

The Information Content of Insider Silence in Vietnam Security Market

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Abstract

Gao et al. [7] find that insider will not sell their stocks in the time of bad news since they are afraid of facing litigation risk, and they also would not buy because of loss. Thus, insider will keep silence in this period to protect themselves. As a result, insider silence firms will have negative future abnormal return. Hong and Li [9] find that when routine insider selling (buying) suddenly become silence, it is a signal for positive (negative) future return. Although some papers have examined insider silence in the developed countries, no research explores insider silence in developing market. Therefore, we aim to find out the relationship between insider silence and firm future stock return in Vietnam security market to test whether the result is consistent with the available literature. We hypothesize that insider silence results in negative future return, future stock return of silence firms is more negative in the time of higher litigation risk and sudden insider silence have more impact on the stock return than unconditional insider silence. Empirical results shows although the effect of insider silence in Vietnam security market is weaker than that in US security market, it is still consistent with Gao et al. [7]. The negative effect of insider silence on firm's future stock return is stronger in firm with higher litigation risk. Nevertheless, we cannot find the difference between the effects of sudden insider silence and unconditional insider silence on the future return.

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Keywords: Insider trading, Insider silence, Litigation risk, Vietnam Security market, Sudden Insider Silence.

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1. Introduction

Insider trading is an attractive issue in the last few decades. The insider is defined as the person with the ability to have the unpublicized private information of the corporation. The advantage in information possession makes insiders have a better decision in their trading activities than normal investors. Therefore, insider trading is a plausible instrument which is used to predict the market movement and firm prospects. The main focus of researchers is about three main topics: the impact of insider trading on firm performance, the relationship between firm announcement event and insider trading behaviors, corporate insider trading and information behind these trades [3]. Some studies conducting on US market have proved that insider trading is informative and predictable about firm abnormal return [10]; [6]; [19]; [2].

Although insider sales do not always communicate unfavorable information, since sales may meet the liquidity needs of insiders, insider purchases convey positive information about a firm's prospect. Besides the examination on the event of insider purchasing and selling stocks, the phenomenon when corporation insiders do not trade also cannot be ignored. The nonoccurrence sometimes may contain important information. Marin and Oliver [15] find that there is a long period of silence from insider before a large drop in stock price. This period is around ten months and before this there is one month that the purchase volume from insider is unusual high. Some recent researches have proved that the absent of insider trading can also predict the firm performance and future stock return. Gao et al. [7] show that insider silence relates to the litigation risk and negative future stock return. They investigate the unconditional insider silence, which is defined as firms have not had any trading from insider within last twelve months. They find that the abnormal future return following insider silence firms is lower than that following the insider selling firms. When the firm faces bad news, the stock price will go down. If the insider sells their stock before it drops, they will be considered as using the private information for their personal purpose before the information being public. This will break the rule of U.S. Securities and Exchange Commission (SEC). As a result, insider may have to face lawsuit. If they buy the stock, they will lost their own money. Therefore, the best option for them is to keep silence until the favorable condition. Moreover, Hong and Li [9] find that the sudden insider silence can be used to predict future stock return. In addition, both firm fundamental and future stock return of firms will increase if in previous two consecutive years, insider sell their stock at the same month and stop selling at the third year. This kind of insider silence could be described as the conditional sudden silence event. With different type of insider silence the information behind them can be different. That is, bad new and good new can be conveyed at the same time.

Most of the studies about insider trading and the above two researches about insider silence focus on U.S. stocks which are in the well-developed and long history of operation stock market. Will these findings are still consistent with the emerging stock market? In fact, this explanation cannot apply for all securities market,

especially for the small and emerging market as Vietnam, which has a big gap behind US security market. The Vietnam security market only has nearly twenty years of operation and a lot of differences in the regulations and procedures for insider trading. The law to regulate insider trading activities in Vietnam is reported imprecise. There are a lot of insiders who take the advantage of these loopholes to make their individual prospects. They are willing to break the rule and pay a small amount of fine to reach their larger profit from the insider trade. However, there is only one research which examines the impact of insider trading on future stock return and no research discusses about insider silence. Lefebvre and Nguyen [14] explore the Vietnam insider trading activities and have the consistent result with studies in others develop market. That is, future abnormal return increases when insider buy their own company stock and decreases when they sell the stock.

Due to the above reasons, it is necessary to examine the impact of insider silence on the future stock return of Vietnam stock market, a typical example for young and developing security market. Moreover, we investigate the effect of two kinds of insider silence, which are unconditional silence and sudden silence. Thus, the first purpose of this paper is to verify the result of existent researches, whether the above mentioned result is still consistent with Vietnam market. Second, we examine whether there is the difference between impact of unconditional silence and sudden silence on the abnormal future stock return.

