The Behavior Patterns of Investors in Thailand Stock Market

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Abstract

The purpose of this paper is to investigate behavioral patterns expressed by investors in the Thailand stock market. The paper examines investment decision-making processes in the context of the current financial market in Thailand to shed some light on behavioral-induced pattern behind such investments. Data for this research was collated from 8 individual investors by semi-structured and in-depth interview. There are four behavioral factors of individual investors in Thailand Stock Exchange: Overconfidence, Excessive Optimism, Psychology of risk, and Herding Behavior. Securities Companies may also use the findings of this research for better understanding on investors' decision to give better recommendations to them. Stock prices then reflect their true value and Thailand stock market becomes the yardstick of the economy's wealth and helps enterprises to raise capital for business activities.

Keywords: behavioral finance, individual investors, Thailand SET, stock market, qualitative inquiry



1. Introduction

One of the most common perceptions of being successful in stock markets is to have the right kind of knowledge about the market dynamics and knowing the right kind of firms to invest in. Traditional finance theories have generally captured two vital assumptions to select different shares by investors, that is, investors are rational and unbiased. However, studies in behavioral finance has rapidly extended during the recent years and provided evidence that investors' financial decisions depend deeply on internal and external behavioral factors (Shefrin, 2000; Shleifer, 2000). Identification of the influencing factors on investors' behavior can be effective for different policyholders, so that it would affect companies' future policies and strategies from company's perspective, in addition, it can affect the required legislations and the additional procedures needed in order to satisfy investors' desires and also to give more supports to market efficiency from government perspective (Wameryd, 2001). Therefore, this research seeks the answer to the question: What is the behavior of individual investors in Thailand stock market?

2. Literature review

In recent times, there has been a noteworthy progress in the field of behavioral finance. The literature on behavioral finance is voluminous, including survey and secondary data analysis. Both approaches have significant contributions in this area. "Behavior of investor is a part of behavior finance, which seeks to understand and predict systematic financial market implications of psychological decision processes. Behavior finance closely combines individual behavior and market phenomena and uses knowledge taken from both the psychological field and financial theory." (Fromlet, 2001).

2.1 Heuristics Theory

Heuristics are defined as the rules of thumb, which makes decision making easier, especially in complex and uncertain environments (Ritter, 2003) by reducing the complexity of assessing probabilities and predicting values to simpler judgments (Kahneman & Tversky, 1979). In general, these heuristics are quite useful, particularly when time is limited (Waweru, Munyoki, & Uliana, 2008), but sometimes they lead to biases (Ritter, 2003; Tversky & Kahneman, 1975). Tversky and Kahneman (1975) seem to be ones of the first writers studying the factors belonging to heuristics when introducing three factors namely representativeness, availability bias, and anchoring. Waweru et al. (2008) also list two factors named Gambler's fallacy and Overconfidence into heuristic theory.

When people overestimate the reliability of their knowledge and skills, it is the manifestation of overconfidence (De Bondt & Thaler, 1995). Many studies show that excessive trading is one effect of investors. There is evidence showing that financial analysts revise their assessment of a company slowly, even in case there is a strong indication proving that assessment is no longer correct. Investors and analysts are often overconfident in areas that they have knowledge (Evans, 2006). Overconfidence is believed to improve persistence and determination, mental facility, and risk tolerance. In other words, overconfidence can help to promote professional performance. It is also noted that overconfidence can enhance other's



perception of one's abilities, which may help to achieve faster promotion and greater investment duration (Oberlechner & Osler, 2008). If an investor overestimates his ability to generate information or to identify the significance of existing data that others neglect, he will underestimate his forecast errors; he will tend to be overconfident about the information he has generated but not about public signals. Thus, the person who overestimates the precision of his own information signal instead of received publicly information signals is defined as an overconfident investor. People tend to think that they are better than they really are. Both the psychology and the recent finance literature characterize people with this type of behavior as being "overconfident." Studies in human behavior have shown that overconfidence is a major contributing factor to overtrading phenomenon of financial market participants. Barber and Odean (2001) attributed the high volume of trading to investors 'overconfidence, in which makes investors believe their own judgment too definitely and not enough consider others' assessment. The role of overconfidence in the trading tendency of stock has been studied by Grinblatt and Han (2002). They analyzed and found that overconfident investors tend to trade more frequently.

