



Advance disclosure of insider transactions: Empirical evidence from the Vietnamese stock market[☆]

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ABSTRACT

We investigate the impact of legal insider trading announcements on stock returns in Vietnam. Vietnamese insiders must announce their trading intentions in advance as well as after the actual trade, which contrasts with the vast majority of countries where only post-trade announcement is mandatory. This regulatory setting allows to put to test the predictions from the theoretical models of advance disclosures (Huddart et al., 2004, Lenkey, 2014). Consistent with the theoretical literature, we find that the abnormal returns are large and significant after the pre-trade announcement, showing that the market takes into consideration the information content of the insiders' intention to trade. In addition, no significant stock price effect is found after the announcement of the actual trade occurrence or cancellation. We argue in favor of the implementation of advance disclosure policies since they help mitigate the returns obtained by insiders, better share the profits with outsiders and contribute to a better information dissemination.

1. Introduction

In the past decades, most countries' regulatory authorities have invested many resources to design regulation and laws against insider trading. The designed policies intend to prevent market abuses and enhance market fairness, with the basic idea that corporate insiders have to report their trades to a public registry of insider trading in order to make their actions visible to the public. There is a long-standing empirical and theoretical literature on legal insider trading, beginning with [Lorie and Niederhoffer \(1968\)](#).

Legal insider trading is defined as the trading activities conducted by managers and directors of listed companies when they trade their own firms' stocks in compliance with existing regulation, which prohibits the use of private and price-sensitive information. However, insiders have a better view of the prospects of their company, so that the profitability of their trades might be higher than that of outsiders, even when their trading actions are in line with the existing regulation. Due to the unfair access to corporate information, the regulation in almost all countries stipulates that insiders have to announce their trades in a public registry of insider trading hosted either by the stock market or by the regulatory body. In developed stock markets, insiders have to publicly announce

their trades without delay and no later than three or five trading days following their trade completion, depending on the country. It is for instance the case for the U.S., the U.K., and most European countries.

Contrary to most other countries in the world in which insiders must disclose their trades of own company's stock to the regulator once the trade is complete, the Vietnamese regulation stipulates that insiders must publicly announce their trade intentions at least three days prior to the actual trade execution. In Vietnam, the national regulation imposes insiders to report three elements associated with their trading activity. First, the insiders have to disclose their intention to trade before trading, that we refer to as trade request or pre-trade announcement. Second, if the trade actually occurs, the second disclosure is to confirm the trade and announce the trade price that we denote a trade completion announcement. Third, if the insider changes her mind and decides not to trade, she is required to report the cancellation of the trade, that we call trade cancellation announcement. As such, each insider has two disclosures to submit for each transaction: the pre-trade announcement, on the one hand and, the trade completion or cancellation, on the other hand. After the trade request announcement is made, Vietnamese insiders are allowed to execute the trades in a one-and-a-half-month period, or they can choose to cancel the trade. Vietnamese insiders

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have to publicly announce the trade completion within three trading days after they complete the execution or, if the trade intent is cancelled, at the end of the time period.

The Vietnamese regulation follows a similar spirit, yet with very different implementation elements, as the SEC rule 10b5-1 in the U.S. related to pre-determined plans of insider trading. According to this rule, insiders can announce in advance to the regulator a trading plan in the future. Similar to the Vietnamese regulation, U.S. insiders can cancel their trading plans. However, rule 10b5-1 assumes that a plan is done in good faith and before the acquisition of private and price-sensitive information. As such, trading plans are not mandatorily announced to the public, nor the cancellation of trading plans. In addition, rule 10b5-1 acts as a "safe haven", or affirmative defense, in court. As a consequence, the literature suggests that insiders use this 10b5-1 regulation to actually trade upon private and price-sensitive information, especially when trading plans are made a few days before the actual trading date, or when a trading plan is cancelled, which effectively acts as a free put or call option. Rule 10b5-1 has been analyzed theoretically by [Lenkey \(2019\)](#), and empirically by [Jagolinzer \(2009\)](#), [Lee \(2020\)](#), [Milian \(2016\)](#), [Robbins \(2010\)](#), and [Mitts \(2020\)](#), among others.

Given its specificity, the Vietnamese market is an interesting area of study. To the best of our knowledge, this paper is the first to analyze empirically such a regulation that enforces pre-trade announcements. The motivation for such an analysis is based on calls from legal scholars to implement such a regulation framework in the U.S. (see for instance, [Fried, 1998, 2006](#); [Bebchuk and Fried, 2010, 2003](#)). According to these authors, this regulation would increase the fairness of the stock market by reducing the profitability of insiders' trades, which is perceived to be unethical and unlawful.

In a more recent study and one of the seminal works in the field, [Lenkey \(2014\)](#) models the effects of an advance disclosure policy. Our empirical analysis builds on this model. According to the author, advance disclosure exposes the insider to price risk which causes her to trade less aggressively. Risk sharing between insiders and outsiders is improved but this comes at the cost of a lower market efficiency because of a slower price discovery process. We discuss [Lenkey \(2014\)](#)'s model extensively. Our analysis is the first one to test the implications of this model on real data.

We study the market reactions around initial trade request announcements, trade completion announcements and trade cancellation announcements. Our methodology grounds on event studies and cross-sectional regression in a similar manner as in [Fidrmuc et al. \(2006\)](#). Using data spanning from January 2009 to December 2015 on a total of 1301 insider trade announcements, we find that the market reaction following sale requests is more dramatic than for purchase requests, amounted at -2.39% versus 1.50% over 30-trading day post-event, both figures are significant at the 1% level. Sales completion announcements deliver an additional significant negative abnormal return. However, purchase confirmations, on one side, and trade cancellations for both buy and sell transactions, on the other side, deliver insignificant or no abnormal returns in the following 30-trading day period. Overall, insider trade requests convey the majority of the information content of insider trading. When analyzing the drivers of the abnormal returns, we find that trade requests from more informed insiders deliver larger abnormal returns than less informed insiders, which is consistent with the theory of information hierarchy. Furthermore, the holding of insiders prior to their purchase announcements is positively associated with the abnormal returns.

The remaining of the paper is organized as follows. [Section 2](#) presents the background and the literature related to legal insider trading. [Section 3](#) provides an overview of the institutional and regulatory setting of the Vietnamese stock market. [Section 4](#) highlights the key theoretical elements as well as the main hypotheses of our study. [Section 5](#) is devoted to the data description. [Section 6](#) presents and discusses the results. The final section concludes.

2. Background

In previous studies about market regulation relative to legal insider trading, most authors conclude that insiders can earn abnormal returns from corporate legal insider trading, since insiders are the most informed market participants about their own listed companies. They should be able to use this monopolistic information to reach a more accurate value for the stock or even predict the future movement of the stock price. Early analyses include [Lorie and Niederhoffer \(1968\)](#), [Jaffe \(1974\)](#) and [Finnerty \(1976\)](#) and confirm that insiders are able to outperform the market for purchases and sales.

[Seyhun \(1986\)](#) identifies the most important statistical regularities that are, for most of them, confirmed in subsequent papers for different time periods and geographic regions. Cumulated average abnormal returns (CAARs) are both statistically and economically significant, pointing to the fact that insiders can earn abnormal profits on both the short and the longer runs. Moreover, CAARs are more dramatic for purchases than sales in all event windows. The author further notes that members of the Board of Director (BOD) outperform the other types of insiders, which implies that BOD's members have access to more significant and material information. He also finds a significant positive relation between the net number of insiders trading the stock on a given day and the cumulated abnormal returns (CARs), meaning that, when many insiders trade at once, the profits they obtain is higher. Besides, he finds that the CARs are significantly and negatively related to firm size while they are significantly and positively related to trade dollar-volume.

Using the same methodology, other empirical papers also confirm that insiders can earn abnormal returns over the market: [Baesel and Stein, \(1979\)](#) with the Canadian stock market, [Givoly and Palmon \(1985\)](#) with the U.S. stock market and, [Pope et al. \(1990\)](#) with the U.K. stock market. All these authors agree on the predictive ability of insiders about future stock price movements. They note numerous reasons behind abnormal returns from insider trading. First, insiders have a better knowledge of their own stock valuation so they are able to assess whether or not the stock is mispriced. Second, market participants are more involved in the trading of stocks when insider trading news are released which temporarily modifies the demand-supply curve of the stocks, stock price therefore rises or declines in response to insider purchases or sales.