The contribution of this paper is filling the gap in the research field about insider silence in Vietnam security market. In more details, this paper will test whether the available research result in developed market is consistent with emerging market or not. In addition, this will be a source of reference for anyone who is interested or works in the Vietnam security market to have a deeper understanding about the trading features of Vietnam insider. This also can be a material for Vietnam regulators to maintain the transparency trading environment by improving the regulations and strictly controlling the insider trading activities.

This paper is organized as follows. In section 2, we refer to some literatures about insider silence trading and insider trading in Vietnam and propose three hypotheses. Section 3 presents data and methodology, and section 4 exhibits empirical results. Final part is the conclusion.

2. Literature Review and Hypotheses

2.1 Literature Review about insider trading

Corporation insiders are including the firm's employees, managers, directors, shareholders who hold more than 10% corporation voting shares, and the family members of employees. They can access to the non-public materials about the organization performance which can affect the decision of investors to buy or sell stock. Insider trading is an event that corporation insider selling or purchasing the security of their own company. It is compulsory for insider to announce their trades to the financial supervision committee [16]. Due to the information advantage, corporation insiders could earn higher profit than their fellow investors. Therefore,

the regulators always try to maintain a fair market place by establishing specific rules and restriction on insider trading activities. The trading activities of corporate insider can be a signal of the firm future prospects. Thus, there are always a high attention from investors, investment fund managers, regulators, and mass media to these trading activities.

Earlier from 1970 to 1976, some researchers study about the abnormal future return for insider trading of NYSE stock sample in different period of time [18]; [10]; [6]. Although these studies use different definitions of insider trading, the conclusion of these researches is that insider trading can be an indication for the firm future abnormal return. Some research are conducted outside the US market with the similar results. In the UK security market, although King and Roell [13] and Pope et al. [17] conduct the researches with different size of sample in the same period of time, the outcome of these two researches is consistent with the statement that insider buying can predict positive future of return but much weaker in the large stock sample. In the Spain market, Del Brio et al. [4] find that there is abnormal return for insider who trade on their own company stock. However, if normal investors try to trade in the same direction with the insiders, they cannot earn anything. In German stocks market, the same result is that there is positive future stock return after buying transactions and negative future stock return after selling transactions from insider [1]. The different kind of insiders trading which can have dissimilar effect to the firm performance. Seyhun [19] finds that in US security market, the transaction of director is more powerful in predicting firm future return than normal insiders. Jenter [11] reflects that the high level manager trading and decision could expose the firm value. Seyhun [19] concludes that both trading from US insiders and mimicking trade of outsider gain profits.

Although there are a huge number of studies about the relationship of insider buying, and selling, a few researches discuss about insider silence. The nonappearance of an event sometime exposes some essential information. Marin and Olivier [15] concern about dropping in the amount of insider net selling after many month of consecutive selling and this dropping period is also the time of stock price crash. On the contrary, insider only has a great amount of buying one month before the suddenly rise of stock price and this is also the period lacking of insider trading. Giglio and Shue [8] study about the corporation merging and show that silence is a positive signal. There is a high hazard rate after the merge announcement. If there is a silence during the period after announcement, this passage of time can predict the completion of merging. The important of silence in insider trading has been proved in Gao et al. [7] and Hong and Li [9] in US security market. According to Gao et al. [7], firms which are insider silence in the past 12 months would experience lower stock cumulative excess return in the next 12 months period than firms which have insider net selling in the same period. When they compare firms which have litigation event and crash stock price to their peers with the same size, b/M and industry, the insiders in litigation and crash price firms tend to stay silence more frequently than their peers. They use three proxies to measure the litigation risk of the firms: Kim-Skinner [7], firm-level volatility, market-level volatility, and

the result show that insider silence in firm with the high litigation risk would face more negative future stock return. After leaving the firms with small number of insiders and firms with low market capitalizations, the returns of insider silence firms are still negative. Hong and Li [9] show that insider silence can also predict for the good news rather than only bad news. They examine the sudden insider silence by investigating the trading history of each insider. If a routine sells insider who sell their own corporation stock at the same month in two consecutive years suddenly stop selling in the same month of third year, this insider action will be put in the sell – sell – no trade group (SSN). If a routine buy insider who purchases their own corporation stock at the same month in two consecutive years suddenly stop buying in the same month of third year, this insider action will be put in the purchase – purchase – no trade group (PPN). They find that ROA of firm is higher in the current quarter if firms have SSN insider silence. The result for PPN insider silence firm is much weaker with negative ROA and firm operating cash flow. The firm insider should possess some material information related to firm fundamentals when routine sell insider chose to suddenly silence. It is the signal for rising in firm's profit. While routine purchase insider chooses to suddenly silence, it can indicate the falling in firm fundamentals. They use Fama and MacBeth [5] regressions to analyze the prediction power of SSN and PPN to future stock return. Stocks in SSN group would have higher three-month cumulative return. The higher return is associated with longer holding period. The future stock return in PPN group will decrease in in coming three-months. The predictive power of SSN is stronger than PPN in both fundamental and firm future stock return. In the period of high litigation risk, routine insider prefer to stay silence rather than trading when they access to the private information because they suppose that the profit which they can earn by private information would be less than the cost which they have to suffer from being prosecuted by regulators. The future 3-month return future based on SSN and PPN prediction is larger in high litigation risk period than that in low period.

