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The Effect Of Trade Volume And Interest Rate On Volatility Of Stock Price

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ABSTRACT: Research in the field of finance has been carried out intended to examine the effect of stock trading volumes, interest rates on stock price volatility and to determine differences in test results in two different types of markets namely developing and advanced types of markets. The location of the study was conducted on the IDX which is a stock market in developing countries and LSE which is a stock market in developed countries. This research was conducted during the period 2014 to 2019. The analysis technique used in this study was multiple linear regression. The results showed different things in the two markets. Trading volume and interest rates have a significant positive effect on stock price volatility on the London Stock Exchange, while variable trading volume and interest rates do not affect stock price volatility on the Indonesia Stock Exchange.
KEYWORDS: volatility, stock trading volume, Indonesia stock exchange, London stock exchange

I. INTRODUCTION

When investing, investors observe two factors, namely, the stock return (risk) and the risk factor. Risk in investing can be measured by observing changes in market prices or often referred to as volatility. Volatility is the fluctuation of stock prices on the exchange. Changes in stock price fluctuations or volatility is caused by new information on the market. Movement of stock prices that go up or down too fast in a short period of time increases the risk faced by investors (Candraningrat et al., 2018). The importance of volatility for investors is not only to assess the potential rate of return that can be obtained, but also to assess the potential losses arising from investing. Purbawati (2016) states that stock volatility reflects the level of risk faced by investors both now and in the future, where volatility is a measure of the high and low fluctuations of assets in a given period. The higher the volatility, the higher the uncertainty of the stock price, this reflects the higher the risk with the expected return is also higher. If the daily volatility is high, the stock price will increase or decrease so that there is an opportunity to make transactions for profit. Low volatile stock prices indicate the movement of stock prices is very low. In low volatility, investors usually cannot make profits, but must hold shares in the long run in order to obtain capital gains.

Volatility provides a signal for investors to invest. Volatility can be predicted with information in the stock market. High and low volatility of stock prices can be influenced by macro and micro factors. Macro factors are factors that affect the overall economy such as interest rates, inflation, politics, high levels of national productivity, and others. Micro factors are factors that have a direct impact on the company such as trade volume, company size, dividends, management changes, and so on. This information can be an incentive for investors to sell or buy shares, so that investors who are good at understanding information will easily predict market movements. This information is very closely reflected by the trading volume of shares and interest rates. The choice of stock trading volume is important for an investor, Candraningrat et al., (2018) states that volatility is closely related to stock trading volume. The volume of stock trading illustrates the condition of securities traded on the capital market. For investors, before investing or investing the most important thing is the level of liquidity of an effect (Wiyani and Wijayanto, 2005). Trading volume is closely related to demand and supply. The higher the trading volume of shares being bargained and requested, the higher the effect on the up and down tendency of stock prices on the stock exchange (Irawan and Suaryana, 2016). Interest rates are also an important factor in volatility. The classical theory in Nopirin (2012: 167) states that the higher the interest rate, the higher the community's desire to save, but the lower the community's desire to invest in the capital market. People are motivated to save at high interest rates because they sacrifice or reduce spending on consumption in order to increase savings.

Stock trading volume is defined as the number of shares traded in a certain time period (Surya, 2016). High trading volume is considered in line with rising stock prices. Hsieh (2014) found a positive relationship between trading volume and volatility. Belhaj and Ezzedine (2015), Koesoemasari, et al. (2017) and Sutrisno (2017) state

that trading volume has a significant effect on volatility. Trading volume has a positive and statistically significant impact on the volatility of equity returns which implies that volume is an important factor in explaining volatility (Naik et al., 2018). This is supported by Supriati and Wiagustini's (2019) research which states that trading volumes have an effect positive and significant to volatility.

