



Original Article

The Impact of Capital Structure on Firm Performance of Vietnamese Non-financial Listed Companies Based on Agency Cost Theory

Nguyen Thuy Anh^{*}, Tran Thi Phuong Thao

Foreign Trade University, 91 Chua Lang, Dong Da, Hanoi, Vietnam

Received 27 March 2019

Revised 01 April 2019; Accepted 24 June 2019

Abstract: This paper investigates the impact of capital structure on firm performance using a sample of 3,122 observations of 446 non-financial listed companies on the Vietnam stock market during 2011-2017. Using firm performance measures, namely ROE and Tobin Q, we examined if higher leveraged firms are more efficient or less in their performance. We employed the fixed effect model to prove that there is an inverse U-shaped relationship between leverage and ROE, and then we can find a preferred capital structure for Vietnamese non-financial firms. To deal with endogeneity problem of the leverage variable, we employ two stage least squares (2SLS) regression with instrument variable estimators, which helps us strengthen the above results.

Keywords: Capital structure, firm performance, leverage variable, 2SLS.

1. Introduction

Financing decisions are now still controversial, particularly in relationship with firm efficiency. Some theoretical and empirical studies have shown that there is a positive impact of debt financing choices on firm performance, whereas others have proved that the impact is negative.

Among several theories explaining the choice of debt in relationship with firm profitability such as M&M theory, agency cost theory, trade-off theory, and market timing theory, we find that the agency cost hypothesis can explain well the impact of capital structure on firm performance. Under the agency costs hypothesis, a high leverage ratio reduces the agency costs of outside equity and increases firm value by constraining or encouraging managers to act more in the interests of shareholders. Greater financial leverage may affect managers and reduce agency costs

^{*} Corresponding author.

E-mail address: nthuyanh@ftu.edu.vn

<https://doi.org/10.25073/2588-1108/vnueab.4212>

through the threat of liquidation, which for managers may cause personal loss of salary, reputation and through pressure to generate a cash flow to pay interest expenses [1-3]. However, while increased leverage may reduce the agency costs of outside equity, the conflicts between debt holders and shareholders may increase the agency cost of outside debt resulting in higher expected costs of financial distress, bankruptcy, or liquidation. These agency costs result in higher interest expenses for firms to compensate debt holders for their expected losses, leading to lower firm efficiency.

In Vietnam, even though there are plenty of researches relating to capital structure and its impact on firm performance, the agency theory hasn't been tested thoroughly. Therefore, we are strongly motivated to test this theory using the data collected from the Vietnamese non-financial listed companies in recent times. This is the very first study to deal with the endogeneity problem using the 2 stages least square model to provide evidence of the inverse U-shape between capital structure and firm profitability.

Moreover, in Vietnam, before 1986, we had a centrally-planned economy and the Government controlled most of the country's resources. In 1986, the country launched a political and economic renovation intending to switch from an ineffective to a market-oriented economy. To implement these reforms, the Vietnamese government started to sell state ownership to domestic and foreign individuals/institutions. The privatization process remains incomplete and the Vietnamese government still has a strong influence on the operation of companies. The Government remains as the dominant shareholder and maintains control in many companies. This study examines the effects of state ownership on debt financing and expects that the State ownership variable will be an instrumental variable in the model investigating the impact of capital structure on firm performance. In addition, whereas many researches measured

state ownership by dummy variables, this study uses the proportion of shares owned by the State as a proxy for state ownership. Furthermore, this study collects annual data for non-financial Vietnamese listed firms on both the Hochiminh stock exchange and the Hanoi stock exchange from 2011 to 2017, which is the period of time that macroeconomic stability was restored after the financial crisis of 2007-2008.

The remainder of the paper is organized as follows: the next section discusses a literature review and our hypothesis, section 3 outlines the methodology and data used, section 4 reports the empirical results and section 5 concludes the paper.

