

# Effect of World Commodity Prices on the Movement of the FTSE Index on The Indonesia Stock Exchange 2020-2023

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## Abstract

This research aims to analyze the relationship between commodity prices (gold, gas, tin, silver, nickel, oil) and the FTSE Indonesia stock market index. This research uses secondary data for the research period from January 2020 to December 2023. The analytical method used in this research is the multiple linear regression analysis method. Linear regression analysis is used to test the influence of commodity prices on changes in the value of FTSE Indonesia. The results of this research show that the gas, tin, silver and nickel index variables have a negative effect on the FTSE Index. The Oil, Nike, Gas and Tin variables have a positive influence while the Gold and Silver variables do not have a negative influence, indicating that they do not have a significant influence on the FTSE Index. The results of the analysis show that the overall regression model has a significant fit to the data, with an R-squared value of 75.58% of the variation in FTSE Indonesia can be explained by the commodity price variables included in the model. The rest are factors outside the commodity variable. In addition, the significant F-statistic (21.15427) with a low p-value 0.00 indicates that the overall regression model is very significant. These findings show that commodity prices, including gold, gas, tin, silver, nickel and oil, together have a significant influence on the movement of FTSE Indonesia. The implications of this research can help investors and decision makers to understand the dynamics of stock and commodity markets, as well as estimate the impact of changes in commodity prices on stock market performance in Indonesia.

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## INTRODUCTION

Capital markets play a key role in economic development by allocating capital efficiently, encouraging growth and innovation, and increasing market liquidity and transparency. Through diversifying financing sources and setting interest rates, capital markets help reduce systemic risk and facilitate critical infrastructure development. Therefore, the development of healthy and strong capital markets is important to achieve sustainable and inclusive economic growth. Capital markets encourage innovation and economic growth by providing funds for companies to conduct research and development. [1]Companies that receive funds from the capital markets often use these funds to innovate new products, processes and technologies, which in turn increase competitiveness and economic efficiency. [2]Commodity prices and stock market indices often have a complex relationship and influence each other. Although they represent different asset classes, changes in commodity prices can have a significant impact on stock market performance. Five Commodity prices can affect various economic sectors, including the energy, agriculture, mining and manufacturing sectors. [3]Changes in the prices of oil, metals and agricultural products such as wheat or corn can affect the income and production costs of companies in these sectors

Companies that depend on commodities as raw materials can experience significant profit fluctuations as a result of changes in commodity prices. [4]For example, oil producers will experience an increase in profits when oil prices rise and vice versa. In addition to the direct impact on specific companies and sectors, commodity prices can also influence overall market sentiment. For example, rising oil prices are often considered an indicator of global economic growth, which can lead to increased investor optimism and an increase in overall stock market indices. In addition to the direct impact on specific companies and sectors, commodity prices can also influence overall market sentiment. For example, rising oil prices are often considered an indicator of global economic growth, which can lead to increased investor optimism and an increase in overall stock market indices.

Indonesia is one of the largest producers and exporters of commodities in the world, including oil, natural gas, coal, and agricultural products such as palm oil and rubber. [5]Therefore, changes in commodity prices have a

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significant impact on the Indonesian economy as a whole. Oil and natural gas prices are key factors influencing the performance of the FTSE Indonesia Index. [6]Indonesia is a significant oil and natural gas producer, so changes in world oil prices can have a direct impact on the revenues of energy companies in Indonesia, which in turn affects the performance of shares and market indices. Coal prices also have an important impact on the performance of the FTSE Indonesia Index. [7]As one of the largest coal producers in the world, changes in global coal prices can affect the income of coal mining companies in Indonesia as well as related sectors such as transportation and energy. Even though Indonesia is dependent on commodities, efforts to diversify the economy have been made. [8]However, the still significant dependence on the commodity sector means that changes in commodity prices still have a strong impact on the performance of the FTSE Indonesia Index. Commodity prices, including oil, natural gas, coal and agricultural products, have a significant impact on the performance of the FTSE Indonesia Index due to the dependence of the Indonesian economy on the commodity sector. [9]Changes in commodity prices can affect corporate earnings, market sentiment and the overall performance of stock market indices. Therefore, investors and market analysts need to pay attention to changes in commodity prices when analyzing and making investment decisions related to stocks and their portfolios in the Indonesian market.

