Available online at JIME website: https://journal.ibs.ac.id/index.php/jime/

Determinants of Gold Prices in Indonesia Period of 2018-2022

Sigit Aprizal[1*], Muhammad Nasim Harahap, S.E., M.S.E[2]
Development Economics, Sultan Ageng Tirtayasa University, Serang, Indonesia [1, 2]

Received: 02nd June 2025. Revised: 19th June 2025, Accepted: 25th June 2025.
Available online: 30th June 2025, Published regularly: June 2025.

Abstract
Gold plays a significant role in the economy, serving both as a store of value and an indicator of economic stability. This study aims to examine the impact of exchange rates, interest rates, the Indonesia Composite Stock Index (IHSG), and world oil prices on gold prices in Indonesia. The study utilizes monthly secondary data from January 2018 to December 2022 and applies the Vector Error Correction Model (VECM) for analysis. The long-run estimation results indicate that exchange rates, interest rates, and IHSG significantly influence gold prices, while world oil prices have a negative impact. In the short run, only the IHSG exhibits a significant negative effect. The Impulse Response Function (IRF) reveals that exchange rates and the IHSG generate negative shocks, whereas interest rates and world oil prices generate positive shocks to gold prices. Furthermore, the Variance Decomposition analysis shows that exchange rates contribute the most to gold price fluctuations, followed by the IHSG, interest rates, and world oil prices.

Keywords
Keyword: gold price, exchange rate, world oil price, interest rate, composite stock price index.

Abstrak
Emas memegang peranan penting dalam perekonomian, baik sebagai penyimpan nilai maupun indikator stabilitas ekonomi. Penelitian ini bertujuan untuk mengkaji pengaruh nilai tukar, suku bunga, Indeks Harga Saham Gabungan (IHSG), dan harga minyak dunia terhadap harga emas di Indonesia. Penelitian ini menggunakan data sekunder bulanan dari Januari 2018 hingga Desember 2022 dan menggunakan Vector Error Correction Model (VECM) untuk analisis. Hasil estimasi jangka panjang menunjukkan bahwa nilai tukar, suku bunga, dan IHSG berpengaruh signifikan terhadap harga emas, sedangkan harga minyak dunia berdampak negatif. Dalam jangka pendek, hanya IHSG yang menunjukkan pengaruh negatif yang signifikan. Impulse Response Function (IRF) menunjukkan bahwa nilai tukar dan IHSG menghasilkan guncangan negatif, sedangkan suku bunga dan harga minyak dunia menghasilkan guncangan positif terhadap harga emas. Lebih lanjut, analisis Variance Decomposition menunjukkan bahwa nilai tukar memberikan kontribusi paling besar terhadap fluktuasi harga emas, diikuti oleh IHSG, suku bunga, dan harga minyak dunia

***Kata Kunci**: harga emas, nilai tukar, harga minyak dunia, suku bunga, indeks harga saham gabungan.*

*) Corresponding Author
Email: 5553200085@untirta.ac.id (Sigit Aprizal)

INTRODUCTION

Gold plays an essential role in the economy as a medium of exchange, a store of value, and an indicator of economic strength. It continues to be used as a reserve by central banks and a reference for currency value. Furthermore, gold is often chosen as an alternative investment during times of economic uncertainty, such as inflation and currency depreciation.

Gold plays an essential role in the economy as a medium of exchange, a store of value, and an indicator of economic strength. It continues to be used as a reserve by central banks and a reference for currency value. Furthermore, gold is often chosen as an alternative investment during times of economic uncertainty, such as inflation and currency depreciation.

According to data from www.exchange-rates.org, gold prices in Indonesia have shown a long-term upward trend over the past six years. From 2018 to 2020, gold prices rose from IDR 533,308 to IDR 827,675, slightly declined to IDR 822,204 in 2021 due to global economic recovery post-COVID-19, and increased again to IDR 952,255 in 2022 due to growing public interest in gold transactions. Overall, despite occasional fluctuations, gold prices tend to rise in the long term.

According to (Suharto, 2013), gold price fluctuations are influenced by various economic factors such as inflation, exchange rate changes, financial panic, oil price spikes, gold demand, global political conditions, and interest rates. Gold price volatility reflects economic instability, and the fact that gold prices do not always rise during economic downturns poses a challenge for monetary policymakers and investors in strategizing asset protection. Gold prices are influenced by several macroeconomic factors, one of which is the exchange rate. (Kesarditama et al., 2020) found a positive relationship, where a depreciation of the Rupiah against the USD pushes up gold prices in Indonesia. This aligns with the logic that gold priced in USD becomes more expensive in Rupiah when the local currency weakens.

