



## CAPITAL STRUCTURE DECISIONS AND FIRM PERFORMANCE OF VIETNAMESE SOES

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### ABSTRACT

*This paper examines relationships between capital structure decisions, firm performance, and Vietnamese state-owned enterprises (SOEs). Capital structure decisions are considered by short- and long-term debts respectively. We consider 1,580 firm-quarter observations of Vietnamese non-financial listed firms during 2007–2011 by applying panel data regression. Our results show that short-term capital structures decisions are found to be significantly negative associated with accounting-based firm performance but long-term capital structures decisions are positively related to market-based firm performance. Additionally, due to socialist market economy reforms, we further show that SOEs are less dominant influence in firm performance. We also find no effects of taxation on firm performance after a series of deregulation of taxation. Finally, 2008 financial crisis event changes relations between capital structure decisions and firm performance of Vietnamese SOEs. Therefore, the Vietnamese experience offers an opportunity to gain new insight.*

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**Keywords:** Capital structure, Firm performance, Vietnamese SOEs, Panel data regression, Deregulation of taxation, *Financial crisis*.

**JEL Classification:** D24, G32.

### Contribution/ Originality

This paper contributes to the existing literature by investigating capital structure decisions and firm performance of Vietnamese SOEs.

## 1. INTRODUCTION

Many financial studies discuss the relation between capital structure and firm performance and mixed results are found since the seminar research of Modigliani and Miller (1963). Negative correlations between capital structure and firm performance (Rajan and Zingales, 1995; Rajesh, 2012) are explained by possible underinvestment problems associated with debt (Myers, 1977) and stakeholder reactions to leverage (Titman, 1984; Maksimovic and Titman, 1991) while positive effects (Roden and Lewellen, 1995; Margaritis and Psillaki, 2010) are due to the trade-off between agency costs of debt and equity (Jensen and Meckling, 1976), the limited liability effect of debt (Brander and Lewis, 1986), and the disciplining effect of debt (Grossman and Hart, 1983; Jensen, 1986). On the other hand, for firms with few growth opportunities the positive effect of debt on firm performance will be more dominant whereas the opposite effect will apply for firms with high growth opportunities (McConnell and Servaes, 1995).

Vietnam has been growing more rapidly than any western economy after introducing privatization program in 1992, followed Doi Moi reform in mid-1980s.<sup>1</sup> The interest in reforming state-owned enterprises (SOEs) was caused by their poor performance due to higher ratios of debts to total assets. On the other hand, the government did still believe in an important role for the SOEs in Vietnam's industrialization and development but reforms were needed to make them more competitive.<sup>2</sup> Therefore, this study examines the effect of the increasing importance of Vietnam in the world economy on relations between capital structure and firm performance although prior studies show significant positive relations between capital structure and firm performance in western countries but negative relation in Asian countries.

However, few studies examine relations between capital structure and firm performance for firm-types under nationalization or privatization (Megginson *et al.*, 1994; Barberis *et al.*, 1996; Boubakri and Cosset, 1998; Megginson and Netter, 2001).<sup>3</sup> While state ownership enhances firms' access to debt, it has adverse effects on firm performance (Dewenter and Malatesta, 2001). Li *et al.* (2009) show that state ownership is positively associated with leverage and firms' access to long-term debt while foreign ownership is negatively associated with all measures of leverage. Therefore, this paper examines effects of (non-) state-owned enterprises in debt financing on firm

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<sup>1</sup> Vietnam is considered to be a high quality frontier market, with steady GDP growth ranging from 8.5% in 2007 and 5.3% in 2009 prior to 2011.

<sup>2</sup> Rondinelli, D. and M. Iacono, 1996. Policies and institutions for managing privatization. International Training Centre, International Labor Office, Turin, Italy. and Pham, C.D. and T.M. Carlin, 2008. Financial performance of privatized state owned enterprises (SOEs) in Vietnam. Working Papers, Macquarie Graduate School of Management. argue that government ownership grew in the developing world for slightly different reasons, primarily that government ownership was perceived as necessary to promote growth. Therefore, privatization could generate positive results.

<sup>3</sup> Nationalization forcibly converts a private corporation into a state-owned enterprise (SOE). On the contrary, privatization is the process of transferring ownership of enterprises from the public sector (a government) to the private sector.

performance. We further examine effects of taxation on firm performance since a series of deregulation of taxation. The Vietnamese experience offers an opportunity to gain new insight.

Following Himmelberg *et al.* (1999) and Claessens *et al.* (2002), panel data regression techniques are used to examine the relationship between capital structure decisions and firm performance for 1,580 firm-quarter observations of non-financial listed firms during 2007–2011. On the other hand, different from those earlier studies, market-based and accounting-based firm performance as well as short- and long-term capital structure decisions are considered respectively. Finally, research period include 2008 financial crisis and structure change problem should be considered.

We find that firm ownership structures are an important factor in determining Vietnamese firms' capital structure decisions. The above findings on the Vietnamese firms' capital structure decisions are mostly consistent with existing literature (such as (Li *et al.*, 2009)). In additionally, debt financings are found to be significantly negative associated with accounting firm performance but positive related to market firm performance when the firm performance considers 2 accounting-based and 3 market-based variables. Next, we find a significant and positive relationship between firm size and firm performance while showing a negative effect of the ratio of tangible fixed assets to total assets on firm performance. Finally, 2008 financial crisis event changes relations between capital structure decisions and firm performance of Vietnamese SOEs.

The organization of the paper is as follows. We review related institutional background and develop our hypotheses in the next section. Section 3 discusses our sample and variable construction. Section 4 presents our main results and provides interpretation, and Section 5 conducts some robustness checks and additional investigation. Section 6 concludes.

## 2. INSTITUTIONAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

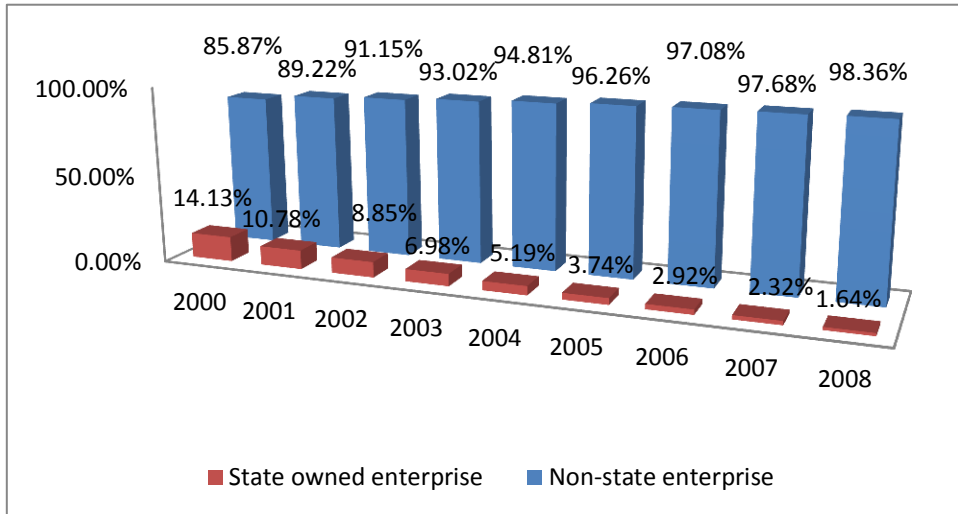
### 2.1. Vietnamese Corporate Context

Equitisation versus privatization have been at the core of the policy debate in Vietnam over the last decade but the government's attitude seems ambivalent. In 1986, Vietnam introduced socialist-oriented market economic reforms as part of the Doi Moi reform program. This program represented a wide ranging agenda aimed at stimulating economic growth and improving the capacity for Vietnam to achieve both self sufficiency and higher levels of prosperity than had previously been generated.

