

**VIETNAM NATIONAL UNIVERSITY – HOCHIMINH CITY
INTERNATIONAL UNIVERSITY
SCHOOL OF BUSINESS**



**DETERMINANTS OF IPO UNDERPERFORMANCE:
EVIDENCE FROM LISTED COMPANIES
IN HOCHIMINH STOCK EXCHANGE (HOSE)**

In Partial Fulfillment of the Requirements of the Degree of
BACHELOR OF ARTS in BUSINESS ADMINISTRATION

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Ho Chi Minh City, Vietnam

June, 2019

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In specialization

by

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TABLE OF CONTENT

ACKNOWLEDGEMENTS	iii
TABLE OF CONTENT	iv
LIST OF FIGURES	vi
LIST OF TABLES	vii
ABSTRACT.....	viii
CHAPTER I.....	1
INTRODUCTION	1
1.1 Backgrounds and rationales	1
1.2 Research objectives.....	5
1.3 Significance of the research.....	6
1.4 Research questions.....	6
1.5 Sample scope of the research.....	6
1.6 Research structure	7
CHAPTER II.....	9
LITERATURE REVIEW	9
2.1 Definition of Key Concepts	9
2.1.1. IPO.....	9
2.1.1.1. <i>General introduction about IPO</i>	9
2.1.1.2. <i>IPO mechanism</i>	10
2.1.2. IPO Underpricing.....	14
2.1.3. IPO Underperformance.....	15
2.1.4. Evidences of IPO Underperformance and Determinants.....	15
2.2 Theoretical background	16
2.2.1. Supporting theories for the determinants of IPO Underperformance General supporting theories for IPO Underperformance phenomenon.....	16
2.2.2. Supporting theories for IPO Underperformance’s determinants	17
2.3 Previous empirical studies of IPO Underperformance	19
2.3.1 Previous empirical studies of IPO Underperformance’s existence	19
2.3.2 Previous empirical studies of IPO Underperformance’s determinants.....	20
2.4 Hypothesis development.....	22

CHAPTER III	24
METHODOLOGY	24
3.1 Research Design	24
3.2 Data collection	24
3.3 Regression Model	25
3.4 Description of variables	26
3.4.1 Dependent Variable	26
3.4.2 Independent Variables	26
3.4.3 Research hypothesis.....	28
3.5 Descriptive Method.....	29
3.5.1 Descriptive Statistic	29
3.5.2 Pearson Correlation Test	29
3.5.3 Regression Model	30
CHAPTER IV	32
RESULTS ANALYSIS	32
4.1 Descriptive Statistic	32
4.2 Pearson Correlation Test.....	33
4.3 One sample T-Test for testing existences of IPO Underperformance	34
4.4 Regression Procedure	35
4.5 Residual Testing	37
CHAPTER V	40
DISCUSSION AND CONCLUSION	40
5.1 Discussion	40
5.2 Conclusion	42
5.3 Limitations of the study	43
5.4 Suggestions for further researches	43
REFERENCES	45
APPENDIX.....	47

LIST OF FIGURES

Figure 1: IPO Vietnam enterprises during 2005 - 2015.....	2
Figure 2: Stock performance during at least 2 years after IPO in US market.	5
Figure 3: Descriptive Hypothesis.....	29
Figure 4: Distribution of IPO Underperformance level.....	37
Figure 5: Regression Standardized P-P Plot.....	38

LIST OF TABLES

Table 1: Ritter's model (1998).....	4
Table 2: Supporting theory	16
Table 3: Summary independent variables.....	28
Table 4: Properties and Degree of correlation.	30
Table 5: Descriptive Statistic	32
Table 6: Summary about correlation coefficients.....	33
Table 7: One-Sample Statistics.....	34
Table 8: One-Sample Test	35
Table 9: Model Summary ^b	35
Table 10: ANOVA ^a	36
Table 11: Coefficients.....	36
Table 12: Residuals Statistics ^a	38

ABSTRACT

Vietnam's first share issuance market (IPO) reached US \$ 4.5 billion in 2018, as of mid-November. According to data from global audit firm Deloitte, the total capital that Vietnamese enterprises mobilized through IPO this year far exceeded the number of only a few hundred million US dollars mobilized in recent years, making Vietnam the largest IPO market in Southeast Asia. The emergence of Vietnam's capital market is partly due to the promotion of the restructuring of the Government market, accompanied by strong interest of foreign investors and domestic investment funds. , along with a positive economic growth forecast of 6.8% in 2018. However, many IPO deals face many difficulties in finding investors, as well as finding long-term business strategies. The term leads to a decline in stock performance after IPO. This study focuses on the existence of Underperformance IPO on HOSE and the factors affecting this phenomenon. Due to limited time and professional knowledge, the research results only prove the existence of the Underperformance IPO on a very small scale (about 2.2%) and 2 factors affecting this phenomenon are Leverage (with impact level of about 25.4%) and ROA (with an impact level of 32.4%).

CHAPTER I

INTRODUCTION

This chapter briefly introduces the economic backgrounds and the rationales of the study (world economic in general and Vietnam economy in particular). Then, identify the research problem and clarify that problem with research questions. The sample size the significance and the research structure are also presented in this chapter.

1.1 Backgrounds and rationales

The State Securities Commission was established on November 28, 1996 and became one of important milestones in Vietnamese Stock Market. Over 20 years of development, Vietnam Stock Market has constantly developed and achieved many successes - the most popular capital markets¹ for businesses. Enterprises can raise capital from various sources, but the most common form is through issuing shares. This type of capital called “direct capital investment” from the stock market. When companies have demand of capital and choose this form, they will calculate how much money they need and issue a same number of shares on the stock market (Baron, 1982). The basic feature of this form is increasing capital without any debts for the enterprises, due to the equity holders (called shareholders) contribute capital to the company to conduct business with the spirit of cooperation as the partners (benefits in win & risks in loss). These shareholders have the right to share net profits and assets of the issuing companies. If debt

¹ Based on the nature of the financial instruments that the financial market is divided into: Debt Market and Capital Market. Debt mobilization market is based on the issuance of debt instruments (bonds, bills, promissory notes, etc.). Meanwhile, the capital market mobilizes capital by issuing shares to sell to those with idle money. Debt instruments often have a fixed interest rate and a fixed term of payment, the company must pay interest to creditors before dividing dividends, and when the company goes bankrupt, its assets is divided to the creditors before paying to shareholders; Therefore, buying debt instruments is usually safer and less risky than stocks.

instruments (e.g., bonds) are selected for their safety and low risk, stocks are preferred due to the dividends² that it brings to investors.

Initial Public Offering (IPO) is an important premise in the process of securities transfer into the market. This is the first condition which determines the success of capital mobilization for securities issuers. According to Adena Friedman, CEO of Nasdaq (one of the largest stock exchanges in the US), IPO helps enterprises boost 76% of jobs and is also be decisive moment for the success in rising capital for small and medium enterprises. This activity happens in the primary market³ with the aim of creating capital for businesses. Subsequent releases of the same business entity conducted on the secondary market⁴ are called additional issuance (Seasonal Public Offering (SPO)) to increase more capital in the future.

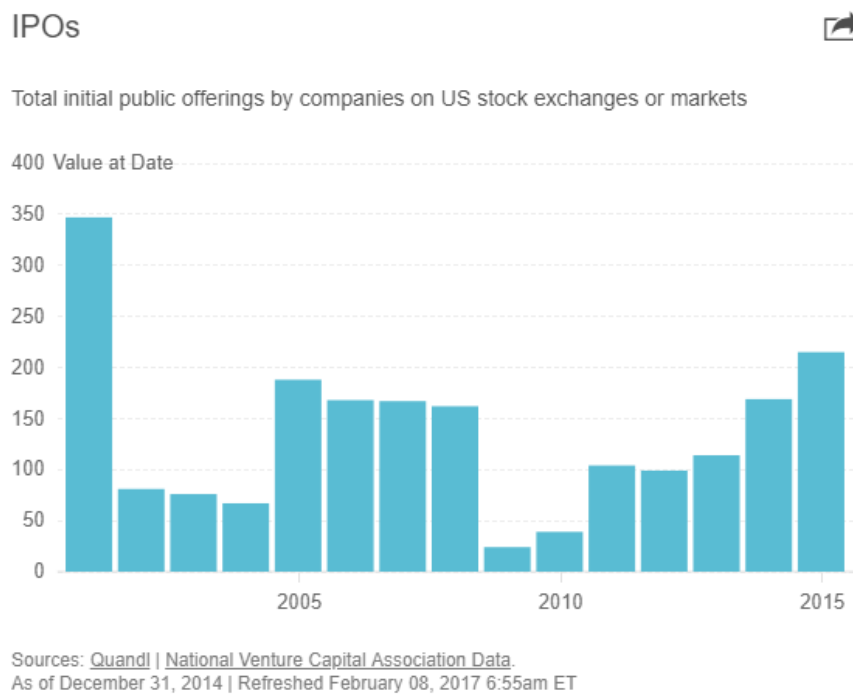


Figure 1: IPO Vietnam enterprises during 2005 - 2015

² Stocks do not have fixed interest rates but dividends depend on the business performance of the issuers. Stocks are considered to be long-term securities because they do not prescribe expiry dates. Shareholders are considered owners of stock issuing companies.

³ Primary market is the market for buying and selling newly issued securities. Characteristics of this market are intermittent markets and the only place where the securities bring capital to the issuers. This market price of securities is decided by the issuer and is usually printed right on the stock.

⁴ The secondary market is the place where trading securities have been issued on the primary market. The secondary market ensures liquidity for issued securities. Trading on the secondary market reflects the principle of free competition, the price of securities in the market decided by supply and demand. This is a continuous market, investors can buy and sell securities many times in the secondary market.

With the financial and economic situation in the world and in the country tending to develop sharply in recent years, Vietnam's stock market is one of the highest growth countries in Asia about the total capitalization. The market of both exchanges was equivalent to VND 3,515 trillion, equivalent to 74.6% of GDP (HOSE's Annual Report, 2017). Total stock market capitalization has been the Government's growth target (expected to be completed by 2020), accounting for 70% of the country's GDP.

As of the end of December 29, 2017, Ho Chi Minh Stock Exchange had 386 listed shares. There are 31 IPO companies that succeeded in 2017 (doubling over the same period in 2016) with many large companies, such as: Petrolimex, Vincom Retail, VPBank, etc. The volume of new listed stocks in 2017 increased by 135.3% compared to the previous year, equivalent to 6.486 million shares (HOSE Annual Report, 2017). However, there is a fact that many Vietnamese enterprises have completed the IPO process but still prolong the listing time on the stock market, leading to the distrust of investors. According to Dang Quy Tien (Head of Corporate Finance, Ministry of Finance), 747 enterprises have not registered to list or trade on the stock market (annual report of the Ministry of Finance 2017, 2017). Although the government has issued a number of legal documents to closely link IPO activities with listing on the exchange (for example, Decision 51/2014 of the Prime Minister, Circular No. 115/2016 of the Ministry of Finance, etc.) but there are still time gaps. Baron (1982) argued that information asymmetry is a major cause of bad influence on the initial public offering of businesses. Legal regulations have not been improved, compulsory content does not cover all issues that investors are interested in, etc. shows that businesses are not focused and honest in information disclosure, as well as building relationships with investors. On the other hand, the IPO process of the enterprise also brings potential risks. Enterprises that decide to list for the first time must be cautious of strict government regulations and high operating costs. Pressure from the market can make these companies focus on short-term goals but loss long-term business goals, becoming challenges for businesses in the long-term development orientation.

