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THE IMPACT OF CAPITAL STRUCTURE ON FINANCIAL PERFORMANCE OF LOGISTIC SERVICE PROVIDERS LISTED ON HO CHI MINH CITY STOCK EXCHANGE

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ABSTRACT:
The research objective of this article is to determine the impact of capital structure on profitability (represented by ROA and ROE indicators) of 30 logistics enterprises listed on Ho Chi Minh City Stock Exchange (HOSE) in the period of 2012-2019. Applying the quantitative method (with models of Pool OLS, FEM, REM and FGLS), the research results have proven that capital structure has a negative impact on profitability represented by ROA of firms. For the case of profitability represented by ROE, the study has not found statistical evidence to support the impact of capital structure of logistics enterprises in this period.

INTRODUCTION

Vietnam's logistics industry is currently assessed as having a lot of potential due to the benefits from consumption growth and domestic production. On the stock market, the number of shares of logistics industry appeared quite strong with about 40 businesses mainly operating in the field of port exploitation, oil and gas transportation, bulk and container transportation, road and logistics services. With a scale of 44.1 billion USD in 2017 the logistics industry is forecast to achieve a growth rate in the period of 2018-2025 of 15-20% per year, contributing 8-10% of GDP. Currently, there are more than 23,000 businesses providing logistics related services. However, more than 80% of them are small-sized enterprises, with insufficient investment in transportation and warehousing equipment, mostly using third-party services and operate in only one segment. In addition, according to Vietstock's statistics, out of a total of 28 listed logistics companies that announced their financial statements in the second quarter of 2020, 13 businesses reported a decrease in profits, 4

businesses suffered losses and 11 businesses with increased profits. Therefore, it is very urgent to build a reasonable capital structure for sustainable development and find a reasonable direction for businesses in the logistics industry (Phong et al, 2020; Tien, 2015; Tien, 2020; Tien et al, 2020).

Capital structure plays an important role for businesses because it affects shareholders' ability to maximize profits, thereby maximizing the value of the business. Therefore, the impact of capital structure on profitability is of great interest to managers, shareholders as well as investors (Detthamrong et al, 2017). Besides, profitability is the core issue in business, it is the long-term goal of all businesses in general. Profitability is assessed through the ratios that measure the profitability and achievement of the business based on book value and market value. Building a sound capital structure also plays a very important role for financial managers, it contributes directly to corporate value and amplifies earnings for company owners. Enterprises often mobilize capital from many different sources (issuing shares, bonds, borrowing from banks, credit institutions). The choice of capital structure has a great influence on the profitability of the business (Hoa & Huong, 2020).

Many studies on the effect of capital structure on profitability have been carried out in many different countries, but most of them have been done in developed countries. However, in recent years, many studies have also been carried out in transition economies and developing countries. Some studies show a positive relationship between capital structure and profitability such as Detthamrong et al (2017), Nasimi (2016), Derayat (2012), while Azeez et al (2015), Tailab (2014), Soumadi et al (2012) support a negative relationship. Thus, the studies of this relationship give different results, and the positive or negative relationship is influenced by the contexts of different economies.

Studying the effects of capital structure on profitability will help businesses in the logistics industry to build a reasonable capital structure, thereby improving profitability. Vietnam's logistics industry is very young and is in burgeoning state of development. Although there have been quite a few studies on the influence of capital structure on the profitability of enterprises, there is no specific study analyzing the effect of capital structure on profitability of logistics enterprises listed on the Ho Chi Minh City Stock Exchange (HOSE). This study is probably the first and pioneering to delve into this specific research topic and could lay a solid ground for further in-depth studies in the logistics industry and other underdeveloped industries in Vietnam. This is very important for the national socio-economic development, because underdeveloped and burgeoning but sensitive industries should be put under scrutiny and need special care of government. The research results of this article will provide policy suggestions to help businesses in the logistics industry to build reasonable capital structure to improve profitability in the future. All that mentioned facts are the real motivations for us to execute our all-out efforts to carry out successfully this very challenging study.

The specific research objectives of the article are as follows:

Building a research model on the impact of capital structure on profitability of businesses in the logistics industry listed on HOSE.

Measuring the impact of capital structure on the profitability of businesses in the logistics industry listed on HOSE.

Proposing some policy suggestions related to capital structure to improve profitability of logistics enterprises listed on Vietnam's stock markets in the coming time.

Spatial scope: 30 companies in the logistics industry listed on HOSE.
Time range: from 2012 to 2019.

The paper uses qualitative and quantitative research with the help of Stata 14 software to process data. The research process includes the following main steps:

Analyzing descriptive statistics of the research variables. Correlation analysis to assess the correlation between the research variables in the proposed model.

Regression analysis to quantify the impact of capital structure and control variables on the profitability of the logistics companies listed on HOSE.

Test research hypotheses and evaluate the appropriateness of the regression model.

The article systematizes general theoretical issues about capital structure, the influence of capital structure on profitability of enterprises. Research results have made certain contributions to the completion of the theoretical framework on effect of capital structure on the profitability of firms. The research results will also contribute to suggest some recommendations for logistics enterprises listed on HOSE in building a reasonable capital structure, contributing to improve their profitability in the future.

Theoretical Framework

Concepts And Theories

Overview of the capital structure

Capital structure concept is defined diversely by many researchers around the world. Capital structure is the choice between debt, equity or derivative securities to finance a firm's business opertions (Myers, 1984). According to Abor (2005), capital structure is a combination of many different securities. Besides, Gill et al (2011) argued that capital structure is a combination of debt and equity that firms use in business activities. Meanwhile, Nirajini and Priya (2013) argued that the capital structure is a combination of long-term capital (common shares, concessional shares, bank loans) and short-term debt (overdraft and overdraft loans, payables to the seller). According to Firer et al (2004), capital structure refers to the mix of debt and equity that a firm uses to

finance its operations. According to Ross et al (2003), the capital structure of the firm is a combination of the use of debt and equity in a certain proportion to finance the production and business activities. This ratio reflects the percentage of a company's assets financed by loans and is used to determine the firm's ability to guarantee repayment. The lower the debt ratio, the more debt can be guaranteed in the event of bankruptcy. Conversely, the higher the coefficient is, the more likely the enterprise will lose its solvency. Normally, if the debt ratio is high, it means that the company usually finances its operations through debt. If a company borrows heavily to finance its high operating costs, it can be more profitable than issuing shares. And if the company's profits are much higher than the cost of borrowing, the company's shareholders get a lot of benefits. However, the profits earned from investment and business activities from the borrowed money may not cover the borrowing costs which could result in the company going bankrupt.

Therefore, borrowing debt or issuing additional shares is a difficult problem for businesses.The debt ratio shows the extent of the firm's use of borrowed capital, which shows how much of the company's assets are invested by the loan. This coefficient helps to evaluate the financial status, including the ability to ensure repayment of debts and risks of the business. The debt ratio can be measured as follows:

Overall debt ratio (D / A) = Total liabilities / Total assets.

Short-term debt ratio (SD / A) = Short-term debt / Total assets.

Long-term debt ratio (LD / A) = Long-term debt / Total assets.

