Market's Reaction to Analytical Information From Brokerage Institutions: Empirical Evidence From Stock Market in Vietnam

Van Huy Bui[1], Van Manh Ha Nguyen[2], Dang Thanh Minh Tran[3,4], Bich Loc Tram[3], Gia Quyen Phan[4] & Tran Thai Ha Nguyen[3]

[1] Market Strategies Department, Ho Chi Minh City Securities Corporation (HSC), Vietnam

[2] Faculty of Finance and Commerce, Ho Chi Minh City University of Technology, Vietnam

[3] Faculty of Finance and Accounting, Saigon University, Ho Chi Minh City, Vietnam

[4] University of Economics and Law, Vietnam National University-Ho Chi Minh City, Vietnam

Correspondence: Van Huy Bui, Market Strategies Department, Ho Chi Minh City Securities Corporation (HSC), Vietnam.

Received: August 22, 2020 Accepted: November 5, 2020 Online Published: January 6, 2021

doi:10.5430/rwe.v12n1p189 URL: https://doi.org/10.5430/rwe.v12n1p189

Abstract

This paper examines the market's reaction to brokerages' recommendations on the Vietnamese stock market. The results indicate that stock analysts tend to show a drastically positive bias, with the overwhelming number of optimistic recommendations compared to negative ones. The abnormal rate of return following upscaling recommendations is positive, incremental, and statistically significant from the offered moment to a month later, which is consistent with results from different measures of the standard portfolio. However, the study has not found cogent evidence of the market reaction to downgrading recommendations. This research emphasizes the significant role of analytical information on the stock market in Vietnam, and the implications are discussed based on this study's findings. The study results are the foundation for investors' considerations about brokerages' proposals before their trades.

Keywords: recommendation, upgrading, downgrading, abnormal rate of return, stock, Vietnam

1. Introduction

Based on the efficient market theory, stock price reflects all market information in a perfect market. This demonstrates that investors expect the profits of their investment based on price and collected information. However, information is rarely perfect in practice, and this allows investors to improve information efficiency by detecting costly information and incorporating their information into a secured price (Grossman, S., 1976; Grossman, S. J. and Stiglitz, 1980; Grossman, H. I. and Iyigun, 1995). Thus, the influence of information is considered to be significant, especially recommendations on purchasing, holding, and selling stocks provided by stock analysts. On the role of information, if analysts believe that fair market is working, they will revise their recommendations based on new price-value comparisons built on personal information and beliefs in their outstanding ability to generate information by handling public information. It is widely accepted that analysts are information agents, and they convey negative information through downgrading revisions (e.g., modifying purchasing to holding) and positive information through upgrading revisions (e.g., modifying holding to purchasing). Through analyses, the analysts transmit information about the company's performance to investors, which is a popular source of information for making decisions.

Although the role of analytical information is widely accepted in both academia and practice, there are many reasons to question how the analysts' recommendations affect the information on the stock market. Firstly, the same revisions of recommended information are provided to all prudent investors at the same time, which makes them invaluable to any individual investors. Secondly, previous empirical evidence shows that either a specific recommendation or a change in revision has an impact on the abnormal rate of return (Barber et al., 2007; Agrawal and Chen, 2008; Moshirian et al., 2009; Bradley et al., 2014a; Bradley et al., 2014b; Jiang et al., 2014). Thirdly, there are also studies showing that more than one-third of the recommended revisions are opposite to measured market returns (Conrad et al., 2006). This raises the question of whether or not recommended information promotes other purposes, collectively, marketing, because events and news provide analysts with abundant opportunities to apply their outweighed skills to

process news into new information. However, while such processing may occur, their revisions usually do not contain too much information, which is against the informative/ abstracted role. Analysts revise their recommendations for events, profits, and return predictions so that these recommendations become more adaptable to recent returns, which improves their reputation, promotes transactions, increases brokerage revenue and income.

Hence, research on the role of recommended information on the stock market should be continued. The aiming of this study is shown clearly in two frontiers. On the one hand, the study will provide additional evidence on the role of information towards the investors and market response. It, therefore, offers the foundation for investors before engaging stock trading. On the other hand, the number of studies that have examined the impact of changes in recommended revisions on the abnormal rate of return is restricted in Vietnam. Moreover, although the Vietnamese stock market is a nascent market with just 20 years of development, it has experienced rapid growth, with an average increase of more than 50% per year. According to the State Securities Commission of Vietnam (SSC), until June 30th, 2020, the total capitalization of the Vietnamese stock market reached 5.5 million billion, the ratio of market capitalization on GDP increased from 0.3% in 2000 to 104% in June 2020. Accordingly, the stock market capitalization reached over VND 4 million billion, equivalent to about 64.5% of GDP in 2019. However, the market is not highly stable, and its movements have not fully reflected economic development as well as investors' reactions. This raises the question of the role of information on the Vietnamese stock market and its influence on investors' behaviors. Therefore, this study directly addresses the role of information in the stock market, through considering the information aspect of the analyst's recommendations.

The methodology of this study is to analyze the return rate volatility before and after brokerages' recommendations are given. The entire part of this study is structured as follows: excluding Part 1 for introduction, Part 2 mentions the related theories and literature review. Part 3 describes the methodology, data, and demonstrates models. Part 4 discusses the empirical findings, and Part 5 shows remarked conclusion and implications.

2. Theory Framework and Literature Review

2.1 Theory Framework

The efficient market hypothesis (EMH) has been initially developed since the early years of the 20th century and then becomes one of the important components in financial theories and practice. EMH states that prices reflect all available information, and it is difficult for any investors to dominate the market in the long run. However, Cowles (1933) shows that professional investors' stock selection cannot beat random selection, meaning the existence of ineffectiveness in transferred informative. Then, Cowles and Jones (1937) develop a hypothesis of random walk in stock prices; later on, it is also confirmed by Fama (1965). It leads to a suspicion that the market's effectiveness is inconsistent, and the transferred information depends on the form of the effectiveness of the stock market. Later, Fama (1970) divides the efficient market into strong form, medium, and weak forms. The main difference among form is the level of reflected information in stock price, such as past information, current information, or all information. When the book "*A Random Walk Down Wall Street*" of Malkiel (1973) was published, the EMH and random walk theory become popular and play an essential role in the theory and practice of the financial industry.

The foundation of EHM states that all information in a market is transferred into a stock price, including public or private ones. It leads to a situation that no one can get an advantage from information, even insider information. EHM suggests that abnormal returns can not gain regardless of the amount of accessed information. However, Grossman, S. J. and Stiglitz (1980) claim that markets hardly reach an efficiency because the information is not free. The return on invested capital (ROIC) must be higher than the cost of information; otherwise, the investment tends to disappear. In their model, a trader who invests in studies gets their profit through speculative rate of return that at least offsets the costs of their investment. The trading activities of this group of investors will push the stock price back to its real value. Shiller Shiller (1980), as well as De Bondt and Thaler (1985), argue that investors often overreact to published basic information, which then outrageously reflects on prices. Other studies showing the market abnormality is Banz (1981)'s effect on the situation when the shares of small companies tend to have better returns than bigger companies. Jegadeesh and Titman (1993) demonstrate that the strategy of buying stocks with a strong inertia and selling stocks with weak inertia of increasing price may bring an outstanding rate of return of 8 percent per year. Thus, the debates on the role of EMH are still controversial.

