Recommendation of Brokers and Stock Trade Performance with Investor Behavior as Mediation

A. Sakir, Ubud Salim, Djumahir and Atim Djazuli
Faculty of Economics and Business, Brawijaya University, Malang, Indonesia

Abstract: This study aims to analyze the effect of broker recommendations on stock trading performance, broker recommendations on investor behavior, investor behavior on stock trading performance and broker recommendations on stock trading performance mediated by investor behavior. Transaction data of 53 stock issuers as samples during the period 2014-2015 were analyzed using path analysis. It was found that broker's recommendation had a significant effect on stock trading performance, broker's recommendation had significant effect to investor behavior, investor behavior had significant effect on stock trading performance and broker's recommendation had a significant effect on stock trading performance mediated by investor behavior.

Key words: Broker recommendations, investor behavior, stock trading performance, behavior, investor, significant effect

INTRODUCTION

The success of an investor to invest in shares other than determined by the investor's own velocity in making investment decisions is also determined by the involvement and role of brokers in providing recommendations to investors. The existence of brokers in the activity of buying and selling shares in the stock exchange is an absolute thing. Investors will not be able to buy and or sell shares if not through brokers because stock investing always requires brokerage services as a provision of law. Brokers are always inherent in securities trading. Chan *et al.* (1991) stated that investors need brokers to support the success of investment in the capital market. So far, brokerage companies tend to ignore the importance of services that should be given to investors whereas this service gives influence to investors in investing.

Good information delivery capability and appropriate service is one of the strategies for Thaler (1992). The limited knowledge of decision makers in the face of complex situations encourages them to formulate problems more easily and simply to form a heuristic mindset that does not follow standard or normative procedures. The heuristic decision-making process will result in a biased solution because people tend to think pragmatically (Mahadma, 2016). Investors in making investment decisions often point to facts that tend to be irrational because as human beings, investors have emotions other than ratios that both research together in forming short-term and long-term reactions (Pompain,

2006). The investment decision-making process, including into any group of investors (educated or not experienced or not, male or female, elderly or young, large or small investors) it definitely involves his emotions in the decision making process.

Literature review
Relationship of stock brokers recommendation and stock performance: Stock analyst's recommendations are able to influence stock prices in the stock market (Barberis and Thaler, 2003). Generally the price reaction for new-selling recommendations is greater than the price reaction for new purchase recommendations (Ryan and Taffler, 2006). Brokers are parties who play a role in stock transactions in the stock because in addition to the brokerage of securities traders, they are also influential in providing transaction recommendations to investors. The largest volume of information and investment advice for securities voters comes from stockbrokers where they are members of the bourse obtaining authorized permission from the Financial Services Authority (OJK) who can execute purchase orders and share sales to earn commissions from investors (Benjamin, 2013). The role of brokers and conflicts of interest of brokers in the market is also expected to affect the performance of stock trading (Ryan and Taffler, 2006).

Recommendation relationship brokers and investor behavior: Expertise owned by investors in conducting stock transactions will also be greatly assisted by the recommendation of brokers and the results of research

brokers concerning market conditions (Ryan and Taffler, 2006). Investors choose reputable brokers to handle their orders (Benjamin, 2013). A reputable broker who has a strong research team must set a higher transaction fee than a simple brokerage company if the BEI is at a maximum of 1% of the transaction value. The existence of a brokerage firm with a reliable broker is very determining the festive atmosphere of the capital market, especially with their recommendations and research results are mampuni then further increase the coefficient of the capital market. All market participants seek to find the best and most accurate research results on capital market conditions in an effort to support investment decisions (Chan *et al.*, 1991).

Investor behavior relations and stock performance performance: Investor behavior in processing and interpreting income and expense information and other information will influence the stock price expectation. Changes in stock market prices are essentially a reflection of market participant's expectations that react to new information entering the market that is expected to affect stock market prices (Mahadma, 2016). Individuals behave in such a way that something is initiated by the intention to do so and is related to volitional activities. This behavior is based on the assumption that humans do things in a reasonable way, either explicitly or implicitly human beings consider the implications of their actions and the intention to act is a function of two basic determinant that is to relate to personal factors and others to social influences (Fishbein and Ajzen, 1975).

