price indexes of nearly 55 businesses, data on VNINDEX, 5-year Government Bond Yields in Vietnam and 10-year Government Bond Yields in Vietnam to support assist in the process of calculating and determining the cost of equity capital.

Data processing: data in the study is performed in two steps. First, the author conducts calculations (COE) using the CAPM model with R_f calculated from data on 10-year Government Bonds in Vietnam; R_m is market data – VNINDEX and K_e is determined by stock price. Based on the CAPM model, the author runs a β rolling regression with limited data from 2014:

$$K_e = R_f + \beta \times (R_m - R_f)$$

$$\rightarrow K_e - R_f = \beta \times (R_m - R_f)$$

Next, the author will calculate monthly β (rolling calculation based on 12 previous observations), from there calculate monthly profit and convert it to annual profit. Once we have obtained the results of β , we will continue to replace the numbers back into the model to calculate COE. Second, the regression model is used to calculate and provide results about the relationship between governance structure and COE.

2.2. Research variables and models

2.2.1. Independent variable: Corporate Governance quality (CGQ)

The independent variable in the study is the quality of corporate governance. This variable is represented by the following characteristics:

The size of the Board of Directors (BOARD.SIZE) is understood as the total number of Board members (Al Daoud, Ismail and Lode, 2015; Shah and Butt, 2009; Singhal, 2014; Hasan and Butt, 2009; Pham et al., 2012). The independence of the Board of Directors (BOARDP) is determined by the total number of independent members of the Board of Directors over the total number of Board members (Al Daoud, 2020; Al-Sraheen and Al Daoud, 2018; Bouaziz and Triki, 2012). The separation between the chairman of the Board of Directors and the general director of the enterprise is also an important component in corporate governance practices and it has a great impact on business performance (Singhal, 2014). Dual CEO (DUAL) is a situation in a business where the CEO also holds the position of Chairman of the Board of Directors. It will be assigned a value of 0 if the CEO is concurrent and 1 if separate (Hasan and Butt, 2009; Gul et al., 2016; Al Daoud, Al-Sraheen, and Aleqab, 2018). Executive director tenure (TENURE), according to Rad et al. (2013), calculated by the total number of years that person held the position of CEO at the enterprise. Number of Board Meetings (MEET) is measured by the frequency of Board meetings in a financial year. This variable is an indicator that helps determine the level of performance of corporate governance and the Board of Directors. The Nomination Committee (RENUMER) helps determine reasonable remuneration/bonus amounts for senior managers and employees of the business and also helps manage the business's cash flow. The Nominating Committee provides consulting support in selecting suitable candidates for the Board of Directors. This variable will take the value 1 if the enterprise has a remuneration/bonus/nomination committee and takes the value 0 if it does not exist.

2.2.2. Dependent variable: COE (Cost of Equity - COE)

The dependent variable we focus on is the enterprise's cost of equity capital (COE). Several methods can be used to calculate a business's COE. However, the two most commonly used methods are the Capital Asset Pricing Model (CAPM) and the PEG method. The CAPM model measures COE as the risk-free rate of return plus an expected market risk premium. The risk premium is the market rate of return minus the risk-free rate multiplied by the degree to which the firm is exposed to risk, measured by market beta (β) (Sharpe, 1964; Lintner, 1965). On the other hand, according to the PEG method proposed by Easton (2004):

$$r = \sqrt{\frac{eps_{t+2} - eps_{t+1}}{P_t}}$$

In there:

r is the COE when using the PEG ratio method

eps_{t+1} and eps_{t+2} are the realized earnings per share one year from now and two years from now, respectively.

P_t is the stock price at the end of year t

This method uses realized earnings per share instead of expected earnings per share, because expected earnings are not available in the Vietnamese market.