Typically, if the overall debt ratio is greater than 50%, it means that the firm's assets are financed by more liabilities, whereas if the overall debt ratio is less than 50%, then the business is financed primarily by equity capital. In principle, the smaller the coefficient, the less a firm will face financial difficulties because the firm is less dependent on debt to finance its business. The debt ratio depends on the industry of business and the field in which the business operates.

Overview of financial performance

There are many different interpretations of the concept of corporate profitability. Siminica et al (2011) argue that profitability is expressed in the ability to generate income to cover operating costs that lead to the attainment of net income. According to Bauer (2004) quoted by Chechet et al (2014), the profitability of an enterprise is measured by its profitability in the years of operation. The theoretical view represents that the more profitable firms are, the more leverage they should use for the benefits of the tax shield. Besides, Gill et al (2011) stated that profitability is the main goal of the business if it wants to operate and develop in long term. Any business cannot survive without profits in the long run. Therefore, determining the current profitability of an enterprise and forecasting this ability in the future is very necessary. Profitability is considered a very important indicator in business management.

Today's managers are always concerned with asset efficiency with the aim of improving corporate profitability, because pressure comes from shareholders forcing businesses to find ways to increase efficiency (Tien et al, 2019). Using assets, in turn, can help businesses maintain competitiveness. There are many forms of expression of the rate of return such as return on assets, return on equity, and return on sales reflected in the financial ratios published by most firms. Hamid et al (2015) confirmed that profitability, also known as financial performance, is closely related to firm capital structure.

Return on assets (ROA) shows how much profit on average one dollar of assets invested in after the production and business process will be earned. According to David Lindo quoted by Siminica et al (2011) return on assets (ROA) is a financial index used to measure the relationship of return with investment assets needed to earn this return. there. Tailab's (2014) study also confirmed that ROA is a good representation of profitability as it relates to firm's profitability due to underlying assets. Hiep (2016) also supports the profitability of business as measured by ROA.

In addition to ROA, return on equity (ROE) shows that on average a dollar invested in investment, after the production and business process, how much profit will the owner get back. Used in measuring the profitability of the business, this is a very popular index because of its simplicity, ease of understanding and comparison between businesses in the same economic sector with different sizes or between businesses in different economic sectors or between different economic sectors, in various investment activities such as savings deposits, stocks, gold, foreign currencies, business projects. Therefore, it will help investors make quick funding decisions. However, the biggest disadvantage of ROE is that it is easily distorted by corporate financial strategies. For example, manager can predict for some reason that the profitability of a business is likely to decline, so the firm will either increase its investment in outstanding loans or buy back stocks, and they are these activities that will significantly improve ROE.

In the study of the relationship between capital structure and profitability, to measure the profitability of an enterprise, Tailab (2014), Hiep (2016) used return on equity (ROE) as an represent. In addition, ROE is also chosen by Abor (2005), Gill et al (2011), Addae et al (2013) to represent the profitability of firms in the study of the impact of capital structure on the profitability of the business.

Basic theories on the impact of capital structure on financial performance

The fundamental theory of capital structure

Modigliani and Miller (1958) lay the foundation for the study of capital structure when stating that capital structure does not affect the market value of firms in perfect capital markets. Perfect capital markets exist with the following assumptions:

• No cost for buying or selling securities;

• No single investor can influence stock prices;

• All investors have access to available information;

• The same interest rate for all borrowers to borrow or lend;

• When operating under the same conditions, the level of business risk will be the same;

• The same business's homogenous expectations for all investors;

• Managers will maximize value for shareholders (no agency costs incurred).

While the perfect capital market assumptions are rigid and do not exist in practice, this model is useful for identifying situations where capital structure does not affect firm value, making a topic for later researchers to develop and expand on this theory. With the development of the capital market, many of Modigliani and Miller (1958) 's (1958) perfect capital market assumptions do not exist in reality. Modigliani and Miller realize of this limitation and expands the assumption when considering corporate value in the event of taxes. Modigliani and Miller (1963) show that enterprise value increases when firms use more leverage because they benefit from the tax shield of interest.

This means businesses will benefit from using more leverage. This view of Modigliani and Miller is subject to many typical debates. Specifically, Stiglitz (1969) carried out research to check the theory of Modigliani and Miller and the results showed that individuals can pay higher interest rates than businesses, and some businesses can pay interest rate higher than other businesses. Besides, the loan cost varies from lender to lender. As such, the assumptions of the same interest rate for all loan or loan investors by Modigliani and Miller are not consistent. The assumption of no bankruptcy costs and the net expectation of corporate profit is also rejected by conclusions from Stiglitz's (1974) later research. Wald (1999) when comparing capital structure choices of firms in France, Germany, Japan, UK and USA found that capital structure choices in these countries are different despite the leverage ratio. It is the difference in tax policy and agency cost as well as the asymmetric information between shareholders and creditors that leads to this difference. Thus, although Modigliani and Miller's theories do not match in practice, this theory is very important because it has laid the foundation for the contributions of later researchers to the modern financial economy.

Capital structure trade-off theory

Myers (1984) admits that the optimal debt ratio is determined by the trade-off between the benefits and the costs of debt. Similarly, the optimal leverage is determined when there is a balance between the benefits and the cost of debt, and then firm value reaches a maximum (Shyam & Myers, 1999). Key factors that contribute to explain and clarify this theory include bankruptcy costs, taxes and the cost of financial exhaustion. Fama and French (2002) argue that

bankruptcy costs are expected to increase as profits decrease and that the threat of these costs pushes firms toward lower target leverage. The more debt a firm uses, the greater the tax shield benefits (Modigliani & Miller, 1963) but in return the costs of financial exhaustion include increasing legal and administrative costs (Myers, 1984 & 2001). Thus, the core content of this theory is that the value of the levered firm is equal to the value of the non-levered firm plus the present value of the tax shield minus the present cost of financial exhaustion. Target debt ratios are not the same across firms, for example firms with a majority of intangible assets tend to borrow less than firms with predominantly tangible assets (Long & Malitz, 1985). Therefore, these firms often tend to capital structures with low debt ratios. However, this theory has not solved the problem that some enterprises have good business performance but little debt or some countries reduce taxes, but enterprises in these countries still use high debt. Brennan and Schwartz (1978) argued that there exists an optimal capital structure where the benefits of the tax shield from interest are equal to the cost of bankruptcy to achieve this optimal level.

Fama and French (2002) said that when the capital structure of the business has not achieved the target capital structure, they will adjust to achieve this capital structure, but the speed of adjustment is not fast but slow because of arising transaction costs, asymmetric information. Therefore, it is only in the long term that the firm will achieve its target capital structure. In the condition of zero adjustment costs, the businesses achieve optimal capital structure. In fact, the cost of issuing equity, the transaction costs incurred affect the rate of capital structure adjustment (Altinkilic & Hansen 2000; Strebulaev, 2007). In addition, debt covenants also affect the rate of capital structure adjustment (Devos et al, 2017). The purpose when making debt covenants is to protect the interests of creditors. Specifically, the debt covenant may not allow an enterprise to issue more new debt when its net working capital or interest rate is too low, or limit the payment of dividends and investment activities of the enterprise. The results show that when there are debt covenants, the rate of capital structure adjustment is lower than that of enterprises without debt covenants. When the business is heavily bound by debt covenants, the adjustment speed is slower than normal.