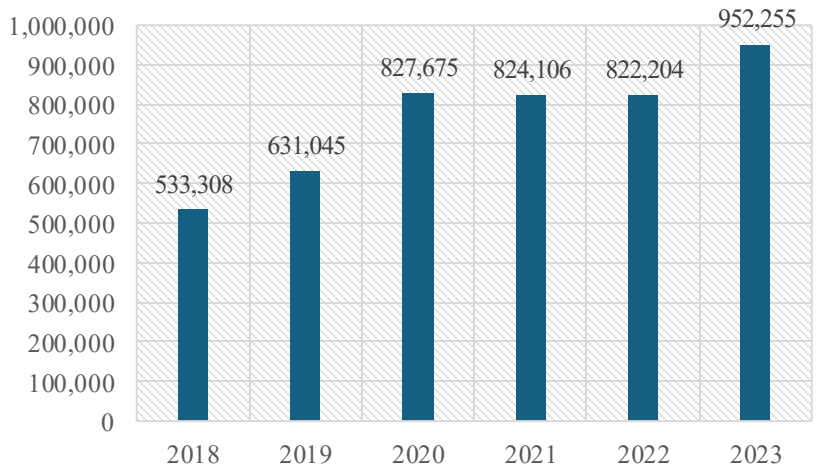

Figure 1. Comparison of Gold Prices and Exchange Rates in Indonesia 2018-2023

Source: *Exchange-Rates* (processed)

However, other studies like (Siti et al., 2023), (Aylin Erdoğdu, 2017), and (Qian et al., 2019) suggest a significant negative relationship, meaning exchange rate fluctuations may lead gold prices to move in the opposite direction.

Another important factor is interest rates. (Khaliq, 2018) concluded that interest rates affect gold prices only in the long term, indicating that gold reacts slowly to interest rate changes. Conversely, (Soraya Nurulhuda & Kosasih, 2019) and (Sunaryo, 2023) found a negative relationship, as rising interest rates attract investors toward deposit or money market instruments, decreasing gold demand.

Indonesia is rich in natural resources, such as mining, oil, gas and forests, therefore the government is advised to ensure that the government gets its fair share of the exploitation of natural resources contracted by foreign and local companies (Latifah et al., 2024). The existence of a market that trades derivative transactions in Indonesia has basically been going on for a long time and has a clear legal basis (Desy Nursanti, 2004). The IHSG (Indonesia Composite Stock Index) also influences gold prices. (Kesarditama et al., 2020) stated a positive relationship, arguing that a rising IHSG reflects investor confidence, encouraging gold purchases for portfolio diversification. On the other hand, (Gusnindar & Syafri, 2023) found a negative relationship, where a falling IHSG pushes investors toward gold as a safe haven asset.

World oil prices are also considered an important determinant. (Kesarditama et al., 2020) and (Chai et al., 2021) found a positive relationship, stating that rising oil prices increase interest in gold as a hedge asset. (Shakil et al., 2018), however, found a negative relationship, reasoning that oil price hikes cause currency depreciation, prompting gold to rise as a hedge against inflation and global uncertainty. These conflicting findings highlight the complex nature of gold price determinants and their dependence on economic conditions.

This study aims to analyze the influence of exchange rates, interest rates, IHSG, and world oil prices on gold prices in Indonesia in both the short and long term, assess how gold prices respond to shocks in these variables, and determine the contribution of each variable based on Variance Decomposition analysis. Based on this background, the research is titled: **"Determinants of Gold Prices in Indonesia (2018-2022)".**

THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

It describes the previously related studies as the primary sources. The use of secondary sources of references should not dominate the total references. The quotation should be maximally one paragraph and/or the gist of the quoted sources.

The theory of supply and demand elasticity explains the relationship between price changes and the quantity of goods or services demanded or supplied. Elasticity measures how much demand or supply changes in response to price changes and includes price elasticity of demand, price elasticity

of supply, income elasticity of demand, and factor substitution elasticity. In the context of gold prices, elasticity theory emphasizes the importance of supply and demand responsiveness to gold stock outside producers or central banks, with dollar exchange rate movements being a key factor in determining gold prices, given that gold stocks far exceed annual production.

The Purchasing Power Parity (PPP) Theory explains the relationship between exchange rate fluctuations and gold prices in international markets. According to Absolute PPP, the exchange rate between two currencies is influenced by the relative price levels of goods and services between the countries. If domestic prices rise significantly, the domestic currency will depreciate, which in turn can affect gold prices, as gold is priced in US dollars internationally. Meanwhile, Relative PPP suggests that differences in inflation rates between countries can influence exchange rate changes, which in turn affect gold prices. If Indonesia's inflation rate is higher than that of other countries, the Rupiah will depreciate against the US dollar, causing the price of gold in Rupiah to rise, even if the dollar-denominated gold price remains stable.