2.2 Market Factor

De Bondt and Thaler (1995) state that financial markets can be affected by investors' behaviors in the way of behavioral finance. If the perspectives of behavioral finance are correct, it is believed that the investors may have over- or under-reaction to price changes or news; extrapolation of past trends into the future; a lack of attention to fundamentals underlying a stock; the focus on popular stocks and seasonal price cycles. These market factors, in turns, influence the decision making of investors in the stock market. Waweru et al. (2008) identifies the factors of market that have impact on investors' decision making: Price changes, market information, past trends of stocks, customer preference, over-reaction to price changes, and fundamentals of underlying stocks.

Normally, changes in market information, fundamentals of the underlying stock and stock price can cause over/under-reaction to the price change. These changes are empirically proved to have the high influence on decision-making behavior of investors. Researchers convince that over-reaction (De Bondt & Thaler, 1995) or under-reaction (Lai, Low, & Lai, 2001) to news may result in different trading strategies by investors and hence influence their investment decisions. Waweru et al. (2008) conclude that market information has very high impact on making decision of investors and this makes the investors, in some way, tend to focus on popular stocks and other attention-grabbing events that are relied on the stock market information. Moreover, Barber and Odean (2001) emphasize that investors are impacted by events in the stock market which grab their attention, even when they do not know if these events can result good future investment performance. Odean (1998) explores that many investors trade too much due to their overconfidence and excessive optimism.

2.3 Prospect Theory

"Prospect theory, which was developed by Kahneman and Tversky (1979), is one of the most often quoted and best-documented phenomena in economic psychology. The theory states that we have an irrational tendency to be less willing to gamble with profits than with losses."



The prospect theory showed human behavior when they face with risk and uncertainly. In particular, people are prone to certainly, therefore people overweight on the outcomes that are perceived more certain than that are considered mere probable. This called certainly effect that human beings are not consistently risk-averse; rather they are risk-averse in gains but risk-takers in losses. In other words, traders are most inclined to take subsequent risks if they have already experienced losses. By contrast, trader who have experienced profit, usually their exposure to the next risk. Therefore, people respond differently, depending on whether the choices are framed in terms of gains or in term of losses. The most famous example of framing effects was illustrated by Tversky and Kahneman (1975).

Psychology of risk refers to the difference level of mental penalty people have from a similar size loss or gain (Barberis & Huang, 2001). There is evidence showing that people are more distressed at the prospect of losses than they are pleased by equivalent gains (Barberis & Thaler, 2003). Moreover, a loss coming after prior gain is proved less painful than usual while a loss arriving after a loss seems to be more painful than usual (Barberis & Huang, 2001). In addition, Lehenkari and Perttunen (2004) find that both positive and negative returns in the past can boost the negative relationship between the selling trend and capital losses of investors, suggesting that investors are loss averse. Risk aversion can be understood as a common behavior of investor, nevertheless it may result in bad decision affecting investor's wealth (Odean, 1998).

2.4 Herding Behavior

In stock market, herd behavior implies that investors tend to ignore the private information; and they incline to incompatible observed results with the fundamentals and the market's foundation (Bikhchandani & Sharma, 2000). Based on the observed actions of others, the individuals create the behavior; or in other words that are imitative actions of each others (Hwang & Salmon, 2004). According to Banerjee (1992), herd behavior is defined that people act on what others are doing, even they should act differently based on their own information. If only a single investor has unreasonable behavior, this investor's transactions have an insignificant impact on stock price in the market. Even if a large investment organization takes actions separately, its influence is also limited. However, while the irrational behavior is systematic, meaning that a group of investors with the same unreasonable behavior, inappropriate pricing will appear and may be extended.

Barber, Odean, and Zhu (2009) explored that individual investors tend to contract the similar forms of deviant behavior at or around the same time. It is unnecessary for these investors to reject the each other's actions, instead their actions have overall potentiality. In that case, individual investors can not be considered as noisy traders; and they all seem to be a giant organization having considerable impact on the market. This can lead the stock prices not to reflect their real and appropriate value. Herd mentality is not only expressed in terms of the same action with the crowd, but also reflected in not acting against the crowd despite the information that they have.



