
THE EFFECT OF MACROECONOMICS ON STOCK PRICE THROUGH FINANCIAL PERFORMANCE AS AN INTERVENING VARIABLE

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ABSTRACT

This research aims to empirically test the direct and indirect influence of macroeconomics represented by inflation indicators, gross domestic product, and Bank Indonesia (BI) interest rates as independent variables on stock prices as the dependent variable and financial performance (ROA) as the intervening variable. The population of this research is pharmaceutical companies included in the IDX-IC F211 classification; the sample of this research is companies listed from 2020 to 2021. This research uses path analysis and panel regression on reviews as a test tool to detect the direct and indirect influence of relationships between the independent and dependent variables. This research shows that inflation and ROA directly affect stock prices. In contrast, BI interest rates and GDP do not directly affect stock prices. Inflation and GDP affect ROA, while BI interest rates do not affect ROA. ROA can mediate the effect of inflation and BI interest rates on stock prices but cannot mediate the effect of GDP on stock prices. This research implies that companies can use the findings of this research to identify how specific macroeconomic factors can affect financial performance. This can assist in planning risk management strategies to mitigate the negative impact of macroeconomic fluctuations.

Keywords: inflation, gross domestic product, return on assets, stock prices.

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INTRODUCTION

Through Presidential Decree No. 12 of 2020, the government determined the COVID-19 pandemic as a non-natural national disaster. Based on Law No. 24 of 2007 concerning Disaster Management, a disaster is an event or series of events that threatens and disrupts people's lives and livelihoods caused, both by natural factors or non-natural factors as well as human factors resulting in human casualties, environmental damage, loss of property, and psychological impact (Umeidini et al., 2019). Non-natural disasters are caused by non-natural events or series of events, including technological failures, modernization failures, epidemics, and disease outbreaks (Samin, 2021).

The impact of the COVID-19 pandemic on the stock market, IHSG experienced a sharp correction in February 2020, which was the lowest closing value during 2020. On the other hand, pharmaceutical companies listed in the IDX-IC F211 category consistently showed an increasing trend in share prices during the year. 2020. The pharmaceutical company's share price was consistent until the end of 2021. It did not decline again to the price at the beginning of 2020. A comparison graph of joint stock price fluctuations with several pharmaceutical companies can be seen in the following image:

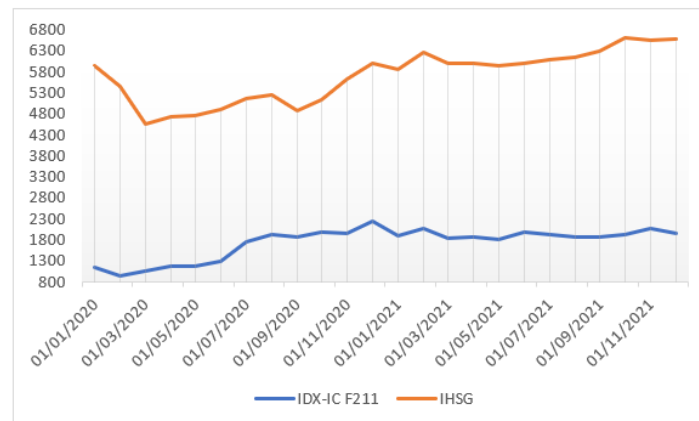


Figure 1. Comparison of Pharmaceutical Company Share Prices and IHSB

Source: Results of stock market data processing, 2021

Figure 1 shows the average movement of pharmaceutical company share prices at the beginning of 2020 in contrast to the IHSB. Pharmaceutical company share prices in the first quarter of 2020 remained stable, while the JCI experienced a sharp decline. There was a significant increase in the third quarter of 2020, while the JCI was still fluctuating and tended to decline. In 2021, even though the JCI movement has improved, IDX-IC F211 shares remain constant, have not experienced a decline, and have returned to their initial position before the pandemic.

As explained in the definition of disaster, COVID-19 is an event or series of events that disrupt people's lives and livelihoods. Covid-19 directly affected Indonesia's economic growth in 2020. Based on the release of the Central Bureau of Statistics, Indonesia experienced a decrease in GDP growth of -2.19% compared to 2019. Gross domestic product influences stock prices on Latin American stock exchanges (de Sousa et al., 2018). Based on previous research, the poor condition of Indonesia's GDP should affect the stock prices of pharmaceutical companies (de Sousa et al., 2018). The results of previous research are not in line with other research that states. The influence of gross domestic product on the stock price index on two stock exchanges, India and America (Sahoo et al., 2020) ; (de Sousa et al., 2018). This research shows that gross domestic product has a different influence on stock prices on the two exchanges. Gross domestic product does not affect stock prices on the American stock exchange. However, it has an influence on stock prices in India.