Numerous papers examine insider trading activities in the U.S. stock market through an event study methodology similar to the one implemented in the present paper. For instance, [Lakonishok and Lee \(2001\)](#) examine insider trading activities during the 1975–1995 period. By using a five-day event window, they conclude that insiders earn abnormal excess returns over the market for both purchases and sales. They confirm that top managers and large shareholders earn more than family members on purchases. This hierarchy of information hypothesis is not verified for sales. Regarding firm size, smaller firms seem to deliver higher abnormal returns for insiders than larger firms. The authors also consider the book-to-market ratio as a potential determinant, and they find that abnormal returns are positively correlated with it in the case of top managers' purchases.

[Fidrmuc, et al. \(2006\)](#) examine the U.K. stock market over the 1991–1998 period gathering 58,363 insider trading records. The authors conclude that insiders outperform the market. Among them, major shareholders and top managers earn more profits than any other group of insiders. [Betzer and Theissen \(2009\)](#) examine 2051 insider trades from July 2002 to June 2004 for the German stock market. The authors note that insiders earn significant abnormal returns which are far larger than abnormal returns in the U.K., as reported in [Fidrmuc et al. \(2006\)](#). They explain that insiders in Germany can execute the trade prior to the earning announcements to profit from their private information, while this is strictly forbidden in the U.K. A strong legal infrastructure may hence reduce the profitability of insider trading. [Bajo and Petracci \(2006\)](#) and [Del Brio et al. \(2002\)](#) also report significant abnormal

returns associated to insiders' activities on the Italian and Spanish stock markets, respectively. Degryse et al. (2014), through a more recent analysis of the Dutch stock market from April 1999 to June 2008, conclude that insiders are able to better time the market and earn abnormal returns from their trades. The CAARs form a V shape for insider purchases and an inverted V shaped for insider sales, which means that insiders buy after a sharp stock price decline and then earn abnormal profit, and similarly sell after a sharp stock price rise and then escape from abnormal loss.

Although there are numerous studies on insider trading and market reactions on countries from developed stock markets, very few papers focus on emerging stock markets. The above-mentioned findings may not be applicable to these markets due to the difference in legal infrastructure, market efficiency, liquidity, and information transparency. The ownership structure is also very specific in Eastern countries since major shareholders are usually family-owners. Miller et al. (2008) examines the insider trades prior to international strategic alliance in China during the 1991–2001 period and find that insiders can earn abnormal profits based on non-public information, but their study just covers a small portion of insider trading activities.

Cheuk et al. (2006), in a study conducted on the Hong Kong stock market, provide a comprehensive analysis with the standard event study approach. The authors examine 23,675 insider trades over the 1993–1998 period. They confirm the predictive ability and abnormal returns of insiders, consistently with developed markets, with high significance levels. However, CAARs from sales are more dramatic than from purchases, in contrast with developed stock market where CAARs from sales are mostly lower than from purchases, even zero or negative in several cases. Furthermore, insiders earn significant CAARs from high-volume sales and no significant CAARs from high-volume purchases. These results are also very different as compared to empirical studies on developed stock market.

The objective of the present paper is to contribute to this extensive literature. The main contribution of this study is twofold. First, there is, to the best of our knowledge, no study on insider transactions on the Vietnamese stock market. Second, and most importantly, this paper is the first to empirically test the effect of an advance disclosure regulation, which also constitutes the main motivation to study insider trading activity on this very specific market.

Only a few research studies specifically analyze the effect of advance disclosure of insiders' trades. One of the seminal works has been provided by Fried (1998). Among other elements, the author proposes a way to mitigate the returns attributed to insiders by implementing an advance disclosure of insider transactions in the U.S. stock market. Fried (2006) emphasizes again the benefits of such a regulation, yet without providing any theoretical nor empirical justification. To the best of our knowledge, only three articles address this issue: Huddart et al. (2004), Lenkey (2014) and Cui et al. (2019). Although these papers use different theoretical approaches, they share the fact that they are based on rational expectations equilibrium models. The empirical implication is that, upon disclosure of their trade intentions, insiders reveal to the market their private information about the stock.

Unlike the developed stock markets, an insider in Vietnam must submit a trade request to the public at least three trading days prior to the trade. Then, she is allowed to execute the trade in a period of one and a half month and needs to announce the trade completion within three trading days following the trade execution. If the trade has not been executed, she must announce the trade cancellation request within three trading days after the end of the requested period. As such, there are three types of insider trading activities: initial insider trade requests, trade completions and trade cancellations that may have an impact on the stock price. This regulatory environment is clearly different from what can be observed in other countries, where the insiders need, most of the time, to report their trades a few days after completion. The impact on market reactions following insider trading activities in Vietnam is then expected to be very different, justifying our analysis.

3. Regulation of insider trading in Vietnam

The Vietnamese stock market started to operate in July 2000 with the opening of Ho Chi Minh Stock Exchange (HSX). The first regulation was made available six years later via the Securities Law No. 70/2006/QH11 dated 29 June 2006 (Securities Law, 2006). It regulates participants and activities related to the stock market. The Ministry of Finance is responsible for establishing securities' laws and regulation, as well as submitting them to the Government for approval. The State Securities Committee (SSC) supervises the financial institutions and the market participants in implementing the securities' law and regulation. Moreover, the SSC is empowered to inspect, monitor, and sanction violations in securities activities including insider trading. The Securities Law of 2006 states that insiders are forbidden to trade on private or price-sensitive information which might affect materially the stock price as well as to counsel or to provide information to any other person or institutions to trade. The purpose of the Securities Law (2006) is to ensure a fair environment for all market participants. Insiders include major shareholders, top executives, and other insiders.

Major shareholders are defined in Article 9 as shareholders who directly or indirectly hold more than 5 % ownership or voting rights of the listed company. Major shareholders are required to submit major holding reports to the SSC and the stock exchange according to Article 29. When the ownership of a shareholder and their relatives exceeds 5 % of the listed company, the group is considered as a major shareholder and has to report it to the SSC and the stock exchange within seven days after the transaction. Conversely, when their ownership drops below 5 % of the listed company, they must also report the fact of not being a major shareholder anymore to the SSC and the stock exchange within 7 days after the transaction that has altered their status. Besides, when their holding crosses the 1 % level of listed company's total outstanding shares, the major shareholders must also report it to the SSC and the stock exchange within seven days after the associated transaction.

Top executives, as defined in Article 33, include chairpersons, members of the Board of Management (BOM), members of the BOD, members of the supervisory board, chief finance officers, chief accountants, and company's representatives. Other insiders are defined in Article 34 as family members of major shareholders and of top executives. We denote other insiders as "family members" to distinguish them from other types of insiders.

The Securities Law (2006) does however not address insider trading disclosures. The Circular 38/2007/TT-BTC (Circular 2007) has been specifically designed to fill this gap and establishes the foundations for insider trading disclosures. Insiders must notify the SSC and the stock exchange at least one trading day prior to their transaction and must report to the SSC and the stock exchange the details of the transaction at the latest three trading days after the trade. Circular 2007 expired in 2010 and was replaced by Circular No. 09/2010/TT-BTC (Circular 2010) which includes some modifications concerning the insider trading process in order to improve the consistency and transparency of insider activities. Circular No. 52/2012/TT-BTC (Circular 2012) then replaced Circular 2010 and brought some changes, the most notable one being the reduced trading range from two months to one and a half month. Today's insider trading process in Vietnam is as follows.²

- (i) An insider registers her expected trading timeframe and her expected trading size with the SSC and the stock exchange at least

² As a comparison with the SEC rule 10b5-1, in the U.S. there is no minimum delay between the registration of trading plans and the first trade. There is no mandatory disclosure of trading plans, although some insiders decide to do so voluntarily (Lenkey, 2019; Jagolinzer, 2009). There is no maximum time frame to execute the trades according to a plan. After a trade, insiders must report in a usual manner (e.g., Form 4), but most importantly, they must not report the cancellation of a trading plan.

three trading days prior to the beginning of the trading timeframe. The expected trading timeframe cannot exceed 30 trading days.