3. Research Methodology

Semi-structured and in-depth interviewing technique was employed to collect data from 8 individual investors in the Thailand stock market. Interviewees were investors with at least two-year experience in the market. These key informants were selected based on the following set of criteria: (1) maximizing over-18-aged diversification; (2) Gender: there were both male and female informants in each group; (3) Job: people work in stock, finance-banking, enterprises, governmental agencies, etc. Relying on their sharing and knowledge in investment in stock market, better understanding of psychological factors influencing individuals' investment behavior in the market has been revealed. The demography of the informants is summarized in table 1.

No.	Gender	Age	Education	Experience	Value of Portfolio (THB)
А	Male	28	Master	2	700,000
В	Male	29	Master	2	250,000
С	Male	32	Master	Over 5 years	400,000
D	Male	30	Master	3	620,000
Е	Female	28	Bachelor	4	100,000
F	Male	28	Master	3	300,000
G	Male	Over 35	Master	Over 5 years	Over 800,000
Н	Male	Over 35	Master	Over 5 years	920,000

 Table 1. Informant demography

To gain a profound insight into individuals' investment attitude and intention, the informants were asked to evaluate and make comments on the following main issues:

- 1. Description of their stock investment process;
- 2. Their foundation for selecting stock types to invest;
- 3. Impact of the environment on their investment decision;

4. Self-evaluation of their stock investment efficiency within the last 2 years and the ability to control individual investment;

5. Their issues and interests in stock investment in the market;

6 Their faith in the development of the Thailand stock market.

4. Results and Discussions

Based on the interview results from 8 investors in Thailand, there are 4 codes strongly supported by the data collected. Individual investors in Thailand express the overconfidence, excessive optimism, psychology of risk, and herding effect.

4.1 Overconfidence

Overconfidence is manifested when investors overestimate their knowledge and skills without their consciousness. Barberis and Thaler (2003) lists many psychological studies in financial market and show that investors seem to be overconfident in areas that they have knowledge. Overconfidence is believed to improve persistence and determination, mental facility, and risk tolerance. 6 out of 8 investors, comment a course of stock trading and



portfolio management is not necessary in making any investment in the market. They believe that they are capable of self-learning about stock investment knowledge. Three of the informants think that stock trading is all about understanding business specialization of the company. These investors have background in marketing, engineering and chemistry so they invest in the company that match their specialism. All investors are confident that they are of full control of their investment. Taylor and Brown (1988) mention a significant aspect of overconfidence in which investor rate themselves as the better-than-average compared to others or have unrealistic judgments about themselves. There are 5 investors affirm that their successful investment is the result of their own knowledge. Specially all of the 8 informants believe that they are aware of Thailand stock market. This implies the existence of overconfidence in the interviewed investors, which can be seen through their confidence in having full control of their investment in the market. This is also recognized by Odean (1998) when he finds out that overconfident investors tend to believe that they are better than others at selecting best stocks as well as choosing right time to sign in or out of the market. Individuals' overconfidence is an important factor motivating them to take part in stock market. It helps them to gain more efficient transactions than in other financial markets. Relevant comments made by informants are quoted as follows:

"I can understand the value and the potential of stocks of company doing food chemistry when I invest in these companies. By finding out what they are doing, I can predict where they will be going";

"My experience in picking stocks come from the practice of trial and failure. No matter how you learn, you have to practice picking stocks and suffer from some pains to have gains";

"I understand the core value of the company business so I can estimate the real price of the stock.";

Most investors also believe that the Thailand stock market is not efficient. In the market of faith, that investors with good luck can easily gain successful investment. Individuals' investment list in Thailand stock market is not diversified and does not correctly evaluate risks that investors might face with. They often make stock transactions at high frequency level to make use of information that they think they are the only one aware of.

