
DETERMINATION OF WORLD COMMODITY PRICES AND MACROECONOMIC VARIABLES ON THE MOVEMENT OF THE INDEKS HARGA SAHAM GABUNGAN (IHSG) IN INDONESIA

Trisna Caraka Putra Prima¹
Universitas Diponegoro, Semarang, Indonesia
trisnacaraka2001@students.undip.ac.id

Hastarini Dwi Atmanti²
Universitas Diponegoro, Semarang, Indonesia
hastarinidwiatmanti@live.undip.ac.id

Abstract

This study aims to analyze the influence of global commodity prices and macroeconomic variables on the Harga Saham Gabungan (IHSG) in Indonesia. The independent variables in this study include global gold price returns, global oil price returns, the Rupiah exchange rate against the US dollar, interest rate returns, and the money supply (M2) return. The dependent variable is the IHSG return. The data used is monthly time series data from January 2020 to December 2024, obtained from official publications of Bank Indonesia (BI). The analytical method used is multiple linear regression with a return model transformation. The results show that all independent variables simultaneously have a significant effect on the IHSG return. Partially, global oil price returns have a significant positive effect on the IHSG return, while the Rupiah exchange rate returns have a significant negative effect. Meanwhile, global gold price returns, interest rate returns, and the money supply return do not show a significant effect.

Keywords: IHSG, Global Comodity Prices, Macroeconomic Variables, Time Series Analysis

INTRODUCTION

The capital market is a crucial pillar in driving the stability and growth of a country's economy (Ali, 2021). In Indonesia, the *Harga Saham Gabungan* (IHSG) is the primary indicator reflecting overall stock market performance (Hamdan & Anasweh, 2020). IHSG movements are influenced not only by micro-company factors but also by macroeconomic dynamics, both domestic and global (Khamis et al., 2022). Therefore, understanding the factors influencing the IHSG is crucial for investors, regulators, and economic policymakers to support informed decision making (Rehman & Xue, 2021).

In recent years, global economic conditions have exhibited high levels of volatility (Naseem & Ahmad, 2020). Fluctuations in global oil prices, changes in global gold prices, the strengthening of the US dollar, and the dynamics of central bank policies in developed countries are external factors that have the potential to depress the national economy and the Indonesian capital market (Mangla, 2023). Global oil prices are a strategic commodity that impacts production cost structures and inflation (Ali et al., 2022). Rising oil prices can increase companies' operating costs, thereby depressing stock performance, while falling oil prices can increase the profitability of certain industrial sectors (Rizwan, 2021).

Global gold prices act as a safe haven asset, with demand increasing during times of economic uncertainty, potentially weakening the stock market (Khan, 2020). Furthermore, a weakening rupiah against the US dollar could increase import costs, putting pressure on companies dependent on imported raw materials, and trigger capital outflows from the stock market (Putra & Santoso, 2022). The *Harga Saham Gabungan* (IHSG) chart shows a consistent long-term upward trend from early 2005 to 2025, albeit accompanied by several periods of correction in response to global and domestic economic dynamics.

In 2008–2009, the *Harga Saham Gabungan* (IHSG) experienced a drastic decline due to the global financial crisis, but quickly recovered and continued its bullish trend until 2015. Afterward, the IHSG's movement tended to fluctuate, reflecting a phase of market consolidation amidst the global economic slowdown and commodity price volatility. A significant surge occurred in 2020 when the COVID-19 pandemic triggered a sharp decline, but the IHSG rebounded in line with the national economic recovery and monetary policy stimulus. Entering the 2023–2025 period, the IHSG showed more aggressive strengthening, reaching its highest level of around 8,700 in 2025, indicating investor optimism regarding macroeconomic stability, increased foreign capital inflows, and improved performance of issuers in key sectors. This pattern confirms that the IHSG is highly sensitive to changes in global conditions, including commodity prices, exchange rates, and interest rate policies, making it relevant for empirical research.