- (ii) The insider can trade after an initial time laps of 24 h after the public announcements made to the SSC, the stock exchange, and relevant media.
- (iii) The insider then submits her order to generate the transaction in the requested trading timeframe. The insider has a maximum of three trading days after the trade execution to report the trade results to the SSC, the stock exchange and her own company.
- (iv) If the insider does not eventually make the transaction, she must report the reasons to the SSC and the stock exchange within three trading days after the end of the requested timeframe.
- (v) The insider is not allowed to trade more than the requested trade volume. She has to complete the initial request in order to submit a new trade request.

We illustrate the legal insider trading process in Fig. 1.

With the aim of preventing violations and encourage the stable and sustainable development of the stock market, Act 181 of Criminal Law No. 37/2009/QH12 (Criminal Law) issued in 2009 establishes the penalties for illegal insider trading on private information. The insider who violates the Criminal Law may be prohibited from her current position in the company from one to five years, is required to return the abnormal profits obtained from her trades and is liable to a fine between VND100 million and VND500 million, about \$5000 and \$25,000, respectively, as well as a term of imprisonment from 6 months to 3 years. Insiders convicted of illegal activities might be punished through trial to a term of imprisonment from two to seven years if the activities have generated severe consequences.

Table 1 summarizes the major insider trading regulations.

4. Theoretical considerations and hypotheses

In line with the existing literature, and most notably Lenkey (2014), we expect a significant market reaction to pre-trade announcements. One specificity of the Vietnamese market, as opposed to what is presented in Lenkey (2014)'s model, is that insiders have the right to cancel their trades. Lenkey (2014) does not allow this freedom in his model, which results in an increasing price risk for the insider since she submits a noncancellable market order.³ In his model, the insider has to engage in trading whatever the state and condition of the market. In practice, this would make such a regulation difficult to implement. As a result, since the insider cannot cancel the predetermined trade proposal, Lenkey (2014) finds that the risk increases significantly for the insider which forces her to trade less aggressively on her private information to mitigate that risk. This in turn reduces the adverse selection costs that outsiders could face. However, since insiders trade less aggressively, the price discovery process is slower and market efficiency is reduced. Lenkey (2019) provides an analysis of cancellable trading plans through a detailed investigation of SEC Rule 10b5-1. In his model, the author assumes that outsiders can infer the existence of trading plans even though there is no mandatory reporting to the public. Yet, this rule is very restrictive since the trading plan needs to be designed prior to acquiring information. We can then conjecture that Vietnamese outsiders will attribute more value to advance disclosure encompassing a cancellation option than rules similar to SEC Rule 10b5-1 in the U.S.

In the current regulatory framework implemented in Vietnam, insiders submit a cancellable market order, which can be viewed as an option to trade. The explicit price of the option is zero but its implicit price is much larger since, as soon as the option is made visible to the public, the market price should worsen for the insider. Upon divulgation

of her desire to trade to the market, the insider generates a strong signal that outsiders can interpret.⁴ This leads us to our first hypothesis:

Hypothesis 1. *The market reaction following insiders' purchase (resp. sale) pre-trade announcements is positive (resp. negative).*

We expect that outsiders strongly engage in the trading process right after the pre-trade announcement. As such, most of the price discovery process occurs in the period spanning the public disclosure of the pre-trade request and the trade completion announcement. In the Vietnamese regulatory framework, we may expect that outsiders will not trade actively after a trade completion announcement because they know they missed part of the return, assuming that the efficient market hypothesis holds, and would prefer to better time future pre-trade announcements rather than trading at the end of the price discovery process initiated by the current pre-trade announcement. This implies our second hypothesis:

Hypothesis 2. *The market reaction following insider's purchase and sale completion announcements is zero on average.*

As outlined here above, none of the theoretical papers addressing advance disclosure discuss the impact of cancellable orders. One exception is Lenkey (2019) but SEC Rule 10b5-1 is too restrictive, which makes empirical implications hard to be drawn. One major reason for a pre-trade request to be cancelled by the insider might be related to a sufficient adverse move of the stock price right after the pre-trading disclosure. The stock price move needs to be large enough to annihilate the gain an insider could make from trading. From the outsider point of view, this means there is no more abnormal price movement to expect. Another reason for the cancelation could be a change in the insider information about the prospects of the firm. From the outsider point of view, the new information is random and the direction of any abnormal price movement cannot be ascertained. According to this intuition, we conjecture that market reactions following trade cancellation announcements, be it purchase or sale, is zero.

Hypothesis 3. *The market reaction following announcements of purchase or sales cancellations is zero on average.*

5. Data

We ground our analysis on insider transactions made on the listed companies of the VN30 Index, which contains the top 30 market capitalization companies in Vietnam, from January 2009 to December 2015. The components selected are the ones which made the index as of December 2015. The global market capitalization of HSX at the research time was around VND 1.700.000 billion (about USD 75 billion). The Vietnamese stock market is defined as a frontier market (not yet an emerging market) according to the MSCI market classification, and the market capitalization is far smaller than the markets that have drawn the researchers' attention so far. We exclude the small-capitalized companies of HSX to avoid potential extreme abnormal returns due to small size and illiquidity.

The insider trading database is collected from cafe.vn, a popular website that provides free data related to finance and economy in Vietnam. Unlike the primary sources of SSC about insider trading activities which are presented in sentence posts on the SSC website, the database of cafe.vn is well organized and presents the following information: company's name, insider's name, insider's position, requested

⁴ In essence, an outsider needs not to evaluate the quality of the information that the insider has acquired if she assumes that none of the other outsiders engage in such an analysis. We can expect that a self-fulfilling prophecy starts after the pre-trade announcement. Of course, outsiders' irrationality may generate overreaction, most notably if some insiders are associated to a higher winning trade probability.

³ In the robustness section, the author discusses the use of limit orders and argues that it would reduce but not eliminate the price risk for the insider.

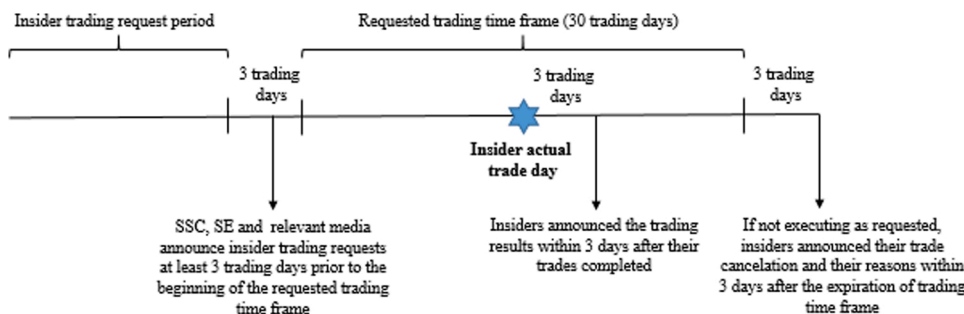


Fig. 1. The legal insider trading process in Vietnam until present. This figure illustrates the legal insider trading process in Vietnam according to the most recent Circular 2012.

Table 1

Summary of major insider trading regulations in Vietnam. This table presents a summary of insider trading regulation in Vietnam.