Gold is often considered a safe haven asset that is safe in situations of economic or geopolitical uncertainty. [10]Investors often turn to gold as a hedge when stock or currency markets experience volatility. Therefore, changes in gold prices can affect overall market sentiment, including the FTSE Indonesia Index. Gold prices can also influence investor sentiment in the stock market. Rising gold prices are often considered an indicator of economic uncertainty or rising inflation, which can lead to reduced investor confidence and poor performance in the stock market. Gold prices also have a direct impact on the gold mining sector.[11] Indonesia is one of the largest gold producers in the world, and gold mining companies in Indonesia are heavily influenced by changes in global gold prices. An increase in gold prices can increase the income of gold mining companies, which in turn can improve the performance of shares and market indices. When gold prices rise, investors may tend to switch from shares to gold, causing a decline in share prices and the overall performance of the FTSE Indonesia Index.

Tin prices have a direct impact on the Indonesian government's income because Indonesia is the largest tin producer in the world. [12]Changes in tin prices can affect the income of tin mining companies as well as the contribution of the mining sector to the Indonesian economy as a whole. Tin mining companies listed on the Indonesian stock exchange will be affected by changes in tin prices. An increase in tin prices can increase revenue and profits of tin mining companies, which can boost the performance of shares and the overall stock market index.

Silver is often considered a more affordable precious metal than gold, but is still considered a safe haven asset. [13]Changes in silver prices can have a similar impact to gold prices on market sentiment and the performance of the FTSE Indonesia Index. Silver is often considered a more affordable precious metal than gold, but is still considered a safe haven asset. Changes in silver prices can have a similar impact to gold prices on market sentiment and the performance of the FTSE Indonesia Index.

Indonesia is one of the largest nickel exporters in the world. [14]Changes in nickel prices can affect the country's income from nickel exports and overall economic performance. Nickel prices are influenced by global demand for the metal, especially from the steel industry. Changes in nickel prices can affect the income of nickel mining companies in Indonesia as well as the performance of the industrial sector that uses nickel as a raw material.

Energy companies in Indonesia are influenced by global oil prices. Rising oil prices can increase the earnings of energy companies, which can affect the performance of stocks and overall stock market indices. [15]World oil prices have a significant impact on the Indonesian economy because Indonesia is the largest net oil importer in Southeast Asia. Changes in oil prices can affect the trade balance, inflation and the performance of the energy sector in Indonesia.

Natural gas prices also have an important impact on the performance of the energy sector in Indonesia. [16]Natural gas is widely used as a fuel for power plants and industry, so changes in natural gas prices can affect company production costs and the performance of the industrial sector. Indonesia is a significant producer and exporter of natural gas. Changes in global natural gas prices can affect a country's revenues from natural gas exports as well as overall economic performance.

The prices of gold, tin, silver, nickel, oil and gas have a diverse impact on the FTSE Indonesia Index through their influence on market sentiment, industrial sector performance and trade balance. [17]Investors and market analysts need to pay attention to changes in commodity prices when analyzing and making investment decisions in the Indonesian market, as changes in commodity prices can affect the performance of shares and their overall portfolio

The relationship between commodity prices and stock indices has a significant impact on investors and policy makers. [18]By understanding this relationship and taking appropriate steps, investors can manage risks and achieve their investment goals, while policymakers can design policies that support economic growth and financial market stability. Carrying out fundamental and technical analysis of commodity prices and stock indices can help policymakers understand market dynamics and design policies that support economic growth and financial stability.

Previous research has shown a complex relationship between commodity prices and stock market performance. Although this relationship may vary depending on market conditions and external factors, most studies find that commodity prices have a significant influence on the stock market. [19]Commodity price volatility affects investor sentiment and the performance of the Indonesian FTSE Index. [16]Oil price has negative effect on upward earnings management. Since oil price determines companies' profitability, lower oil price will leads companies to engage in earnings management to achieve higher earnings[20]. So it can be concluded that by analyzing historical data, this

research can provide insight into how commodity price fluctuations can affect the FTSE price index on the stock market.

