# Publikasi 2

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# DO FINANCIAL PERFORMANCE, SIZE AND AGE OF THE COMPANY AFFECT THE DISPOSITION EFFECT OF INVESTOR? CASE: INDONESIAN STOCK EXCHANGE

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## Abstract
Information has an important role in determining the results of investment decisions. Investors seek information related to investment opportunities so these conditions will create informed investors and uninformed investors. This study analyzes financial and non-financial variables that can influence the disposition effect behavior in the Indonesian capital market. The variable used in this study is the disposition effect, profitability as financial variables and measured with return on asset, return on equity and net profit margin, and non-financial variables measured with company size using total assets approach, and the age of the company measured with the length of time the company stands. This research use SEM-PLS (Structural Equation Modeling-Partial Least Square) as the method by using the data of company in the group of LQ45, this group is indices by Indonesian stock exchange which is consists of 45 company that has highest market capitalization, highest transaction, and good prospect in growth listed on the Indonesia Stock Exchange between 2012 and 2017. The results of this study show that the variable profitability, firm size, and age of the company affect disposition effect on the Indonesian capital market. These results are expected to provide knowledge and updates on the study of disposition effect behavior and provide input for academics in the field of management especially economic behavioral about the development of behavior in the capital market and provide input for investors regarding the importance of understanding investor behavior in the Indonesian capital market.

## Introduction
Economic behavior is often a problem for capital market investors. Good behavior tends to make the market stable or lead to growth. because investors are investors in the capital market, this behavior is unavoidable in making investment decisions. The decision-making process by investors in the market involves various thoughts and factors in decision making. these factors are sometimes unexpected and we are forced to assume that investors are rational in making investment decisions. Various research on investor behavior began to develop in the 1990s, which tried to map the aspects of behavior in the decision-making process in investment to the consequences of these behaviors.

Different expectations can lead to behavioral anomalies in investment decision making. Information has an important role in decision making because information received by investors can be a cause of a variety of investor thinking. Some investors will have information that is more exclusive than other investors due to certain factors with internal issuers. This inequality of information will lead to an inefficient market due to asymmetry information. The condition of investors who are not informed (do not know) will become weak during the decision-making process, so that they will imitate other investors who are considered to have sufficient information. This condition will lead to the behavior of investor anomalies, namely the existence of excessive expectations for investment so that they tend to quickly sell assets owned when prices rise while still holding assets that have the potential to lose. This anomaly is a disposition effect that investors might face.

Kahneman and Tversky (1979) put forward the Disposition effect as a development of prospect theory which shows that most investors will avoid risk if faced with profit opportunities, but have a tendency to take risks if faced with opportunities that create the possibility of loss because investors do not want to lose, especially humans belonging to creatures that are not rational in decision-making that considers losses will have a greater emotional impact than the benefits obtained, even though the results obtained are greater or different from the losses experienced. Investors will conduct further analysis of any information on the market. This information is used by investors for the right investment decision making process. Disposition effect is the behavior of investors who are too fast in trying to realize the benefits of investment, but withstand losses that can occur too long, or it can be said that investors avoid risk if they face favorable conditions and take risks when losses can occur. Shefrin and Statman (1985) first found a disposition effect as a continuation of Kahneman and Tversky (1979). They then develop capital gain and loss theories where investors tend to sell too early and withstand losses for too long. These results are also in line with the findings of Odean (1998), Grinblatt and Han (2005) which show evidence of disposition effect behavior where the expected return of a stock is positively proportional to the comparison of stock market prices and acquisition prices both in the future and a year then. While Dhar and Zhu (2006) proved that a lower level of disposition effect was found in wealthy individuals and worked professionally.

Ritter (2003), argues that behavioral finance is a behavior based on psychology that influences the decision process consisting of two parts, cognitive and limit to arbitrage. Bodie, Kane, and Marcus (2008), explained that investors cannot always process data correctly so that it will create a wrong probability of distribution of investment return predictions. Then, if the distribution is in actual circumstances, investors tend to make decisions that are not optimal. These two things confirm that investors think irrationally in decision making. Goetzmann and Massa (2008); Kadous et al (2014), Croonenbroeck and Matkovskyy (2014) and Jiao (2017) in their research proves that when investors who make dispositions transac volatility, stock returns, and stock trading volume go down. These results add to evidence of the behavior of disposition effect bias behavior in the capital market can affect the stock price of individual issuers.