The Classical Interest Rate Theory states that interest rates are a primary factor influencing savings and investment in the economy, where people save excess income while investors seek funds for expansion (Mankiw, 2006). In contrast, the Keynesian Interest Rate Theory emphasizes that interest rates are determined by money supply and demand in the money market, which are influenced by the amount of money in circulation. According to (Keynes, 1936) interest rates have an inverse relationship with money demand and will reach equilibrium when money supply equals demand. Both theories highlight the role of interest rates in influencing investment behavior and economic decisions.

The Portfolio Theory**,** developed by Harry Markowitz, states that investors should choose a diversified asset portfolio to reduce risk and achieve optimal returns. In the context of the IHSG, this theory helps investors build stock portfolios that match their risk profile and financial goals. Additionally, the Business Cycle Theory explains that the economy moves through cycles of expansion and contraction. The IHSG tends to rise during economic expansion phases and fall during contraction. These two theories demonstrate how external factors and investment decisions affect stock market dynamics, including the IHSG (Harry M. Markowitz, 1959).

Business Cycle Theory also supports the idea that oil prices are influenced by economic cycles: rising during expansion and falling during contraction.

Research Hypothesis:

1. There is an influence of exchange rates, interest rates, IHSG, and world oil prices on gold prices in Indonesia in both short-term and long-term relationships during the January 2018 – December 2023 period.

2. There is a gold price response to shocks in exchange rate, interest rate, IHSG, and world oil price variables in Indonesia during the January 2018 – December 2023 period.
3. There is a measurable contribution (Variance Decomposition) of exchange rate, interest rate, IHSG, and world oil price variables to gold prices in Indonesia during the January 2018 – December 2023 period.

RESEARCH METHOD

This study uses secondary data**,** which refers to information obtained from official publications relevant to the research topic and not collected directly by the researcher. The data used is monthly time series data from 2018 to 2023, encompassing one object but covering multiple time periods to describe the dynamics of the variables studied. Data sources include various institutions and official websites such as Exchange-Rates.org**,** Statistics Indonesia (BPS)**,** Investing**,** and the U.S. Energy Information Administration (EIA)**,** which provide data related to exchange rates, interest rates, the IHSG, and world oil prices. The Vector Error Correction Model (VECM) is a derivative of the VAR (Vector Autoregression) model, characterized by the inclusion of an Error Correction Term (ECT) in each equation (Gujarati et al., 2011).

Table 1. Operationalization of Research Variables

Variable	Concept	Indicator	Symbol	Unit	Scale
Gold Price	Government Debt is an amount of money that must be paid by the central government and/or the central government's obligations that can be valued in money based on applicable laws and regulations, agreements, or other legitimate reasons. State debt is divided into domestic loans, foreign loans and Government Securities (SBN) (Suharto, 2013).	Monthly gold price (2018–2023)	HE	Rupiah/Gram	Ratio
Exchange Rate	Exchange rate is the price of domestic currency against foreign currency, or in other words, the cost of one unit of foreign currency in domestic currency. (Mankiw, 2006)	Monthly exchange rate (2018–2023)	NT	Rupiah/Dollar	Ratio
Interest Rate	Monetary policy instrument impacting investment and inflation (Sunariyah, 2006).	Monthly interest rate (2018–2023)	SB	Percent	Ratio
IHSG	Indicator of stock market movement in Indonesia (Jogiyanto, 2008).	Monthly IHSG (2018–2023)	IHSG	Rupiah	Ratio
Oil Price	Average monthly international crude oil prices (Kesarditama et al., 2020)	Monthly oil price (2018–2023)	HM	USD/Barrel	Ratio

Source: Data compiled and processed from Exchange-Rates.org, Statistics Indonesia (BPS), Investing.com, and U.S. Energy Information Administration (EIA).

The VECM model used in this research is specified as follows:

D(HE) = C(1,1)*D(HE(-1)) + C(1,2) *D(NT(-1)) + C(1,3) *D(SB(-1)) + C(1,4)*D(IHSG(-1)) + C(1,5)*D(HM(-1)) + C(1,6)

Explanation of Symbols:

D(HE)	= First difference of gold price (Gold Price)
D(HE(-1))	= Lag 1 of the first difference of gold price
D(NT(-1))	= Lag 1 of the first difference of exchange rate
D(SB(-1))	= Lag 1 of the first difference of interest rate
D(IHSG(-1))	= Lag 1 of the first difference of Composite Stock Price Index (IHSG)
D(HM(-1))	= Lag 1 of the first difference of world oil price
C(1,x)	= Estimated coefficients of the explanatory variables
C(1,6)	= Constant term (intercept) in the model

RESULT AND DISCUSSION

Time series regression analysis implicitly assumes that the series is stationary (Gujarati et al., 2011) A stationarity test is conducted to ensure that the resulting regression model has strong predictive ability and to avoid spurious regression. The results of the stationarity test at the level are presented in the following table 2. The results, in the short term the exchange rate does not have a significant effect on the price of gold in Indonesia because the t-count value at lag 1 is 0.05206 <1.99600, so H0 is not rejected at the 5% significance level.