Much research has been carried out regarding the mining sector stock price index, including by Nisa & Darmawan, (2018) regarding the influence of macroeconomics and world mining commodity prices on the mining sector stock price index in Indonesia. The drawback of this research is that it only discusses simultaneous and partial influences, does not discuss long-term and short-term influences, so it does not produce and inform whether prices of these commodities can affect the short term or the long term. In this research also did not test the copper and nickel variables. Copper is the best raw material for cables and Electric wire, copper has a relatively small type resistance, so copper is most appropriate to use as an electrical delivery material for electronic components (Ali & Sul-toni, 2019; Wangke, 2020). Nickel too is an important mining material because it is needed by many industries, such as the steel industry stainless steel, batteries, metal alloys and metal plating. Based on the shortcomings of previous research above, this research will analyze more variables the mining sector, namely gold, silver, nickel, tin, gas and world oil. Regression analysis is a statistical method used to understand the relationship between one or more independent variables (called predictor variables) and one dependent variable (called response variables) [21] In the context of the relationship between commodity prices and the value of FTSE Indonesia, regression analysis can help determine the extent to which commodity prices predict or influence the value of the stock index. This research uses interpretation of regression analysis results to understand how strong the relationship is between commodity prices and Indonesia's FTSE value, as well as the direction of this relationship (positive or negative). The coefficient of determination (R-squared) is used to evaluate how well a regression model explains variations in the dependent variable based on the independent variables used in the model. [22] The R-squared value ranges between 0 and 1, where the closer it is to 1, the better the model is at explaining variations in the data. To obtain the coefficient of determination for a regression model involving the variables gold, gas, tin, silver, nickel and oil as independent variables and the value of FTSE Indonesia as the dependent variable, a regression test needs to be carried out. This R-squared value will provide information about how much variability in Indonesia's FTSE value can be explained by the gold, gas, tin, silver, nickel and oil variables in the regression model.

### **Research Purposes**

This research was conducted to find out how much influence gold, gas, tin, silver, nickel and oil as independent variables, and the value of FTSE Indonesia as the dependent variable of the Indonesian Composite Stock either partially or simultaneously for the 2020-2023 period.

### **Hypothesis**

H1: There is a partial effect of gold, gas, tin, silver, nickel and oil on the FTSE Indonesia Price Index on the Indonesia Stock Exchange for the period 2020-2023.

H2: Simultaneously there is the effect of gold, gas, tin, silver, nickel and oil on the FTSE Indonesia Price Index on the Indonesia Stock Exchange for the period 2020-2023.

## **METHODS**

This type of research is quantitative research which is used to solve problems through measurement techniques for certain variables and producing conclusions. Using data secondary in the form of time series data on a monthly scale using Eviews 10. The method used in Data collection for conducting this research is library research and internet research This research will analyze the effect of world commodity prices on sector stock price indices mining in Indonesia uses time series data with monthly scale observations.

The purpose of this research is, one, to analyze short-term and long-term relationships and relationships causality between the world price variables of gold, silver, nickel, tin, gas and world oil Mining Sector Stock Price Index. Second, to analyze the response to the Price Index variable Mining Sector Shares against variable shocks in the prices of gold, silver, nickel, tin, gas and world oil. Third, to analyze the contribution of the price variables of coal, tin, gold, nickel, world copper and crude oil against the Mining Sector Stock Price Index.

This research uses the FTSE index and commodity prices over time (Time series). Monthly data collection on gold, tin, silver, nickel, oil and gas commodity prices and the FTSE 100 value is collected from trusted financial data sources, such as Yahoo Finance and Investing from Januari 2020 until December 2023. The data is classified into several variables, namely the commodity prices of gold, tin, silver, nickel, oil and gas as the independent variable and the FTSE 100 value as the dependent variable. Then used Normality Test, multicollinearity tests, heteroscedasticity test and Autocorrelation test.

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## RESULTS

### Normality Test Result

Normality Test used to Ensures that the residuals from the regression model are normally distributed. The distribution of residuals or data resulting from regression between variables (gold, silver, tin, nickel, gas and oil) with the FTSE index is normal.