Theory of pecking order

Myers and Majluf (1984) argued that it was asymmetric information between managers (inside firms) and investors (outside firms) that shaped the theory of pecking order. Because managers have a lot of internal information, know the actual business situation, growth potential, and risks of the business better than investors, they will decide to implement a capital structure likely to achieve the business's goals. It is the disproportionate information that influences the choice of internal or external funding, considering whether to issue debt or equity. The source of internal funding here is retained earnings as they have lower issuance and transaction costs than other sources of funding (e.g., Debt Issuing). Myers (1984) presents the content of pecking order theory as follows:

• Internal funding is given first priority;

• Target dividend payment policy based on investment opportunities of the business;

• Rigid dividend policy and unpredictable fluctuations in returns and investment opportunities mean that internal cash flows arising may be larger or smaller than capital expenditure. If smaller, the enterprise can withdraw the cash balance in advance or withdraw capital from market securities;

• When outside funding is required, the safe securities will be issued first. The implication is, the firm uses debt first, followed by hybrid securities such as convertible bonds and finally ordinary shares.

Many experimental evidence has proven the validity of this theory. Zeidan et al. (2018) investigates whether pecking order theory is appropriate for owners of private unlisted firms in Brazil. The results show that more than 50% of owners of these firms prefer to use internal capital over other sources of funding, even when the firm has subsidized loans. Thus, pecking order theory is consistent with the preferences of owners of small and medium-sized private businesses in Brazil. Allini et al (2018) examined the relevance of the theory of pecking order in emerging economic markets, namely Egypt, when surveying sample data of 106 companies listed on the EGX stock exchange in 2003-2014 period. The results show that profitable businesses are less likely to choose external funding sources. This is evidence that businesses in Egypt adhere to the theory of pecking order quite well.

Representative cost theory

Jensen and Meckling (1976) argue that it is the conflict between managers and owners or between owners and creditors that results in agency costs. Agency cost includes two types: agent cost of owner and agency cost of creditor. When a conflict arises between the owner and the manager due to the separation between ownership and management rights in the enterprise, it is called the owner's agency cost. Because of this separation, the goal of the manager and the owner is not consistent, then the manager tries to achieve the goal of maximizing their personal benefits instead of maximizing the benefits for shareholder. The conflict between the owner and the creditor results in the creditor's agency costs. Due to pressure from periodic payments of interest and principal, enterprises must try to generate cash flow to meet their financial obligations, thus promoting managers to use and control capital more effectively. From there, the issue of agency cost between owner and manager will be limited. In addition, creditors can establish debt covenants such as: dividend payment policy, future debt and bond issues to limit the manager's decisions that affect the business value and creditors' interests (Jensen & Meckling, 1976). Linder and Foss (2015) study agency cost in another aspect that researches solutions related to assigning tasks from employer to agent in situations where conflicts of interest exist between the two parties. Ni et al (2017) suggested that firms can control agency costs by implementing risk hedges (using options or swaps).

Theory of market timing

Market timing plays an important role when it comes to raising capital and
allows businesses to minimize the cost of capital to maximize firm value.
Graham and Harvey (2001) argue that managers choose the right moment for
firms to enter the capital market by issuing debt when they perceive low
market rates. In addition, Baker and Wurgler (2002) argued that determining
the timing of participation in the equity market is very important in deciding
capital structure. Specifically, when the market value of shares is high, at this
time businesses prefer to issue shares over debt issuance, and buy back shares
when the market price is low. At a time when the cost of equity is low, firms
choose to issue shares and buy back shares when the cost of capital is high.
Finally, when investors expect the earning potential of the business, that is the
time when the business will issue shares. Baker and Wurgler (2002) conclude
that optimal capital structure does not exist in this theory and that capital
structure changes when firms choose to enter the capital market. The
implication of the market timing theory is that the manager's decision to issue
shares or debt is affected by market conditions.

Equity's market timing theory depends on the consideration of equity market
prices and the market timing theory of debt, which states that debt issuance is
the option used by firms when its costs of debt are lower compare with the
past or compare market conditions with other capital markets. A new finding
of this theory is that when there is rejuvenation and experienced factors in the
board of directors, the form of debt issuance is preferred over the issue of
shares. This result is drawn using data of 219 non-financial firms listed in
Russia during 2008-2015 (Zavertiaeva & Nechaeva, 2017).

*Research On Impact Of Capital Structure On Corporate Financial
Performance*

Salim and Yadav (2012) conducted a study on capital structure's effect on
performance of 237 Malaysian listed companies in the period 1995-2011. This
study uses the variables ROA, ROE, EPS and Tobin Q as dependent variable;
long-term debt, short-term debt, total debt and growth are independent
variables; scale is the control variable. The sample is divided into separate
industries such as consumption, construction, agriculture, industry, finance,
and trade and services. The research results show that capital structure
(especially total debt and short-term debt) negatively impact ROE. Long-term
debt and short-term debt have a negative impact on ROA, capital structure
also has a negative impact in some cases in sub-sectors, in agriculture, total
debt has a positive effect on ROE, although Of course, most of the results
showed no statistical significance. Capital structure also has a negative impact
on EPS. Long-term debt and short-term debt have a positive effect on Tobin's
Q, except in the financial sector the long-term liabilities have negative effects.
In contrast, the ratio of total debt has negative effects on Tobin's Q across all
sectors.

Derayat (2012) conducted a study on the impact of capital structure on the
performance of 135 companies listed on the Tehran Stock Exchange in the

period 2006-2010. This research is based on five industries including base metals, machinery and equipment, food and beverage, non-metals and minerals, materials and chemistry. Research results have shown that capital structure has a positive impact on firms' performance.

Soumadi and Hayajneh (2012) conducted a study on the effect of capital structure on the performance of companies listed on the Amman (Jordan) stock exchange. The study uses the least squares model (OLS) to examine the effect of capital structure on performance. The sample includes 76 enterprises in the period from 2001 to 2006. The variables include two dependent variables, ROE and Tobin's Q, the independent variables including leverage, fixed assets, firm size and speed of growth to explain return on equity between high growth firms and low growth firms. Research results show that financial leverage has a negative impact on company performance.

Mohammad et al (2012) studied the effect of capital structure on profitability of 39 companies in the industry listed on the Amman stock exchange from 2004 to 2009. Research results indicate short-term debt ratio over total assets have a negative relationship with ROE but positively correlate with size variable and revenue growth rate. The study also shows that ROE has a negative relationship with the ratio of long-term debt to total assets and total debt to total assets. The results show that, if the debt ratio is increased, the company's profit will decrease because the cost of debt is always higher than the cost of equity of the company. This shows that profitable companies are heavily dependent on equity. However, the above recommendations must be investigated beyond the manufacturing sector.

Ahmad et al (2012) conducted a study of the impact of capital structure on the performance of Malaysian public but unlisted firms. The sample consists of 58 enterprises from 2005 to 2010. The dependent variables include return on assets (ROA) and return on equity (ROE). Capital structure is represented by short-term liabilities (STD), long-term liabilities (LTD) and total debt (TD). Observed variables include asset size, revenue growth, and efficiency. Research results show that short-term debt and total debt have a positive relationship with ROA, ROE.