On the one hand, EMH describes the modern stock market when information and transactions are made quickly. On the other hand, there are still stock patterns that EMH cannot fully explain. Thus, the empirical evidence for the effectiveness of information continuously needs to be clarified through the recommended information of analysts.

2.2 Literature Review

Although the earliest studies often claim a skeptical view of the analyst's role and abilities (Cowles, 1933; Diefenbach, 1972; Bidwell, 1977, and Groth et al., 1979). However, they are criticized that their samples were biased, and the data was inaccurate, leading to unreliable conclusions (Womack, 1996). Other arguments are that the analysts' recommended revisions are most often associated with business-related events, especially, earnings claims (Altınkılıç and Hansen, 2009; Altınkılıç et al., 2013; Kim and Song, 2015; and Altınkılıç et al., 2016). Therefore, the extraordinary rate of return followed by recommendations is the result of many predictive factors of future returns, such as price inertia and profit announcement rather than from analysts' recommendations. Recently, Altınkılıç et al. (2013), using intraday data show that recommended revisions provide scanty new information. Analysts' evaluations only comprise a chain of information, following key business events. However, Bradley et al. (2014b) point out that the collected data from I/B/E/S classification is delayed by an average of 2.4 hours, and most of this delay occurs before trading time. This delay creates a big effect on the abnormal rate of return. Information on releasing times of reports obtained from alternative sources of I/B/E/S, including Dow Jones News Retrieval, Reuters and Lexis-Nexis, shows an abnormal 30-minute rate of return for recommended revisions using alternative data source at 1.83% (-2.10%) compared to -0.07% (-0.09%) when using I/B/E/S data. This result partly explains inaccurate conclusions in the study of Altınkılıç and Hansen (2009). Then, Kim and Song (2015) show evidence that after controlling the variable of the company manager's disclosure, the abnormal rate of return no longer exists. On the market, profit announcement events are completely free for investors, so the study doubts the market role of analysts. Altınkılıç et al. (2016) questioned the analysts' role, stating that although the market has certain responses to recommendations, after considering transaction costs, the abnormal return is almost back to zero. Additionally, the study also shows that in the period of 2003 and later, the phase of the high-frequency trading algorithm, the abnormal rate of return is not significantly different from zero, and it comes to the conclusion that the analyst's role was greatly reduced in the age of supercomputers.

On the contrary, the study of Cooper et al. (2001), Jegadeesh et al. (2004), Green (2006), Barber et al. (2007), Agrawal and Chen, 2008, and Jegadeesh and Kim (2009) give the empirical evidence to support a view that analysts' recommendations play an important role on the U.S. stock market. In other markets, Bjerring et al. (1983) study the brokerages' stock recommendations in Canada and the U.S.; Dimson and Marsh (1984) for the U.K. stock market during 1980-1981; Yazici (2002) on the Turkish stock market; Jegadeesh and Kim (2009) for G7 countries; Lidén (2006) on the Swedish stock exchange; Moshirian et al. (2009) for 13 emerging markets; and Jiang et al. (2014) on the Chinese stock market. They also give similar results when the market reaction follows the recommendations. In most research samples, the number of buying recommendations outweighs selling recommendations. According to Diefenbach (1972) and Womack (1996), this mainly derives from a conflict of interest due to the higher cost of making negative recommendations. Analysts are reluctant to make bad recommendations that damage relationships with businesses and stakeholders. This also partly explains the fact that negative recommendations have a stronger effect than positive recommendations in many markets (Womack, 1996; Ivković and Jegadeesh, 2004; Green, 2006; Jegadeesh and Kim, 2006). Empirical evidence from Jegadeesh et al. (2004) show that the recommended revisions contain more information than a specific recommendation or the analyst's consensus and are a better predictor of the abnormal rate of return. Recent studies also prioritize recommended revisions rather than specific recommendations. Moreover, Stickel (1995) shows that recommendations from large brokerage firms have a stronger effect than from a smaller one, and the firm's size is contrastingly related to the influence of the recommendations. Cooper et al. (2001) find evidence that leading analysts offer more information to the investor than followers. Jegadeesh and Kim (2006) study the analysts' role in the G7 and conclude that analysts in the U.S. are more skillful than colleagues in other countries in detecting undervalued stocks. This is one of the factors that cause the market to react more strongly to recommendations in the U.S. market when compared to other markets. The results of Jegadeesh and Kim (2006) also show that smaller firms respond more strongly to recommendations than larger firms. Ryan and Taffler (2006) also find similar evidence showing that small firms are more strongly influenced by recommendations, which results in a higher abnormal rate of return.

However, the problem that is also frequently mentioned in previous studies is how the conflicts of interest of the investment banks affect the analyst's recommendation process. Research by Ryan and Taffler (2006) on the U.K. stock market finds no evidence for the existence of bias in the reports released from the analysis department of investment banks. Conversely, the empirical results of Barber et al. (2007) on the U.S. market state that the market reaction is weaker to a buying recommendation and stronger to a sell recommendation from the analysis department of banks. This suggests that a conflict of interest leads bank analysts to give positive recommendations and to be reluctant to recommend negative ones. Agrawal and Chen (2008) conclude that there exists a conflict of interest

when making recommendations in the U.S. stock market, but the market seems to discount this conflict of interest in response to recommendations. It shows that analysts with a conflict of interest are not able to mislead the investors with optimistic recommendations on the stock price. Regarding analysts' recommendation-making behaviors, they tend to issue recommendations close to important business events and show herding behaviors. The studies of Ivković and Jegadeesh (2004), Altınkılıç and Hansen (2009), and Altınkılıç et al. (2016) show that most of the recommendations from analysts are issued close to important milestones such as income disclosure, mergers, and acquisitions, etc., from which these studies investigate whether the extraordinary returns are gained from recommendations or from those events. Study of Jegadeesh and Kim (2009) on the U.S. stock market with recommendations from November 1993 to December 2005 about the herding behavior of analysts. The market reacts more strongly to recommended revisions when they are opposed to the current consensus. This research claims that herding behavior is stronger in the case of a downgrading recommendation, suggesting that analysts do not want to stand alone when offering negative views. Analysts at large brokerage firms tend to show more herding behaviors than at small firms, and they are less likely to revise recommendations with more herding traits.