Ritter (1998) classified the share issuance of businesses, based on how prices and stock distribution are determined, into the following methods:

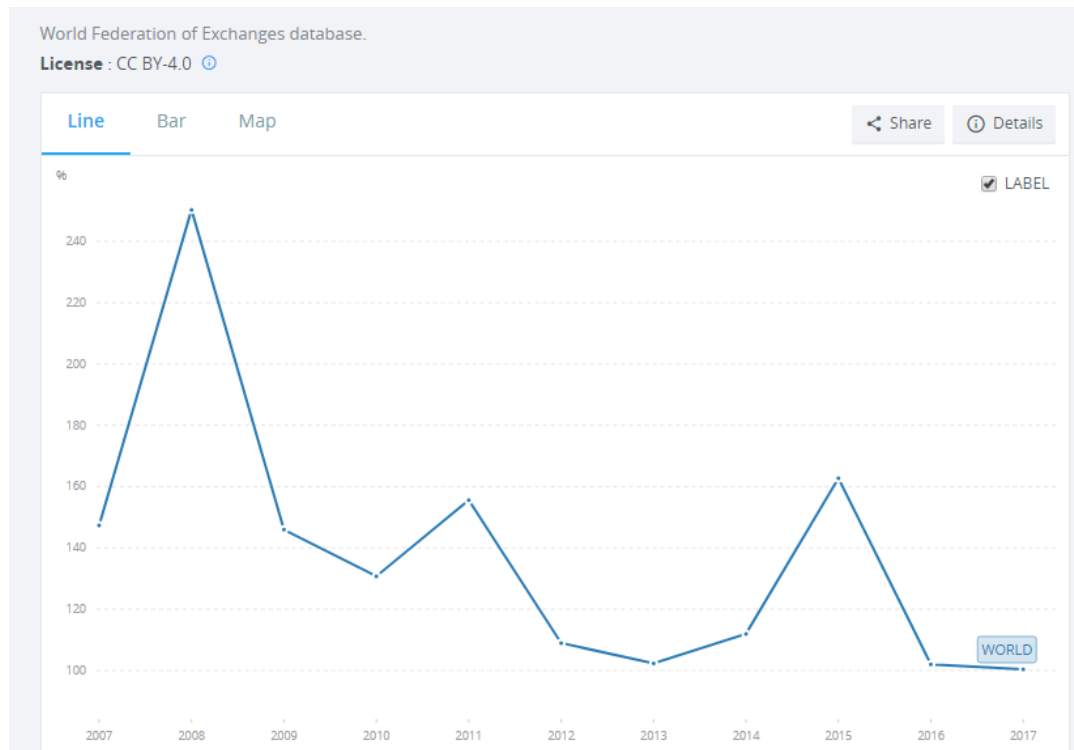
Table 1: Ritter's model (1998)

		Fixing price	
		No participation of investors	Participation of investors
Stock distribution	Arbitrarily issuing underwriters	Fixed - price	Book - building
	Do not arbitrarily issue underwriting organization	Offer for sale (UK)	Auction

Currently, most Vietnamese enterprises are using auction mechanism (English's style auction, also called multi-price auction) for initial public offering process. The initial public offering of shares by auction has the advantage of limiting the underpricing phenomenon⁵ in the IPO process because the pricing mechanism of this method reflects the expectation of a quantity. Large investors, which is considered to be closer to the price that the market accepted than other methods. Especially with state-owned enterprises that want to conduct equity because they are usually in good fields and are well known to the public. However, the disadvantage of this auction method, especially in the Vietnamese market, is that the issue price still quite high due to low financial market development and similar management policies to tighten, limit the liquidity and flexibility of investors. In addition, another disadvantage of the auction method is the phenomenon of underperformance. Contrary to the underpricing phenomenon, the underperformance phenomenon is the phenomenon that the issue price of a stock is pushed too high compared to the real value, or the issue price is higher than the transaction price of the first day. This phenomenon may not be evident in the short-term cycle but is evident in the long-term cycle. This reflects investors' expectations for the potential of the issuer: if investors put hope on the potential of the company, they will set a very high price to be sure to succeed in the auction. Shares to be sold to other investors to earn or hold those stocks to receive dividends. In addition,

⁵ "Underpricing" phenomenon: a stock is considered to be underpriced if its issue price is lower than the price of the first trading day. This below-price issue appears to be due to some concerns about liquidity and uncertainty about the trading prices that stocks can achieve. The less liquid a stock is and the harder it is to predict, the higher the price is issued.

this phenomenon may occur because investors lack knowledge, are affected by psychological factors. They set high expectations but do not anticipate incidents that occur during the operation of the business, leading to offering high prices to be sure of buying stocks without properly evaluating the performance of business for a long time.



Source: World Federation database

Figure 2: Stock performance during at least 2 years after IPO in US market.

Unfortunately, researches on IPO in Vietnam stock market are still quite rare. These studies often focus on determining below IPO prices (e.g. Tran et al., 2015; Thao et al., 2016) and very few studies mention the phenomenon of underperformance. This is the driving force for us to conduct research on the phenomenon of underperformance in Vietnam stock market in general, and Ho Chi Minh City Stock Exchange in particular. We not only assess the existence of this phenomenon, but also examine the factors that influence the performance of IPO stocks at Ho Chi Minh Stock Exchange (HOSE).) in the period of 2009 - 2018.

1.2 Research objectives

This study aims to test whether there is a underperformance phenomenon in our data sample (including stock codes listed on the Ho Chi Minh City Stock Exchange in period 01/2009 - 12/2018) or not. In addition, the study examined the factors affecting this phenomenon.

1.3 Significance of the research

In theory, we believe this research will contribute to the theoretical foundation of underperformance phenomenon in IPO process in the world (in general) and Vietnam stock market (in particular). The results of the study will show that the factors affecting the performance under IPO performance still exist and can be used to explain the inefficiencies of some stocks for long-term targets in the Vietnamese stock market.

In reality, this research has practical implications: First, the research results show that there is a phenomenon of underperformance in the IPO process in Vietnamese stock market. This can be considered a useful reference for economic entities (publishers, shareholders, creditors, suppliers, etc.) to help them make best decisions. In addition, in this study, to test the existence of under-performance, we have examined and tested the factors that influence the level of success in IPOs such as: firm size (total assets, tangible assets and intangible assets); financial leverage (liabilities/total assets); profit (ROA, ROE); liquidity (short-term assets/short-term liabilities); etc. Research results are valuable reference for researchers on a dynamic emerging market like Viet Nam.

1.4 Research questions

The purpose of this study is to determine the existence of IPO underperformance and factors affecting this phenomenon on the Ho Chi Minh City Stock Exchange (HOSE) in the period of 2009 - 2018.

Research aims to answer the following questions:

- a. Does IPO underperformance exist in non-financial companies listed on HOSE in the period of 01/2009 - 12/2018?
- b. If yes, what are the determinants of IPO underperformance of non-financial companies listed on HOSE?

1.5 Sample scope of the research

The initial sample of the study included 387 IPO from March 2007 to December 2018. The data were collected by Vietstock, including information from the Ho Chi Minh City Stock Exchange. (HOSE) and financial reports (quarterly, annual, prospectus, etc.) of related companies. The size of the research sample is quite large, but many information about IPO activities of Vietnamese companies is often not publicly disclosed or not fully listed in the

market. The public only has limited access to information when companies are listed on the stock exchange. Therefore, we have chosen to collapse the sample based on the following criteria:

- Selected companies are non-financial companies. Because the research needs to use the data in the financial statements of enterprises, the reports of financial companies have differences with other industries.
- The time of IPO and listing time of the company, as well as related documents (prospectus, reports and shareholder meeting minutes) are clearly and accurately disclosed. In addition, the time of IPO is not more than 3 years from the listing time.
- Financial statements, documents related to the operation process and company information are published clearly and continuously. The company is still operating until the time of the research.

Finally, 105 Vietnamese non-financial companies in the period of 2009 - 2018 were included in this study. Due to time constraints, the scope of this research is aimed at companies listed on the Ho Chi Minh City Stock Exchange (HOSE).

1.6 Research structure

This study is divided into 5 chapters as follow:

CHAPTER 1: INTRODUCTION

This chapter introduces the backgrounds of the stock market and rationales of developing the study. In addition, this chapter covers the purposes, questions, sample size and structure of the study.

CHAPTER 2: LITERATURE REVIEW

This chapter covers the basic definitions of key concepts, supporting theories, previous empirical studies and hypothesis development.

CHAPTER 3: METHODOLOGY

The third chapter shows how to design research, scales, data collection methods and methods for analyzing these data.

CHAPTER 4: RESULTS ANALYSIS

After collecting research data, the purpose of this chapter is to analysis the empirical results obtained based on software and supporting theories.

CHAPTER 5: DISCUSSION AND CONCLUSION

The final chapter provides discussions and conclusions of the research process, limitations and suggestions for improving future studies.

CHAPTER II

LITERATURE REVIEW

There are three main parts in this chapter: Basic definitions of key concepts (IPO mechanism, IPO Underperformance); Theories and The previous empirical studies supporting for determinants of IPO Underperformance (consider markets in the world in general and focusing on Vietnam market in particular); Based on the above theoretical bases, research model with proposed hypotheses will be presented.

2.1 Definition of Key Concepts

In this section, we will outline and clarify the definitions of IPO mechanism and determinism under theoretical IPO performance and in previous practical studies.

2.1.1. IPO

2.1.1.1. General introduction about IPO

As mentioned in Chapter 1, Initial Public Offering (hereafter IPO) is the most important milestone in the process of securities in the stock market that affect to successful capital mobilization with every securities issuers, especially, joint stock enterprises that want to become the public companies. IPO is the widespread offering of shares to the public in large scale and large volume, in which a certain percentage of securities must be distributed to small investors. The total value of issued securities must also reach a certain level. Public offering of stocks has a degree of influence on many people, so this issuance must have certain conditions. Depending on the laws on securities of each country, joint-stock companies that want to issue shares to the public must have a relatively large charter capital, must operate at a certain time and have a feasible plan about using the mobilized capital from the issuance.

Vietnam Securities Law (2010) has introduced regulations on public offering of securities which are the following methods: Stock offering form to investors through mass media (transmission media) social media, such as: Radio, TV channels, newspapers, etc.); And, the scale calls for investors to be bigger than 100 investors.

In addition, there are legal provisions in the state to ensure transparent and effective IPO process, such as: Enterprises can only conduct IPO when the total equity is greater than VND 10 billion (As of the IPO time, business activities must have effective interest rates and must have a plan to use capital after reasonable IPO (Article 12, Clause 1, Vietnam Securities Law). The information in the file must be accurate and truthful with the decision of the Board of Directors or the Members' Council or the owner of the company (article 14, clause 6, Vietnam securities law). Information that does not contain the subjective opinions of the business owner is misleading and contains all important content affecting the decision of the investor (article 14, clause 4, Vietnam Securities Law).

