Anchoring Bias of Behavior towards Legal Insider Trading Decision on Indicator 52-WeekHigh in Ho Chi Minh Stock Exchange

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ABSTRACT

The paper considers the problem of bias anchoring behavior on legal insider trading decisions that occur in Ho Chi Minh City Stock Exchange. A major review of research done using monthly stock data that are consistently present in VN30 stock index for 10 years. The results in this study show that legal insider trading decisions (internal shareholders and related person's) are influenced by the behavior of the anchoring bias to the indicator 52-WeekHigh. The nearness of the stock price indicator of 52-WeekHigh encourages their tendency to commit sales more than purchasing decisions. It works in reverse, when the stock price are far from the indicator of 52-WeekHigh, then the insider tend to purchase more shares than sales did. These conditions indicate that the insider performs a contrarian strategy to trade. While insider trading decisions made by the major shareholders are not affected by the indicator 52-WeekHigh. Those findings indicate that despite having access to insider information about the company is better than public investors in its decision-making is still susceptible to bias behavior.
Keywords— legal insider trading, 52-WeekHigh, anchoring bias

1. INTRODUCTION

Companies that are already IPO (Initial Public Offering) and traded on the capital market should submit complete information and open it to the public. Submission of information to the public is given to avoid the presence of asymmetric information which could harm either party. Trading took place in the capital market often occurs inefficiently whereby insiders trade deliberately to take advantage of the monopoly of information about prospects, values and stock prices, and the forecast of stock price movement in the future that are not accessible to the public (Wang, 2010).

Insider trading can occur for a variety of reasons. The most common reason is profit-seeking in which there is an indication that the person has the potential to earn abnormal returns on the transactions made from taking advantage of its information (Agrawal and Cooper, 2015; Lakonishok and Lee, 2001). Besides, insider trading can also be caused by non-profit who people in selling shares to diversify risks associated with wealth or their interests (Kallunki et al., 2009; Ke et al., 2003). However, according to Lee and Piqueira (2019), the anchoring bias of stock trading can affect the decisions made by investors in general and several insiders have better information though. The anchoring bias of people in the company can be evaluated based on indicators of 52-WeekHigh as a proxy that can trigger anchoring bias of

investors. Bias-related behavior nearness stock price to 52-WeekHigh occurring in securities trading may act as anchoring in decision-making as well as investors will evaluate the information obtained.

The practice of insider trading often leads to illegal acts because they do trade with the purpose to gain personally through the use of information asymmetry about the prospects for companies that are not publicly owned. But insider trading is not always an illegal act that could take place legally. Legal insider trading can occur when trading is executed has been registered and publicly announced to the public following applicable regulations. That way the information asymmetry can be addressed and the public can react to the actions taken into consideration when making trading decisions. Vietnam is one of the emerging market have implemented regulations and legislation governing the legal acts of insider trading. Insider trading which includes three categories, namely internal shareholders, related person's, and major shareholders are prohibited from trading in private shares or based on price-sensitive information which may affect the decision of the parties and other organizations. Insiders are required to announce the plan two days before the execution trading is actually happening and announced the decision postponed the execution of a maximum of 3 days after the transaction is completed.

Referring to the practice insider trading as a result of the use of information asymmetry, this study is intended to look at the effect of anchoring behavior that occur in the company against

insider trading decisions that take place legally in emerging markets, especially in Ho Chi Minh City Stock Exchange. Also, this study was conducted to see the trend of insider trading in taking decisions that are influenced by the behavior of the anchoring bias. Measurement is done to see the reaction of the three categories of insider proximity with the company's stock price indicator of 52-WeekHigh as anchoring behavior.

2. LITERATURE REVIEW

Insider trading practice in the company often occurs in the capital market. In practice, trade conducted by insider trading can take place illegally and legally. Insider trading most often carried out to obtain abnormal returns by exploiting insider information owned by related companies (Lakonishok and Lee, 2001). Insider trading may conduct transactions with liquidity considerations as well as efforts to diversify risks (Kallunki et al., 2009). The advantages possessed by insider information does not necessarily prove that they conduct transactions appropriately and rationally. Findings Lee and Piquiera (2019), shows that insider highly susceptible to bias the behavior even though they have access to personal information that is not publicly owned company. Trading decisions do not always base on solid consideration of the information that they get the indicate insider can behave irrationally.

