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Behavior of Investors VS Traders in Determining Share Prices with Intrinsic Value Moderation (Evidence of Random Walk Hypothesis) in the Indonesian Pandemic Time 2019-2021

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Abstract

The pandemic period that started in 2019 has caused many businesses to collapse, the JCI is at the level of 6,244 (24 Jan). This resulted in the closing of the capital market on March 13, 2020 after the WHO announcement that the COVID-19 outbreak was a pandemic. Nevertheless (Rizal, 2021; 1) the reality shows that the Indonesian capital market is still growing with the increase in the number of investors, especially retail investors. This study aims to determine the behavior of market participants, namely investors and traders through stock prices. The population used in this study were 18 companies whose shares were actively traded in 2019 and 2020 and semester 1 2021, the sample was taken from companies whose shares received top gainers. The analytical model used is MRA or moderated regression analysis. The results of the study show that the capital market's revival during the pandemic is caused by the motivation of traders to obtain short-term results, namely capital gains, by using the stock's intrinsic value benchmark, without conducting in-depth technical analysis. This shows that stock prices will move randomly following past patterns which have not been proven in the pandemic conditions in Indonesia.

Keywords
investor behavior; trader behavior; stock price; intrinsic value; random walk hypothesis

I. Introduction

The presence of Covid-19 as a pandemic certainly has an economic, social and psychological impact on society (Saleh and Mujahiddin, 2020). The pandemic period that started in 2019 has caused many businesses to collapse, mainly due to the large-scale social restrictions imposed by the government. This of course had an impact on the Indonesian capital market, where the JCI was sharply corrected to a level of 5,351 on March 2, 2020 and continued to fall to a level of 4,973 from before the first confirmation of COVID-19 in Indonesia, the JCI was at the level of 6,244 (24 Jan). This resulted in the closing of the capital market on March 13, 2020 after the WHO announcement that the COVID-19 outbreak was a pandemic. Haryanto (2020; 153). However, according to Rizal, (2021; 1) the reality shows that the Indonesian capital market is still growing with the increase in the number of investors, especially retail investors. This condition means that there is still hope for the development of the capital market considering that the capital market is an important factor in the economy of a country. This is reinforced by the still actively traded shares in 2019 and 2020, where there are 50 companies in each year. (IDX Statistics, 2019/2020).

Stock trading activity in graphical form can be seen in Figure 1.1 graph of the development of the Jakarta Composite Stock Price Index which shows a decline in March 2020.

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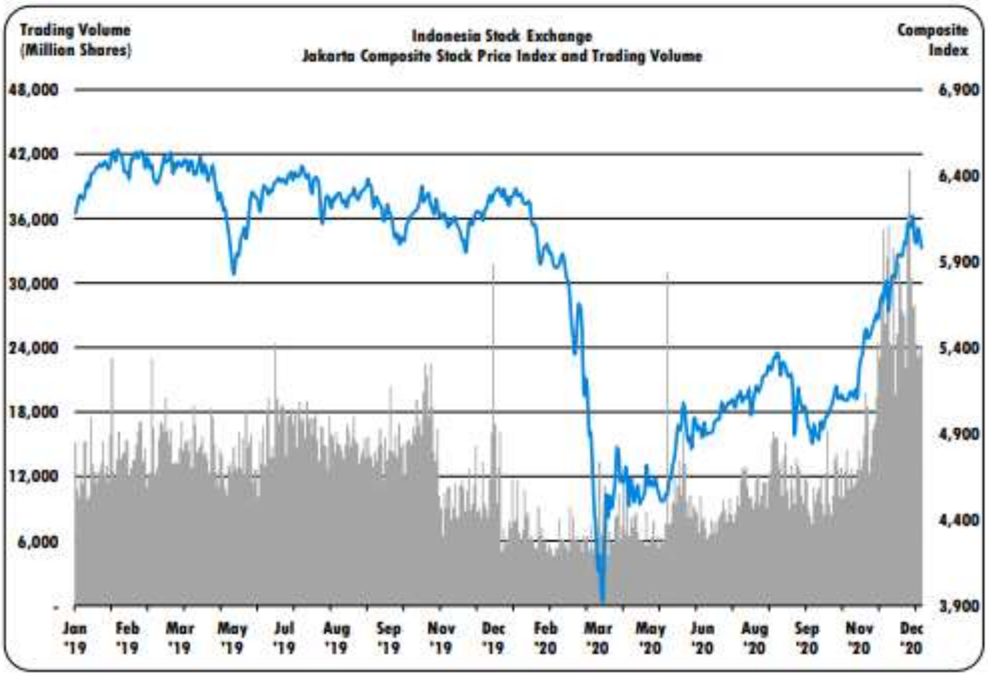