2. Literature review and hypotheses

2.1. Literature review

The capital structure of a firm refers to the combination of debt and equity capital which a firm uses in its operation [4]. Capital structure theories explain the mix of debt and equity used by firms, determinants of capital structure and the relationship between capital structure and firm value.

The agency cost theory, initially developed by Berle and Means (1932), discovered that managers pursue their interests instead of maximizing returns to the shareholders. Jensen and Meckling (1976) demonstrated that there are two kinds of agency costs [5, 6]. The agency cost of equity arises because of the difference of interest between shareholders and managers and the agency cost of debt is caused by the different interests of shareholders and debt holders. Jensen (1986) claimed that with high debt, managers are under pressure to invest in profitable projects to create a cash flow to pay interest [3]. In other words, at low levels of leverage, increases will produce positive incentives for managers and reduce total agency costs by reducing the agency costs of outside

equity. However, at higher levels where bankruptcy and distress become more likely, the agency costs of outside debt overwhelm the agency costs of outside equity and so further increases in leverage lead to higher total agency costs and worse, the performance of firms.

Empirical evidence

Regarding the empirical evidence, most studies agree that debt can influence firm performance in several ways. Abor (2005) used correlations and regression analyses to investigate the effect of capital structure on firm performance. This study showed that there is a significant positive relationship between short-term debt to total assets and total debt to total assets on return on equity [7]. Weill (2008) used the data of seven European countries and provided new evidence that the relationship between leverage and firm performance varies across countries [8]. The study of Zeitun and Haq (2015), used evidence from Gulf Cooperation Council countries with a dynamic GMM approach [9]. They found that both long term debt and short term debt financing affect firm performance negatively.

Besides, some studies found a non-linear relationship between capital structure and firm value. Berge and Bonaccorsi di Patti (2006) employed a simultaneous-equation model that accounted for reverse causality from performance to leverage [10]. Using data on the US banking industry, they argued that getting debt can reduce the agency cost of equity, which then boosts the profit efficiency. However, when leverage becomes relatively high, it can have a negative effect on firm performance. In line with Berge and Bonaccorsi di Patti (2006), Margaritis and Psillaki (2007) used a sample of 12,240 New Zealand firms with OLS and quantile regression analysis [11]. The paper found strong evidence supporting the theoretical predictions of the agency cost model.

The literature involving Vietnamese firms is mostly concerned with factors affecting capital structure and a linear relationship between

capital structure and firm value. Vo Minh Long (2017) focused on analyzing panel data by applying different models, such as generalized linear models, a fixed effect model and a random effect model [12]. These studies found a positive relationship between capital structure and firm performance. Using the same methods, Le Thi Phuong Vy (2015) stated that leverage is associated positively with firm value [13]. However at a high leverage, the relationship switches from positive to negative. Nguyen Thanh Cuong et al. (2012) applied an advanced panel threshold regression model to prove the nonlinear relationship between leverage and firm value for Vietnam's seafood processing enterprises [14]. However, most models mainly capture unobserved heterogeneity - they do not account for the endogeneity problem, which is caused by measurement errors. One possibility to cope with endogeneity is to apply instrumental variable estimation. A feasible instrument is one which is sufficiently correlated with the endogenous variable, but not with the others. In this paper, we apply a two stage least squares model with an instrumental variable to determine whether there is a non-linear relationship between capital structure and firm performance.

2.2. Hypothesis

The impact of capital structure on firm performance has been the subject of considerable debate. Empirical evidence has been mixed with regards to debt adding a positive or negative value to a firm. Some researches show the positive effect of capital structure on firm performance in Italy and Spain [8]. However, researches in developing countries such as Ghana and India show an inverse relationship between a firm's debt ratio and profitability [7, 15]. While most studies explore the linear relationship between capital structure and performance, few provide further evidence on the curvilinear relation [10, 14, 16]. Adding more debt increases firm value through

corporate tax benefits and agency cost reducing. However, the distress costs also increase along with the higher level of debt. Therefore, in the context of the Vietnamese economy, our hypothesis is: There is a non-linear relationship between capital structure and the firm performance of listed Vietnamese companies.