4.2 Excessive Optimism

Investors pay close attention to the changes in market information, fundamentals of the underlying stock and stock price These changes cause over/under-reaction to the price change which in turn have the high influence on decision-making behavior of individual investors. 5 of 8 informants state that they would keep investing in the market even when it declines, which implies their faith in the high productivity of stock market. 6 individuals say that within the next one year they would increase investment capital for this market; 3 believe that within in the next one or two years, the Thailand stock market would get back on track after the death of their beloved king. Such findings imply excessive optimism which can also be seen in judgments made by individuals about the development potential for the Thailand stock market as well as their expectation of profits gained in this market. Gervais, Heaton,



and Odean (2002) state that excessive optimism usually brings about positive impact as it encourages administrators to make investment. Relevant comments made by informants are quoted as follows:

"Though the Thailand stock market is now in its difficult phase, I believe that it will get back on track in the next 1-2 years. That is the reason why I am not much bothered by the current declining stock market";

"In my opinion, stock market is an attractive investment field compared with other markets in the country. Therefore, I will keep investing in the stocks I trust despite the current fluctuating market";

"The market fluctuates a lot after the king passed away. My returns are not as what I expected. However, investing in stock market is a very good way to reserve my saving. I plan to increase my investment next year".

Individual investor in Thailand express a high degree of excessive optimism. They still have faith in the productivity of stock market even though they are facing with political crisis, taxes and fees. Excessive optimism, at the same time, is the reason why individuals pay too much attention to companies they have invested in because they see other companies in market weaker than theirs in the race. In addition, excessive optimism can make individuals dignify reports on companies' development potential made by analysts or the companies themselves. Excessive optimism also makes individuals become less aware of negative information about their investment.

4.3 Psychology of Risk

In the field of finance, loss aversion refers to the difference level of mental penalty people have from a similar size loss or gain while risk is an unexpected outcome and risk is linked to uncertainty. The study of Tversky and Kahneman (1975) suggested that people tend to be risk averse in the gain zone or when things go well and turn to be risk seeking when facing losses. In the interview, 2 out of 8 informants refer to the times of strong fluctuation in the stock as their chances to gain profits. It illustrates the attitude of finding profits in risk. When stock price on the declining trends, 6 informants state that they tend to hold the stocks longer till their price goes up or until they have information that stock price will stay low for a longer period. They also express the intention to buy more of the same stock while it prices decline. 4 informants invest in companies that they are familiar with or have much information about. This statement reveals their cautiousness and fear of risk or preference of familiarity. 4 individuals invest in Companies paying steady dividend. Their common choices are stocks of powerful companies in Thailand such as CP all, PTT, TRUE or AIS (Bluechip stocks). Relevant comments made by informants are quoted as follows:

"The current fluctuation in the stock market is the chance to make profit. I track my stock more frequently when the market declines. I estimate the time when my stock will bound back based on my knowledge and experiences. Sometime I buy more declining stocks if I see the chance of profit";

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"I invest in companies with high prestige in the market such as the ones in natural resources exploitation, electricity or telecommunication since they very often have a stable business";

"Even when stock price goes down, I do not hasten to sell my stock immediately as the price fluctuation is just temporary based on my experience";

"I do not want to sell my stock at loss but keep it for a while for better future chance";

"When joining the stock market, I am aware that it is a risky market but I still want to try because "High risk goes with big profit";

Olsen (2007) states that risk is perceived from both emotion and cognition and the two main psychological moods which are risk aversion and risk seeking can exist in individuals under different conditions and contexts. Therefore, comments made by the investors show that although they are risk-adverse but when the losses increase, they tend to assume more risks for making up the losses while they still perceive themselves as risk-averse investors.

4.4 Herding Behavior

Herding effect in financial market is identified as tendency of investors' behaviors to follow the others' actions. The investors' reliance on crowding information rather than their own private information can result the price deviation of the securities from fundamental value and may trigger a chain of irrational buy-out or sell-off. Herding impacts on stock price changes can influence the parameters of risk and return models in asset pricing implementation of institutional investors. Bikhchandani and Sharma (2000) give many examples and cases that investors usually imitate the others or the market movement in stead of following his/her source of information and strategy. Investors do not always make lucid and reasonable decisions as expected. Their behaviors, in stead, are also led by emotions as well as psychological mood of other investors. Results from the interviews so that 6 out of 8 investors claim that they usually refer to others' opinion before making any investment decisions. All the informants say that they would consider referring to movements on the digital stock board to make their own investment decision. This shows a tendency among individuals to observing others' behavior when making investment decision. In other words, it is the act of mutual imitation among investors Hwang and Salmon (2004). In the study conducted in 1992, Banerjee explained that herd behavior as acting following what other people are doing, even when their private source of information proves that they should act differently Banerjee (1992).