Figure 1. *Development of the Composite Stock Price Index Source: IDX Statistics 2019*

Increasing investors and still stretching the capital market in Indonesia in the midst of a pandemic, it is quite surprising, even though many companies have collapsed, so this study aims to prove the Random Walk Hypothesis by knowing the behavior of market participants during the pandemic in Indonesia, namely investors and traders through stock prices.

The research questions asked are:

1. Is there an effect of investor behavior on stock prices during the 2019-2021 pandemic in Indonesia?
2. Is there any influence of trader behavior on stock prices during the pandemic in Indonesia in 2019-2021?
3. Is there an effect of investor behavior on stock prices moderated by intrinsic value during the 2019-2021 pandemic in Indonesia?
4. Is there an effect of trader behavior on stock prices moderated by intrinsic value during the 2019-2021 pandemic in Indonesia?

II. Review of Literature

According to (Rizal, 2021; 1) Retail investors should pay attention to the available information in terms of conducting fundamental and technical analysis. In addition, investors need to be prepared for the pandemic conditions that occur, where a good emotional condition is needed to deal with situations like this, so that these investors do not get caught up in negative trends. Reilly, FK, (2003;4) the concept of intrinsic value is used to estimate the market value of the company. Wijaya, A. (2021; 49), the results of hypothesis testing indicate that debt policy, profitability, asset structure and firm size affect firm value, while dividend policy has no effect on firm value. Utkus, SP, & Young, JA (2020;6). Individual investors have negative expectations for a 1 year return. Furthermore, there is evidence of the tide of optimism and pessimism. Investors became more optimistic in early 2018 after the market strengthened in 2017 and somewhat more pessimistic in

December 2018 after prices declined - 20% peak-to-trough. While Tarmidi, 2021; 138). Finding that investors react positively to EPS, firm size, and at the publication date and investors react positively to ROA and DER at the time of publication. Waldron, DG (2011; 23) concludes that the average investor bases *cash flow*, where intrinsic value is on average Average and market prices tend to converge. The difference between *overvalued* and *undervalued* firms is based on *excess returns.excess returns* Short-term *value drivers*, which are consistent with market mechanisms that are more emotion-based than the

Random Walk hypothesis (Fama, nd:2) assuming that history tends to repeat itself, i.e. past price behavior patterns of individual securities will tend to repeat in the future. Thus, the way to predict stock prices is to look at patterns of past security price behavior that are likely to repeat themselves. Therefore this stock price prediction technique is referred to as technical analysis. While fundamental analysis predicts stock prices based on intrinsic value, which depends on the potential profit of a stock which in turn is the ability of management. A different opinion, Delcey, T. (2019; 2) states that according to Samuelson EMH, the randomness of price variations is explained by competition between rational agents without caring about the fundamental value.

Companies can increase the value of the company through the choice between dividing dividends or holding them as capital gains for company growth. This can happen depending on the investor's preference for returns as dividend yields or capital gains Brigham, EF, & Daves, PR (2007). Companies usually set a target for dividends (*dividend payout ratio*) which is the percentage of net income paid out as dividends. Bhattacharya, S. (1979, 9) developed a model in which dividends provide an inside signal about a firm's future performance. *This market-signaling value model* applies only if the expectations about *cash flows* as informed (the signals sent) are met. Furthermore, when there is *asymmetric information* between companies and investors, dividends become a mechanism or instrument that provides information for shareholders (investors). Announcements about decreasing dividends lead to a fall in the company's stock price, on the contrary announcements about increasing dividends will increase the company's share price. (Black F, 1976;6).

Capital gains exist when the asset sold is worth higher than the initial value paid, therefore there is an increase or growth opportunity. Hermuningsih, Sri, (2014; 115) examined the effect of profitability, growth opportunities and capital structure on firm value, finding that profitability, growth opportunities and capital structure had a significant positive effect on firm value. Handayani, (2019; 179) found that ROE, CR, DER, DPR, company size and sales growth explained 4.85% of the variation in stock price volatility, and only sales growth had a significant positive effect on stock price volatility.