3. Data, Methodology, and Model

3.1 Research Data

On the stock market, the analysis department of securities firms is classified as a "sell-side" analysis to distinguish from a "buy-side" analysis and independent analytical firms. All the recommendations of these three groups are obtained from the recommendation statistics system of Bloomberg. However, this study only focuses on recommendations from securities companies. Data is extracted from Bloomberg, and stocks lacking data on any criteria will be excluded from the sample. The standard portfolio return will be calculated using both the equal-weighted method and the capitalization-weighted method. The period for data is from January 1st, 2010 to December 31st, 2015, with stock recommendations on Ho Chi Minh Stock Exchange (HOSE). It is because Bloomberg has just started to collect data on recommendations since 2008, and statistics of recommendations before 2010 are relatively sporadic. Data on prices, trading volume, market capitalization, and other business-related variables are also collected from Bloomberg's system. In Bloomberg's system, the recommended date, target price, suggesting company, suggesting employee's name, recommendations, and revisions are all provided. Recommended revisions are also reported in detail; the system uses the symbol "U" (Up) for upgrading recommendations, "D" (Down) for downgrading recommendations, "M" (Maintain) for maintaining the recommended level and "N" (New) for new recommendations.

The Vietnamese stock market is still very young, and only after the financial crisis, investors became more interested in fundamental analysis of enterprises, and analysis department of securities companies are formed. Hence, many recommendations on listed companies are newly offered. The studies of Green (2006), Altınkılıç and Hansen (2009), Bradley et al. (2014a) reject new recommendations and ones without prior information because it is impossible to identify the state of previous recommendations. This stems from the fact that the number of recommendations on the U.S. stock market is vast and has a long record, which makes it very difficult to obtain all the previous information. However, the studies of Barber et al. (2007) include new recommendations in their researches. In the Vietnamese market, with initial recommendations, the Bloomberg system has a clear caption with the letter "N" (New) for each of them. Thus, it is entirely possible to identify specific information on new recommendations. Therefore, in this study, the new positive recommendations are classified into the upgrading group, and the new negative recommendations into downgrading group to avoid the omission of observational information. Brokers and different analytical firms use different words for their recommended information; for example, "Buy – Hold – Sell" or "Buy – Outperform – Hold – Underperform – Sell". This study statistically records the recommendations of securities companies in the sample to determine whether each recommendation is positive or negative, as shown in Table 1.

Table 1. Recommendations in sample

Corporate	Negative recommendation			Positive recommendation	
	1	2	3	4	5
SSI	Sell		Hold		Buy
VPSC	Sell		Hold		Buy
VCSC	Sell	Underperform	Hold	Outperform	Buy

HSC	Sell	Underperform	Hold	Outperform	Buy
ACB	Sell	Underperform	Hold	Outperform	Buy
VDS	Sell	Reduce	Neutral	Accumulate	Buy
BVC	Sell	Underperform	Hold/Neutral	Outperform	Buy
MBKE	Sell		Hold		Buy
VCBS	Sell		Hold/Neutral		Buy
VNDS	Sell	Reduce	Hold	Accumulate	Buy
MSC	Sell		Hold		Buy
Woori	Sell	Underperform	Hold	Outperform	Buy
TVSC	Sell		Hold		Buy
SBS	Sell		Hold/Neutral		Buy
BSC	Sell/Strong Sell	Buy	Hold	Buy	Buy/Strong Buy
FPTS	Sell	Reduce	Hold/Neutral	Add	Buy
VinaSec	Sell	Underperform	Hold	Outperform	Buy
MBS	Sell		Hold		Buy
HRS	Sell	Underperform	Hold/Neutral	Outperform	Buy
Mirae Asset	Sell		Hold		Buy
PSI	Sell		Hold		Buy

Source: HOSE database

Table 2 shows the statistical results of recommendations from brokerage institutions for the HOSE market from 2010 to 2015 (Appendix 1). The sample consists of 1,268 collected recommendations, in which there are 202 "N" recommendations. In Table 3.2, U", "D", "M", "N" are Up, Down, Maintain and New recommendations, respectively. Recommendations are classified into five categories ranging from strong buy to strong sell, relied on the I/B/E/S classification. We note that "Note rate" means no recommendations.

Consequently, the number of positive recommendations outweighs the negative others, for example, 674 positives and 114 negatives. The ratio between positive and negative recommendations is more than seven times. It shows a positive bias in the analysts' recommendations, which has been shown in most previous studies.

Table 2. Statistical recommendations from 2010 to 2015 in HOSE

Year	**Up (U)**	**Down (D)**	**Maintain (M)**	**New (N)**	**Total**
2010	13	16	49	80	158
2011	5	9	95	29	138
2012	15	28	139	25	207
2013	12	13	133	7	165
2014	22	15	218	24	279
2015	27	23	234	37	321
Total	**94**	**104**	**868**	**202**	**1,268**

Source: HOSE database

Table 3. The number of recommendations by the group

Year	Strong Buy	Buy	Neutral	Sell	Strong Sell	Not Rated	Total
2010	84	10	38	3	21	2	158
2011	59	13	43	-	21	2	138
2012	77	7	100	3	18	2	207
2013	60	16	77	5	7	-	165
2014	98	48	108	10	14	1	279
2015	138	64	106	6	6	1	321
Total	**516**	**158**	**472**	**27**	**87**	**8**	**1,268**

Source: HOSE database

When we sort analyst recommendations into 03 categories quintile based on the value of capitalization, 30% of the 1st quintile is the highest capitalization, the middle capitalization consists 40%, and the lowest capitalization remains 30%. These results show that the number of analyst recommendations is overwhelming for large firms with high capitalization, accounting for more than 90% of the total number of recommendations. Indeed, the recommended stocks only account for 26.3% of the number of stocks on the HOSE market, but they contain over 84.97% of the value capitalization in 2015. We conclude that analysts have an intention to analyze the high-value stocks on the market, and these groups will often have many changes in recommendations. It is similar to the empirical results of Womack (1996), Jegadeesh et al. (2004), Jegadeesh and Kim (2006). After statistical analysis, there are 202 upgrade recommendations and 123 downgrade recommendations to be included in this study.