Equitisation is emphasized in policy statements. Equitisation denotes the conversion of a state-owned enterprise (SOEs) in Vietnam into a private corporation. But all private enterprise was nationalized without compensation. Private firms have positive effects on firm performance although private firms may rely on alternative financing channels based on reputation and relationships (Allen *et al.*, 2005). Additionally, Wang (2013) shows structural difference in static capital structure between state-owned and private listed firms, implying that the adjustment to an optimal capital structure is faster for the private firm than for the state-owned firm.

However, private ownership was encouraged in industries, commerce and agriculture. As shown in the Fig1, the ratio of number of acting enterprises by type of enterprises over total enterprises, implying significantly reduced the number of SOEs from 6,545 in 1992 to 3,324 in the period 2009–2010.<sup>4</sup> Nevertheless, Vietnam's economy is among the fastest-growing, with annual growth of about 7% from 2000 to 2005. Growth remained strong even in the face of the late-2000s global recession, holding at 6.8% in 2010.

**Fig-1.** Ratios of number of enterprises by type of enterprises over total enterprises



## 2.2. Corporate Taxes in Vietnam

Interest payments on debt are tax deductible expenses in Vietnam. Vietnam has implemented three important phases of tax reforms over first phase of tax reform (1990-1995), second phase of tax reform (1997-2005), and third phase of tax reform (2006-2010) as documented by Tax Policy Department of Vietnam. In late 1990s Vietnam signed ASEAN Trade Freedom Agreement (AFTA) and was preparing to negotiate access to World Trade Organization (WTO) with the introduction of modern taxes, which are value-added tax (VAT) and corporate income tax (CIT). This reform period expressed a great effort of the Vietnamese government in implementing the reform direction, reflected the economy's shift to market orientation.<sup>5</sup>

In its 2008 tax reform, reducing corporate income tax (CIT) rate from 28 percent to 25 percent for both domestic and foreign-invested enterprises. In an effort to attract more foreign direct investments, to reduce the current CIT rate from 25 percent to 22 percent since January 1, 2014. On

<sup>4</sup> According to the Statistical Censuses & Surveys in 2008, the Vietnam had 3,287 businesses for state-own enterprises and 196,776 businesses for non-state enterprises, compared with the year 2000, the number of 5,759 for state-own enterprises and 35,004 for non-state enterprises.

<sup>5</sup> As shown by Fiscal Affair Department of Vietnam, corporate income tax (CIT) rate was about 50% in early 1990s and 35% in late 1990s.

the other hand, the National Assembly will also cut CIT rates for small and medium-sized enterprises and developers of low-cost housing by 5 percent (to 20 percent) and 15 percent (to 10 percent), respectively. This new tax rate would put Vietnam at an advantage over other neighboring countries such as China (25 percent), Indonesia (25 percent) and the new rising star Myanmar (30 percent). However, other countries such as Thailand do offer a lower CIT rate at 20 percent and also more attractive incentives and tax breaks for newcomers.<sup>6</sup>

In general, Vietnam has been successful on 2006–2010 tax reform, contributing significantly to the process of economic reform in Vietnam.<sup>7</sup> In other words, tax reform has been made an important contribution to socio-economic development.

### 2.3. Literature Review and Our Hypotheses

The relationships of capital structure decision and firm performance was highlighted by two main capital structure theories, static trade-off theory (Myers, 1977) and pecking order theory (Myers and Majluf, 1984),<sup>8</sup> but results are mixed. The static trade-off theory assumes a positive relationship between profitability and leverage whereas the pecking-order theory states that there is a negative relationship (Chen, 2004). Negative correlations are explained by possible underinvestment problems associated with debt (Myers, 1977), stakeholder reactions to leverage, (Titman, 1984; Maksimovic and Titman, 1991) and for firms with high growth opportunities (McConnell and Servaes, 1995) while positive correlations are due to the trade-off between agency

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<sup>6</sup> Average CIT rate for Asia region in 2011 was 22.78%.

<sup>7</sup> As shown by Vietnam Fiscal Affair Department, tax revenue in 1996-2000 increased by 2.3 times in compared with the revenue collected in 1991-1995 and tax revenue in 2001-2005 increased by 2.0 times in compared with revenue collected in 1996-2000. Rates falling, but tax revenue has held up to 2% of GDP in 2010 from 1% of GDP in 2006.

<sup>8</sup> The static-trade-off theory claims that a firm will borrow up to the point (target debts-to-assets ratio) where the tax benefit from an extra dollar in debt is exactly equal to the cost that comes from the increased probability of financial distress Shyam-Sunder, L. and S.C. Myers, 1999. Testing static tradeoff against pecking order models of capital structure. *Journal of Financial Economics*, 51(2): 219-244, Hillier, D., I. Clacher, S. Ross, R. Westerfield, J. Jaffe and B. Jordan, 2011. *Fundamentals of corporate finance*. 1st Edn.: McGraw-Hill. A tax benefit from debt can be obtained, implying that the higher the tax rate, the greater the incentive to borrow Bowen, R.M., L. Daley and J.C. Huber, 1982. Evidence on the existence and determinants of inter-industry differences in leverage. *Financial Management*, 11(4): 10-20, Shyam-Sunder, L. and S.C. Myers, 1999. Testing static tradeoff against pecking order models of capital structure. *Journal of Financial Economics*, 51(2): 219-244, Hillier, D., I. Clacher, S. Ross, R. Westerfield, J. Jaffe and B. Jordan, 2011. *Fundamentals of corporate finance*. 1st Edn.: McGraw-Hill. On the other hand, the pecking-order theory developed by Myers, S.C. and N.S. Majluf, 1984. Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2): 187–221. describes that, due to adverse selection, firms prefer internal to external finance. When outside funds are needed, firms prefer the use of debt before equity, because there is lower information costs associated with debt and equity is therefore little used. Therefore, the pecking-order theory is based on the argument that asymmetric information creates a hierarchy of costs in the use of external financing.

costs of debt and equity (Jensen and Meckling, 1976), the limited liability effect of debt (Brander and Lewis, 1986), and the disciplining effect of debt (Grossman and Hart, 1983; Jensen, 1986), for firms with few growth opportunities (McConnell and Servaes, 1995). However, Brounen *et al.* (2006) find that agency problems do not have large implications on capital structure choice.