Major shareholders			
Date	Act	Article	Content
Jun. 2006	Securities Law 2006	No. 6 No. 29	Definition of major shareholders: directly or indirectly hold more than 5 % ownership of the company. - Major holding reports within 7 days after becoming/ no longer being a major shareholder; - Report on 1 % change threshold in ownership within 7 days after trade executions
Apr. 2007	Circular 2007		Manual guidance of major holding reports
Top executives and other insiders			
Date	Act - Articles		Content
Jun. 2006	Securities Law 2006	No. 33 No. 34	Definition of top executives Definition of other insiders
All insiders			
Date	Act - Articles		Content
Apr. 2007	Circular 2007 (22/10/2007)		- First foundation of insider trading disclosures. - Notify to SSC and stock exchange in one trading day prior to the trades;
Jan. 2010	Circular 2010 (25/03/2010)		- Modifications of insider trading process. - Notify to SSC stock exchange in 3 trading days prior to the trades; - Report the trade results within 3 days; - Request trading time frame not exceeding a 2-month period; - Public announcement of insider trading requests;
Apr. 2012	Circular 2012 (20/07/2012)		- Report the reasons of not executing the trades within 3 trading days after the expiration of requested trading time frame - Modification of insider trading process.
Jun. 2009	Criminal Laws 2009 (19/06/2009)	No. 181	- Reduce the requested trading time frame to 30 trading days Penalties for illegal insider trading

amount, trading timeframe, trade completion date, actual trade amount, and trade cancellation date. We check the primary databases to verify the initial inputs of insider trade request announcements and check the integrity of our dataset. We observe that the insider trading announcements appear in cafe.vn databases within one hour after the posts of SSC. Upon several tests and checks, we find no data omission or error between the SSC website and cafe.vn.

We divide the insider trading database into three categories: Insider trade requests, insider trade completions and insider trade cancellations, where the number of insider trade requests is equal to the number of insider trade completions plus insider trade cancellations. Each insider trading record is categorized into three groups relative to the position of the insider in the firm: “major shareholders”, “top executives” and “family members”, which are based on the guidance and regulations of Securities Law 2006 and Circular 2007. In case the top executives are also major shareholders, we group the trades of them as of top executives. “Family members” are family members of top executives and of major shareholders.

Finally, we match insider trading records with market and corporate information relative to each firm using data from Bloomberg. We collect the market capitalization, the price-to-book ratio, and the firms’ industries based on GICS standards.

We use the concept of “company-day”, that is, the date at which insider trading activities occur for a given firm (trade requests,

completions, or cancellations). If there are several events during a specific day relative to a company, we aggregate all stock purchases and sales of that particular stock into one trade.⁵ The net aggregated value classifies the trade type as purchase or sale corresponding with positive or negative signs. When there are more than one insider trading in a single day, we aggregate the trade volume, and we tag the insider type of the transactions with higher position priority according to the following order: top executives, major shareholders, and family members. In doing that, we assume that higher positions have access to more material information. We thus conjecture that the trade requests of higher positions are more meaningful with the market participants than lower positions.

Table 2 describes descriptive statistics of the observations.

Considering the insider trade requests (Panel A), our dataset contains 565 insiders who publicly announce their trade intentions legally and

⁵ If we use the announcement date, this aggregation generates 66 occurrences of several trades for a given company on a given date. Compared to the whole sample of 1133 insider trade announcements, it represents less than 6 % of the trade announcements. Given this low proportion, our aggregation method is very unlikely to generate biases in our analysis. The issue is not relevant for completion or cancellation announcements since there are zero occurrences of several entries for a given company at a given date for completion or cancellation announcements.

Table 2

Descriptive statistics. This table presents the descriptive statistics of insider trading in the sample period. At the beginning of each year, the firm size is computed and assigned to corresponding groups: Lower tercile, middle tercile and upper tercile.

Items	Purchases	Sales	All transactions	Purchases to sales ratio
Panel A. All trade requests				
Number of trade requests	452	849	1301	53 %
Number of company-days	393	740	1133	53 %
Average number of shares per transaction	2,718,838	2,338,163		116 %
Breakdown to Insiders type				
Major shareholders	270	316	586	85 %
Top executives	149	358	507	42 %
Family members	33	175	208	19 %
Breakdown to Firm size (from the sample)				
Smallest cap (Lower tercile)	186	261	447	71 %
Middle cap (Middle tercile)	133	307	440	43 %
Biggest cap (Upper tercile)	133	281	414	47 %
Panel B. All trade completions				
Actual trades	370	652	1022	57 %
Actual trades to trade requests	82 %	77 %	79 %	
Average number of shares per transaction	2,059,172	2,330,667		88 %
Number of company-days	334	585	919	57 %
Panel C. All actual non-trades				
Actual non-trades	82	197	279	42 %
Actual non-trades to trade requests	18 %	23 %	21 %	
Number of company-days	77	177	254	44 %

submit 1301 trade requests, corresponding to 1133 company-days. This means that there are numerous days for which two or more insiders announce their trade requests. We use these 1133 company-days as observations to study the market reactions before and after insider trade request announcements.

There are 452 insider purchase requests and 849 insider sale requests, so that the number of sale requests is almost twice bigger than the purchase requests. However, the average number of shares per transaction of purchase requests is 16 % higher than of sale requests.

When breaking down into insider types, we also note that major shareholders' trade request announcements are more frequent than for top executives and family members. Although all types of insiders submit more sale requests than purchases requests, the major shareholders seem more interested into purchasing shares than other insiders. One explanation is the fact that top executives and family members submit sale requests more frequently to support their diversification strategy and/or financial needs.

Concerning firm size, we note that insiders trading in the lowest tercile according to the market capitalization criterium submit purchase requests more frequently than the middle and upper tercile firms. This is consistent with Seyhun (1988a) who show that insiders in smaller firms, associated with higher profits, trade more frequently on firm-specific information and insiders in large firms, associated with fewer profits, trade more frequently on economy-wide information. Apparently, firm-specific news seems to dominate the legal insider trading in the VN30.

Regarding insider trade completions (Panel B), 79 % of the trade requests are actually executed. In the period under scrutiny, we count 370 insider purchases and 652 insider sales that have been announced.

Besides, we also note that 82 % of insider purchase requests are actually executed while 77 % of insider sale requests are actually executed. Aggregating the transactions, we obtain 334 company-days for purchases and 585 company-days for sales. As opposed to insider trade requests, the average number of shares for insider purchases is 12 % lower than for insider sales. It means that insiders actually concentrate more to sell shares than to buy shares on average.

Finally, concerning insider trade cancellations (Panel C), 21 % of the trade requests are not executed. Insiders usually publicly explain the reasons for trade cancellations, which are, most of the time, associated with stock prices being located outside their expected price range.

6. Empirical analyses

6.1. Event study

To shed light on the advance disclosure of insider transactions and its impact on performance, we first ground our analysis on an event study methodology to quantify abnormal returns from insider trade activities around the announcement date and to study whether the impact on market reaction is statistically significant.

In the event study, we propose an estimation window of 250 observations and an event window of 51 observations (including the event date), from 20 days prior the event date to 30 days after the event date. Fig. 2 illustrates the estimation and event window.

For each observation in the estimation window, we run the following regression:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it},$$

where R_{it} is the return of stock i at time t , R_{mt} is the return of the market portfolio at time t , in this case VN30 Index, and ε_{it} is the error term. We compute the estimated stock return of the event window based on the expected stock return to the market return and parameter estimates of the estimation window:

$$E(R_{it}|R_{mt}, \hat{\alpha}_i, \hat{\beta}_i) = \hat{\alpha}_i + \hat{\beta}_i R_{mt}$$

During the event window, we compute the abnormal return (AR_{it}) as the difference between the actual and estimated returns:

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt})$$

We sum up all the AR from time T_1 to T_2 (i.e. the starting day and the ending day of the event window) to obtain the cumulated abnormal return for stock i , $CAR_i(T_1; T_2)$:

$$CAR_i(T_1; T_2) = \sum_{j=T_1}^{T_2} AR_{ij}$$

Table 3 presents some descriptive statistics of the CARs.

We then compute the cumulated average abnormal return ($CAAR(T_1; T_2)$) by calculating the average of all $CAR_i(T_1; T_2)$:

$$= \frac{1}{N} \sum_{i=1}^N CAR_i(T_1; T_2)$$

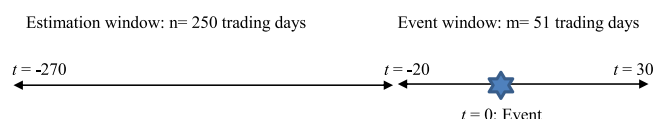


Fig. 2. Estimation and event windows. This figure illustrates the estimation and event windows for the event study methodology. The event date is at $t = 0$. The estimation window is composed of 250 observations from the date $t = -270$ to the date $t = -20$ prior to the event date. Event window is composed of 51 observations (including the event date), from 20 days prior the event date to 30 days after the event date. We calculate the abnormal returns in the event window by applying the market model in the estimation window.