2.1.1.2. IPO mechanism

Public offering is usually much higher cost than private offering⁶. However, companies still prefer this offering because of the following advantages:

- Securities issued to the public are allowed to list at Securities Trading Center (for joint-stock companies that are eligible for listing). Therefore, it is higher and more attractive to shareholders.
- Securities issued separately can hardly reflect each supply and demand relationship in the market due to a very limited number of buyers. Public release with the participation of thousands of investors partly reflects the value of the company's performance more accurately, and often the amount of capital retrieved is higher than when issued separately. .
- When issuing shares to the public, although the number of issuance is large, the number of shares will usually be divided among many investors, so the control of the shareholders of the major and strategic shareholders is not much affected. If private

⁶ Private placement is a small-scale issuance of securities. In particular, securities are sold within an internal range - certain entities (usually institutional shareholders) - with limited conditions and information not publicly available. Businesses often choose to issue separately because of the following reasons: The company is not qualified to issue to the public; the amount of capital to be mobilized is low; issued to employees of the company; or, unfavorable market situation, etc.

placement, an investor, usually a strategic investor, will own a large number of shares and affect the control of current shareholders.

- Public offering with the participation and assurance of reputable underwriting organizations will ensure that the company's capital mobilization is successful. This organization will carry out procedures before offering securities, organizing the distribution of securities and help stabilize securities prices in the first phase after issuance. Thus, underwriting includes financial advisory and securities distribution. In general, businesses often do not directly sell their newly issued shares, but will sign contracts with underwriters to distribute the shares to the primary market. Upon receiving the guarantee task, the sponsors received part or all of the risk in selling newly issued shares. Therefore, businesses often pay for underwriting organizations to issue a certain underwriting commission. This amount is the difference between the proceeds from the sale of shares and the amount to be returned to the issuer. The issuance underwriting commission depends on the quality and scale of the issuance and the specific situation of the market at the time of issuance.

Types of issuance underwriting are classified as follows:

- Type 1 - Guarantee for all consumption: This is the most sure form of guarantee because the brokerage company will buy all newly issued shares of the joint stock company, and then resell it to investors at a higher price to enjoy the difference.
- Type 2 - Issuing agent with the best effort: In this form, the issuers receive the sale of shares but do not buy all the shares but not yet sold. They only commit to try their best to sell securities within the time limit; If not sold out, the remaining shares will be paid to the joint stock company.
- Type 3 - All or no guarantee: The issuing enterprise requires the guaranteeing organization to sell all shares to be issued, if not all distribution will cancel the issuance. Guarantee organizations must sell all the shares and the issuing company obtains all the value of the issuance. Otherwise, the stock returns to the issuer and the money returned to the investor.
- Type 4 - Guarantee with minimum limit: Is the method that the issuing organization requires the guaranteeing organization to sell at least a certain percentage of shares. In

order to encourage an effective sale, the publisher may require a goal - a certain amount of revenue.

In general, in the initial public offering of securities, of course companies can do it themselves but often they choose to cooperate with one or more banks, financial companies - this is a partnership (Beneficial for both parties⁷).

Currently, the initial public offering of joint stock companies is mostly a method of issuing shares under the guarantee.

Publicly issued with a predetermined price: Before issuing, stock prices will be predetermined by consulting organizations or valuation organizations. After that, stocks offered by underwriting organizations to investors at predetermined prices. The issue will be limited to a certain period of time with a predetermined number of offered shares. The distribution of stocks depends entirely on the underwriting organization.

- Advantages: How much the issuer of the stock knows how much it will earn (in case of successful issuance). Therefore, the company can use this method to finance a specific capital needs.
- Disadvantages: The offering price is often lower than the real value of the stock to attract investors. This price often does not reflect the supply-demand relationship for issued shares and company values. Therefore, enterprises cannot mobilize maximum amount of capital as much as possible.

Issuance by book-buiding method: Underwriting organizations will represent businesses to offer shares to potential investors, often investment organizations or wealthy customers. . Through the collection of data on total market demand, the desired prices and the credibility of investors and underwriters will determine the issue price of the stock. After that, distribute the distribution to investors who accept to buy. These investors have pledged to buy a number of shares at the suggested price.

- Advantage: This method has been widely used since the 1990s and is now the main IPO method of many countries in the world due to many benefits. In the US and Canada, 80% of IPO cases use this mechanism. Enterprises can determine

⁷ Enterprises are supported by the law-based campaign of issuing and selling securities, receiving funding when the company is not known to the public or to mobilize a large amount of capital on time. For underwriters (banks, financial companies, securities companies, etc.) being an advisor, an agent or an agent for businesses will receive a commission or interest bonus, but they must research carefully to avoid risks.

exactly the total capital gained after the share issuance; New shareholders can perform stock transactions on the secondary market right on the first trading day; And, guarantee organizations will receive a commission based on the percentage of sales of the IPO plus an issue of underwriting.

- Disadvantages: The role of underwriting organizations is too large. The assessment of enterprises to determine the exact share issuance price is extremely complicated: the reasonable price is accepted by both the market and the enterprise, assessing the seriousness of investors to limit instances of cases that offer too high prices. This requires a certain level of development of the financial market as well as the accompanying financial services. Therefore, sometimes lead to some negative problems causing damage to the issuer.

Issuing via auction method: Based on the information about the publicly announced enterprise, investors will give the price they think is reasonable. Depending on the approach to information as well as the views of each investor, the share price offered for purchase may be very different. After the auction, the stock will be distributed to successful auction investors, not depending on the guarantee organization. The determination of the bid price of a successful auction as well as the price that each investor must pay for the purchase order depends on the auction mechanism used. Currently, there are two popular auction mechanisms: English auction and Dutch auction.

English auction: this is the most popular auction on the Vietnamese stock market. In this auction mechanism, the issuer will announce the number of offered securities (offering or not offering prices). The buyer will issue a closed bid, stating the price and volume of shares they want to buy. These orders will be arranged in order of descending order prices. The auction ends when no one offers a higher price or when the "ceiling" price is reached, then the highest bidder will be able to buy the item at the price he paid. Under this mechanism, there will be many winning bid prices starting from the highest bidder, then selling to the lower bidder until selling out the number of offered shares. The seller may set a floor price, if the auction is held or the underwriters cannot raise the price above the floor price, the auction may fail.

Dutch auction: also known as the descending price auction, with a very high initial price, then it will gradually descend until investors accept the price. and the volume of shares offered for sale. Dutch auction is applied to Vietcombank's IPO process.

- Advantages: Mobilizing maximum capital from investors; At the same time, enterprises and issuance underwriting organizations can accurately comment and re-evaluate the value of enterprises through stock issue prices. Releasing this method is suitable for companies that need a lot of investment capital or need to accurately define the value of the business. For equitized companies in Vietnam, especially State-owned companies or state-owned companies, they often choose this issuance method to accurately determine the previous capital value and attract more other sources of capital, especially foreign investment.
- Disadvantages: Investors face many difficulties in determining the appropriate buying price. At the same time, for small issuances, investors' groups have a chance to make prices in their favor, when the real value of the stock cannot be determined. In addition, there are also cases where issuers or underwriters intentionally conceal the negative information of the company and falsify positive information in order to create a false "vision" for the investors.

In Vietnam, the process of enterprise massification (IPO process) has gone through many years of practical application, but this is still one of the new issues not only for state management agencies but also stakeholders, such as: issuers, investors, intermediaries, etc. The state has improved the legal framework related to IPO activities. The regulations are built on the basis of national experience and quite complete on the government's order, procedures, conditions and management mechanisms for IPO activities. Vietnam has also gradually introduced IPO regulations in accordance with international practices and principles of the International Securities Commission (IOSCO).

2.1.2. IPO Underpricing

A noticeable phenomenon is that most of the initial public offering sessions have issued prices lower than the market average price expectations. This phenomenon is called Underpricing⁸. This phenomenon occurs due to investors' concerns about the liquidity of the business and the uncertainty about the transaction price that the stock can achieve. This is considered a compensation for the risks that investors have to pay when buying shares in IPOs. Besides, this is also considered a way to attract investors. Countries with lower price levels - usually Asian countries, including Vietnam - are countries with low levels of financial

⁸ A stock is considered to be underpricing if its offer price is lower than market price on the first trading day.

development and stricter management policies, leading to restrictions of liquidity and flexibility of investors.

There are many research theories about the IPO process in the world market, but most focus on the underpricing phenomenon of stocks. Can list the most popular doctrines such as the self-interested investment bankers (Baron and Holmström, 1980), the "winner's curse" (Rock, 1986), the theory of tax avoidance (lawsuit avoidance) (Tinic, 1988; Hughes and Thakor, 1992), signaling theory (Allen and Faulhaber, 1989; Grinblatt and Hwang, 1989; Welch, 1989), market incompleteness (Mauer and Senbet, 1992), the theory of bookkeeping (book building) (Benveniste and Spindt, 1989), the theory of information asymmetry (informational cascades (Welch, 1992).

2.1.3. IPO Underperformance

Another phenomenon, another disadvantage that also exists in the auction method is the Underperformance. In contrast to the underpricing phenomenon, underperformance is a phenomenon where stock prices are pushed too high compared to its true value in the stock market. This phenomenon occurs when investors place high expectations on the potential of the business, leading to a very high price to be sure to buy stocks without anticipating the risks that may occur in operation process of the enterprise. In addition, Underperformance phenomenon can occur when enterprises and underwriting organizations deliberately conceal adverse information, enhance positive information to create high expectations for investors; However, after some time after the IPO (usually 3 to 5 years), investors realized the real capacity of the business, leading to the divestment and the price of stock transactions on the market decreased sharply compared to the value defined on the stock.

2.1.4. Evidences of IPO Underperformance and Determinants

The IPO performance decline has received attention from investors and researchers in recent years. Studies show effectiveness for IPO performance - negative, positive or even zero. Ibbotson (1975), and Jenkinson and Ljungqvist (2001) proved the existence of inefficient IPO on the US stock market with IPO performance of only 75% after the initial 3 years. The most plausible explanation is that after investing capital in the company, investors get more accurate information about the true value of the business, leading to psychological instability that results in shares after the IPO fell, especially when the initial value of IPO shares were too high.

In the Asian market, namely the Hong Kong stock market, Ma and Shen (2003) gave another explanation regarding the long-term effectiveness of IPO. They argue that prospect theory can be applied to explain IPO performance. They said that when investors accepted to buy IPO shares, they accepted the risks of these stocks. At that time, the development potential of the business can bring them a much bigger profit than possible risks. We cannot deny that IPO deals, if conducted successfully, will bring extremely high profit investors. Therefore, despite lower long-term average returns, initial IPO performance may decline, but investors will still choose to buy IPO stocks because of the profit potential it brings.

In Thailand, Kim, Kitsabunnarat and Nofsinger (2004) analyzed a sample of 133 companies and reported that the company's performance after IPO showed signs of decline. However, they find that the size of the business does not play an important role, but the main reason is the "information bubble". This study shows that companies that tend to hide information before IPO will be reduced in stock performance when forced to disclose accurate information when IPO and listed on the stock exchange.

On the other hand, Wang's (2005) study noted a sharp decline in post-IPO performance for 747 stocks in China, suggesting that companies have a high level of supervised "information bubble" better, bigger capital and stronger motivation, etc., the binding role of debt is one of the main reasons for this impact: debt financing puts pressure on managers to perform better. Therefore, companies with a higher level of "information bubbles" will be more excited to improve their performance. The relationship between "information bubble" and performance can be explained primarily by cost theory. Grossman and Hart (1982) also argue that debt financing creates better incentives for managers to do when they try to avoid personal expenses when bankruptcy.

Unfortunately, in Vietnam, there is very little research on IPO Underperformance and its determinants.