Booth, G., Kallunki, J., Sahlstro, P., & Tyynela, J. (2011) examined the response between types of foreign and domestic investors regarding stock information, based on investor stock ownership data in Finland sourced from the Finnish Depository Central Securities, indicates that after the announcement by the issuer carrying negative information, a group of foreign investors will respond with the action of selling the shares of the issuer that publishes the negative information. Research by Riaz, Hunjra and Rauf-I-Azam (2012) and Olayinka et al (2017) examines investors' psychological factors on investment decisions. The results show that investor perceptions of risk are very influential in the investment decision making process. This investor behavior depends on how available information is presented to them and how much they dare to take risks in decision making, so this has an important role in the investment style of investors.

The style of investors in investing also has relevance to the information presented by the issuer, one of which is related to the company's ability to generate profits. Donovan and Gibson (2000) found that profitability has a negative influence on the company's CSR activities where this signal has an impact on investors, and when the company earns a low profit, management still hopes that users of financial statements will respond well to the company's performance. Unlike the case in the research of Rudangga and Sudiarta (2016) shows that profitability has a positive and significant effect on the value of the Company in Food and Beverages Companies listed on the Indonesia Stock Exchange. Companies that have high profitability tend to have sufficient funds, so they will be able to improve performance which results in an increase in company value. The company's ability to generate profits will be able to increase the value of the company as reflected in the increase in stock prices. Continuous increase in profitability will foster investor interest. Investors who receive information related to the company's ability to increase profits will potentially gain a large return, so that it becomes a positive signal for investors.

The size of the company has meaning for investors in addressing related information received. Research by Ema Maharani and Erman Denny Arfianto (2016) shows that the size of the company listed on the Kompas 100 Index of the Indonesia Stock Exchange in the period 2012-2015 proves that the growth of large shares is due to the high revenue from the past and compares with retained earnings and the size of the company. can be used as a disposition effect detection variable. Investors consider company revenue to be a positive signal so as to increase stock price growth. This result is in line with the research of Rudangga and Sudiarta (2016) who found that firm size has a positive effect on firm value in food and beverages companies listed on the Indonesia Stock Exchange in 2011-2014. This shows that the size of the company is directly proportional to the value of the

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company, the larger the size of the company, the greater the value of the company. Investors will consider the size of the company as a guarantee of investment security so as to provide positive information and increase the value of the company. Conditions like this can make different results when dealing with investors who are disposition, because this behavior is classified as a deviation in investor behavior so that results can vary.

Perfect competition in an efficient market will cause information about actual stock value to be automatically reflected in actual stock prices (Fama and French, 2004). Some researchers support this opinion and argue that stock prices in the stock exchange are positively influenced by changes in company profits, company growth, and stock dividends (Block, 1964); (Shiller, 1987); (Lo and Lin, 2005); and (Becchetti and Giacomo, 2007). However, the fundamental value of shares is often not reflected in stock prices on the stock market.

The information that becomes the study of investors regarding the company's internal conditions is the financial report. The financial report presents various information needed by investors in relation to obtaining profits from the company, investors will analyze the company's profitability ratio. Company profitability can be measured using Gross Profit Margin (GPM), Operating Profit Margin (OPM), Net Profit Margin (NPM), Return on Assets (ROA), Return on Equity (ROE), and Return on Investment (ROI). Investors' understanding of the issuer's financial performance will raise hopes of results as well as investment opportunities in the company and the age of the company which indicates the company's ability to survive and be able to compete in the business.

Based on the description above, this research is expected to be able to answer the problems regarding the effect of profitability, firm size, and age of the company on the disposition effect and provide additional knowledge on economic behavioral so that investors get additional insight into existing behavior in the Indonesian capital market.

## Methods

This study uses a quantitative approach in processing and testing the data obtained according to the research period so that a clear picture of the phenomenon is obtained and a comprehensive conclusion is drawn according to the relevant theory. This study uses secondary data obtained indirectly through intermediary media from different data sources then processed using statistical applications with the SEM-PLS (Structural Equation Modeling-Partial Least Square) approach. This study gives limitations on variables, data used, research period and size used in identifying variables. These limits include. The research period uses the period of 2012 to 2017 in the LQ45 group of companies. The variable used in the study is the disposition effect (DE) as an endogenous variable and profitability (ROA, ROE, NPM), firm size (total assets), and company age as exogenous variables. The sample used is the companies listed in the LQ45 group that have complete data. The data used are secondary data obtained from the Indonesia Stock Exchange, the Central Bureau of Statistics (BPS), Bank of Indonesia (BI) and the official website of the issuer as well as data on investor trading transactions that carry out transactions in buying or selling shares through brokerage companies.