Table 2. VECM Estimation Results

Variable	Coefficient	t-Statistic	Description
Short Term			
CointEq1	-0.816378	-4.25021	
CointEq2	4.987052	2.95442	
CointEq3	-0.036105	-0.71049	
CointEq4	5.47E-05	0.39218	
D (NT (-1))	0.104424	0.05206	Not Significant
D (SB (-1))	-0.276476	-1.04398	Not Significant
D (IHSG (-1))	0.000466	2.02065	Significant Positive
D (HM (-1))	0.001287	0.21863	Not Significant
C	0.011836	0.31198	
Long Term			
NT (-1)	0.00000	0.00000	Cointegrated
SB (-1)	0.00000	0.00000	Cointegrated
IHSG (-1)	0.00000	0.00000	Cointegrated
HE (-1)	-0.010694	-2.29497	Significant Negative
R-squared	0.479028		
Adj. R-squared	0.400882		
F-statistic	6.129923		

Source: Output Eviews 10 (processed)

However, in the long term, the estimation results show that the exchange rate and gold price are cointegrated, which means that there is a long-term relationship between the two variables in Indonesia.

Based on the VECM estimation results, the interest rate does not have a significant effect on the price of gold in the short term because the t-count value at lag 1 is -1.04398 <-1.99600, so H0 is not rejected at the 5% significance level. However, in the long term, the interest rate and gold price show a cointegrated relationship, indicating a long-term relationship between the two variables in Indonesia.

Based on the VECM estimation results, the JCI has a significant effect on gold prices in the short term because the t-count value is 2.02065 > 1.99600, so H0 is rejected at a significant level of 5%. In the long term, the JCI also has a cointegrated relationship with gold prices, indicating a long-term relationship between the two variables in Indonesia.

Based on the VECM estimation results, in the short-term oil prices do not have a significant effect on gold prices because the t-count value is 0.21863 < 1.99600, so H0 is not rejected. However, in the long term, oil prices have a significant negative effect on gold prices with a t-count value of -2.29497 < -1.99600, which means H0 is rejected at a significance level of 5%. In Figure 1, the IRF results show that in the 3rd period, the Gold Price response to the shock given by the Exchange Rate in Indonesia showed a positive response. After that, the Gold Price in the 4th period, the Gold Price response was stable at a positive number until the 10th period in Indonesia.

In Figure 2, the IRF results show that in the early to late period, the Gold Price response to the shock given by the Exchange Rate in Indonesia showed a negative response. Furthermore, in the 2nd period, the Gold Price response to the shock given by the Interest Rate in Indonesia showed a negative response. After that, the Gold Price in the 3rd period, the Gold Price response was stable at a negative number until period 10 in Indonesia.

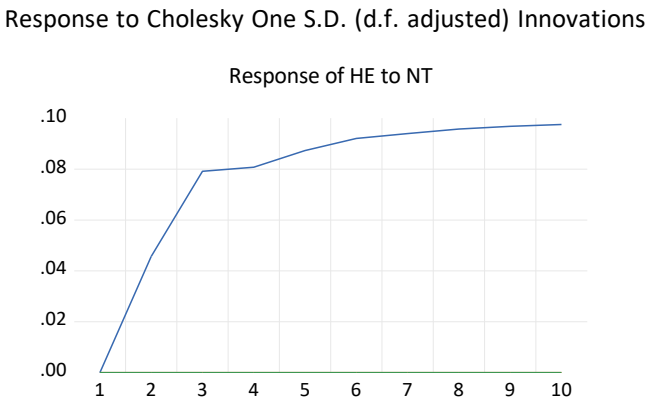

Figure 2. IRF Results of Gold Prices against Exchange Rates in Indonesia

Source: Output Eviews 10 (processed)

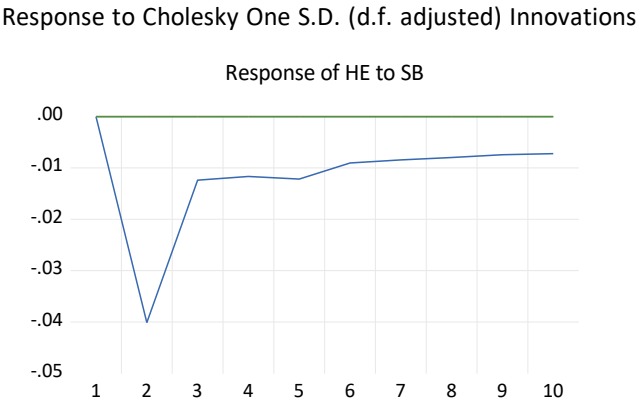

Figure 3. IRF Results of Gold Prices to Interest Rates in Indonesia

Source: Output Eviews 10 (processed)

