

The impact of financial leverage on the profitability of real estate companies: A study from Vietnam stock exchange

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ABSTRACT

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Using financial leverage (FL) has a great influence on business performance of enterprises. Therefore, the determination of the impact of FL on the profitability of enterprises helps to create synchronous solutions to improve operational efficiency of enterprises which is very important and necessary. This study aims to identify the impact of FL on Return On Assets (ROA), Return On Equity (ROE), Return On Sales (ROS), and Return On Capital Employed (ROCE). The study is conducted based on the data collected from 58 real estate firms listed in Vietnam Stock Exchange with 464 observations. The study also uses quantitative method combined with multivariable regression models to examine the hypotheses of the survey with the help of the EVIEW 11.0 software. Research results indicate that FL has no impact on ROS and ROCE while it has a negative impact on ROA and a positive impact on ROE. In accordance with the research findings, the authors propose specific recommendations and solutions to improve profitability in the real estate companies listed on Vietnam's stock exchange.

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1. Introduction

In recent years, the Vietnam and the world economy have changed drastically in many different aspects. This creates not only new opportunities but also challenges for enterprises. As real estate business requires a large amount of capital and has a slow payback period, so to ensure solvency, to improve business efficiency and to expand business scale, real estate companies often have to increase use financial leverage. Therefore, interest expenses in these businesses are costly, which directly affects the profitability of the companies. The FL policy is a type of policy that mobilizes from loans outside of the company. This is a popular option among Vietnamese real estate companies because of the “unique” advantages when using loans. A survey on 58 listed real estate companies in Vietnam as of the of 2018 disclosed that all these companies use some loans in their financial structure while in average only 49.56% of the industry uses load (State Securities Commission of Vietnam, 2019). The analysis of policies of using FL and their impacts on profitability is essential when the profitability of Vietnamese real estate enterprises is very low. This study aims to analyze the impact of FL on the profitability of Vietnamese real estate companies. Thereby, we recognize that the policy of using FL has different effects on

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indicators reflecting the profitability of Vietnamese real estate companies. Research data was collected from the financial statements of real estate companies listed on the Vietnamese stock exchange provided by the State Securities Commission of Vietnam. To ensure the representativeness, completeness, and reliability of the collected samples, we collect the necessary information based on the following criteria:

The research time

The study period is selected in 2017-2018, from early 2008 to mid-2009 Vietnam real estate market was frozen and the real estate transactions almost were negligible; From the end of 2009 to 2010, the real estate market showed signs of recovery and growth again; From 2013 to 2015 the market was stable and during the 2017-2018 there was a visible growth. According to Vietstock statistics, in 2018, 65 listed real estate enterprises (including 7 companies on UPCOM floor - Author) generated more than VND 248,953 billion in net revenue and VND 34,110 billion in net profit, up 43% and 93% year over year. In more details, there were 61 enterprises with profits, 4 businesses reported losses, 41 businesses had profit growth, 17 businesses were with profit deceleration, 3 businesses were upstream from loss to profit and 3 enterprises reported some losses (Nguyen, 2019).

The size of the samples collected

Because the characteristics of real estate business require a large amount of capital and a long payback period, we only chose listed real estate companies without selecting small and medium enterprises. By the end of 2018, the number of listed companies in the stock exchange in Vietnam was 58; in which HOSE included 45 companies and HNX included 13 companies (Cophieu68.vn, 2019). We have selected all 58 listed real estate companies on both exchanges for the survey. Sample rate accounted for 100.00%.

The research data

Research data is collected from secondary data published publicly by the State Securities Commission and securities companies and the data ensure reliability, transparency and accuracy (Cophieu68.vn, 2019; Hanoi Stock Exchange, 2019; Hochiminh Stock Exchange, 2019; CafeF, 2019).