However, estimating a firm's COE using the PEG method requires data on realized earnings per share (EPS) for the next one and two years, which is extremely difficult because of the There is a lack of data we collected from businesses and is also inconsistent with the data the author has collected. Therefore, the CAPM model was used by the author to estimate the COE of the enterprise. The CAPM model can be described as follows:

$$Ke = R_f + \beta \times (R_m - R_f)$$

In which, Ke is COE. R_f , risk free rate, this is the interest rate when the risk rate of an asset is almost zero. This type of interest rate is typically calculated using the yield on a 10-year government bond or the rate of return on a Treasury bill that serves as a benchmark for the risk-free rate. β is a measure of the volatility of a specific stock compared to the entire market (VNINDEX). In our study, β was calculated using the regression method. R_m is the expected rate of return of the market. This study calculated the expected rate of return of the market based on the percentage change in monthly market stock prices. $(R_m - R_f)$ reflects the market risk premium. The market risk premium, sometimes called the market risk premium, is the difference between the return on a given stock or asset and the risk-free rate of return in a valuation model. for capital assets (CAPM). This is the compensation an investor must pay when choosing to accept risk rather than investing in lower-risk or no-risk options, such as government bonds.

2.2.3. Control variable

In our study, selected control variables include: size of the business (size), liquidity of the business (LIQUID), growth rate (GROWTH), financial leverage (LEV) and net return on assets (ROA). The author controlled for the effects of these variables in his analysis.

First, the size of the business (size), according to research by (Singhal, 2014; Hasan and Butt, 2009; Shah and Butt, 2009; Christine and Marlene, 2001) is measured by the natural logarithm of the total corporate assets at the end of the year on the balance sheet. This is a variable that shows a negative relationship with COE because large-sized enterprises are considered to have less risk than smaller-sized enterprises.

Second, a business's liquidity (LIQUID) is measured by Current Assets/Current Debt. In theory, it shows a negative relationship with COE because businesses with higher liquidity will be more susceptible to risks compared to businesses with more liquidity problems. This is an agent that measures agency costs.

Third, the growth rate (GROWTH) is calculated using the change in market price. Specifically:

$$GROWTH \text{ market value} = ([Market value]_t - [Market value]_{(t-1)}) / [Market value]_{(t-1)}$$

Fourth, according to Singhal (2014) and Shah and Butt (2009) financial leverage is a means that allows businesses to invest borrowed capital to increase revenue and profits. Financial leverage can be defined as the use of both stocks and loans from banks or other financial institutions to increase a business's profit margin. It is calculated = Total Debt / Total Assets.

And finally, the return on assets (ROA) ratio is a measure of a business's profitability per dollar of assets. This is an index used to evaluate a company's performance, or more specifically, the efficiency with which the company manages its resources. ROA is calculated as the ratio of Profit after tax to Total Assets. In which, Profit after tax (Net profit = Revenue - Expenses) and Total Assets (including equity and debt capital) are the capital that the business uses for business.

Table 1: Measurement of variables

Variables	Defining and measuring variables	Related hypothesis	Sign of expectations
<i>Dependent variable</i>			
COE (Cost of Equity)	Use the Capital Asset Pricing Model (CAMP) to calculate COE: $Ke = R_f + \beta \times (R_m - R_f)$		

	In which, R _f is the risk free rate. β is a measure of the volatility of a stock compared to the general market (VNINDEX). R _m is the market's expected rate of return.		
<i>Independent variable</i>			
BOARD.SIZE	Size of the Board of Directors	H2	-
BOARDP	Independence of the Board of Directors	H3	-
DUAL	Part-time CEO	H4	+
RENUMER	Remuneration Committee/Nomination Committee	H5	-
TENURE	Term of office of the executive director	H6	-
MEET	Number of Board of Directors meetings	H7	-
<i>Control variable</i>			
Size	Size of the business	H8	-
LIQUID	Credital	H9	-
GROWTH	Growth	H10	+
LEV	Financial leverage	H11	+
ROA	Net profit to assets ratio	H12	-

Source: Author's own compilation

2.3. Regression model

To explore the relationship between selected variables reflecting corporate governance quality and a business's COE, the author developed a multiple regression model based on Chen's previous studies. et al. (2009), Haniffa and Cook (2002) and Christensen, Kent and Stuart (2010). This model can be represented as follows:

$$COE = \alpha + \beta_1 Size + \beta_2 Liquid + \beta_3 Roa + \beta_4 Growth + \beta_5 Boardp + \beta_6 Dual + \beta_7 Tenure + \beta_8 Lev + \beta_9 Meet + \beta_{10} Board.size + \beta_{11} Renumer + \varepsilon$$