2.2 Theoretical background

2.2.1. Supporting theories for the determinants of IPO Underperformance

General supporting theories for IPO Underperformance phenomenon

Table 2: Supporting theory

Supporting theory	Author	Explaining
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The capital structure theory (MM Theory)	Durand (1952), and Modigliani and Miller (1958)	Real value - The real performance of IPO shares is determined by its profitability and economic risk calculated on the total assets after the IPO.
Signaling theories	Leland and Pyle (1977), and Myers and Mujluf (1984)	Asymmetric information theory is applied to explain the decline of IPO stocks. Publishers tend to hide adverse information to investors, while investors make investment decisions by observing business economic signals and comments from financial experts.
Agency theory	Jensen and Mecling (1976)	Agency theory clarifies the balance between investors and business owners. This is clearer than the problems that exist in the issuance of IPO shares. In many cases, the owner after the IPO release has deliberately delayed the time of listing on the stock exchange, adversely affecting the interests of investors, resulting in a decline in IPO stock performance.
Prospect theory	Daniel Kahneman (1979) and Amos Tversky (1992)	This is a theory of behavioral finance. In particular, investors often choose stocks with high potential risks with the expectation of "high risk, high return". They are willing to take the risk that these stocks are expecting on the huge profits that stocks bring to them. Their investment decisions are mostly without or uncertain basis.

Source: Authorize

2.2.2. Supporting theories for IPO Underperformance's determinants

For theories that explain the IPO Underperformance in general, three main theories can be pointed out: agency theory, stock ownership rate retained by major shareholders and Opportunity theory (Ritter, 1991). In addition, we have other theories can use to explain that phenomenon, such as: market time theory (Baker and Wurgler, 2002), MM theory (Modigliani

and Miller, 1958), trade-off theory (Myers, 1984) and derivation theory self-capital structure (Myers and Majluf, 1984).

Within the scope of this study, we mentioned three possible factors affecting IPO Underperformance: Information Asymmetry, Operating Activities and Firm Ownership structure & Age.

Information Asymmetry, it is possible to identify proxies that show the nature of this factor as the liquidity and the price of daily stock transactions after the IPO. Ritter (1991) pointed out the relationship between equity and inefficiency after IPO. If equity is overvalued (or ineffective) (due to high demand or high hopes of prospects from investors) will be long-term. After the information becomes clearer, the market will reevaluate the real value.

Operating Activities: Production activities and long-term plans of businesses are often concerned by investors because of the close connection to the potential for development and economic risks of enterprises, especially after the IPO time. Large businesses have better capital use plans, more diversified and closely monitored product lines will bring higher profits. These factors contribute to improving efficiency and reducing risks around IPO shares (Chowdhry & Sherman, 1996).

Ownership Structure & Age: Empirical research on Chinese IPO - an IPO market that found that ownership rights and influences corporate operations similar to the Vietnamese market - finds that the percentage of stock ownership Large crowds can explain the decline in IPO performance in the long term. For businesses where the high shareholding percentages of shareholders are, they tend to hide the company's negative information. This leads to outside investors often lacking sufficient information about the quality and true value of IPO shares. Chi & Padgett (2005) supported this argument with findings from the Chinese IPO market and concluded that the level of ownership of major shareholders has a negative relationship with IPO performance. In addition, another measure of asymmetric information is the age of a company. Investors often have more information about older companies than about younger companies. Tian (2011) found a negative relationship between the age of the company and low ratings among Chinese IPOs. The business experience of companies is assumed to be inversely correlated with the level of corporate performance assessment. Newly established businesses are not as safe as old businesses. This is due to the fact that new businesses are less likely to be watched by financial analysts when there is not enough financial data in the past. Secondly, the

availability of information from enterprises operating for many years has contributed to reducing information asymmetry around the IPO (Ritter, 1984 & 1991, Hensler et al., 1997).

2.3 Previous empirical studies of IPO Underperformance

2.3.1 Previous empirical studies of IPO Underperformance's existence

The study of 221 publicly traded companies on the US stock market during the period 1993-2000, Friesen and Swift (2009) found IPO stock performance of companies with a significant decline after 12 months of IPO.

Kini (1996) analyzed the performance changes of 682 IPO companies in the United States between 1976 and 1988. They found a significant decline in measures to operate over a period of three to five years after IPO compared with the previous year's IPO performance. IPO makes initial ownership diluted and agency issues arise.

Jaskiewicz (2005), finds that the underperformance persists usually up to three to five years after listing. Examining IPO performance in the UK market, moreover, Levis (1993) reports average initial return 14.5 percent and negative long-run performance ranging 8 percent to 23 percent depending on the benchmark portfolio constructed. The same scenario applies in Ljungqvist's (1997; 2007) study of the German and US markets respectively. Alvarez and Gonzalez (2005) study of the Spanish market document similar results confirming that IPOs initial return is positive, but negative returns in the long-run.

Seshadev and Mitchina (2010) investigated IPO performance (long-term underperformance and ineffective operations) for 92 Indian IPOs during 2002-2006. On average, Indian IPOs are priced lower than the 46.55% on the listing day compared to the market index. Long-term profits of up to 36 months are measured by using the Wealth Relative (WR) and the extraordinary Buy and Hold (BHAR) ratios adjusted according to the market index. The results show the least obvious performance in the first year of the transaction, ie, up to 12 months from the listing date, then the performance is too high for longer periods.

The most recent study conducted by Jewartowski and Lizinska (2012) on the IPOs recorded by Warsaw Stock Exchange from 1998 to 2008 reports that the IPOs during the short-term over-performed by 13.95 percent, and underperformed by 22.62 per cent for the three-year post-listing date employing the buy-and-hold strategy.

2.3.2 Previous empirical studies of IPO Underperformance's determinants

Stock price and performance: In another study in the United States, Mikkelson, Partch and Shah (1997) also reported a decline in post-release performance of 283 IPOs. However, the decline in performance after the first year is found to be relatively small. In Japan, Cai and Wei (1997) investigated the performance of 180 IPOs listed on the Tokyo Stock Exchange and found that companies that issue peak performance were about a year before offering and immediately deteriorating after that.

Leverage and performance: Kim, Kitsabunnarat and Nofsinger (2004) analyzed a sample of 133 companies in Thailand and reported that companies with a high level of leverage suffered a greater performance decline when disclosed. However, Wang (2005), who noted a sharp decrease in performance after the release of 747 IPOs in China, said that high-leverage companies are involved in better monitoring and therefore outstanding performance. Theoretically, the binding role of debt is a major reason for this impact: debt financing puts pressure on managers to perform better. Therefore, companies with higher leverage will be most excited to improve their performance. The relationship between leverage and performance can be explained primarily by agency cost theory. As Jensen and Meckling (1976) mentioned, considerable agency costs may arise due to conflicts of interest between different parties such as managers, shareholders and creditors. These authors determined that this conflict of interest led to two different meanings and conflicting theories about the relationship between leverage and performance. On the one hand, agency costs are the result of conflicts of interest between shareholders and managers. There is a moral hazard behavior involved: managers can waste company resources or minimize their efforts instead of increasing business value, because they prioritize protecting the interests of They before the company needs. However, for high-debt companies, there is an implication of interest payment obligations. And managers must meet these obligations under the threat of bankruptcy. Grossman and Hart (1982) also argue that debt financing creates better incentives for managers to do when they try to avoid personal expenses when bankruptcy. Clearly, in high leverage cases, debt financing puts pressure on managers to encourage high performance, which is to reduce resource waste and increase their efforts. Therefore, there is a positive relationship between leverage and performance.

Company ownership structure & age and performance: Research by Balatbat, Taylor and Walter, (2004) on 313 IPO of Australia showed that performance decreased in the first four

years after listing. And to explain this degradation, they think that the length of the previous year IPO - the age of the company has a positive relationship with the performance of companies. As well as firm scale, solid leverage, there is also much debate and debate about the relationship between age and performance and these seem to be unclear.

The most recent research focuses on the ownership structure (Deb and Marisetty, 2010), the existence of competitive advantage related to IPO compared to industry competitors. (Hsu et al., 2010), institutional characteristics that are country-specific in terms of frame quality (Engelen and Essen, 2010), financial market integration (Francis et al., 2010), Proxy risk (Sahoo and Rajib, 2011), transparency in IPO mechanism and the participation of retail investors (Neupane and Poshakwale, 2012), institutional development and IPO under price performance (Robinson and Robinson, 2012).

In Vietnam, Mai et al. (2011) recorded 25 normal IPO cases and 30 underestimated cases from 2005 to 2009 but did not study the factors affecting valuation (over or underpriced).

Ly and Kha (2013) only underestimated (no high valuation) and bootstrap mode and said that the basic price is 38% - 49% (depending on the measure). The impact is overwhelming and the starting price, while other factors such as scale, delays in listing, age of the company and state ownership after equity are not correlated with the lower price.

In addition, Thuy and colleagues. (2014) also investigated the factors affecting the underestimation of IPO shares at Ho Chi Minh City Stock Exchange. Ho Chi Minh City, but did not study the effect of mispricing on the operations of enterprises after the IPO.

The results show that there are underestimated phenomena in this market, and at the same time, there are four main factors that affect below-price rates: delayed listing; Initial price; company age and company size. Specifically, delays in listing and the scale of the issue are closely related to the low valuation level, while the company's asking price and time have a negative relationship at low prices.

Nguyen Duy Gia (2011) concludes that the IPO process of state-owned enterprises is slow, in which the core element of IPO decisions is unresolved enterprise valuation and fear of anxiety. . State assets are still in large enterprises.

However, with high valuations such as IPOs of some former state-owned enterprises, this may cause concern that the company may find it difficult to find strategic partners as well as disappoint investors. When mobilizing capital through the stock market.

This study examines the significance of asymmetric hypothesis according to the form of the initial public offering on the HOSE market. The study focused on IPOs implemented by non-financial service companies to measure their performance in the short and long term. Most of the empirical studies reviewed on IPOs use Abnormal Buy and Hold (BHAR) or / and Accumulated Extraordinary Returns (CAR), while this article uses similar strategies. In addition to the statistical tests for a series of extraordinary short-term and long-term profit generated.

The purpose of this study is to evaluate the performance of stock prices after the issuance of IPOs issued and listed on Ho Chi Minh Stock Exchange (HOSE) in the period of 2009 to 2018.

2.4 Hypothesis development

Based on the theoretical documents summarized above, this study hypothesizes the existence of the Underperformance IPO phenomenon of companies, examining the factors affecting this phenomenon. Together with Ritter and Welch (2002), Ljungqvist et al. (2006), Jiang (2007), Han and Wu (2007) and others, the hypothesis is given as follows:

H1: There exists IPO Underperformance in HOSE during the period of 2009-2018.

Thuy et al. (2014) also investigated the factors influencing the undervaluation of IPO shares at the Ho Chi Minh City Stock Exchange. Ho Chi Minh City, but did not study the effect of the wrong valuation on the performance of enterprises after IPOs. The results show that there are undervalued phenomena in this market, at the same time, there are four main factors affecting the level below the price include: Delayed listing; initial price; company age and company size. In particular, the delays in listing and the size of the issue are closely related to the undervalued levels, while the offering price and duration of the company have a negative relationship with the level of the underpricing.

H2: Information asymmetry has a positive effect on the phenomenon of under-IPO performance in the period 2009-2018.

In Vietnam, Ly and Kha (2013) only have underperformance phenomenon without clarifying the determinants (previous studies mentioned have shown that there are factors influencing the underperformance of an IPO: Information Asymmetry, State ownership, Listing time lag, Initial price or Offering price, Company age & size, corporate risk and Market conditions) and that basic stock price is 38% - 49% (depending on the research method). The impact is overwhelming and the starting price, while other factors such as delays in listing, age

of the company and state ownership after the IPO have no impact on the effect operating rate of the enterprise.