Many researches show that capital structure decision is the mix of debt and equity that will use to finance its business (Damodaran, 2001). Capital structure can be considered as one of important factors on firm profit. Again, there is little research being conducted on the determinants of capital structure in the Vietnam. In this study, we would expect that capital structure will affect to Vietnamese firm's performance. We need to find a strong relationship between them. Our first hypothesis thus is:

H1: There are significant relationship between firm's capital structure and its performance.

Few studies show positive effect of debt on performance of firms. Most studies argue that firm's debt ratio has negative effects on firm's performance, especially short-term debt, because short-term debt will make a firm facing with the risk of refinancing. Our second hypothesis thus is:

H2: Debts will decrease a firm performance.

A firm's size is measured by logarithm natural of total assets, supporting positively related to firm's performance. Thus, an increase in assets for a large-size firm will lead to an increase in its performance. On the other hand, the tangibility of a firm is expected to have negative relationship with firm's performance where tangibility is calculated by dividing the fixed assets to the total asset. Lower performance is resulted from high tangibility ratio because firm pays large amount of interest expense when tangibility is financed by debt. Our hypotheses are:

H3: A firm's size will have a positive relationship with firm's performance.

H4: There is a negative relationship between tangibility and firm performance.

Next, motivated by early works on state ownership, mixed effects of state ownership on firm performance are found. Megginson *et al.* (1994) suggest that after being privatized, former SOEs increased real sales, became more profitable, increased levels of capital spending, improved operating efficiency levels, had lower debt and increased dividend payouts. However, Dewenter and Malatesta (2001) and Li *et al.* (2009) find that SOEs' easy access to long-term debt is positively associated with long-term investment and negatively associated with firm performance. Pham and Carlin (2008) also suggest that after being privatized, firms generally exhibit reductions in profitability. Therefore, a controlling government stakeholder is expected to have adverse effects on firm performance when state ownership enhances firms' access to debt. Finally, 2006–2010 Vietnam corporate tax reform has been made an important contribution to socio-economic development. It implies that a decrease in tax rate lead to an increase in firm performance. Wu *et al.* (2012) show negative relation between tax rate and firm performance, suggesting firms enjoying tax benefits. Our two hypotheses thus are:

H5: There is a negative relation between SOEs and firm performance.

H6: There is a negative relation between taxation and firm performance.

Finally, research period include 2008 financial crisis and structure change problem should be considered. Our final hypothesis thus is:

H7: There are structure change on relations between Capital structure decisions and firm performance before and after 2008 financial crisis.

### 3. METHODOLOGY AND DATA

#### 3.1. Measure of Firm Performance

We use Tobin's Q and ROA (return to assets) to measure firm performance. Tobin's Q is defined as the market value of total assets deflated by the book value of total assets and is calculated as the ratio of the market value of equity plus the book value of total debts to the book value of total assets. Additionally, an alternative market performance is MBVR variable, defined as market value of equity to book value of equity. On the other hand, for accounting performance, ROA and ROE are calculated as net profit divided by total assets and net profit divided by book value of equity respectively.

#### 3.2. Firm Performance Regression Models

Following Himmelberg *et al.* (1999) and Claessens *et al.* (2002), this paper uses panel data regression model to test the relationship between capital structures decisions and firm performance.<sup>9</sup> The dependent variable is Performance, the Tobin's Q, MBVR, ROA, or ROE, which represents the firm performance. First and last two variables present market-based and accounting-based performance. Our firm performance regression models are as followed.

$$Y_{it} = \alpha_0 + \alpha_1 Lev_{it} + \alpha_2 Size_{it} + \alpha_3 Tang_{it} + \alpha_4 ETR_{it} + \alpha_5 SOEs\ dummy + \varepsilon_{it} \quad (1)$$

where the independent variables include a proxy for capital structure decisions (*Lev*), firm size (*Size*), Tangibility (*Tang*), Taxation (*ETR*), and *SOEs Dummy*. The definitions of these independent variables are below. As for capital structure decisions variables (*Lev*), as in prior studies, three measures of leverages are used in this study as short-term debt to total asset (SDTA), long-term debt to total asset (LDTA), and total debt to total asset (TDTA). Additionally, size variable (*Size*) is defined as the natural log of total assets in our model to control for economics of scale or the size effect. Tangibility variable (*Tang*) is estimated by dividing the book value of fixed assets by the total assets of firms. Taxation variable (*ETR*) is calculated as total tax expenses over earnings before interest and tax, similar to Wang (2013). Finally, to control for the SOEs effect, we include *SOEs dummies* in our models, which equal one if a firm is SOEs, and zero otherwise.

<sup>9</sup> While it is possible to use ordinary multiple regression techniques on panel data, they may not be optimal. The estimates of coefficients derived from regression may be subject to omitted variable bias - a problem that arises when there is some unknown variable or variables that cannot be controlled for that affect the dependent variable. With panel data, it is possible to control for some types of omitted variables even without observing them, by observing changes in the dependent variable over time. This controls for omitted variables that differ between cases but are constant over time. It is also possible to use panel data to control for omitted variables that vary over time but are constant between cases.

To analyze above regression equation, we apply different models, such as generalized linear models (OLS), fixed effect model (FE), and random effect model (RE). These last two models will focus on analyzing panel data in study. Fixed effect model (FE) helps us to explore the relationship between variables within a company. Fixed effect model eliminates the effect of those time-invariant characteristics from the explanatory variables by controlling for those impacts. On the other hand, random effect model (RE) assumes coefficient are randomly characterized from population that the sample was randomly drawn (Baltagi, 2005). Therefore, following Greene (2008), we decide which fixed/random effect model is preferred by conducting a Hausman test with null hypothesis of random effect versus alternative one of fixed effect.

### 3.3. Data

We consider Vietnamese stocks listed at the Ho Chi Minh City Stock Exchange (HOSE). Our quarterly sample data from 2007 to 2011 are obtained from Financial Statements of listed firms published in the HOSE.

For some selecting criteria, we only choose the listed firms with enough financial statements information from 2007 to 2011. In addition, we exclude all of the financial institutions and banks. Only 79 companies are available in 5 years, with 1,580 firm observations. In this study, instead of using time series or cross-section data, we will combine both of them as the panel data. Hence, we need to apply the panel data regression.

## 4. RESULTS

Table1 provides a summary of the descriptive statistics. We show statistics including mean, median, max, min, standard deviation, and panel data unit root testing statistics. We also list variables of ROA, Tobin Q, MBVR, SDTA, LDTA, TDTA, Size, Tangibility, ETR, SOEs-dummy, and Private-dummy.

Our results show that the mean of the return on asset (ROA) is 2.47%, with the range of 23.9% and -71%. Tobin Q variable is the mean of 1.2450, with the max of 9.8330 and the min of 0.2200. MBVR is the mean of 1.2186, suggesting that firms operate better when greater than one. Additionally, the average value of short-term debt to total assets (SDTA) is 32.2% while the ratio of long-term debt (LDTA) is only 9.1%. This implies that Vietnamese companies mainly use short-term debt to finance their operations due to the difficulty in accessing long-term credit from financial institutions. Thus, the mean of total debt to total assets (TDTA) is about 41.4%, total with SDTA and LDTA. Our results of capital structure decisions imply that Vietnamese firms, similar to many companies in emerging countries, mainly finance their business by short-term debt. Because mid-term and long-term debts have high liquidity risk premium, interest rates are relatively high, and banks are very carefully in disbursing. Therefore, long-term debt is not really popular in Vietnamese debt market.