- In there:
- α is the blocking coefficient;
- size is the scale of the business;
- LIQUID is the liquidity of the enterprise;
- ROA is the ratio of net profit to assets;
- GROWTH is the growth rate;
- BOARDP is the proportion of independent members of the Board of Directors;
- DUAL is a situation when the CEO is also the chairman of the Board of Directors;
- TENURE is the term of office of the executive director;

LEV is the financial leverage of a business;

MEET is the number of meetings in a fiscal year of the Board of Directors;

BOARD.SIZE is the total number of members of the Board of Directors;

RENUMER considers whether a remuneration committee exists in the enterprise;

ϵ is the residual/error

$\beta_1 \dots \beta_{11}$ is the unstandardized regression coefficient

The empirical model, which tests the research hypotheses and achieves its objectives, will be examined using aggregate data and panel analysis methods. One advantage of analyzing panel data is that it helps researchers greatly reduce problems that occur when variables such as time and individual variables are not taken into account. The presence of time variables and individual variables makes regression testing on aggregate data ineffective. Additionally, panel data overcomes the problem of limited sample size. To choose the best descriptor for testing a data set, the Hausman test is often used to choose between two-panel data analysis methods. However, many diagnostic tests such as multicollinearity test, non-homogeneous PSSS, and normality test are required to obtain accurate and efficient results.

The author conducts estimation using the Pooled OLS Regression Model. Then, the author will diagnose to choose between fixed effects regression model (Fixed effect model - FEM) with OLS regression model and random effects regression model (Random effect model - REM) with OLS regression model. In the next step, the author uses the Hausman test developed by Jerry A. Hausman, De-Min Wu and James Durbin. It is a statistical hypothesis test used in economics. Two estimation methods for estimating fixed and random effects – FEM and REM – are compared using this procedure and the most appropriate estimation method is selected (Baltagi, 2008; Gujarati, 2004). Next, the author ran regression diagnostics to check the problems of Autocorrelation, Serial Correlation and Heteroskedasticity. Finally, use the debug command to fix the errors encountered, as in this study, we use cluster.

3. RESEARCH RESULTS

3.1. Descriptive statistics

Descriptive statistics from a sample of nearly 55 food processing enterprises listed on the Vietnamese stock market, Table 2 shows descriptive data for the entire sample of enterprises mentioned in this study. It includes the number of observed samples, the mean and standard deviation, as well as the minimum and maximum values of the important variables of the study.

Table 2: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
COE	440	.38	.545	-.811	1.308
SIZE	440	28.504	1.4	25.999	32.69
LIQUID	440	2.098	1.187	.058	4.866
ROA	440	.051	.052	-.083	.173
GROWTH	440	.109	.218	-.408	.618
BOARDP	440	.156	.193	0	.714
DUAL	440	.501	.501	0	1
TENURE	440	5.614	4.438	1	18
LEV	440	.537	.193	.011	1.033
MEET	440	19.904	16.417	2	118
BOARD.SIZE	440	5.748	1.483	3	13
RENUMER	440	.049	.217	0	1

Note: COE: COE, size: business scale, LIQUID: liquidity, ROA: return on assets, GROWTH: growth rate, BOARDP: independence of the Board of Directors, DUAL: CEO duality, TENURE: CEO's term, LEV: financial leverage, MEET: number of Board meetings, BOARD.SIZE: Board size, RENUMER: nominating committee.

Source: Calculation results from the author's SPSS22 software

3.2. Regression results and discussion

3.2.1. Correlation matrix

The study calculated the correlation coefficient of the variables in the model using the correlation coefficient matrix to determine the correlation of those variables before testing and the results obtained were obtained. listed in Table 3.

Table 3: Correlation coefficient matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) COE	1.000											
(2) SIZE	0.063	1.000										
(3) LIQUID	-0.097	-0.011	1.000									
(4) ROA	0.166	0.196	0.229	1.000								
(5) GROWTH	0.160	0.321	-0.039	0.197	1.000							
(6) BOARDP	0.031	0.102	-0.068	0.007	0.091	1.000						
(7) DUAL	0.040	-0.149	-0.030	0.038	-0.100	-0.033	1.000					
(8) TENURE	-0.123	-0.037	0.144	-0.010	-0.023	-0.061	-0.303	1.000				
(9) LEV	0.147	0.279	-0.541	-0.252	0.114	0.108	-0.162	0.036	1.000			
(10) MEET	0.076	0.397	0.085	0.062	0.165	0.097	-0.021	-0.200	0.089	1.000		
(11) BOARD.SIZE	-0.062	0.313	0.005	0.130	0.101	0.084	0.053	-0.104	0.100	0.056	1.000	
(12) RENUMER	0.159	0.481	-0.007	0.157	0.203	0.108	-0.042	-0.110	0.130	0.326	0.129	1.000