3. Methodology and data

3.1. Data

A panel of secondary annual data of Vietnamese listed firm's financial figures and stock prices from 2011 to 2017 are used in this research. The raw data is obtained from the Stoxplus Company, a nationally recognized company providing a Vietnamese financial database. The data is cleaned by dropping observations with large missing main data or containing extreme data. In addition, financial institutions and insurance firms are excluded since the accounting presentations are different from those in the other sectors. Following the above sample selection process, a total of 3,122 observations are collected from 446 companies over 7 years. Table 1 shows the industry distribution of Vietnamese listed firms, based on the Industry Classification Benchmark Code.

Table 1. Number of companies separated by industry

No.	Industry	Quantity
1	Technology	21
2	Industrials	203
3	Consumer services	41
4	Oil and gas	3
5	Health care	18
6	Consumer goods	70
7	Basic materials	62
8	Utilities	28
9	Telecommunications	0
	Total	446

Source: Calculated from database of Stoxplus.

Table 1 shows that most listed firms are in the industrial sector, representing 45.5% of the total firms. The industrial sector was followed by the basic materials industry and consumer goods industry, accounting for 14% to 16% of total firms. The oil and gas industry and telecommunications industry are at the bottom of the list with few or no listings on the stock market.

3.2. Methodology

Following Abor (2005), Zeitun and Haq (2015), this research uses the following model:

$$PER_{it} = \beta_0 + \beta_1 LEV_{it} + \beta_2 Z_{it} + \varepsilon_{it} \quad (1)$$

To investigate the non-linear relationship between capital structure and firm performance, this paper uses the quadratic function underpinned by the studies of Margaritis and Psillaki (2010) and Berger and Bonaccorsi di Patti (2006) [10, 16]. The second regression equation for the firm's performance model is given by:

$$PER_{it} = \beta_0 + \beta_1 LEV_{it} + \beta_2 LEV_{it}^2 + \beta_3 Z_{it} + \varepsilon_{it} \quad (2)$$

where PER_{it} is the firm performance of firm i at time t and measured by ROE. ROE is calculated by dividing earnings after tax into the book value of total equity. LEV_{it} is a capital structure of firm i at time t and measured by the ratio of total debt to total assets. Z_{it} is a vector of control variables. The variables are included in Z_{it} to control for firm characteristics. We assume that firm size, tangibility, growth opportunities, dividend payout, liquidity, State ownership and the prestige of the stock exchange are likely to influence firm performance [9, 16]. Firm size (SIZE) is measured by the natural log of a firm's assets. Tangibility (TANG) is measured as the ratio of fixed assets divided by total assets. Growth opportunities (GROW) are measured by the growth in the sales (the sales in the current year minus the sales in the previous year divided by the sales in the previous year). Dividend payout (DIV) is defined by the dividend payout divided by earnings after tax. Liquidity (LIQ) is

measured by the current ratio (total current assets divided by total current liabilities). State ownership (GOV) is represented as the percentage of a total number of shares that the government owns.

To analyze the above regression equation, we describe the firm's variables by industry and year and analyze the correlation for variables to discover the links among the factors. Secondly, we focus on analyzing panel data in this study by employing a Pooled OLS model, a fixed effect model (FEM) and a random effect model (REM). In general, these estimation methods are common techniques for estimation of panel data. To determine which model is better, this research conducts the Breusch-Pagan LM test and the Hausman test.

Although REM and FEM can control for unobserved heterogeneity, they do not account for the endogeneity problem. To deal with this issue, some previous research has suggested using instrument variable estimators (IV estimators) [16]. In addition, many researches show that capital structure decisions are influenced by many factors.