Figure 1: IHSG Graph



Domestically, monetary policy and liquidity indicators also influence capital market performance (Budi, 2023). Interest rates, as a policy instrument, can influence investment fund flows, with increases encouraging investors to shift funds to fixed-income instruments (Wicaksono, 2021). Meanwhile, the money supply (M2) reflects the level of liquidity in the economy, which, if increased, can encourage investment activity in the capital market (Rahmawati & Dewi, 2020). Thus, fluctuations in global and domestic macroeconomic variables simultaneously influence the movement of the IHSG, making a thorough understanding of this relationship crucial for all market participants (Surya, 2023).

Various previous studies have shown that macroeconomic variables have a significant relationship with the stock market. Arouri and Rault (2012) found that oil prices affect stock markets in various countries. Baur and McDermott (2010) demonstrated that gold acts as a hedge and safe haven. Ali et al. (2020) showed that exchange rates and gold are closely related to stock market performance. However, most previous studies tend to focus on one or two specific macroeconomic variables, and few have simultaneously examined global and domestic variables in the Indonesian context. Furthermore, there is limited research that presents interest rates and money supply in a single model, along with the variables of gold price, oil price, and exchange rate against the IHSG.

Based on these phenomena, this study aims to analyze the influence of global gold prices, global oil prices, the IDR/USD exchange rate, interest rates, and the money supply on the IHSG in Indonesia. The results of this study are expected to provide an empirical contribution to the development of literature on the relationship between global and domestic macroeconomic variables and the stock market. Furthermore, the findings of this study are expected to serve as a reference for investors, academics, and policymakers in mapping out more optimal capital market strategies and policy directions.

REVIEW OF LITERATURE

Indonesia's capital market is strongly influenced by global economic developments, including the volatility of commodity prices and monetary policy, which affects investment interest and the movement of the Indeks Harga Saham Gabungan (IHSG) (Ali, 2021). In the macroeconomic context, global gold prices are often considered a safe haven because they tend to become an alternative investment when the stock market is under pressure and uncertainty increases (Baur & McDermott, 2010). Several studies show that an increase in gold prices can cause capital to shift from stocks to gold, thereby negatively affecting the

IHSG (Basit, 2020). However, there is also evidence that gold prices can have a positive relationship with stocks depending on economic conditions and investor risk perceptions (Seifoddini et al., 2017).

Meanwhile, global oil prices have a significant influence on production costs and inflation, so changes in oil prices can affect corporate profitability and investment in the stock market (Mahendra et al., 2022). Rising oil prices typically put pressure on energy-intensive industries, which can weaken the IHSG (Arouri & Rault, 2012). However, in certain situations such as during global economic recovery, increasing oil prices can signal rising demand and economic activity, thus providing a positive impact on commodity-based stocks (Rizwan, 2021).

The exchange rate (kurs) of the rupiah against the US dollar also plays a major role in the stock market. A depreciating exchange rate can increase import costs and affect the performance of import-dependent companies, as well as trigger capital outflows that lower the IHSG (Putra & Santoso, 2022). Several studies have found that exchange rate movements have a strong and significant relationship with stock indices in emerging markets, including Indonesia (Ali et al., 2020). The stock market's sensitivity to exchange-rate fluctuations generally increases during periods of economic instability (Naseem & Ahmad, 2020).

Furthermore, monetary policy such as interest-rate adjustments influences investment direction. Higher interest rates make fixed-income instruments more attractive than stocks, causing investors to shift funds into these instruments, which ultimately leads to a decline in stock prices (Wicaksono, 2021). Other studies reinforce that interest rates are one of the main determinants of stock index volatility in Indonesia (Ali, 2022). On the other hand, economic liquidity reflected through the money supply (M2) can potentially increase transactions and market activity, so rising M2 can encourage increases in the IHSG (Rahmawati & Dewi, 2020).

Based on existing literature, the relationships between macroeconomic variables such as gold prices, global oil prices, exchange rates, interest rates, and liquidity with stock market performance show mixed results depending on global and domestic economic conditions (Surya, 2023). Therefore, research using a time-series linear regression approach based on returns is highly relevant to re-examine the relationships between these variables and the IHSG during the 2020–2024 period, which is marked by sharp fluctuations due to the pandemic and subsequent economic recovery (Mangla, 2023).