Conflicting research results are found in Safitri's (2013) research which states that stock trading volume has no effect on stock price volatility. This is supported by the findings of Ratnasari (2015), Chebbi and Sana (2016), Priana and Muliartha (2017) which state that the high and low volume of stock trading cannot reflect the price volatility of a stock. Andiani and Gayatri (2018) explained that trading volume and volatility have a negative effect.

Information from external parties such as government policies can also influence market reactions. One such policy is interest rates. Interest rates according to Boediono (2014: 76) are the prices of the use of investment funds (loanable funds). The interest rate is one indicator in determining whether someone will invest or save.

Research by Dewi and Ganesh (2012) states that interest rates have a positive effect on volatility. Changes in interest rates will affect a person's desire to make an investment, because in general changes in SBI interest rates can affect deposit rates and lending rates in the community (Amin, 2012). Hajilee and Naser (2017) find that there is an absolute significant short-term effect on the uncertainty of interest rates on volatility. Marwadi, et al. (2018) argues that Indonesia interest rates (SBI) have a significant negative effect on stock price volatility. This finding is contrary to Nurfadillah (2011) interest rates do not affect stock price volatility.

The influence of trade volume and interest rates was jointly investigated by Hugida (2011). The results of the study showed that trade volume, interest rates, inflation, and the rupiah exchange rate influenced the volatility of stock prices. This is supported by research Romli, et al. (2017) states that together and significantly independent variables (trade volume, inflation, exchange rates, SBI interest rates) have an influence on stock price volatility. There are differences in findings in the research of Dewi and Suaryana (2016) which show that stock trading volume has a positive effect on stock price volatility. While leverage and interest rates do not affect the volatility of stock prices

The different findings in previous studies provide a gap for this study to reexamine the relationship between trading volume and interest rates on volatility. Empirical studies that examine the relationship between trading volume and interest rates with volatility tend to be conducted in one market, so that in this study a comparison of these three variables will be conducted in two different types of markets (emerging and developed markets) specifically. This study examines the volatility in different country markets comparing the results of the regression descriptively in order to find out whether there are differences from the test results in the two markets.

Xing's (2004) findings of stock market volatility differ by country. The average level of education of investors is the most important factor in explaining differences in market volatility across countries. This result implies that the better the education of investors in the market, the more unstable the market. This result is evidence supporting the idea that the collective characteristics of investors in developed markets play an important role in shaping market volatility. Volatility is caused by general factors, not country-specific factors, but this is not always the case. This general component is more stable in European and Latin American or developed countries than in the Asia-Pacific and Africa regions in developing countries (Mobarek and Michelle, 2014). Agarwal (2017) revealed that there is volatility in emerging markets and developed countries in general by using the MSCI index, but the volatility of the previous day has a greater influence in explaining today's volatility in developing markets, while in developed markets, prior volatility and information has a big influence in explaining today's volatility.

The existence of a research gap between volatility in developed markets and developing markets is the basis for conducting comparative studies of volatility between developing markets and developed markets. The selection of the London Stock Exchange (LSE) as a stock market in developed countries because LSE is one of the largest stock exchanges in the world, with many listed of shares from overseas as well as British companies. LSE is also a reference for the stock market in the world. The Indonesia Stock Exchange (IDX) is used as a comparison of the stock markets in developing countries.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Ayu and Wiagustini (2019) stated that trade volume had a significant positive effect on volatility. Trading volume has a positive and statistically significant impact on the volatility of equity returns which implies trade, trading volume is one of the important factors in explaining volatility (Naik et al., 2018). Research by Naik is supported by previous research, there is a positive relationship between trade volume and volatility (Koesoemasari, et al. 2017) and (Sutrisno, 2017). Belhaj and Ezzedine (2015) also found that similarly there was a strong positive relationship between trading volume and volatility. There is a significant causal relationship between trading volume and volatility in the market (Hsieh, 2014). Trading volume is needed to move prices. This positive relationship between trading volume and volatility was also stated by Girard, Eric and Mohammed Omran (2009), that when total volume is included in the conditional variance specification,

volume tends to (on average) be positively related to volatility. Trading volume is seen as an important piece of information that signals the next price movement (Mahajan and Singh, 2008). Based on the results of these supporting studies, the hypothesis can be formulated, as follows:

$H_{1.1}$: Trading volume has a positive effect on volatility in the Indonesia stock market.