**Table 2. Data Testing Results**

	<b>FTSE</b>	<b>GOLD</b>	<b>GAS</b>	<b>OIL</b>	<b>NICKEL</b>	<b>SILVER</b>	<b>LEAD</b>
Mean	3266.438	1842.638	3.787333	69.57292	1585.104	23.57106	26291.02
Median	3314.350	1836.600	2.905500	74.49000	1533.500	24.11050	25392.00
Maximum	3793.590	2071.800	9.127000	114.6700	2547.000	29.74400	45224.00
Minimum	2453.630	1571.800	1.640000	18.84000	861.0000	15.01600	14602.00
Std. Dev.	383.8711	121.8354	1.930856	22.16886	462.4374	3.212151	8110.092
Skewness	-0.520706	-0.224936	1.125841	-0.352972	0.329946	-0.604070	0.607244
Kurtosis	2.176583	2.466643	3.322397	2.631800	2.276220	3.239379	2.571942
Jarque-Bera	3.525108	0.973707	10.34803	1.267857	1.918632	3.033814	3.316426
Probability	0.171606	0.614557	0.005662	0.530504	0.383155	0.219389	0.190479
Sum	156789.0	88446.60	181.7920	3339.500	76085.00	1131.411	1261969.
Sum Sq. Dev.	6925780.	697662.1	175.2257	23098.54	10050874	484.9421	3.09E+09
Observations	48	48	48	48	48	48	48

Source: processed data

From this table it can be seen that the FTSE mean (average) value is around 3266,438, while the median is around 3314,350. This shows that on average the FTSE is around this figure, with the median value close to the average, indicating a slight skew in the data distribution. The FTSE standard deviation is approximately 383.8711. The Jarque-Bera value for the FTSE is approximately 3.525108 with a probability of approximately 0.171606. Gold prices have a mean of around 1842.638 and a median of around 1836.600. This shows that in general, the data distribution is relatively symmetrical. However, the relatively low standard deviation of around 121.8354 indicates a more controlled variation in gold prices from the mean value. Skewness close to zero (-0.224936) indicates a slight dip on the left side of the distribution, while kurtosis around 2.466643 indicates a distribution that is slightly steeper than a normal distribution. Although the Jarque-Bera test shows a value of around 0.973707 with a probability of around 0.614557, which indicates that the gold distribution is probably quite close to a normal distribution. Gas prices have a mean of about 3.787333 and a median of about 2.905500. This significant difference between the mean and median indicates the possibility of extreme values or asymmetric distributions in the data. The relatively low standard deviation of around 1.930856 indicates a moderate variation in gas prices from the mean value. Positive skewness around 1.125841 indicates a rise on the right side of the distribution, while kurtosis around 3.322397 indicates a distribution that is steeper than a normal distribution.

Oil prices have a mean of about 69.57292 and a median of about 74.49000. This significant difference between the mean and median indicates the possibility of extreme values in the data distribution. The relatively high standard deviation of around 22.16886 indicates a considerable variation in oil prices from the mean value. Skewness close to zero (-0.352972) indicates a slight dip on the left side of the distribution, while kurtosis around 2.631800 indicates a distribution that is slightly steeper than a normal distribution.

Nickel prices have a mean of around 1585,104 and a median of around 1533,500. This difference between the mean and median indicates the potential for extreme values in the data distribution. The fairly high standard deviation of around 462.4374 indicates significant variation in nickel prices from the average value. Skewness close to zero (0.329946) indicates a slight increase on the right side of the distribution, while kurtosis around 2.276220 indicates a distribution that is slightly steeper than the normal distribution.

Silver prices have a mean of about 23.57106 and a median of about 24.11050. This difference between the mean and median indicates the possibility of extreme values in the data distribution. The relatively low standard deviation of around 3.212151 indicates moderate variation in silver prices from the mean value. Skewness close to zero (-

0.604070) indicates a slight dip on the left side of the distribution, while kurtosis around 3.239379 indicates a distribution that is steeper than a normal distribution.

Tin prices have a mean of about 26291.02 and a median of about 25392.00. This difference between the mean and median indicates the possibility of extreme values in the data distribution. The high standard deviation of around 8110.092 indicates significant variation in tin prices from the mean value. A positive skewness of around 0.607244 indicates a slight increase on the right side of the distribution, while a kurtosis of around 2.571942 indicates a distribution that is slightly steeper than a normal distribution.