The number of observations

With 58 survey companies, we conducted 464 observations to get the best estimate. On that basis, we set up a regression model for analysis and verification with the help of specialized software Eview 11. The primary objective of this study is to investigate the effect of financial leverage (FL) use on the profitability of the of listed real estate companies. To achieve the goals set out, in this study, the authors used quantitative methods, built regression models to show the relationship between FL and profit; In which FL was an independent variable, profitability was measured through return on equities (ROE), return on sales (ROS), return on assets (ROA), Return on Capital Employed (ROCE) which are dependent variables, with the support of specialized software EVIEWS 11.0. On that basis, the study proposed some recommendations and solutions to improve the profitability of the listed real estate companies in Vietnam.

2. Literature Review

Theoretically, FL is a term used to present the capital structure of an enterprise - an important part of the financial structure. FL represents the capital structure of the business, which reflects the relationship between liabilities and equities. Speaking of policies using financial leverage is also synonymous with the policy of using debt of businesses. FL has a positive relationship with liabilities: When liabilities increase, FL rises and vice versa. An efficient business should use FL to take advantage of the tax shield

to reduce corporate income tax and encourage profitability over the same period (Nguyen, 2017). Research by Modigliani and Miller (1958) has shown that: capital structure does not have any effect on the market value of an enterprise but has a positive impact on the profitability of the equities of the company. There are some other outstanding researches such as Capital Structure Theory of Ardalan (2017), Trade-Off Theory of Kraus and Litzenberger (1973), Pecking Order Theory, etc. have which indicated the relationship between the profitability and FL. In practice, there have been also many well-known types of studies on relationship between FL and profitability such as Schwartz and Aronson (1967), Ghosh and Jain (2000), Hadlock and James (2002) indicating that liability structure has a positive impact on the performance of the business. Meanwhile, researches of Long and Malitz (1985), Kester (1986), Titman and Wessels (1988), Smith and Watts (1992), Rajan and Zingales (1995), Fama and French (1998) or Simerly and Li (2000).

After M & M theory was public, Pecking order theory was issued by Donaldson to restore the theory built up by Modigliani and Miller by ignoring any unrealized conditions including the absence of taxes, bankruptcy costs, agency costs, and an efficient market (Donaldson, 1961). The Pecking order theory was developed by Myers and Majluf (1984) and argued that companies need to prioritize the increase of equity and the strengthening of liabilities as a final solution. However, the Pecking order theory did not illustrate why there were a lot of firms still issued new equities instead of using debt to guarantee their financial capacity and show enough evidence to prove the best financial option for gaining profits for companies is internal financing - debt - equity. Several publications published by Shyam et al. (1999), or Zeidan et al. (2018) indicate that the owners of private companies in Brazil follow the pecking order theory. On the other hand, Goyal and Frank's publication in 2003 neglected this theory by stating that prior to using debt instead of equity is not the best option for a firm.

Based on M & M theory developed by Modigliani and Miller (1958), Kraus and Litzenberger (1973) built up the Trade-off theory after removing inconsequential assumptions used by M & M when they ignored the impact of taxes or asymmetric information. Trade-off theory showed that: "firms in the same industry should have similar or identical financial gearing ratios as they attempt to maximize the tax savings because the market value of the firm using the debt (V_L) is equal to the market value of the firm without using the debt (V_U) plus the benefit of the tax shield ($T_C B$) after the removal of the financial costs (PV)" (Kraus & Litzenberger, 1973).

The study by Singh and Schmidgall (2002) refers to the importance of indicators to analyze financial efficiency in the tourism business. Research by Riggo (2007) and Palepu et al. (1999) used financial indicators to measure profitability: ROS, Operating Margin Operating (OPM), ROA, ROE, ROIC. Studies by Bernstein and Wild (1989); Josette Peyrard (2005) and Subramanyam and Wild (2009) mentioned both analytical techniques, usage data, analytical content, and analytical indicator systems. The empirical studies of Pandy (2001), Huang and Song (2002), Bhaduri (2002) in countries with transitional economies show that profitability is negatively correlated with financial leverage. The author also said that, in liabilities, it is necessary to distinguish loans and appropriated capital; in which, the capital to take over, whether it is in the term or overdue and there is no interest payment. Therefore, when the capital is used up, it will contribute to increasing profits and vice versa. Both practical and theoretic types of research in developed countries have indicated the relationship between the profitability and FL but there are still many contraries that limit such assumptions. These studies mainly refer to analytical content and indicators or are mentioned in enterprises in general. Some studies mention the relationship between financial leverage and profit but most studies only mention business areas such as hotels, tourism, mining, export, etc. Meanwhile, real estate business has its own characteristics and significant differences between different markets. These researches have not reached the same conclusion due to the differences in setting assumptions under different conditions. Moreover, in Vietnam, there is still a lack of practical research about the relationship between profitability and FL in the real estate industry. Therefore, this research will solve the contraries in previous researches and find out a new model about the impact of FL on profitability.