$H_{1.2}$: Trading volume has a positive effect on volatility in the Londonstock market.

There is an absolute significant short-term effect on the uncertainty of interest rates on volatility (Hajilee and Naser, 2017). Romli., Et al (2017) states that interest rates affect the volatility of stock prices. This is also supported by previous studies of the SBI interest rate is a financial instrument issued by Bank Indonesia (BI) to control the circulation of money in the community by using the BI interest rate reference (Rismawati, 2013). Changes in interest rates will affect a person's desire to make an investment, because in general changes in SBI interest rates can affect deposit rates and lending rates in the community (Amin, 2012). Venkates (2012) also said that interest rates have a positive effect on volatility. Based on the results of these supporting studies, a hypothesis can be formulated, as follows.

$H_{2.1}$: Interest rates have a positive effect on volatility in the London stock market.

$H_{2.2}$: Interest rates have a positive effect on volatility in the London stock market.

III. METHODS

This research was conducted on companies whose shares are listed on the Indonesia Stock Exchange and the London Stock Exchange in the 2014-2019 period by accessing the official financial website, www.finance.yahoo.com and interest rates in Indonesia and the UK in the 2014-2019 period by accessing the website finance is www.investing.com.

The population in this study, namely the 2014-2019 Period Stock Market Index on the Indonesia Stock Exchange (IDX) with IHSG and London Stock Exchange (LSE) with the FTSE 100 index.The sampling technique in this study uses a saturated sampling technique in which the samples in this study are all members of the study population.The method of determining the sample or sampling technique is a way of determining the sample. The sampling method applied in the studyThis is non-probability sampling and is included in the saturation sampling technique.Data collection methods in this study are categorized as structured observation by observing, recording, and studying datacontained on the site www.finance.yahoo.com and www.investing.com.Data analysis technique used is multiple linear regression analysis techniques.

IV. RESULT AND DISCUSSION

Multiple linear regression analysis is used in analyzing the effect of stock trading volume and interest rates on volatility on the Indonesia Stock Exchange and the London Stock Exchange with the help of the SPSS 24 program. The results of the linear regression are shown in Table 1 for the Indonesia Stock Exchange and Table 2 for the London Stock Exchange below:

Table 1. Multiple Linear Regression Analysis Testing Result (Composite Stock Price Index)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Description
	B	Std. Error	Beta			
(Constant)	,478	,610		,783	,437	
IHSG Trading Volume ($X_{1.1}$)	,004	,037	,027	,115	,909	**rejected**
Indonesia Interest Rates ($X_{1.2}$)	,402	,056	,173	,743	,461	**rejected**
F-value =1,130						
Sig. F-value =,330						
Adjusted R Square =,004						

Secondary Data, 2019

Table 2. Multiple Linear Regression Analysis Testing Result (Financial Times Stock Exchange 100 Index)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Description
	B	Std. Error	Beta			
(Constant)	-20,806	7,898		-2,634	,011	
FTSE 100 Trading Volume ($X_{2.1}$)	,905	,334	,338	2,705	,009	Accepted

London Interest Rates ($X_{2.2}$)		,768	,324	,296	2,372	,021	Accepted
F_{value}	5,302						
Sig. F_{value}	,008						
Adjusted R Square	,127						

Secondary Data, 2019

Coefficient of determination (R^2)

The results of the coefficient of determination test on the London Stock Exchange on the FTSE 100 index Table 2 shows that the Adjusted R Square (R^2) value of 0.127 means that 12.7% of the volatility variation is influenced by variations in trading volume and interest rates while the remaining 87.3% is caused by other factors outside the model.