Previous research has been conducted on the influence of macroeconomic indicators on stock prices. Macroeconomic indicators are one of the factors that investors consider in making decisions. GDP, the object of research, is only one macroeconomic indicator that can influence stock prices (de Sousa et al., 2018) ; (Sahoo et al., 2020). However, the results of previous research regarding the influence of macroeconomic indicators other than GDP on stock prices also produce different conclusions.

Previous research states that inflation and interest rates influence stock prices in Tanzania (Epaphra, 2018) ; (Gwahula, 2018). Other research also states that the inflation rate and interest rates affect stock prices in Indonesia (Utomo et al., 2019) ; (Mawardi et al., 2019). Other research on interest rates stated that interest rates affect stock prices in Malaysia (Qing & Kusairi, 2019). However, the results of previous research state that the inflation rate and interest rates do not affect the American or Indian stock price index (Sahoo et al., 2020). Likewise, others also stated that the

inflation and interest rates do not affect the share prices of palm oil companies in Indonesia (Putri et al., 2019).

Macroeconomics is a general economic problem that affects the lives of individuals. This problem involves the overall economic performance of a country. Macroeconomics not only has an influence on stock prices but also affects the company's financial performance, as the results of research (Rao, 2016), (Issah & Antwi, 2017), (Gautam, 2018), (Hadi et al., 2018). The results of other studies state that several macroeconomic indicators do not affect financial performance, including inflation and interest rates (Egbunike & Okerekeoti, 2018) ; (Dewi et al., 2019).

On the other hand, the company's financial performance is an important instrument in decision-making by investors. The effectiveness of company finances results from management activities (Siswanti et al., 2021). To assess the success of company management in achieving company goals set within a certain period, using the results of management activities as parameters or benchmarks. Financial reports, as a source of information for investors regarding the company's financial condition, are a resource for decision-making. This is supported by other research, stating that the company's financial performance influences share prices (Pranata & Pujiati, 2015), (Putri et al., 2019), (Nasarudin & Anggraini, 2019) ; (Lusiana, 2020). Previous research shows that ROA does not affect share prices (Prayogo & Lestari, 2018).

The differences in previous research results regarding the influence of macroeconomics on stock prices and the increasing share prices of pharmaceutical companies during the pandemic need to be clarified. Further research is needed to examine the direct effect of macroeconomics on stock prices. Apart from research on direct influences, research on the ability of financial performance to mediate macroeconomic influences on stock prices is also necessary. This is based on some previous research which concluded that financial performance can influence stock prices and can be influenced by macroeconomics. Therefore, this research aims to determine and analyze the influence of macroeconomics on stock prices in the pandemic era through financial performance as an intervening variable in pharmaceutical companies listed on the Indonesian stock exchange. Therefore, the benefits of this research are as follows: this research helps to gain a deeper understanding of how macroeconomic factors can affect stock prices through financial performance. It provides insights into the possible mechanisms involved. The results of this research can be used by investors, financial analysts, and financial managers to make better investment decisions. Additionally, the benefit of this research is that companies can use the results of this research in strategic corporate planning.

METHOD

Research is quantitative, with strategies oriented toward data and policy analysis to answer research questions. The population of this study is the IDX Classification of the Health sector (IDXHEALTH) with the pharmaceutical industry subsector (Pharmaceutical Industry subsector F211). Pharmaceutical industry subsector, which conducted an IPO before January 1, 2020, and continued to list until December 2021. The background and period of the research were the basis for consideration in determining the sample where the pandemic conditions began at the beginning of 2020, so companies that conducted an IPO after January 1, 2020, are not affected by this condition. Companies delisted within the research period were also not used as research samples because they

could not fully describe the conditions in the research. The data collection results showed that 1 company in the F211 subsector was delisting, namely SCPI. The data analysis techniques used in this research include tests for normality, heteroskedasticity, multicollinearity, and hypothesis testing.

RESULTS AND DISCUSSION

Classical Assumption Testing

a. Normality test

The normality test in panel data regression can be done by looking at the probability value of the Jarque - Bera normality test results. In this test, if the probability value obtained is > 0.05 , it can be concluded that the regression residual is normally distributed so that the normality assumption is met, whereas if the probability value obtained is < 0.05 , then it can be concluded that the residual from the regression results is not normally distributed.