Note: COE: COE, size: business scale, LIQUID: liquidity, ROA: return on assets, GROWTH: growth rate, BOARDP: independence of the Board of Directors, DUAL: CEO duality, TENURE: CEO's term, LEV: financial leverage, MEET: number of Board meetings, BOARD.SIZE: Board size, RENUMER: nominating committee.

Source: Calculation results from the author's SPSS22 software

The correlations between all dependent variables, independent variables and control variables are summarized in Table 3. When considering the correlation between the dependent variable and the independent variables, the results show that the correlation between 6 The independent variable and the dependent variable (COE) are both less than 0.05, of which two variables, TENURE and BOARD.SIZE, have a negative correlation with COE, showing that the higher the CEO's tenure and the size of the Board of Directors. The larger the value, the lower the COE will be. The variable with the largest correlation coefficient among the control variables is the size of the enterprise with a correlation value of 0.063. Negative correlation coefficients exist for the control variables, but they are relatively low. The correlation between variables is usually in the range (-0.6; 0.6), so there is no evidence to prove multicollinearity according to the regression results.

3.2.2. Regression results according to Random effect model - REM

After performing regression with the random effects model (Random effect model - REM), only 5 out of 11 variables included in the regression with the REM model have an effect on COE. In particular, COE has a negative relationship with the size of the Board of Directors (BOARD.SIZE); and has a positive relationship with the variables ROA, GROWTH and LEV. However, the model did not record any statistically significant relationship between COE and the remaining variables.

Table 4: Random effects regression model (Random effect model – REM)

COE	Coef.	St.Err.	t-value	p-value	95% Conf	Interval	Sig
SIZE	-.034	.029	-1.17	.241	-.09	.023	
LIQUID	-.006	.031	-0.20	.838	-.066	.054	
ROA	2.3	.619	3.72	0	1.087	3.513	***
GROWTH	.275	.138	1.99	.046	.005	.545	**
BOARDP	.002	.156	0.02	.987	-.303	.307	
DUAL	.054	.064	0.85	.395	-.071	.179	
TENURE	-.014	.007	-1.95	.051	-.028	0	*
LEV	.606	.206	2.94	.003	.201	1.01	***
MEET	.001	.002	0.38	.705	-.003	.005	
BOARD.SIZE	-.051	.021	-2.41	.016	-.093	-.01	**
RENUMER	.245	.158	1.55	.122	-.065	.556	
Constant	1.18	.766	1.54	.123	-.321	2.681	
Mean dependent var		0.357	SD dependent var			0.542	
Overall r-squared		0.122	Number of obs			341	
Chi-square		43.608	Prob > chi2			0.000	
R-squared within		0.068	R-squared between			0.417	

*** $p < .01$, ** $p < .05$, * $p < .1$

Source: Calculation results from the author's SPSS22 software

Test random versus OLS

Breusch and Pagan Lagrangian multiplier test for random effects

$$\text{COE [id, t]} = \text{Xb} + \text{u [id]} + \text{e [id, t]}$$

Estimated results:

	Var	sd = sqrt (Var)
COE	.293907	.5433091
e	.2519979	.501994
u	.0083443	.0913469

Test: Var(u) = 0

$$\text{chibar2}(01) = 0.14$$

$$\text{Prob} > \text{chibar2} = 0.3289$$

Source: Calculation results from the author's SPSS22 software

3.2.3. Regression results according to the Fixed effect model – FEM

Regression according to the fixed effect model (FEM) produces the following results: with Prob value > F = 0.0000 < 0.05, control variables include ROA, GROWTH, LEV and independent variables. DUAL has a positive relationship with COE (COE), whereas the size variable has a negative relationship with COE. The remaining variables including LIQUID, BOARDP, TENURE, MEET, BOARD.SIZE and RENUMER have negligible impact on COE.