However, 5 out of 8 informants confirm that they will stay on their ground of decision when they are asked "what do you do if you see that market make opposite trading compare to yours, given all the private information you have at hand". The other three informants state that they will carefully revise their decision. This result proves that investors do not entirely base on market movements to decide; in fact, it can be seen as an illustration of overconfidence when individuals consider their information of great value. On the other hand, 6 out of 8 also claim that they will decide to sell or buy certain stocks following the crowd if they do not have any information about such stocks. This is also the time when they often listen to market analysts and researchers. Barber et al. (2009) argues that individual investors



tend to make similar deviation at or around a certain point of time. Such investors do not necessarily reject each other's actions; in fact, their actions share overall potential. Comments revealing herd behavior made by the informants are quoted as below:

"When I am unsure of which stock to invest, I asked for relevant information from friends and informal sources of information in stock market. Such information has a rather high impact on my investment decision";

"It is the fact that information in the Thailand stock market is still neither clear nor timely, hence I mainly rely on informal sources of information to make decision. I do not believe the market is efficient";

"There is a lack of formal information in the Thailand stock market, which is actually a barrier to people's investment decision. I myself often consult analysts, market researchers or foreign investors' decision";

"The trading floor is really interesting with a lot of people and a lot of noises. Those people may have inside information I do not have. Collectively, they are the signal of the market. I cannot deny their influence on me".

Herding behavior has a great impact on investment decision made by individuals in the Thailand stock market especially when people have to make decision in an environment where information is inefficient, information accuracy is not reliable and information transparency is limited. When individual investors do not have faith in the quality and transparency of information in combination with limited information analysis ability, they tend to imitate others in the market (Chiang & Zheng, 2010).

5. Conclusion

This research determines four prominent behavioral biases of individual investors in the Thailand stock market including Overconfidence, Excessive Optimism, Psychology of Risk and Herding Behavior. It sends them a caution about influence of behavioral biases in decision-marking process. Therefore, investors should have knowledge in behavioral finance, to realize behavioral biases which ones influence them. Research result can be considered as basis for the next deep researches in behavioral finance in Thailand. The psychological factors including overconfidence, excessive optimism, attitude towards risk and herd behavior are likely to exist naturally that people can not realize them. Nevertheless, they have a profound impact on making investment decisions of investors. Research result can also give some useful information to financial advisors. They can diagnose behavioral biases which ones can affect their clients in order that they can issue good advices

The limitation of this research is that it is just an investigation into individual investors, not institutional investors. The research just chose sample randomly in Thailand stock market. It is necessary to have further research studies to confirm the findings of this research with the larger sample size and the more diversity of respondents.

Further research studies are also suggested to apply behavioral finance to explore the behavioral factors of institutional investors at the Thailand Stock Exchange. Ethics should



also be included into behavioral factors of institutional investors, especially those in industries in which ethics of stakeholders play a crucial role such as healthcare services. The impact of corporate governance and corporate social responsibility on behavioral factors of institutional investors can attract researchers as well. The relationship between behavioral factors of institutional investors and marketing effectiveness and brand performance can be another interesting research avenue. Behaviors of institutional investors as an important stakeholder group also can create sense of urgency for higher level of organizational changes and learning.

References

Banerjee, A. V. (1992). A simple model of herd behavior. *The Quarterly Journal of Economics*, 797-817. https://doi.org/10.2307/2118364

Barber, B. M., & Odean, T. (2001). Boys will be boys: Gender, overconfidence, and common stock investment. *Quarterly journal of Economics*, 261-292. https://doi.org/10.1162/003355301556400

Barber, B. M., Odean, T., & Zhu, N. (2009). Do retail trades move markets?, *Review of Financial Studies*, 22(1), 151-186. https://doi.org/10.1093/rfs/hhn035

Barberis, N., & Huang, M. (2001). Mental accounting, loss aversion, and individual stock returns. *The journal of finance*, 56(4), 1247-1292. https://doi.org/10.1111/0022-1082.00367

Barberis, N., & Thaler, R. (2003). A survey of behavioral finance. *Handbook of the Economics of Finance*, 1, 1053-1128. https://doi.org/10.1016/S1574-0102(03)01027-6

Bikhchandani, S., & Sharma, S. (2000). Herd behavior in financial markets. IMF Economic Review, 47(3), 279-310.