3.2 Methods

It is assumed that *t* is the day when the analysts give the change in their recommendations for stock *i*, $r_{i,\tau}$ is the rate of return of stock *i* in the date τ, $r_{bm,\tau}$ is the rate of return of a standard portfolio of the date τ and H is the time for holding. The abnormal rate of return $AR_i(t,H)$ from buying and holding strategies of stock *i* during H-days begins from the date when there is the difference between the abnormal rate of return and rate of return of the standard portfolio.

$$AR_i(t,H) \equiv \prod_{\tau=t}^{t+H}(1+r_{i,\tau}) - \prod_{\tau=t}^{t+H}(1+r_{bm,\tau}) \quad (1)$$

It is essential to test the significant difference between 0 and abnormal rate of return which gained by recommendations of analysts, the study applies *t* statistic, which is suggested by Jegadeesh and Karceski (2009). This test is suitable in the case of heteroskedasticity and autocorrelation problems in an abnormal rate of return. The below function calculates the average abnormal rate of return:

$$\overline{AR}_{sample}(H) = \frac{1}{N}\sum_{t=1}^{T}\sum_{i=1}^{N_t} AR_i(t,H)\ (N_t > 0) \quad (2)$$

where N_t is the number of recommendations in date *t*, *T* is the number of trading days and $N = \sum_{t=1}^{T} N_t$ is the total of changed recommendations of sample period. In this study, the date is set up by H = 0, 1, 5, 22, 44, 62, 120 trading sessions with the rate of return at the recommended day, rate of return in next day, rate of return in a week, rate of return in a month, rate of return in two months and rate of return in six months, respectively. To perform inference statistics, the variance of the mean outliers of return in equation (2) is estimated as follows:

$$Var\left[\overline{AR}_{sample}(H)\right](t,H) = w'Vw \quad (3)$$

where V is the variance-covariance matrix, in which the element *(i,j)* equals $\sigma_{i,j}$ and $\sigma_{i,j} = cov[\overline{AR}(i,H), \overline{AR}(j,H)]$ with $\overline{AR}(t,H)$ is the average abnormal rate of return for all recommended changes in the date *t*:

$$\overline{AR}(t,H) = \begin{cases} \frac{1}{N_t}\sum_{0}^{Nt} {AR_i}^2(t,H), & N_t > 0 \\ 0, & in\ other\ cases \end{cases} \quad (4)$$

Thus, it is important to estimate $\sigma_{i,j}(i,j = 1,2,\dots T)$. Jegadeesh and Karceski (2009) propose a reliable estimation method for $\sigma_{i,j}$ in both cases (i) the correlated and homogeneous average abnormal rate of return and (ii) the

correlated and heteroskedastic average abnormal rate of return. In the case of the correlated and homogeneous average abnormal rate of return, $\sigma_{i,j}$ is estimated:

$$\sigma_{i,j} = \begin{cases} \sigma^2 = \frac{1}{T_N}\sum_{\substack{i=1 \\ N_i>0}}^{T} \overline{AR}^2(i,H) & if\ i = j \\ \rho_j = \frac{1}{T_N}\sum_{\substack{i=1 \\ N_i>0 \\ N_{i+j}>0}}^{T} [\overline{AR}(i,H).\overline{AR}(j,H) & if\ 1 \le |i-j| \le H \\ 0, & in\ other\ cases \end{cases} \quad (5)$$

In the case of the correlated and heteroskedastic average abnormal rate of return, $\sigma_{i,j}$ is estimated:

$$\sigma_{i,j} = \begin{cases} [\overline{AR}(i,H).\overline{AR}(j,H) & if\ 0 \le |i-j| \le H \\ 0, & in\ other\ cases \end{cases} \quad (6)$$

Because the stock return is estimated by the fluctuation over time, and the abnormal rate of return seems to be correlated together. It is important to estimate both cases of autocorrelation and heteroskedasticity. The inference statistics based on *t-statistic* estimate robustly in these cases, and it is calculated based on the below formula:

$$t_{HAC} = \frac{\overline{AR}_{sample}}{\sqrt{w'\hat{V}w}} \quad (7)$$

3.3 Model and Variables

This study uses the abnormal rate of return to measure the market's response to recommended revisions, calculated based on a comparison of stock return and standard portfolio return. The standard portfolio is formed based on firm characteristics, following the studies of Daniel et al. (1997), Wermers (2003), and other studies about this topic. Then, we conduct the below model to investigate the market reaction to analysts' revisions:

$$BHAR_i(H) = a_1.d_{UP} + a_2.d_{DN} + a_3.SIZE + a_4.BM + a_5.LRET + a_6.TURN + a_7.VOLA + a_8.LEV + \varepsilon \quad (8)$$

Where $BHAR_i(H)$ is an abnormal rate of return (%) of analysts' revisions after H-days of trading secession. Dummy variable d_{UP} (d_{DN}) is coded as 1 in case of upgrading or downgrading revisions and equals 0 in other cases. To control the bias problems in estimating, we add more control variables that present the firm's specifications. All control variables are standardized to avoid the time effects by the standardization method, which was used by Amihud (2002), Jegadeesh and Kim (2006), Jiang et al. (2014) and Altınkılıç et al. (2016).

- SIZE is the firm's market capitalization at the end of the most recent quarter. Banz (1981), as well as Fama and French (1992), suggest that small firms create higher abnormal rate of return than bigger firms;
- B.M. is the ratio of book-to-market value at the end of the most recent quarter. Fama and French (1992) argue that firms with higher B.M. are more likely to gain a higher rate of return than other firms (growing companies)
- LRET is stock return in the most recent quarter. Jegadeesh and Titman (1993) indicate empirical evidence that stocks with high (low) inertia of price are more likely to gain higher (lower) return in the next 12 months;
- TURN is the average trading volume on the total number of circulating stocks in the most recent quarter. Lee and Swaminathan (2000) propose that stocks with big (small) trading volume gain higher (lower) return;
- LEV is the ratio of total assets to total liabilities or firm's leverage at the end of the most recent quarter. Modigliani and Miller (1958) suggest that the return on equity (ROE) increases when leverage is higher. Thus, we expect LEV is negatively correlated to the abnormal rate of return;
- VOLA is the standard deviation of stock return in the most recent quarter. French et al. (1987) indicate that the expected stock risk premium increases if stock volatility is higher, so VOL is also expected to have a positive correlation with the abnormal rate of return.

4. Results

In this part, the study presents the market's response to the recommended revisions. In Table 4.1, the results show the market reaction to the stock recommendation in Vietnam. They show that the market has an apparent response to upgrading recommendations, and this effect lasts from the recommended time until one month later. From one to six months later, the effect is just statistically found on the portfolio calculated by the equal-weighted method. This

means the abnormal rate of return is incremental, and information is moving forward, upgrading commendations of analysts. The abnormal rate of return from two to six months later of portfolio calculated by the capitalization-weighted method is not statistically significant, but still in an uprising trend. Conversely, this study does not find credible evidence about the market's response to downgrading recommendations. The trend of the abnormal rate of return is also unclear. Table 4 shows the difference in the abnormal rate of return obtained from upgrading and downgrading information.