Khan (2012) conducted research based on data of 36 technical companies listed on the Karachi stock exchange of Pakistan from 2003 to 2009. The results showed that the short-term debt ratio to total assets (STDTA) and total debt to total assets (TDTA) have a negative effect on ROA, while long term debt to total debt (LTDTA) is not significant for ROA and ROE. TDTA has a negative effect on ROE at the 5% significance level. When measuring performance by Tobin's Q index, STDTA and TDTA have a negative impact on Tobin's Q while LTDTA has a positive impact on Tobin's Q. The results show that long-term debt has a price-increasing effect of market value of businesses.

Toraman et al (2013) studied the effect of capital structure on profitability of 28 manufacturing companies operating in Turkey. The data is taken from the financial statements of companies from 2005 to 2011. The results show that

short-term debt to total assets and long-term liabilities to total assets have a negative relationship with ROA. There is no relationship between total debt and equity and ROA.

Sheikh and Wang (2013) conducted a study with a data set of 240 non-financial companies listed on the Karachi stock exchange and classified into 8 different industries. Using the regression model of Pool OLS, FEM, REM and Hausman test to choose between FEM and REM models, the results confirm the inverse relationship between capital structure (TDR, LDTA, SDR) and performance (ROA).

Tailab (2014) conducted a survey based on data of 30 energy enterprises in the US from 2005 to 2013 to study the impact of capital structure on operational efficiency. The study uses multivariate regression, with the dependent variable: ROE and the independent variable: SDR and TDR. Accordingly, we have an inverse relationship between capital structure TDR and ROE, while capital structure SDR is proportional to ROE.

Azeez et al (2015) studied the effect of financial leverage on performance in the period before (2003-2006) and after the crisis (2009-2012). The data set involved 200 companies listed on US stock exchanges from 2003 to 2012. Research has found an inverse relationship between financial leverage (debt to equity ratio) and ROA for the period before the economic crisis (2003-2006) and after the economic crisis (2009-2012). Specifically, when the debt to equity ratio increased by 1%, ROE decreased by 0.362% (before economic crisis) and decreased by 1.13% (after economic crisis).

Nasimi (2016) studied the effect of capital structure on the performance of 30 enterprises selected from the FTSE-100 index of the London Stock Exchange from 2005 to 2014. This study uses measurement indicators of capital structure: debt to equity ratio and interest payment ratio. Indicators measuring corporate performance: ROA, ROE, ROIC (Return on Invested Capital). The FEM and REM models are used to explore the relationship between capital structure and performance. The results show that capital structure positively affects the business performance of enterprises.

Detthamrong et al (2017) relied on data collected from a sample of 493 non-financial firms in Thailand from 2001-2014 and used an OLS regression model to explore the relationship between financial leverage and performance. The variable financial leverage is measured by TDTA (Total Debts To Assets), the dependent variable is ROA, ROE. Research results have supported a positive correlation between financial leverage and performance in these firms.

Le and Phan (2017) conducted a study on the impact of capital structure on performance of Vietnam's listed non-financial firms in the period 2007-2012. These businesses are classified into 11 industries according to ICB (Industry classification benchmark) standards, excluding banking, insurance and finance industries, with the used models including: Pool OLS, FEM, REM and general estimation model (GMM). The variables measuring operating performance include: Tobin'Q, ROA, ROE. Variables measuring capital structure mainly

are: ratio of total debt to book value of total assets and ratio of total debt to market value of the total assets. Research results have found an inverse correlation between capital structure and performance in these firms.

Phuc (2014) conducted research on the effects of capital structure on the performance of enterprises after equitization in Vietnam listed on two stock exchanges of Ho Chi Minh City (HOSE) and Hanoi (HNX) in the period 2007-2012. The author uses the independent variable as short-term debt, long-term debt, total debt and the dependent variables to measure performance are ROA and ROE. The research results show that short-term debt and total debt are negatively correlated with ROA and ROE at significant 1%, long-term debt, firm size and growth rate are positively correlated with ROA and ROE at 1% significance level. The results of this study do not support the hypothesis of the relationship between short-term debt, long-term debt, total debt and performance as measured by ROA and ROE.

Duy et al (2014) conducted a study on the effects of capital structure, size, and revenue growth on the performance of seafood companies listed on the Ho Chi Minh City Stock Exchange (HOSE). The author uses the variable ROE index to measure the company's performance. The results from this study show that the short-term debt ratio has a negative impact on the performance of the seafood companies.

In general, previous studies on the research topic of capital structure's effects on firm's profitability have found empirical evidence that the relationship between capital structure and profitability has results. heterogeneity between economies.

METHODOLOGY

Research Procedure

In order to determine the impact of capital structure on the business performance of firms in the logistics industry listed on HOSE, the authors collects audited financial data of 30 listed logistics enterprises from 2012 to 2019. This survey helps the authors to have an overall picture of the impact of capital structure on profitability of logistics companies listed on HOSE. The research process includes the following main steps:

Figure 3.1: Research procedure

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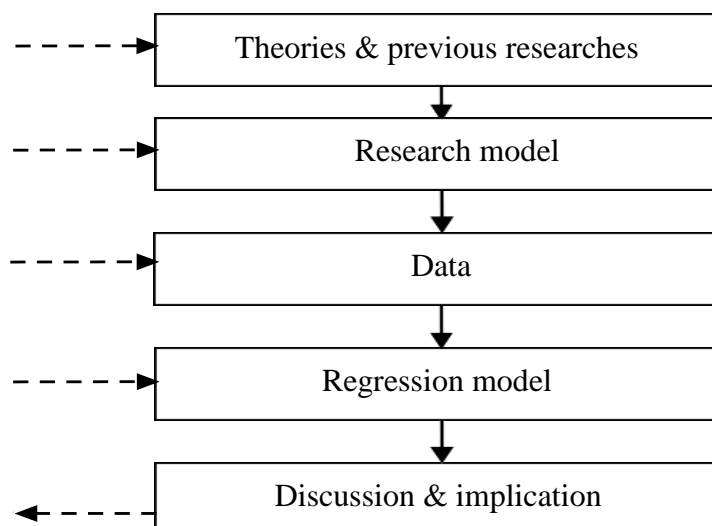
Source: Authors'

Research model

Dựa trên nền tảng cơ sở lý thuyết về ảnh hưởng của cấu trúc vốn đến khả năng sinh lời của các doanh nghiệp, kết hợp lược khảo các mô hình nghiên cứu thực nghiệm mà đã trình bày ở trên, tác giả ứng dụng mô hình nghiên cứu của Khan (2012) vì sự tương đồng về việc nghiên cứu một ngành kinh tế của quốc gia đang phát triển. Mô hình nghiên cứu về ảnh hưởng của cấu trúc vốn tới khả năng sinh lời của doanh nghiệp ngành Logistics niêm yết trên HOSE được trình bày như sau:

Based on the theoretical basis of the effect of capital structure on the profitability of enterprises, combining the research model of empirical research that was presented above, the authors applied the research model research proposed by Khan (2012) for similarities in studying an given economic sector of a developing country. The research model of the impact of capital structure on the profitability of logistics enterprises listed on HOSE is presented as follows:

Model 1: $ROA_{it} = \beta_0 + \beta_1 DA_{it} + \beta_2 SIZE_{it} + \beta_3 GROWTH_{it} + \beta_4 TANG_{it} + \beta_5 LIQ_{it} + \varepsilon_{it}$

Model 2: $ROE_{it} = \beta_0 + \beta_1 DA_{it} + \beta_2 SIZE_{it} + \beta_3 GROWTH_{it} + \beta_4 TANG_{it} + \beta_5 LIQ_{it} + \varepsilon_{it}$

Notes:
ROA: profit after tax on total assets.