2.1 Investor VS Trader

An investor is rational because the risk borne is proportional to the expected return (Indahwati, 2021). However, there are two parties who transact in the capital market which are commonly referred to as informed traders and liquidity traders, hereinafter referred to as investors and traders. Decisions about stock trading consist of 3 dimensions, namely: buying, selling and holding. Alsedrah, I. (2018, 606). Individual decisions are influenced by two categories of *behavioral finance (*BF), where a person trades in the capital market based on his beliefs or preferences. These two categories are investors who make stock transactions with the hope of getting dividends or days from the company's business, while the other one is traders who make transactions with the hope of getting profits from stock trading or capital gains. The difference between investors and traders lies in the first is the time period. Traders hold stocks for the short term with the expectation of high performance, while investors work on the principle of buying and holding for several years or long term and short term market fluctuations are insignificant. Second is dividends, Black and Sxholes (1976,6-7) there are 3 types of investors who prefer stocks with *dividend yields* , investors who prefer *returns* from dividends and *capital gains* and investors who prefer stocks with *low dividend yields*. Third is the analysis used, investors consider fundamental analysis by looking at the company's performance, while traders look at technical analysis, namely random stock movements in the market by following patterns in the past. Fourth is the issue of risk, where the trader involves a higher risk with a higher potential return because the price can go high or low in the short term. Investors check a development, compare returns and comparable risks. Fifth is the psychological factor, investors are rational in the sense of being more patient to hold on to long-term investments, while traders are more *risk takers* by developing their research and making corrections when the market moves against it. Thus, it can be concluded that the decision-making process is based on their motivation, where investors buy shares to get dividends periodically, while traders transact to obtain capital gains.

2.2 Previous Research

Announcements about decreasing dividends lead to a fall in the company's stock price, on the contrary announcements about increasing dividends will increase the company's stock price. (Black F, 1974, 6). Bhattacharya's, 1979 stated that when there is *asymmetric information* between companies and investors, dividends become a mechanism or instrument that provides information for shareholders (investors). Referring to Black and Sxholes (1996) there are 3 types of investors who prefer stocks with *dividend yields* , investors who prefer returns from dividends and *capital gains* and investors who prefer stocks with *dividend yields* .

Pahlevi, RW, & Oktaviani, II (2018) concluded that attitudes, subjective norms, perceptions of behavioral control subjective norms, excessive trust, group behavior affect investors' intentions to invest, while there is no psychological effect of risk on investors' attitudes in investing. Alsedrah , I, (2018, 604) who conducted research on the Saudi capital market, and found that to make better and wiser purchasing decisions by combining it with increased market efficiency compared to speculating on stock price movements in the market. Muhammad Husni Thamrin, (2018, 151) concluded that investment decisions and financial performance have a positive relationship with firm value.

Decision making in stock transactions, can not be separated from investor behavior which is very psychological in nature, namely preference for risk, a study conducted by Al, MH, & Adib, IN (nd; 1) concluded that the results of the study strongly describe the behavior of investors in making decisions in Malang. Investors do not pay attention to the intrinsic value of shares when there is an increase in stock prices and investors tend to be rational because they are very concerned about the company's fundamentals, macroeconomics and technical movements of stocks. Puspitaningtyas, Z., & Jember, U. (nd; 2) concluded that accounting information is not consistent with stock prices, but is an investor's personal signal in terms of psychological factors that are more considered by investors in making investment decisions.

Research by Didarul Hasam, M & Saheb Ali Mondal, (2008; 1) concluded that qualitative and quantitative factors affect stock prices. Qualitative factors are *goodwill*, market sentiment, company announcements, unexpected conditions and so on. Quantitative factors are dividends, *price earning ratio, earnings per share, net income, return on investment*, and so on. Furthermore, the P/E ratio, stock price rumors, demand for stocks and economic conditions are the most influential factors on stock prices.