From the review of the above studies, in this study, we focus on determining the impact of financial leverage on profits in real estate businesses in Vietnam. We pay special attention to the impact of financial leverage on the following criteria: (1) ROA, (2) ROS, (3) ROE and (4) ROCE.

3. Hypothesis, empirical model and research methods

3.1. Hypothesis

To consider the impact of FL on profitability, the authors considered the relationship between FL with ROA, ROE, ROS, and ROCE of a company on the following hypothesis:

H₁: FL is negatively correlated with ROA

Theoretically, as the degree of FL increases, the ratio of paying debts of the company in comparison with total equity also increases, which directly affects and results on a rise in financial costs occurred during the period. If the increase in profit is not enough to offset the corresponding borrowing costs, ROA will decrease. Empirically, Zeitun et al. (2007); Muritala (2012); Sheikh and Wang (2013), and Pouraghajan et al. (2012) concluded that FL had a negative impact on ROA.

H₂: FL is positively correlated with ROE.

To analyze the effects of FL on ROE, we use the Dupont model:

$$ROE = \frac{\text{Profit after tax}}{\text{Net sales}} \times \frac{\text{Net sales}}{\text{Total assets}} \times \frac{\text{Total assets}}{\text{Equities}} = ROE \times TAT \times FL.$$

Hence when the degree of FL increases, ROE also increases. FL, therefore, has a positive correlation with ROE.

H₃: FL is negatively correlated with ROS.

In 2014, Bērzkalne and Javad did two separated types of research illustrating the impacts of capital structure on profitability by collecting and handling samples from Latvia and Pakistan respectively. While Bērzkalne showed that FL had a negative correlation in ROS, Javed believed that FL did not have any impact on ROS.

H₄: FL is positively correlated with ROCE.

Based on the research results of Abor (2005) and Gill et al. (2011), the increase of using FL will improve the Return on Capital Employed in the firms. Consequently, FL has a positive impact on ROCE.

3.2. Empirical model

To consider and justify the effects of FL on profitability, earlier researches usually followed the method of quantitative research into the correlation and regression model with the assistance from the software. Therefore, in this research, the authors will follow the method of quantitative research into regression models with FL as the independent variable, profitability as dependent variables, with the assistance of EViews 11.0. The research model is built on the basis of the relationship between financial leverage and profitability. In this model, the independent variable will be FL, while the dependent variable is the indicator reflecting profitability: ROA, ROE, ROS, and ROCE. To test the stated hypotheses, the authors developed the following regression models:

- Model 1: $ROA = \text{Intercept} + \beta \times FL + u$

- Model 2: $ROE = Intercept + \beta \times FL + u$
- Model 3: $ROS = Intercept + \beta \times FL + u$
- Model 4: $ROCE = Intercept + \beta \times FL + u$

where:

- Intercept and β are the coefficients calculated from regression equations, models. When there are no regression results from any equation, the values of the coefficients are set to 0.
- u: Random error (random variable).