Table 5: Fixed effects regression model (Fixed effect model – FEM)

COE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval	Sig
SIZE	-.381	.1	-3.82	0	-.577	-.184	***
LIQUID	.025	.04	0.62	.537	-.054	.103	
ROA	3.618	.842	4.29	0	1.959	5.276	***
GROWTH	.466	.15	3.11	.002	.171	.761	***
BOARDP	-.053	.253	-0.21	.835	-.551	.445	
DUAL	.215	.107	2.01	.045	.004	.425	**
TENURE	-.007	.009	-0.75	.454	-.024	.011	
LEV	1.676	.346	4.85	0	.995	2.357	***
MEET	-.001	.004	-0.31	.757	-.008	.006	
BOARD.SIZE	-.025	.029	-0.87	.386	-.082	.032	
RENUMER	-.095	.278	-0.34	.732	-.643	.452	
2015	-.881	.522	-1.69	.093	-1.908	.147	*
2016	-.825	.521	-1.58	.115	-1.85	.201	
2017	-.694	.523	-1.33	.186	-1.723	.335	
2018	-.98	.525	-1.87	.063	-2.014	.054	*
2019	-.764	.526	-1.45	.147	-1.8	.271	
2020	-.569	.528	-1.08	.282	-1.609	.47	
2021	-.31	.533	-0.58	.561	-1.359	.738	
2022	-.511	.541	-0.94	.346	-1.576	.554	
Constant	10.824	2.706	4.00	0	5.496	16.152	***
Mean dependent var		0.357		SD dependent var		0.542	
R-squared		0.293		Number of obs		341	
F-test		4.852		Prob > F		0.000	
Akaike crit. (AIC)		402.804		Bayesian crit. (BIC)		494.769	
F test that all u _i =0:		F (12,269) = 5.67		Prob > F = 0.0000			

*** p<.01, ** p<.05, * p<.1

Note: COE: COE, size: business scale, LIQUID: liquidity, ROA: return on assets, GROWTH: growth rate, BOARDP: independence of the Board of Directors, DUAL: CEO duality, TENURE: CEO's term, LEV: financial leverage, MEET: number of Board meetings, BOARD.SIZE: Board size, RENUMER: nominating committee.

Source: Calculation results from the author's SPSS22 software

3.2.4. Select regression model

The Breusch and Pagan LM test, used to choose between OLS and REM under the hypothesis H_0 that the between-subjects difference in the model regression is zero, was the first tool the research team used to choose a suitable regression model. The test results in Table 4 show that $\text{Prob} > \chi^2 = 0.3289 > 0.05$ should accept the hypothesis H_0 , that is, the Pooled OLS regression technique should be used because the REM regression method is ineffective.

Next, the Fixed test is used to make a choice between OLS and FEM with two hypotheses given:

- H_0 : The FEM model is not effective
- H_1 : The FEM model is effective

The Fixed test results in Table 5 demonstrate that with the coefficient $\text{Prob} > F = 0.0000 < 0.05$, the research team accepts H_1 and rejects H_0 , this shows that the model has fixed effects. or the FEM model is said to be more effective than the OLS model.

Hausman test, a test used to compare two regression models FEM and REM to see which model is better in clarifying the correlation between variables, is used by the authors to choose between the two models. FEM and REM. Two hypotheses are used in the Hausman test:

- H_0 : The REM model is suitable
- H_1 : The FEM model is suitable

Table 6: Hausman test

Test fixed versus random using hausman

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Test: Ho: difference in coefficients not systematic

      chi2(11) = (b-B)'[(V_b-V_B)^(-1)](b-B)
              =          22.15
      Prob>chi2 =          0.0211
  
```

Source: Calculation results from the author's SPSS22 software

The above results indicate that the FEM model is more suitable to explain the relationship between variables because the test results in $\text{Prob} > \chi^2 = 0.0211 < 0.05$, so the hypothesis H_0 will be rejected.

The authors apply the Wald test to the FEM model with two hypotheses to test the phenomenon of PSSS change:

- H_0 : The PSSS of the entities remains unchanged.
- H_1 : PSSS of entities changes

Table 7: Wald test

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Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

H0: sigma(i)^2 = sigma^2 for all i

      chi2 (49) =          836.29
      Prob>chi2 =          0.0000
  
```

Source: Calculation results from the author's SPSS22 software

The results of Table 7 show that $\text{Prob} > \chi^2 = 0.0000 < 0.05$, rejecting H_0 and coming to the conclusion that the phenomenon of PSSS change appears in the FEM model.