2.2 Insider trading in Vietnam market

Most of the studies about insider trading and insider silence have been conducted in US security market and some developed security market. There is a big absence of studies about these topics in emerging markets. In the case of Vietnam market, domestic researchers do not pay much attention to the impact of insider trading. Until now only a few research about insider trading have been conducted in Vietnam security market and there is no study about insider silence of this market. Vietnam established the Ho Chi Minh Securities Trading Center (HOSE) on 20 July 2000 with only 2 listed companies with total capitalization of 986 billion VND which equal to 0.28% GDP in 2000. In 2015, the Hanoi Stock Exchange was launched to trade most of the small-cap and OTC stocks. Until the end of April 2019, Vietnam security market has 752 listed company including 375 companies in HOSE, and 377 companies in HNX. The average trading volume per day is about 5000 billion VND. In addition, there are 814 unlisted companies registered for trading in UpCOM in

Hanoi. There are 2112 companies which capitalize 5,436,823 billion VND equivalent to 98.2% GDP. At the beginning the VN-Index has a base value of 100 as of July 28, 2000 and now it reach around 1000 point in 2019. There is another index in Vietnam which is known as VN30 established in 2012 with the top 30 largest capitalization stocks.

In comparison to the developed security market, the regulation for insider trading activities in Vietnam has a bit different in the percentage of share owed by major shareholders and the disclosures trading time. The State Securities Committee (SSC) is the supervision financial institutions which controls the market participants in practicing the securities laws and regulations. The law relates to insider trading is The Securities Laws which was launched in 2006. According to The Securities Laws, insiders include major shareholders, top executives and other insiders. According to Article 9, if the shareholders own more than 5% ownership or voting rights of the listed company, they will be the major shareholders of the listed company. Top executives are including Chairman, member of Board of Management (BOM), member of BOD, member of supervisory board, chief finance officer, chief accountant, and company's representatives. The family members of major shareholders and top executives are classified as other insiders. In 2012, Vietnam Circular Law instructed that insiders must announce to SSC and Stock Exchange (SE) their expected trading time frame and expected trading size at least three trading days prior to the beginning of trading time frame. The expected trading time frame does not exceed 30 trading days. Within three days after executing day, they have to report the trade results to SSC, SE and their own company. If they want to cancel the transactions, they have to explain the reasons to SSC and the Stock Exchange within three trading days after the end of the requested time frame.

Lefebvre and Nguyen [14] examine the abnormal return of insider trading in Vietnam security market. The stock experience positive future abnormal return (2%) in 30 trading day after the purchase request. The sale request is followed by negative abnormal return (-2.5%) in the same period of time. The private information exposes to the public through insiders' trade intentions. The three-day market reaction after the trading request announcement day of purchase requests is stronger than that of sale request. After three days, the insider can execute their trade. The impact of sale requests on abnormal return is stronger than that of purchase requests. The abnormal return is insignificant after the completion announcements of insider purchase because market has already reacted to the purchase intentions before. In contrast, after insider complete their sale, the normal investors continue to sell the stock massively. Thus, the Vietnam outsiders are more sensitive to insider sale than insider purchase. There is no abnormal return following the trade cancellation because insiders may just cancel their trade since the stock price is inconsistent with their expectation. The abnormal return from purchase requests of top executives and sale requests of major shareholders are higher than the others group. The abnormal returns from purchase requests of top executives and sale requests of major shareholders in small-cap firms are significantly larger than those in big-cap firms.

2.3 Hypotheses

Insider is known as a specific group of investors with favorable private information. They also have opportunities to receive stock options. Their trading activities are always restricted by many regulations and supervision organization to maintain the market transparency. The purposes of insider trading are variety. It may be inspired from non-informative or informative reasons. Some non-informative reasons are personal liquidity, portfolio diversification and regulation issues. When insiders possess private information about firm performances, they will have opportunity to buy before good news and sell before bad news to gain additional profit or prevent losing. If they do that in the case of bad new, they may be arrested by the regulators, and the amount of punishing money may be larger than their gaining. Thus, to prevent from loss and being arrested, insider does not trade in the period of bad news. The previous studies has proved that in US market, firms which have insider silence in the last twelve months would suffer from negative excess return in the next twelve months [7]. In the case of Vietnam market, we also hypothesize that the Vietnam insider will do the same with US insider when they possess the bad news of their organization. The future excess returns of silence firms would be lower than the selling stock firms. Therefore, we have the following hypothesis:

Hypothesis 1: The silence stock firms have lower future excess return than the selling stock firms in Viet Nam security market.