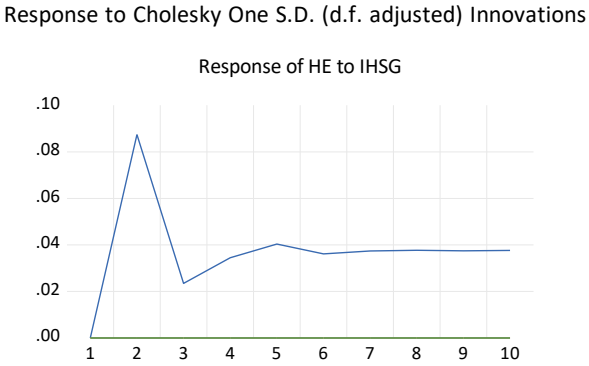

Figure 4. IRF Results of Gold Prices against Stock Price Index in Indonesia

Source: Output Eviews 10 (processed)

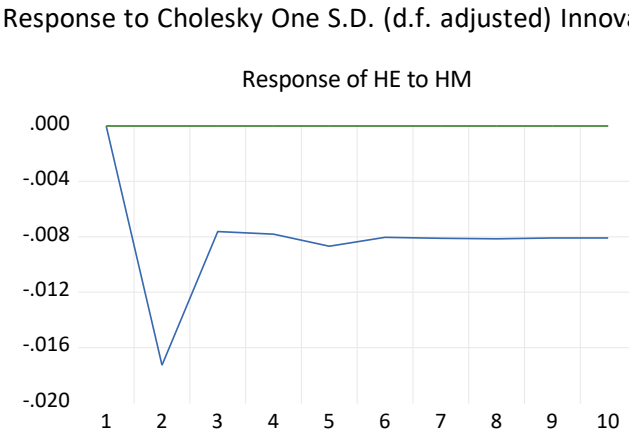

Figure 5. IRF Results of Gold Prices against Oil Prices in Indonesia

Source: Output Eviews 10 (processed)

In Figure 3, the IRF results show that in the 2nd to 3rd period, the Gold Price response to the shock given by the Stock Price Index in Indonesia showed a positive response that fluctuated greatly. After

that, the Gold Price showed a stable response at a positive number from the 4th period to the 10th period in Indonesia. In Figure 4, the IRF results show that in the 2nd period, the Gold Price response to the shock given by the World Oil Price in Indonesia showed a negative response. After that, the Gold Price showed a stable response at negative numbers from the 3rd period to the 10th period in Indonesia. Based on table 2 of the results of the Variance Decomposition (VD) analysis, the contribution of gold prices to their own variability shows a downward trend over time, from 89.69% in the second period to 42.55% in the fiftieth period. In contrast, the contribution of exchange rates to gold prices has increased significantly, from 1.84% to 48.70% in the same period.

This shows that in the long term, exchange rates are the most dominant external factor influencing gold price fluctuations in Indonesia. Meanwhile, the contribution of interest rates to gold prices is very small and continues to decline, from 1.42% in the second period to only 0.44% in the fiftieth period. The Jakarta Composite Index (JCI) shows a stable and increasing contribution, from 6.76% to 7.93%. Meanwhile, the contribution of world oil prices to gold prices is very small, only increasing from 0.26% to 0.36%. Overall, these results confirm that the exchange rate has the most significant influence in the long run on changes in gold prices, while other factors such as interest rates, IHSG, and world oil prices have a lower contribution.

DISCUSSION

This increase in the exchange rate contribution can be interpreted as affecting the financial market at large. Changes in the exchange rate can attract the attention of speculators and market players, which can cause significant price movements in the gold market. Speculation about the direction of a particular currency's exchange rate can affect capital flows and demand for gold as a safe haven asset. This is consistent with the Purchasing Power Parity Theory which explains that the decline in domestic purchasing power in the foreign exchange market is caused by a proportional increase in domestic prices, followed by currency appreciation (Krugman & Obstfeld, 2000).

Table 3. Results of Variance Decomposition Analysis

Period	HE	NT	SB	IHSG	HM
2	89.69812	1.846543	1.423583	6.767966	0.263788
15	56.87881	34.56550	0.774654	7.440547	0.340482
30	47.18132	44.13555	0.551798	7.775026	0.356304
40	44.34568	45.98062	0.486599	7.872683	0.360914
50	42.55108	48.70527	0.445336	7.934488	0.363831

Source: Output Eviews 10 (processed)

Changes in interest rates can affect the exchange rate and inflation, which in turn affects the price of gold. When interest rates increase, the exchange rate also increases, and vice versa, when interest rates decrease, the exchange rate also decreases. These changes can affect the price of gold. This result is in line with the results of research (Bukowski, 2016),(Qian et al., 2019)and supported by research (Lastri, 2021) showing that the rupiah exchange rate against the US dollar affects the price of gold. This shows that if the rupiah exchange rate against the US dollar rises, of course investors will leave gold because the acquisition value is expensive, conversely if the rupiah exchange rate against the US dollar falls, investors will switch their money to gold because the acquisition value is cheap.