### Multicollinearity Test Results

VIF measures how much variability in regression coefficient estimates increases due to correlation between independent variables. [20].The VIF value is calculated using the formula:  $VIF_i = 1/R_i^2$  In general, frequently used guidelines for VIF interpretation are:

1. VIF = 1: There is no correlation between independent variables.
2.  $1 < VIF < 5$ : Moderate correlation, probably not a serious problem.
3. VIF > 5: High correlation, indicating potential multicollinearity problems.
4. VIF > 10: Very high correlation, serious problem of multicollinearity.

**Table 1. Variance Inflation Factor**

Variable	Coefficient	Uncentered	Centered
	Variance	VIF	VIF
C	39263.65	395.0187	4.000214
GOLD	0.174387	236.1172	2.075726
GAS	-47.78922	549.0314	4.085593
OIL	14.79725	278.1998	3.075828
NICKEL	0.309839	679.7921	1.098952
SILVER	-3.269852	756.6857	2.985806
LEAD	-0.016396	546.0954	3.559389

Source : Data proceed

Interpretation of the results from table 1 above the multicollinearity test results, can be seen in the Centered VIF column table. And for each VIF value for the Gold variable 2.075726, VIF Gas value 4.085593, VIF oil 3.075828, VIF Nickel value 1.098952, VIF Silver value 2.985806, VIF value tin 3.559389. So because all the Variance Inflation Factor (VIF) values are below the threshold, it is said that multicollinearity does not occur. The nickel variable has a very low VIF, indicating minimal multicollinearity. The variables gold, oil, and silver have quite low VIFs, also showing minimal multicollinearity. The gas and lead variables have higher VIFs but are still within a reasonable range.

### Heteroscedasticity test Result

**Table 2. Heteroscedasticity test**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2113.630	527.2620	4.008691	0.0003
GOLD	0.174387	0.357877	0.487282	0.6287
GAS	-47.78922	25.35396	-1.884882	0.0665
OIL	14.79725	3.191685	4.636187	0.0000
NICKEL	0.309839	0.120022	2.581514	0.0135
SILVER	-3.269852	12.60973	-0.259312	0.7967
LEAD	-0.016396	0.005347	-3.066240	0.0038

Source : Data proceed

The results obtained from the heteroscedasticity test using the Glejser test show that the variables gold, gas, silver, there is no heteroscedasticity, this is proven to have a value greater than 0.05, so  $H_0$  is accepted, while nickel, oil and tin have heteroscedasticity.

The autocorrelation test in this study used the Durbin Watson test (DW test). Based on the table, with a confidence level of 5%,  $k = 7$ , and  $n = 48$ , the following values are obtained. The results obtained from the autocorrelation test using the Durbin Watson test (DW test) show that the DW value is 2.180017. Based on these results, it can be concluded that there is no autocorrelation in the regression model.

### T test

The linear regression method is used to evaluate the relationship between these two variables. [20] Regression coefficient test, F significance test, and t test for each regression coefficient. To determine whether there is a significant relationship between changes in crude oil prices and changes in FTSE Indonesia. This research population consisted of 48 observation units. Each observation unit will have independent variable values for six commodities (gold, tin, silver, nickel, oil and gas) as well as dependent variable values (FTSE 100 values) for each month during the period

Monthly data on Indonesian commodity prices and FTSE values were collected during the time period from January 2020 to December 2023. Mean and median tests are often used in statistical analysis to understand the central characteristics of the data distribution and help in identifying whether there is asymmetry or the influence of extreme values in the data.

**Table 3. Data Testing Result**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2113.630	527.2620	4.008691	0.0003
GOLD	0.174387	0.357877	0.487282	0.6287
GAS	-47.78922	25.35396	-1.884882	0.0665
OIL	14.79725	3.191685	4.636187	0.0000
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SILVER	-3.269852	12.60973	-0.259312	0.7967
LEAD	-0.016396	0.005347	-3.066240	0.0038

  