H3: Operating activities have a positive impact on IPO performance in the 2009-2018 period.

Jaskiewicz et al. (2005) examine the company characteristics at the time of IPOs to predict long-term performance. Significant characteristics recorded were state ownership, capital structure, organize and investment activities. In addition, the long-term targets of the business (before & after IPO) can be affected by enterprise risk and market conditions.

H4: Firm ownership structure and firm age have a positive impact on IPO performance in the 2009-2018 period.

Mikkelson, Partch and Shah (1997) presented that age and ownership structure of firms lead to a decline in post-release performance of 283 US IPOs. However, the decline in performance after the first year is found to be relatively small. And in contrast to Jain and Kini (1994), they found that performance was not affected by the change of firm ownership structure and firm age.

CHAPTER III

METHODOLOGY

This chapter explains the research design of the study as well as the methods used to collect and analyze data. This study applies quantitative approach to achieve all the purposes mentioned in chapter I. In addition, the explanation of questionnaire designs, how to collect data and the measurements are also discussed.

3.1 Research Design

For the purpose of determining the existence of the IPO Underperformance on HOSE stock market in the period of 2009-2018 - as well as the factors affecting this phenomenon, post-IPO long-run stock performance (IPO Underperformance) is measured by Firm Operation Performance - the excess of the market returns is accumulated by Buy-and-Hold Abnormal Return (BHARs) to analyzing the level of IPO Underperformance. And, simultaneous to consider the effects of some control determinants such as information asymmetry, Operating activities, Firm Ownership structure and Firm Age, quantitative method will be mainly used for conducted this research. The secondary data are used for quantitative study in this research and the collected data have been analyzed with the help of statistical techniques and computer software SPSS 25.

3.2 Data collection

This study examine the aforementioned hypothesis empirically by using data from the annual reports, excluded all the companies of financial and real estate industries, collected from the Ho Chi Minh Stock Exchange (HOSE) deep archive. In general, the study excludes implausible firm observations for important variables such as firms with low or negative IPO initial returns within the sample period. The following criteria were employed:

- i. Firms are non-financial companies.

- ii. IPOs are common stock only, where firms have only one class of common stock outstanding.
- iii. IPO completion price (offer price) and date are clearly identified.
- iv. Firms are listed on stock exchanges and daily prices over the period investigated are available.

The final sample of data are 104 companies listing in HOSE in the period of 2009 - 2018. Any company that has not been traded will be eliminated. Companies are required to have provided financial information at least in a period of 3 years (1 year IPO, 2 the year after IPO). The data are extracted from the annual reports and financial statements given from official websites. Moreover, further information was taken from many financial websites hsx.vn, stockbiz.vn, finance.vietstock.vn, mof.gov.vn (The Ministry of Finance VN), cafebiz.vn, brandsvietnam.com, etc. The information gathered from these websites is mainly the expertise of leading experts in the areas of financial reporting analysis, industry analysis, Vietnam economic analysis (say separately) and the world economy (in general), especially IPO Underperformance - signs and factors.

The research sample is divided by industry: Basic materials (30 companies), Consumer goods (15 companies), Consumer services (23 companies), Industrials (31 companies) and Utilities (6 companies).

Secondary data sources (information about companies) carefully selected and verified include:

- Official trading name, year of establishment, time of IPO, year of listing of shares on HOSE.
- Price issued, closing price adjusted (including VN index) on IPO day (Unit: VND).
- The price traded daily for 2 years after listing on HOSE (Unit: VND).
- Total assets (tangible assets, intangible assets), Total liabilities, Total equity (share ownership percentage of major shareholders), etc. (millions VND).

3.3 Regression Model

The linear regression model was used to test the impacts of determinants that are mentioned in this thesis. The data used in this research are designed in panel data and run regression by SPSS and Stata soft wares.

The following model is used to find the determinants of IPO Underperformance:

$$\text{Ln}(\text{BHAR}) = \beta_0 + \beta_1.\text{Ln}(\text{SD}) + \beta_2.\text{ROA} + \beta_3.\text{ROA} + \beta_4.\text{OS} + \beta_5.\text{AGE} + \varepsilon$$

Where:

β_0 : constant coefficient

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$: regression model coefficient

ε : random error

3.4 Description of variables

3.4.1 Dependent Variable

In addition, BHAR is measured as follows:

$$\text{BHAR}_{(2,240)} = \prod_{t=2}^{240}(1 + R_{240}) - \prod_2^{240}(1 + R_{it})$$

In the above formula, BHAR (2, n) represents the level of IPO holding of investors. The performance of high or low IPO stocks depends on whether investors want to continue investing their money in corporate stocks. Simply put, if investors believe in the potential of the company, they will invest money to buy and hold corporate shares. Conversely, if investors find there are potential risks, they will quickly withdraw capital from the business. BHAR is calculated over a period of 2 years (calculated from the 2nd day after IPO – i.e. BHAR₂₄₀. In which, R₂₄₀ is the gross profit/share as of 2 years after the IPO). R_{it} is the profit earned in the first day transaction. In Vietnamese market, BHAR is considered as the listed date and has been commonly and extensively used in the literature (Wu and Kwok, 2007).

3.4.2 Independent Variables

Asymmetry Information: there are many reasons for the influence of asymmetric information leading to IPO Underperformance which is mentioned in chapter 2, such as information bubbles, investor psychology, unpredictable fluctuations of stock prices, etc. However, within the scope of this study, we would like to focus on 2 proxies of asymmetric information: volatility of stock price and firm liquidity. Other proxies are: intangible assets, market demand, the length of time lag, etc., due to many limitations (in terms of time, financial ability, professional capacity) that are not handled in this research.

a) *Volatility of stock price:*

$$\text{LnSD}_i = \log\left(\sqrt{\frac{1}{240} \sum_{i=1}^{240} (R_{i,t} - \bar{R}_l)^2}\right)$$

Where:

SD_i is the standard deviation of daily return of stock (i)

$R_{i,t}$ is the daily return of stock (i) on trading day t (t=1,2,3,...,240) after listing.

\bar{R}_i is the mean daily return of stock (i) in 240 trading days after listing.

b) *Leverage_i*:

$$\text{Leverage}_i = \frac{\text{Liabilities}_i}{\text{Total Assets}_i}$$

Where:

Leverage_i means the leverage ratio of firm (i);

Liabilities_i means the liabilities in balance sheet of firm (i) before IPO;

Total Assets_i means the total assets in balance sheet of firm (i) before IPO;

Operating Activities:

$$\text{ROA}_i = \frac{\text{Net Income}_i}{\text{Total Asset}_i}$$

ROA_i means the capital structure of firm (i);

Net Income_i means the total shares in annual reports of firm (i) after IPO;

Total Assets_i means the total assets in annual reports of firm (i) after IPO;

Firm: divided by Firm Ownership Structure and Firm Age.

a) *Ownership structure*: is calculated by taking the percentage of the total shares of a firm held by major shareholders. We should see how big or small the firm size could affect the profit performance of companies after listing.

$$\text{OS}_i = \frac{\text{Number of shares holding by major shareholders}_i}{\text{Total Shares}_i}$$

Structure_i means the capital structure of firm (i);

$\text{Number of shares holding by major shareholders}_i$ means the the percentage of shares held by major shareholders, taking control of the operations of the enterprise (i) after IPO;

Total Shares_i means the total shares in annual reports of firm (i) after IPO;

b) *Age*: The variable could be defined as the number of years between the listing year and the company initial year (first established).

$$\text{AGE}_i = \text{listing year} - \text{established year}$$

Table 3: Summary independent variables

Independent Variables	Proxy	Expected sign
Volatility of stock return (SD)	$SD_i = \sqrt{\frac{1}{240} \sum_{t=1}^{240} (R_{i,t} - \bar{R}_i)^2}$	Positive
Leverage	$\text{Leverage}_i = \frac{\text{Liabilities}_i}{\text{Total Assets}_i}$	Positive
Operating Activities	$ROA_i = \frac{\text{Net Income}_i}{\text{Total Assets}_i}$	Positive
Ownership Structure	$OS_i = \frac{\text{Number of shares holding by major shareholders}_i}{\text{Total Shares}_i}$	Positive
Age	$AGE_i = \text{listing year} - \text{established year}$	Positive

3.4.3 Research hypothesis

Based on determinants mentioned in chapter 2, we have three hypotheses, which are used to study the impact of these factors influence to IPO Underperformance in HOSE (the period 2009-2018), including:

H1: There exists IPO Underperformance in HOSE during the period of 2009-2018.

H2: Information asymmetry has a positive effect on the phenomenon of under-IPO performance in the period 2009-2018.

H3: Operating activities have a positive impact on IPO performance in the 2009-2018 period.

H4: Firm Ownership Structure and Firm Age have a positive impact on IPO performance in the 2009-2018 period.

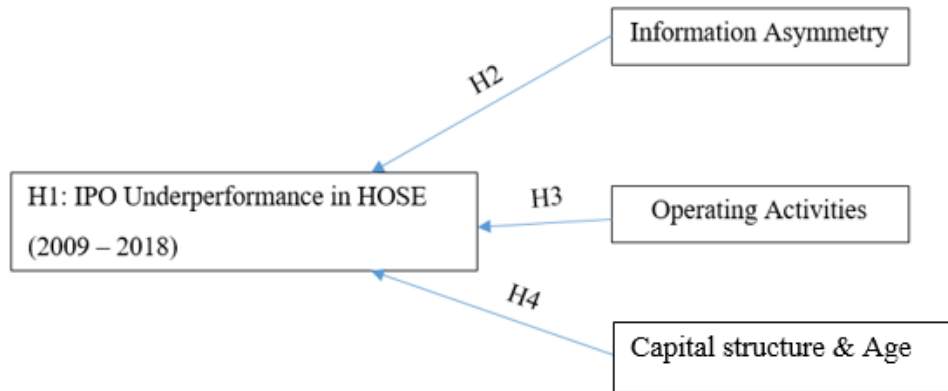


Figure 3: Descriptive Hypothesis

3.5 Descriptive Method

3.5.1 Descriptive Statistic

In statistical theory, the conduct of descriptive statistics is to use software (specifically SPSS software) to briefly describe the scale, nature, frequency, etc. of research data. Indicators analyzed in descriptive statistics include: standard deviation, variance, minimum and maximum variance. Descriptive statistics can interpret part or all of the population. In addition, we can also rely on descriptive statistics to produce general charts, tables and discussions to better understand the meaning of the research data included in the analysis.

3.5.2 Pearson Correlation Test

Pearson's correlation test (Karl Pearson, 1990) is used to test the linear relationship between independent variables and dependent variables. If the independent variables are closely correlated, attention should be paid to the problem of multicollinearity when regression analysis (hypothesis H0: correlation coefficient is 0). This test is used when we want to examine the correlation relationship between variables based on the covariance method. In particular, if the independent variables have a close correlation with each other, we need to be careful in the analysis of their impact on the dependent variable, avoiding too large or misleading errors impact.

Table 4: Properties and Degree of correlation.