Litigation risk is the main factor for insider silence, which have been proved in US security market [7]. We believe that Vietnam insiders also face this litigation risk. Vietnam Criminal Laws punish illegal insider trading based on their current positions of the company. That is, illegal insiders are requested to return the abnormal profits from their trades, which is punished from VND 100 million - VND 500 million (about \$ 5,000 -\$ 25,000). In the case of serious result, they may have a sentence from 2 to 7 years imprisonment. When there is a serious negative news, it will make stock price drop dramatically. Thus, insider do not trade before this bad news become public to prevent them from being suspected by SSC for the offence of trading on private information. We examine whether Vietnam insider do not trade before the bad news because of the high litigation risk. If things are doing so, in the time of high litigation risk the future stock return of insider silence firms will be more negative.

Hypothesis 2: The negative effect of insider silence on firm's future stock return is stronger in firm with higher litigation risk in Viet Nam security market.

Hong and Li [9] defined another kind of insider silence, which are sudden insider silence of routine sells and routine purchases insider. In this hypothesis, we will compare the effect of two kinds of insider silence on firm future stock return in Vietnam security market. For unconditional insider silence, some may result from

the non-informative reasons and some may result from the informative reasons. When routine insider become silence, we assume that this silence will be more informative than the randomly silence. Thus, we expect that the sudden insider silence would have more impact on firm future stock return than unconditional insider silence. That is, the future return of firms with conditional insider silence in routine purchases will be more negative than the future return of firms with unconditional insider silence.

Hypothesis 3: Sudden insider silence have more negative impact on firm future stock return than unconditional insider silence in Viet Nam security market.

3. Data and Methodology

3.1 Data

We examine the insider trading activities of top 100 firms with highest market capitalization and liquidity in HOSE from January 2010 to December 2018. We choose the top 100 firms to ensure that the amount of data will be enough to provide the appropriate sample. The total market capitalization of top 100 firms is around 54% of the total Vietnam stock market at the end of 2018. The sample period we select can reflect the newest features of the Vietnam security market and this time is also the period that Vietnam security market has a stable period of operation.

The data about insider trading are collected from the announcement of SSC which is the only organization to directly receive the insider trading report from listed firms. But the announcement of SSC are public separately and unorganized depending on the time of receiving the report from insiders. There are many financial websites which reorganize these information with the purpose to support the trading activities of investors. One of the most reliable website is *cafef.vn*. This website shows the announcements from SSC in a short time with a high accuracy. We will collect the data of insider trading via this website because their data are arranged by the company name, insider name, insider position, time of trading and the amount of stock. Others financial data such as firm's market capitalization, book-to-market ratio, past return are collected from VNDIRECT Securities Corporation, one of a large stock exchange in Vietnam. Then, we match them with each stock in suitable period.

Table 1 shows the summary statistic of variables. Mean of silence (0.114) is smaller than that of buy (0.454), indicating that the frequency of insider silence is less than that of insider buy. Moreover, mean of PPN (0.004) is smaller than that of SSN (0.016), indicating that the frequency of sudden insider silence to purchase is less than that to sale.

Table 1: Summary Statistic

	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness
r(t+1)	0.028	0.011	1.464	-1.069	0.256	0.408
Silence	0.114	0	1	0	0.318	2.423
Buy	0.454	0	1	0	0.498	0.184
LNBM	-0.260	-0.232	1.865	-6.213	0.716	-0.474
LNMC	4.597	4.468	9.600	0.286	1.683	0.247
NI	0.622	0.000	21.724	-21.599	11.150	-0.064
PR	0.159	0.079	3.724	-0.835	0.437	1.359
Market Sigma	47.503	35.430	151.908	17.154	31.902	1.936
Sigma	2.845	1.701	47.790	0.101	3.863	4.680
PPN	0.004	0	1	0	0.066	14.968
SSN	0.016	0	1	0	0.125	7.758

Table 2 presents the correlation value among variables. There is a negative correlation between dummy Silence variable and the cumulative six months abnormal return, which is consistent with the expectation. In addition, this relationship is positive between dummy Buy variable and abnormal return.

Table 2: Correlation Matrix

	r(t+6)	Silence	Buy	Market Sigma	Sigma	PPN	SSN
r(t+6)	1						
Silence	-0.042	1					
Buy	0.021	-0.328	1				
Market Sigma	-0.009	-0.006	0.011	1			
Sigma	-0.14	0.048	-0.053	0.308	1		
PPN	-0.01	0.185	-0.061	-0.019	-0.026	1	
SSN	-0.021	0.353	-0.116	0.007	0.062	0.008	1

3.2 Methodology

First, we group the insider silence stock by their insider trading history. At month t , we check the trading activities of insider in the past twelve months to explore whether there is no insider trading in this period. If so, the stock belongs to insider silence group. Second, according to Gao et al. [7], we calculate the net insider demand (NID). The net insider demand in month j is the total number of shares bought by insider minus the number of shares sold by insider in the past m months, divided by the total number of shares trading by insider at month $j-1$.