Relationship of stock broker recommendations and stock performance that are mediated by investor behavior: Stock prices on the market are influenced by analyst recommendations and the extent to which investor interest in responding will have an impact on their investment decisions. The recommendation given by the broker to the investor will be very beneficial to improve the performance of stock trading if supported by the unbiased behavior of investors. The broker will provide responsible recommendations to investors (Benjamin, 2013). The rational behavior of investors can affect the broker's recommendation relationship with stock trading performance because as good as any broker's recommendation will not be worth optimally if it is not supported by psychological factors that increasingly rational investors in making investment decisions. Overconfidence has an effect on investment decision while herding bias has no significant effect in this Suzaida and Yi (2016) research. Durand *et al.* (2008) negative emotions.

MATERIALS AND METHODS

Data and sample: The data of this research is weekly stock trading transaction data of 53 sample shares actively transacted by foreign and domestic investors in IDX taken from IDX Fact Book 2015-2016 edition monthly and annually and using path analysis with the help of Wrap PLS 4.0 Software. The sampling criterion is that the company's shares are actively traded by Foreign and domestic investors, regardless of the period of suspension and the stock price never touches the price of the lower limit.

Operational definition of variables: Broker recommendation. Broker recommendation is the extent to which an investor can benefit from the recommended brokerage deal they choose as their client in investing. Measurements can be made with Buy-Hold Abnormal Return (BHAR) of any recommendation given by the brokerage company to its investors (Ryan and Taffler, 2006). BHAR measurements are formulated as BHAR, it is indicates as abnormal return of stock trading and hold trading for i time periods. R it is stock return realization of time period i and e (ri, t) is the return value of y.

If you have invested in an investor for a long period of time to invest in an investor, then investing in an investor will not be able to invest in an investor or investing in an investor, investing in an investor for a long-term investment (Ryan and Taffler, 2006):

$$BHAR_{i,t} = \prod_{t=0}^{n}\left[1+R_{i,t}\right]-\prod_{t=0}^{n}\left[1+E\left(R_{i,t}\right)\right]$$

Investor Behavior (PI). Investor behavior is a way or action how an investor behaves or behaves with regard to investor investment decisions after a response from the information they have. The measurement of investor behavior in the capital market is reflected in the investigation by looking at the extent to which the relationship between investment flows and the market return they receive, so that, it will lead to the behavior of whether investors as investors who have a positive or negative feedback (Oh *et al.*, 2008). The measure used is a net investment flow called Net Investment Flows (NIF) with the ratio of buying value-selling value is divided with its lag periods (Oh *et al.*, 2008).

NIF_{it} is a ratio for ownership data that allows investors to identify net purchases on investor i in time t. This net measure is sometimes indicative when the market is undervalued or overvalued which may reflect market timing capabilities of different types of investors. The value of the purchase is the multiplication of the purchase

price and the number of shares purchased during a period while the sale value is the multiplication of the selling price of shares and the number of shares sold in a period. The positive value of NIF_{it} indicates that the investor has the right market timing in the transaction which is trying to buy the stock when undervalued and sell it at overvalued, meaning that investors follow the momentum strategy of transaction behavior in the direction of market movement.

Stock Trading Performance (PPP). If investor trading performance increases in aggregate then automatic market performance will also increase (Ryan and Taffler, 2006; Phansatan *et al.*, 2012). Trade performance is intended as an investor's advantage over other investors in the market in allocating assets that exceed the median net buy order relative value of other investor's net trade when conducting stock selection. Trade performance is the overall net trade result that shows the implicit cash value generated by trading during the weekly trading interval from week t. measurement of trade performance is the result of adjustment of previous research formula, so that, more visible contribution of trade performance from dominant market timing or stock selection capability as formulated (Phansatan *et al.*, 2012):

$$\left[\frac{Y_t^b \left(\frac{p_t^s + h}{p_t^b} \right)^{\frac{1}{h}}}{Y_t^s \left(\frac{p_t^b + h}{p_t^b} \right) 1/h} \right]$$