Properties	Correlation Coefficient Shows Strength & Direction of Correlation	Describe
Limitation		It is independent of the unit of measurement
Pure Number		Correlation of the coefficient between two variables is symmetric
Symmetric		

Source: Authorize

3.5.3 Regression Model

The most frequently used to apply in cross-section data regression - Pooled OLS Regression. By applying the approach OLS Regression, the results are consistent in all models showing that average abnormal return illustrate that the IPO portfolios underpriced the Benchmark portfolio over the short-run, with some diversity even among this group. However, in the long-run the IPOs underperformed the Benchmark. The results show positive cumulative excess return for the firms for 24 months after the IPO date. However, companies in general underwent significant price corrections that lasted approximately 18 months, which produced negative BHAR after 5 years IPO. The IPO portfolios maybe over-priced (under-performed) the benchmark portfolio. However, such overpricing is more severe and significant in the long-run compared to the short-run. The IPO portfolio experiences cyclical price corrections from positive to negative and vice versa relative to the fundamental common stock value over time post offering date.

The IPO portfolios in all the covered listed companies in HOSE are going through a process of price correction around the fundamental common stock values no matter whether the IPO portfolios have over/under performed the benchmark portfolios in the short or long-run. On the basis of the study's empirical findings, it is suggested that short-term as well as the long-term investors should show caution while analyzing IPO firms since IPO performance is country dependent. Furthermore, over performance of IPOs in the short-run could encourage company management to manipulate their company's market value by underpricing the stocks public. Such over-performance (or underpricing) will vanish over the long-run making the whole process a zero sum game as soon as the stock market realizes the common stock fundamental

value. In conclusion, IPO portfolio experiences cyclical price corrections relative to the fundamental common stock value over time post offering date.

There are two estimation methods used to estimate the parameters of the fixed impact model.

- i) Pooled Ordinary Least Square Regression (Pooled OLS): Regression estimation of minimum dummy variable with each dummy variable is representative of each observed object of the sample.
- ii) Fixed impact estimation (Fixed effects estimator).

When N is large, the use of Pooled Ordinary Least Square Regression (Pooled OLS) estimates will be cumbersome or not feasible. To use this method, we will need to create 1000 dummy variables and run OLS regression for more than 1000 variables. In such a case, a fixed impact estimate would be more appropriate.

OLS estimates for random impact models will give the estimated parameters not biased but not effective. Moreover, the estimates of standard errors and therefore t-statistics will no longer be accurate. This is because estimating OLS ignores autocorrelation in the error component μ_{it} . In order for the results to be unbiased and effective, we can use feasible GLS estimation (FGLS) to overcome the phenomenon of autocorrelation errors. Estimates of FGLS are also called random impact estimates (Random effects estimator).

In addition to the two methods of fixed impact and random effects, in some cases the researcher still uses rough OLS estimation for this type of collected data. The rough estimate is the estimation of OLS on the data set of objects over time, so it considers all coefficients unchanged between different objects and does not change over time (Gujarati, 2004 page 641).

CHAPTER IV

RESULTS ANALYSIS

This chapter presents the research results of the study as well as the methods used to analyze data mentioned in Chapter III. Then, using the theoretical bases listed in chapter II to explain the results obtained for achieving the objectives stated in chapter I

4.1 Descriptive Statistic

Before conducting the tests to verify the objectives set out in Chapter 1, we proceed to analyze the collected data. The most common measures of dispersion of quantitative data are variance, its square root value, i.e. standard deviation; about; the distance between the quartiles; and absolute average deviation.

Table 5: Descriptive Statistic

Variable	Obs	Mean	Standard Deviation	Max	Min
ln (BHAR)	105	3.638	10.964	7.782	1.305
ln (SD)	105	5.808	10.562	7.913	0.901
Leverage	105	0.039	0.948	0.482	0.233
ROA	105	0.062	6.399	1.016	0.844
OS	105	0.05	99.510	51.930	22.858
Age	105	7.000	62.000	25.440	13.538

Source: SPSS Software

First of all, there is a problem to keep in mind because the collected data are quite large and the unit is not uniform, so we would like to apply the logarithm formula to control the calculation results more effectively. . Based on the above analysis results, we can see that in the

sample of 105 firms on HOSE in the period of 2009-2018, the fluctuation of the variables Ln (BHAR), Ln (STD) and Total number is held by major shareholders is the largest. This means that these factors are easily influenced by external factors, leading to rapid change between companies in the research sample.

4.2 Pearson Correlation Test

Pearson's product moment correlation coefficient is used when both variables being studied are normally distributed.

Table 6: Summary about correlation coefficients

Size of correlation	Interpretation
0.90-1.00 (-0.90 to -1.00)	Very high positive (negative) correlation
0.70-0.90 (-0.70 to -0.90)	High positive (negative) correlation
0.50-0.70 (-0.50 to -0.70)	Moderate positive (negative) correlation
0.30-0.50 (-0.30 to -0.50)	Low positive (negative) correlation
0.00-0.30 (0.00 to -0.30)	Negligible correlation

Source: Authorize

Table 7: Pearson Correlation Test

	Ln(BHAR)	Ln(STD)	Leverage	ROA	Firm Size	Firm Age
Ln(BHAR)	1.0000					
Ln(SD)	-0.0270	1.0000				
Leverage	-0.1230	-0.0540	1.0000			
ROA	0.1100	-0.0660	-0.0730	1.0000		
OS	0.0390	-0.0730	-0.1780	0.2190	1.0000	
Age	0.0360	0.0390	-0.1200	0.0580	0.2110	1.0000

Source: SPSS Software

Pearson's correlation is used to test the linear relationship among variables (independent and dependent variables). If independent variables are closely correlated, attention should be paid to the problem of multicollinearity when regression analysis (hypothesis H0: correlation coefficient is 0).

The important condition for conducting regression analysis is that the independent variable must be correlated with the dependent variable, if the independent analysis does not correlate with the dependent variable then we have the toxic variable set out from rules. If Pearson's correlation analysis results show that some independent variables are correlated, we need to pay attention to the issue of multicollinearity when running regression model.

Based on the analysis results in the above table, the correlation coefficients between the dependent variable and the independent variables show that: there is a linear relationship between the variables, although quite weak because all the coefficients are <0.5 . The correlation coefficient between $\ln(\text{BHAR})$ and variables ROA (0.11), OS (0.04), AGE (0.04) are positive numbers, so these variables are directly related to each other. Example: The value of $\ln(\text{BHAR})$ increases by 1, the value of ROA also increases by 11%. For $\ln(\text{SD})$ and Leverage variables, correlation coefficients are negative numbers, related variables are inversely related. This means that when the value of $\ln(\text{BHAR})$ increases by 1, the value of $\ln(\text{SD})$ decreases by 2.7%. Between the independent variables are correlated but too small, negligible.

4.3 One sample T-Test for testing existences of IPO Underperformance

In statistics, there are three common types of tests, that is

One-Sample T Test: compare the overall average value with a specific number.

Independent Samples T Test: compare two average values of two overall groups.

Pair sample T test: compare two average values of two separate global groups with the characteristic that each element in this population has a pairwise relationship with one element in the other.

In this study, we mainly focus on comparing the average performance of IPO stocks in the group of studied companies (105 companies on HOSE in the period 2009-2018). Therefore, The One sample T-Test is used in this study.

Table 8: One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
$\ln(\text{BHAR})$	105	7.782	1.305	0.127

Source: SPSS Software

Table 9: One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
ln(BHAR)	61.118	105	0.000	7.782	7.529	8.035

Source: SPSS Software

We see the value of Sig. (2 - tailed) = 0.000 <5%, so we can reject the H0 hypothesis: the average ln (BHAR) is stable. Based on the value of mean = 7.782 in the One Sample Statistics table, we see the average BHAR is more than 61% (note here, the value of t-test of the average BHAR is t = 61.18, corresponding with significance level 0.0000 <0.05).

4.4 Regression Procedure

Regression in SPSS is a step to verify the research model after running a series of analyzes to select independent variables that meet the conditions for regression requirements. Regression to determine the specific weight of each independent factor affecting the dependent factor from which the regression equation is given is also the purpose of the research paper. Determine the degree of influence of each independent factor on the dependent factor.

Normally, R-square reaches over 50% is ideal for a study. However, in some cases, R-square <0.5 is still acceptable. The figure shows that 2.7% of the variation of the dependent variable ln (BHAR) is explained by the independent variables affecting it.

The coefficient Durbin Watson allows to check the phenomenon of autocorrelation between independent variables.

Table 10: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0.163 ^a	0.027	-0.023	1.3194078 58071017	1.519	0.163 ^a	0.0 27	-0.023	1.319	1.519

a. Predictors: (Constant), Age, Ln(STD), ROA, Leverage, Total number of shares held by major shareholders

b. Dependent Variable: ln(BHAR)

Source: SPSS Software

The ANOVA table should consider the value of sig. In this research, sig. = 0.745 > 0.05 then the model doesn't makes sense. In other words, there is at least one independent variable that does not affect the dependent variable ln (BHAR). In the ANOVA test figure, the model that is implementing regression is significant but cannot be widely applied.

Table 11: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.701	5	0.940	0.540	0.745 ^b
	Residual	172.343	99	1.741		
	Total	177.044	104			

a. Dependent Variable: ln(BHAR)

b. Predictors: (Constant), Age, Ln(STD), ROA, Leverage, Total number of shares held by major shareholders

Source: SPSS Software

Table 12: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.244	1.291		6.387	.000		
	Ln(SD)	-0.041	0.145	-0.028	-0.281	0.779	0.985	1.016
	Leverage	-0.654	0.567	-0.117	-1.153	0.252	0.956	1.046
	ROA	0.156	0.157	0.101	0.989	0.325	0.948	1.055
	OS	-0.001	0.006	-0.010	-0.096	0.924	0.887	1.127
	Age	0.002	0.010	0.019	0.188	0.851	0.946	1.057

a. Dependent Variable: ln(BHAR)

Source: SPSS Software

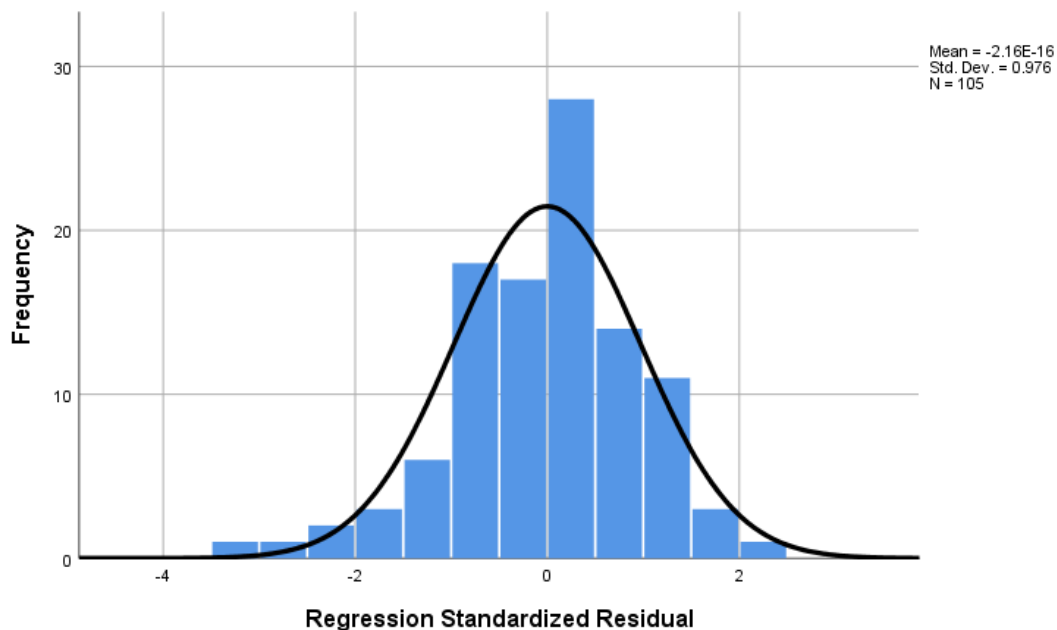
First, we consider the value of sig. must be <0.05 then the independent variable has an impact on the dependent variable. Therefore, according to the results obtained from the above table, only ROA and Leverage have an impact on the dependent variable ln (BHAR).