Therefore, we continue to test the endogeneity with the expectation that capital structure is the endogenous variable in the model of firm performance.

4. Empirical results

4.1. Descriptive statistics

A summary of statistics for the variables used in the study are provided in Table 2. The average of the firm's performance ROE for the sample over the period 2011-2017 is about 10.6%. The average of leverage accounts for 50.7% and widely disperses, from 0.6% to 97.1%.

Correlation analysis is used to determine the links between the firm performance and firm's specific variables for the whole period. The pairwise correlation matrix is presented in Table 3. Overall, most correlation coefficients among variables are quite low, which indicates that there is no serious multicollinearity problems among the variables used in the study.

Table 2. Descriptive statistics 2011-2017

Variable	Observations	Median	Mean	Std. Dev	Minimum	Maximum
ROE	3122	0.108	0.106	0.198	-3.674	0.982
LEV	3122	0.536	0.507	0.221	0.006	0.971
SIZE	3122	26.909	26.982	1.474	23.330	31.922
TANG	3122	0.206	0.262	0.213	0.000	0.970
GROW	3122	0.079	0.270	5.037	-0.99	244.456
DIV	3122	0.468	0.478	0.521	0	10.484
LIQ	3122	1.394	2.071	2.257	0.143	35.332
GOV	3122	0.086	0.207	0.235	0	0.844

Source: Calculated from database of Stoxplus.

4.2. Results with Pooled OLS, FEM and REM

The Breusch - Pagan Lagrangian Multiplier test (LM test) is used to decide between REM or FEM and the Pooled OLS model. The null hypothesis in the LM test is that variances

across entities are zero. The results of the LM test are shown in Table 4.

The results imply to reject the null hypothesis and conclude that the Pooled OLS model is not appropriate. There is evidence of significant difference across listed firms. Next,

we decide which FEM or REM is preferred by conducting the Hausman test with the null hypothesis of REM versus the alternative FEM (Table 5).

The Hausman test statistics indicate that FEM is preferred because of rejecting the null hypothesis of REM. Table 6 shows the firm performance fixed effect regression results.

Our findings show a negative and significant coefficient of leverage on ROE in the linear model (model 1). However, the non-linear model with ROE measure illustrates the inverse U-shaped relation. The coefficient of LEV^2 is still negative and significant, but the coefficient of LEV turns out to be positive and still significant. The curvilinear relation is consistent with agency theory.

Table 3. Correlation coefficients

	ROE	LEV	SIZE	TANG	GROW	DIV	LIQ	GOV
ROE	1.00							
LEV	-0.15	1.00						
SIZE	0.04	0.35	1.00					
TANG	0.01	-0.06	0.10	1.00				
GROW	0.03	0.00	-0.02	-0.02	1.00			
DIV	-0.06	0.03	-0.01	-0.01	0.00	1.00		
LIQ	0.01	-0.32	-0.11	-0.10	0.00	-0.01	1.00	
GOV	0.06	0.08	-0.01	0.09	-0.02	0.01	-0.05	1.00

Table 4. The Breusch - Pagan Lagrangian Multiplier test results

Model	Chi ²	Pro > Chi ²	The model is chosen
Model (1)	488.87	0.0000	REM/FEM
Model (2)	507.12	0.0000	REM/FEM

Table 5. The Hausman test results

Model	Chi ²	Pro > Chi ²	The model is chosen
Model (1)	112.75	0.0000	FEM
Model (2)	158.01	0.0000	FEM

Table 6. Firm performance fixed effect regression results

	Model 1	Model 2
LEV	-0.453*** (-11.09)	0.734*** (6.29)
LEV ²		-1.261*** (-10.82)
SIZE	0.109*** (9.11)	0.125*** (10.6)
TANG	-0.183*** (-4.76)	-0.187*** (-4.98)
GROW	0.002*** (3.00)	0.002*** (3.58)
DIV	-0.004*** (-3.80)	-0.003*** (-3.51)
LIQ	-0.001 (-1.24)	0.001 (0.72)

GOV	-0.028 (-0.97)	-0.019 (-0.69)
Constant	-2.492*** (-7.94)	-3.151*** (-10.07)
R-Squared	0.3975	0.4229

Note: *, **, *** represent statistical significance at 0.10, 0.05 and 0.01 levels, respectively. Numbers in parentheses are asymptotic t-values.