Next, the mean of size is 5.1800 while the mean of Tangibility is 0.2919. The average of taxation variable (*ETR*) is about 6%. The average value of SOEs dummy is 37% while the one of private firm is 67%. It implies most firms are private firms while some are SOEs.

Finally, following Levin *et al.* (2002) (LLC) with the null hypothesis of all the panels containing a unit root, our results show LLC bias- adjusted t- statistics are significant at the 1% level. It implies to reject null hypothesis of a unit root. We conclude that all of the variables do not have a unit root. In other words, our results of LLC test suggest stationary for all variables.

**Table-1.** Summary Statistics

Variables	Mean	Median	Max	Min	Std.	LLC Test
ROA	0.0247	0.0210	0.2390	-0.7100	0.0369	-10.73***
ROE	0.0419	0.0400	0.3980	-1.6230	0.0749	-12.25***
Tobin Q	1.2450	1.0290	9.8330	0.2200	0.8457	-10.90***
MBVR	1.2186	0.9000	11.1900	0.1400	1.0484	-14.14***
SDTA	0.3226	0.2820	0.8010	0.0000	0.1888	-10.06***
LDTA	0.0915	0.0308	0.6667	0.0005	0.1356	-7.69***
TDTA	0.4142	0.4290	0.8500	0.0000	0.2019	-9.41***
Size	5.1800	5.1400	7.0000	4.0000	0.5480	-5.18***
Tang	0.2919	0.2505	0.9380	0.0070	0.1979	-4.79***
ETR	0.0600	0.0160	43.0000	-22.0000	1.3340	-6.28***
dummy (SOEs)	0.3700		1.0000	0.0000	0.4820	
dummy (Private)	0.6300		1.0000	0.0000	0.4820	

**Note:** Performance variables are the Tobin's Q, MBVR, ROA, or ROE. We list variables include a proxy for capital structure decisions (*Lev*), firm size (*Size*), Tangibility (*Tang*), Taxation (*ETR*), and *SOEs Dummy*. Unit Root Test (LLC Test). MBVR is the ratio of market to book value. Tobin's Q is defined as the market value of total assets deflated by the book value of total assets. Alternative market performance is MBVR variable, defined as market value of equity to book value of equity. For two accounting performance, ROA and ROE are calculated as net profit divided by total assets and net profit divided by book value of equity respectively. As for capital structure decisions variables (*Lev*), three measures of leverages are used in this study as short-term debt to total asset (SDTA), long-term debt to total asset (LDTA), and total debt to total asset (TDTA). Additionally, size variable (*Size*) is defined as the natural log of total assets in our model to control for economics of scale or the size effect. Tangibility variable (*Tang*) is estimated by dividing the book value of fixed assets by the total assets of firms. Taxation variable (*ETR*) is calculated as total tax expenses over earnings before interest and tax. Finally, to control for the SOEs effect, we include SOEs dummies in our models, which equal one if a firm is SOEs, and zero otherwise.

Table2 shows the firm performance regression results with ROA measure to verify the association between capital structure and firm performance. We employ the pooled OLS regression and panel data regression with fixed effect model (FE) and random effect model (RE) to examine the capital structure decisions and firm performance. Additionally, controlling size, taxation, and SOEs, we can obtain robust results.

First following Greene (2008), we decide which fixed/random effect model (FE/RE) is preferred by conducting the Hausman test with null hypothesis of random effects versus alternative one of fixed effect. Table2 shows the firm performance fixed effect (FE) regression results with ROA measure are preferred because rejecting null hypothesis of random effect (RE).

For FE regression results, our findings suggest negative and significant relation between firm performance and capital structure decisions measured by SDTA, LDTA and TDTA. By comparing the coefficient of SDTA and LDTA on ROA, the greater coefficient of SDTA is greater than

LDTA, suggesting that an increase of 1 percent in SDTA (LDTA) leading to a decrease in ROA by 5.0% (4.3%). In other word, the increase in leverage ratios will make lower firm performance measured by ROA. Two possible reasons would be provided. Due to high fluctuation of interest rate, firms difficultly raised their capital. At the same time, Vietnamese companies almost cannot raise capital from stock market due to rapid slowdown in price. Therefore, they need to collect money from the bank so Vietnamese firms need to pay the large amount of interest expense, lead to the decrease in firm performance. Another reason is that Vietnamese enterprises suffer from bearish markets to lower their firm performance although they make short-and long-term investment on security and real estate markets by financing from banks due to unavailable better investment opportunity.

We turn to further observe the relation between controlling variables and firm performance. For all capital structure decisions variables, this Table shows positive and significant coefficients of size on ROA while negative and significant coefficient of tangibility on ROA. Additionally, taxation (LTR) is weakly and significantly related to ROA except for SDTA measure. Next, SOEs dummy is an insignificant impact on ROA although positive and significant impact in the OLS results. Finally, FE models provide higher adjusted R-squared values for ROA with range from 30% to 35%.

**Table-2.** Firm performance regression results with ROA measure

$$Y_{it} = \alpha_0 + \alpha_1 Lev_{it} + \alpha_2 Size_{it} + \alpha_3 Tang_{it} + \alpha_4 ETR_{it} + \alpha_5 dummy (SOEs) + \varepsilon_{it}$$

Dev Var	SDTA			LDTA			TDTA		
	Pooled	FE	RE	Pooled	FE	RE	Pooled	FE	RE
Const	-0.022 (-2.57)**	-0.135 (-6.49)***	-0.076 (-5.08)***	-0.031 (-3.46)***	-0.131 (-6.28)***	-0.085 (-5.48)***	-0.034 (-3.95)***	-0.136 (-6.58)***	-0.077 (-5.35)***
Dev	-0.053 (-10.22)***	-0.050 (-5.97)***	-0.054 (-7.42)***	-0.052 (-6.22)***	-0.043 (-3.05)**	-0.045 (-3.78)***	-0.060 (13.13)***	-0.058 (-7.37)***	-0.061 (-9.29)***
Size	0.013 (7.81)***	0.037 (9.59)***	0.024 (8.58)***	0.010 (6.17)***	0.034 (8.85)***	0.022 (7.63)***	0.016 (9.30)***	0.037 (9.71)***	0.025 (9.06)***
Tang	-0.022 (-4.63)***	-0.039 (-3.89)***	-0.028 (-3.65)***	0.012 (1.99)**	-0.022 (-2.04)**	-0.003 (-0.34)	0.001 (0.170)	-0.025 (-2.55)**	-0.009 (-1.14)
LTR	0.001 (2.15)**	0.001 (1.85)	0.001 (1.99)**	0.001 (2.19)**	0.001 (1.68)*	0.001 (1.84)*	0.001 (1.99)**	0.001 (1.80)*	0.001 (1.92)*
SOEs	0.005 (2.47)**	0.001 (0.08)	0.005 (2.47)**	0.008 (4.37)***	-0.007 (-0.77)	0.008 (4.37)***	0.005 (2.45)**	0.002 (0.18)	0.005 (2.45)**
R <sup>2</sup>	0.098	0.350	0.073	0.061	0.339	0.050	0.133	0.360	0.089
Adj.R <sup>2</sup>	0.095	0.314	0.073	0.058	0.303	0.049	0.130	0.330	0.088
P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
F-value	34.110	9.830	30.780	20.430	9.350	20.550	48.200	10.170	38.490
Wald Chi <sup>2</sup>		170.56			102.17			241.00	
Hausman Test		0.000<0.5			0.000<0.5			0.000<0.5	
(Prob>Chi <sup>2</sup> )		=>Fixed Effect			=>Fixed Effect			=>Fixed Effect	