$$\text{NID} = \frac{\# \text{ shares insiders buy}_{j-m,j-1} - \# \text{ shares insiders sell}_{j-m,j-1}}{\# \text{ shares trading by insider}_{j-1}} \quad (1)$$

Finally, to investigate the effect of insider silence on future stock return, we use the firm cumulative abnormal return as the dependent variable to run the regression. There are two dummies variable. If there is no insider trade in the past m months, dummy variable of insider silence (Silence) is equal to one. Moreover, if the shares insider buy their own company stock is higher than those in the past m months (NID is positive), dummy variable of insider buy (Buy) will equal to one. The intercept indicate the impact of insider selling stock on future return. The coefficient of dummy variable of insider silence presents the difference between the impact of insider silence stocks and insider sell stocks on future return. Control variables include market capitalization, book to market ratio, past return of 12-month period and net stock issues. The regression model as following:

$$r_{(t+6)} = \alpha + \beta_1 \text{Silence} + \beta_2 \text{Buy} + \beta_3 \ln(\text{MC}) + \beta_4 \ln(\text{BM}) + \beta_5 \text{PR} + \beta_6 \text{NI} + \varepsilon \quad (2)$$

where $r_{(t+6)}$ is the stock's future 6 months cumulative abnormal return (subtracting the market return – VN Index) over the period $(t + 1, t + 6)$; Silence is dummy variable, which is equal to one if there is no insider trading activity during the past 12-month period $(t - 12)$; Buy is dummy variable, which is equal to one if the net insider demand is positive over the past 12-month period $(t - 12)$; $\ln(\text{MC})$ is the natural log of price times number of shares outstanding at the end of each month; $\ln(\text{BM})$ is the natural log of the ratio of the book value of equity to the market value of equity on month $t-1$; PR is the past return of stock when investors buy and hold it from month $t-11$ to $t-1$; NI is the net stock issues through stock split from the year of $t-2$ to the year of $t-1$.

According to hypothesis 1, the coefficient (β_1), which indicates the additional return of firm with insider silence compared to firm with insider selling over the past 12 months should be negative. It implies that the silence stock firms have lower future excess return than the selling stock firms.

To test the second hypothesis, we add the two variables as the proxy of litigation risk. Following Gao et al. [7], we use two proxies to measure litigation risk, which

are a firm-level stock volatility measure (Sigma), the market-level stock volatility measure (Market Sigma).

Next, we run the regression by adding one kind of litigation risk proxy as a new variable and an interaction term of litigation risk proxy and silence dummy variable. The new regression model as below:

$$r_{(t+6)} = \alpha + \beta_1 \text{Silence} + \beta_2 \text{Sigma} + \beta_3 \text{Sigma} * \text{Silence} + \beta_4 \text{Buy} + \beta_5 \ln(\text{MC}) + \beta_6 \ln(\text{BM}) + \beta_7 \text{PR} + \beta_8 \text{NI} + \varepsilon \quad (3)$$

$$r_{(t+6)} = \alpha + \beta_1 \text{Silence} + \beta_2 \text{MarketSigma} + \beta_3 \text{MarketSigma} * \text{Silence} + \beta_4 \text{Buy} + \beta_5 \ln(\text{MC}) + \beta_6 \ln(\text{BM}) + \beta_7 \text{PR} + \beta_8 \text{NI} + \varepsilon \quad (4)$$

In the equation (3), and (4), if the coefficient of interaction term (β_3) is negative, we can accept hypothesis 2. It indicates that the negative effect of insider silence on firm's future stock return is stronger in firm with higher litigation risk.

Following Hong and Li [9], we define routine insider sudden silence as follow. In each month that insiders do not trade, we check the trading history of the firm in the past two continuous years on the same month. If they had insider purchase in that two months, we group these firms into routine purchase insider sudden silence firm. Vice versus, if firms have insider who sold their stock in that two months, they belong to routine sell insider sudden silence group. Instead of investigating the trading history of individual insider, we observe it at the firm level. Dummy variable indicate routine purchase insider sudden silence (PPN) equal to one if firms have insider purchase their own company stock at the same month in 2 consecutive year but stop trading at the third year, whereas routine sell insider sudden silence (SSN) equal to one if firms have insider sell their own company stock at the same month in 2 consecutive year but stop trading at the third year.

$$r_{(t+6)} = \alpha + \beta_1 \text{Silence} + \beta_2 \text{Buy} + \beta_3 \text{PPN} + \beta_4 \text{SSN} + \beta_5 \ln(\text{MC}) + \beta_6 \ln(\text{BM}) + \beta_7 \text{PR} + \beta_8 \text{NI} + \varepsilon \quad (5)$$

According to Hong and Li [9], the sign for coefficient β_3 of PPN variable should be negative, and coefficient β_4 of SSN variable should be positive. If the magnitude of PPN (or SSN) are larger than coefficient of silence variable, we can accept hypothesis 3. It indicates that sudden insider silence have more negative impact on firm future stock return than unconditional insider silence.