Next, we check the assumption of multicollinearity phenomenon (correlation between independent variables) through the value of acceptability (Tolerance) or the magnification coefficient of variance VIF (Variance inflation factor): VIF > 10 can remarked that there is a phenomenon of multicollinearity (Hoang Trong & Chu Nguyen Mong Ngoc, 2005). In fact, it is

often compared with all $VIF < 2$. In this article, the magnification coefficient of VIF variance is less than 2, indicating that there is no multicollinearity phenomenon.

Finally, we consider the coefficient: There are two types of coefficients: Standardized Coefficients (which are used to compare the degree of influence between independent variables) and Unstandardized Coefficients (which are used to write regression equation). Thus, according to the analysis results show that only leverage and ROA variables affect the dependent variable BHAR. ROA impacts on the strongest BHAR with a coefficient of 0.324; Leverage affects BHAR weaker with coefficient 0.254.

Figure 4: Distribution of IPO Underperformance level



Source: SPSS Software

From the chart shown, a normal distribution curve is superimposed on the frequency chart. This curve is bell-shaped, in accordance with the graph of the normal distribution. Mean value is close to 0, the standard deviation is 0.976 close to 1, so it can be said that the remainder distribution is approximately standard. Therefore, it can be concluded that the normal distribution of the remainder is not violated.

4.5 Residual Testing

Testing (standardized) Testing is the method used to measure standard deviation. This helps us reconfirm that there are undesirable errors or variables in the processing of research data.

Table 13: Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	7.329	8.806	7.782	0.213	105
Residual	-4.413	3.207	-0.000	1.287	105
Std. Predicted Value	-2.132	4.817	0.000	1.000	105
Std. Residual	-3.345	2.431	0.000	0.976	105

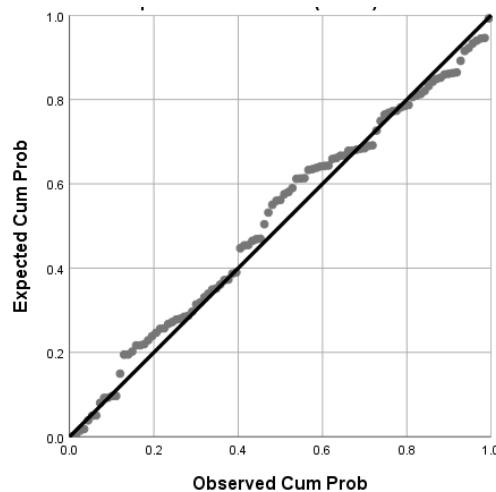
a. Dependent Variable: ln(BHAR)

Source: SPSS Software

In the regression model, if the independent variables are closely interrelated, the independent variables have a linear relationship, meaning that the independent variables are strongly correlated with each other route, that is the phenomenon of independent variables in regression model are interdependent and expressed as functions.

As a final step in Residual Testing, we use the Classification Diagram. The main purpose of this test is to use a probability distribution chart according to the probability range (classification chart) to determine whether the independent variables actually affect the dependent variable. If the graph shows anomalies, the points are not interpreted in a straight line but according to other shapes, it is likely that in our research model, there are errors or other factors arising in the study.

Figure 5: Regression Standardized P-P Plot



Source: SPSS Software

With P-P Plot (or maybe using Q-Q Plot, these two graphs are not much different), the percentile points in the distribution of the remainder will focus into a diagonal if the remainder has a normal distribution. In simple and easy to understand, we look at this graph, the circular dots focus into a diagonal form, it will not violate the regression assumption of normal distribution of residual. Specifically for the data we are using, the distribution points in the distribution of the remainder are concentrated into one diagonal, thus, assuming the normal distribution of the remainder is not violated.

CHAPTER V

DISCUSSION AND CONCLUSION

This chapter discusses the research results and gives the final conclusion to achieve all purposes in chapter 1. In addition, mentioning about the limitation of this research and suggestions for further researches.

5.1 Discussion

General, after all the process of analysis with some tests that have been used, the final results of running regression models helped us to come to final conclusions:

Based on the finding above, as what is expected from the beginning, there is Underperformance IPO exists in the sample of 105 firms on HOSE (2009-2018 period) (although accounting for a relatively small proportion of 2.2%) and a significant relationship between dependent variable BHAR and two factors (Leverage and ROA). Specifically, ROA is the factor with each of the most intimate relations improve the IPO Underperformance with coefficient equal to 0.324. This means that for every 32.4% of the level of ROA increasing, IPO Underperformance rate also decreased by 1%. That is, the potential for development, the more effective the company's operations - the higher the profitability of assets on the asset - the better the performance of IPO shares, the reduction of IPO underperformance significantly. Besides, the more the level of dishonest information, the less transparency is proportional to the investor's anxiety.

For investors in Vietnam, caution is getting better and better. However, there is no sign of the caution in the "IPO" fever that is taking place in this Southeast Asia's busiest market. With successive deals, Vietnam has become the largest and largest IPO market in the region in the past year if calculated according to published value. Meanwhile, investors are being more cautious about equitization deals. Currently, Vietnam is promoting activities of selling shares of state-

owned companies. Good growth market is considered favorable for the state in the process of divesting from businesses. Currently, Vietnam's stock market is booming thanks to a large amount of investment from venture capitalists. However, the biggest risk for Vietnam is that the stock market is incomplete and the speculative psychology is still quite high, while Vietnamese enterprises have not enough potential to confront the events after conduct IPO. Although Vietnam stock market saw a positive growth of 70% last year, the P / E of these stocks is quite low. This raises concerns from investors in the long term, affecting IPO performance at both micro and macro levels.

In the period of 2009-2016, Vietnam is a market that does not attract much attention of securities investors. However, only after 2 years (2017 and 2018), the Vietnamese market is the main reason why Singapore market lost its leading position in IPO in Southeast Asia. Meanwhile, if compared with Singapore, Vietnam is still rated as a market with more risks. EY Consulting said that two years ago, Vietnam was still far behind the big neighboring countries in the region but in 2018, Vietnam rose to the top with 5 IPO agreements, mobilized 2.6 billion VND. U.S. dollar. Large IPO agreements in Vietnam are obtained after the government proceeds to promote privatization, which has been long awaited. The IPO agreement earned \$ 1.35 billion from Vinhomes Real Estate Company which is considered the largest ever in Vietnam and the second largest in Southeast Asia in 2018. Ms. Tay Hwee Ling, in charge of pepper Singapore and Deloitte's Global International Financial Reporting Standards and CNBC's Email Response Service Manager: "In the second half of 2018, trade war, political tension and Market volatility has inadvertently impacted the economy, causing delays in the plans of several IPOs, in addition, Vietnam's stock market is gradually improving and having great developments. "

According to a report from Baker McKenzie and Oxford Economics, with the government boosting the sale of shares in state-owned enterprises, Vietnam is still leading the IPO race in Southeast Asia. Earlier this month, the law and consulting firm proposed that by 2021, Vietnam's IPO funds would increase to the highest number in Southeast Asia, followed by Singapore and Thailand.

Based on the stability of the global economy, we can expect that IPOs that have been postponed in 2018 will be able to list in the first quarter of 2019. 2019 will witness strong growth of the market when some proposals of the Vietnam Stock Exchange in 2018 will get good results, including the first two-class share listing forecast.

5.2 Conclusion

At the end of the last trading session in November 2018, VnIndex stopped at 1,121.54 points, up nearly 14% from the beginning of the year. With this increase, VnIndex has risen to become the strongest growth index in the world since the beginning of the year.

Previously, in 2017, VnIndex was also one of the three best growth indices in the world with an increase of nearly 50%. Not only did the market break out strongly on the score but the market liquidity also improved significantly. Trading sessions with a value of VND 10,000 billion are no longer a rare thing on Vietnam stock market. The strong breakthrough of Vietnam stock market in recent years stems from the positive changes of the economy when Vietnam is among the fastest growing countries in the world, despite recent instabilities in the global market.

Besides, the support of foreign investors also plays an important role for the market's momentum. Only in the first 2 months of the year, the value of foreign investors' net buying reached 12,000 billion VND, this is the record number of Vietnam stock market in the same period.

Another factor promoting the growth of the market comes from promoting equitization and divestment of state-owned enterprises.

According to Decision 991/TTg-ĐMDN, in 2019 there will be big names participating in equitization including MobiFone, VTC, Genco 1 and 2, Saigon Jewelry Company (SJC) ... Equitized enterprises It will be an opportunity to attract large cash flows from domestic and foreign investors because now after IPO, enterprises will list on Upcom in 90 days if they are eligible, creating liquidity for investors.

In this March, names of oil and gas industry such as Binh Son Refinery (BSR), PVPower, PVOil will go to the floor and this will bring a new wind to the market.

Regarding the divestment plan, in 2018, the State also plans to divest from some large enterprises, such as Petrolimex, ACV, TCT Pharmacy, Lilama, Viglacera, Habeco ... Besides, the portfolio is withdrawn. SCIC's capital such as Domesco, Bao Minh, Vinaconex, Binh Minh Plastics, Tien Phong Plastic, FPT ... are also remarkable. Currently, SCIC has launched a starting price for BMP of VND 96,500 / share and the success of this deal will be a test for the state divestments in 2018.

In addition, the increasing number of banks and private enterprises on the floor of Vincom Retail, HDBank, VPBank, and Vietjet Air ... also helps the market to have more quality goods, thereby attracting great interest from domestic and foreign investment.

In the context of US President Donald Trump wants to return to TPP, Vietnam may become the next world factory in Asia. However, it seems that Vietnam's stock market is ahead of this trend and that could be a disadvantage if something makes investors feel they are wrong at the right time.

5.3 Limitations of the study

Obviously, there are some limitations to this study.

- First, the research is generally based on a number of companies listed on the HOSE, which cannot cover the entire market size of the whole country.
- Secondly, due to the operation history of the stock market in general and IPO activities in particular in Vietnam, there is quite a lack of experience, so the underpricing phenomenon and the under-performance phenomenon on the stock exchange not yet clearly shown.
- Thirdly, due to the limitation of data resources, this study only includes data for a maximum period of 3 years after the time of listing. This somehow doesn't mean the same thing as giving a very broad picture of the long-term performance trends of businesses.
- Finally, the special rates used in the study are taken from secondary data from websites. Some other factors are not included in this study such as growth rate, inflation rate, etc.

5.4 Suggestions for further researches

Although the State has issued a series of IPO regulations and securities listing, many Vietnamese enterprises still ignore. Many enterprises, after conducting IPO, have announced that in the next few years they will consider listing on the stock exchange.

This makes many investors seem to be disappointed by this information, especially those who intend to become strategic partners of businesses in Vietnam market. Especially when the law stipulates a lot of constraints for them, such as limiting transfer of purchased shares within 5 years.