2.3 Conceptual Framework and Research Hypotheses

This conceptual framework is based on the fact that those who transact in the capital market are not only investors but also traders. Investors are distinguished from traders here meaning that investors who buy stocks with the aim of being held for the long term in the hope of periodic dividends, they will carry out fundamental analysis. Meanwhile, traders will make transactions to buy or sell shares using technical analysis, which means waiting for the price to rise or fall to obtain a profit or capital gain. Technical analysis studies that stock prices will move randomly and tend to follow past price movement patterns or the Random Walk Hypothesis. Therefore, the intrinsic value becomes a moderation for investors, especially traders in conducting stock transactions. This study uses the *dividend payout ratio* as *a proxy* for investor behavior and uses *capital gains* as *a proxy* for *traders,* and the conceptual framework is structured as follows:

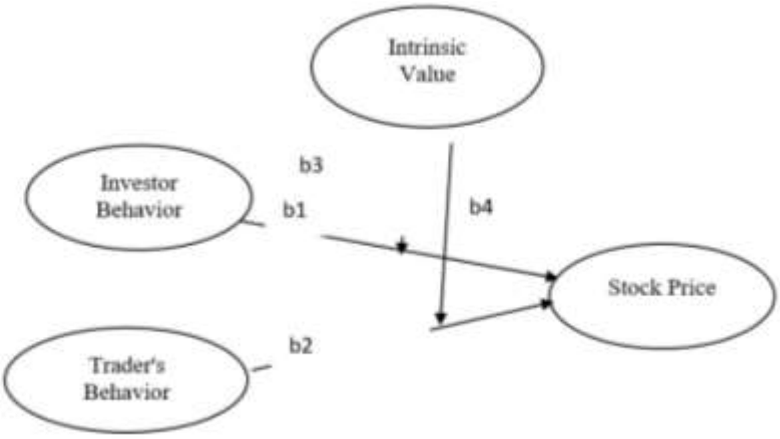

Figure 2. *Conceptual framework*

2.4 Research Hypotheses

1. There is an effect of investor behavior on stock prices during the pandemic in Indonesia in 2019-2021.
2. There is an influence of trader behavior on stock prices during the pandemic in Indonesia in 2019-2021
3. There is an influence of investor behavior on stock prices which is moderated by intrinsic value during the 2019-2021 pandemic in Indonesia.
4. There is an influence of trader behavior on stock prices which is moderated by intrinsic value during the 2019-2021 pandemic in Indonesia.

III. Research Method

3.1 Data Collection Methods

This study uses data from the financial statements of publicly listed companies in the Indonesian capital market.sampling technique uses *purposive sampling*, which takes samples from stocks that are actively traded in the sense *of top gainers* when the pandemic panic occurs in 2019-2020 and the first half of 2021, which are 6 companies each, which means there are 18 units of

3.2 Variable Research and Operational Definitions of Variables and Measurements

This study uses 2 independent variables, namely investor behavior and trader behavior. a moderating variable is an intrinsic value. The dependent variable is the stock price.

a. Investor behavior is a decision making to choose a transaction based on a rational motivation, namely to obtain periodic dividends. The indicator used is the dividend payout ratio which is formulated as dividends/net income after tax (Danila, 2020; 3) Didarul Hasam, M & Saheb Ali Mondal, (2008; 1)
b. Trader behavior is a decision making to choose to transact based on lack of motivation. Rationale, namely obtaining *capital gains* (short term) by waiting for the ups and downs of stock prices. Fama EF (nd; 23). The indicator used is capital gain or growth.
c. The intrinsic value of the stock. Stock demand is measured using the following formula:

$$NI = \frac{D_1}{ks - g}$$

Where NI = Stock intrinsic value ks= ROE g = growth
d. Stock price is the price that occurs in the market due to the interaction of stock demand and supply.

3.3 Analysis

The analytical model used in this study is MRA or Moderated Regression Analysis which analyzes the effect of stock demand and supply on the company's stock price by moderating intrinsic value. This analytical model is described in the following equation:

Y = a + b1X1 + b3X3 + b5X1X3 + e

Y = a + b2X2 + b4X3 + b6X2X3 + e

Where Y = stock price X1 = investor behavior X2 = trader behavior X3 = value moderating variable intrinsic

3.4 Model Testing

Model Testing using the F test and the coefficient of determination

a. F test
1. If the calculated F value > F table with a significance value < 0.05, then the model is said to be feasible and can be used to predict Y.
2. If the calculated F value < F table with a value significance > 0.05, then the model is said to be inappropriate and cannot be used to predict Y.

b. Coefficient of determination
3. The coefficient of determination is the value of R square > 0.6 meaning that 60% of the variation in Y can be explained by variables X1 and X2 and moderate-moderate , while 40% is explained by causes outside the model

3.5 Hypothesis Testing

Hypothesis Testing: using t test

a. If the value of tcount > ttable with a significance value <0.05 then the hypothesis is accepted
b. If the value of tcount < ttable with a sig value significance > 0.05 then the hypothesis is rejected

IV. Results and Discussion

4.1 Results

Results obtained 18 units of analysis consisting of various industrial groups, including telecommunications, mining, and pharmaceuticals. There are 5 companies that do not pay dividends and this has an impact on the intrinsic value which is also zero.