Where:
π_t	=	All net trader
Y_t^b	=	v_t^s v_t^s is the median of monetary value adjustment from buying transaction of t periods
v_t^b and v_t^s	=	The median of monetary value adjustment from sales transaction of weekly period t
p_t^b and p_t^s	=	Volume of trade transaction weighted
p_t^b and p_t^s	=	Price of buying and selling transaction

In this case, however, the whole trade transaction can be positive or negative that captures as $\pi_t > 0$ ($\pi_t < 0$) indicates that buyers take advantage position compared with some selling trader because of market timing reason. The net trader (π_t) is drive from two components such as stock choice (π_t^s) and market timing (π_t^T). When (π_t^T)>0, its figured as the investor action to execute transaction buying or selling before the price slowdown, otherwise the gain from stock return will be increased based on the ability of market timing that will be negatively of (π_t^T)<0. It can be concludes that, the greater the stock return (π_t) will be make better trade performance.

Model analysis: The analysis model used in this research is Partial Least Square Structural Equation Modeling (PLS-SEM) based on variance and equipment for data processing used warp PLS 4.0 Software. This PLS-SEM approach does not require data to be normally distributed, it can handle any type of measurement scale (interval, nominal, ordinal and ratio) and can be used on small samples so often referred to as soft modeling (Imam and Latan, 2014). This research model uses broker recommendation (RP) as independent variable, investor behavior (PI) as mediation variable and stock trading performance (KPS) as dependent variable. Further testing is done by first testing the linearity assumption and fitness and fitness model (Goodness of Fit Model). Based on the inner model (research model) of the wrap PLS 4.0 output with the estimated parameters set at 95% or $\alpha = 0.05$ then evaluated.

RESULTS AND DISCUSSION

This research has fulfilled linearity assumption, since, all relationships between variables have shown significant or insignificant results. Testing Goodness of Fit (GoF) has also been fulfilled, so that, obtained value of $Q_2 = 78\%$ which means that model built in this research is very good that is have relevant predictive ability equal to 78%, so, it is proper to be used for hypothesis testing. The statistics of the research results for each of the variables studied can be presented in Table 1.

Based on Table 1 shows that the broker recommendation variables in BEI is quite appropriate in predicting stock prices with an average value of 0.00005403 or 0.0054% means that the prediction value close to zero, so that, the prediction result is quite accurate with the value of realization in the market. Thus, the more accurate prediction results provided by investor recommendations will increase the quality of purchasing decisions and the sale of stocks of investors in the capital market, so that, the performance of stock trading is expected to increase. This is supported by the lowest value and the highest recommendation of brokers, ie., -0.02384 and 0.040935 where the dispersion is not so, wide. Therefore, the accuracy of the broker's recommendation is expected to boost the rationality of

Table 1: Statistical discription of research variables

	Average weekly periode 2014-2015		
Variabels	Min	Max	Mean
RP	-0.02384	0.040935	0.0005403
PI	-0.05761	0.043506	-0.0003276
KPS	0.36963	1.831399	0.9644950

Research data analysis

Table 2: Hypothesis test analysis of direct and indirect relations

Relation between variables	Path estimation	p-values	Description
Direct effect test			
Broker Recommendation (RP)→Stock trader performance (KPS)	0.220	0.030	Support
Broker recommendation (RP)→Investor behaviour (PI)	0.560	<0.010	Support
Investor behavior (PI)→Stock trader performance KPS)	0.650	<0.010	Support

Mediation	Direct effect path	Indirect effect path	Discription
Indirect effect test			
$X_1 \rightarrow Y_1 \rightarrow Y_2$	$X_1 \rightarrow Y_1 = 0.560; Y_1 \rightarrow Y_2 = 0.650$	$0.560 \times 0.650 = 0.364$	Support

Table 3: Statistical estimation result of meditation effect based on sobel testing procedure

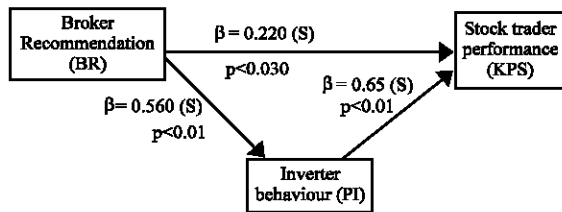| Independen variables	Meditation variables	Dependent variables	t-value	p-value	Discription
Broker recommendation (RP)	Investor behaviour (PI)	Trader stock performance (KPS)	47698	0,0000	Support

Research data analysis, 2017

Fig. 1: Path diagram of hypothesis testing

investor behavior and increase investor's confidence to brokerage company and increase investor interest to be more interested in investing in capital market.