Lee and Piqueira (2017), have proved the existence of other indications related reasons insider transactions based on the information it has. Stock trading activities conducted showed their bias insider behavior from which decisions are made based on incomplete information in the company's fundamental values and behaviors are influenced by heuristics. There is also evidence of the biased behavior of a variety of information such as short-selling traders and managers can influence decisions that depend on the recipient group information. Various levels of anchoring biases between insider groups, such as the management and majority shareholders showed heterogeneity in state of quality or quantity of personal information that may influence the decision transactions carried out in the end.

In fact, can not be denied insider in the company has the advantage of the information and a better ability to predict the company's prospects. This led to the analysis to look at insider trading practices that are influenced by biased behavior became difficult. Lee and Piqueira (2017; 2019), using the stock with the highest price in the past 52 weeks as a proxy which can be a trigger of biased behavior of investors. The highest price for 52 weeks (52-WeekHigh) has a role in anchoring biases when investors evaluate the information by looking at the proximity of the company's stock price to 52-WeekHigh.

Research on the reaction of traders based on stock price movements has been done much. George and Hwang's Research (2004), indicating the tendency of investors to buy stocks at highest prices which affected by the information of the "good news" of the company will push the stock price close to 52-WeekHigh and apply otherwise When it is "bad news". Investor reaction to news and movement of stocks can lead to overreaction or underreaction. The reaction was followed by a positive return momentum when the price approached 52-WeekHigh and vice versa. Investors who react to the news can then be utilized by other investors who intentionally implement

a contrarian strategy. This strategy can take place when investors exploit the reaction of other investors by conducting transactions that are contrary to the investor in general. This can be done with the intention of looking at the unconscious odds of other traders or even as actions are undertaken to influence other investors to gain greater profit (Lakonishok and Lee, 2001).

3. DATA AND METHODOLOGY

This research uses data related to insider trading and the characteristics of companies acquired from the website vietstock.vn and the Thompson Reuters. In accordance with the Securities Law 2006 regulations issued by the Ministry of Finance of Vietnam, in conducting legal insider trading, traders are required to make public announcements regarding plans and execution results from Transactions made. Insider trading data used in this study includes transaction data, the identity of the trade participants, and their relationship with the company in the form of monthly data. The research samples used are 30 companies that conduct insider trading and are included in the VN30 stock indices consistently during the 10-year observation period (January 2009 – December 2018).

In reference to the applicable legal insider trading rules, insider trading transactions will be processed based on 3 insider categories (internal shareholders, related person's, and major shareholders). But the main analysis of the research will focus on the trade activities undertaken internal shareholders as a perpetrator who directly falls in the company's activities. The data processing methods used in this study are quantitative, whereby the study will examine the link between the biased behavior of anchoring insider against 52-WeekHigh with the decision of insider trading. The method of data processing panels was done using an Ordinary Least Square regression (OLS) based on the determination of the estimation model with the help of Microsoft Excel software and E-Views 10.0.

The beginning of calculating the ratio is net purchase ratio (NPR), purchases and sales turnover ratio used by Lakonishok and Lee (2001) and Lee and Piquiera (2019).

$$NPR = \frac{\text{insider purchase} - \text{insider sales}}{\text{insider purchase} + \text{insider sales}} \qquad (1)$$

where insider purchases and sales denote the number of shares purchased and sold by insiders, respectively. Turnover ratio calculated as the number of shares traded by insiders scaled by the number of shares outstanding.

This research work the 52-WeekHigh ratio as a representative for the nearness of the stock price to its 52-WeekHigh. The 52-Week High ratio ($52wkHigh_{i,t}$) is executed as below:

$$52wkHigh = \frac{P_{i,t}}{P_{52wkHi,t}} \qquad (2)$$

where $P_{i,t}$ is stock price of i at the end of t month and $52wkH_{i,t}$ is the peak of i stock price over past 52 weeks. A big amount of the 52-WeekHigh ratio defined that the price of the stock is near to its 52-WeekHigh, while a small amount of the 52-WeekHigh ratio defined the opposite.

Regression was conducted to test the research model to see the connection between insider trading decisions as a dependent variable and 52-WeekHigh ratio as a independent variable. The decision of insider trading as a dependent variable focuses on

NPR variables (Net Purchase Ratio), buying decisions (ainsi), and sales decisions (dinsi). The characteristics of any company involved in insider trading are then used as a control variable to support the research model. The following picture is a conceptual framework used as a general description of research (Fig. 1).