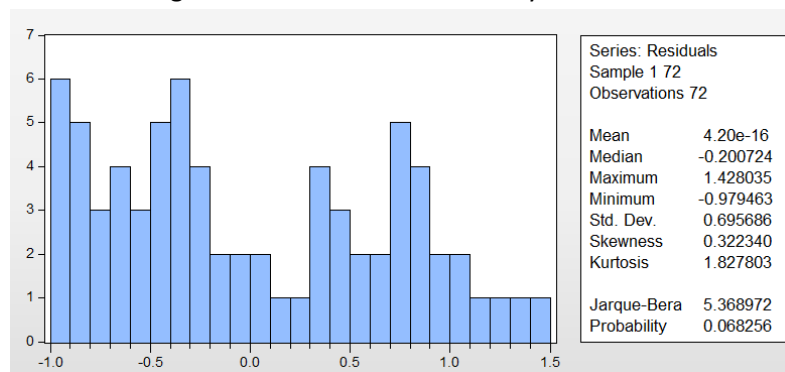


Figure 2. Normality Test Results of the Effect of Inflation, GDP, BI7DRR and ROA to Share Prices

Source: processed data (2023) in Appendix 3

Based on Figure 2 above, the probability value of the Jarque - Bera normality test result is $0.068256 > 0.05$, which indicates that the residual regression data is normally distributed.

b. Heteroscedasticity Test

The heteroscedasticity test can be carried out using the Gletsjer test. The model is declared to contain heteroscedasticity in this test if the Chi-Square probability is < 0.05 . In contrast, if the Chi-Square probability is > 0.05 , it is stated that the model does not contain heteroscedasticity. Based on the results of the heteroscedasticity test in Appendix 2, it can be seen that the chi-square probability value obtained is $0.0492 < 0.05$. This means that there is heteroscedasticity in the regression model. Based on the overall classical assumption test results above, it is concluded that the regression model meets all classical assumptions.

c. Multicollinearity Test

The partial correlation test between independent variables is carried out to detect multicollinearity. Then, it can be decided whether the data is affected by multicollinearity, namely by testing the correlation coefficient between independent variables. The results of the multicollinearity test show the following:

Table 1 Multicollinearity Test Results for Inflation, GDP, and BI7DRR

	INFLATION	GDP	BITRATE
INFLATION	1,000000	-0.372522	0.866948

GDP	-0.372522	1,000000	-0.663566
BITRATE	0.866948	-0.663566	1,000000

The results of the multicollinearity test showed no correlation value between the independent variables that exceeded 0.90. Based on Table 1 of the multicollinearity test results processed above, all correlation coefficient numbers are less than 0.9, indicating no correlation value between the independent variables. Thus, it can be concluded that the model is free from multicollinearity problems.

Hypothesis test

In this research, the regression model is divided into 2 models, namely the relationship between the influence of GDP, BI *Seven Day Reverse Repo Rate*, Inflation, and ROA on company share prices, while the second model is the influence of GDP, BI7DRR, and Inflation on ROA. The results of the panel regression analysis, including the partial influence test (t-test) for each model using *random effects*, are as follows.

a. T Test of the Effect of Inflation, GDP, BI7DRR, and ROA on Stock Prices

In panel data regression analysis, the t-test is used to partially test the influence of the independent variable on the dependent variable. The test hypothesis used in this partial test is as follows:

Ho: The independent variable does not affect stock prices

Ha: The independent variable influences stock prices

With a significance level of 0.05, Ho is rejected if the probability value is <0.05. Ho will be accepted if the probability value is >0.05.

Table 2 T-TEST RESULTS

Dependent Variable: Stock Price				
Method: EGLS panel (Period random effects)				
Date: 05/16/23 Time: 14:29				
Sample: 2020Q1 2021Q4				
Periods included: 8				
Cross-sections included: 9				
Total panel (balanced) observations: 72				
Swamy and Arora estimator of component variances				
Cross-section SUR (PCSE) standard errors & covariance (df corrected)				
Variables	coefficient	std. Error	t-Statistics	Prob.
Inflation	-63.30883	17.58060	-3.601062	0.0006
BI7DRR	11.26198	22.85555	0.492746	0.6238
GDP	1.450579	0.745380	1.946094	0.0558
ROA	-4.390819	0.900257	-2.310644	0.0239
C	-1.392024	2.519759	-0.552443	0.5825

Source: processed data (2023)

Based on the t-test results in the table above, the following results were obtained:

1) Stock Price Inflation→

The significant value of the influence of inflation on stock prices is 0.000 because of the sig value. < 0.05 and a negative regression coefficient of -63.30883, it is concluded that inflation has a negative and significant effect on stock prices, meaning that high inflation can risk reducing the company's share price.

