

Liabilities and The Impacts on Financial Performance of The Vietnamese Listed Small and Medium-Sized Enterprises

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Abstract

This research aims to examine the relationship between liabilities and firm performance of the Vietnamese listed small and medium-sized enterprises (SMEs). We explore a panel data set of 61 listed SMEs in Vietnam from 2011 to 2014 and apply random-effects models to test whether the financing policy affects firm performance. It is found that leverage policy has a significantly positive impact on Tobin's q and a negative impact on ROE of the listed SMEs. Moreover, non-financial variables including joint stock firm age and business areas of SMEs significantly influence their performances.

Keywords: Liabilities; firm performance; Tobin's q ; ROE; SMEs.

1. Introduction

Small and medium-sized enterprises (SMEs) play an important role in economic development. This is a vulnerable group which forms a large part of the private sector in most countries (Clusel et al., 2013), particularly in developing ones like Vietnam. According to a 2013 report by the Vietnamese government, SMEs accounted for over 97 percent of total enterprises nationwide, about 50 percent of total employment and up to 40 percent of GDP (VCCI, 2013). Given the importance of SMEs, it is necessary to improve their business environment through adequate intervention so that they can perform better. In the context of Vietnam, enhancing the competitiveness of Vietnamese enterprises, particularly of SMEs, is one of the leading urgent demands. Of all aspects to improve the competitiveness of Vietnamese SMEs, facilitating access to credit and improving firm performance appear to be of particular importance. Firms lacking capital, especially long-term credit, tend to face inventory shortages, leading to lower rates of capacity utilisation (Fisman, 2001). A consideration is raised whether the selection of different terms of liabilities generates different impacts on firm performance.

With regard to leverage policy, Modigliani and Miller (1958, 1963) pioneer in affirming that a firm's value is unaffected by its capital structure in the no-corporate-taxes condition. Conversely, if corporate taxes are considered, a levered firm's value will be increased by virtue of utilising the debt tax shield. However, the Agency theory (Jensen and Meckling, 1976) proves that using debt over the optimal point leads to an increase of bankruptcy costs and agency costs, which decreases the firm's value.

Further, different ways of using debt as a financial leverage lead to different performances of firms (Brigham and Daves, 2003).

The purpose of this paper is to examine the relationship between liabilities and firm performance of the Vietnamese listed SMEs. We focus on the differences in leverage financing which impact firm performance. The research question is identified as how different liabilities financing impacts of listed Vietnamese SMEs affect performance. Once the question is addressed, it would provide more evidence about the relationship between leverage policy and performance as well as emphasise the importance of formal financing to firm development, especially that of SMEs. The research finds the significant impacts of different liabilities policies on firm performance measured by ROE and by Tobin's q in an opposite way. Another finding is that non-financial variables including joint stock firm age and business areas of SMEs have a significant influence on firm performance.

The research is structured into five sections. After the introduction, the literature review and an overview of the Vietnamese listed SMEs are presented in the second and third sections, respectively. The fourth section shows the models and framework while the fifth one demonstrates empirical results and discussion. The study is ended by the conclusions in the sixth section.

2. Literature review

Liabilities and firm performance

Modigliani and Miller (1958) lay the foundation for the modern theories of capital structure. They demonstrate that if investors can borrow and save on the same terms as firms,

and if firms' financing decisions do not affect their total cash flows, then the firms' choice between debt and equity has no effect on their total market value. In terms of owning firms, funding for assets is provided by a combination of owner and non-owner sources of finance (Easton et al., 2010). Owner (or equity) financing includes resources contributed to the company by its owners along with any profit retained by the company. Non-owner (creditor or debt) financing is borrowed money. Easton et al. (2010) reason that borrowed money entails a legal obligation to repay amounts owed, and failure to do so can result in severe consequences for borrowers. Equity financing entails no such legal obligation for repayment. Hence, the use of debt as a financial leverage contains financial risk for the common stockholders (Brigham and Daves, 2003). Also, financial leverage concentrates the firm's business risk on its stockholders because debt holders, who receive fixed interest payments, bear none of the business risk. Nonetheless, interest expenses, which are generated from the use of debt and accrue to debt holders, have been generally treated by tax laws and bring much more advantages than dividends or other cash flows accruing to equity holders (Damodaran, 2001). Conceptually, debt has a dual impact as interest expenses are tax deductible and thus create tax savings. However, if firms used too much debt, they would confront a huge pressure of payment, then erode firm profits and decrease their profitability (Nguyen and Phan, 2015). For this reason, examining firm leverage policy in relationship with its performance has been researched over time (Abor, 2007; Champion, 1999; Hutchinson, 1995; Taub, 1975). A signifi-

cantly positive relationship between debt ratio and measures of profitability is emphasised by Hutchinson (1995), Lloyd and Jahera (1994), Nguyen and Phan (2015), and Taub (1975).

Regarding liabilities, Mesquita and Lara (2003) find a negative relationship between long-term financing and rates of return. However, they find a positive relationship between short-term financing and equity. Abor (2005) examines the effect of capital structure including short-term debt ratio, long-term debt ratio, and total debt ratio on the corporate profitability of the listed firms in Ghana. It is shown that short-term debt ratio and total debt ratio separately have significantly positive relationships with firm profitability, whilst long-term debt ratio negatively affects profitability. Capital structure, especially long-term and total debt ratios, negatively impact the performance of SMEs (Abor, 2007).

Different equations to measure the firm leverage ratio are captured. The proportions of long term debt to total assets and of current liabilities to total assets are raised by McCue and Ozcan (1992). Later on, Deesomsak et al. (2004) present the debt to capital ratio by total debt to the sum of total debt, market value of equity, and book value of preference shares. Another calculation method is estimated by Bevan and Danbolt (2002), in which debt ratio is measured by non-equity liabilities to total assets. This is defined as the ratio of total debt plus trade credit and equivalent to total assets.

There have been a number of methods to capture firm performance. Belkaoui and Pavlik (1992) used net profit and the market value of equity as performance measures. Another alternative indicator, that is, return on investment

(ROI), serves as a meaningful performance measure, particularly for firms with low tangible asset investment and of moderate size (Jahera and Lloyd, 1992). Return on assets ratio (ROA) is also identified to measure firm performance (Alzharani et al., 2012). Sales revenue of a firm is used as an output to analyse firm efficiency (Su and Dai, 2012). In a majority of previous studies, revenue or firm growth rate (Beck et al., 2008; Rand and Tarp, 2012; Zarook et al., 2013), which is highly sensitive to exogenous shocks, is explored to represent firm performance.