In addition, the operational plans of enterprises after IPO also need to be transparent to investors, avoid placing investors in a passive situation when IPO performance drops suddenly. For example, in the case of Vinatex shares (in 2012 and 2013, this group has a return on equity (ROE) of 4.73% and 4.94% respectively, while the listing conditions require At this level, Vinatex delayed the listing of shares on the stock market, leading to IPO Underperformance after only 1 year of conducting IPO.

In addition, the relationship between the Underpricing IPO and the IP Underperformance IPO can also be further exploited in upcoming studies. Like in the case of Aviation Services Company, Tan Son Nhat Airport (Sasco) has just completed a successful IPO with over 31 million shares offered by investors at an average price of 19,330 VND / shares, almost double the starting price. However, after 1 year of operation, with many incidents, IPO performance declined quite quickly, losing more than 20% of the original value.

In short, more than anyone else, investors must protect their rights against IPO deals that appear to be highly profitable. State agencies also need to strengthen the impulse and punish businesses intentionally adversely affect the interests of investors in particular and the development of Vietnam's stock market in general.

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APPENDIX

Appendix 1: One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
ln(BHAR)	105	7.7821223405 64357	1.3047383672 22897	.12732942677 5157

Appendix 2: One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
ln(BHAR)	61.118	104	0.000	7.782122340 564357	7.529623309 043614	8.034621372 085102

Appendix 3: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ln(BHAR)	105	3.637586159 726390	10.96393057 5086735	7.782122340 564356	1.304738367 222897
Ln(STD)	105	5.808424286 246460	10.56200682 7753583	7.912963094 669191	0.901132761 242869
Leverage	105	0.039185362 369121	0.948065939 348546	0.481858028 266556	0.233413351 663180
ROA	105	0.061977407 999496	6.398663822 814707	1.015854344 841974	0.844083894 620684
The total percentage of shares held by major shareholders	105	5.080000000 000000	99.509999999 9999990	51.929999999 9999990	22.85848226 6731130
Company Age	105	7	62	25.44	13.538

Appendix 4: Correlations

		ln(BHAR)	Ln(STD)	Leverage	ROA	The total percentage of shares held by major shareholders	Company Age
ln(BHAR)	Pearson Correlation	1	-0.027	-0.123	0.110	0.039	0.036
	Sig. (2-tailed)		0.785	0.210	0.264	0.694	0.717
	N	105	105	105	105	105	105
Ln(STD)	Pearson Correlation	-0.027	1	-0.054	-0.066	-0.073	0.039
	Sig. (2-tailed)	0.785		0.583	0.505	0.458	0.694
	N	105	105	105	105	105	105
Leverage	Pearson Correlation	-0.123	-0.054	1	-0.073	-0.178	-0.120
	Sig. (2-tailed)	0.210	0.583		0.458	0.070	0.221
	N	105	105	105	105	105	105
ROA	Pearson Correlation	0.110	-0.066	-0.073	1	0.219*	0.058
	Sig. (2-tailed)	0.264	0.505	0.458		0.024	0.557
	N	105	105	105	105	105	105
The total percentage of shares held by major shareholders	Pearson Correlation	0.039	-0.073	-0.178	0.219*	1	0.211*
	Sig. (2-tailed)	0.694	0.458	0.070	0.024		0.030
	N	105	105	105	105	105	105
Company Age	Pearson Correlation	0.036	0.039	-0.120	0.058	0.211*	1
	Sig. (2-tailed)	0.717	0.694	0.221	0.557	0.030	
	N	105	105	105	105	105	105

*. Correlation is significant at the 0.05 level (2-tailed).

Appendix 5: Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Ln(Age), Ln(STD), ROA, Leverage, Ln(Total number of shares held by major shareholders) ^b	.	Enter

a. Dependent Variable: ln(BHAR)

b. All requested variables entered

Appendix 6: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.163 ^a	0.027	-0.023	1.319407858 071017	1.519

a. Predictors: (Constant), Company Age, Ln(STD), ROA, Leverage, The total percentage of shares held by major shareholders

b. Dependent Variable: ln(BHAR)

Appendix 7: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.701	5	0.940	0.540	.745 ^b
	Residual	172.343	99	1.741		
	Total	177.044	104			

a. Dependent Variable: ln(BHAR)

b. Predictors: (Constant), Company Age, Ln(STD), ROA, Leverage, The total percentage of shares held by major shareholders

Appendix 8: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.244	1.291		6.387	.000		
	Ln(STD)	-.041	.145	-.028	-.281	.779	.985	1.016
	Leverage	-.654	.567	-.117	-1.153	.252	.956	1.046
	ROA	.156	.157	.101	.989	.325	.948	1.055
	The total percentage of shares held by major shareholders	-.001	.006	-.010	-.096	.924	.887	1.127
	Company Age	.002	.010	.019	.188	.851	.946	1.057

a. Dependent Variable: ln(BHAR)

Appendix 9: Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions					
				(Constant)	Ln(STD)	Leverage	ROA	The total percentage of shares held by major shareholders	Company Age
1	1	5.166	1.000	.00	.00	.01	.01	.00	.01
	2	.367	3.752	.00	.00	.06	.84	.00	.01
	3	.239	4.652	.00	.00	.34	.06	.05	.36
	4	.143	6.002	.00	.00	.06	.09	.53	.53
	5	.079	8.096	.03	.05	.48	.00	.37	.09
	6	.006	29.963	.97	.94	.05	.01	.04	.00

a. Dependent Variable: ln(BHAR)

Appendix 10: Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	7.328776359 558106	8.806209564 208984	7.782122340 564357	.2126010397 78478	105
Residual	- 4.412905216 217041	3.207097291 946411	- .0000000000 00002	1.287300666 040614	105
Std. Predicted Value	-2.132	4.817	.000	1.000	105
Std. Residual	-3.345	2.431	.000	.976	105

a. Dependent Variable: ln(BHAR)



Appendix 11: List of Companies

Ticker	Company name
AAM	Mekong Fisheries Joint Stock Company
AGM	An Giang Import - Export Company
APC	An Phu Irradiation Joint Stock Company
ASM	Sao Mai Group Corporation
BCE	Binh Duong ConStruction & Civil Engineering JSC
BFC	Binh Dien Fertilizer Joint Stock Company
BRC	Ben Thanh Rubber Joint Stock Company
BTP	BaRia Thermal Power Joint Stock Company
BTT	Ben Thanh Trading & Service Joint Stock Company
C47	Construction Joint Stock Company 47
CAV	Vietnam Electric Cable Corporation
CCI	Cu Chi Commercial & Industrial Developing Investment JSC
CCL	Cuu Long Petro Urban Development & Investment Corporation
CIG	COMA 18 Joint Stock Company
CLL	Cat Lai Port Joint Stock Company
CLW	Cholon Water Supply Joint Stock Company

CMG	CMC Corporation
CMT	Information and Networking Technology JSC
CMV	Ca Mau Trading Joint Stock Company
CMX	Camimex Group Joint Stock Company
CNG	CNG Viet Nam Joint Stock Company
CSM	The Southern Rubber Industry JSC
CSV	South Basic Chemicals JSC
CTD	Coteccons Construction Joint Stock Company
CTI	Cuong Thuan IDICO Development Investment Coporation
D2D	Industrial Urban Development JSC No.02
DAG	Dong A Plastic Joint Stock Company
DAT	Travel Investment And Seafood Development Corporation
DCM	PetroVietNam CaMau Fertilizer Joint Stock Company
DHC	Dong Hai Joint Stock Company of Bentre
DHM	Duong Hieu Trading and Mining Development JSC
DIG	Development Investment Construction JSC
DLG	Duc Long Gia Lai Group Joitn Stock Company

Ticker	Company name
DRH	DRH Holdings JSC
DRL	Hydro Power Joint Stock Company – Power No.3
DSN	Dam Sen Water Park Corporation
DTL	Dai Thien Loc Corporation
DVP	Dinh Vu Port Investment and Development JSC
ELC	Electronics Communications Technology Investment Development Corporation
EMC	Thu Duc Electro Mechanical Joint Stock Company
EVE	Everpia Vietnam JSC
FCM	Fecon Mining Joint Stock Company
GAS	PetroVietnam Gas Joint Stock Corporation
GDT	Duc Thanh Wood Processing Joint Stock Company
GSP	International Gas Product Shipping Joint Stock Company
GTN	GTNFoods JSC
HAH	Hai An Transport and Stevedoring Joint Stock Company
HDG	Ha Do Group Joint Stock Company
HHS	Hoang Huy Investment Services Joint Stock Company

HLG	Hoang Long Group
HNG	Hoang Anh Gia Lai Agricultural JSC
HOT	Hoi An Torurist Service Joint Stock Company
HTL	Truong Long Auto & Technology Joint Stock Company
HU3	HUD3 Investment and Construction Joint Stock Company
HVG	Hung Vuong Joint Stock Corporation
HVX	Vicem Hai Van Cement Joint Stock Company
IDI	I.D.I International Development & Investment Corporation
JVC	Japan Vietnam Medical Instrument Joint Stock Company
KSB	Binh Duong Mineral and Construction Joint Stock Company
LCM	Lao Cai Mineral Exploitation & Processing JSC
LHG	Long Hau Corporation
LIX	Lix Detergent Joint Stock Company
MCG	Vietnam Mechanization Electrification & Construction JSC
MSN	Masan Group Corporation
MWG	Mobile World Investment Corporation
NAF	Nafoods Group Joint Stock Company
NCT	Noi Bai Cargo Terminal Service Joint Stock Company
NKG	Nam Kim Steel Joint Stock Company
OGC	Ocean Group Joint Stock Company

Ticker	Company name
PNJ	Phu Nhuan Jewelry Joint Stock Company
POM	Pomina Steel Corporation
PTB	Phu Tai Joint Stock Company
PXI	Petroleum Industrial & Civil Construction JSC
PXS	Petroleum Equipment Assembly & Metal Structure .,JSC
PXT	Petroleum Pipeline and Tank Construction Joint Stock Company
QBS	Quang Binh Import & Export JSC
RDP	Rang Dong Plastic JSC
SBA	Song Ba Joint Stock Company
SFG	The Southern Fertilizer JSC
SHI	Son Ha International JSC
SII	Sai Gon Water Infrastructure Corporation
SKG	Superdong Fast Ferry Kieng Giang JSC
SMA	Sai Gon Machinery Spare Parts JSC
SPM	SPM Joint Stock Company
SRC	Sao Vang Rubber Joint Stock Company
SRF	Seaprodex Refrigeration Industry Corporation
STG	South Logistics Joint Stock Company

STK	Century Synthetic Fiber Corporation
SVT	Saigon Viendong Technology Joint Stock Company
TCL	Tan Cang Logistics & Stevedoring Joint Stock Company
TDW	Thu Duc Water Supply Joint Stock Company
THG	Tien Giang Investment And Construction JSC
TIX	Tan Binh Import Export Joint Stock Corporation
TLG	Thien Long Group Corporation
TLH	Tienlen Steel Corporation Joint Stock Company
TMP	Thac Mo Hydro Power Joint Stock Company
TMT	TMT Automobile Joint Stock Company
VAF	Van Dien Fused Magnesium Phosphate Fertilizer JSC
VCF	Vinacafé Bien Hoa Joint-Stock Company
VFG	Viet Nam Fumigation Joint Stock Company
VMD	Vimedimex Medi-Pharma Joint Stock Company
VNG	Thanh Thanh Cong Tourist Joint Stock Company
VOS	Viet Nam Ocean Shipping Joint Stock Company
VPS	Vietnam Pesticide Joint Stock Company
VSI	Water Supply Sewerage Construction & Investment, JSC