Regarding the control variables, the regression result shows a significant positive impact of SIZE on firm performance. The proposed explanation is that larger firms have diversified activities, carry lower risk and lower variability in cash flow such that they are in a better position to explore profitable opportunities. Firm TANG has a negative and significant effect on firm performance. This negative relationship is supported by the argument that the firms that have larger amounts of fixed assets need more external finance and can suffer more financial distress.

There is a significant and positive relationship between growth opportunities and ROE. This result suggests that the pursuit of a growth strategy leads to profitability. Finally, regressions provide a significant negative relation between DIV and ROE. As the dividend payout ratio increases, the internal cash flow decreases and the demand for external funds grow. Under the assumption that the internal capital market is a cheaper capital source than the external capital market, then dividend distribution reduces operational efficiency for Vietnamese listed firms. However, liquidity and State ownership have an insignificant effect on firm performance.

4.3. Results with two-stage least squares model

The endogeneity problem occurs when an explanatory variable is correlated with the error term. The endogeneity problem causes inconsistent estimates from the ordinary least square. To deal with the endogeneity problem, some previous researches have suggested using instrument variable estimators (IV estimators)

[16]. Therefore, the study tests the endogeneity with the expectation that capital structure is the endogenous variable in the model of firm performance. Test steps are as follows:

Step 1: Based on studies on the capital structure by Titman and Wessels (1988) and Duong (2014), we conduct a sub-model (model 0) of capital structure to get the residual [17, 18]:

$$LEV_{it} = \beta\alpha_0 + \alpha_1SIZE_{it} + \alpha_2LIQ_{it} + \alpha_4DIV_{it} + \alpha_5GOV_{it} + \alpha_6RISK_{it} + \varepsilon_{it} \quad (0)$$

where LEV is the capital structure of a firm and measured by the ratio of total debt to total assets; SIZE is firm size and measured by the natural log of the firm's assets; LIQ is liquidity and measured by the ratio of total current assets to total current liabilities; DIV is dividend payout and defined by the ratio of the dividend payout to the earnings after tax; GOV is State ownership and is represented as the percentage of a total number of shares that the government owns. RISK is risk and measured by the standard deviation of profit after tax divided by total assets in a three-year period. The results of the sub-model in which LEV is the dependent variable are reported in Table 7.

Table 7. Capital structure regression results

Variable	Coefficient	t-statistic	P-value
SIZE	0.048	17.27	0.000
LIQ	-0.010	-2.22	0.026
DIV	0.002	3.54	0.000
GOV	0.041	2.75	0.006
RISK	-0.763	-6.01	0.000
Constant	-0.748	-9.39	0.000
R-squared	0.2718		
No. of observations	3,122		

Step 2: The residual of the sub-model is added in the firm performance regressions. According to the results from the fixed-effect model, the liquidity (LIQ) and State ownership (GOV) do not reach a significant level with the firm performance. Therefore, the study removes these variables from the firm performance model. The following models are constructed:

Model (1) with residual (r_{it})
 $PER_{it} = \beta_0 + \beta_1 LEV_{it} + \beta_2 X_{it} + \beta_3 r_{it} + \varepsilon_{it}$ (1')

Model (2) with residual (r_{it})
 $PER_{it} = \beta_0 + \beta_1 LEV_{it} + \beta_2 LEV_{it}^2 + \beta_3 X_{it} + \beta_4 r_{it} + \varepsilon_{it}$ (2')

Step 3: We apply a Hausman test to figure out if LEV is an endogenous variable. The null hypothesis is that LEV is not an endogenous explanatory variable. Table 8 shows the results of the Hausman test.