Among indicators used to measure firm profitability, two ratios namely Tobin's q and return on equity (ROE) are widely used in studies on firm capital structure. Wernerfelt and Montgomery (1988) suggest the use of Tobin's q as a useful performance measure. Tobin's q is defined as the ratio of the market value of the firm to the replacement cost of its assets. Accordingly, the advantage of this ratio is to minimise distortions caused by tax laws and accounting conventions. It is found that industry effects are the main determinants of differences in Tobin's q from firm to firm (Wernerfelt and Montgomery, 1988). Jose et al. (1986) used Tobin's q as a performance measure in their research to investigate the contributions of diversification, promotion, and R&D investment strategies to firm value. Lloyd and Jahera (1994) used Tobin's q to capture performance effects. In studies by Zeitun and Tian (2007) and Margaritis and Psillaki (2007), a firm's operational efficiency is measured by the market value indicator of Tobin's q and by book values of ROA and ROE. Most studies indicate a significant relationship between debt financing or firm capital

structure and its performance. Generally, financial leverage has a positive effect on a firm's return on equity as long as the ratio of earnings before interest and taxes to total assets exceeds the average interest cost of debt to the firm (Hutchinson, 1995). Conversely, Kester (1986) and Friend and Lang (1988) point out a significantly negative association between profitability and the debt ratio. It is also found a negative impact of financial leverage on business performances in developing countries (Rajan and Zingales, 1995; Ratha et al., 2003).

SMEs and existing related issues

Studies over time have affirmed and recognised the significance of SMEs to socio-economic development (Audretsch et al., 2009; Doern, 2009; Harvie, 2007; Hussain et al., 2009). Studies and projects on SMEs have been conducted in many countries worldwide, especially in emerging countries (Hussain et al., 2009; Le, 2012; Regnier, 2000; Zarook et al., 2013). For developing countries like Vietnam, SMEs continue to be central to the development process regarding economic growth and employment (VCCI, 2013). SME-related issues examined in existing studies include marketing and entrepreneurship (Cromie et al., 1995), total quality management (Ghobadian and Gallea, 1996), R&D collaboration (Narula, 2004), innovation (Van de Vrande et al., 2009), financial policy and capital structure (Michaelas et al., 1999), etc.

Of all aspects relating to SMEs' development, access to credit and capital structure of SMEs have attracted much concern (Abor and Biekpe, 2009; Cassar and Holmes, 2003; Le, 2012; Michaelas et al., 1999; Zarook et al., 2013). Most researchers affirm the impor-

Table 1: Fundamental indicators of the listed SMEs from 2011 to 2014 on average

No.	Indicators	Value
1	Short-term liabilities ratio	30.3%
2	Long-term liabilities ratio	4.2%
3	Total liabilities ratio	34.5%
4	Return on equity (ROE)	5.1%
5	Tobin's q	0.8

Source: Calculation from listed SMEs' financial statements

tance of leverage policy for SMEs growth and dynamics. In Vietnam, firm capital structure is mostly examined by separate sectors such as the seafood industry (Le and Dang, 2013; Nguyen and Phan, 2015; Phan and Nguyen, 2013), construction (Nguyen et al., 2014; Phan, 2011) and the food industry (Phan and Nguyen, 2014). There are also numerous studies to investigate capital structure and/or firm performance of all listed companies in Vietnamese stock markets (Doan and Dinh, 2014; Duong, 2014; Vo et al., 2014). Notwithstanding, a few studies in Vietnam examine capital structure in relationship with performance by firm size. By virtue of the important role and contributions of SMEs in the national economic development and growth, our research is conducted with the purpose to find out a significant relationship between capital structure of listed SMEs and their performances. In other words, this study investigates the impact of liabilities ratios on firm performance by focusing on SMEs, which are often neglected in most empirical previous studies. In this paper, we use ROE and Tobin's q to capture SMEs' performance based on a review of previous studies by Lloyd and Jahera (1994), Margaritis and Psillaki (2007), Wernerfelt and Montgomery (1988), and Zeitun and

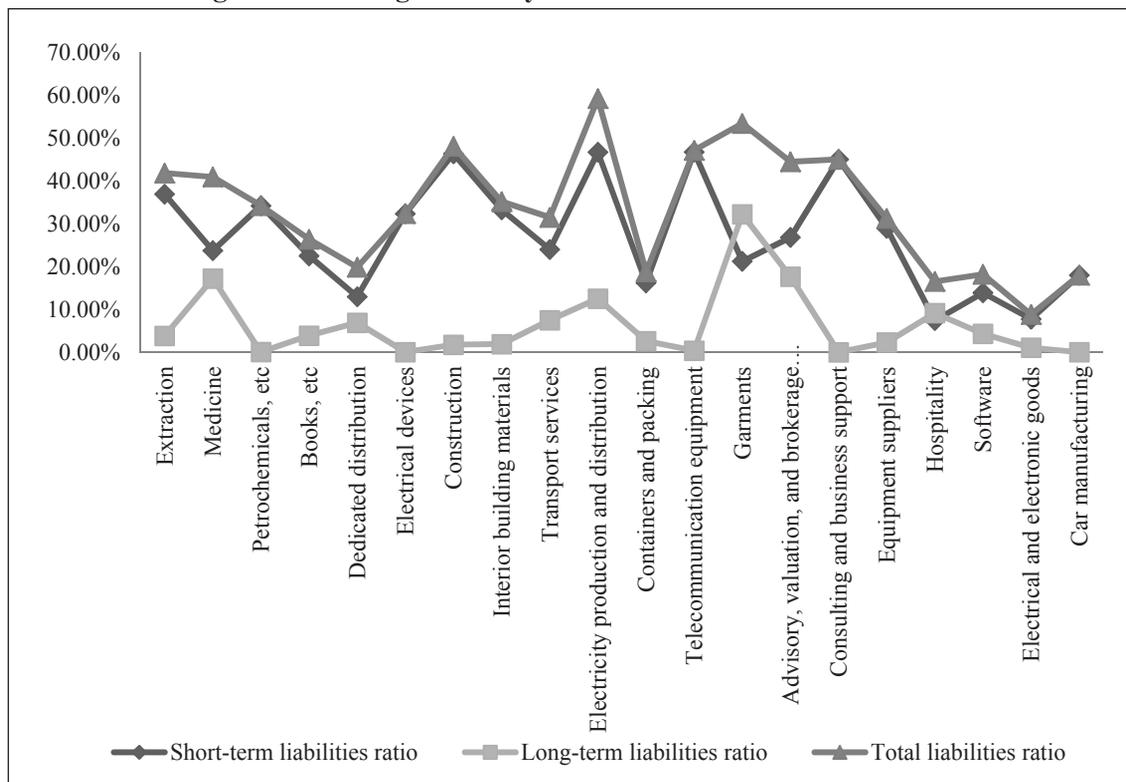
Tian (2007).

3. Overview of the Vietnamese listed SMEs

In Vietnam, SMEs play an important role in socio-economic development. They are often described as efficient and prolific job creators, the seeds of big businesses and the fuel of national economic engines (Abor and Quartey, 2010). The Vietnamese situation shows that SMEs have operated in most regions and localities across the country, which helps firms utilise and exploit the local resources. 61 SMEs¹ were listed in the two Vietnamese stock markets in the period 2011 – 2014. These enterprises are organised into 20 business areas. The average capital of these enterprises in the period 2011 – 2014 was 46.4 billion VND, in which liabilities accounted for 34.5 percent (see Table 1).