Data regression analysis panel that considers cross sectional and time-series data retrieval. The regression is performed using the following research model:

$Insi_{i,t} = \alpha + \beta_1$ x $52wkHigh_{i,t-1} + \beta_2$ x $ret_{i,t} + \beta_3$ x $mom_{i,t} + \beta_4$ x $lnmcap_{i,t-1} + \beta_5$ x $bmratio_i + \beta_6$ x $lnilliq_{i,t-1} + \beta_7$ x $lnto_{i,t-1} + \beta_8$ x $sqret_{i,t-1} + \beta_9$ x $numest_{i,t-1} + \varepsilon_t$

the dependent variable, $insi_{i,t}$ is the net purchase ratio (NPR), insider purchase and sale ratio for price stock of i in month t, and the independent variable is the 52-WeekHigh price in month t-1. An analysis is done by reviewing insider trading decisions related to trading intensity and propensity of insider trading. The propensity of insider trading is measured by probit regression with a binary variables for insider buying (ashare_ind) and selling (dshares_ind).

Analysis of the research on insider trading conducted by bias in internal shareholders will then be compared to the bias that occurs in related person's and major shareholders. This is done in accordance with the main purpose of the study to investigate whether an insider who has specific information will be subject to anchoring biases.
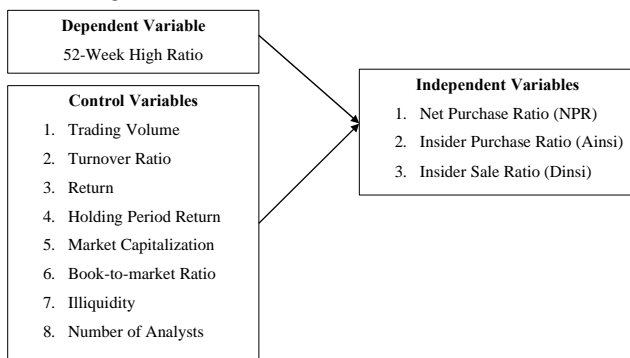
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┌─────────────────────────────────┐
│   Dependent Variable            │
│   52-Week High Ratio            │
└─────────────────────────────────┘
┌─────────────────────────────────┐
│   Control Variables             │
│   1. Trading Volume             │
│   2. Turnover Ratio             │
│   3. Return                     │
│   4. Holding Period Return      │
│   5. Market Capitalization      │
│   6. Book-to-market Ratio       │
│   7. Illiquidity                │
│   8. Number of Analysts         │
└─────────────────────────────────┘
        ┌──────────────────────────────┐
        │  Independent Variables       │
        │  1. Net Purchase Ratio (NPR) │
        │  2. Insider Purchase Ratio   │
        │     (Ainsi)                  │
        │  3. Insider Sale Ratio (Dinsi)│
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Fig. 1. Conceptual Framework

4. RESULT

The descriptive statistic analysis shows that the overall transaction by insider tends to be more occurring on the purchase of stocks compared to sales. But if it is reviewed based on value turnover ratio, sales by internal shareholders and related person's higher than turnover in the stock purchase. The turnover ratio shows the turnover of traded stocks, it indicates that the large share purchase is made for short-selling. This condition affects the average monthly net purchase ratio (NPR) on internal shareholders and related person's are significantly negative, whereas on NPR's major shareholders is significantly positive.

Under Securities Laws 2006, the insider who will make trades is required to make a trade plan announcement to the public before the transaction is executed. The analysis results show the average traded stock plan it is known from insider trading plan 78.639% on purchase transactions and 90.158% sales transactions are executed. This indicates the market can react directly to the insider trading plan which is considered as a reference in estimating the trading decisions made. There is a potential of underreaction and overreaction that occurs in public investors against information related to insider trading.

Internal Shareholders Trading

Results of regression related to insider trading decisions conducted by internal shareholders to the proximity of stock price with 52-WeekHigh presented in Table I. In Panel A, the dependent variables used in the analysis are the intensity of insider trading. Regression is performed to see the relationship between insider trading decisions including net purchase ratio (NPR), decision buying (ainsi), and sales (dinsi). The results of regression analyses showed a significantly negative between 52-WeekHigh on transaction tendencies (NPR) and insider sales decisions. The findings indicate that there is anchoring biases ,indicate that insiders' net purchases tend to decrease with the gap of a stock price to the 52-WeekHigh. This suggests that when the price approaches 52-WeekHigh then the internal shareholders tend to conduct more sales transactions than stock purchase transactions. The acquired regression coefficient can demonstrate the increased influence of one standard deviation on the proximity of the stock price with 52-WeekHigh can lead to a decline of NPR up to 1% (-0.0708 x 0.15453) economically.