ROE: return after tax on equity.

DA_{it} = Total liabilities over total assets of company i in year t.

$SIZE_{it}$ = Total assets of company i in year t.

$GROWTH_{it}$ = Growth of company i's total assets in year t.

$TANG_{it}$ = Net fixed asset value over total assets of company i in year t.

LIQ_{it} = Company i's liquidity ratio in year t.

ε_{it} = Company i's error in year t.

Table 3.1: *Variables description*

Variables' names	Measuring
Return on assets (ROA)	Profit after tax / average total assets
Return on equity (ROE)	Profit after tax / average

	equity
Total Debts to Total Assets (DA)	Total debt / total assets
Scale (SIZE)	Natural logarithm of total assets
Growth (GROW)	The growth rate of total assets
Tangible assets (TANG)	Tangible fixed assets / total assets
Liquidity (LIQ)	Short-term assets / short-term debts

Source: Authors'

Variables description

Dependent variables

The dependent variable in the study is profitability measured according to the accounting approach, including 02 representative variables: ROA, ROE (Sheikh & Wang, 2013; Hasan et al, 2014; Nasimi, 2016; Detthamrong et al, 2017; Le & Phan, 2017).

Interpreting variables

Based on previous studies by Khan (2012), Abor (2005 & 2007) the capital structure metrics used are: short-term debt to total assets, long-term liabilities to total assets, total liabilities to total assets. In this article, the authord measure the capital structure of the business according to the approach of Ross et al (2003). Accordingly, the capital structure is determined based on the overall debt ratio, which is measured by dividing the total debt by the total assets.

Controling variables

Business performance is not only explained by indicators measuring capital structure (explanatory variables), but also many other factors such as firm size, growth, tangible fixed assets, liquidity. The variables measuring these factors contribute to explain in a more detailed and clearer way the profitability of the business. Based on the review model from previous studies of Sheikh and Wang (2013), Le and Phan (2017), the authors use 4 control variables including: business, growth, tangible assets, liquidity.

Size (SIZE)

Business size can affect the profitability of businesses in many different directions. Studies support a positive relationship between firm size and profitability (Muritala, 2012; Salim & Yadav, 2012; Soumadi & Hayajneh, 2012). Meanwhile, the opposite relationship is found in the study of Gunasekarage et al (2007).

Liquidity (LIQ)

According to Goddard et al (2005), there is a positive relationship between firm's liquidity and firm's profitability. Highly liquid companies can easily adapt to rapid changes in an increasingly competitive environment. Long (2017) states that there is an inverse relationship between liquidity with SDTA and a positive relationship with LDTA, but this relationship is insignificant when studying capital structure in emerging economic markets with Vietnam in particular. Because liquidity affects capital structure, it has an impact on the profitability of businesses.

Tangible assets (TANG)

The relationship between tangible assets and corporate profitability is opposite (Sheikh & Wang, 2013; Margaritis et al, 2010); Le & Phan, 2017).

Growth (GROW)

There are many ways to measure growth as growth is calculated based on a percentage change in revenue (Fosu, 2013; Soumadi & Hayajneh, 2012). Research by Salim and Yadav (2012), Sheikh and Wang (2013) supports a positive correlation between growth and profitability.

Research Methodology

The article uses quantitative methods to determine and quantify the impact of capital structure and control factors on the profitability of businesses. Specifically it is implemented as follows:

Step 1: Perform descriptive statistics, analyze the correlation between the variables.

Step 2: Perform regression of Pooled OLS, FEM, REM, FGLS models and tests to choose suitable model.

Step 3: Check multicollinearity, variance, autocorrelation of selected model. If there is a problem of variable variance or autocorrelation, the thesis uses the general least squares estimation method (FGLS) to overcome.

Descriptive statistical analysis

Based on statistical information about the number of observations, mean value, maximum value, minimum value, and standard deviation of the variables, the authors summarize and give general statements.

Correlation analysis

Analysis of the correlation coefficient matrix is to consider whether there is a multicollinearity phenomenon among the variables in the model. Observing the results in the correlation coefficient matrix, if the correlation coefficients

of the variables are less than about 0.8, there may not occur pair correlation between the variables in the model. However, this approach sometimes does not give accurate results in cases where the correlation coefficient is small but multicollinearity still exists. To overcome this, the author used variance inflation factor (VIF).

Regression analysis

Baltagi (2005) gives general form of tabular data regression, which is presented as follows:
$Y_{it} = \beta_1 + \beta_{it} X_{it} + u_{it}$
In which:

i = 1, 2,…. N: The ith enterprise; t = 1, 2,… T: Time interval t;
Y_{it}: Dependent variable of the ith enterprise at time t;
X_{it}: Value of X for enterprise i at time t;
β_{it}: Angular coefficient of firm i at time t;
u_{it}: Random error of firm i at time t.

Gujarati (2011) gives many regression models of table data, the models used in this study include Pool OLS, FEM, REM.

Pool OLS model

Pool OLS model is a simple regression model, it does not consider the time and space factors of the data, only estimates the normal OLS regression. Therefore, the coefficients in the model do not change over time and by each enterprise. However, the limitation of this model is that the autocorrelation phenomenon often occurs because the Durbin Watson coefficient is quite low (Gujarati et al, 2009).

$Y_{it} = \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + u_{it}$
In which:
i: The ith cross unit; t: Time t; u_{it}: Random error.

FEM model

In the fixed effects model, we assume that the slope of the root varies by firm and that the slope coefficient is constant. Er should note that the root offset may be different for each firm, but the root of each enterprise does not change over time. The difference in the origin of each enterprise can be attributed to the specific characteristics of each enterprise such as: management style (Gujarati et al., 2009; Gujarati, 2011).

The FEM model is presented as follows:
$Y_{it} = \beta_{1i} + \beta_2 X_{2it} + \beta_3 X_{3it} + u_{it}$

REM model

In this model, we assume that β_{1i} is a random variable with the mean value of

β1. The difference of each firm is shown in the random error (Gujarati, 2011).
The REM model is presented as follows:

$Yit = β1i + β2\ X2it + β3\ X3it + uit$

With: $β1i = β1 + εi$

Where, β i is the random noise class with the mean of 0 and the variance of.
Instead of the above formula, we have the following equation:

$Yit = β1 + β2\ X2it + β3\ X3it + uit + εi$

In which:

εi: Error component of cross unit;

uit: combined error component between cross unit and time series.

Testing to select and fix the defects of the model

Testing multi-collinearity phenomenon

Gujarati and Porter (2009) used the VIF to detect multicollinearity
phenomenon. If the correlation coefficient is closer to 1, the larger the VIF, the
multi-collinearity phenomenon occurs. In the absence of multicollinearity
between the variables, VIF = 1
.