From Table 1, the ratio of short-term liabilities to total capital was 30.29 percent. Due to the limited access of long-term credit, the ratio of long-term liabilities was 4.2 percent on average, except that of SMEs in the fields of medicine and garments. Typically, enterprises in the business areas of construction, electricity production and distribution, telecommunication equipment, consulting, etc. had a short-term liabilities ratio of around 50 percent of capital

Figure 1: Leverage ratios by business areas of the listed SMEs



Source: Authors' calculation

(see Figure 1).

As seen in Table 1, return on equity of SMEs on average maintained at the rate of 5.1 percent. Among SMEs, firms in the field of books and cultural publications led the group with a ROE of 15 percent (Figure 2). The other three areas including dedicated distribution, interior building materials, and software had negative ROEs due to their business losses.

With the features of small-scale capital and low profitability, market values of the listed SMEs are also not assessed considerably by investors as 1 unit of book value is equivalent to 0.8 unit of market value (see Table 1). Except firms in the hospitality area which had Tobin's

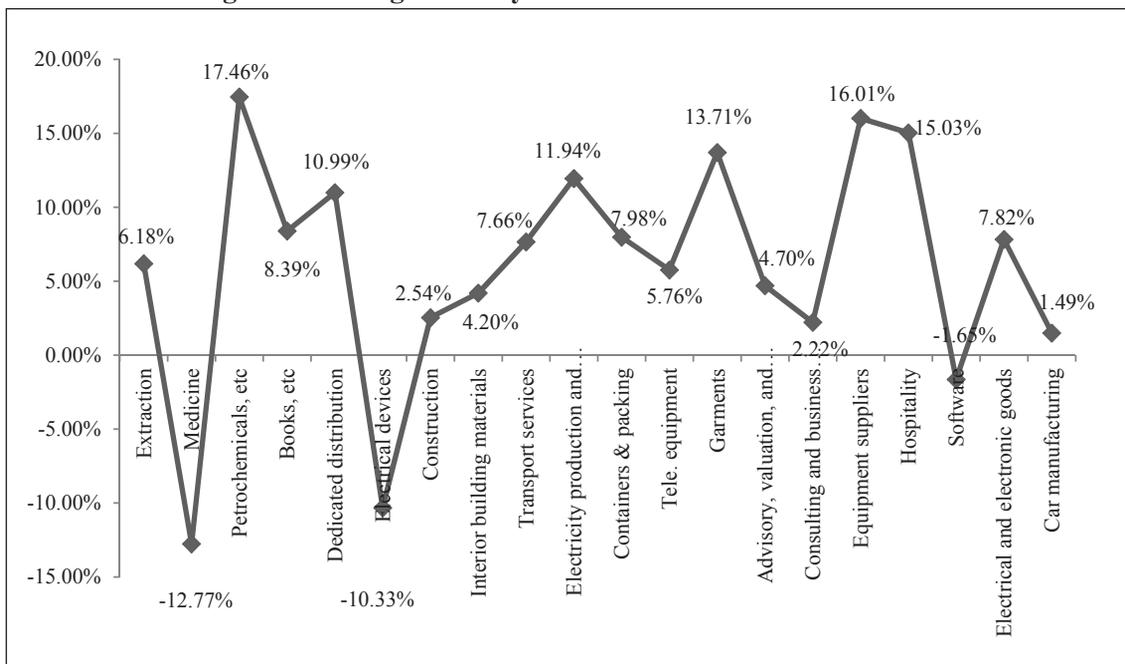
q to be greater than 1, those in the remaining ones had Tobin's q between 0.5 and 0.9 (Figure 3).

To summarise, the Vietnamese listed SMEs contain features of general SMEs in other countries in the world, that is, small-scale capital, limited access to credit, inefficient profitability and low market value. Therefore, it is necessary to research how leverage ratios influence the firm performance of the listed SMEs, the results of which will lay a reliable foundation for issuing capital policies for SMEs as well as for performing other appropriate support.