**Notes:** Definitions of performance variables of Tobin's Q, MBVR, ROA, or ROE and capital structure decisions (*Lev*), firm size (*Size*), Tangibility (*Tang*), Taxation (*ETR*), and *SOEs Dummy* are same in Table1. \*, \*\*, and \*\*\* represent significant at the 0.10, 0.05, and 0.01 level respectively. Numbers in parentheses are asymptotic t-values.

In Table3, we turn to regress capital structure decisions on alternative firm performance measure, ROE, and we apply pooled OLS regression and panel data regression with fixed effect model (FE) and random effect model (RE). We provide firm performance regression results for all three capital structure decisions measures.

First following Greene (2008), we decide which fixed/random effect model (FE/RE) is preferred by conducting the Hausman test with null hypothesis of random effects versus alternative one of fixed effect. Table3 shows the firm performance fixed effect (FE) regression results with ROE measure are preferred because rejecting null hypothesis of random effect (RE).

Our findings show negative and significant coefficients of SDTA and TDTA on firm performance of ROE except for LDTA. It implies that Vietnamese firms using short-term debt to finance their assets lead to a decline in firm performance but long-term debt are not related to firm performance. In other words, lower short-term debt leads to create stockholders' wealth. Additionally, size variable across different capital structure decisions is significant and positive related to firm performance. Tangibility (Tang) is only significant negative impact on firm performance in the capital structure decision of SDTA. Then, there is an insignificant and positive relation between Taxation (LTR) variable and ROE. However, SOEs are not benefit to firm performance. Finally, FE models provide higher adjusted R-squared values for ROA about 20%.

**Table-3.** Firm performance regression results with ROE measure

Dev Var	SDTA			LDTA			TDTA		
	Pooled	FE	RE	Pooled	FE	RE	Pooled	FE	RE
Const	-0.104 (-5.73) <sup>***</sup>	-0.277 (-6.09) <sup>***</sup>	-0.161 (-5.51) <sup>***</sup>	-0.109 (-5.94) <sup>***</sup>	-0.274 (-6.02) <sup>***</sup>	-0.164 (-5.60) <sup>***</sup>	-0.111 (-6.07) <sup>***</sup>	-0.277 (-6.10) <sup>***</sup>	-0.164 (-5.65) <sup>***</sup>
Dev	-0.029 (-2.73) <sup>***</sup>	-0.037 (-2.02) <sup>**</sup>	-0.036 (-2.43) <sup>**</sup>	-0.032 (-1.89) <sup>*</sup>	-0.017 (-0.56)	-0.026 (-1.08)	-0.034 (-3.56) <sup>***</sup>	-0.038 (-2.21) <sup>**</sup>	-0.039 (-2.87) <sup>***</sup>
Size	0.030 (8.55) <sup>***</sup>	0.066 (7.85) <sup>***</sup>	0.042 (7.53) <sup>***</sup>	0.029 (8.31) <sup>***</sup>	0.064 (7.65) <sup>***</sup>	0.040 (7.24) <sup>***</sup>	0.032 (8.84) <sup>***</sup>	0.066 (7.86) <sup>***</sup>	0.043 (7.66) <sup>***</sup>
Tang	-0.136 (-1.37)	-0.045 (-2.06) <sup>**</sup>	-0.023 (-1.55)	0.006 (0.550)	-0.036 (-1.57)	-0.007 (-0.43)	-0.001 (-0.07)	-0.036 (-1.63)	-0.010 (-0.70)
LTR	0.002 (1.37)	0.002 (1.18)	0.002 (1.29)	0.002 (1.38)	0.001 (1.13)	0.002 (1.26)	0.002 (1.31)	0.001 (1.16)	0.002 (1.26)
SOEs	0.008 (2.09) <sup>**</sup>	0.011 (0.51)	0.008 (2.09) <sup>**</sup>	0.010 (2.65) <sup>***</sup>	0.005 (0.23)	0.010 (1.26)	0.008 (2.07) <sup>**</sup>	0.011 (0.51)	0.007 (0.94)
R <sup>2</sup>	0.056	0.239	0.040	0.053	0.237	0.038	0.059	0.240	0.042
AdjR <sup>2</sup>	0.053	0.198	0.040	0.050	0.196	0.037	0.056	0.198	0.042
P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
F-value	18.490	5.740	13.310	17.670	5.680	12.330	19.590	5.750	13.800
WaldChr <sup>2</sup>		92.470			88.370			97.960	
Hausman Test (Prob>Chr <sup>2</sup> )		0.000<0.5			0.000<0.5			0.000<0.5	
		=>Fixed Effect			=>Fixed Effect			=>Fixed Effect	

**Notes:** Definitions of performance variables of Tobin's Q, MBVR, ROA, or ROE and capital structure decisions (*Lev*), firm size (*Size*), Tangibility (*Tang*), Taxation (*ETR*), and *SOEs Dummy* are same in Table1. \*, \*\*, and \*\*\* represent significant at the 0.10, 0.05, and 0.01 level respectively. Numbers in parentheses are asymptotic t-values.

We turn to observe the relation between capital structure decisions and market firm performance, measured by Tobin Q and MVBV, in Table4 and Table5 respectively. We also employ pooled OLS regression and panel data regression with fixed effect model (FE) and random effect model (RE) to examine capital structure decisions and firm performance controlling size, taxation, and SOEs. Table4 shows the firm performance regression results with Tobin Q measure.

First following [Greene \(2008\)](#), we find to reject null hypothesis of random effects under the Hausman test. It implies that fixed effect (FE) regression is preferred. Then, we further observe the relationship between Tobin's Q and different capital structure decisions and interesting results are found in Table4. Tobin Q variable is significant and negative related to SDTA but significant and positive related to LDTA. However, there is an insignificant relation between TDTA and Tobin Q. These findings are consistent with prior studies in the new emerging stock markets ([Zeitun and Tian, 2007](#); [Saeedi and Mahmoodi, 2011](#); [Khan, 2012](#)).

Additionally, firm size have positive effect on Tobin's Q, while tangibility has significant negative relationship on Tobin's Q under capital decisions of SDTA and LDTA but positive relation under capital decisions of TDTA. Taxation is insignificant impact on Tobin Q. SOEs dummy variable is significantly and positively related to Tobin Q, implying SOEs is dominant to firm performance.