Testing variance change

Gujarati (2011) argued that the variance of each factor depending on selected
value of the explanatory variables, is a constant number, this is the assumption
of the constant variance (homoscedasticity). Several tests are commonly used
to check variance of change: White test, Wald test, and LM test (Breusch and
Pagan Lagrangian). Two theories are set out:

H0: Variance does not change;

H1: Variance changes.

If p-value <significant level, reject hypothesis H0, if p-value> significance
level, accept hypothesis H0, conclude there is no variance change
phenomenon.

Testing autocorrelation

Gujarati (2011) proposed two hypotheses when testing for autocorrelation:

H0: There is no autocorrelation phenomenon;

H1: There is a autocorrelation phenomenon.

The author used the Wooldridge test to check autocorrelation. If p-value
<significant level, reject hypothesis H0, if p-value> significance level, accept
hypothesis H0, conclude no autocorrelation phenomenon.

Hausman test

Gujarati and Porter (2009) performed Hausman test to choose between two models FEM and REM. Two theories are put forward:

H0: There is no correlation between the error component of cross unit and explanatory variable;

H1: There is correlation between the error component of the cross unit and the explanatory variable.

If p-value <significant level, reject hypothesis H0, FEM model is suitable. If p-value> significance level, accept hypothesis H0, REM model is suitable.

Robust test

When variance changes appear, the OLS estimate for the results of the coefficients is still not biased, but the variance, covariance between the estimated coefficients obtained from the OLS regression is biased. Therefore, White (1980) proposed the method of stable standard error while keeping estimated coefficients from the OLS method, but the variance of the estimated coefficients is re-estimated. After performing this test, there is no heteroskedasticity (variance change).

Results And Discussion

Overview Of Logistics In Vietnam

Vietnam's logistics industry began to develop in the 1990s on the basis of delivery, transportation and warehousing services. Up to now, Vietnam's logistics market is still in the early stage of development. Although its scale is not large, it is full of potentials and attractions. Currently, there are about 1,200 businesses providing logistics services nationwide (compared to 700 before 2005) such as freight forwarding services, warehousing, loading and unloading, shipping agents, forwarding agents primarily concentrated in Ho Chi Minh City and Hanoi (Phong et al, 2020; Tien, 2017; Tien & Anh, 2017).

Enterprises providing logistics services in Vietnam mainly act as agents, or undertake each stage as subcontractors for international logistics service providers. There are over 25 multinational enterprises operating in the logistics industry in Vietnam, but accounting for over 70-80% of the market share in the logistics service provision of the country.

The growth rate of logistics services in Vietnam reaches 16-20% per year. However, the competitiveness of the logistics industry is still low, logistics costs are still very high at a rate of 20-25% of Vietnam's GDP, while that of China is 17.8% and Singapore is 9%.

In developing countries, the linkage between import-export enterprises and logistics service provider is still limited, not tight and lack of trust (Sturc,

2020). This is one of the reasons why Vietnam's logistics services are less developed than required. Outsourcing rate of logistics services in Vietnam is still very low, about 25-30%, while that of China is 63.3%, Japan, Europe and America are over 40%.

The market of Vietnam logistics services is currently shared by both domestic and foreign enterprises, but the main market is still dominated by foreign service providers with competitive ability, wide network, and professional, diversified and specialized services such as supply chain management, value-added services, logistics information systems and distribution centers while domestic firms mainly focus on providing basic services such as transportation, forwarding and customs clearance.

Despite the high growth rate, the quality of logistics services in Vietnam has not really developed adequately. In the survey conducted in early 2018, the World Bank increased the number of countries surveyed to 160 and Vietnam's LPI (Logistics Performance Index) ranked 39 out of 160 countries surveyed, up 25 places from the ranking position 64 in 2016. The LPI and component indexes of Vietnam's logistics industry over the years are shown in detail in Table 4.1 below:

Table 4.1: *Vietnam Logistics indicators in 2012-2018*

Indicators	2012		2014		2016		2018	
	Points	Ranked	Points	Ranked	Points	Ranked	Points	Ranked
LPI	3.00	53	3.15	48	2.98	64	3.27	39
Customs	2.65	63	2.81	61	2.75	64	2.96	41
Infrastructure	2.68	72	3.11	44	2.7	70	3.01	47
International shipment	3.14	39	3.22	42	3.12	50	3.16	49
Ccompetence & service quality	2.68	82	3.09	49	2.88	62	3.40	33
Tracking & tracing	3.16	47	3.19	48	2.84	75	3.45	34
Timeliness	3.64	38	3.49	56	3.5	56	3.67	40

Source: WB (2018)

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The efforts of the Government as well as domestic and foreign companies have contributed to the improvement of the logistics industry in Vietnam. In 2018, Vietnam had a positive change when most indexes on LPI and component indexes of Vietnam's logistics activities, especially the infrastructure index, were improved from 70 (2016) to 47 (2018) and the quality and capacity index of the logistics industry improved from 62 (2016) to 33 (2018). At the same time, the service time index improves from 56 (2016) to 40 (2018).

In 2016, the industry's competency index changed position to 49 and has positively improved its position to 33 in 2018. This positive signal shows that, if more effective solutions are continued, the capacity of the industry Vietnam's logistics will have a change for the better. In addition, while the countries in the region have not changed their positions much, Vietnam is still one of the countries whose LPI index has jumped from 53/155 (2012) to 39 / 160 (in 2018). However, it can be seen that there are still indicators of decline. For example, the time index decreased from 38 (2012) to 56 (2014) and only just raised its ranking in 2018 at 40. Meanwhile, the international transport index also signs of a decline from position 39 (2012) to position 50 (2016). Thus, in the coming time, Vietnam's logistics industry should focus on improving these declining indicators.

The decline in some of Vietnam's logistics service indexes as assessed by the World Bank (2018) shows that the overall quality of logistics services has not been improved, so it will be a big challenge for businesses. Vietnam logistics in the context of increasingly fierce competition between domestic and foreign companies as well as with foreign companies preparing to enter the Vietnam logistics market since the 100 % foreign capital has been opened since 2014 (Tien, 2019; Tien, 2019a).

Descriptive Statistics Of Researched Variables

This study was conducted with 30 logistics enterprises listed on HOSE in the period 2012-2019 with a sample of 240 observations summarized in Table 4.2 below.

Table 4.2: Descriptive statistics of researched variables

Variables	Observations	Mean	Std. deviation	Min	Max
ROA	240	0.0751	0.0699	-0.208	0.3551
ROE	240	0.0991	0.0968	-0.023	0.5872
DA	240	0.4607	0.2275	0.039	0.9673
SIZE	240	5.6791	0.5787	4.6111	6.9791
GROWTH	240	0.0965	0.1917	-0.3846	1.0266
TANG	240	0.4654	0.0791	0.1114	0.8945
LIQ	240	0.9232	0.7894	0.2267	7.3651

Source: Authors' analysis

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The results of descriptive statistical analysis in Table 4.2 show:

The average ROA of the Logistics enterprises listed on HOSE in the period 2012-2019 fluctuated around 0.075, in which the minimum value is about -0.208 and the maximum value is about 0.355, showing the different ROA between companies. In general, ROA rate of logistics enterprises listed on HOSE has grown unevenly over the years in the period 2012-2019. ROE of logistics enterprises listed on HOSE in the period 2012-2019 has an average value of about 0.0991, the minimum value is -0.023 and the maximum value is 0.587, the standard deviation is about 0.097. In general, ROE of logistics companies has not grown steadily in the period 2012-2019. It can be seen that the operation of logistics enterprises listed on HOSE over the years 2012-2019 tends to change in a positive direction. The ROA and ROE ratios indicate that the profitability of these companies has also improved and has been performing better over the years. It can be said that logistics companies listed on HOSE have been operating effectively in this period.