Table 8. Hausman test results

Model	F statistic	Pro > Chi ²	Conclusion
Model (1')	49.29	0.0000	LEV is an endogenous variable
Model (2')	30.97	0.0000	LEV is an endogenous variable

The results of Chi-square statistics in other models are all significant at the 1% level, which means LEV is an endogenous variable. Hence, we can employ two-stage least squares (2SLS) regression with the instrumental variable technique to examine the relationship between capital structure and firm performance.

Step 4: Estimate the value of the endogenous variable (LEV predicted) from the sub-model (model 0) and use the new value to conduct the main model regression (model 1 and model 2). The results of the two-stage model are presented in Table 9:

Table 9. The firm performance regression results with 2SLS model

	Model 1	Model 2
LEV	0.103 (1.29)	0.513*** (4.35)
LEV2		-0.702*** (-5.35)
SIZE	-0.001	0.015***

	(-0.13)	(5.51)
TANG	0.016 (0.91)	-0.025* (-1.86)
GROW	0.001 (1.58)	0.001 (1.58)
DIV	-0.004* (-1.82)	-0.003* (-1.78)
Constant	0.101 (1.02)	-0.289*** (-4.26)
R-squared		0.0617

Note: *, **, *** represent statistical significance at 0.10, 0.05 and 0.01 levels, respectively. Numbers in parentheses are asymptotic t-values.

The results of the 2SLS regression model show an insignificant linear relationship between capital structure and ROE. However, the results support the inverse U-shaped effect of the capital structure on ROE. Thus, two different models of regression (FEM and 2SLS) have the same view on the relationship between capital structure and a firm's performance. At a low level of debt ratio, the positive effect of the tax shield dominates the negative effect of the financial distress cost. The maximum capital structure can be calculated by the formula $-b/2a = -0.734/(-1.261*2) = 0.291$ (according to the fixed effect model) and $-b/2a = -0.513/(-0.702*2) = 0.365$ (according to the 2SLS model). Although each industry has its own characteristics that may alter the optimal capital structure, for the overall samples, the mean of leverage for all non-financial listed firms is 50.7%, which is much higher than the optimal capital structure. Therefore, it is recommended that many listed companies need to decrease debt to get closer to the optimal capital structure. Other control variables including firm size, tangibility, growth and dividend payout have the same effect on firm performance as the results from the fixed-effect model.

In addition, related to the capital structure equation (model 0), the firm size, dividend payout, and State ownership have a positive significant effect on capital structure. The explanation is that small firms have difficulty obtaining financing from the debt market because of information asymmetries, and so

small firms are expected to use more internal funds. Firms having higher dividend payout ratios have insufficient retained earnings for reinvestment, which increases the need for external financing, hence, they turn to have higher leverage, which affects indirectly firm performance. State-owned firms may have substantial advantages in access to the debt market because of the preferential treatment from state-owned banks. Thus, in the context of Vietnam, the findings imply that when firms want to reduce leverage, the managers may decrease the firm size, dividend payout ratio and the percentage of shares held by the State. In contrast, liquidity and firm risk are negatively related to capital structure. This relation means that the firms with higher liquidity tend not to issue debt because they have ability to finance growth from internally generated funds. When the firm risk grows, the probability of bankruptcy and the firm's cost of capital also rises. This condition leads to a negative relationship between firm risk and capital structure.

5. Conclusions

The study employs several different methods, including pooled OLS, REM, FEM and 2SLS to capture normality issues such as unobserved heterogeneity and endogeneity in researching the impact of capital structure on firm performance. The results illustrate that there is a non-linear relationship between leverage and firm performance. Our findings are consistent with the agency costs hypothesis. Moreover, by using an IV estimator, we also find that the firm size, dividend payout ratio and State ownership are positively related with firm leverage; liquidity and firm risk have a negative significant effect on leverage. Hence, though the firm has leverage, it can affect firm profitability indirectly.