Table 4. The market reaction with upgrade and downgrade recommendations

Time	**Upgrade recommendations (N=202)**			**Downgrade recommendations (N=123)**		
	EW	**VW**	**Index**	**EW**	**VW**	**Index**
0	0.63 **	0.62**	0.54**	0.58**	0.56**	0.52**
	(2.07)	(2.27)	(2.06)	(2.51)	(2.47)	(2.37)
1	0.53*	0.50*	0.38	0.23	0.23	0.25
	(1.73)	(1.79)	(1.48)	(0.84)	(0.80)	(0.93)
5	1.19**	1.13**	1.25**	-0.20	-0.14	-0.16
	(2.52)	(2.36)	(2.47)	(-0.53)	(-0.31)	(-0.36)
10	1.20**	1.13**	1.26**	-0.25	-0.09	-0.52
	(2.13)	(1.98)	(2.21)	(-0.39)	(-0.13)	(-0.72)
22	1.53**	1.44*	1.74**	-0.83	-0.34	-1.84**
	(2.22)	(1.76)	(2.16)	(-1.21)	(-0.40)	(-2.20)
44	2.26**	1.80	1.59	-0.29	0.55	-1.18
	(2.34)	(1.47)	(1.18)	(-0.39)	(0.48)	(-1.18)
62	2.88**	2.17	1.86	-0.14	1.07	-1.28
	(2.19)	(1.52)	(1.11)	(-0.14)	(0.83)	(-1.14)
125	3.57*	2.26	1.32	-0.28	1.07	-2.71
	(1.88)	(0.97)	(0.49)	(-0.16)	(0.42)	(-1.27)

Note: *, **, *** represent the level of significance at 1%, 5%, and 10%, respectively. ( ) is t-statistic. E.W. is the standard portfolio rate of return calculated by the equal-weighted method, and V.W. is the standard portfolio rate of return calculated by the capitalization-weighted method. The index is the market index of the Vietnamese exchange market (VN-Index).

Source: HOSE database

The absolute value of coefficients of upgrading recommendations is bigger than downgrading ones, though most of the downgrading information is not statistically significant. This proves that upgrading recommendations create stronger effects than the opposite ones. This result is against many prior studies such as Ivković and Jegadeesh (2004), Green (2006), and Jegadeesh and Kim (2006). Besides, the stronger effect of selling advice found in this study is similar to the study of Jiang et al. (2014). According to the authors, there are two reasons to make downgrading information less effective than upgrading commendations in the Chinese market: (1) short-selling room and (2) investors' psychology on the market. Until now, the Vietnamese stock market does not allow to make short selling, so we cannot test whether this transaction affects market reaction towards downgrading information. For the latter reason, the variable is the number of analysts who follow each stock, and this study finds it insignificant. Next, this study investigates the impact of upgrading (Sell) and downgrading (Buy) recommendations on the stock price.

Table 5. The market reaction with upgrade (Sell) and downgrade (Buy) recommendations

Time	Upgrading recommendations (N=156)			Downgrade recommendations (N=41)		
	EW	VW	Index	EW	VW	Index
0	0.90**	0.89***	0.77**	0.81*	0.56	0.60
	(2.39)	(2.62)	(2.38)	(1.77)	(1.32)	(1.44)
1	0.86**	0.80**	0.65**	0.79	0.38	0.69
	(2.26)	(2.37)	(2.11)	(1.56)	(0.76)	(1.46)
5	1.50***	1.43**	1.48**	0.98	1.10	1.11
	(2.68)	(2.48)	(2.50)	(1.47)	(1.41)	(1.54)
10	1.37**	1.29*	1.30**	-0.40	-0.09	-0.20
	(2.08)	(1.95)	(2.05)	(-0.40)	(-0.08)	(-0.19)
22	2.06**	1.76*	1.92**	-2.57*	-2.74*	-4.17
	(2.41)	(1.77)	(2.03)	(-1.94)	(-1.85)	(-2.69)
44	3.16**	2.46	2.33	-3.37*	-4.32	-5.29**
	(2.43)	(1.55)	(1.40)	(-1.76)	(-1.67)	(-2.18)
62	3.92*	2.85	2.67	-2.22	-3.78	-4.63**
	(2.43)	(1.59)	(1.31)	(-1.11)	(-1.49)	(-2.02)
125	4.20	2.42	1.63	-1.47	-4.86	-7.14
	(1.53)	(0.79)	(0.49)	(-0.34)	(-1.06)	(-1.61)

Note: *, **, *** represent the level of significance at 1%, 5%, and 10%, respectively. ( ) is t-statistic. E.W. is the standard portfolio rate of return calculated by the equal-weighted method, and V.W. is the standard portfolio rate of return calculated by the capitalization-weighted method. The index is the market index of the Vietnamese exchange market (VN-Index).

Source: HOSE database

The results in Table 5 show that upgrade (Buy) recommendations and downgrade (Sell) recommendations have a positive impact than general recommendations. Specifically, their coefficients are positive and stronger in the case of upgrade (Buy) recommendations. They are statistically significant from date t = 0 to one month after the given recommendations in all standard portfolio. In the period from 1 month to 6 months, the statistical significance only occurs in the standard portfolio calculated by the equal-weighted method. This is similar to studies of Jegadeesh and Kim (2006) with G7 countries, Moshirian et al. (2009), with 13 emerging countries. They also find that upgrade (Buy) recommendations and downgrade (Sell) recommendations have a significant influence than general recommendations. For the downgrade (Sell) recommendations, a similar effect is found. Their coefficients are negative and have a greater absolute value than the general recommendations. The statistical significance is found more and concentrated in the period from one to three months. We illustrate this trend by the following figures:

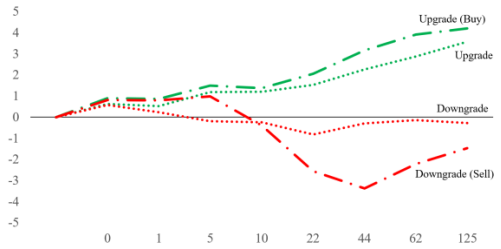

Figure 1. Movements of the abnormal rate of return in the standard portfolio using the equal-weighted method

Source: HOSE database

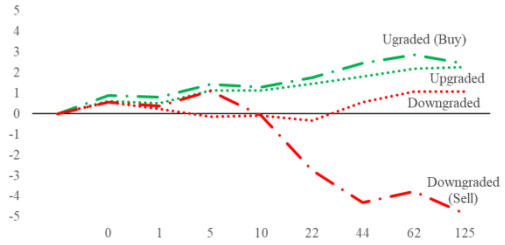

Figure 2. Movements of the abnormal rate of return in the standard portfolio using the capitalization-weighted method

Source: HOSE database

Table 6 shows the estimated results of the equation (8). Statistic coefficients of upgrading d_{UP} and downgrading d_{DN} recommendations are consistent with *t*-test results. All coefficients of upgrading information are positive and statistically significant at mostly different time range. This once claims that the market reacts positively to upgrading advice. Though the market's response is not apparent for downgrading information because few coefficients are statistically significant, and their distribution is uneven. Regarding control variables for firm characteristics, the variable for book-to-market value (bm) has the clearest effect on the abnormal rate of return. Specifically, B.M. is usually statistically significant and has positive coefficients. This means stocks with high book-to-market value ratio or trending stocks create a positive abnormal rate of return. This result is opposed to Jegadeesh et al. (2004) and Moshirian et al. (2009). Before, Moshirian et al. (2009) arguing that growth stocks are in favor of analysts and critical factors to explain the abnormal rate of return in emerging markets. Nevertheless, the regression results claim that abnormal rate of return evolves with SIZE, LRET, TURN, and opposes to VOLA. This result implies that highly capitalized stocks sharply increase price inertia, and stocks with high liquidity have a tendency to gain higher abnormal rate of return. By contrast, stocks with higher volatility (riskier) gain lower the abnormal rate of return.