**Table-4.** Capital Structure and Firm Performance measured by Tobin Q

Dev Var	SDTA			LDTA			TDTA		
	Pooled	FE	RE	Pooled	FE	RE	Pooled	FE	RE
Const	-0.892 (-0.44)	1.013 (3.21) <sup>***</sup>	-0.088 (-0.43)	0.139 -0.670	0.246 -0.860	0.139 -0.680	-0.099 (-0.48)	0.078 -0.030	-0.099 (-0.48)
Dev	-0.591 (-4.93) <sup>***</sup>	-1.831 (-6.67) <sup>***</sup>	-0.592 (-4.93) <sup>***</sup>	1.293 (6.60) <sup>***</sup>	1.831 (6.67) <sup>***</sup>	1.295 (6.61) <sup>***</sup>	-0.097 (-0.87)	1.819 (0.27)	-0.097 (-0.87)
Size	0.273 (6.86) <sup>***</sup>	0.175 (3.24) <sup>***</sup>	0.273 (6.86) <sup>***</sup>	0.191 (4.96) <sup>***</sup>	0.175 (3.24) <sup>***</sup>	0.191 (4.95) <sup>***</sup>	0.235 (5.78) <sup>***</sup>	0.313 (0.37)	0.235 (5.78) <sup>***</sup>
Tang	0.112 (0.99)	-0.606 (-3.27) <sup>***</sup>	0.112 (0.99)	-0.325 (-2.33) <sup>**</sup>	-0.606 (-3.27) <sup>***</sup>	-0.326 (-2.34) <sup>**</sup>	0.266 (2.35) <sup>**</sup>	0.519 (2.21) <sup>**</sup>	0.266 (2.35) <sup>**</sup>
LTR	-0.003 (-0.18)	0.005 (0.28)	-0.003 (-0.18)	0.001 (0.06)	0.005 (0.28)	0.001 (0.07)	-0.001 (-0.10)	-0.013 (-0.59)	-0.002 (-0.10)
SOEs	0.218 (4.83) <sup>***</sup>	0.265 (4.54) <sup>***</sup>	0.218 (4.83) <sup>***</sup>	0.239 (5.39) <sup>***</sup>	0.265 (4.54) <sup>***</sup>	0.239 (5.39) <sup>***</sup>	0.250 (5.53) <sup>***</sup>	0.262 (3.09) <sup>***</sup>	0.250 (5.53) <sup>***</sup>
R <sup>2</sup>	0.068	0.094	0.069	0.079	0.094	0.092	0.054	0.042	0.028
Adj.R <sup>2</sup>	0.065	0.037	0.068	0.076	0.077	0.079	0.050	0.009	0.054
P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000
F-value	22.550	18.920		26.610	18.930		17.570	3.840	
Wald Chi <sup>2</sup>		112.710			132.990			87.830	
Hausman Test (Prob>Chi <sup>2</sup> )		0.000<0.5=>			0.0936<0.5			0.0627<0.5	
		Fixed Effect			=> Fixed Effect			=> Fixed Effect	

**Notes:** Definitions of performance variables of Tobin's Q, MBVR, ROA, or ROE and capital structure decisions (*Lev*), firm size (*Size*), Tangibility (*Tang*), Taxation (*ETR*), and *SOEs Dummy* are same in Table1. \*, \*\*, and \*\*\* represent significant at the 0.10, 0.05, and 0.01 level respectively. Numbers in parentheses are asymptotic t-values.

Table5 presents results when examining the relationship between capital structure and market to book ratio (MBVR). We first to look at the results when conducting the Hausman test and null hypothesis of random effects is rejected. It implies to prefer fixed effect (FE) regression.

Our findings show positive relations between capital structures decision variables and MBVR. Next, we also show negative relations between size variables and MBVR as well as between tangible assets and MVBV. Finally, Taxations are insignificant positive impacts on firm performance while SOEs are insignificant negative impacts

To sum, on our examination of relationships between capital structures decisions and market (accounting) based firm performance, we find negative relation between capital structure decisions and accounting firm performance by using OLS and fixed effect regressions when considering SDTA, LDTA, and TDTA. On the other hand, LDTA are positively related to market firm performance but SDTA are negatively related to market firm performance based on OLS results. An interesting thing is mixed results for SDTA and market firm performance by using fixed effect models. SDTA is negative related to Tobin Q but positive related to MBVR. For TDTA, the positive relation between TDTA and MBVR is only found based on fixed effect model.

**Table-5.** Capital Structure and Firm Performance measured by MBVR

Dev Var	SDTA			LDTA			TDTA		
	Pooled	FE	RE	Pooled	FE	RE	Pooled	FE	RE
Const	-0.493 (-1.93)*	3.009 (5.16)***	1.619 (3.66)***	-0.341 (-1.32)	2.957 (5.07)***	1.759 (3.95)***	-0.496 (-1.93)*	3.037 (5.23)***	1.688 (3.81)***
Dev	-0.355 (-2.37)**	0.844 (3.56)***	0.483 (2.29)**	0.750 (3.15)***	1.138 (2.88)***	1.169 (3.40)***	-0.049 (-0.36)	1.099 (4.97)***	0.797 (4.09)***
Size	0.321 (6.47)**	-0.463 (-4.31)***	-0.125 (-1.48)	0.268 (5.52)***	-0.416 (-3.89)***	-0.113 (-1.35)	0.297 (5.87)***	-0.473 (-4.42)***	-0.161 (-1.90)*
Tang	0.306 (2.20)**	-0.507 (-1.81)*	-0.141 (-0.62)	0.081 (-0.490)	-0.897 (-3.03)***	-0.607 (-2.42)**	0.399 (2.90)***	-0.750 (-2.68)***	-0.347 (-1.53)
LTR	0.001 (0.07)	0.001 (0.04)	0.000 (0.01)	0.004 (0.19)	0.002 (0.15)	0.002 (0.09)	0.002 (0.11)	0.001 (0.07)	0.001 (0.04)
SOEs	0.199 (3.54)***	-0.147 (-0.53)	0.365 (2.65)***	0.218 (3.94)***	-0.004 (-0.02)	0.315 (2.26)**	0.219 (3.91)***	-0.182 (-0.66)	0.374 (2.70)***
R <sup>2</sup>	0.047	0.365	0.008	0.050	0.363	0.012	0.044	0.370	0.015
Adj.R <sup>2</sup>	0.044	0.330	0.008	0.047	0.329	0.012	0.041	0.336	0.015
P-value	0.000***	0.000***	0.031**	0.000***	0.000***	0.002***	0.000	0.000	0.000
F-value	15.550	10.500	2.450	16.450	10.420	3.730	14.410	10.730	4.770
Wald Chi <sup>2</sup>		77.770			82.250			72.040	
Hausman Test (Prob>Chi <sup>2</sup> )		0.000<0.5=> Fixed Effect			0.000<0.5 => Fixed Effect			0.000<0.5 => Fixed Effect	

**Notes:** Definitions of performance variables of Tobin's Q, MBVR, ROA, or ROE and capital structure decisions (*Lev*), firm size (*Size*), Tangibility (*Tang*), Taxation (*ETR*), and *SOEs Dummy* are same in Table1. \*, \*\*, and \*\*\* represent significant at the 0.10, 0.05, and 0.01 level respectively. Numbers in parentheses are asymptotic t-values.