In this research regression analysis was also conducted against the decision of the purchase and sale of shares by insider separately. Trading data is reviewed based on the trading decision turnover ratio analyzed by considering the capitalization factor. The coefficients on the 52-WeekHigh ratios are significantly negative with insider sale ratios and the absence of a significant relationship with purchase ratios. This indicates the purchase decisions made by an insider are more influenced by other control variables, such as turnover, historical return, and the number of analysts. The findings indicated that anomalies were found that the stock sales decision had decreased when the price was away from 52-WeekHigh and the analysis was conducted taking into consideration the capitalization factor and using the short horizon.

The result is robust when we examine the propensity of insider trading through probit regression in Panel B. Coefficient on the ratio of 52-WeekHigh is significantly positive with the insider selling indicator (0.7657) and the absence of significant relationship to the insider buying indicator. This suggests that insiders react to the distance of a stock price to 52-WeekHigh in the decision-making of insider selling.

The findings in this study showed a similar conclusion to the research by Lakonishok and Lee (2001) and Lee and Piquiera (2019) stating that internal shareholders make a contrarian strategy. This is evidenced by the significantly negative relationship between the 52-WeekHigh ratio and NPR. Previous research has shown that insider often does a contrarian strategy. Insiders tend to do more sales when knowing the stock price in the market is close to 52-WeekHigh and do the opposite. However, in this case, the internal shareholders' decision suggests that an insider is also prone to biased behavior against the ratio of 52-WeekHigh. This can be

evidenced by the insider's decision to reduce sales (holding "losser") when the stock price close to 52-WeekHigh after considering the capitalization factor. The decision indicates that the insider is massively influenced by heuristics (historical data) despite having more superior information than public investors.

Table 1.Internal Shareholders regression result

Coef t-value	A. Trading Intensity			B. Trading Propensity	
	(1) NPR	(2) ainsi (%)	(3) dinsi (%)	(1) ashares_ind	(2) dshares_ind
Intercept	0.4467	0.0002	-0.0092	-0.6129	-6.0298[a]
	(1.5902)	(-0.0742)	(-1.6307)	(-0.3712)	(-5.1274)
52wkHigh$_{t-1}$	-0.0708[c]	0.0000	-0.0015[c]	0.1305	0.7657[a]
	(-1.7583)	(-0.1105)	(-1.8190)	(0.4902)	(3.1641)
ret$_t$	1.9467	0.0012	0.0167	16.8390[c]	-9.7634
	(1.4406)	(0.0875)	(0.6352)	(1.8985)	(-1.3986)
mom$_t$	0.0058	-0.0001	0.0001	0.0368	-0.0013
	(0.5008)	(-0.8996)	(0.5842)	(0.6072)	(-0.0262)
lnmcap$_{t-1}$	-0.0187	0.0001	0.0007[b]	0.0024	0.2186[a]
	(-1.2981)	(0.9249)	(2.1018)	(0.0292)	(3.6291)
bmratio$_{t-1}$	-0.0041	0.0000	0.0001	-0.1092	0.1071[a]
	(-0.4235)	(-0.3261)	(0.4796)	(-1.5752)	(2.6445)
lnilliq$_{t-1}$	-0.0343[a]	0.0000	0.0007[a]	-0.0808	0.2393[a]
	(-2.9308)	(0.4014)	(3.2486)	(-1.1755)	(5.2431)
lnto$_{t-1}$	-0.0409[a]	0.0005[a]	0.0015[a]	0.118	0.4409[a]
	(-2.7865)	(3.2727)	(5.1832)	(1.3157)	(6.783)
sqret$_{t-1}$	3.6393[a]	-0.0226[c]	-0.0823[a]	-1.0744	-28.0807[a]
	(3.0694)	(-1.9367)	(-3.5773)	(-0.1516)	(-5.0471)
numest$_{t-1}$	0.0001	-0.0001[c]	-0.0002[c]	0.0201	0.0053
	(0.0281)	(-1.6731)	(-1.8196)	(0.8519)	(0.2801)
Prob (F-Statistic)	0.0136	0.0001	0.0005	0.0000	0.0000
R^2	0.0076	0.00107	0.07855	0.0404	0.0493
Model estimasi					
Cross-sectional	*Random Effect Model*			*Probit Regression*	
Time-series	*Pooled Least Square*				

Standard errors are arranged by firm, and t-statistics are reported in parentheses below coefficient estimates. 'a', 'b', and 'c' represent significance at 0.01, 0.05, and 0.1 levels, respectively.