Table 1

List of variables in the research model

Variable	Meaning	Role
ROA	Reflecting the profitability of assets - Return on Assets	Dependent variable
ROE	Reflecting the profitability of Equity - Return on Equity	Dependent variable
ROS	Reflecting the profitability of Sale - Return on Sales	Dependent variable
ROCE	Reflecting the profitability of Capital Employed - Return on Capital Employed	Dependent variable
FL	Reflecting the relationship between liabilities and equity - Financial Leverage	Independent variable

Source: Compiled by the authors based on research results

A conceptual framework is displayed in Fig. 1:

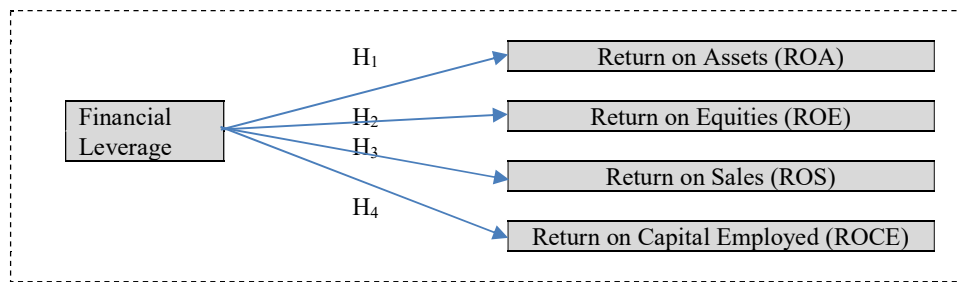


Fig. 1. Conceptual Framework

Source: Compiled by the authors based on research results

3.3. Research method

Sample collection and processing process:

Step 1: Get a full list of real estate companies listed by HOSE and HNX until the date of 31/12/2018. A total of 58 real estate companies listed with full names, stock codes and securities transactions.

Step 2: Data on the financial statements of each company was collected quarterly (58 companies×2 years×4 quarters).

Step 3: FL, ROA, ROE, ROS, ROCE were measured and some special data samples were removed if ROA was greater than ROE or ROCE and only data for 457 samples were left.

Data collected and processed are analyzed by the following methods:

- *Descriptive statistics analysis:*

This method is applied in the research to describe basic quantitative characteristics of data, including:

+ Calculate mean, median, maximum, minimum, standard deviation, skewness and kurtosis values. These values will provide fundamental conclusions about samples and basic comparisons between observations.

+ Calculate correlative values between independent variables to ensure the meaning of subsequent cor-

relation and regression analysis. The use of descriptive statistical methods to clarify collected data, summary content, presentation methods, ways of calculating and describing different characteristics. Thereby, a general presentation of the research objects. However, the limitation of descriptive statistics is that it only proposes notes and judgments for the past events relating to data but does not provide either approximation and statistics for subsequent data or forecast about correlations between figures.

- Correlation and regression analysis:

In order to overcome the limitations of descriptive statistics analysis method, the authors use correlation and regression analysis method to measure linear correlations between variables in regression models. The process of correlation and regression analysis for each model comprises the following steps:

- + Estimate the values of regression coefficients of four independent variables in the corresponding regression model with Ordinary Least Square method (OLS).
- + Test the statistical significance of the model and its independent variables.
- + Test for any possible problems with the regression model, including functional form misspecification, high multicollinearity, residuals not following a normal distribution, auto-correlation and heteroskedasticity.

4. Empirical results

4.1. Descriptive Analysis

Table 2 indicates that real estate firms in Vietnam have low profitability when ROA, ROE, ROS, and ROCE indicate very small meaningful information. In specific, the average ROE does not exceed 4% while ROS has a higher mean of 9% and ROCE has the smallest (2.7%). These observations, however, varies between each firm. In some cases, the profitability can be very high with good ROA and ROCE values (as high as 20% and 39% respectively). In contrast, most other firms have low business efficiency and negative profitability. All real estate firms in Vietnam use FL in their business structures. On average, the amount of debt in the capital structure is very similar to the shareholder equity ratio (49.56%). However, like profitability, the differences between the firms' capital structures are very large. Some firms use almost all their shareholder equities while others keep losing, leading to negative equity. As a result, the debt reaches almost 145.4% compared with the total capital.