2) GDP →Stock Prices

The significant value of the influence of GDP on stock prices is 0.0558 because of the sig value. > 0.05, it is concluded that high and low GDP influences high and low stock prices

3) BI7DRR → Share Price

The significant value of the influence of BI7DRR on stock prices is 0.6238 because of the sig value. < 0.05, it is concluded that the high and low BI7DRR does not affect the high and low share prices.

4) ROA → Share Price

The significant value of the influence of ROA on share prices is 0.0239 because of the sig value. < 0.05 and a negative regression coefficient of -4.390819, it is concluded that ROA has a negative and significant effect on share prices, meaning that the higher the ROA, the higher the share price, and vice versa, the lower the ROA, the lower the share price

Based on the results of the analysis in the table above, the following regression equation is obtained:

$$Y = -1.392024 + -63.30883 (X1) + 1.450579 (X2) + 11.26198 (X3) - 4.390819 (X4)$$

Information :

X1 = Inflation

X2 = GDP

X3 = BI7DRR

X4 = ROA

Y = Share Price

Based on the regression equation, the relationship between variables is obtained as follows:

1. In conditions where the GDP, BI7DRR, and ROA variables are fixed, a decrease in inflation by 1 will reduce stock prices by -63.30883
2. Under conditions where the variables Inflation, BI7DRR, and ROA are fixed, an increase in GDP by 1 will increase stock prices by 11.26198
3. Under conditions where the GDP, Inflation, and ROA variables are fixed, an increase in BI7DRR by 1 will increase share prices by 1.450579
4. Under conditions where the GDP, BI7DRR, and Inflation variables are fixed, a decrease in ROA of 1 will reduce the share price to -4.390819.

b. T Test of the Effect of Inflation, GDP, and BI7DRR on ROA

In panel data regression analysis, the t-test is used to partially test the influence of the independent variable on the dependent variable. The test hypothesis used in this partial test is as follows:

Ho: The independent variable does not affect ROA

Ha: Independent variables influence ROA

With a significance level of 0.05, Ho is rejected if the probability value is <0.05. Ho will be accepted if the probability value is >0.05.

Table 3. Results of the T-TEST ON THE INFLUENCE OF INFLATION, GDP, AND BI7DRR on ROA

Dependent Variable: ROA				
Method: Panel EGLS (Cross-section random effects)				
Date: 05/16/23 Time: 15:11				
Sample: 2020Q1 2021Q4				
The period included: 8				
Cross-sections included: 9				
Total panel (balanced) observations: 72				
Swamy and Arora estimator of component variances				
Cross-section weights (PCSE) standard errors & covariance (df corrected)				
Variables	coefficient	std. Error	t-Statistics	Prob.
Inflation	-2.984988	1.322274	-2.257467	0.0272
BI7DRR	2.482136	1.779149	1.395125	0.1675
GDP	0.123508	0.056272	2.194823	0.0316
C	-0.331406	0.194531	-1.703614	0.0930

Source: processed data (2023)

Based on the results of the t-test in the table above, the following results are obtained:

1. ROA inflation→

The significant value of the effect of inflation on ROA is 0.027 because of the sig. <0.05 and a negative regression coefficient of -2.985, it is concluded that inflation has a negative and significant effect on ROA, meaning that the higher the inflation, the lower the company's ROA, and vice versa, the lower the inflation, the more it supports the company's high ROA.

2. GDP →ROA

The significant value of the influence of GDP on ROA is 0.031 because of the sig value. < 0.05 and a positive regression coefficient of 0.124, it is concluded that GDP has a positive and significant effect on ROA, meaning that the higher the GDP, the higher the ROA, and vice versa, the lower the GDP, the lower the ROA.

3. BI7DRR →ROA

The significant value of the influence of BI7DRR on ROA is 0.167 because of the sig value. > 0.05, it is concluded that the high and low BI7DRR do not affect the high or low ROA

Based on the results of the analysis in the table above, the following regression equation is obtained:

$$Y = -0.331 - 2.985 (X1) + 0.124 (X2) + 2.482 (X3)$$

Information :

X1 = Inflation

X2 = GDP

X3 = BI7DRR

Y = ROA

The explanation of the regression equation is

1. In conditions where the GDP variables and interest rates are fixed, a decrease in inflation by 1 will reduce ROA by -2.985,

2. Under conditions where the interest rate and inflation variables are fixed, an increase in GDP by 1 will increase ROA by 0.127,
3. Under conditions where the GDP and inflation variables are fixed, increasing BI7DRR by 1 will increase ROA by 2.482.