Chiang, T. C., & Zheng, D. (2010). An empirical analysis of herd behavior in global stock markets. *Journal of Banking & Finance*, 34(8), 1911-1921. https://doi.org/10.1016/j.jbankfin.2009.12.014

De Bondt, W. F., & Thaler, R. H. (1995). Financial decision-making in markets and firms: A behavioral perspective. *Handbooks in operations research and management science*, *9*, 385-410. https://doi.org/10.1016/S0927-0507(05)80057-X

Evans, D. A. (2006). Subject perceptions of confidence and predictive validity in financial information cues. *The Journal of Behavioral Finance*, 7(1), 12-28. https://doi.org/10.1207/s15427579jpfm0701_3

Fromlet, H. (2001). Behavioral Finance-Theory and Practical Application: Systematic Analysis Of Departures From The Homo Oeconomicus Paradigm Are Essential For Realistic Financial Research And Analysis. *Business economics*, 63-69.

Gervais, S., Heaton, J., & Odean, T. (2002). The positive role of overconfidence and optimism in investment policy. *Rodney L White Center for Financial Research-Working Papers*.



Grinblatt, M., & Han, B. (2002). The disposition effect and momentum. Retrieved from Lai, M.-M., Low, K., & Lai, M.-L. (2001). Are Malaysian investors rational? *The Journal of Psychology and Financial Markets*, 2(4), 210-215.

Hwang, S., & Salmon, M. (2004). Market stress and herding. *Journal of Empirical Finance*, *11*(4), 585-616. https://doi.org/10.1016/j.jempfin.2004.04.003

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. Econometrica: *Journal of the Econometric Society*, 263-291. https://doi.org/10.2307/1914185

Lehenkari, M., & Perttunen, J. (2004). Holding on to the losers: Finnish evidence. *The Journal of Behavioral Finance*, 5(2), 116-126. https://doi.org/10.1207/s15427579jpfm0502 5

Oberlechner, T., & Osler, C. L. (2008). Overconfidence in currency markets. Available at SSRN 1108787. https://doi.org/10.2139/ssrn.1108787

Odean, T. (1998). Are investors reluctant to realize their losses? *The journal of finance*, 53(5), 1775-1798. https://doi.org/10.1111/0022-1082.00072

Olsen, R. A. (2007). Investors' Predisposition for Annuities: A Psychological Perspective. *Journal of Financial Service Professionals*, 61(5).

Ritter, J. R. (2003). Behavioral finance. *Pacific-Basin finance journal*, 11(4), 429-437. https://doi.org/10.1016/S0927-538X(03)00048-9

Shefrin, H. (2000). Beyond Greed and Fear Harvard Business School Press: Boston.

Shleifer, A. (2000). Inefficient Markets: An introduction to behavioural finance: OUP Oxford.

Taylor, S., & Brown, J. (1988). Illusion and well-being: a social psychological perspective onmentalhealth.Psychologicalbulletin,103(2),193.https://doi.org/10.1037/0033-2909.103.2.193

Tversky, A., & Kahneman, D. (1975). Judgment under uncertainty: Heuristics and biases, *Utility, probability, and human decision making* (pp. 141-162): Springer. https://doi.org/10.1007/978-94-010-1834-0_8

Wameryd, K.-E. (2001). Stock-market psychology: How people value and trade Stocks. Northampton. USA: MA: Edward Elgar.

Waweru, N. M., Munyoki, E., & Uliana, E. (2008). The effects of behavioural factors in investment decision-making: a survey of institutional investors operating at the Nairobi Stock Exchange. *International Journal of Business and Emerging Markets*, 1(1), 24-41. https://doi.org/10.1504/IJBEM.2008.019243

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