Table 3

Distribution of cumulative abnormal returns. This table shows summary statistics relative to cumulative abnormal returns, CAAR(0,30), for each type of announcement.

Announcement	Mean (%)	Median (%)	St.Dev. (%)	Min. (%)	Max. (%)	Skewness	Excess Kurtosis
Purchase Requests	1.50	0.12	12.82	-47.71	58.79	0.56	1.91
Purchase Completion	0.32	-0.48	12.06	-33.68	38.37	0.22	0.60
Purchase Cancellation	0.05	-1.29	11.90	-28.70	32.16	0.39	0.45
Sale Requests	-2.39	-3.96	12.40	-47.68	74.47	1.34	5.88
Sale Completion	-2.43	-3.34	11.15	-35.52	55.54	0.60	2.07
Sale Cancellation	-1.18	-4.08	15.51	-44.20	81.84	1.75	6.55

where N is the number of events.

Finally, we test the hypothesis whether $CAAR(T_1; T_2)$ is different from zero. Due to the long estimation window, we assume that the test of CAAR is approximately normally distributed and compare the test of CAAR to the critical value.

$$t = \frac{CAAR(T_1, T_2)}{\sqrt{\frac{(T_2 - T_1 + 1) \sum_{i=1}^N \hat{\sigma}_i^2}{N^2}}} \approx N(0, 1)$$

Where $\hat{\sigma}_i^2$ is the standard error of the estimated market model in the estimation window.

In this paper, we use the critical value of 1.645, 1.96, and 2.576 of a normal distribution with a two-sided test associated with significance levels equal to 10 %, 5 % and 1 %, respectively.

According to Hypothesis 1, purchase requests should be followed by positive abnormal returns and sale requests by negative abnormal returns. Fig. 3 shows CAAR from 20 trading days prior to 30 trading days after the announcement date of purchase (full line) and sale requests (dashed line). The horizontal axis represents the event window around the announcement date $t = 0$. The vertical axis represents the cumulative average abnormal return, CAAR, from both trade date before and after the announcement date. We normalize the two curves to be zero at $t = -1$ to see the market reaction at the announcement date. The graph markers – circles, squares and triangles – denote the significance level of 1 %, 5 % and 10 %, respectively.

Fig. 3 shows that purchase requests are followed by strong, significant, and positive abnormal returns of almost 2 %, 30 trading days after the request announcement. Similarly, for sale requests, we observe negative abnormal returns of almost 2.5 %. In both cases, the abnormal returns are highly statistically significant after just a few days. This finding validates Hypothesis 1. We conclude that insiders reveal their private information by announcing their trade intentions. The

regulation reaches its objective of making the markets fairer to outside investors.

Another feature of the results shown in Fig. 3 is that the purchase curve does not form a “V” shape; the curve illustrates a flat trend prior to the announcement date and then lifts up after the announcement date. This could mean that the corporate legal insiders do not wait for the stock price to drop to make purchase decisions; it is in strong contrast with the extant literature, which documents that insiders buy after a significant stock decline. This is a distinctive characteristic of insiders in Vietnam. Market timing of trades does not seem to be one of the strategies followed by insiders in the Vietnamese largest capitalization stocks.

Fig. 3 further demonstrates that CAAR of purchase requests starts to be statistically significant right after that the outsiders receive the insider purchase intention information. Because insiders are allowed to execute the trades after having waited for three trading days following their trade request announcements, CAAR (0, 3) represents the pure outsider reaction with no involvement of insider trades and CAAR (4, 30) probably represents the market reaction to the combination of both outsiders’ reactions and insider trades. We observe that CAAR (0, 3) is 0.86 % with a significance level of 1 % and larger than CAAR (4, 30), which amounts to 0.64 %. This means that, on average, the pure market reaction contributes substantially to the abnormal returns in the first three trading days, while from trading day 4 to trading day 30, when insiders are allowed to buy, the abnormal returns are relatively small.

When taking into account all insider sale request announcements, the sales’ curve (the dashed line) forms an inverted “V” shape, meaning that, on average, insiders want to sell after an abnormal stock price increase and before a price decline. This highlights two different strategies. First, insiders, on average, take their profits by selling after the stock price increases. Second, by selling just before a price drop, they, on average, wish to prevent any further loss. This shows a market timing ability for insiders on the sell side, as opposed to what is observed for purchase requests. The stock price run-up prior to the sale request is of 1.95 %. These findings are consistent with the existing literature, as shown here above.

However, we note that insider sale request announcements’ impact on outsiders is lower than for purchase request announcements. This can be explained by the fact that market participants do not have the ability to evaluate whether insiders believe that the stock price is overvalued or whether they have liquidity and/or diversification needs. CAAR starts to be statistically significant from the trading day 4 after the sale request announcements. Total CAAR over 30 trading days is amounted to -2.39 % with a significance level of 1 %. Insider sale request announcements are informative in association with the sharp and steady stock price decline. We observe that CAAR (0, 3) is -0.26 % with a 10 % significance level which is lower than CAAR (4, 30) amounted to -2.31 % with a 1 % significance level. It means that on average, the pure outsider trades contribute little to the abnormal returns in the first three trading days while, from trading day 4 to trading day 30, when insiders are allowed to sell, the abnormal returns are substantial.

When comparing the CAAR obtained in 30 trading days after the announcements for purchase requests and sale requests, we note that abnormal returns from insider sale requests are more dramatic than purchase requests. This result strongly contradicts previous findings

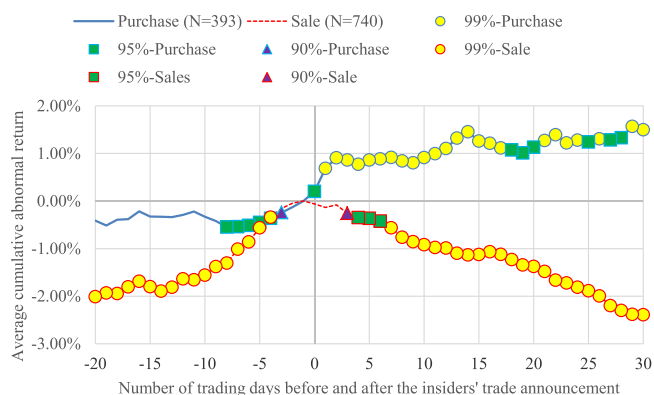


Fig. 3. CAAR around all insider purchase and sale request announcements. This graph illustrates the CAAR around all insider purchase and sale request announcements. The x-axis represents the event window around the request announcement date $t = 0$. The y-axis represents the CAAR from the trade request announcement date to the trade day. We normalize the two curves to be zero at $t = -1$. The circles, squares and triangles represent the significance of 1 %, 5 % and 10 %, respectively.

from the extent literature, notably on Western countries' stock markets (see e.g. Fidrmuc et al. (2006)). It is however worthy to note that the majority of the listed companies in our sample are family-owned, which shares similar ownership characteristic with the stock markets in Italy and Hong Kong that are analyzed in Del Brío et al. (2002) and Cheuk et al. (2006), respectively. These authors find that insider sales are more informative than purchases, which can explain our findings.

Fig. 4 presents the results of insider trade completion announcements. In the sample period, we observe that there are 370 purchases and 652 sales of insiders that are actually executed as expected with their initial trade requests.

Firstly, CAAR is close to zero with a low volatility from 20 trading days prior to insider trade completion announcements. On average, insiders execute their purchases and sales when abnormal stock price changes are small or nonexistent. It is rational that insiders do not buy on a stock price run-up or sell on a stock price decline to minimize their implicit transaction costs and maximize their profits, since liquidity vanishes from the market when the price movement is strong and unidirectional.

Second, within a 20-trading day and 30-trading day period following insider purchases, CAARs are both economically and statistically insignificant. It is consistent with Hypothesis 2. Since the information content of insider purchases has been communicated to the market through insider purchase intentions before the actual trade, the abnormal returns following insider purchase completion announcements are insignificant.