The rate of using debt financing for existing assets of logistics companies is quite high. Specifically, in the period 2012-2019, the variable total debt to total assets (DA) has an average value of 0.4608, meaning that on average, for each dollar of assets formed, 46.08% is funded from in debt. In general, the debt ratio has changed unevenly over the years, but the debt ratio of logistics services companies is all higher than 40%. The sharp increase in equity in the years 2014-2016 resulted in a rapid increase in total assets of logistics enterprises while the total debt of companies did not increase much, making the debt ratio decrease. For the enterprise size variable (SIZE), the lowest value is about 4.61, the highest value is about 6.98, and the average value is about 5.68. Firms are mainly sized around mean value.

For the tangible asset variable (TANG), the average value is about 0.4654, the lowest and highest value range is from 0.1114 to 0.8945, the standard deviation is about 0.0791, which shows that the TANG value also mainly revolves around the value. medium. The turnover growth variable (GROWTH) of the firms has the average value 0.0965, the lowest value -0.3846, the highest value 1.0266. Liquidity variable (LIQ) has the mean value of 0.9232, the smallest value 0.2267, the maximum value of 7,3651. The average value of liquidity shows that businesses have paid more attention to short-term payments due to lessons learned from the risk of losing liquidity, leading to a decrease in value of the business during the economic crisis.

Correlation Analysis Of Independent Variables

According to Gujarati (2004), to eliminate the problem of multicollinearity, we need to study carefully the correlation coefficients between the variables. If the correlation value between the variables is greater than (> 0.8), the model will have a serious problem of multicollinearity. If the VIF coefficients are all small (<10), no multicollinearity phenomenon occurs in the model.

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Table 4.3: Correlation matrix of independent variables

Variables	DA	SIZE	GROWTH	TANG	LIQ
DA	1.00				
SIZE	0.4169	1.00			
GROWTH	-0.1478	-0.0642	1.00		
TANG	-0.3476	-0.0271	0.1575	1.00	
LIQ	-0.0997	0.0234	0.0292	-0.2184	1.00

Source: Authors' analysis

The results of correlation analysis between the independent variables in the model presented in Table 4.3 show that there is no serious multicollinearity phenomenon in the independent variables, the correlation coefficient is in the range from -0.3476 to 0.4169. However, these coefficients are not greater than 0.8, so when using the regression model, there will be less multicollinearity between the variables. Therefore, the results in Table 4.3 show the suitability of these variables to use to conduct regression analysis in the next step.

Regression Analysis

The next part is the regression results between the independent variables and the dependent variable, which are indicators measuring the profitability of logistics enterprises, including: ROA and ROE.

Regression analysis of independent variable ROA

Table 4.4: Regression analysis of independent variable ROA with Pool OLS, FEM và REM

Variable	Pool OLS (1)	FEM (2)	REM (3)
DA	-0.0735771***	-0.0781791***	-0.0781791***
SIZE	0.000199	0.0002649	0.0002649
GROWTH	-0.018143	-0.0223919	-0.0223919
TANG	0.704952**	0.0298146***	0.623847***
LIQ	0.0018282*	0.0010926**	0.0026679**

*Note: *, **, *** corresponds to the significance level 10%, 5% and 1%*

Source: Authors' analysis

Table 4.4 shows the regression results between the independent variables and the ROA variable. Columns (1), (2), (3) show the regression results, performed in turn according to the Pool OLS, FEM, and REM models. Based on the results of testing the Hausman model selection, we see that the FEM model is more suitable than the REM model. Besides, the test of variance

change and cointegration shows that FEM model has the phenomenon of variance change and autocorrelation. Therefore, to overcome these shortcomings of the FEM model, the author continues to do the model regression according to the FGLS method to correct variance and autocorrelation. The regression results with the dependent variable ROA according to FGLS are presented in Table 4.5 below.

Table 4.5: Regression of independent variable ROA with FGLS

Variable	FGLS
DA	-0.0601089***
SIZE	0.0002388
GROWTH	-0.0428308
TANG	0.7494306***
LIQ	-0.0027641***

*Note: *, **, *** corresponds to the significance level 10%, 5% and 1%*

Source: Authors' analysis

The regression results in Table 4.5 show that the variable DA has a negative effect on ROA with the significance level of 1%. In addition, the variables TANG, LIQ all showed correlation and significance with the dependent variable ROA. In which, variable TANG had the same effect with ROA at the significance level 1% and the variable LIQ had the opposite effect with ROA at the significance level 1%. In addition, the variables SIZE, GROWTH, did not show a clear, statistically significant impact on the variable ROA.

Regression of independent variable ROE

Table 4.6: Regression of independent variable ROE with Pool OLS, FEM và REM

Variable	Pool OLS (1)	FEM (2)	REM (3)
DA	0.3116841	-0.0235433	0.3116841
SIZE	-0.0762634**	-0.0880082**	-0.0762634**
GROWTH	0.3423462	0.3244233	0.3423462
TANG	0.3631277	0.3639699	03631277
LIQ	-0.0011428	0.010673	-0.001428

*Note: *, **, *** corresponds to the significance level 10%, 5% and 1%*

Source: Authors' analysis

Table 4.6 shows the regression results between the independent variables and the ROE variable. Columns (1), (2), (3) show the regression results, performed in turn according to the Pool OLS, FEM, and REM models. Based on the test results of the model selection Hausman test, we see that the REM model is more suitable than the FEM model. In addition, tests on variance change and cointegration show that the REM model has the phenomenon of variance

change and autocorrelation. Therefore, to overcome these shortcomings of the REM model, the author performed the model regression according to the FGLS method, which corrected the variance of change and autocorrelation. The regression results with the dependent variable ROE according to FGLS are presented in Table 4.7 below.

Table 4.7: Regression of independent variable ROE with FGLS

Variable	FGLS
DA	0.0372901
SIZE	-0.0092458
GROWTH	0.0509215
TANG	0.2109246**
LIQ	-0.0059641**

*Note: *, **, *** corresponds to the significance level 10%, 5% and 1%*

Source: Authors' analysis

The regression results in Table 4.7 show that, the variable DA has a positive effect on ROE but not statistically significant. The variable TANG shows a positive and significant correlation with the dependent variable ROE at the 5% statistical significance level. The variable LIQ negatively affected the ROE variable at the 5% significance level. Besides, the variables SIZE, GROWTH have not shown a clear and significant impact on the variable ROE.