RESEARCH METHOD

This study employs a quantitative approach using econometric time-series analysis to examine the influence of macroeconomic variables on fluctuations in Indonesia's stock market. The data used consist of secondary monthly data from January 2020 to December 2024, covering global oil prices (USD/barrel), global gold prices (USD/troy ounce), the USD/IDR exchange rate, interest rates, and the money supply. The *Indeks Harga Saham Gabungan* (IHSG) is used as the primary indicator of Indonesia's capital market.

All variables are transformed into logarithmic returns because time-series models using original-level data often exhibit non-stationary properties. The return transformation is applied to stabilize the variance and mean of the data over time, ensuring more valid estimation results. The transformation is performed using the formula:

$$rX_t = Ln\left(\frac{X_t}{X_{t-1}}\right)$$

Thus, the analytical variables in this model consist of the return of IHSG (rIHSG), return of gold prices (rGold), return of oil prices (rOil), return of the exchange rate (rKurs), return of interest rates (rSB), and return of the money supply (rM2). In addition, all independent variables are lagged by one period ($t-1$), because changes in macroeconomic variables generally do not affect the stock market immediately, but rather through an information-transmission mechanism that requires time. The lag technique is also applied to minimize autocorrelation, which was initially detected in the model prior to transformation.

The analytical model used is a multiple linear regression based on time-series data, estimated using IBM SPSS Statistics software. The empirical equation of this study is formulated as follows:

$$rIHSG_t = \alpha + \beta_1 rOil_{t-1} + \beta_2 rGold_{t-1} + \beta_3 rKurs_{t-1} + \beta_4 rSB_{t-1} + \beta_5 rM2_{t-1} + \varepsilon_t$$

Where ε_t represents the error term that captures other factors outside the model. To ensure the model's validity and reliability, a series of classical assumption tests are conducted, including tests for stationarity, multicollinearity, autocorrelation, heteroskedasticity, and residual normality. The model is considered appropriate if all these assumptions are satisfied.

The use of logarithmic returns with a lagged approach in this model helps eliminate the tendency for spurious regression and provides a more realistic depiction of how Indonesia's stock market responds to global and domestic economic dynamics. Thus, this methodological approach is expected to produce empirical findings that are more accurate and relevant for decision-making in the capital market sector.

RESULTS AND DISCUSSION

For this study, daily data were collected on the Indeks Harga Saham Gabungan (IHSG), global oil prices, global gold prices, the USD/IDR exchange rate, the BI 7-Day Reverse Repo Rate (SBI), and the money supply (M2). All data were obtained from official publications of Bank Indonesia. IHSG is used as Indonesia's stock market index, global oil and gold prices serve as indicators of international commodities, the USD/IDR exchange rate represents currency stability, the SBI rate reflects monetary policy, and M2 represents domestic liquidity.

The research sample covers the period from January 2020 to December 2024. This period was selected to ensure that no significant structural changes occurred in Indonesia's economic system during this timeframe, allowing the analysis to focus on normal macroeconomic conditions and avoid distortions arising from structural breaks.

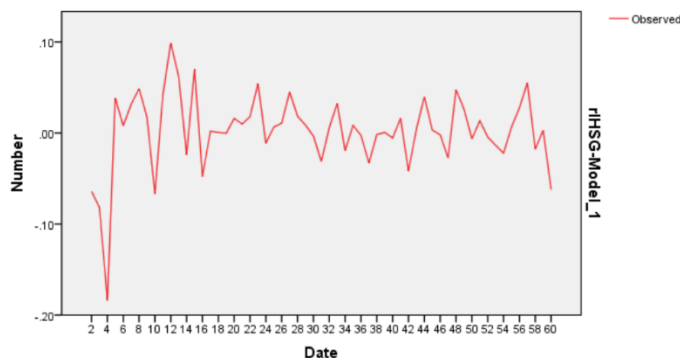
Table 1: Descriptive Characteristics of the Sample