Table 6. Regression for the abnormal rate of return with upgrade and downgrade recommendations

Standard portfolio using the equal-weighted method (E.W.)								
Independent variables	**Time – H**							
	0		**1**		**5**		**10**	
dUP	0.65	***	0.52	**	1.17	***	1.07	**
dDN	0.59	***	0.23		-0.17		-0.17	
SIZE	0.14		-0.24		-0.17		-0.24	
BM	0.28	*	0.08		0.43		0.62	
LRET	0.05		0.08		0.13		0.02	
TURN	-0.26		-0.18		-0.07		0.90	
VOLA	0.12		0.07		0.14		-0.63	
LEV	-0.07		-0.08		-0.08		-0.27	
R2-Adjusted	0.049		0.003		0.026		0.032	
N	325		325		325		325	

Note: *, **, *** represent the level of significance at 1%, 5%, and 10%, respectively.

Standard portfolio using the equal-weighted method (E.W.) (Cont.)								
Independent variables	**Time – H**							
	22		**44**		**62**		**125**	
dUP	1.36	**	2.12	**	2.84	***	3.68	**
dDN	-0.73		-0.13		0.06		0.13	
SIZE	0.01		0.17		0.99		3.29	**
BM	0.28		1.41	*	2.02	**	3.01	**
LRET	0.27		0.64		0.63		2.04	
TURN	1.51	***	0.74		0.21		-0.88	
VOLA	-0.38		-0.40		0.06		-0.42	
LEV	-0.31		-0.18		-0.65		-1.28	
R2-Adjusted	0.033		0.017		0.021		0.023	
N	325		325		325		325	

Note: *, **, *** represent the level of significance at 1%, 5%, and 10%, respectively.

standard portfolio using the capitalization-weighted method (V.W.)								
Independent variables	**Time – H**							
	0		**1**		**5**		**10**	
dUP	0.56	***	0.37	*	1.19	***	1.10	**
dDN	0.54	**	0.27		-0.09		-0.40	
SIZE	0.22		-0.12		0.00		0.02	
BM	0.31	**	0.13		0.64	*	0.74	*
LRET	0.15		0.22		0.51	*	0.47	
TURN	-0.23		-0.15		0.04		1.06	**
VOLA	0.04		0.00		-0.15		-0.79	*
LEV	-0.07		-0.04		-0.18		-0.25	
R2-Adjusted	0.045		-0.005		0.032		0.041	
N	325		325		325		325	

Note: *, **, *** represent the level of significance at 1%, 5%, and 10%, respectively.

standard portfolio using the capitalization-weighted method (V.W.) (Cont.)								
Independent variables	**Time – H**							
	22		**44**		**62**		**125**	
dUP	1.54	**	1.39		1.77	*	1.21	
dDN	-1.71	**	-0.97		-1.06		-2.19	
SIZE	0.07		0.17		0.62		2.79	*
BM	0.51		1.60	*	1.36		2.12	
LRET	0.85		1.46	*	1.49	*	4.51	***
TURN	1.32	**	0.59		0.07		-0.50	
VOLA	-0.59		-0.49		0.02		-0.23	
LEV	-0.05		-0.09		-0.64		-0.92	
R2-Adjusted	0.050		0.013		0.004		0.029	
N	325		325		325		325	

Note: *, **, *** represent the level of significance at 1%, 5%, and 10%, respectively.

5. Remarked Conclusion

This study examines the market's responses to upgrading and downgrading information offered by brokerage companies in Vietnam during the period 2010 – 2015. This investigation is critical because the influence of information is considered to be significant, especially specialists' recommendations on purchasing, holding, and selling stocks. Moreover, the market's effectiveness is inconsistent, and the transferred information depends on the form of the stock market's effectiveness. However, information is rarely perfect in practice, which allows investors to improve information efficiency by detecting costly information and incorporating their information into a secured price. Hence, research on the role of recommended information on the stock market should be continued. On the one hand, the study will provide additional evidence on the role of information towards the investors and market response. On the other hand, the number of studies that have examined the impact of recommended revisions on the abnormal rate of return is restricted in Vietnam.

By assessing analysts' recommendations and the reaction of trading volumes as well as recommendations' integration into a portfolio, our main results indicate that positive recommendations are overwhelming negative ones, showing the analysts' significantly positive bias on the Vietnamese market. When considering the individual recommendation, investors react positively to upgrading ones. Our results also show that the abnormal rate of return statistically significant with different measures of the standard portfolio from the recommended time to one month later. However, we do not find evidence about market reaction to downgrading recommendations. When separately considering upgrading (Buy) recommendations and downgrading (Sell) recommendations, our results claim that upgrading recommendations make a greater impact than general recommendations because their coefficients of an abnormal rate of return are positive, statistically significant and higher than coefficients of consensus. However, we do not find empirical evidence about the market's reaction to downgrading (Sell) recommendations, although coefficients are negative and have higher absolute value than general recommendations.

To test the robustness, we include control variables for firm's characteristics in the analysis. The results are homogenous with a *t*-test for both upgrading and downgrading information. This once claims the stability of our results, as well as the impact of upgrading recommendations. Besides, this study also finds that stocks with high book-to-market value ratio have a tendency to gain positive the abnormal rate of return, while stocks with significant capitalization, sharply increased inertia of price and high liquidity gain higher abnormal rate of return. On the contrary, stocks with high volatility gain lower the abnormal rate of return, showing that they are risk stocks. Finally, this study can not confirm the convincible evidence about the reaction of trading volume towards analysts' recommendations, for both upgrading and downgrading recommendations.

However, this study also has some limitations. The study only focuses on the standard portfolio during the specific time, and of course, it does not entirely represent the reaction of the Vietnamese market in the long run. Besides, the Vietnamese market has not yet allowed short selling. Although it is possible to conclude that the upgrade recommendations have the potential to bring real extraordinary profits for investors, the changes in the rate of return over holding periods with different portfolios are different and affected by waiting time to put stocks into the portfolio. In addition, the question of whether reaction differs in response to recommendations among firms with high and low capitalization needs to be clarified. This study contributes to the current literature on the critical role of information on stock markets, especially brokerages' information. Indeed, our findings are similar to the results of Womack (1996), Jegadeesh et al. (2004), and Jegadeesh and Kim (2006). In the context of an emerging market such as Vietnam, it is meaningful to practical investors and prompts scholars to continue conducting further studies. For example, future studies can develop the studies of Nguyen and Phan (2017), Thu et al. (2018), Khuong et al. (2019), Nguyen et al. (2019), Tseng et al. (2020), Nguyen et al. (2020), Hassan et al. (2020) and Yousaf et al. (2020) about stock's return with the participants of audit information, qualitative information, or information of stakeholders' risk-taking behavior, and financial crises.