4. Empirical results

Our sample is composed by top 100 Vietnam firms from January 2010 to December 2018. To find out the frequency of insider silence in 100 firms, we calculate the NID of each month in different m month period ($m = 6, 12, 24$). We split into three group (silence, buy and sell), and then calculate the proportion of firm in each group in different time period.

Table 3 presents that the Vietnam insider tends to be silence very frequency. When the time to measure insider trading is 6 months, 89 among 100 firms shows insider silence. The percentage in net insider buy and sell firm, is 6% and 5% respectively. The proportion of silence firm decreases when the time period increases. When we expand the measuring window into 12 and 24 months, the percentage of insiders silence firms decreases to 54% and 26%. The percentage of insider buy firms is 26% in 12 months period and 40% in 24 months. Similarly, it also increases in insider sell firm 20% and 34% with 12 months and 24 months period. According to Gao et al. [7], 22% and 12% are the percentage of insider silence firm in US in 12 and 24 month of measurement. We can conclude that the frequency of insider silence in Vietnam market is higher than that in US market.

Table 3: Insider Silence Frequency

Month to measure insider trading	Silence	Buy	Sell
6	89%	6%	5%
12	54%	26%	20%
24	26%	40%	34%

Table 4 shows the results of equation (2) which is used to test the hypothesis 1. In panel regression, there are 4 models, which are no fixed effect, firm fixed effect, year fixed effect and both firm and year fixed effect.

Table 4: Insider silence and future return

Variables	Model 1	Model 2	Model 3	Model 4
Constant	14.17	13.22	34.84	62.41
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Silence	-4.22	-3.94	-4.28	-4.53
	(0.0000)	(0.0000)	(0.0001)	(0.0000)
Buy	-0.09	-0.36	1.38	1.69
	(0.8770)	(0.5527)	(0.0339)	(0.0061)
Ln(MC)	-2.31	-2.11	-6.57	-12.72
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Ln(B/M)	1.95	1.87	7.7	6.43
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Past Return	2.31	2.94	0.54	2.25
	(0.0007)	(0.0000)	(0.4490)	(0.0023)
Net Issues	-0.09	-0.13	-0.09	-0.13
	(0.0002)	(0.0000)	(0.0004)	(0.0000)
Firm FE	No	No	Yes	Yes
Year FE	No	Yes	No	Yes
Adj. R-squared	0.03	0.11	0.12	0.22

Model 1 is the panel regression without adding fixed effects. Therefore, the coefficients illustrate the impact of silence on the cumulative abnormal return with the effect from both cross-section and time-series. The impact of insider silence firms on abnormal return is statistically negative (-4.22%) in 1% level.

We add fixed effect to control the year period in model 2. The cross section across the firm affect the coefficient. The results are similar with the model 1. The impact of insider silence firms on cumulative abnormal return is lower (3.94%) lower than that of insider sell stock. The coefficient of silence is still significant and that of buy is insignificant.

In model 3, the panel regression is controlled by the cross-sectional firm effect. When the coefficient depend on the time variation, the impact of silence firm on cumulative abnormal return is still significantly negative (-4.28%). The impact of insider buy stock on cumulative abnormal return is significantly larger (1.38 %) than that of insider sell stock in 5% level, which is consistent with Gao et al. [7].

In model 4, we control both cross-sectional firm effect and time-series year effect. Although the coefficients rely on the (monthly) time-series variations for firms, it still present the similar sign direction. Coefficient of insider silence is negative (-4.53%), coefficient of insider buy is positive (1.69%) and both of them are

statistically significant at 1% level. This indicates that the future 6-month cumulative abnormal return following insider silence is lower (4.53%) than that following insider sell. The future 6-month cumulative abnormal return following insider buy is higher (1.69%) than that following insider sell.

The adjusted R-squared increases gradually across different models. Our panel regression becomes fitter when we adding the fixed effect. With no fixed effect, the adjusted R-squared is 3%. This number rises to 11% when we add period fixed effect, it increases slightly to 13% with cross-sectional firm effect. It reaches 22% when controlling both year fixed effect and firm fixed effect.

According to hypothesis 1, we infer that the sign for insider silence is negative and buy variable is positive. The coefficients of silence stock variable are negative and statistically significant at 1% significant level accord 4 models, we can conclude that hypothesis 1 is accepted. The impact of insider silence on firm future abnormal return in Vietnam security market is similar with that in US security market. That is, firms with insider silence have lower future excess return than firms with insider sell.