Finally, as opposed to insider purchases, following the insider sales, the 10-trading day, 20-trading day and 30-trading day CAARs are both large and significantly negative, at -0.53% , -1.39% , and -2.43% , respectively. This is in contradiction with Hypothesis 2. A possible explanation may lie in the fact that outsiders are more sensitive to insider sales as well as probable corporate bad news that could be hidden behind insider sales. They massively continue to sell the stocks when insiders complete their stock sales, further contributing to the price drop. Whether this behavior is rational or irrational and whether or not it is associated with overreaction goes beyond the purpose of this study.

Fig. 5 presents the event study results for trade cancellation announcements. In the sample period, there are 82 purchases and 197 sales of insiders that are not executed as expected with their initial trade intentions.

We observe no consistency or significance in abnormal returns around insider trade cancellation announcements. This is in line with Hypothesis 3: trade cancellation might be triggered simply by adverse

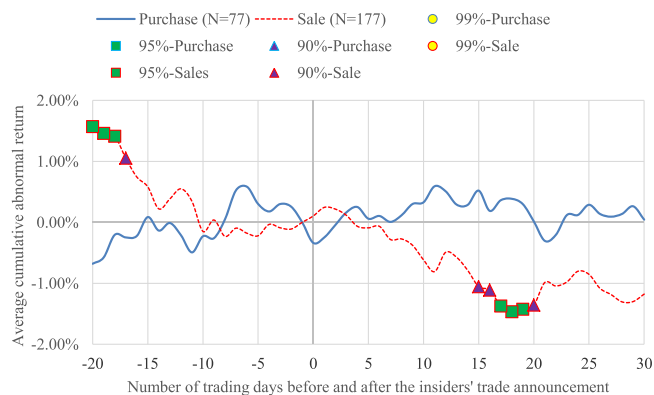


Fig. 5. CAAR around all insider trade cancellation announcements. This graph presents the CAAR around all insider purchase and sale cancellation announcements. In the sample period, there are 82 purchases and 197 sales that are not executed as opposed to the plans initially made by the insiders in their initial trade requests. Insiders announce the trade cancellations at the end of the requested trading timeframe. The x-axis represents the event window around the trade cancellation announcement date $t = 0$. The y-axis represents the CAAR from the trade day to announcement date. We normalize the two curves to be zero at $t = -1$. The circles, squares and triangles represent the significance of 1 %, 5 % and 10 %, respectively.

price movements, and thus the cancellation per se does not bring any new information content to the market.⁶

Overall, we note that initial trade requests made by insiders convey the majority of information content that explain the market reaction. The other insider trading events are less informative.

In Table 4, since they convey most of the information, we zoom in on the abnormal returns following trade requests by breaking them down into insider types.

In a 3-trading day post-event period, in the bottom two terciles of firms according to their market capitalization, the market reaction is stronger with major shareholders purchase intentions than top executives while in the upper tercile firms, top executives purchase intentions are more informative. From trading day 4 to trading day 30, abnormal returns are both small and insignificant regardless of firm size.

Over 30 trading days, only purchase request announcements from top executives of the firms in the lowest tercile are informative. On average, in 30 trading days following their purchase request announcements, CAAR is substantially high at 2.73 % with a significance level of 10 %. However, they decide to buy after a slight stock increase. As explained here above, we assume that they decide to buy upon the positive news of their companies. Although CAARs from top executives of middle and upper terciles firms are also considerably high at 1.44 % and 2.39 %, respectively, the results do not point to any statistical difference from zero. Besides, CAARs from major shareholders are also insignificant, regardless of firm size.

We further observe that, over 30 trading days following the insider sale request announcements, CAAR of the lowest tercile firms form a sideways pattern. It is strongly contrasting the previous literature, as shown here above. On the contrary, following insider sale request announcements, CAAR of middle and upper terciles firms both form steady and sharp declines. CAAR(0,30) amounts to -4.53% and -2.19% for the middle and upper terciles firms, respectively, and statistically significant at the 1 % significance level.

Table 5 presents the results by firm size for sale request announcements.

On average and contrary to what we expected, the stock price

⁶ An alternative explanation is that trade cancellations are triggered by new information that the insider gets about the firm, in which case the direction of this new information is random.

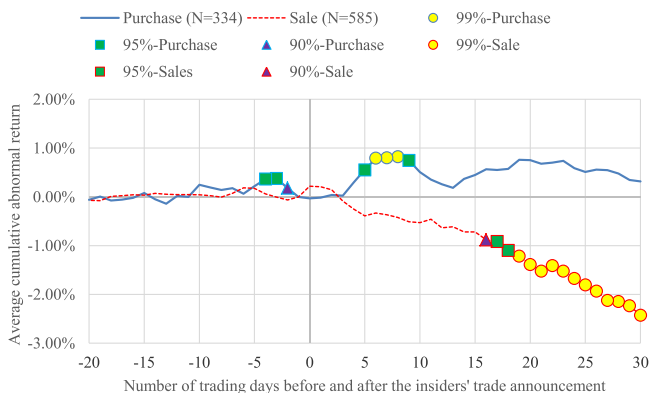


Fig. 4. CAAR around all insider trade completion announcements. This graph presents the CAAR around all insider purchase and sale completion announcements. In the sample period, there are 370 purchases and 652 sales that are actually executed as expected in the insider initial trade requests. The x-axis represents the event window around the trade completion announcement date $t = 0$. The y-axis represents the CAAR from the trade day to announcement date. We normalize the two curves to be zero at $t = -1$. The circles, squares and triangles represent the significance of 1 %, 5 % and 10 %, respectively.

Table 4

CAAR around insider purchase request announcements with different firm sizes. This table shows the CAAR around insider purchase request announcements by firm size on different event windows: pre-event window of 20 trading days, event date, post-event window of 3, 20 and 30 trading days, post-event from trading day 3 to trading day 30. Firm size represents the market capitalization of the stock. Firm sizes are calculated at the beginning of each year. We categorize the firm sizes as small-cap, mid-cap, and big-cap firms corresponding to lower tercile, middle tercile and upper tercile of market size quantiles from the sample. (*), (**) and (***) denote significance level of 10 %, 5 % and 1 % respectively.

Firm size	Event window	Purchase requests					
		Top executives			Major shareholders		
		CAAR	t-stat	N	CAAR	t-stat	N
Smallest cap. (Lower tercile)	Post-event (0,30)	2.73 %	1.859*	74	0.95 %	0.727	75
	Post-event (0,20)	1.66 %	1.371		1.21 %	1.127	
	Post-event (4, 30)	1.57 %	1.147		-0.47 %	-0.387	
	Post-event (0, 3)	1.16 %	2.198**		1.42 %	3.031***	
	Event date	0.28 %	1.050		0.16 %	0.667	
Middle cap. (Middle tercile)	Pre-event (- 20, - 1)	0.90 %	0.759		2.18 %	2.076**	
	Post-event (0,30)	1.44 %	0.769	29	1.96 %	1.611	76
	Post-event (0,20)	-0.54 %	-0.348		1.83 %	1.824*	
	Post-event (4,30)	1.46 %	0.832		1.10 %	0.964	
	Post-event (0,3)	-0.02 %	-0.022		0.87 %	1.979**	
Biggest cap. (Upper tercile)	Event date	0.74 %	2.206**		-0.03 %	-0.137	
	Pre-event (- 20, - 1)	-1.40 %	-0.928		0.76 %	0.777	
	Post-event (0,30)	2.39 %	1.276	22	0.96 %	1.086	87
	Post-event (0,20)	1.62 %	1.051		0.55 %	0.755	
	Post-event (4,30)	0.77 %	0.438		0.42 %	0.506	
All	Post-event (0,3)	1.62 %	2.414**		0.54 %	1.71*	
	Event date	0.04 %	0.111		0.23 %	1.418	
	Pre-event (- 20, - 1)	-3.21 %	-2.133***		-0.26 %	-0.366	
	Post-event (0,30)	2.37 %	2.31**	125	1.28 %	1.959**	238
	Post-event (0,20)	1.14 %	1.351		1.17 %	2.174**	
	Post-event (4,30)	1.40 %	1.465*		0.35 %	0.582	
	Post-event (0,3)	0.97 %	2.627***		0.92 %	3.94***	
	Event date	0.34 %	1.86*		0.12 %	1.044	
	Pre-event (-20,-1)	-0.36 %	-0.435		0.96 %	1.78*	

Table 5

CAAR around insider sale request announcements with different firm sizes. This table shows the CAAR around insider sale request announcements by firm size on different event windows: pre-event window of 20 trading days, at the event date, post-event window of 3, 20 and 30 trading days, post-event from trading day 3 to trading day 30. The firm sizes represent market capitalization of the companies. Firm sizes are calculated at the beginning of each year. We categorize the firm sizes as small-cap, mid-cap, and big-cap firms corresponding to lower tercile, middle tercile and upper tercile of market size quantiles from the sample. (*), (**) and (***) denote significance level of 10 %, 5 % and 1 % respectively.