Due to sample period containing 2008 financial crisis event, we examine whether relations between capital structure decisions and firm performance of Vietnamese SOEs are changed by financial crisis. We divide our sample period into three subperiods, before, during, and after

financial crisis. The period for pre-crisis is in 2007, the period for crisis is during 2008-2009, and the period for post-crisis is during 2010-2011. Here, due to restricted and limited space, we only present firm performance regression subresults with ROA and Tobin Q measures as shown by Tables 6 and 7. Panel A reports panel data model selection and Panel B report panel data regression subresults.

In Table6, we only observe relations between capital structures decision variables and ROA, and our findings show negative relations between those variables. It suggests larger impacts of crisis periods on relations between capital structures decision variables and ROA than non-crisis periods. However, results in Table7 show that negative relations between capital structures decision variables and Tobin Q during pre-crisis and crisis periods, but positive relations during post-crisis periods. Therefore, 2008 financial crisis event changes relations between capital structure decisions and firm performance of Vietnamese SOEs.

**Table-6.** Firm performance regression subresults with ROA measure

$$Y_{it} = \alpha_0 + \alpha_1 Lev_{it} + \alpha_2 Size_{it} + \alpha_3 Tang_{it} + \alpha_4 ETR_{it} + \alpha_5 dummy (SOEs) + \varepsilon_{it}$$

**Panel-A.** panel data model selection

Dev Var	SDTA			LDTA			TDTA		
	Pre-crisis	Crisis	Post-crisis	Pre-crisis	Crisis	Post-crisis	Pre-crisis	Crisis	Post-crisis
Wald Chi <sup>2</sup>	58.98	69.38	67.16	14.82	47.24	51.25	67.93	109.03	107.58
Hausman	0.545>0.5	0.1932<0.5	0.107<0.5	0.3648<0.5	0.1386<0.5	0.1369<0.5	0.281<0.5	0.165<0.5	0.4345<0.5
Panel models	Random	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed

**Panel-B.** Regression subresults with ROA measure

Dev Var	SDTA			LDTA			TDTA		
	Pre-crisis	Crisis	Post-crisis	Pre-crisis	Crisis	Post-crisis	Pre-crisis	Crisis	Post-crisis
Const	0.045 (3.08) <sup>***</sup>	-0.006 (-0.33)	-0.022 (-1.24)	0.039 (1.16)	-0.009 (-0.55)	-0.026 (-1.44)	0.032 (1.03)	-0.018 (-1.12)	-0.042 (-2.35) <sup>**</sup>
Dev	-0.045 (-6.72) <sup>***</sup>	-0.048 (-5.34) <sup>***</sup>	-0.046 (-4.48) <sup>***</sup>	-0.031 (-1.11)	-0.071 (-5.02) <sup>***</sup>	-0.064 (-4.16) <sup>***</sup>	-0.038 (-3.04) <sup>***</sup>	-0.060 (-7.8) <sup>***</sup>	-0.064 (-6.93) <sup>***</sup>
Size	0.001 (0.46)	0.010 (2.97) <sup>***</sup>	0.011 (3.35) <sup>***</sup>	0.000 (0.03)	0.006 (1.99) <sup>*</sup>	0.009 (2.64) <sup>**</sup>	0.003 (0.68)	0.012 (3.95) <sup>***</sup>	0.017 (4.77) <sup>***</sup>
Tang	-0.033 (-4.57) <sup>***</sup>	-0.023 (-2.88) <sup>***</sup>	-0.01 (-1.17)	-0.018 (-1.04)	0.019 (1.94)	0.019 (1.93)	-0.015 (-1.06)	0.000 (0.01)	0.005 (0.65)
LTR	0.016 (0.84)	0.007 (2.09)	0.001 (2.02) <sup>*</sup>	-0.014 (-0.40)	0.005 (1.75)	0.002 (1.94)	-0.003 (-0.09)	0.0061 (1.87)	0.001 (1.71)
SOEs	0.004 (1.47)	0.002 (0.67)	0.001 (0.34)	-0.004 (-0.59)	0.005 (1.63)	0.005 (1.44)	-0.003 (-0.54)	0.0023 (0.78)	0.001 (0.15)
R <sup>2</sup>	0.188	0.160	0.200	0.060	0.040	0.130	0.150	0.170	0.240
AdjR <sup>2</sup>	0.16	0.110	0.110	0.020	0.060	0.070	0.150	0.150	0.150

**Notes:** Definitions of performance variables of Tobin's Q, MBVR, ROA, or ROE and capital structure decisions (*Lev*), firm size (*Size*), Tangibility (*Tang*), Taxation (*ETR*), and *SOEs Dummy* are same in Table1. \*, \*\*, and \*\*\* represent significant at the 0.10, 0.05, and 0.01 level respectively. Numbers in parentheses are asymptotic t-values.

**Table-7.** Firm performance regression subresults with Tobin Q measure

$$Y_{it} = \alpha_0 + \alpha_1 Lev_{it} + \alpha_2 Size_{it} + \alpha_3 Tang_{it} + \alpha_4 ETR_{it} + \alpha_5 dummy (SOEs) + \varepsilon_{it}$$

**Panel-A.** panel data model selection

Dev Var	SDTA			LDTA			TDTA		
	Pre-crisis	Crisis	Post-crisis	Pre-crisis	Crisis	Post-crisis	Pre-crisis	Crisis	Post-crisis
Wald Chi <sup>2</sup>	148.6	408.80	4.7	29.30	201.45	7.36	492.86	995.98	5.77
Hausman	0.000<0.5	0.000<0.5	0.8>0.5	0.068<0.5	0.0061<0.5	0.997>0.5	0.000<0.5	0.000<0.5	0.778>0.5
Panel models	Fixed	Fixed	Random	Fixed	Fixed	Random	Fixed	Fixed	Random