References

Agrawal, A., & Chen, M. A. (2008). Do analyst conflicts matter? evidence from stock recommendations. *The Journal of Law and Economics, 51*(3), 503-537. https://doi.org/10.1086/589672

Altınkılıç, O., & Hansen, R. S. (2009). On the information role of stock recommendation revisions. *Journal of Accounting and Economics, 48*(1), 17-36. https://doi.org/10.1016/j.jacceco.2009.04.005

Altınkılıç, O., Balashov, V. S., & Hansen, R. S. (2013). Are analysts' forecasts informative to the general public?. *Management Science, 59*(11), 2550-2565. https://doi.org/10.1287/mnsc.2013.1721

Altınkılıç, O., Hansen, R. S., & Ye, L. (2016). Can analysts pick stocks for the long-run?. *Journal of Financial Economics, 119*(2), 371-398. https://doi.org/10.1016/j.jfineco.2015.09.004

Amihud, Y. (2002). Illiquidity and stock returns: cross-section and time-series effects. *Journal of Financial Markets, 5*(1), 31-56. https://doi.org/10.1016/s1386-4181(01)00024-6

Banz, R. W. (1981). The relationship between return and market value of common stocks. *Journal of Financial Economics, 9*(1), 3-18. https://doi.org/10.1016/0304-405x(81)90018-0

Barber, B. M., Lehavy, R., & Trueman, B. (2007). Comparing the stock recommendation performance of investment banks and independent research firms. *Journal of Financial Economics, 85*(2), 490-517. https://doi.org/10.1016/j.jfineco.2005.09.004

Bidwell, C. M. (1977). How good is institutional brokerage research?. *The Journal of Portfolio Management, 3*(2), 26-31. https://doi.org/10.3905/jpm.1977.26

Bjerring, J. H., Lakonishok, J., & Vermaelen, T. (1983). Stock prices and financial analysts' recommendations. *The Journal of Finance, 38*(1), 187-204. https://doi.org/10.1111/j.1540-6261.1983.tb03634.x

Bradley, D., Clarke, J., Lee, S., & Ornthanalai, C. (2014a). Are analysts' recommendations informative? Intraday evidence on the impact of time stamp delays. *The Journal of Finance, 69*(2), 645-673. https://doi.org/10.1111/jofi.12107

Bradley, D., Liu, X., & Pantzalis, C. (2014b). Bucking the trend: the informativeness of analyst contrarian recommendations. *Financial Management, 43*(2), 391-414. https://doi.org/10.1111/fima.12037

Conrad, J., Cornell, B., Landsman, W. R., & Rountree, B. R. (2006). How do analyst recommendations respond to major news?. *Journal of Financial and Quantitative Analysis, 41*(1), 25-49. https://doi.org/10.1017/s0022109000002416

Cooper, R. A., Day, T. E., & Lewis, C. M. (2001). Following the leader. *Journal of Financial Economics, 61*(3), 383-416. https://doi.org/10.1016/s0304-405x(01)00067-8

Cowles, A. (1933). Can stock market forecasters forecast?. *Econometrica, 1*(3), 309. https://doi.org/10.2307/1907042

Cowles, A., & Jones, H. E. (1937). Some a posteriori probabilities in stock market action. *Econometrica, 5*(3), 280. https://doi.org/10.2307/1905515

Daniel, K., Grinblatt, M., Titman, S., & Wermers, R. (1997). Measuring mutual fund performance with characteristic-based benchmarks. *The Journal of Finance, 52*(3), 1035-1058. https://doi.org/10.1111/j.1540-6261.1997.tb02724.x

De Bondt, W. F. M., & Thaler, R. (1985). Does the stock market overreact?. *The Journal of Finance, 40*(3), 793-805. https://doi.org/10.1111/j.1540-6261.1985.tb05004.x

Diefenbach, R. E. (1972). How good is institutional brokerage research?. *Financial Analysts Journal, 28*(1), 54-60. https://doi.org/10.2469/faj.v28.n1.54

Dimson, E., & Marsh, P. (1984). An analysis of brokers' and analysts' unpublished forecasts of uk stock returns. *The Journal of Finance, 39*(5), 1257-1292. https://doi.org/10.1111/j.1540-6261.1984.tb04907.x

Fama, E. F. (1965). The behavior of stock-market prices. *The Journal of Business, 38*(1), 34. https://doi.org/10.1086/294743

Fama, E. F. (1970). Efficient capital markets: a review of theory and empirical work. *The Journal of Finance, 25*(2), 383. https://doi.org/10.2307/2325486

Fama, E. F., & French, K. R. (1992). The cross-section of expected stock returns. *The Journal of Finance, 47*(2), 427-465. https://doi.org/10.1111/j.1540-6261.1992.tb04398.x

French, K. R., Schwert, G. W., & Stambaugh, R. F. (1987). Expected stock returns and volatility. *Journal of Financial Economics, 19*(1), 3-29. https://doi.org/10.1016/0304-405X(87)90026-2

Green, T. C. (2006). The value of client access to analyst recommendations. *Journal of Financial and Quantitative Analysis, 41*(1), 1-24. https://doi.org/10.1017/s0022109000002404

Grossman, H. I., & Iyigun, M. F. (1995). The profitability of colonial investment. *Economics & Politics, 7*(3), 229-241. https://doi.org/10.1111/j.1468-0343.1995.tb00112.x

Grossman, S. (1976). On the efficiency of competitive stock markets where trades have diverse information. *The Journal of Finance, 31*(2), 573-585. https://doi.org/10.1111/j.1540-6261.1976.tb01907.x

Grossman, S. J., & Stiglitz, J. E. (1980). On the impossibility of informationally efficient markets. *The American Economic Review, 70*(3), 393-408.