Related Person's and Major Shareholders Trading
Further analysis is then done to the decision of insider trading on the related person's and major shareholders which are not directly involved in the company's activities. In Table 2, regression results only show a significantly negative relationship to the net purchase ratio (NPR) decision made by the related person's. Other dependent variables do not show a significant relationship to the anchoring bias with the 52-WeekHigh indicator. This indicates that the insider who is not directly involved with the company's activities has a variety of reasons and wider range of considerations.

Table 2. Related Person's and Major Shareholders Regression Result

Coef t-value	Panel A. Related Person's			Panel B. Major Shareholders		
	(1) NPR	(2) AINSI	(3) DINSI	(1) NPR	(2) AINSI	(3) DINSI
Intercept	0.2457	-0.0053	-0.0154[a]	0.3933	-0.0223[b]	-0.0057
	(0.9126)	(-0.9815)	(-3.4132)	(1.4877)	(-2.1297)	(-0.5037)
52wkHigh$_{t-1}$	-0.1195[a]	-0.0009	0.0004	0.0264	0.0014	0.0008
	(-3.0543)	(-1.1534)	(0.5355)	(0.6426)	(0.8317)	(0.5944)
ret$_t$	-0.5283	-0.0052	0.0122	-0.6997	-0.0341	-0.0005
	(-0.4016)	(-0.2063)	(0.5517)	(-0.4999)	(-0.6037)	(-0.0096)
mom$_t$	-0.0099	-0.0002	-0.0001	-0.0010	-0.0001	-0.0002
	(-0.8938)	(-1.0707)	(-0.5691)	(-0.0898)	(-0.2386)	(-0.3949)
lnmcap$_{t-1}$	-0.0031	0.0004	0.0008[a]	-0.0297	0.0012[b]	0.0006
	(-0.2228)	(1.5941)	(3.6571)	(-2.1950)	(2.1750)	(0.9723)
bmratio$_{t-1}$	-0.0006	0.0001	0.0002	0.0072	0.0002	0.0003
	(-0.0616)	(0.3882)	(1.1559)	(0.7963)	(0.6729)	(0.8600)
lnilliq$_{t-1}$	-0.0166	0.0004[c]	0.0009[a]	-0.0060	0.0013[a]	0.0007
	(-1.4877)	(1.6802)	(4.7818)	(-0.5493)	(2.9428)	(1.6036)
lnto$_{t-1}$	-0.0249[c]	0.0008[a]	0.0016[a]	-0.0345[b]	0.0025[a]	0.0025[a]
	(-1.7188)	(2.8858)	(6.5892)	(-2.3815)	(4.2501)	(4.3653)
sqret$_{t-1}$	-0.8458	-0.0563[b]	-0.0752[a]	1.0588	-0.0395	-0.1297[a]
	(-0.7373)	(-2.5213)	(-3.9088)	(0.8970)	(-0.8353)	(-3.0067)
numest$_{t-1}$	-0.0039	-0.0001	0.0000	-0.0037	0.0002	0.0001
	(-0.8352)	(-0.5544)	(-0.5336)	(-0.8311)	(1.1021)	(0.7287)
Prob (F-Statistic)	0.0189	0.1404	0.0000	0.0000	0.0006	0.0022
R^2	0.0072	0.0049	0.0177	0.0131	0.0105	0.0235
Model estimasi						
Cross-sectional	RE	RE	RE	RE	RE	FE
Time-series	PLS	PLS	PLS	PLS	PLS	PLS

Standard errors are arranged by firm, and t-statistics are reported in parentheses below coefficient estimates. 'a', 'b', and 'c' represent significance at 0.01, 0.05, and 0.1 levels, respectively.

5. CONCLUSIONS

Insider is prone to biased behavior in taking trading decisions despite having better information than the Internal public investor. Internal shareholders are susceptible to anchoring bias towards the distance of a stock price to its 52-WeekHigh. That is, internal shareholders tend to do more sales transactions than purchases. An insider who is not directly involved with the company's activities (related person's and major shareholders) have consideration with a variety of reasons and wider range of considerations.

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