Even though we find a preferred debt ratio for Vietnam non-financial companies, the results should be tested more among different industries to find out more appropriate levels of debt for each sector. In the future, further research could examine the relationship between the maturity structure of the firm's debt and firm performance.

Finally, further research could examine the joint impact of both capital structure and ownership structure on firm's performance on Vietnamese listed companies - for example, foreign-owned and family-owned companies.

References

- [1] S.J. Grossman, O.D. Hart, Corporate financial structure and managerial incentives, In M. J.J., *The economics of information and uncertainty*, University of Chicago Press, 1982.
- [2] J. Williams, Perquisites, "Risk and capital structure", *Journal of Finance* 42 (1987) 29-49.
- [3] M. Jensen, "Agency cost of free cash flow, corporate finance and takeovers", *American Economic Review Papers and Proceedings* 76 (1986) 323-329.
- [4] J. Berk, P. DeMarzo, J. Harford, *Fundamentals of Corporate Finance*, second edition, Prentice Hall, 2012.
- [5] A.A. Berle, G.C. Means, *The Modern Corporation and Private Property*, New York: The Macmillan Company, 1932.
- [6] J.C. Jensen, W.H. Meckling, "Theory of the firm: managerial behavior, agency costs and ownership structure", *Journal of Financial Economics* 3 (1976) 305-360.
- [7] J. Abor, "The effect of capital structure on profitability: An empirical analysis of listed firms in Ghana", *Journal of Risk Finance* 6 (2005) 438-447.
- [8] L. Weill, "Leverage and Corporate Performance: Does Institutional Environment matter?", *Small Business Economics* 30 (2008) 251-265.
- [9] R. Zeitun, M.M. Haq, "Debt maturity, financial crisis and corporate performance in GCC countries: A dynamic-GMM approach", *Afro-Asian J. Finance and Accounting* 5 (2015) 231-247.
- [10] A.N. Berger, E. Bonaccorsi di Patti, "Capital structure and firm performance: A new approach to testing agency theory and an application to the banking industry", *Journal of Banking and Finance* 30 (2006) 1065-1102.
- [11] D. Margaritis, M. Psillaki, "Capital structure and firm efficiency", *Journal of Business Finance and Accounting* 34 (2007) 1447-1469.
- [12] V.M. Long, "The relationship between capital structure and firm value: the case of listed companies on the Ho Chi Minh City Stock Exchange. Banking University of Ho Chi Minh

- City”, *Journal of Science - Ho Chi Minh City Open University* 53 (2) (2017) 45-56.
- [13] Le Thi Phuong Vy, “Ownership Structure, Capital Structure and Firm Performance: A Study of Vietnamese Listed Firms”, Dotoral thesis. Sydney: University of Western Sydney, 2005.
- [14] N.T. Cuong, “The relationship between capital structure and firm value: The case of listed companies on the Ho Chi Minh City Stock Exchange. Banking University of Ho Chi Minh City”, Dotoral thesis, Ho Chi Minh City: Vienam National University, 2015.
- [15] V. Dawar, “Agency theory, capital structure and firm performance: Some Indian evidence”, *Managerial Finance* 40 (12) (2014) 1190-1206.
- [16] D. Margaritis, M. Psillaki, “Capital structure, equity ownership and firm performance”, *Journal of Banking and Finance* 34 (2010) 621-632.
- [17] S. Titman, R. Wessels, “The determinants of capital structure choice”, *Journal of Finance* 43 (1) (1988) 1-19.
- [18] T.H.V. Duong, “A study of the factors affecting the capital structure of the companies listed on Vietnam stock market”, Doctoral thesis, National Economics University, 2014.