4. Framework and research models

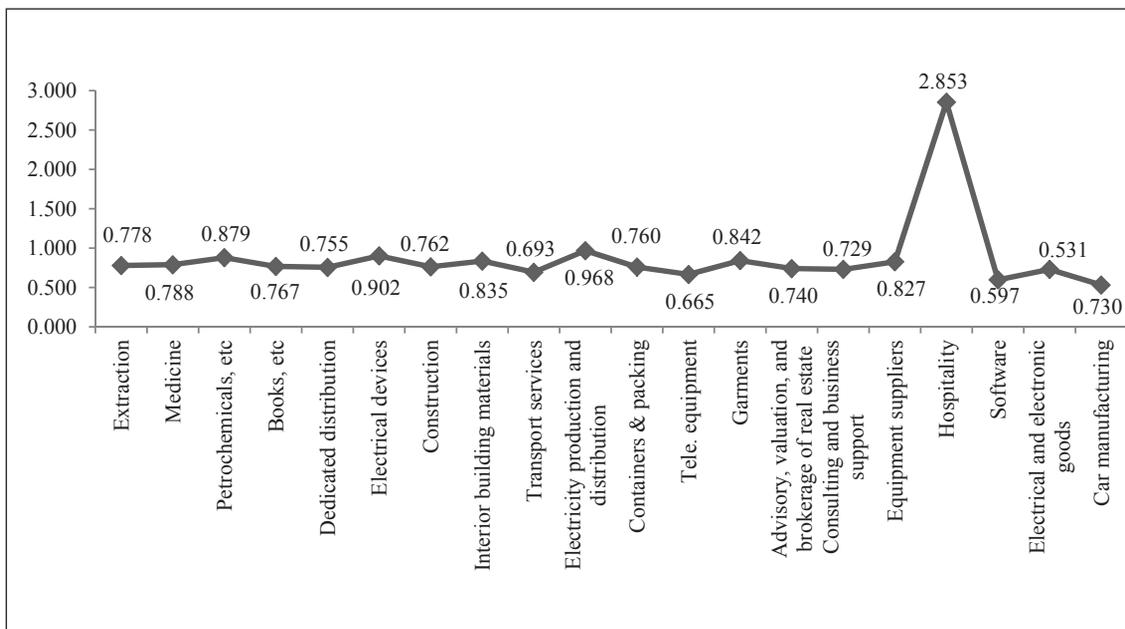
4.1. Framework

Figure 2: Average ROE by business areas of the listed SMEs



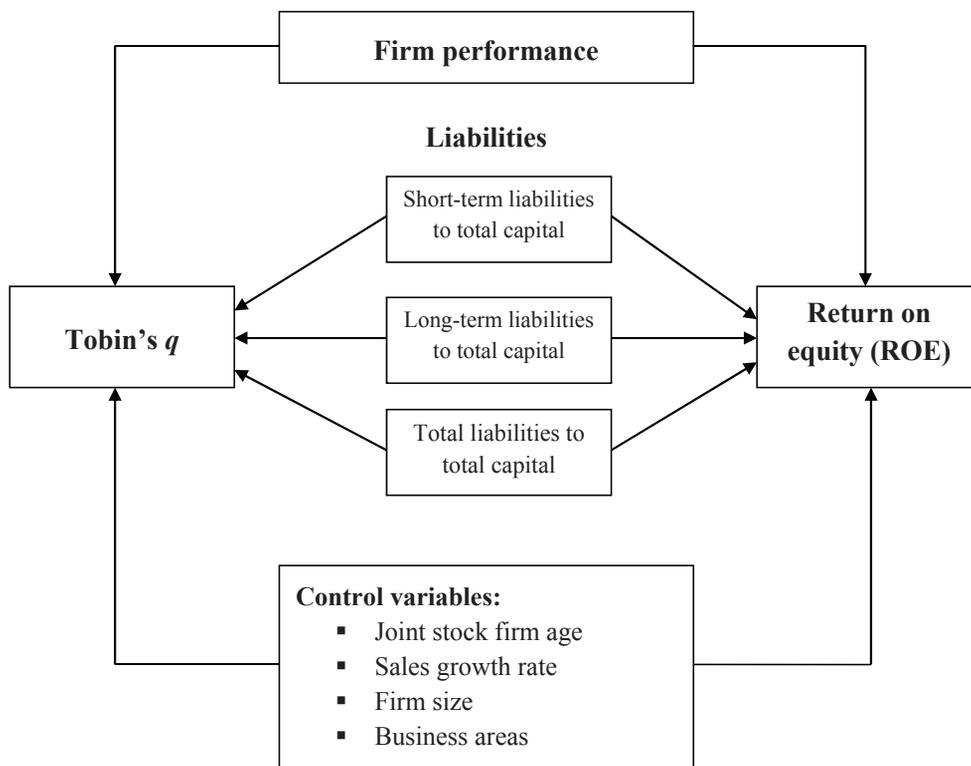
Source: Authors' calculation

Figure 3: Average Tobin's q by business areas of the listed SMEs



Source: Authors' calculation

Figure 4: Theoretical framework



In order to achieve the research purpose, a theoretical framework is developed as in Figure 4. Two indicators namely Tobin's q and ROE are explored to represent firm performance. Main explanatory variables are the short-term liabilities ratio, long-term liabilities ratio, and total liabilities ratio. Different from a number of previous studies which explored debt ratios (Abor, 2005; McCue and Ozcan, 1992; Margaritis and Psillaki, 2007), we use the concept of liabilities instead of debt to measure the financing policy of the Vietnamese listed SMEs for the following reason: SMEs have a large proportion of non-debt items in liabilities which accounted for about 68 percent in total liabilities accord-

ing to our estimation from the listed SMEs' financial statements between 2011 and 2014. Such a proportion is likely to affect firm profitability, hence we explore liabilities instead of sole debt to capture non-owner financing in the relationship with firm performance of the listed SMEs in Vietnam.

Four variables, namely joint stock firm age, sales growth rate, firm size, and business areas, are explored as control variables of the models. We separately test the impacts of each type of liability on Tobin's q and on ROE. It is expected that leverage ratios have a significant association with firm performance. Previous studies (Margaritis and Psillaki, 2007; Zeitun and Tian,

Table 2: Description of variables

Variables	Description
Firm performance	Firm performance is represented by return on equity (ROE) and Tobin's q , in which ROE is a ratio of earnings after tax to total equity and Tobin's q is measured by firm market value to its book value.
Short-term liabilities ratio (SLC)	The short-term liabilities ratio is measured by short-term liabilities to total capital of firm.
Long-term liabilities ratio (LLC)	The long-term liabilities ratio is measured by long-term liabilities to total capital of firm.
Total liabilities ratio (TLC)	The total liabilities ratio is measured by total liabilities to total capital of firm.
Joint stock firm age	Firm age is calculated since a firm became a joint stock company until the year end.
Sales growth rate	Sales growth measures the growth rate of sales, measured by the ratio of difference between sales at time t and those at time $t-1$ to sales at time $t-1$.
Firm size	The natural logarithm of total assets ¹ at the accounting year-end.
Business areas	Main business activities of listed firms, which are classified by SSI.

2007) test and analyse the correlation between capital structure and firm performance based on market value, measured by Tobin's q , and based on book value, measured by ROA and ROE.

4.2. Data sources and variables

This paper relies on the data from financial statements between 2011 and 2014 of the Vietnamese listed SMEs. In order to determine if a firm is an SME, we based this on Article 3 of the Decree No.56/2009/ND-CP dated June 30th 2009 by the Prime Minister of Vietnam to support Vietnamese SMEs development. Given that, an SME is identified by its capital or number of employees in accordance with the SME's industry sector.

According to the regulations in the Decree, we select the category of total capital of each firm by sector as a basis to filter SMEs from all listed companies. A firm is determined an

SME once its capital is 100 billion VND or less for firms in agriculture and construction and 50 billion VND or less for those in commerce and services industries. We collect data and information of 61 listed SMEs from their financial statements and reports which are published on the webpages www.cophieu68.com and www.cafef.vn. Additionally, data and information are taken from the webpage of the VNDIRECT Securities Corporation. The four-year data set is explored from audited balance sheets and income statements of the listed SMEs, which reflect the most important financial statistics such as revenue, earnings, corporate tax, total assets, total liabilities, etc. From these fundamental data, we calculate other financial indicators presented in Table 2.

In addition, we add an important variable into our estimations, that is, firm business areas. The areas of the listed firms are categorised by the Saigon Securities Incorporation (SSI) based

on the main business activities of each company. As such, all listed Vietnamese companies are organised into 65 fields. In this research, we examined 61 listed SMEs whose main business activities are divided into 20 areas.

Table 2 presents all the variables used in the research. In order to match the current context in Vietnam, we examine the liabilities policy of the listed SMEs by using the ratios of short-term liabilities² to total capital, of long-term liabilities³ to total capital, and of total liabilities⁴ to total capital⁵. The concept of firm performance is represented by ROE and Tobin's q , with each of which we build up three regression models of short-term liabilities policy, long-term liabilities policy, and total liabilities policy to examine how debt financing specifically impacts firm performance in each method.

4.3. The analysis models

As mentioned in the introduction section, this paper aims to examine the relationship between the leverage policy and firm performance of the Vietnamese listed SMEs, measured by the two important ratios ROE and Tobin's q . The further purpose is to prove that such a policy has a significant association with firm performance. Therefore, in order to reach the research objectives, we examine the impacts of short-term liabilities, long-term liabilities, and total liabilities on ROE and on Tobin's q . Variables used in the models demonstrate the linear relationship between liability ratios according to previous studies on capital structure and firm performance (Abor, 2007; Champion, 1999; Hadlock and James, 2002; Hutchinson, 1995; Nerlove, 1968; Noe, 1988; Taub, 1975). The models are defined as in Equations (1), (2), and (3) below.

$$FP_{it} = \beta_0 + \beta_1 SLD_{it} + \beta_2 JFA_{it} + \beta_3 SGRO_{it} +$$

$$\beta_4 SIZE_{it} + \beta_5 AREA_i + u_{it} + e_{it} \quad (1)$$

$$FP_{it} = \beta_0 + \beta_1 LLD_{it} + \beta_2 JFA_{it} + \beta_3 SGRO_{it} + \beta_4 SIZE_{it} + \beta_5 AREA_i + u_{it} + e_{it} \quad (2)$$

$$FP_{it} = \beta_0 + \beta_1 TLD_{it} + \beta_2 JFA_{it} + \beta_3 SGRO_{it} + \beta_4 SIZE_{it} + \beta_5 AREA_i + u_{it} + e_{it} \quad (3)$$

Where:

FP_{it} is firm performance, respectively measured by Tobin's q ratio and return on equity (ROE) of firm i at time t .