R-squared	0.755844	Mean dependent var	3266.438
Adjusted R-squared	0.720114	S.D. dependent var	383.8711
S.E. of regression	203.0841	Akaike info criterion	13.59915
Sum squared resid	1690968.	Schwarz criterion	13.87204
Log likelihood	-319.3797	Hannan-Quinn criterion.	13.70228
F-statistic	21.15427	Durbin-Watson stat	0.837148
Prob(F-statistic)	0.000000		

Source : Data Proceed

The coefficient of 2113.630 with t-Statistic 4.008691 and p-value 0.0003 indicates that the intercept is statistically significant. The gold price coefficient is 0.174387 with a t-statistic of 0.487282 and a p-value of 0.6287 indicating that this variable is not statistically significant. This coefficient shows that for every one unit increase in the price of gold, the FTSE index is predicted to increase by 0.174387 units. These results indicate that the price of gold does not have a statistically significant influence on the dependent variable. This means that, based on the data analyzed, changes in the price of gold do not have a significant enough impact to be considered as a major factor in investment decisions related to the FTSE Index. Investors are advised not to rely too heavily on gold prices in their investment decisions and to consider other factors that show stronger statistical significance.

The Gas coefficient -47.78922 with t-Statistic -1.884882 and p-value 0.0665 indicates that this variable is close to significant, but not at the 95% confidence level. This coefficient shows that for every one unit increase in the gas price variable, the FTSE Index is predicted to decrease by 47.78922 units. This is an indicator that there is a negative relationship between gas prices and the FTSE Index. That is, there is an indication that gas prices may influence the dependent variable, although the evidence is not strong enough at the 95% confidence level. Investors should consider gas prices as a factor in their analysis, conduct further analysis, and ensure their portfolios are diversified to manage the risks associated with this uncertainty.

Oil coefficient 14.79725 with t-statistic 4.636187 and p-value 0.0000 shows that this variable is very statistically significant. This coefficient shows that for every one unit increase in the oil price variable, the FTSE index is predicted to increase by 14.79725 units. This is an indicator that there is a strong positive relationship between oil prices and the dependent variable. The results of the analysis show that oil prices have a very statistically significant influence on the dependent variable. Due to the strong and positive relationship, an increase in oil prices is expected to be followed by an increase in the FTSE Index, and vice versa.

The nickel coefficient is 0.309839 with a t-statistic of 2.581514 and a p-value of 0.0135 indicating that this variable is statistically significant. The nickel price coefficient (0.309839) with t-Statistic (2.581514) and p-value (0.0135) shows that nickel prices have a statistically significant influence on the FTSE Index. Investors can utilize this information in making their investment decisions. Due to the strong and positive relationship, an increase in nickel prices is expected to be followed by an increase in the dependent variable, and vice versa. Investors should consider nickel market factors seriously, diversify their portfolios, and be prepared to adjust strategies based on nickel price trends and relevant global economic factors

The silver coefficient -3.269852 with t-Statistic -0.259312 and p-value 0.7967 indicates that this variable is not statistically significant. This coefficient shows that for every one unit increase in the silver price variable, the FTSE Index variable is predicted to decrease by 3.269852 units. However, it is important to note that the value of this coefficient is not statistically significant. shows that the price of silver does not have a statistically significant influence on the dependent variable. Investors are advised not to rely too heavily on silver prices in their investment decisions. It is better to focus on other significant variables and ensure their portfolio is diversified to manage risk.

The tin coefficient -0.016396 with t-Statistic -3.066240 and p-value 0.0038 indicates that this variable is statistically significant. This coefficient shows that for every one unit increase in the tin price variable. The FTSE index is predicted to decline by 0.016396 units. This is an indicator that there is a negative relationship between tin prices and the dependent variable. The tin price coefficient (-0.016396) with t-Statistic (-3.066240) and p-value (0.0038)

shows that the tin price has a statistically significant influence on the dependent variable. Investors can utilize this information in making their investment decisions. Due to the strong and negative relationship, an increase in tin prices is expected to be followed by a decrease in the dependent variable, and vice versa. The variables Oil, Nickel and Tin are statistically significant at the 95% confidence level, which means they have a significant influence on the dependent variable. Based on the coefficients, t-statistics and p-values provided, these three variables do show statistical significance at the 95% confidence level. This means that the prices of nickel and tin oil have a significant influence on the dependent variable in the regression model analyzed. Investors can have confidence that changes in oil, nickel and tin prices will impact the FTSE Index variables in the model. Therefore, price changes in these three metals should be seriously considered in investment strategies. Even though all three variables are significant, diversification is still important. Investors should consider the effects of changes in oil, nickel and tin prices in the context of an already diversified portfolio to better manage risk.