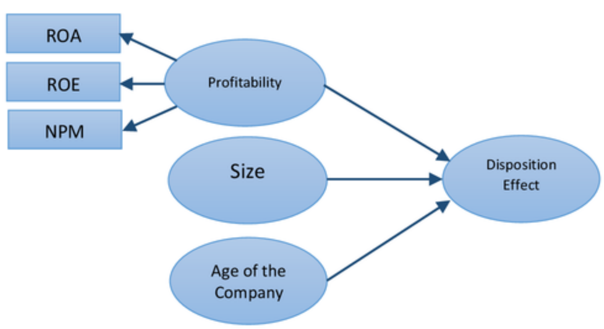


*Fig. 1: SEM-PLS Model*

## Results and discussion

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This study analyzes and tests data obtained quantitatively so that a clear meaning is obtained from the phenomena that occur, then a conclusion is drawn according to the relevant theory. This study uses historical data obtained through intermediary media from different data sources. The data comes from literature and other sources related to the discussion.

This study uses LQ45 trading data contained in brokerage companies that are processed using a formula developed by Odean (1998) as an approach to disposition effects as well as endogenous variables and profitability (ROA, ROE, NPM), company size (total assets), and company age as exogenous variable. This study uses secondary data obtained indirectly through intermediary media from different data sources then processed using statistical applications with the SEM-PLS (Structural Equation Modeling-Partial Least Square) approach. A total of 225 data of observation from the LQ45 company during the period 2012 to 2017 were used in this study. The discussion in this study uses the results of processing using SEM-PLS. Table 1 and Figure 2 are the results of the process.

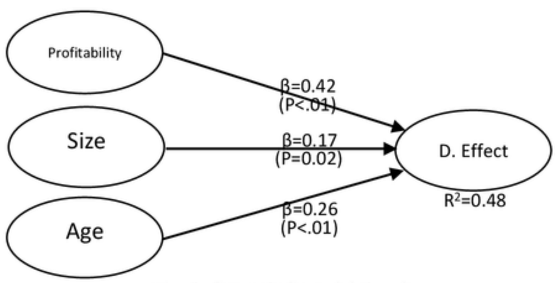


*Fig. 2: SEM-PLS Model Result*

*Table 1. Outer Model*

| Variable | Indicator | Loading Factor | AVE | CR | CA | R-Square |
|---|---|---|---|---|---|---|
| | ROA | 0.823 | | | | |
| Profitability | ROE | 0.824 | 0.663 | 0.855 | 0.746 | |
| | NPM | 0.797 | | | | |
| Size | | 1.000 | 1.000 | 1.000 | 1.000 | |
| Age | | 1.000 | 1.000 | 1.000 | 1.000 | |
| D. Effect | | 1.000 | 1.000 | 1.000 | 1.000 | 0.480 |

Outer models are used to see the validity and reliability of latent variables. Validity and reliability are carried out on variables that have more than 1 indicator such as profitability variable as measured by ROA (return on asset), ROE (return on equity), and NPM (net profit margin). Table 1 above shows that all loading factor values from profitability indicators have values above 0.7 with a value of AVE> 0.5 so this result indicates that the validity criteria have been met. Table 1 above also shows that the composite reliability and Cronbach alpha values have values above 0.7 so this result shows that the reliability criteria have been met. It can be concluded that ROA, ROE and NPM are able to measure profitability variables well. This result also informs that ROE is the best indicator in measuring profitability as indicated by the highest loading factor value of 0.824.

*Table 2. Inner Model and Test Result*

| *Relation* | *Path Coefficient* | *P value* | *Remarks* |
|---|---|---|---|
| *Profitability --> D. Effect* | 0.416 | <0.001 | Affected |
| *Size --> D. Effect* | 0.166 | 0.017 | Affected |
| *Age --> D. Effect* | 0.255 | <0.001 | Affected |

Inner model describes the relationship between exogenous variables and endogenous variables. Inner model is divided into hypothesis testing and determination coefficient. In hypothesis testing, the relationship between latent variables is signified if the value of P value < $\alpha$ = 0.05 or t-count> 1.96. While the coefficient of determination has three criteria, namely, the influence between variables is said to be strong if it has a value of $R^2$> 0.67; moderate if 0.33 < $R^2 \leq 0.67$; weak if the value is 0.19 < $R^2 \leq 0.33$ and is said to be very weak if the value of $R^2$ is $\leq 0.19$.