SLD_{it} is short-term liabilities divided by total capital of firm i at time t .

LLD_{it} is long-term liabilities divided by total capital of firm i at time t .

TLD_{it} is total liabilities divided by total capital of firm i at time t .

JFA_{it} is firm age since the firm was a joint stock company.

$SGRO_{it}$ is sales growth rate of firm i at time t .

$SIZE_{it}$ is firm size of firm i at time t .

$AREA_i$ is business areas of firm i .

u_{it} is between-entity error, e_{it} is within-entity error.

In these models, we select random-effects regressions to test the impacts of leverage ratios on firm performance as we explore a time invariant variable in our models, that is, business areas. It is assumed that the entity's error term is not correlated with the predictors which allows for time-invariant variables to play a role as explanatory variables.

5. Empirical results and discussion

5.1. Descriptive statistics

Table 3 shows a summary of descriptive statistics of all the variables used in the paper. It can be seen that the average Tobin's q of the

Table 3: Descriptive statistics of variables

Variable	Obs	Mean	Std. Dev	Min.	Max.
Tobin's q	244	0.8014	0.3691	0.0772	3.2109
ROE	244	0.0511	0.1706	-1.0844	0.4340
SLC	244	0.3029	0.1723	0.0056	0.7287
LLC	244	0.0416	0.0808	0.0000	0.4505
TLC	244	0.3451	0.1839	0.0056	0.7287
Joint stock firm age	244	8.0901	2.9116	1.0000	17.0000
Sales growth rate	244	1.7669	7.6237	-1.0000	92.0657
Firm size	244	10.6150	0.2197	10.0669	10.9998

listed SMEs was 0.8014 in the period 2011 – 2014, which basically means that on average, the cost to replace a firm's asset was greater than the value of its stock (Tobin, 1969). This implies that the stock was undervalued in this period. Meanwhile, the average ROE of these firms was 5.11 percent, which reveals that the listed SMEs, on average, generated 5.11 units of net income with 100 units of capital that shareholders have invested.

In terms of leverage financing, the short-term liabilities ratio in the period 2011 – 2014 of the listed SMEs reached 30.29 percent on average, whilst the long-term one was merely 4.16 percent. The total liabilities ratio was closely similar to the short-term one with a value of 34.51 percent.

5.2. Empirical results and discussion

The empirical results after running random-effects models are demonstrated in Tables 4 and 5, in which Table 4 presents the impacts of financing policy on Tobin's q , whilst Table 5 shows how leverage policy influences ROE of the listed SMEs.

5.2.1. Impacts of liabilities on Tobin's q

Tobin's q index reflects the assessment of in-

vestors of firm market value. Once Tobin's q is greater than 1, it shows that a firm is estimated over its book value. In other words, investors are willing to buy the assets of firms at higher prices than book value (Wernerfelt and Montgomery, 1988). This fact occurs when investors: (i) add the value of assets or other resources of firms which are not listed in the balance sheet, typically the firm brand name, land use rights, firm relations with state-administered offices and other partners, preferential policies of the state, etc.; (ii) expect an increased income due to fully exploiting the existing property portfolio of firms or due to the scarcity of products or the monopoly of firms. Theoretically, those who finance firms as owners rather than creditors do themselves accept a higher risk, hence their expected returns are also higher (Damodaran, 2001).

According to the research results shown in Table 4, the leverage policy of the listed firms, including short-term liabilities ratio, long-term liabilities ratio, and total liabilities ratio, has a positive impact on Tobin's q . Given that, at the 10 percent significance level, a one-percent increase of short-term liabilities ratio leads to an increase of Tobin's q by 21.34 percent on

Table 4: Impacts of liabilities on Tobin's q

Explanatory variables	Dependent variable: Tobin's q		
	(1)	Coefficients	
		(2)	(3)
Short-term liabilities ratio	0.2134* (0.1291)		
Long-term liabilities ratio		0.5251** (0.2673)	
Total liabilities ratio			0.2591** (0.1141)
Joint stock firm age	0.0285*** (0.0070)	0.0282*** (0.0069)	0.0276*** (0.0069)
Sales growth rate	-0.0009 (0.0021)	-0.0002 (0.0021)	-0.0009 (0.0021)
Firm size	-0.1189 (0.0952)	-0.1501 (0.0974)	-0.1441 (0.0958)
Business areas			
Extraction	0.2347 (0.1456)	0.2535* (0.1433)	0.2104 (0.1455)
Medicine	0.1178 (0.1567)	0.0304 (0.1643)	0.0646 (0.1585)
Petrochemicals, etc.	0.2647 (0.1764)	0.3024* (0.1750)	0.2609 (0.1752)
Books, etc.	0.1621 (0.1344)	0.1381 (0.1353)	0.1399 (0.1344)
Dedicated distribution	0.2688 (0.1760)	0.2175 (0.1771)	0.2472 (0.1752)
Electrical devices	0.3213* (0.1765)	0.3473** (0.1749)	0.3108* (0.1754)
Construction	0.1775 (0.1357)	0.2222* (0.1300)	0.1544 (0.1348)
Interior building materials	0.1937 (0.1329)	0.2123 (0.1312)	0.1795 (0.1323)
Transport services	0.1175 (0.1522)	0.0881 (0.1533)	0.0924 (0.1522)
Electricity production and distribution	0.3707** (0.1788)	0.3665** (0.1776)	0.3245* (0.1803)
Containers and packing	0.0712 (0.1790)	0.0507 (0.1787)	0.0659 (0.1780)
Telecommunication equipment	0.0328 (0.1563)	0.0907 (0.1514)	0.0174 (0.1547)
Garments	0.2549 (0.1754)	0.0964 (0.1935)	0.1737 (0.1784)
Advisory, valuation, and brokerage of real estate	0.2276 (0.1815)	0.1371 (0.1900)	0.1645 (0.1841)
Consulting and business support	0.1588 (0.1820)	0.2073 (0.1774)	0.1368 (0.1808)
Equipment suppliers	0.1288 (0.1785)	0.1415 (0.1778)	0.1221 (0.1776)
Hospitality	2.1049*** (0.1848)	2.0339*** (0.1846)	2.0907*** (0.1830)
Software	0.0310 (0.1464)	-0.0129 (0.1472)	0.0142 (0.1456)
Electrical and electronic goods	0.2087 (0.1521)	0.1786 (0.1513)	0.2082 (0.1510)
Car manufacturing	Omitted	Omitted	Omitted
Intercept	1.5692 (1.0340)	1.9468** (1.0616)	1.8403* (1.0410)
R-squared	59.40%	59.60%	59.84%
Wald chi ² (23)	321.85***	324.59***	327.75***
Number of observations	244	244	244

*, **, and *** denote 10%, 5%, and 1% significance levels correspondingly. Standard errors are in parentheses.

average. Meanwhile, once the long-term liabilities ratio grows by one percent, Tobin's q on average increases by 52.51 percent at the 5 percent significance level. This finding is consistent with Lloyd and Jahera (1994) who show a positive association between debt ratio and Tobin's q .