	rIHSG	rOil	rGold	rKurs	rSB	rM2
N Valid	59	59	59	59	59	59
Missing	1	1	1	1	1	1
Mean	.0020	.0025	.0090	.0023	.0031	.0072
Median	.0043	.0183	.0039	.0028	.0000	.0066
Mode	-.18 ^a	-.15 ^a	-.06 ^a	-.09 ^a	.00	-.03 ^a
Std. Deviation	.04220	.12109	.03112	.02745	.03547	.01525
Minimum	-.18	-.51	-.06	-.09	-.07	-.03
Maximum	.10	.28	.08	.13	.13	.05

Sum	.12	.15	.53	.13	.18	.42
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The stationarity test results for all variables presented in Graph 1 indicate that all variables are stationary, as shown by the absence of any significant trend pattern in the data. This condition suggests that the variable values fluctuate randomly around their mean and are suitable for use in time-series regression analysis, thereby minimizing the risk of spurious regression. Thus, the empirical model constructed can represent both short-term and long-term relationships among the variables without being affected by systematic trend changes.

Graph 1 : Stationer Test



Based on the Model Summary in Table 2, the Durbin–Watson value of 1.930 indicates that there is no autocorrelation problem in the regression model, as it falls within the range close to 2, which is the benchmark for a model free from serial correlation. In addition, the coefficient of determination (R Square) of 0.514 indicates that the independent variables used in this study namely the returns of global oil prices, global gold prices, the USD/IDR exchange rate, the SBI interest rate, and the money supply (M2)—are able to explain 51.4% of the variation in IHSG return, while the remaining 48.6% is influenced by other factors outside the research model.

Table 2 : Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.717 ^a	.514	.468	.03077	1.930

Based on the results of the heteroskedasticity test using the Glejser method shown in Table 3, the significance value obtained is 0.668, which is greater than the 0.05 significance level. This indicates that there is no significant influence of the independent variables on the absolute residual values, meaning that the regression model does not experience heteroskedasticity problems. Thus, the variance of the residuals is constant (homoskedastic), and the regression model is appropriate for further analysis.

Table 3 : Heteroskedastisitas Test

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.001	5	.000	.643	.668 ^b
Residual	.019	53	.000		
Total	.020	58			

The residual normality test results in Table 4, using the One-Sample Kolmogorov–Smirnov Test, show an Asymp. Sig. (2-tailed) value of 0.200, which is greater than 0.05. This indicates that the residuals in the regression model follow a normal distribution. Thus,

the normality assumption is fulfilled, and the regression model used can be considered valid for explaining the relationship between the return of global oil prices, the return of global gold prices, the USD/IDR exchange rate return, the interest rate return, and the money supply return with the return of IHSG.

Table 4 : Normality Test

		Unstandardized Residual
N		59
Normal Parameter ^{a,b}	Mean	.0000000
	Std. Deviation	.02941300
Most Extreme Differences	Absolute	.094
	Positive	.059
	Negative	-.094
	Test Statistic	.094
Asymp. Sig. (2-tailed)		.200 ^{c,d}

Based on the F-test results in the ANOVA Table, the calculated F-value is 11.223 with a significance value of 0.000, which is lower than the 0.05 significance level. This indicates that the regression model used in this study is simultaneously significant, meaning that all independent variables namely the returns of global oil prices, global gold prices, the USD/IDR exchange rate return, the SBI interest rate return, and the money supply (M2) return collectively have an influence on the return of the Indeks Harga Saham Gabungan (IHSG) in Indonesia during the period from January 2020 to December 2024.

Table 5 : F Test

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.053	5	.011	11.223	.000 ^b
Residual	.050	53	.001		
Total	.103	58			

With the overall model significance fulfilled, it can be concluded that the regression model is appropriate to be used as an analytical tool to explain the dynamics of IHSG return changes influenced by global and domestic macroeconomic factors. These findings reinforce the argument that Indonesia's capital market is closely linked to the movement of fundamental economic variables, both those derived from global commodity price fluctuations and domestic monetary conditions. Therefore, investors and policymakers need to pay close attention to the stability of these variables in order to support the performance of the stock market.