Firm size	Event window	Sale requests					
		Top executives			Major shareholders		
		CAAR	t-stat	N	CAAR	t-stat	N
Smallest cap. (Lower tercile)	Post-event (0,30)	1.60 %	1.276	106	-3.70 %	-2.803***	83
	Post-event (0,20)	1.37 %	1.327		-1.84 %	-1.693*	
	Post-event (4,30)	1.41 %	1.209		-3.90 %	-3.17***	
	Post-event (0,3)	0.18 %	0.411		0.21 %	0.433	
	Event date	0.34 %	1.496		-0.20 %	-0.850	
Middle cap. (Middle tercile)	Pre-event (- 20, - 1)	3.14 %	3.124***		2.23 %	2.107**	
	Post-event (0,30)	-6.21 %	-6.45***	124	-2.66 %	-2.232**	82
	Post-event (0,20)	-4.43 %	-5.592***		-1.65 %	-1.681*	
	Post-event (4,30)	-5.76 %	-6.413***		-1.97 %	-1.774*	
	Post-event (0,3)	-0.45 %	-1.293		-0.68 %	-1.603*	
Biggest cap. (Upper tercile)	Event date	-0.06 %	-0.371		-0.01 %	-0.031	
	Pre-event (- 20, - 1)	2.09 %	2.696***		0.34 %	0.359	
	Post-event (0,30)	-4.49 %	-4.189***	80	-0.79 %	-0.859	102
	Post-event (0,20)	-2.45 %	-2.78***		-0.19 %	-0.246	
	Post-event (4,30)	-3.86 %	-3.859***		-0.57 %	-0.662	
All	Post-event (0,3)	-0.63 %	-1.638		-0.22 %	-0.671	
	Event date	-0.05 %	-0.285		-0.24 %	-1.450	
	Pre-event (- 20, - 1)	1.25 %	1.455		2.29 %	3.112***	
	Post-event (0,30)	-3.10 %	-4.846***	310	-2.27 %	-3.478***	267
	Post-event (0,20)	-1.94 %	-3.686***		-1.15 %	-2.141**	
	Post-event (4,30)	-2.82 %	-4.726***		-2.03 %	-3.347***	
	Post-event (0,3)	-0.28 %	-1.213		-0.23 %	-0.987	
	Event date	0.08 %	0.656		-0.16 %	-1.331	
	Pre-event (- 20, - 1)	2.23 %	4.349***		1.67 %	3.2***	

increases after the sale request announcements of top executives in the lowest tercile firms. Yet, CAAR(0,30) of top executives for middle and upper terciles firms are consistent with our expectations since, they

statistically amount to - 6.21 % and - 4.49 %, respectively.

Following the sale request announcements of major shareholders, we also find that CAAR of the lowest tercile firms are both economically and

significantly higher than CAAR of middle and upper terciles firms in the same order.

Overall, the purchase requests of top executives and sale requests of major shareholders are informative. Purchase requests of top executives and sale requests of major shareholders in smaller firms deliver significantly larger abnormal returns than in bigger firms.

6.2. Cross-sectional regression

In this section, we investigate the potential drivers affecting $CAR(T_1; T_2)$. We run a cross-sectional regression of $CAR(T_1; T_2)$ of each company-day with a set of explanatory variables:

$$CAR_i(T_1; T_2) = \alpha + \sum_{k=1}^K \beta_k X_{ik} + \varepsilon_i \tag{1}$$

where:

- α is the intercept,
- K is the number of independent variables (including firm size, Price to book ratio, industry, top executives, holding, etc.).
- X_{ik} is the value of explanatory variable k for firm i .
- β_k is the coefficient of explanatory variable k .
- ε_i is the error term.

White heteroskedasticity-consistent standard errors are used in the regression. We use $CAR_i(0; 30)$ as the dependent variable representing the cumulated abnormal return in 30 trading days following the trade request date, because, according to the Vietnamese regulation, insiders have to execute the trade maximum 30 trading days following their initial trade request.

Table 6 and Table 7 present the definitions and descriptive statistics of the explanatory variables, respectively.

The results are summarized in Table 8.

Firm size seems to be a strong determinant to explain the abnormal returns of insider trade requests. Its parameter estimate is significantly negative with both purchase and sale requests (significance level of 10 % and 1 %, respectively). The larger the firm, the lower the cumulated abnormal returns of insider trade requests, consistent with the previous literature. The price-to-book ratio is associated with a statistically significant and negative parameter estimate at the 1 % level with both purchase and sale requests. We can conclude that insider purchase requests from value firms deliver more abnormal returns than growth firms and insider sale requests from growth firms deliver more abnormal returns than value firms. These results are consistent with an interpretation of the price-to-book ratio as a measure of mispricing.

Concerning the holdings of insiders prior to their purchase requests, we observe that the coefficient is positive with purchase requests with significance level of 10 % but insignificant with sale requests. In other words, large holdings prior to the purchases are informative. By contrast, insiders with large holdings prior to sale requests seems to be motivated by liquidity or diversification purposes, and as such, are less informed. The volume shows a negative and statistically significant (at the 10 % level) parameter estimate for purchase requests only.

Zooming in on the effect of insider types, only the major shareholders' group shows significance for purchase requests while only the top executives' group shows significance for sale requests. Both effects are significant at the 10 % level with a positive sign for purchase requests and a negative sign for sale requests. This can be explained by the fact that major shareholders are the insiders who make the most important decisions on behalf of and in the company. Therefore, their purchase announcements reflect a higher profitable future of the company than other types of insiders over the long run. Consequently, the market participants regard the purchase requests of major shareholders as good news. For sales requests, major shareholders who have large stakes in the company may not sell their shares just for bad news; they may want to keep their stakes in the company in order to keep the voting rights and have a control of the company. Conversely, top executives

Table 6

Variables definition. This table defines the variables used in the cross-sectional regression.

Variable	Definition
Dependent variable	
CAR (0,30)	CAAR from the announcement date of trade requests to day 30 (one and a half month).
Explanatory variables - Dummy variables	
Insider positions	
Major Shareholders	Equals 1 if the trade requests come from major shareholders and 0 otherwise.
Top executives	Equals 1 if the trade requests come from top executives and 0 otherwise.
Family members	Equals 1 if the trade requests come from a family member of a major shareholder or top executive and 0 otherwise.
Law enforcement phases	
Phase 1: Before 3/25/10	Equals 1 if the trade requests are before 25-Mar-2010 and 0 otherwise. We exclude this dummy variable from the regression to avoid perfect multi-collinearity.
Phase 2: 3/25/10-7/19/12	Equals 1 if the trade requests are from 25-Mar-2010 to 19-Jul-2012 and 0 otherwise.
Phase 3: After 7/19/2012	Equals 1 if the trade requests are from 19-Jul-2012 to 30-12-2015 and 0 otherwise.
Industry types	
	Equals 1 corresponding to the firm industries of the trade and 0 otherwise. There are 7 industry dummy variables including consumer discretionary, consumer staples, financials, industrials, materials, energy, and information technology. We exclude the utility industry dummy from the set of regressors to avoid perfect multi-collinearity.
Other dummies	
Cluster	Equals 1 if insiders of the same companies submit the trade requests within the same week and 0 otherwise.
Explanatory variables - Continuous variables	
Firm Size	Firm size is equal to the log of market capitalization of the stock at the announcement date
Price-to- book ratio	Price-to-book ratio is equal to the price-to-book ratio of the stock at the announcement date. The book values are collected at the beginning of each year.
Holding	Represents the stake of insiders prior to the trade requests. This variable is only available for top executives and major shareholders. Holding is equal to the ratio of number of shares holding to the total number of share outstanding.
Volume	Volume is equal to the volume of trade requests divided by the total number of share outstanding.