According to the Trade-off theory of capital structure, when firms raise additional debt to expand their operations, investors should not put in more capital but gain the added value from the use of the assets financed by debt after offsetting interest expenses (Kraus and Litzenberger, 1973). Investors accept the fact that the increase of debt inevitably increases the risk as a trade-off. At the same time, firms' access to bank credit is regarded as proof of their stable financial capacity as investors believe in the abilities of business development. Previous studies show that debt financing from banks has a significant impact on firm performance (Abor, 2005; Haniffa and Hudaib, 2006; Short and Keasey, 1999). Therefore, gearing policy is important to improve firm performance and to further enhance firm efficiency.

In addition, firm age has a positive relationship with Tobin's q . Accordingly, an increase of one unit of firm age triggers Tobin's q to increase by around 2.8 percent on average in the three models. It basically means that the more the number of years of operation of SMEs, particularly since firms were transformed into joint stock companies, the higher the Tobin's q . This can be explained that firms accumulate management experience and capital over time as well as develop business relations with other partners and spread out their brand names, which increases the expectation of investors of

firm value in the future.

Besides, the research results indicate impacts of business areas on Tobin's q . In all three models, those whose business areas are in the fields of electrical devices, electricity production and distribution, and hospitality have market values that are overestimated rather than those of the remaining areas. It can be seen that investors highly believe in the potential for these areas. Therefore, raising capital in the short term or long term for SMEs in these fields is positively important in utilising business opportunities to maximise the wealth of shareholders. This result lies in line with the present growth and development of these three areas in Vietnam. Specifically, given the government's plan in the period 2015-2025 for developing electricity production and distribution, this sector: (i) will develop to meet 70 percent of domestic demand for equipment and 55 percent of the demand for electric motors and some common generators; (ii) will be able to produce and supply electrical equipment sets for building power lines and substations by 2025; and (iii) will concentrate on producing high-quality wires and cables with an export turnover of up to 35.5 percent per year. Therefore, this sector has a very large market share nationwide and is encouraged to develop.

For the field of electricity production and distribution, the opportunities for development of SMEs are enhanced remarkably due to the roadmap of liberalisation and the monopoly decrease of the EVN Corporation. Meanwhile, the demands for electricity tend to increase over time, which causes the index of electricity production and distribution to be higher than the average rate, contributing to boost the na-

tional industrial production in general (Nguyen, 2015).

Furthermore, there is potential market development in the long run for the field of hospitality (Lan, 2014). Accordingly, hotel quality and infrastructure have been significantly improved in the past few years. This is the main reason leading to a more stable and sustainable tourism market. This explains the impact of the business area, particularly once firms are in the field of hospitality, on Tobin's q at the 1 percent significance level in the three models.

In addition to the three areas of electrical devices, electricity production and distribution, and hospitality, SMEs whose main business activities are extraction, petrochemicals and construction also tend to be over-valued, which is indicated by the significant impacts of these three business areas on Tobin's q , but only in the case of mobilising long-term liabilities. This finding is drawn from the research result shown in Table 4 after running model 2. In the world, the global competition for oil and rare metals has always occurred seriously due to rising demands and restricting supply in the monopoly of multinational corporations which occupy the majority of these resources. Along with the diversity of oil metabolic products, there are development opportunities for SMEs in the field of extraction and petrochemicals, but they require these firms to have long-term investment and accept high risk. In Vietnam, the government has approved the planning of basic geological surveys of mineral resources until 2020 with an orientation towards 2030 under Decree No.1388/QD-TTg dated 13th August 2013. Accordingly, the extraction sector has been prioritised for development but it should ensure the

sustainability for the environment and the local social life. In sum, the development of these business areas is an important reason to explain the significantly positive impacts on Tobin's q of SMEs in these fields.

Besides, SMEs in the field of construction had 22.22 percent, on average, higher Tobin's q than their counterparts. Along with the international economic recovery in general and the domestic real estate market in particular, the construction industry in Vietnam is predicted to have a good growth rate of 6.6 percent in 2015 and may increase in the following years (Minh, 2015).

To conclude, for Vietnamese SMEs with long-standing operation years in potential business areas such as electrical devices, electrical and electronic goods, hospitality, extraction, petrochemicals, and construction, the use of short-term liabilities or long-term liabilities has a positive effect on utilising business opportunities and on increasing income per unit of equity. Therefore, the market value of these SMEs tend to be over-estimated, rather than their book value, once they use leverage.

5.2.2. Impacts of liabilities on ROE

Table 5 shows the results of impacts of financing policy on ROE of the Vietnamese listed SMEs. Notably, there exist significantly negative effects of the long-term liabilities ratio and of the total liabilities ratio on ROE. Different from Tobin's q which shows an overall rating of investors on firm value, the ROE ratio measures the profitability of one unit of invested capital of shareholders (Damodaran, 2001). This ratio is also negatively influenced by debt policy (Abor, 2005; Nguyen and Phan, 2015). According to the research results to the