Effect of trading volume on volatility

Based on the results of multiple linear regression tests this study proves that the trading volume of the FTSE 100 index has a significant positive effect on volatility in developed markets, the London Stock Exchange. If the volume of stock trading increases, the volatility of stock prices on the LSE also increases and vice versa. Trading volume is a reflection of market reactions to information or signals given by companies to investors. If in a market there is no information about the shares, then investors are more likely to choose to keep holding their shares so that the trading volume of shares decreases because of the small number of shares sold or bought, resulting in lower stock price volatility.

The information obtained causes market participants to continue to make improvements to the interpretation of information either by buying, selling, or maintaining shares. This causes the stock price to move. Interpretation of information from each investor also becomes different according to how much information is obtained and responded by investors and depends on the analytical skills of the investors themselves. The difference in interpretation or response by investors is what causes investment decisions of each investor is also different and affects the ups and downs of supply and demand for shares in the market. Changes in demand and supply causes changes in trading volume in the market which affects the high and low volatility. In other words, research in developed markets namely the London Stock Exchange with the FTSE 100 index explains the volatility of shares influenced by how investors interpret information that is reflected by stock trading volumes.

The results of the research are in line with previous studies conducted on developed stock markets, namely research by Chan and Fong (2000), Girard and Omran (2009) states that trading volume has a positive effect on volatility in the Egyptian stock market, Hsieh (2014) in state markets Asian developed countries such as Singapore, Naik et al., (2018) in the South African market which argues that trading volume has an effect on volatility in developed markets.

The difference in results was found in the emerging markets namely the Indonesia Stock Exchange. Trading volume has no effect on stock price volatility in Indonesia. The rise or fall of the stock prices of companies listed in the composite stock price index on the 2014-2019 IDX is not influenced by the volume of stock trading. This means that investors investing in the capital market do not always pay attention to the volume of stock trading. The concept of demand and supply shows that stock prices will rise due to the large number of investors who want these shares. However, the determinants of changes in the rise and fall of stock prices are not only through demand and supply factors, but trends and macroeconomic situations that occur in certain periods also underlie the movement of stock prices. In addition, differences in the types and characteristics of listed companies traded in each sample of the company can also result in differences in trading volume.

The results of the study are in line with previous studies conducted on developing stock markets, namely research by Ratnasari (2015), Safitri (2013), and Agustinus, et al. (2013) states the volume of stock trading has no effect on the volatility of stock prices in Indonesia.

Effect of interest rates on volatility

This study proves that interest rates have a significant positive effect on volatility in developed markets, the London Stock Exchange. The interest rate is one indicator in determining whether someone will invest in shares or save. The higher the interest rate, the higher the community's desire to save, but the lower the community's desire to invest in the capital market and vice versa. An increase in interest rates causes an increase in the burden on the company, thereby reducing corporate profits and causing the stock price movement to be volatile. This proves that volatility is increasing with the increasing interest rates.

The results of research on the stock market in LSE are in line with research by Hajilee and Naser (2017). Romli., Et al (2017) states that interest rates affect the volatility of stock prices. Research results from Rismawati (2013), Amin (2012) and Venkates (2012) also say that interest rates have a positive effect on volatility.

Research in developing markets, namely Indonesia is not in line with research in developed markets in the United Kingdom. Interest rates do not affect the volatility of stock prices. The increase in interest rates imposed by Bank Indonesia does not always affect the level of investor interest to invest and less impact on shareholders.

SBI interest rates do not affect the stock price can be caused by the type of investors in Indonesia are investors who like to conduct stock transactions in the short term, so investors tend to take profit taking with the hope of getting a high capital gain in the capital market compared to investing in SBI.

The results of research in developing markets in Indonesia are consistent with previous research by Thobarry (2009), Mayasari (2011), and Nurfadillah (2011) which stated that interest rates had no effect on stock prices.