The Effect of Inflation on Stock Prices

Hypothesis 1 in this research is accepted, and it can be concluded that inflation harms stock prices, which means that the higher the inflation, the lower the stock prices, and vice versa, the lower the inflation, the higher the stock prices. This research aligns with APT theory, which states that macroeconomic indicators influence stock returns.

An increase in the average price of all goods and services in the economy must be distinguished from an increase in the relative prices of individual goods. Therefore, an increase in inflation can trigger a decline in company stock prices, especially for companies in the industrial sector. Inflation has a negative relationship with stock prices. Inflation increases a company's revenue and costs. If the increase in production costs is higher than the price increase that the company can enjoy, the company's profitability will decrease. Suppose the profit earned by the company is small. In that case, this will make investors reluctant to invest their funds in the company, decreasing the stock price (Wardani & Andarini, 2016).

The results of this research are in line with previous research, which found that inflation had a significant effect on stock prices (Gwahula, 2018) (Utomo et al., 2019), but this is not in line with other research which found that inflation did not have a significant effect on stock prices on the Indian and American stock markets (Sahoo et al., 2020).

The Effect of GDP on Stock Prices

Hypothesis 2 in this research is accepted, and it is concluded that GDP positively affects stock prices, which means that the higher the GDP, the higher the stock price.

An increase in GDP is a good signal (positive) for investment and vice versa. Increasing GDP has a positive effect on consumer purchasing power so that it can increase demand for company products. An increase in GDP reflects a country's consumer purchasing power. An increase in consumer purchasing power causes an increase in public demand for company goods and services, which will increase company profits.

The results of testing Hypothesis 2 align with the APT theory, which states that economic factors influence the level of stock prices. This study uses general Indonesian GDP data, where the pandemic conditions have worsened Indonesia's GDP. GDP reflects the added value generated by all economic production activities (Dama, 2016). This means that an increase in GDP also reflects an increase in remuneration for the production factors used in these activities. This shows that an increase in GDP also reflects an increase in people's welfare. Sukarno (2013) An increase in state income will encourage more investment.

This research aligns with previous research, stating that inflation and interest rates influence stock prices in Tanzania (Epaphra, 2018) ; (Gwahula, 2018). Other previous research researched the influence of gross domestic product on the stock price index on two stock exchanges, namely India and America (Sahoo et al., 2020). This research shows that gross domestic product has a different influence on stock prices on the two exchanges. Gross domestic product does not affect stock prices

on the American stock exchange. However, it has an influence on stock prices in India. Differences in stock market conditions, which are the focus of research (Sahoo et al., 2020), can also determine the influence of GDP on stock prices.

The Effect of BI7DRR on Stock Prices

Hypothesis 3 in this study is not accepted, and it can be concluded that the BI7DRR has no effect on stock prices, which means that the high or low BI7DRR does not affect stock prices.

Changes in BI7DRR affect deposit rates and bank lending rates. BI lowered BI7DRR to encourage economic activity (Susilowati & Wahyuningdyah, 2018). The reduction in BI7DRR will affect consumption and investment. This transmission process requires a certain time lag. Investment is a prediction of the state of the economy in the future. Forecasts indicating that the economic situation will improve even more, namely predictions that prices will remain stable and economic growth and increases in people's incomes will develop rapidly, are conditions that will encourage investment growth.

Based on BI7DRR data, it shows that on January 23, 2020, BI set a BI7DRR of 5%. However, this policy continues to decrease until January 21, 2021, to 3.75%. BI reduced the BI7DRR again on February 18, 2021, to 3.5%. This policy remains constant until the end of 2021. This insignificant variation in data may be one of the reasons that the BI7DRR variable does not affect stock prices.

BI policies that tend to reduce the BI7DRR carry the risk of rising inflation. Prices of goods will tend to rise, increasing the company's production costs. People's purchasing power, reflected in GDP, tends to decrease during the pandemic. This illustrates the uncertainty of economic conditions during a pandemic. In addition, in the 2022 economic development report, BI reports that there is a tendency for investors to be careful in making investments and tend to invest in safer sectors.

Based on this explanation, it can be concluded that several factors may have made BI7DRR not affect stock prices, namely (1) the behavior of investors who are cautious in making these investments so that they prioritize the consumption sector or other safer investment sectors, and (2) uncertain forecasts of economic conditions during a pandemic.