In Tables 5 and 6, we run panel regression to analyze the interaction between insider silence and litigation risk. In Table 5, we use a firm-level stock volatility as a proxy for litigation risk. This proxy is changed to the market-level stock volatility in Table 6. Similarly, in each equation, we run four types of panel regression with no fixed effect, year fixed effect, firm fixed effect, both year and firm fixed effect.

Table 5: Analysis of litigation risk hypothesis – Using firm-level volatility (Sigma) as a proxy

Variables	Model 1	Model 2	Model 3	Model 4
Constant	13.78	13.18	32.7	59.12
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Silence	-2.53	2.78	3.37	-3.91
	(0.0282)	(0.0122)	(0.0077)	(0.001)
Silence*Sigma	-0.25	-0.07	-0.14	-0.02
	(0.1620)	(0.6844)	(0.4813)	(0.8936)
Sigma	-0.53	-0.67	-0.76	-0.84
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Buy	-0.14	-0.46	1.44	1.69
	(0.8202)	(0.4391)	(0.0268)	(0.0062)
Ln(MC)	-2.02	-1.82	-5.74	-11.59
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Ln(B/M)	0.5400	0.25	6.45	5.19
	(0.2635)	(0.5960)	(0.0000)	(0.0000)
Past Return	3.03	4.03	1.12	3.15
	(0.0000)	(0.0000)	(0.1219)	(0.0000)
Net Issues	0.09	-0.13	-0.09	-0.13
	0.0002	0.0000	0.0003	0.0000
Firm FE	No	No	Yes	Yes
Year FE	No	Yes	No	Yes
Adj. R-squared	0.03	0.12	0.13	0.23

Model 1 presents that in the panel regression without adding fixed effect, the coefficient of interaction term between insider silence and sigma variables is – 0.25%. It can be inferred that when the firm’s sigma increases 1%, the cumulative abnormal return of silence firms decreases 0.25%.

However, the result is not statistically significant at 10% level. The coefficients of interaction term are also negative when we rerun the regression by controlling the time period, firm cross-sectional individually and two of them at the same time. The coefficients vary from -0.07%, -0.14% and -0.02% in models 2, 3, 4 respectively. Although the sign of these coefficients is negative as we expected, all of them are not statistically significant.

Table 6 is the regression of firm's six month cumulative return on insider silence with the interaction term between silence and market sigma.

Table 6: Analysis of litigation risk hypothesis – Using market-level volatility (Market Sigma) as a proxy

Variables	Model 1	Model 2	Model 3	Model 4
Constant	13.28	-10.02	37.96	112.5
	(0.0000)	(0.4108)	(0.0000)	(0.2804)
Silence	-2.89	-2.48	-1.58	-1.46
	(0.0997)	(0.1423)	(0.0077)	(0.4046)
Silence*MarketSigma	-0.02	-0.03	-0.05	-0.06
	(0.3432)	(0.2788)	(0.0713)	(0.0294)
MarketSigma	0.03	0.49	0.12	-1.05
	(0.0013)	(0.0555)	(0.0000)	(0.6321)
Buy	-0.15	-0.35	1.34	1.71
	(0.8069)	(0.5595)	(0.0377)	(0.0055)
Ln(MC)	-2.44	-2.13	-8.53	-12.7
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Ln(B/M)	0.32	1.83	7.67	6.29
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Past Return	2.33	2.96	1.59	2.28
	(0.0006)	(0.0000)	(0.0260)	(0.0020)
Net Issues	-0.09	-0.13	-0.07	-0.12
	(0.0003)	(0.0000)	(0.0026)	(0.0000)
Firm FE	No	No	Yes	Yes
Year FE	No	Yes	No	Yes
Adj. R-squared	0.03	0.11	0.14	0.23

In model 1, the coefficient of interaction term is negative (-0.02%) and insignificant. This result is also the same when we control the cross-sectional among firms in model 2. The coefficient of interaction term changes to -0.03% and it is insignificant. In model 3, when the dummy silence variable depends on the monthly time series, the result is negative and significant at 10% level. The cumulative abnormal return of silence firm is lower (0.05%) in the period of high volatile market return rather than that in the low volatility time. This means that when the market volatility

increases 1%, the cumulative abnormal return of silence firm will decrease 0.05%. After controlling both time series and firm cross-sectional effect, the cumulative abnormal return of silence firm in the time of high legislation risk is significantly lower (0.06%) than in the time of low legislation risk at 5% level.

In conclusion, there is a relationship between insider silence and litigation risk in Vietnam stock market. The cumulative abnormal return which is contributed by the interaction term of silence and two litigation risk measurements are negative. However, if the proxy of litigation risk is the variability of firm stock price, we do not have the statistically significant result. If the proxy of litigation risk is the instability in the whole market stock return, the negative effect of interaction term is very slight. Therefore, hypothesis 2 can be accepted. That is, the negative effect of insider silence on firm's future stock return is stronger in firm with higher litigation risk in Viet Nam security market.