Based on the results of this study, the relationship between the exchange rate and gold prices in Indonesia from 2018 to 2023 shows that in the short term, the exchange rate does not have a significant effect on gold prices, but in the long term, the exchange rate has a significant effect. This finding reflects the complexity of the Indonesian economy in a period full of global and domestic changes. The 2018-2023 period in Indonesia was marked by various economic challenges, both domestically and internationally, which affected the rupiah exchange rate against foreign currencies, especially the US dollar, as well as the price of gold.

The Indonesian rupiah experienced significant volatility during this period, mainly due to changes in monetary policy in developed countries such as the United States, as well as global uncertainty caused by trade wars, the COVID-19 pandemic, and geopolitical instability. The pandemic put severe pressure on the Indonesian economy, including the weakening of the rupiah at certain times, as well as major changes in the demand and supply of gold, both as an investment asset and as an industrial need.

In the short term, the results of the study show that the exchange rate does not have a significant effect on the price of gold in Indonesia. According to the author, this could happen because one of them is the intervention of Bank Indonesia where BI actively intervenes to maintain the stability of the rupiah. In the short term, this action can dampen major fluctuations that may occur in the exchange rate, thereby reducing its impact on the price of gold. And also the price of gold in the short term tends to be influenced by global market sentiment, such as changes in the price of gold in the international market which is influenced by the US dollar, the Fed's interest rate, and the demand for gold in the global market.

In the long term, this study found that the rupiah exchange rate has a significant effect on gold prices in Indonesia. According to the author, this could happen because of the Rupiah Depreciation and Inflation, where in the long term, the depreciation of the rupiah exchange rate can cause an increase in gold prices. This is because gold is often considered a safe haven when the local currency depreciates, especially amid inflationary pressures. The depreciation of the rupiah increases the cost

of importing gold, which drives up domestic gold prices. And although BI's short-term intervention can reduce the impact of the exchange rate on gold prices, in the long term, monetary policies such as higher interest rates or monetary tightening carried out to stabilize the rupiah can have a cumulative impact on gold prices. Long-term exchange rate fluctuations tend to be transmitted to gold prices in the long term.

Low interest rates usually indicate loose monetary policy, which can drive inflation or reduce the purchasing power of a currency. Investors may seek out hedge assets such as gold to protect themselves from potential high inflation or currency depreciation. This increased demand can support gold prices. Gold prices tend to be stable and are not greatly affected by changes in interest rates. This may explain why interest rates contribute relatively little to gold prices.

This is in line with Keynes Liquidity Preference theory which states that it has monetary policy implications in situations where aggregate demand and investment are low, the central bank must increase the money supply to encourage consumer spending and investment where increased consumer spending and investment will encourage consumption (Mishkin, 2013). In addition, these results are also in line with the results of research (Abdullah & Abu Bakar, 2015) and (Raza et al., 2021) which show that interest rates have a significant effect on gold prices.

Based on the results of this study, the relationship between interest rates and gold prices in Indonesia from 2018 to 2023 shows that interest rates do not have a significant effect on gold prices in the short term, but in the long term, interest rates have a significant effect. These findings illustrate the complex interaction between monetary policy, economic conditions, and commodity prices in Indonesia during this period. During the 2018-2023 period, Indonesia experienced a number of significant economic changes, including changes in interest rates, exchange rate fluctuations, and various external challenges that affected financial and commodity markets, including gold prices.

During this period, Bank Indonesia (BI) played an important role in adjusting interest rates to achieve economic stability, control inflation, and maintain the stability of the rupiah exchange rate. Changes in BI interest rates have direct and indirect impacts on various aspects of the economy, including gold prices. And also during this period, there was the COVID-19 Pandemic, which triggered an extraordinary policy response from BI and the government, including interest rate cuts and various fiscal stimulus measures to stabilize the economy. The pandemic also significantly affected the demand and supply of gold.

This study shows that in the short term, interest rates do not have a significant effect on gold prices in Indonesia. According to the author, this could be due to other more dominant factors, where in the short term, gold prices are often more influenced by factors other than interest rates, such as changes in exchange rates, global market sentiment, and international economic conditions. Fluctuations in

gold prices tend to be more sensitive to changes in the US dollar, global uncertainty, and investment demand, than changes in domestic interest rates.