The results of this research are in line with previous research, which states that interest rates affect stock prices (Putri et al., 2019), but this is not in line with other research, which states that interest rates affect stock prices (Utomo et al., 2019), (Sahoo et al., 2020), (Gwahula, 2018).

The Effect of Inflation on ROA

Hypothesis 4 in this research is accepted, and it can be concluded that inflation harms ROA, which means that the lower the inflation, the higher the ROA, and vice versa; the higher the inflation, the lower the ROA.

ROA is a ratio that compares profit (before tax) and total bank assets. This ratio shows the efficiency level of asset management carried out by the bank concerned (Katuuk et al., 2018). High inflation reflects an increase in goods, which reduces the value of the money supply due to rising prices, and high inflation reduces assets. The result of high inflation will reduce people's purchasing power because this will reduce the assets owned by companies. On the other hand, with increasing inflation, the purchasing power of the invested rupiah will decrease. So, the risk of inflation is also called purchasing power risk. If inflation increases, investors usually demand an additional premium to compensate for the decline in people's purchasing power; this will further affect the company's ROA.

Inflation generally has an unfavorable impact on the economy; however, as one of the economic principles states that in the short term, there is a trade-off between inflation and unemployment, this shows that inflation can reduce the unemployment rate, or inflation can be used as a way to balance the country's economy, etc. Among the negative impacts caused by inflation is a decrease in people's purchasing power, with prices generally continuing to rise. In contrast, people's income sources remain constant. Second, producers tend to be forced to increase selling prices due to increased purchasing prices for raw materials. However, on the other hand, people's purchasing power decreases. Third, the distribution of goods could be more fair because there is accumulation and concentration of products in areas where people are close to production sources and have much money. Based on these three negative impacts, inflation can significantly affect ROA in a negative direction, meaning that high inflation can reduce a company's ROA.

The results of this study are in line with the results of previous studies, which stated that inflation has a positive effect on ROA (Siswanti et al., 2015) ; (Hadi et al., 2018), but this is not in line with the results of other studies which show insignificant results on the effect of inflation on ROA (Dewi et al., 2019).

Effect of GDP on ROA

Hypothesis 5 in this study is accepted, and it can be concluded that GDP positively affects ROA, which means that the higher the GDP, the higher the ROA, and vice versa; the lower the GDP, the lower the ROA.

GDP measures the market value of final goods and services produced by resources located in a country during a certain period, usually one year. GDP can also be used to study the economy over time or simultaneously compare several economies. Gross domestic product or GDP is the value of goods and services produced in a country using production factors owned by residents/state companies (Sahara, 2013). GDP only includes final goods and services, namely goods and services sold to final users. Goods and services purchased to be processed and sold again (intermediate goods and services) are not included in GDP to avoid the problem of double counting, namely counting a product more than once. Therefore, a high GDP can support a high company ROA.

The results of this research are in line with the results of previous research, which found that ROA (Egbunike & Okerekeoti, 2018), (Hadi et al., 2018), (Issah & Antwi, 2017) and (Gautam, 2018) but are not in line with the results of other studies which states that the profitability of Islamic banks is not influenced by GDP and inflation.

Influence of BI7DRR on ROA

Hypothesis 6 in this study is not accepted, and it can be concluded that BI7DRR does not affect ROA, which means that high and low BI7DRR do not affect high or low ROA.

BI7DRR changes affect deposit and bank lending rates (Susilowati & Wahyuningdyah, 2018). BI lowered BI7DRR to encourage economic activity. A decrease in BI7DRR will impact the increasing demand for credit from households or companies. This decrease will also reduce the company's cost of capital to invest. However, the results of this study show that there is no significant effect of BI7DRR on ROA; ROA is more influenced by factors other than BI7DRR, such as inflation and GDP or other factors that are not used as objects in this study.

Based on BI7DRR data, it shows that on January 23, 2020, BI set BI7DRR at 5%, but this policy continued to decrease until January 21, 2021, to 3.75%. BI lowered BI7DRR again on February 18,

2021, to 3.5%. This policy is constant until the end of 2021. This insignificant variation in data may be one of the reasons why the BI7DRR variable does not affect ROA.

BI reports that there is a tendency for investors to be careful in making investments; this behavior also applies to business actors. Even though the reduction in BI7DRR is intended as a credit stimulus for entrepreneurs, the uncertainty of economic conditions and the impact of the reduction in BI7DRR on inflation have made business actors prefer not to expand their business by purchasing assets and increasing production through purchasing these assets.