Differences in the effect of trading volume and interest rates on volatility on the Indonesia Stock Exchange and the London Stock Exchange

The results of this study indicate that there are differences in the effect of trade volume and interest rates on volatility. The influence of trading volume and interest rates on volatility is found in only one type of market, the London Stock Exchange, which is in developed country stock markets

This difference in results is due to the influence of trade volume and interest rates on volatility in Indonesia which has a lower percentage than the effect of trade volume and interest rates on volatility in the UK. This happens considering that Indonesia is a developing country, so the stability of economic conditions, especially stock trading is still low and emerging markets such as Indonesia are still influenced by many factors besides trade volume and interest rates. This causes the high and low volatility to be different. In addition, this difference is also caused by the behavior of investors in Indonesia, the majority of which are still categorized as new subjects in stock investment activities compared to investors in the UK, so experience in interpreting information about shares is still lacking.

The results also found differences in trading volume, interest rates and volatility in the two markets. The difference can be seen from the average trading volume on the Indonesia Stock Exchange which is greater than the London Stock Exchange. This is influenced by several factors, such as companies listed on the FTSE 100 index used in research by the London Stock Exchange, which numbered 100 companies with the highest capitalization and this number is far less than the companies listed on the Indonesia Stock Exchange, which are 559 companies. This amount affects the lot or the least trading activity in the market. The difference in average trading volume is also influenced by the ability of investors in developing markets and different developed markets to carry out investment activities. The difference in interest rates in the two markets is also different, it can be seen from the average interest rate in the country of Indonesia is higher than in the UK. This is due to the state of Indonesia setting high interest rates and the United Kingdom setting low interest rates. Low interest rates make investors prefer to invest in the capital market.

There are differences in volatility in the Composite Stock Price Index and the FTSE Index on the IDX and LSE, the volatility on the LSE with the FTSE 100 Index is lower than the volatility on the IDX. This difference can be influenced by investor behavior with an understanding of different stock investments, the stability of different economic conditions between developing and developed markets, and other factors such as inflation affecting the market. This finding also indicates that information asymmetry is greater in the Indonesian stock market compared to the UK stock market. High stock volatility is actually not a bad condition for a market and can be used as an opportunity by investors to achieve a higher return. The higher the volatility, the higher the uncertainty of stock prices, this reflects the higher the risk with the expectation of a higher return (Capital Market Volatility Study Team in Indonesia and the World Economy, 2011).

The results of this study are in line with previous studies conducted by Joshi and Kiran (2012), Hsieh (2014), Mobarek, Asma and Michelle Li (2014), and Agarwal (2017) which states that there are differences in volatility in different markets.

V. CONCLUSION

The test results in this study that the volume of trade and interest rates have a significant positive effect on volatility in developed markets, namely the UK, but the results of research in emerging markets such as Indonesia, trade volume and interest rates do not affect volatility. Trading volume and interest rates are a reflection of market reactions to signals given by companies to the market or investors. Fluctuations in trade volume indicate that information asymmetry occurs. This information asymmetry occurs because the signals given by the company to investors are not evenly distributed, thus causing different interpretations of the information by each investor. The higher trading volume causes the market to become more volatile. This research refutes the theory of efficient markets, especially weak forms markets, where the theory suggests that markets become efficient if everyone observes past information systems that already reflect all information.

Efficient market theory cannot be proven in this study because information asymmetry still exists in the market and past price information does not reflect all the information to forecast future profits. Markets that have lower volatility are considered stable markets, while markets that have higher volatility have higher risks.

Suggestion

The results of this study are expected to provide information that can be considered by investors in making investment decisions, especially in developing and developed markets such as Indonesia and the UK. This research proves that trading volume and interest rates can be one important factor in predicting volatility in a market. High and low volatility can be a guideline for investors in making decisions whether they are more interested in developing markets or developed markets and with the presence of this volatility can reflect the

characteristics of investors themselves whether they prefer investments with stable returns that lead to long-term investments or volatile returns that lead to short term investment.

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