Investor behavior as a mediating variable for investor behavior variables is determined by the t-count value generated in the sobel test. If t count> of t-table value 1.96 then the variable acts as a mediation variable. On the other hand, if the sobel test results are t-count<t-table 1.96 then the variable does not act as a mediating variable in the research model (Fernandes and Nurjannah, 2017). The sobel-test results can be shown in Table 2 and 3 (Fig. 1).

Direct influence of broker recommendations on stock performance performance: The result of the research shows that the effect of broker recommendation on stock trading performance has positive and significant line coefficient. The first hypothesis testing in this research is direct influence of broker recommendation (RP) to stock trading performance (KPS) can be proved on coefficient value of path 0.220 with p = 0.030, so, it can be said that this hypothesis is significant becausep <0.05. This finding is consistent with hypothesis prediction (H₁) which predicts the broker's recommendation variables have a positive and significant effect on stock trading performance. Thus, it can be concluded that good broker's recommendation proved to have a positive and significant effect on stock trading performance. This means that directly how good or bad the broker's recommendation will affect the trade.

Direct influence of broker recommendations to investor behavior: The result of the research shows that the effect of broker recommendation on investor behavior has positive and significant line coefficient. Testing of second hypothesis in this research is direct influence of broker recommendation (RP) to investor behavior (PI) can be proved at path coefficient value 0.560 with p = 0.010, so, it can be said that this hypothesis is significant because p<0.05. This finding is consistent with the predicted hypothesis (H₂) which predicts the broker's recommendation variables have a positive and significant effect on investor behavior. Thus, it can be concluded that good broker's recommendation proved to have a significant effect on investor behavior. This means that directly how good or bad the broker's recommendations will affect both the bad behavior of investors.

Direct influence of investor behavior on stock market performance: The third hypothesis testing is the direct influence of investor behavior (PI) on stock trading performance (KPS) can be proved on the coefficient value of 0.650 with p-value of 0.010, so, it can be said that this hypothesis is significant because p-value <0.05. This finding is in accordance with the hypothesis (H₃) which predicts investor behavior variables have a positive and significant effect on stock trading performance. Good or bad investor behavior proved to have a positive and significant effect on stock trading performance. This means that directly how good or bad the behavior of investors will affect the ups and downs of stock trading performance. Relationship or influence of both variables are positive which means unidirectional. The third hypothesis (H₃) proposed in this study is accepted or can be supported by empirical facts.

The influence of broker recommendations to stock trading performance mediated by investor behavior: The fourth hypothesis test is indirect influence of broker recommendation (RP) on stock trading performance (PPP) mediated by investor behavior (PI) can be proved on

coefficient of indirect and total efects value 0.364 with p = 0.010, so, it can be said that hypothesis this is significant because p-value is 0.000<0.05. The Sobel-test result with t-count value is 4.7698>1.96 with p = 0.000 where this result indicates that investor behavior can mediate broker's recommendation relationship to partial mediation performance. It is said partial mediation because besides significant indirectly through investor behavior, relationship recommendation brokers with stock trading performance also have a significant effect directly. Thus, it can be concluded that good bad.

CONCLUSION

The broker's recommendation determines whether or not the investor's behavior. That is brokers "recommendations contribute the most to shape the behavior of investors who are not biased because it can affect investors" perceptions of the actions they do in investing. Investor actions supported by the broker's recommendation are likely to make behavioral bias reduced, so, as to reduce irrational investor behavior. Although sometimes the recommendations of investors are making investors behave speculatively and tend to send information that makes investors do over-trading and over-confident. Recommended brokers give maximum contribution to stock trading performance. The accuracy of decisions investors make in stock transactions, especially in determining market timing of stock transactions will have an impact on stock trading performance in aggregate. This recommendation is one of the important factors that can improve the quality.

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