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
x1	18	,00	62,80	11,9894	17,44419
x2	18	-900,00	1360,00	240,8667	510,26744
x3	18	-16,20	886.00	153,4517	280,33651
y	18	244.00	6525 ,00	2013,6111	1888,66732
Valid N (listwise)	18				

Source: SPSS analysis

Table 1 shows that the three variables, namely x1, x2 and x3 have a standard deviation that is larger than the mean, which means that there are outliers. Data processing is still carried out even if there are outliers because the data taken is data from financial reports that have already occurred, and to be able to describe the actual conditions regarding decision making in terms of investor behavior and trader behavior.

Dividend payout ratio (x1) shows a minimum of 0 and a maximum of 62.8, with an average of 11.99% which means that the company pays dividends on average of 11.99%. *Capital gain* (x2) shows a minimum value of -900 and a maximum of 1.360 which means that there are companies that experience a decrease in stock prices and also a very sharp increase in stock prices. Meanwhile, the intrinsic value (y) also shows *range* which means that the company's performance is poor, because the intrinsic value is calculated from the return on its own capital and the company's growth. The stock price is in the range of 244 to 6525, indicating a fairly good response from the behavior of investors and traders.

The results of the study are shown in Table 4.2 and Table 4.3 as follows:

Table 2. Coefficient x1 and moderate1

model		Beta	t	sign.	Information	
1	(Constant)	1103,992	2,960	0.010		Intrinsic value does not moderate the behavior of investors to form stock prices
	x1	0.098	0.603	0.556	TS	
	x3	1.047	4.839	0.000	S	
	Moderate1	-0.394	-1.731	0.105	TS	
F = 9.841 Sign. = 0.001 R square = 0.678						

Source: SPSS data processing

The resulting regression equation is

$Y = 1.103.992 + 0.098x1 + 1.047x3 – 0.394x1x3 + e$

a. Test Model variable x1

The calculated F value is 9.841 with a sign value. = 0.001 < 0.05 means significant, while R square is 0.678 which indicates that the stock price of 67.8% is determined by the *dividend payout ratio* (x1) and intrinsic value moderation. Thus, the model is feasible and can be used to predict stock prices.

Table 3. Coefficient x2 and moderate2

Model		Beta	t	sign.	Description	
1	(Constant)	746,448	2,633	0.020		Intrinsic value moderates the behavior of traders. The stock price moves around intrinsic value
	x2	0.008	0.487 3.084	S	x3	
	0.874	7,627	0.000	S	Moderate2	
	-0.662	-4.311	0.001	S	F	
= 23,149 Sign. = 0.000 R square = 0.832						

Source: SPSS data processing

Produces the following regression equation:
Y = 746,448 + 0.487x2 + 0.874x3 – 0.662 x2x3 + e

b. Test Model variable x2

The calculated F value is 23,149 with a sign value. = 0.000 <0.05 means significant, while R square is 0.832 which indicates that the stock price of 83.2% is determined by capital gain (x2) and intrinsic value moderating. Thus, the model is feasible and can be used to predict stock prices.

4.2 Discussion

a. The effect of investor behavior on stock prices during the pandemic in Indonesia in 2019-2021 shows that it is not significant at 0.098. This shows that the behavior of investors who are motivated by the dividends distributed does not determine the company's stock price. This indicates that the share price will be Rp. 1103,993 (Table 4.2) without being affected by the intrinsic value of the stock. This study is not in accordance with research conducted by Puspitaningtyas, Z., & Jember, U. (nd; 2) concluded that accounting information is inconsistent with stock prices. Announcements about decreasing dividends lead to a fall in the company's stock price, on the contrary announcements about increasing dividends will increase the company's share price. (Black F, 1976, 6).