Table 5: Impacts of liabilities on ROE

Explanatory variables	Dependent variable: ROE		
	(1)	(2)	(3)
Short-term liabilities ratio	-0.0057 (0.0829)		
Long-term liabilities ratio		-0.7002*** (0.1655)	
Total liabilities ratio			-0.1305* (0.0731)
Joint stock firm age	-0.0107** (0.0045)	-0.0088** (0.0043)	-0.0096** (0.0044)
Sales growth rate	0.0016 (0.0014)	0.0014 (0.0013)	0.0019 (0.0013)
Firm size	0.3004*** (0.0611)	0.3630*** (0.0603)	0.3207*** (0.0614)
Business areas			
Extraction	0.0572 (0.0935)	0.0894 (0.0887)	0.0904 (0.0933)
Medicine	-0.0056 (0.1006)	0.1299 (0.1018)	0.0281 (0.1016)
Petrochemicals, etc.	0.1596 (0.1133)	0.1502 (0.1083)	0.1765 (0.1123)
Books, etc.	0.1999** (0.0863)	0.2521*** (0.0837)	0.2184** (0.0862)
Dedicated distribution	0.1283 (0.1130)	0.1908* (0.1097)	0.1370 (0.1123)
Electrical devices	-0.0708 (0.1133)	-0.0620 (0.1083)	-0.0496 (0.1125)
Construction	0.0564 (0.0871)	0.0808 (0.0805)	0.0987 (0.0864)
Interior building materials	0.1000 (0.0853)	0.1187 (0.0813)	0.1230 (0.0848)
Transport services	0.1109 (0.0978)	0.1700* (0.0949)	0.1308 (0.0975)
Electricity production and distribution	0.1169 (0.1148)	0.2041* (0.1100)	0.1699 (0.1156)
Containers and packing	0.1647 (0.1150)	0.1829* (0.1106)	0.1640 (0.1141)
Telecommunication equipment	0.0827 (0.1004)	0.0867 (0.0937)	0.1201 (0.0992)
Garments	0.1228 (0.1127)	0.3391*** (0.1198)	0.1655 (0.1144)
Advisory, valuation, and brokerage of real estate	0.1249 (0.1166)	0.2815** (0.1176)	0.1698 (0.1180)
Consulting and business support	0.0843 (0.1169)	0.1057 (0.1098)	0.1269 (0.1159)
Equipment suppliers	0.2024* (0.1146)	0.2088* (0.1101)	0.2143* (0.1138)
Hospitality	0.2499** (0.1187)	0.3051*** (0.1143)	0.2426** (0.1173)
Software	0.0603 (0.0940)	0.1109 (0.0911)	0.0658 (0.0933)
Electrical and electronic goods	0.0927 (0.0977)	0.1067 (0.0937)	0.0834 (0.0968)
Car manufacturing	Omitted	Omitted	Omitted
Intercept	-3.1620*** (0.6641)	-3.8552*** (0.6574)	-3.3679*** (0.6674)
R-squared	21.64%	27.53%	22.75%
Wald chi ² (23)	60.75***	83.58***	64.81***
Number of observations	244	244	244

*, **, and *** denote 10%, 5%, and 1% significance levels correspondingly. Standard errors are in parentheses.

Vietnamese listed SMEs, any increase of long-term liabilities would have a negative effect on ROE (see results from models 2 and 3 shown in Table 5).

Results in Table 5 show that joint stock firm age and firm size have significant impacts on ROE but in opposite signs. At the 5 percent significance level, there is a negative effect of firm age on ROE. This finding is consistent with Nguyen and Phan (2015) who show a negative impact of joint stock firm age on ROE of the Vietnamese listed seafood enterprises. Adversely, firm size, which is calculated by the logarithm of total assets, has a positive influence on ROE in all three models at the 1 percent significance level.

Regarding the variable of business areas, it is noted that some estimates are statistically significant but different from the results to test the impacts of the liabilities ratio on Tobin's q . Specifically, in all three models, SMEs that are involved in the fields of books and cultural publications, equipment suppliers, and hospitality have a positive impact on ROE. In the period 2011 - 2014, enterprises in these three business areas have advantages to increase their profitability ratios compared to other areas no matter how they maintain their leverage policy.

Firms in the area of books and cultural publications that are considered in a stable business field are mostly company members of the Education Publishing House with many advantages in operations, such as a stable market share, experienced staff, less competition, etc. This advantage factor and the small business size are the reasons to contribute to stably increasing the profitability of firms. For a country with a young population like Vietnam, demands for

educational products and facilities are huge (Phu Gia Securities, 2012). These factors indicate a favorable potential for growth in production and business activities of educational products in the coming years. Average ROE of the listed SMEs in this field during the period 2011 – 2014 was 8.39 percent (see Figure 2 in the overview section and Table A1 in the Appendix).

In the context that business activities in Vietnamese enterprises generally require more professionalism and safety, becoming an equipment supplier is in accordance with market demands and helps maximise capacity and productivity of machines to achieve a higher profitability rate. Therefore, SMEs in the area of equipment suppliers have more potential for growth, thus positively affecting ROE. As for the field of hospitality, profitability and growth potential of SMEs in this field are explained in the previous model of Tobin's q .

In addition to the three business areas discussed above – including books and cultural publications, equipment suppliers, and hospitality, ROE is positively affected by some other business areas with the use of long-term liabilities, including: dedicated distribution, transport services, electricity production and distribution, containers and packing, garments, and advisory of real estate. Although the mobilisation of long-term liabilities may reduce ROE of the listed SMEs in the above areas, the effect of providing marginal capital to take the existing advantages of these areas, in return, contributes to increasing ROE. The reason for the significant difference of the business areas variable in two models of Tobin's q and ROE is that Tobin's q index represents the evalua-

tion of investors of market value, therefore they prefer the potential future development of the sector rather than the current available advantages (Lloyd and Jahera, 1994).

6. Conclusions

Investors tend to overvalue firms using debt as they expect the growth potential of firms in the future by increasing total capital. However, if firms' capabilities of exploring financial sources are not efficient enough, firms using high liabilities ratios would harm their performance in the aspect of profit erosion. SMEs have not punctually and appropriately improved their capabilities for utilising sources of finance to maximise marginal capital.

6.1. Conclusions and implications

Findings

Through studying the relationship between leverage policy and firm performance of the Vietnamese listed SMEs from 2011 to 2014, this paper has made several main findings. *Firstly*, there are significant impacts of different liabilities policies including short-term liabilities ratio, long-term liabilities ratio, and total liabilities ratio on firm performance. *Secondly*, we found an opposite difference of liabilities ratios which affect Tobin's q and ROE. *Thirdly*, non-financial variables including joint stock firm age and business areas of SMEs have a significant influence on firm performance.

Conclusions

Compiled from two models, liabilities ratios have significantly affected the listed SMEs' business performance, measured by Tobin's q and ROE but in the opposite direction. SMEs that raise marginal debt, typically long-term debt, reduce the profitability per unit of equity,

but thus decrease the power sharing as well as the burden of capital for shareholders, and take advantage of potential business opportunities in the future. Briefly, firm value is still overestimated by investors as a whole. Moreover, in some areas such as electrical devices, electricity production and distribution, hospitality, extraction, petrochemicals, construction, books and cultural publications, equipment suppliers, transport services, containers and packing, garments, and advisory of real estate, the existing advantages and the possibility of developing in the long run have positive effects on firm performance. This fact again shows the dual effect of liabilities which requires controlling leverage ratio to maximise the assets value of shareholders. In addition, firm size and firm age since SMEs shifted into a joint stock company have significant influences on ROE and on Tobin's q in adverse directions.

Implications

From the firms' perspective, there are main implications based on the research findings. *Firstly*, it is advised to maintain, even increase, the leverage ratio for SMEs in the business areas of electrical devices, electricity production and distribution, hospitality, extraction, petrochemicals, construction, books and cultural publications, equipment suppliers, transport services, containers and packing, garments, and advisory of real estate to markedly raise the wealth of shareholders in the condition of controlling interest expenses. *Secondly*, SMEs are necessary to accumulate essential resources such as finance, human, and reputation during the development period with the purpose to improve their profitability.

From the government's perspective, it is

essential for the government to find solutions such as simplifying processes and reducing costs to facilitate SMEs' listing in stock market or financing in the capital market. Moreover, it is suggested the government remove existing restrictions for investment capital in the listed SMEs to increase investment demands. Last but not least, it is recommended for the state to implement supporting solutions for SMEs which plan listing in stock markets (Ha, 2015) and to run supporting programs for SMEs to enhance their management capabilities.