Table 7

Descriptive statistic of the variables in the cross-sectional regression.

Descriptive statistic of the variables					
Variable	Mean	St.dev	Min	Median	Max
Log Firm Size	6.57033	0.56469	4.84323	6.52980	8.14627
Price to Book	3.89842	3.59106	0.10523	2.84572	24.53284
Holding	0.03820	0.10153	0	0.00135	1.96983
Volume	0.01171	0.02792	1.43607E-06	0.00151	0.30353
	Prop.				
Cluster	0.25				
Correlation matrix					
	Firm Size	Price to Book	Holding	Volume	
Firm Size	1				
Price to Book	0.50637	1			
Holding	-0.11769	-0.02401	1		
Volume	-0.16493	0.00519	0.35278	1	

who own fewer stakes at the company than major shareholders are willing to sell upon bad news. The cluster dummy variable is not significant. Whether or not more than two insiders submit their trade requests at the same time does not necessarily imply larger abnormal returns.

Table 8

Cross-sectional regression results with CAR in 30 trading days following the trade requests. This table represents the heteroskedasticity-consistent cross-sectional regression results with as dependent variables the CAR in 30 trading days following the trade requests. *, ** and *** denote the significance level of 10 %, 5 % and 1 % respectively.

Dependent variable: CAR (0,30)						
Independent variables	Purchase requests			Sale requests		
	Coefficient	t-stat	N	Coefficient	t-stat	N
Intercept	0.218	2.135**		0.194	2.669**	
I. Continuous variables						
Firm size	-0.027	-1.783*		-0.034	-3.171***	
Price-to-book ratio	-0.034	-2.748***		-0.019	-2.554***	
Holding	0.094	1.542*		-0.020	-0.334	
Volume	-0.387	-1.629*		0.252	1.177	
II. Dummy variables						
1. Insider types						
Major Shareholders	0.043	1.617*	238	-0.006	-0.454	267
Top executives	0.029	1.062	118	-0.021	-1.693*	244
2. Cluster						
	0.002	0.111	64	-0.004	-0.404	215
3. Regulation regimes						
Mar 15, 2010–Jul 18, 2012	-0.036	-0.965	170	0.008	0.455	266
Jul 19, 2012–Dec 31, 2015	-0.058	-1.512	210	-0.006	-0.324	415
4. Industry						
Consumer Discretionary	0.064	1.597*	28	0.039	1.211	59
Consumer Staples	0.001	0.039	90	0.016	0.541	171
Financials	0.030	0.940	96	0.067	2.326*	175
Industrials	0.022	0.700	79	0.004	0.136	149
Materials	0.039	1.185	46	0.067	2.276*	77
Energy	-0.007	-0.138	10	0.024	0.779	60
Information Technology	0.004	0.107	21	0.028	0.764	26
N	393			740		
Adjusted R square	0.045026			0.046433		
F statistic	2.087***			3.117***		

We also investigate the changes of market reactions to insider trade requests over three regulation regime phases. In the regression, we exclude the dummy variable for Phase 1 - from January 1st, 2009 to March 14th, 2010 when the Circular 2007 is effective – to avoid the dummy variable trap. We only consider Phase 2 (from March 15th, 2010 to July 18th, 2012) and Phase 3 (from July 19th, 2012 to December 31st, 2015) dummy variables for the regression. Phase 2 and Phase 3 represent the regulation regime periods when Circular 2010 and Circular 2012, respectively and have been issued to tighten insider trading disclosure activities. The parameter estimate associated with the variables Phase 2 and Phase 3 represent the difference of abnormal returns, as compared with Phase 1, whose effect is captured in the intercept. For purchase requests, the coefficients of both phases are negative, amounted to – 0.036 in Phase 2 and – 0.058 in Phase 3, although not statistically significant. Only very few changes of market reactions following insider sale requests over regulation regime phases may be observed. We can conclude that the enforcement of insider trading disclosure activities has not generated any specific market reaction.

7. Conclusion

In this study, we investigate the market reactions to insider trading activities in Vietnam. In Vietnam, Security Laws 2006, Circular 2007, along with its amendments Circular 2010 and Circular 2012, regulate insider trading activities. The specificity of the Vietnamese regulation is that insiders have to announce in advance their intention to buy or sell the stocks of their company. Our study grounds on several policy proposals made by legal scholars as well as the theoretical works provided by the literature, most notably [Lenkey \(2014\)](#) which develops a rational expectations equilibrium model to investigate the extent to which an advance disclosure might be a valid solution to improve the existing regulation on insider trading in the U.S. The contribution of our study is twofold. First, it is the first one to investigate inside traders’ actions in the Vietnamese stock market. Second, and most importantly, our study is the unique empirical analysis of an advance disclosure rule based on real data, which also constitutes our main motivation for this empirical

work.

Using data on 1301 insider announcements covering the period from January 2009 to December 2015, we validate our three hypotheses. The main results of the study show that most information asymmetry between insiders and outsiders is resolved by the pre-trade disclosure requirement. The pre-trade announcement makes stock prices move before the actual trade occurs. The market positively reacts to purchase requests and negatively reacts to sale requests, confirming our expectations stated in [Hypothesis 1](#). The results are statistically and economically significant, in the order of magnitude of 2 % abnormal return for the 1.5-month period following the announcement. The regulation seems to reach its stated objective in reducing the undue profits that insiders would otherwise make if this regulation was not implemented.

We also find that purchases’ completion announcements do not convey more information to the market compared to the trade requests, on average, validating our second hypothesis. Yet, this result is valid for purchase transactions only. On the contrary, sale completions are followed by large and significant negative abnormal returns, as if the pre-trade announcement did not convey the full information to the market. The informational content associated to sales’ completion seems to be more important to outsiders. We explain this by the fact that it is more dramatic for an actual stockholder to remain long while the market is bearish than missing a potentially good bullish opportunity, whose potential is yet to determine.

Finally, we validate our third hypothesis stating that trade cancellations are not informative. We find that no significant abnormal returns follow purchase or sale cancellations. This is consistent with cancellations being motivated by market conditions, e.g., an adverse price movement, that might have changed in the time span between the trade request and the trade cancellation, and not by information.

Despite the regulatory changes from 2010 and 2012, the global Vietnamese regulatory framework did not modify much legal insider trading policies. The main changes in the regulation pertain to administrative procedures such as the modifications of insider trading reports or trading timeframe requests. As for illegal insider trading the criminal

law keeps the penalty level for illegal insider trading identical since 2009 until present. The maximum penalty for insider trading is still VND 500 million (about USD 20,000) which is expected to be much lower than the potential abnormal return an insider could generate. In the U. S., insiders may be fined up to USD 1,000,000 or to the triple of their illegal trading profits. As a comparison point, according to Degryse et al. (2014), abnormal returns from insider sales reduce substantially and significantly after implementing the Market Abuse Directive of the European Union with the major aim to raise the penalty level for illegal insider trading. By raising the penalty level for illegal insider trading, the Vietnamese regulator should be able to reach the simultaneous objective of increasing market integrity, transparency, and efficiency.

All in all, we conclude that advance disclosure regulation, as it is implemented in Vietnam and close to what is theoretically modelled in Lenkey (2014), succeeds in achieving the global objective of reducing the profits obtained by corporate legal insiders and better share them with observing outsiders through a more efficient information dissemination. Our study argues in favor of such an implementation in developed markets and opens wide avenues for future theoretical and empirical research to help design advance disclosure policies.

CRedit authorship contribution statement

Dr. Jérémie LEFEBVRE was in charge of the Software, Formal analysis, Investigation, Data curation and Writing – original draft. Globally, Dr. Lefebvre generated all tables and most figures and implemented the methods in the software. Dr. Paolo MAZZA was in charge of the Conceptualization and Writing – original draft, Writing – review & editing, Project administration. He also motivated the study and highlighted the contribution.

Data Availability

The authors do not have permission to share data.

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