This research is in line with what states that interest rates do not affect ROA (Egbunike & Okerekeoti, 2018) but is not in line with other research which states that interest rates affect ROA (Hadi et al., 2018) (Khan & Khan, 2018) ; (Student et al., 2015).

The Effect of ROA on Share Prices

Hypothesis 7 in this research is accepted, and it can be concluded that ROA hurts share prices, which means that the higher the ROA, the higher the share price, and vice versa, the lower the ROA, the lower the share price.

Signaling theory states that there is asymmetric information between external and internal parties of the company. This condition causes companies with more information to provide signals of actual conditions to external parties, including investors, through financial reports. ROA shows the extent to which a company's ability to use the assets owned by the company to generate profits. The ROA ratio is calculated by comparing the net profit with the company's total assets. The higher the ROA ratio, the better the company's ability to generate profits, thereby increasing the interest of investors because it affects the greater the rate of return so the ROA will affect the company's stock price. The results of this study indicate that investors make good use of the information described through the company's ROA in making investment decisions.

However, this research shows that an ROA that is too high can reduce the company's share price. One of the determining factors for investment is the forecast of the future state of the economy. If the forecast shows that the economic situation will be better, including stability in prices and economic growth, and the increase in people's income will develop rapidly, this situation will encourage investment growth. Uncertainty in economic forecasts during the pandemic has changed investment behavior. The anomaly of increasing the ROA of pharmaceutical companies, which is too high, increases investors' distrust in investing in their shares.

The results of this study are in line with the results of previous research that ROA affects stock prices (Putri et al., 2019) but not in line with the results of other studies because it shows that ROA has no significant effect on stock prices (Prayogo & Lestari, 2018) ; (Rahmani, 2020).

ROA's ability to mediate the effect of the inflation rate in the pandemic era on pharmaceutical company stock prices

Hypothesis 8 in this research is accepted, and it can be concluded that ROA can mediate the influence of the inflation rate in the pandemic era on company share prices. Inflation has an impact on both sides of the company's financial management. First, raw material prices are increasing, increasing production costs and reducing profit margins. Second, people's purchasing power is decreasing, so it will directly or indirectly impact company sales. Increased cost of production and decreased sales will reduce net profit. Therefore, the calculation of the ROA ratio will decrease. The results of testing hypothesis 1 show that inflation impacts stock prices. This is in line with the APT

theory, which states that stocks are affected by inflation. This shows that investors can use information directly on the inflation rate for investment purposes. Based on signaling theory, investors can use this information for their investment interests. The results of testing hypothesis 8 also show that investors use information on the impact of inflation on investment decisions through information reflected in ROA.

ROA's ability to mediate the influence of GDP in the pandemic era on pharmaceutical company stock prices

Hypothesis 9 in this study is not accepted, and it can be concluded that ROA cannot mediate the effect of GDP in the pandemic era on company stock prices. An increase in the GDP of a business sector indicates that the production level of companies operating in that sector has increased.

Based on signaling theory, investors can use this information to invest in this sector. The results of testing hypothesis 2, which tested the direct influence of GDP on stock prices, were accepted. This shows that investors use GDP information to make investment decisions. The results of testing hypothesis 7 show that ROA directly influences prices. The coefficient value of the influence of GDP on stock prices is smaller than that of the influence of ROA on stock prices. This shows that investors trust GDP data, which is more dominant than ROA on share prices. This may be due to pharmaceutical companies' highly fluctuating ROA data during 2020 and 2021. Calculation of ROA movements per company is as depicted in the following table.

Table 4. Movement in ROA of Pharmaceutical Companies

Company	2020			2021		
	Movement from TW 1 to TW 2	Movement from TW 2 to TW 3	Movement from TW 3 to TW 4	Movement from TW 1 to TW 2	Movement from TW 2 to TW 3	Movement from TW 3 to TW 4
DVLA	136.66%	11.67%	5.69%	60.98%	5.29%	4.18%
INFO	-80.72%	322.33%	-100.14%	-49.52%	139.99%	-1640.58%
KAEF	237.77%	-12.00%	-54.62%	245.27%	420.77%	4.38%
KLBF	108.38%	44.80%	34.42%	113.50%	48.31%	31.47%
BRAND	-7.29%	75.63%	30.83%	44.39%	46.82%	0.75%
PEHA	-296.86%	74.40%	11.73%	43.19%	10.76%	5.54%
PYFA	32.95%	160.46%	31.14%	3.13%	29.36%	-73.29%
SIDO	93.86%	44.17%	40.08%	108.22%	70.02%	30.39%
TSPC	32.60%	31.01%	52.50%	43.69%	32.62%	48.73%
	28.59%	83.61%	5.74%	68.10%	89.33%	-176.49%