Table 2
Descriptive Analysis

	ROA	ROE	ROS	ROCE	FL
Mean	0,015026	0,039470	0,900747	0,027623	0,495614
Median	0,008021	0,017443	0,144175	0,014081	0,518745
Maximum	0,197782	2,124250	8,63288	0,390842	1,453887
Minimum	-0,038032	-0,238573	-4,320513	-0,074954	0,005358
Std. Dev.	0,027966	0,151924	6,315430	0,059879	0,243746
Skewness	3,256041	11,27439	10,56327	3,091270	0,141887
Kurtosis	17,90075	154,5376	120,1133	16,01490	2,854300
Jarque-Bera	2556,250	226896,9	136897,9	2006,910	0,983647
Probability	0,000000	0,000000	0,000000	0,000000	0,611510
Sum	3,486134	9,157116	20,9732	6,408552	114,9826
Sum Sq. Dev.	0,180662	5,331714	92,357	0,828236	13,72421
Observations	232	232	232	232	232

Source: Compiled by the authors based on research results

Table 3 shows that FL has a very low correlation with other variables in the model (less than 15%.) FL, while having a negative correlation with ROA and ROS, is positively correlated with ROE and ROCE. The respective correlation values between FL and ROA, ROE, ROS, and ROCE are -14.6%, 13.22%, -11.6% and 1.9%.

Table 3

The correlation between independent and dependent variances

	ROA	ROE	ROS	ROCE	FL
ROA	1,000000	0,281161	0,468697	0,840221	-0,145998
ROE	0,281161	1,000000	0,090224	0,266402	0,132268
ROS	0,468697	0,090224	1,000000	0,216195	-0,115977
ROCE	0,840221	0,266402	0,216195	1,000000	0,018958
FL	-0,145998	0,132268	-0,115977	0,018958	1,000000

Source: Compiled by the authors based on research results

4.2. Results**4.2.1. ROA model (Model 1: $ROA = \beta_0 + \beta_1 FL + u$)**

In Table 4, with a confidence level of 95%, Model 1 has statistical significance Prob(F-statistic) of 0.026169, smaller than 0.05. Moreover, because R^2 is 0.211315, the change of ROA is equal to 21.13% the change of FL. As a result, Model 1 can be written as $ROA = 0.023328 - 0.016751 FL + u$.

Table 4

ROA model (Dependent variable: ROA, Observations: 357)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Intercept	0.023328	0.004132	5.645950	0.0000
Coefficient of FL	-0.016751	0.007484	-2.238147	0.0262
R-squared	0.211315	Mean dependent var		0.015026
Adjusted R-squared	0.171060	S.D. dependent var		0.027966
S.E. of regression	0.027726	Akaike info criterion		-4.324291
Sum squared resid	0.176811	Schwarz criterion		-4.294578
Log-likelihood	503.6178	F-statistic		5.009300
Durbin-Watson stat	0.542175	Prob(F-statistic)		0.026169

Source: Compiled by the authors based on research results

4.2.2. ROE model (Model 2: $ROE = \beta_0 + \beta_1 FL + u$)

In Table 5, with a confidence level of 95%, Model 2 has statistical significance Prob(F-statistic) equals 0, smaller than 0.05. Moreover, because R^2 is 0.754182, the change of ROE is equal to 75.42% the change of FL. As a result, Model 2 can be written as: $ROE = -0.001389 - 0.082441 FL + u$

Table 5

ROE model (Dependent variable: ROE, Observations: 357)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Intercept	-0.001389	0.022490	-0.061751	0.9508
Coefficient of FL	0.082441	0.000722	-16.52441	0.0000
R-squared	0.754182	Mean dependent var		0.022263
Adjusted R-squared	0.751420	S.D. dependent var		0.140290
S.E. of regression	0.069946	Akaike info criterion		-2.460462
Sum squared resid	0.435424	Schwarz criterion		-2.405278
Log-likelihood	113.9510	F-statistic		273.0561
Durbin-Watson stat	2.127445	Prob(F-statistic)		0.000000

Source: Compiled by the authors based on research results

4.2.3. ROS model (Model 3: $ROS = \beta_0 + \beta_1 FL + u$)

In Table 6, with a confidence level of 95%, Model 3 has no statistical significance since Prob(F-statistic) is 0.077915, bigger than 0.05. Moreover, because R^2 is 0.009161, the change in ROS is equal to 0.9% the change of FL. Therefore, FL has no effects on ROS.