The Wooldridge test was also used by the research team to check the autocorrelation of the FEM model according to the hypothesis H_0 : There is no first-order autocorrelation. Thus, the Wooldridge test result is $\text{Prob} > F = 0.0085 < 0.05$, showing that the model has autocorrelation and rejects the hypothesis H_0 .

Finally, the author of the Wooldridge Test: According to the results drawn from the two Wald and Wooldridge tests, the selected model simultaneously appears two phenomena: PSSS change and autocorrelation. Therefore, the author has Cluster to solve two goals

3.2.5. Final regression results

After using cluster to handle two errors: PSSS changes and autocorrelation - appearing in Fixed effect Regression, the final result is obtained as follows:

Table 8: Final regression results

Fixed effect Regression results (cluster)

COE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval	Sig
size	-.158	.089	-1.77	.083	-.338	.021	*
LIQUID	-.012	.06	-0.19	.848	-.133	.11	
ROA	2.27	.845	2.69	.01	.571	3.97	***
GROWTH	.294	.125	2.34	.023	.542	.546	
BOARDP	.114	.23	0.50	.621	-.348	.577	
DUAL	.215	.119	1.80	.077	-.025	.455	*
TENURE	-.009	.012	-0.79	.436	-.032	.014	
LEV	1.126	.44	2.56	.014	.242	2.01	**
MEET	.001	.004	0.36	.721	-.006	.009	
BOARD.SIZE	-.064	.034	-1.89	.065	-.132	.004	*
RENUMER	-.455	.257	-1.77	.083	-.973	.062	*
Constant	4.438	2.498	1.78	.082	-.585	9.461	*
Mean dependent var		0.357	SD dependent var		0.542		
R-squared		0.114	Number of obs		341		
F-test		4.984	Prob > F		0.000		
Akaike crit. (AIC)		453.711	Bayesian crit. (BIC)		495.862		

*** $p < .01$, ** $p < .05$, * $p < .1$

Note: COE: COE, size: business scale, LIQUID: liquidity, ROA: return on assets, GROWTH: growth rate, BOARDP: independence of the Board of Directors, DUAL: CEO duality, TENURE: CEO's term, LEV: financial leverage, MEET: number of Board meetings, BOARD.SIZE: Board size, RENUMER: nominating committee.

Source: Calculation results from the author's SPSS22 software

F statistic with 1% significance level, there are 6 variables in the model that have a significant impact on COE. Specifically:

Firstly, the results on business size affecting COE show an inverse relationship, meaning that the larger the business, the smaller the COE will be. The results are consistent with the research hypothesis, because the larger the enterprise, the stronger its potential, and the level of investment risk will decrease. Therefore, investors have a basis to rely on the size of the business to consider the appropriate required level of profitability when making investment decisions. In reality, this result is also completely consistent because for large corporations with strong and solid potential in many aspects, such as Vinamilk, it is very easy for them to mobilize investment capital as well as borrow from banks. row. Because large-scale enterprises will create good reputation, have quality information, as well as transparent, reliable financial reports, and good information disclosure quality. Therefore, it is possible to limit information asymmetry for investors. Investors with a large amount of good quality information will feel secure when investing in businesses, leading to the requirement for a high rate of return on investment. Lower investment because of less risk. This result is completely consistent with agency theory.

Second, the leverage factor in our study shows a positive relationship with COE at a rate of 112.6% with a significance level of 5%. This result is consistent with many research results of Zhu (2014), Houqe et al. (2017), Khan (2016) and is also consistent with our research hypothesis. Because the higher the leverage level, the more it shows the debt level as well as the risk level of the business. Investors consider and demand higher returns when they realize the potential risks they face when investing in businesses. In fact, this research result is very consistent with fluctuations in the food processing market in Vietnam during the Covid-19 pandemic. In 2020, a report from the Ministry of Finance showed that food processing enterprises used excessive financial leverage to mobilize investment capital. In addition, due to the Covid19 epidemic, banks strictly control loan applications to limit bad debt, so businesses choose to issue bonds to borrow. Excessive abuse of financial leverage causes the market as well as businesses to face high risks, investors must also consider carefully when pouring investment capital into these businesses.