Table 6 : t Test
Coefficients^a

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Correlations	Collinearity Statistics
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	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	.002	.005		.407	.686					
rGold	-.120	.130	-.088	-.920	.362	-.070	-.125	-.088	.998	1.002
rOil	.101	.041	.289	2.444	.018	.538	.318	.234	.656	1.524
rKurs	-.772	.185	-.502	-4.163	.000	-.657	-.496	-.399	.630	1.587
rSB	.150	.115	.126	1.305	.198	.034	.176	.125	.976	1.024
rM2	.308	.280	.111	1.098	.277	.168	.149	.105	.894	1.119

a. Dependent Variable: rIHSG

Based on the t-test results in the Coefficient Table, the return of global gold prices (rGold), measured in USD per troy ounce, has a regression coefficient of -0.120 with a significance value of 0.362 ($p > 0.05$). This means that an increase in the return of global gold prices tends to reduce the IHSG return, but the effect is not statistically significant. This may be because gold is viewed as a safe haven, where shifts of global investors into gold do not necessarily lead to a significant change in Indonesia's stock market performance during the 2020–2024 period.

For the return of global oil prices (rOil), expressed in USD per barrel, the regression coefficient is 0.101 with a significance value of 0.018 ($p < 0.05$). Thus, an increase in the return of global oil prices has a positive and significant effect on IHSG return. This impact is closely related to energy-sector stocks and related industries that benefit from rising revenues and increased economic optimism when global oil prices strengthen.

Furthermore, the return of the Rupiah - US Dollar exchange rate (rKurs), measured in Rupiah per USD, has a regression coefficient of -0.772 with a significance level of 0.000 ($p < 0.05$). This indicates that when the return of the exchange rate increases, which economically reflects a depreciation of the Rupiah IHSG return decreases significantly. A weaker Rupiah increases the cost of imported inputs and pressures corporate profitability, thereby reducing investor confidence in Indonesia's stock market.

The return of interest rates (rSB), measured in percentage points of the benchmark interest rate, has a regression coefficient of 0.150 with a significance value of 0.198 ($p > 0.05$). This shows that changes in interest rate policy during the study period do not have a significant effect on IHSG return. One possible explanation is market efficiency, where interest rate changes are perceived as long-term policy adjustments or are already anticipated through Bank Indonesia's policy communication.

Finally, the return of the money supply (rM2), measured in billions of Rupiah, has a coefficient of 0.308 with a significance value of 0.277 ($p > 0.05$). Although the coefficient is positive, the lack of significance indicates that increases in economic liquidity do not directly lead to higher IHSG returns. This may be due to fund allocations towards other financial instruments such as government bonds, deposits, or the real sector, which reduces the sensitivity of IHSG to movements in the money supply.

CONCLUSION

The analysis results show that simultaneously, the return of global gold prices, the return of global oil prices, the return of the Rupiah - US Dollar exchange rate, the return of interest rates, and the return of the money supply have a significant effect on the return of IHSG, as indicated by the F-test with a significance value of 0.000 . Partially, only the return of global oil prices has a significant positive effect, and the return of the Rupiah exchange

rate has a significant negative effect on the return of IHSG, while the return of global gold prices, the return of interest rates, and the return of the money supply do not show significant effects.

The coefficient of determination (R^2) of 0.514 indicates that 51.4% of the variation in IHSG return can be explained by the five independent variables in the model, while the remaining portion is influenced by other factors outside the scope of this research. In addition, the Durbin-Watson value of 1.930 indicates that there is no autocorrelation problem in the model, meaning that the estimation results are statistically reliable.

Thus, the regression model used in this study meets the criteria of model fit and can be used to describe the relationship between macroeconomic variables and IHSG return during the research period.

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