Table 6

ROS model (Dependent variable: ROS, Observations: 357)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Intercept	2.390038	0.936830	2.551197	0.0114
Coefficient of FL	-3.004940	1.696917	-1.770823	0.0779
R-squared	0.013451	Mean dependent var		0.900747
Adjusted R-squared	0.009161	S.D. dependent var		6.315430
S.E. of regression	6.286435	Akaike info criterion		6.523249
Sum squared resid	9089.432	Schwarz criterion		6.552962
Log-likelihood	-754.6969	F-statistic		3.135813
Durbin-Watson stat	1.969923	Prob(F-statistic)		0.077915

Source: Compiled by the authors based on research results

4.2.4. ROCE model (Model 4: $ROCE = \beta_0 + \beta_1 FL + u$)

In Table 7, with a confidence level of 95%, Model 3 has no statistical significance since Prob(F-statistic) is 0.773941, bigger than 0.05. Moreover, because R^2 is 0.000359, the change of ROCE is equal to 0.03% the change of FL. Therefore, FL has no effects on ROCE.

Table 6

ROCE model (Dependent variable: ROCE, Observations: 357)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Intercept	0.025315	0.008941	2.831292	0.0050
Coefficient of FL	0.004657	0.016195	0.287562	0.7739
R-squared	0.000359	Mean dependent var		0.027623
Adjusted R-squared	-0.003987	S.D. dependent var		0.059879
S.E. of regression	0.059998	Akaike info criterion		-2.780435
Sum squared resid	0.827938	Schwarz criterion		-2.750722
Log-likelihood	324.5305	F-statistic		0.082692
Durbin-Watson stat	0.689107	Prob(F-statistic)		0.773941

Source: Compiled by the authors based on research results

4.3. Verifying the reasonableness and the reliability of the models

After the results of the models in Section 4.2 are calculated, the two remaining models, which are Model 1 and Model 2, need to be investigated. With different methods of testing, the rationality and reliability of the models will be determined.

Model 1: $ROA = 0.023328 - 0.016751 FL + u$ Model 2: $ROE = -0.001389 + 0.082441 FL + u$ **Table 8**

Process validation of the rationality and reliability of regression models

Statistical Test	Objective	Hypothesis	Conclusion
Wald Test	Test the reasonableness of the slope C (2) in each model.	Model 1: $\begin{cases} H_0 : \beta_1 = 0 \\ H_0 : \beta_1 < 0 \end{cases}$ Model 2: $\begin{cases} H_0 : \beta_1 = 0 \\ H_0 : \beta_1 > 0 \end{cases}$	With a confidence level of 95%, P-value is smaller than 0.05. Therefore, H_0 is rejected and H_1 is accepted. Moreover, P-value _{Model 1} = 0.025211 P-value _{Model 2} = 0.042998 Thus, FL has a negative effect on ROA and a positive effect on ROE.

Source: Compiled by the authors based on research results

Table 8**Process validation of the rationality and reliability of regression models (Continued)**

Statistical Test	Objective	Hypothesis	Conclusion
White Test	Establishes whether the variance of the errors in a regression model is constant	H ₀ : Variance of the errors in a regression model is constant H ₁ : Variance of the errors in a regression model is not constant	With a confidence level of 95%, P- value is larger than 0.05. The null hypothesis cannot be rejected based on the data. Moreover, P-value _{Model 1} = 0.281632 P-value _{Model 2} = 0.370127 Thus, the variance of the errors in a regression of both models is constant.
Ramsey Test	Ramsey Test aims to consider whether non-linear combinations of equipped values help explain response variables.	H ₀ : Model has the correct function form H ₁ : Model does not have the correct function form	With a confidence level of 95%, P- value is larger than 0.05. The null hypothesis cannot be rejected based on the data. Moreover, P-value _{Model 1} = 0.214885 P-value _{Model 2} = 0.228748 Thus, both models have the correct functional form.
Jacque-Bera Test	Jacque-Bera Test is intended to examine whether sample data has a deviation and disturbance consistent with normal distribution.	H ₀ : u is normally distributed H ₁ : u is not normally distributed	With a confidence level of 95%, P- value is smaller than 0.05. Therefore, H ₀ is rejected and H ₁ is accepted. Moreover P-value _{Model 1} = 0 P-value _{Model 2} = 0,054217 Thus, Model 1 has u not normally distributed. Model 2 has u normally distributed