**Panel-B.** Regression subresults with Tobin Q measure

Dev Var	SDTA			LDTA			TDTA		
	Pre-crisis	Crisis	Post-crisis	Pre-crisis	Crisis	Post-crisis	Pre-crisis	Crisis	Post-crisis
Const	1.736 (5.96) <sup>***</sup>	1.262 (15.82) <sup>***</sup>	-2.17 (-0.45)	2.277 (5.81) <sup>***</sup>	1.251 (13.63) <sup>***</sup>	-0.789 (-0.16)	1.989 (11.15) <sup>***</sup>	1.101 (17.95) <sup>***</sup>	-1.495 (-0.30)
Dev	-1.204 (-10.10) <sup>***</sup>	-0.731 (-16.76) <sup>***</sup>	0.130 (0.04)	-1.398 (-4.23) <sup>***</sup>	-0.827 (-10.55) <sup>***</sup>	7.406 (1.63)	-1.484 (-20.55) <sup>***</sup>	-0.831 (-28.33) <sup>***</sup>	2.887 (1.03)
Size	0.013 (0.25)	-0.074 (-4.74) <sup>***</sup>	0.744 (0.79)	-0.167 (-2.33) <sup>**</sup>	-0.133 (-7.71) <sup>***</sup>	0.507 (0.56)	-0.014 (-0.45)	-0.042 (-3.49) <sup>***</sup>	0.399 (0.42)
Tang	-0.599 (-4.64) <sup>***</sup>	-0.344 (-8.91) <sup>***</sup>	-4.390 (-1.62)	-0.130 (-0.64)	0.183 (3.37) <sup>***</sup>	-7.020 (-2.29) <sup>**</sup>	-0.103 (-1.25)	-0.010 (-0.36)	-4.780 (-1.81)
LTR	0.481 (1.53)	0.014 (0.88)	-0.020 (-0.08)	-0.141 (-0.34)	0.001 (0.07)	-0.010 (-0.04)	0.321 (1.67)	0.001 (0.11)	-0.010 (-0.04)
SOEs	0.003 (0.07)	-0.003 (-0.23)	-0.500 (-0.45)	0.006 (0.09)	0.039 (2.25) <sup>**</sup>	-0.459 (-0.43)	0.021 (0.63)	0.002 (0.24)	-0.27 (-0.25)
R <sup>2</sup>	0.185	0.090	0.060	0.250	0.310	0.010	0.190	0.130	0.010
AdjR <sup>2</sup>	0.158	0.080	0.070	0.010	0.020	0.010	0.180	0.130	0.009

**Notes:** Definitions of performance variables of Tobin's Q, MBVR, ROA, or ROE and capital structure decisions (*Lev*), firm size (*Size*), Tangibility (*Tang*), Taxation (*ETR*), and *SOEs Dummy* are same in Table 1. \*, \*\*, and \*\*\* represent significant at the 0.10, 0.05, and 0.01 level respectively. Numbers in parentheses are asymptotic t-values.

## 5. FURTHER DISCUSSIONS

Compared to other stock markets in Asian, Vietnamese market was quite small in terms of market capitalization, number of listed firms or trading volume. Besides raising capital from banks, firms can also increase capital from stock market. Actually, equity financing still had a lot of limitations such as inefficient market, asymmetric information, and violent market. However, debt financing from the Government banks was particularly important for Vietnamese firms. Debt financing depends heavily on the fluctuation of interest rate due to hyperinflation in late 2007 and early 2008. On the other hand, tighten monetary policies of the Central Bank led to an increase in deposit interest rates, exceeding 15% in July 2008.<sup>10</sup> Our findings show negative relation between short-term capital structures decisions and firm performance. It suggests possible underinvestment problems associated with debt (Myers, 1977), stakeholder reactions to leverage (Titman, 1984; Maksimovic and Titman, 1991), and more growth opportunities (McConnell and Servaes, 1995).

<sup>10</sup> Vietnam General Statistical Office shows the interest rate of 11.2% in 2007, 15.8% in 2008, 10.1% in 2009, 13.1% in 2010, and 17% in 2011.

Another explaining reason is that long term debt financings are difficult due to the high level of interest rate in Vietnam. Most Vietnamese private firms cannot access to long term debt financing but SOEs can access.

On the other hand, our evidence of positive relation between long-term capital structures and firm performance suggests the trade-off between agency costs of debt and equity (Jensen and Meckling, 1976), the limited liability effect of debt (Brander and Lewis, 1986), the disciplining effect of debt (Grossman and Hart, 1983; Jensen, 1986), and less growth opportunity (McConnell and Servaes, 1995).

The 2008 financial crisis creates many problems in Vietnam's economy, and its GDP growth is reduced sharply from 8.5% in 2007 to 6.3% in 2008 although the average value of 6.56% during our sample period. Our findings show negative relations between capital structures decision variables and accounting (marketable) firm performance during pre-crisis, crisis, and post-crisis periods except for positive relations between capital structures decision variables and marketable firm performance during post-crisis periods. It suggests underinvestment problems seem to be controlled during post-crisis periods. Corporate governance is examined by Vietnamese firms after crisis. Thus, 2008 financial crisis event changes relations between capital structure decisions and firm performance of Vietnamese SOEs.

## 6. CONCLUSIONS AND POLICY IMPLICATIONS

This study examines relations between capital structure decisions and firm performance for Vietnamese stocks listed at the Ho Chi Minh City Stock Exchange (HOSE). Panel data regression techniques are used to examine relationships between capital structure decisions and firm performance for 1,580 firm-quarter observations of Vietnamese non-financial listed firms during 2007–2011. On the other hand, different from earlier studies, market-based and accounting-based firm performance variables are considered whereas short- and long-term capital structure decisions are discussed. Our results show that short-term capital structures decisions are found to be significantly negative associated with accounting-based firm performance but long-term capital structures decisions are positively related to market-based firm performance. Possible reasons are that Vietnamese firms mainly rely on debts financings, especially short-term debts. More than 32 percent of assets are financed with short-term debt while only 9 percent come from the long term debt. Next, we find a significant and positive relationship between firm size and firm performance while showing a negative effect of the ratio of tangible fixed assets to total assets on firm performance.

Due to socialist market economy reforms, we further show that SOEs are more dominant influence in Tobin Q although insignificant positive relation between SOEs and accounting based firm performance. Our findings are consistent with Li *et al.* (2009) that ownership structures are an important factor in determining Vietnamese firms' capital structure decisions in existing literatures. Additionally, we find no effects of taxation on firm performance after a series of deregulation of taxation. It implies that tax has an insignificant effect on firm performance, with mixed effects for



private firms and SOEs because private firms tend to be more tax aggressive than public firms (Cloyd *et al.*, 1996; Beatty and Harris, 1999). In addition, Chen *et al.* (2010) find that family firms are less tax aggressive than non-family firms. On the other hand, results of other controlling variables of size and tangibility suggest positive related to firm performances. Finally, 2008 financial crisis event changes relations between capital structure decisions and firm performance of Vietnamese SOEs.

Several important policy implications emerge from our empirical results of capital structure decisions and firm performance of Vietnamese SOEs. First, negative relationship between short-term capital structures decisions and accounting-based firm performance suggests that most firms access to debt financings which depends heavily on fluctuations of interest rate due to hyperinflation. Targeting interest rates may be feasible and desirable. Second, positive relationship between long-term capital structures decisions and market-based firm performance suggests the trade-off between agency costs of debt and equity. Corporate governance is desirable as part of capital structures decisions. Thirds, SOEs are more dominant influence in Tobin Q, suggesting that SOEs determining Vietnamese firms' capital structure decisions improves firm performance. Fourth, our findings suggest that 2008 financial crisis to relations between capital structure decisions and firm performance of Vietnamese SOEs is not temporary. Results imply that following major structural changes in global financial market, capital structure is one of the most important effective parameters on the valuation and direction of economic enterprises in the capital markets. Reforms of corporate governance improve relations of capital structures and firm performances. In addition, the government attempts to improve channels of equity financings and debt financings for firms. Therefore, our findings would shed more valuable insights on capital structures and firm performances. The Vietnamese experience offers an opportunity to gain new insights.

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