Groth, J. C., Lewellen, W. G., Schlarbaum, G. G., & Lease, R. C. (1979). An analysis of brokerage house securities recommendations. *Financial Analysts Journal, 35*(1), 32-40. https://doi.org/10.2469/faj.v35.n1.32

Hassan, K., Hoque, A., Gasbarro, D., & Wong, W.-K. (2020). Are islamic stocks immune from financial crises? Evidence from contagion tests. *International Review of Economics & Finance*. https://doi.org/10.1016/j.iref.2020.08.004

Ivković, Z., & Jegadeesh, N. (2004). The timing and value of forecast and recommendation revisions. *Journal of Financial Economics, 73*(3), 433-463. https://doi.org/10.1016/j.jfineco.2004.03.002

Jegadeesh, N., & Karceski, J. (2009). Long-run performance evaluation: correlation and heteroskedasticity-consistent tests. *Journal of Empirical Finance, 16*(1), 101-111. https://doi.org/10.1016/j.jempfin.2008.06.002

Jegadeesh, N., & Kim, W. (2006). Value of analyst recommendations: international evidence. *Journal of Financial Markets, 9*(3), 274-309. https://doi.org/10.1016/j.finmar.2006.05.001

Jegadeesh, N., & Kim, W. (2009). Do analysts herd? An analysis of recommendations and market reactions. *Review of Financial Studies, 23*(2), 901-937. https://doi.org/10.1093/rfs/hhp093

Jegadeesh, N., & Titman, S. (1993). Returns to buying winners and selling losers: implications for stock market efficiency. *The Journal of Finance, 48*(1), 65-91. https://doi.org/10.1111/j.1540-6261.1993.tb04702.x

Jegadeesh, N., Kim, J., Krische, S. D., & Lee, C. M. C. (2004). Analyzing the analysts: when do recommendations add value?. *The Journal of Finance, 59*(3), 1083-1124. https://doi.org/10.1111/j.1540-6261.2004.00657.x

Jiang, G. J., Lu, L., & Zhu, D. (2014). The information content of analyst recommendation revisions — evidence from the chinese stock market. *Pacific-Basin Finance Journal, 29*, 1-17. https://doi.org/10.1016/j.pacfin.2014.03.002

Khuong, N. V., Ha, N. T. T., & Thu, P. A. (2019). The relationship between real earnings management and firm performance: the case of energy firms in vietnam. *International Journal of Energy Economics and Policy, 9*(2), 307-314.

Kim, Y., & Song, M. (2015). Management earnings forecasts and value of analyst forecast revisions. *Management Science, 61*(7), 1663-1683. https://doi.org/10.1287/mnsc.2014.1920

Lee, C. M. C., & Swaminathan, B. (2000). Price momentum and trading volume. *The Journal of Finance, 55*(5), 2017-2069. https://doi.org/10.1111/0022-1082.00280

Lidén, E. R. (2006). Stock recommendations in swedish printed media: leading or misleading?. *The European Journal of Finance, 12*(8), 731-748. https://doi.org/10.1080/13518470500531093

Malkiel, B. G. (1973). *A random walk down wall street*. New York: Norton.

Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *American Economic Review, 48*, 261-297. https://doi.org/10.4013/base.20082.07

Moshirian, F., Ng, D., & Wu, E. (2009). The value of stock analysts' recommendations: evidence from emerging markets. *International Review of Financial Analysis, 18*(1-2), 74-83. https://doi.org/10.1016/j.irfa.2008.11.001

Nguyen, T. T. H., & Phan, G. Q. (2017). The relationship between state ownership and tax avoidance level: empirical evidence from Vietnamese firms. *Journal of Asian Business Strategy, 7*(1), 1-12. https://doi.org/10.18488/journal.1006/2017.7.1/1006.1.1.12

Nguyen, T. T. H., Moslehpour, M., Vo, T. T. V., & Wong, W.-K. (2020). State ownership and risk-taking behavior: an empirical approach to get better profitability, investment, and trading strategies for listed corporates in Vietnam. *Economies, 8*(2), 1-22. https://doi.org/10.3390/economies8020046

Nguyen, T. T. H., Vo, T. T. V., Phung, A. T., & Le, T. H. A. (2019). Institutional environment, government ownership and firm profitability: empirical evidence from Vietnam. *Academy of Accounting and Financial Studies Journal, 23*(3), 1-11.

Ryan, P., & Taffler, R. J. (2006). Do brokerage houses add value? The market impact of uk sell-side analyst recommendation changes. *The British Accounting Review, 38*(4), 371-386. https://doi.org/10.1016/j.bar.2006.07.015

Shiller, R. (1980). *Do stock prices move too much to be justified by subsequent changes in dividends?*. https://doi.org/10.3386/w0456

Stickel, S. E. (1995). The anatomy of the performance of buy and sell recommendations. *Financial Analysts Journal, 51*(5), 25-39. https://doi.org/10.2469/faj.v51.n5.1933

Thu, P. A., Khanh, T. H. T., Ha, N. T. T., & Khuong, N. V. (2018). Perceived audit quality, earnings management and cost of debt capital: evidence from the energy listed firms on vietnam's stock market. *International Journal of Energy Economics and Policy, 8*(6), 120-127.

Tseng, M.-L., Chang, C.-H., Lin, C.-W., Nguyen, T. T. H., & Lim, M. K. (2020). Environmental responsibility drives board structure and financial and governance performance: a cause and effect model with qualitative information. *Journal of Cleaner Production, 258*, 120668. https://doi.org/10.1016/j.jclepro.2020.120668

Wermers, R. R. (2003). Is money really 'smart'? New evidence on the relation between mutual fund flows, manager behavior, and performance persistence. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.414420

Womack, K. L. (1996). Do brokerage analysts' recommendations have investment value?. *The Journal of Finance, 51*(1), 137-167. https://doi.org/10.1111/j.1540-6261.1996.tb05205.x

Yazici, B. (2002). Dissemination of Stock Recommendations and Small Investors: Who Benefits?. *Multinational Finance Journal, 6*(1), 29-42. https://doi.org/10.17578/6-1-2

Yousaf, I., Ali, S., & Wong, W.-K. (2020). Return and volatility transmissions between metals and stocks: a study of the emerging asian markets by using the VAR-AGARCH approach. *Asia-Pacific Journal of Operational Research*. https://doi.org/10.1142/s0217595920400205

Appendix A

List of brokerage institutions

List	Full Name
SSI	Saigon Securities Incorporation
VPSC	Vietnam Prosperity Securities Joint Stock Company
VCSC	Vietcapital Securities Joint Stock Company
HSC	HoChiMinh City Securities Joint Stock Company
ACB	Asia Commercial Bank Securities Joint Stock Company
VDS	Viet Dragon Securities Joint Stock Company
BVC	Baoviet Securities Joint Stock Company
MBKE	Maybank Kim Eng Securities Limited
VCBS	Vietcombank Securities Joint Stock Company
VNDS	VNDirect Securities Joint Stock Company
MSC	Mekong Securities Joint Stock Company
Woori	Woori Securities Corporation
TVSC	TriViet Securities Corporation
SBS	Sacombank Securities Corporation
BSC	BIDV Securities Company
FPTS	FPT Securities Company
VinaSec	VinaSecurities Joint Stock Company
MBS	Military Bank Securities Joint Stock Company
HRS	VietNam Gateway Securities Joint Stock Company
Mirae Asset	Mirae Asset Securities Limited Liability Company
PSI	Petrovietnam Securities Incorporated