Third, CEO duality has a positive relationship with COE, indicating that businesses with a CEO who also participates in the Board of Directors will face higher COE levels. This is completely consistent with the agency theory and hypotheses of the study. At the same time, the above results are consistent with previous studies by Dalton et al. (1998), Cornett et al. (2008), and Naciti (2019). When a business has a concurrent CEO, it is believed that the level of transparency in management and clarity in income will decrease, on the other hand, it will hinder the supervision of the management team of the Board of Directors, leading to the running the business inefficiently and causing the COE mobilized from investors to increase. This result is consistent with agency theory (Jensen and Meckling, 1976) but contrary to management theory (Davis et al., 1997; Donaldson and Davis, 1991). Management theory

argues that the CEO concurrently chairing the Board of Directors will create unity in leadership, while also facilitating supervision and making financial decisions. In fact, the issue of whether it should be separate or concurrent is always a controversial issue and both still exist in parallel. The view of separation of CEO and Chairman of the Board of Directors is generally supported by European countries, for example, 100% of businesses in Germany and the Netherlands, 95% in the UK, 65% of Canada... However, In the US, up to 80% of the 500 businesses on the Standard and Poor's (S&P500) list have combined these two positions into one. In general, businesses in these large markets exist and develop well. In the case of Vietnam, according to the Enterprise Law, it is not prohibited to hold the two positions of Chairman of the Board of Directors and CEO. Thus, from a legal perspective in Vietnam, concurrent work is not prohibited. However, holding two positions at the same time usually only applies to small and medium-sized enterprises for easier management and more flexible control. But for large businesses, there should be separation to specialize leadership roles and maximize expertise by field. Of the total samples the research team collected about food processing enterprises, more than 58% of businesses recorded the presence of concurrent CEOs in the business's executive apparatus. This is consistent with reality in Vietnam, because the Vietnamese market focuses mainly on small and medium-sized enterprises, so it is quite common for the CEO to simultaneously hold the position of Chairman of the Board of Directors. variable. COE is said to be more difficult to mobilize for small businesses than for large businesses, this coincides with the group's research results, with small-scale businesses often having concurrent CEOs, so COE increase.

Fourth, the larger the size of the Board of Directors, the smaller the COE. This is consistent with the group's hypothesis and consistent with many research results such as Hasan and Butt (2009) and Arslan and Abidin (2019), Sani, Alifiah and Dikko (2020), Christine and Marlene, 2001). Most investors believe that when a business has a large Board of Directors, its human resources are more abundant and the quality of management will be better. Therefore, the potential risks of the business are limited, investors feel confident and safe when investing, thereby reducing COE. According to the results from the descriptive statistics table, the average number of Board of Directors at food processing enterprises in Vietnam is 7 people, completely consistent with current regulations in the Vietnamese market.

The results related to business profits and growth show that, the more profitable a business is from business and has a strong growth rate, it will suffer a large COE level. According to Embong et al. (2012), businesses with fast growth rates will be riskier than businesses with slower growth rates. Because businesses with too fast growth rates are said to have an uncertain foundation, they are likely to become passive when facing fluctuations in the market.

Finally, the results show that when businesses have a remuneration/nomination committee, COE decreases. This is also completely consistent with the agency theory and research hypothesis we put forward. This result is consistent with many research results of Dechow et al. (1996), Main and Johnston (1993), Conyon and Peck (1998), and Laksmana (2008). Enterprises establishing a remuneration/remuneration committee has a positive impact on the quality of management, as well as the ability to run the business, helping the board of directors prevent fraudulent acts in remuneration issues, ensuring the Transparency in corporate cash flow. Similarly, the presence of a nomination committee helps advise the board of directors on professional, potential candidates for suitable positions in the enterprise. From there, the quality of corporate governance is expected to be improved and enhanced, leading to a decrease in COE.

CONCLUDE

Through research, the author came to the conclusion: higher quality of corporate governance will help reduce equity costs, this result is consistent with prominent studies on corporate governance issues and equity costs in the world such as Waliuddin and associates (2017), Srivastava et al. (2019), Gupta et al. (2018)...These research results can be considered a reliable source of information for investors to rely on to Make a decision on whether to invest in a project or a business by considering the quality of corporate governance of that business and practice proving that most investors place great trust in these businesses. The industry has highly appreciated management quality.

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