Research Results Discussion

Table 4.8: Summary of regression analysis results

Varaible	ROA	ROE
DA	-	No statistical significance
SIZE	No statistical significance	No statistical significance
GROWTH	No statistical significance	No statistical significance
TANG	+	+
LIQ	-	-

Source: Authors' synthesis

Summary of regression results in 02 models with variables representing the dependent variable of profitability in turn (ROA, ROE) shows an inverse relationship between capital structure and profitability (represented by ROA index) of Logistics businesses listed on HOSE in the period 2012-2019. The variable DA has a opposite effect with ROA, specifically: when the DA increases by 1%, the ROA decreases by 0.06 units and is statistically significant at 1%. But it is not statistically significant for the dependent variable ROE. This shows that enterprises in this industry have a high debt ratio, leading to an increase in the rate of profit earned over investment costs, leading to increased interest rates and higher debt ratios than profitability rates.

Demonstrating that, enterprises in the logistics industry have to adjust the debt ratio properly and increase the capital investment in assets, it will increase the profitability of the business. This can be explained for a number of reasons as follows. First, according to agency cost theory, borrowing will reduce the agency cost between owner and manager, the creditor acts as the supervisor of the business in the use of capital. However, in Vietnam, this role of the creditor has not been performed well, so borrowing does not reduce agency costs between the owner and manager (Le & Phan, 2017).

Second, compared to the stock market, the development of the debt market in Vietnam is still slow, so companies in the listed Logistics industry in the research period often mobilize capital from issuing shares instead because of issuing debt. If enterprises mobilize capital from outside, loans from banks are often used, so they cannot take advantage of the tax shields from debt issuance (Tianyu, 2013; Le & Phan, 2017). In addition, studies on the effects of capital structure on profitability have mixed results when conducted in developed and developing countries. Most of the research is done in developed countries, the relationship between capital structure and corporate profitability is positive, on the contrary, for developing countries and emerging markets like Vietnam. is the opposite relationship. Studies in developing countries such as by Salim and Yadav (2012); Tianyu (2013); Le and Phan (2017) also agree with the results of this study.

Besides the results on the relationship between capital structure (DA) and profitability of logistics firms on HOSE, findings on the influence of the remaining control variables in the model are also very interesting. The variable tangible assets (TANG) shows the same positive impact on the profitability of the logistics enterprises listed on HOSE in the period 2012-2019 and is consistent in both regression models according to FGLS. This shows that the more tangible fixed assets that listed logistics firms have, the deeper they are, the more modernized they are, the more profitable they are. The findings of the thesis prove that the enterprises in the logistics industry make long-term investments and tend to modernize machinery and equipment to improve service quality, which will help businesses increase their capacity. compete in the market and improve profitability. This result is consistent with research by Farooq et al (2016). However, the results of the topic are contrary to the findings of Kausar et al (2014) and Long (2016). The authors found evidence of an inverse relationship between the ratio of tangible fixed assets to total assets and firm profitability. The fact that businesses invest too much in tangible assets will make asset turnover very slow. Too much tangible assets make businesses have less assets to operate. At the same time, the fact that many assets are placed in permanent and permanent places will greatly reduce working capital needed to turn around, making it difficult for business operations. Liquidity variable (LIQ) had the opposite effect with ROA and ROE at the 1% level. This is understood that like the ratio of tangible fixed assets, short-term solvency is negatively related to profitability. Enterprises with higher LIQ index, the lower profitability. High LIQ proves the business has left too many assets to ensure liquidity in the short term without making these assets profitable. The high short-term payment ratio partly reflects the fact that businesses have not used their assets effectively. Therefore,

profitability will be reduced. This result is similar to the study of Kausar et al (2014) and Long (2016). In addition, other control variables such as firm size (SIZE), asset growth (GROWTH) have not found clear statistical evidence (not statistically significant) to conclude the relationship between the This control variable for firm profitability in the sample.

CONCLUSION
The main research objective of this article is to determine the impact of capital structure on financial performace (represented by ROA and ROE) of logistics enterprises listed on HOSE in the period of 2012- 2019. Applying the data of 30 logistics enterprises listed on HOSE from 2012 to 2019, and quantitative method (with models of Pool OLS, FEM, REM and FGLS), the research results have proven that capital structure has a negative impact on profitability represented by ROA, particularly in the case of profitability represented by ROE, the study has not found any statistical evidence to support the effects of capital structure on profitability of logistics enterprises in the research period.

In addition, the study also showed that the tangible asset variable (TANG) had a positive impact on the profitability of the logistics firms listed on the HOSE in the period 2012-2019 and had consistency across both regression models with variables representing the profitability of the firm. This shows that the more logistics companies listed on HOSE, the more tangible fixed assets they have, the more profitable their profitability is. Similarly, the variable liquidity (LIQ) also has a consistent effect with 02 variables representing the profitability of the business. This means that businesses with higher LIQ index, the lower profitability.

In addition, with other control variables such as size (SIZE), wealth growth (GROWTH) research has not found clear statistical evidence to conclude the relationship between these control variables with the profitable business.

Policy Implication

Based on the research results, the following are some policy suggestions to improve the profitability of logistics enterprises listed on HOSE. First, logistics businesses should consider using leverage. When using leverage, businesses face financial exhaustion costs as well as tax shield benefits from interest, so businesses consider using financial leverage as well as finding a threshold for debt to take advantage of. take advantage of financial leverage to improve profitability. In addition, investors should consider and consider the debt ratio of logistics enterprises before making investment decisions. Second, tangible assets have a positive impact on the profitability of logistics businesses. Therefore, in order to increase their profitability, logistics enterprises need to increase long-term investment and modernize machinery and equipment to improve product quality to increase their competitiveness in the market. schools and improve the profitability of businesses. Third, the variable liquidity (LIQ) also has a consistent effect with two variables representing the profitability of the business.

This means that businesses with higher LIQ index, the lower profitability.

High LIQ proves that the enterprise has too many assets to ensure the liquidity in short-term debt without making these assets profitable, proving that the business performance is not high. But if this ratio is too low, it will lead to risks in the liquidity of the business. Therefore, in the coming time, logistics enterprises need to maintain an appropriate short-term ratio of payments to effectively utilize their assets to increase investment in machinery and equipment to increase their competitiveness. thereby improving profitability.

Finally, the government should develop a balance between the bond market and the stock market to provide logistics businesses more channels of capital mobilization, especially from the bond market. Normally, logistics businesses often mobilize long-term capital in the bond market. However, the bond market in Vietnam currently has not yet developed commensurate with its potential, it is difficult for businesses to mobilize capital on this channel, and instead depends mainly on loans from banks, while the high loan interest rate from this channel greatly affects their profitability.

Limitation And Further Research

Firstly, research data of the topic is collected from 30 logistics enterprises listed on HOSE, in the period 2012-2019. The sample size is limited at 240 observations for tabular data, therefore, the research results do not guarantee high generalization for businesses operating in other industries. Therefore, the next research direction should be done to expand the sample size for many branches, to expand the research stage in order to further improve the generalization capacity of the research results.

Second, this study uses only a limited number of control variables (SIZE, TANG, LIQ, GROW). However, in practical conditions, there are many factors that affect the profitability of businesses in the industry. Therefore, the next research direction will expand to add controlling factors belonging to the group of economic characteristics such as economic growth, inflation, interest rates, money supply of the economy to increase the relevance of the model and the sustainability for the research results in this article (Tien et al, 2019a; Tien et al, 2018).

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