5. The conclusion and recommendations*5.1. The conclusion from the research results*

The results from analyzing the correlation between FL and the profitability including ROA, ROE, ROS, and ROCE illustrate that: (1) FL has no impacts on ROS and ROCE, (2) FL has a negative impact on ROA and (3) FL has a positive impact on ROE.

FL has no impacts on ROS and ROCE

Research results showed that: Although FL plays an important role in evaluating ROA and ROE but while ROA is influenced negatively by FL, ROE has a positive correlation in accordance with FL. These results are consistent with previous studies, both theoretically and empirically.

FL has a negative impact on ROA

From the results, it has shown that FL had a great impact on ROA. With a confidence level of 95%, the change of FL relates to 21% the changes of ROA. With 232 observations from audited financial reports and testing using EVIEW 11.0, it is assumed that if FL increases by 1%, ROA will reduce by 0.01167%. Clearly, increasing debts causes total assets to increase. But, if that increase does not create enough profit in correlation with the financial costs raising from the debts, ROA will completely decrease. This is a suitable result based on Trade-off theory and a lot of descriptive previous researches of Fama and French (1998), Simerly and Li (2000) and Le (2017).

FL has a positive impact on ROE

The results in section 4 show that the change of ROE can be explained by 75% the change of FL, with the conference level of 95%. With 232 observations from audited financial reports and testing using EVIEW 11.0, it is assumed that if FL increases by 1%, ROA will increase by 0.08%. This is an important conclusion that is consistent with the Dupont model. It is also matched with the M&M theory and many other published types of research, including Abor's research (2005) and Gill's research (2011).

5.2. Limitations

Because the data that was collected and analyzed is from secondary sources as well as many different websites, errors are inevitable. This is mostly because the observations in this research are not uniform (most of the observations are quarterly data; however, some are yearly data). Nevertheless, since the data used in this research is all relative, the characteristics of those observations are not affected by the scale of an enterprise. Moreover, in this research, only model 2, which shows the relationship between ROE and FLR, is optimal. This is because in model 1 that shows the relationship between ROA and FLR, the residuals were not normally distributed. This problem in model 1, however, is alleviated because the sample size used in this research is very large (357 observations). The bigger the sample size, the less significant the problem is to the accuracy of the whole model.

5.3. Recommendation

5.3.1. Recommendation to the State

First of all, the State should create a legal environment for investment in real estate. At the same time, favorable conditions for real estate credit must be created. Currently, due to concerns about the appearance of “bubble” of real estate, the State Bank tends to strictly control the flow of money into the real estate market and people must wait for longer time to receive loans. Moreover high-interest rates have created many difficulties for enterprises for the process of mobilizing resources for production and business activities. In such a situation, the State should have more timely, practical interventions to avoid cumbersome practices and loose monetary policy for investment enterprises. In addition, the State should promote the stable development of the stock exchange, and increase the transparency of information, thereby increasing the flow of money in the stock exchange and solving the problem of capital.

5.3.2. Recommendation to the Stock Exchanges

Vietnam's stock exchange is an emerging market with no solid foundation, unstable trading and restrictions on information verification, infrastructure constraints, especially Human Resources. As a result, investors are more skeptical about investing in securities, making it difficult for businesses to access capital. Therefore, in order to promote the development of the real estate market, the Stock Exchanges need to strengthen the supervision of transactions and listed companies, ensuring openness and transparency to help businesses have an equal environment for development.

5.3.3. Recommendation to the Real estate Agents

For listed real estate companies, the most important issue is profit, as investors will consider it before deciding whether to invest or not. Besides waiting for government support, businesses also have to look for opportunities and prevent risks. FL is one of the most effective financial instruments. The debt used in the business depends on the business objectives of the business in the short and long-term, but generally must ensure the profitability of the business.

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