This study shows that in the long term, interest rates have a significant influence on long-term gold prices in Indonesia. According to the author, this could happen because of more stable economic conditions where In the long term, interest rate decisions usually reflect more stable and predictable economic conditions. This allows the relationship between interest rates and gold prices to become clearer, where investors can adjust their portfolios based on long-term interest rate expectations. And also according to the author, there is an impact on investment and demand for gold. Lower interest rates tend to reduce the attractiveness of investing in financial instruments such as deposits or bonds, encouraging investors to look for safer and more profitable alternatives, such as gold. In the long term, this can increase demand and the price of gold.

This study has important implications for policy makers, investors, and market players in Indonesia, namely Understanding that interest rates affect gold prices in the long term, but not in the short term, can help in designing more effective monetary policies. Interest rate policies should be considered carefully, given their impact on gold investment and overall economic stability in the long term. Investors who invest in gold should consider interest rates as an important factor in the long term. They need to pay attention to interest rate trends when making long-term investment decisions, given that changes in interest rates can affect the attractiveness of gold as an investment asset. Companies in the gold sector need to anticipate the long-term impact of interest rate changes on gold prices. Managing the risks associated with interest rate fluctuations can help companies maintain profitability and business stability.

Portfolio theory, developed by Harry Markowitz, states that investors should choose a diversified portfolio of assets to reduce risk and achieve a desired level of return. In the context of the Composite Stock Price Index (IHSG), this theory can be used to understand how investors create an optimal stock portfolio based on their risk and financial goals. Business Cycle Theory: This theory states that the economy moves through cycles consisting of expansion and contraction phases. The movement of the IHSG can be influenced by the economic cycle, where during economic expansion, the stock price index tends to rise, while during economic contraction, the stock price index tends to fall. Empirical evidence that supports the results of this study are (Bukowski, 2016), (Qian et al., 2019) and (Nuraini et al., 2023).

Based on the results of this study, the relationship between the Composite Stock Price Index (IHSG) and the price of gold in Indonesia from 2018 to 2023 shows that in the short term, the IHSG has a positive effect on the price of gold, but in the long term, the IHSG has a significant effect. These findings illustrate the complex relationship between the stock market and gold commodities in Indonesia during a period full of economic changes. During the period 2018-2023, Indonesia

experienced various significant economic developments, including changes in the stock market as reflected in the movement of the JCI, as well as the dynamics of gold prices.

During this period, the JCI experienced quite significant fluctuations, influenced by global factors such as trade wars, economic uncertainty due to the COVID-19 pandemic, and domestic political and economic conditions. The pandemic caused great uncertainty in global and domestic financial markets, which affected investor behavior and created volatility in the JCI and gold prices.

In this study in the short term, it shows that the JCI does not have a significant effect on the price of gold in Indonesia. According to the author, this could happen because of different price movements where gold and stocks often move in different directions, especially in the short term. When the stock market declines, investors often turn to gold as a safe asset, but this response may not occur immediately or be seen in the short term. The price of gold in the short term tends to be influenced by external factors such as changes in the price of gold in the international market, global monetary policy, and fluctuations in the US dollar exchange rate. Changes in the JCI may not be directly reflected in the price of gold due to the dominance of these global factors.

In this study, in the long term, it has a significant influence on the price of gold in the long term in Indonesia. According to the author, this could happen because in the long term, there is a tendency that when the stock market, represented by the IHSG, grows steadily, demand for gold as a safe asset may decrease, thus suppressing the price of gold. However, when the IHSG experiences a prolonged decline, investors may seek protection in safe assets such as gold, which can push the price of gold up. changes in investment patterns can occur when investors begin to view gold as a hedge against long-term declines in the stock market. This can occur after a period of prolonged economic uncertainty or economic crisis. Economic policies implemented by the government and Bank Indonesia, such as monetary and fiscal policies, can have a clearer impact in the long term. For example, policies that support the growth of the IHSG can reduce the attractiveness of gold as an investment, or conversely, policies that cause economic uncertainty can increase demand for gold.

Based on the results of this study, there are several important implications for various parties in Indonesia, namely Understanding that the JCI has an influence on gold prices in the long term, but not in the short term, can help in designing economic policies that consider the interaction between the stock market and gold commodities. Stable and consistent policies can help maintain stability in both markets. Investors who invest in gold need to pay attention to the development of the JCI as a long-term indicator. They should consider the movement of the JCI when making long-term investment decisions in gold, given that a continued decline in the stock market can increase gold prices. Companies in the gold sector should monitor the JCI as one of the macroeconomic indicators that can affect gold demand and prices in the long term. Managing the risks associated with stock market fluctuations can help companies maintain profitability and business stability.