   Based on existing data and research, it can be explained that stock prices are not affected by dividends. The distribution of dividends affects the stock price only at the time of the announcement of the distribution of dividends, because market participants, both investors and traders, expect to receive dividends when they know there is a dividend distribution. The dividends paid do not reflect the fundamental condition of the company, they are often *asymmetric information*. (Black F, 1974, 6). Bhattacharya's, 1979. This study can also show that a very large dividend distribution of 62% (Table 4.1) means that the company cannot grow in the coming year because it does not have *retained earnings* for expansion. This finding is clearly due to the COVID-19 pandemic in which many companies have collapsed. Puspitaningtyas, Z., & Jember, U. (nd; 2) concluded that accounting information is not consistent with stock prices, but is an investor's personal signal in terms of psychological factors that are more considered by investors in making investment decisions. Didarul Hasam, M & Saheb Ali Mondal, (2008; 1) Waldron, DG (2011; 23)

b. The effect of trader behavior on stock prices during the 2019-2021 pandemic in Indonesia is significant at 0.487. This shows that without the influence of trader behavior motivated by *capital gains* , the stock price will be Rp. 746,448 (Table 4.3) and will increase by Rp. 0.487 when there is an increase in *capital gains*. This increase or decrease in stock prices is used by traders to make profits during the pandemic, when they have to lose their income. Didarul Hasam, M & Saheb Ali Mondal, (2008; 1) Handayani, (2019; 179)

c. The effect of investor behavior on stock prices moderated by intrinsic value during the 2019-2021 pandemic in Indonesia is not significant at -0.394 (Table 4.2). The results of the study are in accordance with research conducted by Al, MH, & Adib, IN (nd; 1) that investors do not pay attention to intrinsic value. Investor behavior towards stock prices is not significant even if moderated by intrinsic value. This can be explained that investors really can't expect much considering the company's performance is declining or even closing. In contrast to the research of Pahlevi, RW, & Oktaviani, II (2018), but in accordance with the research of Muhammad Husni Thamrin, (2018, 151) that investment decisions and financial performance have a positive relationship with firm value.

d. The effect of trader behavior on stock prices moderated by intrinsic value during the 2019-2021 pandemic in Indonesia is significant at -0.660 (Table 4.3). The results of this study are in accordance with a study by Waldron, DG (2011; 23) that the average intrinsic value and market prices tend to converge, with short-term excess return value drivers, namely capital gains and more emotional in nature. Traders tend to look at the intrinsic value before making a transaction, where they will buy when the stock price is below the intrinsic value and sell when the stock price is above the intrinsic value. This trader's behavior will bring the price to an equilibrium level, namely its intrinsic value. This is not in accordance with the random walk hypothesis theory that stock prices move randomly (Fama, nd.,: 23) Delcey, T. (2019:2). The best justification is that in different conditions, namely during the pandemic, traders try to speculate in the capital market. Rizal, (2021; 1). Black and Sxholes (1976,6-7). Alsedrah, I. (2018, 606). In addition, it also proves that stock prices do not move randomly but follow their intrinsic value during the 2019-2021 pandemic in Indonesia.

Thus it can be explained that traders only see intrinsic value which is short-term, while the Random Walk Hypothesis by Fama where stock prices move randomly following past patterns, which are long-term.

The implication of this research is that Fundamental analysis and Technical Analysis, including the Random Walk Hypothesis, do not apply during the 2019-2021 pandemic in Indonesia.

V. Conclusion

1. The effect of investor behavior on stock prices during the pandemic in Indonesia in 2019-2021 shows that it is not significant because of the pandemic conditions that cause financial performance to decline, so dividends are not a motivation to trade shares.
2. The influence of trader behavior on stock prices during the pandemic in Indonesia in 2019-2021 is significant, because capital gains are the motivation for traders to speculate during the pandemic.
3. The effect of investors' behavior on stock prices, which are moderated by intrinsic value during the 2019-2021 pandemic in Indonesia, is insignificant, because in the absence of dividends, investors do not dare to speculate, mostly just holding back and waiting for pandemic conditions and the economy to improve.

4. The effect of trader behavior on stock prices which is moderated by intrinsic value during the 2019-2021 pandemic in Indonesia is significant, because traders' behavior is indeed speculating or seeking profit from price fluctuations. They wait for the price to rise or fall around its intrinsic value.

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