Table 1 informs that the R-square value is 0.480, this indicates that the variable profitability, company size and age of the company can explain the disposition effect by 48%, in other words these variables only contribute 48% and 52% are influenced by other variables outside the model. Table 2 informs that the p value of profitability is smaller than 0.001 and smaller than the value of $\alpha$ 0.05, it can be said that profitability has an influence on the disposition effect so that the first hypothesis in this study is that there is a significant influence between profitability variables on disposition effect on the capital market Indonesia. The company size variable has a p value of 0.017 smaller than the $\alpha$ value of 0.05 can be said that the size of the company has an influence on the disposition effect so that the second hypothesis in this study is that there is a significant influence between the firm size variable on the disposition effect on the Indonesian capital market. In the variable age of the company obtained p value smaller than 0.001 and smaller than the value of $\alpha$ 0.05, it can be said that the age of the company has an influence on the disposition effect so that it receives the third hypothesis in this study that there is a significant effect between the variable age of the company on the disposition effect on Indonesian capital market. Overall, the variables of profitability, firm size, and firm age affect the disposition effect.

The results of this study provide additional evidence and updates to previous studies. Disposition effects on the Indonesian capital market can be influenced by the variables of profitability, company size and company age. Profitability as one of the ratios used by investors to measure company efficiency and profitability is a consideration in decision making so that it becomes one of the variables that influence the occurrence of capital market disposition effects so that this study also supports the statement of Sudana (2011: 21-23).

This study also supports the statement of Sugiri and Riyono (2014) which states that the size of a company as measured by total assets is an economic source owned by the company and still provides benefits in the future. Investors have hope for the results of their investments in the future so that this thought will make investors hold assets owned in the hope of obtaining profits in the future, this expectation can have negative results where the assets held are increasingly experiencing losses compared to profitable assets, so leads to disposition effect behavior.

This study also supports the research of Sri Utami and Sawitri Dwi Prastiti (2011) that the age of a company provides a level in the fulfillment of information to the public. The longer the company stands, the more the community knows about the company's information. With the increasing amount of information that investors get, they will have their own expectations for the investments made, including the profits earned, so that it is probable that investors will hold back the investment assets they have because of their expectations for the investment.

## Conclusion

This study aims to examine financial and non-financial variables that can influence the disposition effects by using trading data of companies in the Indonesia Stock Exchange in the group LQ45 period 2012 to 2017. The financial variables used are profitability with approach on ROA, ROE, and NPM then non-financial variables include firm size using total asset approach and variables the age of the company. The result is that the variables of profitability, firm size, and age of the company have a significant effect on the disposition effect on the Indonesian capital market for the 2012 research period up to 2017, especially for companies in the group of LQ45 list.

The results of this study provide additional evidence and an update on research on the disposition effect. Investors have considered financial and non-financial variables in making investment decisions so that they can lead to a disposition effect. Investors have had sufficient experience in investing and understanding the investment climate in Indonesia, especially the capital market, so that in decision making has been able to make good decisions in addition to the availability of information also has an important role in the process. Although

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it has been able to make good investment decisions, some disposition effect can still occur in investment. This is due to the different expectations of investment returns faced by each investor.

This study has limitations during the research process including the data that used is the data from brokerage companies so that only includes investors who are registered with the company. Then, this study uses financial and non-financial variables that are limited to profitability, company age, and company size and the period used between 2012 and 2017, so that the results obtained only cover these variables and periods, differences in the use of variables and possible periods probably get different results.

Based on the conclusions and limitations above, the advice that can be given related to this research is the existence of updates in methods, data, variables and research periods can provide different contributions to research, especially related to economic behavioral, so similar research can be developed and able to reduce or eliminate the limitations there is in this study to produce research that can detect other financial behaviors at the individual level. The use of other approaches is also recommended in the effort to develop this research so that more renewable research can be achieved that is able to overcome existing limitations.

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