Our final regression is the test about the effect of two kinds of insider silence on the cumulative abnormal return. After adding two dummy variables which represent for the sudden insider silence, we run the regression in Table 7 with 4 different models as same as the previous tests.

Table 7 presents that the coefficients of PPN change noticeably among 4 models, which vary from -0.94% in no fixed effect model to -3.30% in year fixed effect model and changed slightly to -3.06% in both firm and year fixed effect model. There is only one positive result as our expectation in firm fixed effect model with the value of 0.79%. However, all of them are statistically insignificant. Although the coefficients of SSN variable are negative, which is consistent with our assumption, they are also not significant. Moreover, magnitude of PPN coefficient cannot exceed that of silence coefficient, which is compatible with our expectation. In short, the sudden insider silence cannot be well explained in this regression.

Table 7: Unconditional insider silence and sudden insider silence

Variables	Model 1	Model 2	Model 3	Model 4
Constant	14.16	13.21	34.82	62.47
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Silence	-4.13	-3.68	-4.12	-3.84
	(0.0001)	(0.0004)	(0.0006)	(0.0007)
PPN	-0.94	-3.30	0.79	-3.06
	(0.8358)	(0.4516)	(0.8594)	(0.4699)
SSN	-0.38	-0.93	-1.13	-3.25
	(0.8807)	(0.2788)	(0.6532)	(0.1749)
Buy	-0.09	-0.35	1.39	1.71
	(0.8774)	(0.5551)	(0.0325)	(0.0056)
Ln(MC)	-2.31	-2.11	-6.57	-12.7
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Ln(B/M)	1.96	1.87	7.69	6.43
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Past Return	2.31	2.94	0.55	2.26
	(0.0007)	(0.0000)	(0.4428)	(0.0022)
Net Issues	-0.09	-0.13	-0.09	-0.12
	(0.0002)	(0.0000)	(0.0004)	(0.0000)
Firm FE	No	No	Yes	Yes
Year FE	No	Yes	No	Yes
Adj. R-squared	0.03	0.11	0.12	0.23

There are two reasons that can be considered as the source for the above problem. First, the data of PPN and SSN is not sufficient in our regression. Our sample is eight years from January 2010 to December 2018. It is enough for investigating the unconditional insider silence phenomenon, but this sample seems too small for the sudden insider silence phenomenon. To find out whether a month is the sudden silence month, we need to have the trading history of the previous two years. Therefore, the number of month with PPN is only 32 months and SSN is 115 months. This is not enough to have a correct estimation from the regression. Second, the method to sort the sudden silence in our paper is different from the available literature. Hong and Li [9] they acquire PPN and SSN variable by checking the trading activity of each insider individually instead of calculating monthly NID as in our paper. Because of the time limitation and a large number of insider, we cannot

apply this method into our research.

To sum up, the hypothesis 3 cannot be accepted. All of the coefficients of SSN and PPN variable are not statistically significant. In addition, the sign of some PPN coefficients are opposite to our expectation. It cannot be proved that there is a difference in the impact of sudden insider silence and unconditional insider silence on firm future stock return in Vietnam security market.

5. Conclusion

In this paper, we calculate cumulative abnormal return of top 100 stocks in Vietnam security market during the time they are insider silence. We test the available hypothesis about insider silence whether the results in Vietnam market is still consistent with those in U.S. stock market.

We can observe some following findings in Vietnam security market. First, firms which are insider silence within the last 12 months have lower future 6-month cumulative abnormal return rather than firms which are insider sell at the same period. Second, when the litigation risk of the firm increase, insider silence firms will have more negative abnormal return than that in normal time. However, the statistic result in Vietnam seems weak when we use firm sigma as the proxy for litigation risk. Finally, there is no or very little effect when the firms are unconditional insider silence and sudden insider silence. In general, although the results are weak, our findings are still consistent with the insider silence phenomenon. In the case of Vietnam security market, insider silence is still a signal for bad news and results in negative future stock return.

The results have been affected by some factors which may lead to some inaccuracy in our finding. Due to the time limitation, we cannot conduct the research in all available stocks in Vietnam stock market and the eight year time period is a bit short. This shortage of time period mostly affect the hypothesis 3, when we need to check the insider trading activity in three continuous year. Since the financial data is collected from website by ourselves, there are some lacking of information and incompatible between different websites. We collect data from many resource and the whole process is manually. Therefore, there may occur some errors which are unavoidable.

Further researches can conduct on a larger sample. For example, it can do with all the stocks in Vietnam market or a longer period result to have a better estimations. The trading volume of the market is another factors which may affect the insider trading. Because this factors is ignored in our research, further papers may consider it to improve the result. Future researchers can use free return or capital asset pricing model to calculate dependent variable to do the robustness check. To have a better result for hypothesis 3, future studies can try new way of defining SSN and PPN such as the consecutive three months in the same year.

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