The variables Gold and Silver, are not statistically significant, indicating that they do not have a significant influence on the dependent variable. If the GOLD and SILVER variables are not statistically significant in the analysis, it could indicate that they do not have a significant influence on the dependent variable in the investment context. This could mean that gold and silver prices are not consistently predicting or influencing the performance of your investments. The Gas variable is close to significant, but not quite at the 95% confidence level. This suggests that there may be a relationship between the GAS variables and the FTSE Index but the relationship may not be strong enough to be considered statistically significant at a high level of confidence.

The R-squared value of 0.755844 means that 75.58% of the variation in the FTSE Indonesia index can be explained by variations in the prices of gold, gas, tin, silver, nickel and oil. This shows that the regression model has quite strong explanatory power, because most of the variability in FTSE Indonesia can be explained by these variables. About 24.42% ( $1 - 0.755844 = 0.244156$ ) of the variation in FTSE Indonesia is not explained by the model. This variability may be caused by other factors not included in the model or by random elements in the data. Investors can use these results to understand how much influence independent variables such as the prices of gold, gas, tin, silver, nickel and oil have on the performance of the FTSE Indonesia index. Although not all variation in index performance can be explained by a regression model, having a high R-squared indicates that most of the variability in market performance can be explained by the factors included in the analysis.

The F-statistic value of 21.15427 shows the overall strength of the relationship between the independent variables (gold, gas, tin, silver, nickel, oil) and the dependent variable (FTSE Indonesia). The F-statistic value of 21.15427 indicates that the regression model which uses independent variables (gold, gas, tin, silver, nickel, oil) to explain the dependent variable (FTSE Indonesia) is statistically significant overall. This means that these independent variables together have a significant influence on FTSE Indonesia. This shows that the overall regression model is very significant. The F-statistic value is 21.15427 with a very low p-value (0.000000) indicating that the overall regression model is significant. This means that the independent variables (gold, gas, tin, silver, nickel, oil) collectively have a significant influence on the FTSE Indonesia index. Given the significant relationship between commodities (gold, gas, tin, silver, nickel, oil) and FTSE Indonesia, investors could consider diversifying their portfolio to include some of these commodities. This can help in managing risks and exploiting opportunities based on commodity price movements. By considering the findings from this regression model, investors can make better decisions and more effective strategies in managing their portfolios, thereby maximizing profits and reducing possible risks.

#### IV. CONCLUSIONS

Based on the discussion of the results of data analysis using the Regression method, it was found that the Gold and Silver variables were not statistically significant, indicating that they did not have a significant influence on the dependent variable and the Oil, Gas, Nickel and Tin variables were statistically significant and had a significant positive influence. which means they have a significant influence on FTSE Indonesia. The relationship between commodity prices such as gold, gas, tin, silver, nickel and oil and the value of the Indonesian FTSE (Indonesian stock index) can be complex and influenced by various factors. Data analysis shows that there is a significant relationship between commodity prices (gold, gas, tin, silver, nickel, oil) and the value of FTSE Indonesia. The linear regression results show that the overall model has a significant fit to the data, with an R-squared value 75.58% of the variation in FTSE Indonesia can be explained by the commodity price variables included in the model. The significant F-statistic (21.15427) with a low p-value (0.000000) indicates that the overall regression model is very significant. The implication of these findings is that changes in commodity prices, such as gold, gas, tin, silver, nickel and oil, together have a significant impact on the movement of FTSE Indonesia. It is hoped that the results of this research will provide valuable insights for investors and decision makers to understand the dynamics of stock and commodity markets, as well as help in planning more effective investment strategies. Investors can use these results to understand how much influence independent variables such as the prices of gold, gas, tin, silver, nickel and oil have on the performance of the FTSE Indonesia index. Although not all variation in index performance can be explained by a regression model, a high R-squared indicates that most of the variability in market performance can be explained by the factors included in the analysis and the remainder by other factors.

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