6.2. Suggestions for further research

In order to enhance the robustness of models and to open up other research directions on the basis of the current framework, several suggestions for further research are made as follows: (i) expanding the sample to include all SMEs across the country but not limited to the listed SMEs; and (ii) exploring data of large listed enterprises but not limited to the listed SMEs.

Another suggestion is to alter the research framework on the basis of the current sample as follows: (i) testing the impact of debt policy on firm performance by the independent variables, namely short-term debt to total capital, long-term debt to total capital, and total debt to total capital; and (ii) investigating the dual impact on firm performance of liabilities ratios associated with each control variable such as firm size, firm age, and business areas, by changing the format of these variables in the form of disaggregation.

APPENDIX
Table A1: Summary statistics by sub-industry

Business areas	% of SMEs in the sample	Tobin's <i>q</i>	ROE	SLC	LLC	TLC	JS firm age	Sales growth rate	Firm size
Extraction	4.92%	0.7778 (0.2561)	0.0617 (0.1267)	0.3684 (0.1138)	0.0382 (0.0426)	0.4177 (0.1273)	6.1666 (2.1248)	0.1307 (0.2250)	10.7661 (0.2132)
Medicine	1.64%	0.7882 (0.2055)	-0.1276 (0.2819)	0.2368 (0.1325)	0.1718 (0.1794)	0.4087 (0.1975)	10.5000 (1.1952)	0.8256 (2.3983)	10.4927 (0.2374)
Petrochemicals, etc.	3.28%	0.8786 (0.1005)	0.1746 (0.0457)	0.3414 (0.0613)	0.0005 (0.0011)	0.3419 (0.0622)	9.5000 (1.2909)	1.0127 (2.0594)	10.9140 (0.0467)
Books, etc.	22.95%	0.7665 (0.2252)	0.0839 (0.0746)	0.2247 (0.1063)	0.0386 (0.0767)	0.2634 (0.1277)	8.0000 (2.0714)	2.3104 (6.8500)	10.4153 (0.1597)
Dedicated distribution	1.64%	0.7545 (0.1810)	0.1099 (0.0539)	0.1294 (0.0205)	0.0687 (0.0051)	0.1981 (0.0163)	5.5000 (1.2909)	-0.1702 (0.2707)	10.6632 (0.0365)
Electrical devices	1.64%	0.9015 (0.3362)	-0.1032 (0.1539)	0.3228 (0.0554)	0.0003 (0.0004)	0.3232 (0.0550)	7.5000 (1.2909)	1.2369 (2.6825)	10.6834 (0.0987)

Construction	19.67%	0.7621 (0.2387)	0.0253 (0.2252)	0.4628 (0.1364)	0.0175 (0.0302)	0.4803 (0.1385)	6.5000 (2.6577)	2.3842 (13.4213)	10.6486 (0.1671)
Interior building materials	16.39%	0.8347 (0.3169)	0.0419 (0.2197)	0.3321 (0.1904)	0.0189 (0.0334)	0.3511 (0.2099)	9.5000 (3.2423)	0.9355 (1.7855)	10.6712 (0.1785)
Transport services	3.28%	0.6933 (0.1199)	0.0765 (0.0475)	0.2395 (0.1548)	0.0747 (0.0581)	0.3143 (0.2079)	8.0000 (2.9277)	0.1149 (0.1857)	10.6997 (0.0584)
Electricity production and distribution	1.64%	0.9677 (0.2221)	0.1194 (0.0548)	0.4663 (0.0317)	0.1250 (0.0276)	0.5913 (0.0582)	7.5000 (1.2909)	0.1788 (0.1624)	10.8086 (0.0510)
Containers and packing	1.64%	0.7595 (0.0657)	0.0798 (0.0515)	0.1616 (0.0854)	0.0259 (0.0395)	0.1875 (0.1203)	12.5000 (1.2909)	1.1833 (2.5151)	10.6840 (0.0784)
Telecommunication equipment	3.28%	0.6650 (0.1417)	0.0576 (0.0402)	0.4668 (0.1419)	0.0037 (0.0071)	0.4706 (0.1390)	8.5000 (2.4494)	0.3054 (0.8695)	10.7516 (0.2589)
Garments	1.64%	0.8419 (0.0878)	0.1370 (0.0551)	0.2118 (0.0223)	0.3216 (0.0026)	0.5335 (0.0223)	9.5000 (1.2909)	0.8035 (1.6346)	10.9104 (0.0140)
Advisory, valuation, and broke- age of real estate	1.64%	0.7403 (0.2100)	0.0469 (0.2717)	0.2677 (0.1870)	0.1761 (0.1208)	0.4439 (0.0673)	4.5000 (1.2909)	5.4984 (11.1743)	10.4002 (0.1435)
Consulting and business support	1.64%	0.7293 (0.1318)	0.0221 (0.2324)	0.4496 (0.0694)	0.0000 (0.0000)	0.4496 (0.0694)	5.5000 (1.2909)	0.0603 (0.6844)	10.5222 (0.0520)
Equipment suppliers	1.64%	0.8271 (0.1240)	0.1601 (0.0176)	0.2890 (0.0476)	0.0228 (0.0196)	0.3119 (0.0643)	12.5000 (1.2909)	1.3300 (2.6616)	10.8274 (0.0289)
Hospitality	1.64%	2.8533 (0.3902)	0.1503 (0.0969)	0.0737 (0.0192)	0.0912 (0.1720)	0.1649 (0.1732)	15.5000 (1.2909)	1.1317 (1.7837)	10.7405 (0.1170)
Software	4.92%	0.5967 (0.2232)	-0.0164 (0.1854)	0.1386 (0.1230)	0.0429 (0.0942)	0.1816 (0.1824)	7.8333 (2.1248)	5.9540 (12.9719)	10.5178 (0.3080)
Electrical and electronic goods	3.28%	0.7300 (0.5618)	0.0782 (0.1209)	0.0774 (0.0183)	0.0105 (0.0110)	0.0880 (0.0194)	7.5000 (1.6035)	1.3772 (3.3318)	10.7376 (0.2229)
Car manufacturing	1.64%	0.5310 (0.0700)	0.0149 (0.0069)	0.1795 (0.0320)	0.0001 (0.0002)	0.1796 (0.0319)	7.5000 (1.2909)	1.7047 (4.1897)	10.8359 (0.0220)

Standard deviations are in parentheses.

Notes:

1. SMEs are defined according to Decree No. 56/2009/ND-CP dated June 30th 2009 by the Prime Minister of Vietnam
2. Short-term liabilities include short-term debt, accounts payable, notes payable, tax payable, internal payable, expenses payable, others payable.
3. Long-term liabilities are including long-term debt, long-term payable, and others.
4. Total liabilities are a sum of short-term liabilities and long-term liabilities.
5. Total capital is equal to liabilities plus total equity.
6. As the category of capital is selected to define SMEs, firm size is measured by the logarithm of total assets which is equal to that of capital of firms.

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