Based on the table above, the ROA movement value of pharmaceutical companies tends to fluctuate. The highest movement was in the second quarter of 2021 and the second quarter of 2020, with average ROA movements of 89.33% and 83.61%, respectively. The highest movement in the second quarter of 2020 occurred in the INAF company at 322.33%; however, in the third quarter, ROA moved negatively or decreased by 100.14%. This shows that INAF experienced a decline in income or invested in assets in the 3rd quarter of 2020. In the 3rd quarter of 2021, the highest ROA movement for KAEF companies was 422.77%, but in the 4th quarter of 2021, the KAEF ROA movement was only 4.38 %. This inconsistency in ROA indicates uncertainty in the financial conditions of pharmaceutical companies in 2020 and 2021. In the 2022 economic report, BI reports

that there is a tendency for investors to be careful in making investments. Fluctuating ROA and uncertain economic conditions can influence investor behavior.

ROA's ability to mediate the influence of BI7DRR in the pandemic era on pharmaceutical company stock prices

Hypothesis 10 in this study is accepted, and it can be concluded that the ability of ROA can mediate the influence of BI7DRR in the pandemic era on company stock prices. ROA is one of the information provided by the company's internal to outsiders to provide an overview of the company's financial condition. This is a signal for investors to make investment decisions. As stated in the Signaling theory, external and internal parties of the company have information asymmetry, and internal parties provide signals to outsiders through financial reports. The results of testing hypotheses 3 and 6 show that BI7DRR does not affect stock prices or ROA. This is inconsistent with the APT Theory, which states that stock returns are influenced by macroeconomic factors.

The standard concept of the monetary policy transmission mechanism starts when the central bank changes instruments, which then influence operational, intermediate, and final targets (Natsir, 2011). For example, BI increases BI7DRR; this increase will push up interbank money market interest rates, deposit interest rates, bank credit, asset prices, exchange rates, and inflation expectations in the community. These changes will then affect consumption and investment. This transmission process requires a certain deadline (time lag). Apart from that, the BI economic report for 2022 states that there are indications that investors are being careful in investing their funds. However, the results of testing Hypothesis 10 show that ROA can mediate the influence of BI7DRR on stock prices. This hypothesis shows that APT and signal theories are compatible with this phenomenon, where investors use macroeconomic information and ROA simultaneously to determine their investment actions.

CONCLUSION

Based on the results of the research and discussion in the previous section, it can be concluded as follows: In summary, the research findings and discussions lead to the following conclusions: 1) Inflation significantly and negatively affects the stock prices of pharmaceutical companies during the pandemic, in accordance with the Arbitrage Pricing Theory (APT). 2) Gross Domestic Product (GDP) has a significant impact on the stock prices of pharmaceutical companies during the pandemic, aligning with the Arbitrage Pricing Theory (APT). 3) BI7DRR (Bank Indonesia's 7-Day Reverse Repo Rate) does not significantly influence the stock prices of pharmaceutical companies during the pandemic, contrary to the predictions of the Arbitrage Pricing Theory (APT). This may be attributed to business responses to economic uncertainty, BI's policy direction, and inflation-related risks. 4) Inflation significantly and negatively impacts the Return on Assets (ROA) of pharmaceutical companies during the pandemic, in line with the Arbitrage Pricing Theory (APT). 5) GDP positively and significantly affects the Return on Assets (ROA) of pharmaceutical companies during the pandemic, consistent with the Arbitrage Pricing Theory (APT). 6) BI7DRR does not significantly affect the Return on Assets (ROA) of pharmaceutical companies during the pandemic, which deviates from the expectations of the Arbitrage Pricing Theory (APT). This could be influenced by business behavior in an uncertain economic environment. 7) ROA negatively influences the stock prices of pharmaceutical companies during the pandemic, in line with Signaling Theory, which suggests that

companies signal information to investors through financial reports due to information asymmetry. 8) ROA can mediate the impact of inflation during the pandemic on the stock prices of pharmaceutical companies, in accordance with the Arbitrage Pricing Theory (APT) and Signaling Theory. 9) ROA cannot mediate the impact of Gross Domestic Product (GDP) during the pandemic on the stock prices of pharmaceutical companies, which contradicts the expectations of the Arbitrage Pricing Theory (APT) and Signaling Theory. 10) ROA can mediate the impact of BI7DRR during the pandemic on the stock prices of pharmaceutical companies, in line with the Arbitrage Pricing Theory (APT) and Signaling Theory.

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