Crude oil is a major commodity used for energy production and transportation worldwide. Its price is heavily influenced by factors such as global demand, supply from major producers, energy policies, and geopolitical turmoil in oil-producing regions. Meanwhile, gold has a more complex function as a hedge, alternative currency, and consumer goods. Its price is influenced by factors such as inflation, currency exchange rates, market sentiment, and global monetary policy. The price of crude oil can affect the rupiah exchange rate against the US dollar, causing the rupiah exchange rate to decline. This can positively affect the price of gold because gold is relatively more expensive in domestic currency when the exchange rate declines.

These results are in line with the Business Cycle Theory: This theory states that the economy moves through cycles consisting of expansion and contraction phases. Oil price movements can be influenced by the economic cycle, where during economic expansion, oil prices tend to rise, while during economic contraction, oil prices tend to fall. Empirical evidence that supports this is research (Kesarditama et al., 2020), (Bukowski, 2016), and (Chai et al., 2021).

Based on the results of this study, the relationship between world oil prices and gold prices in Indonesia from 2018 to 2023 shows that world oil prices have no effect on gold prices in the short term but have a negative effect in the long term. During the 2018-2023 period, world oil prices experienced quite significant fluctuations, influenced by various global factors such as geopolitical tensions, OPEC production policies, changes in global energy demand, and the impact of the COVID-19 pandemic. On the other hand, gold prices are also influenced by factors such as global monetary policy, inflation rates, and economic uncertainty.

Fluctuations in oil prices where world oil prices experienced several peaks and sharp declines during this period, including a drastic decline at the beginning of the COVID-19 pandemic in 2020. Fluctuating oil prices affect various aspects of the global economy, including inflation and economic growth, which ultimately also have an impact on gold prices. And global uncertainty caused by geopolitical tensions, trade wars, and the pandemic also plays an important role in shaping the relationship between oil and gold prices. Gold is often considered a safe haven asset during periods of uncertainty, while oil is considered a key indicator of global economic conditions.

In this study in the short term, it shows that world oil prices do not have a significant effect on gold prices in Indonesia. According to the author, this could happen because oil prices and gold prices often experience high volatility in the short term, but the causes of this volatility can be very different. Oil prices are influenced by the dynamics of energy supply and demand, while gold prices are often influenced by market sentiment related to economic uncertainty and monetary policy. As a result, short-term oil price fluctuations may not directly affect gold prices.

In this study, in the long term, world oil prices have a negative effect on gold prices in the long term in Indonesia. This can happen because in the long term, rising world oil prices tend to increase

inflationary pressures worldwide, including in Indonesia. Higher oil prices increase production and transportation costs, which in turn can increase the price of goods and services. When inflation increases, demand for gold as an inflation hedge tends to increase, which can push gold prices up. In the long term, high oil prices can reflect global economic conditions that lead to increased demand for commodities as a whole, including gold. For example, economic growth driven by the energy sector can increase purchasing power and demand for gold investments.

High oil prices over the long term are often accompanied by tighter monetary policy, especially when inflation is a major concern. Tighter monetary policy can push interest rates up, which in some situations can strengthen the positive relationship between oil prices and gold prices, especially if investors are seeking protection from economic uncertainty. Over the long term, high oil prices can create economic uncertainty, especially when accompanied by geopolitical instability or major changes in global energy policy. This uncertainty often increases the appeal of gold as a safe haven asset, which in turn increases the price of gold.

Based on this study, there are several important implications for policy makers, investors, and market players in Indonesia who must Understand that world oil prices have a long-term influence on gold prices in Indonesia can help in designing better economic policies. Policies that take into account the long-term impact of oil prices on inflation and people's purchasing power can help maintain economic stability. Investors who consider gold as part of their portfolio need to pay attention to world oil prices as a long-term indicator. Sustained increases in oil prices can be a signal to increase investment allocations in gold, especially as a hedge against inflation. Companies in the gold sector need to be aware that oil prices can affect gold demand and prices in the long term. Managing the risks associated with oil price fluctuations can help companies maintain stability and profitability.

CONCLUSION, SUGGESTION AND LIMITATIONS

In the short term, the exchange rate, interest rate and world oil price variables do not affect the gold price while the IHSG has a negative effect on the gold price. In the long term, the exchange rate, interest rate and IHSG variables have an effect on the gold price while the world oil price has a negative effect on the gold price.

The results of the Impulse Response Function show that there are variables with shocks that are responded negatively by the Gold Price, namely, Interest Rates and the Composite Stock Price Index. Meanwhile, the variables that provide shocks that are responded positively by the Gold Price are the Exchange Rate and World Oil Price.

The results of the Variance Decompostion show that the variable with the largest percentage contribution is the exchange rate, the variables with the next largest contributions are the composite

stock price index, interest rates and world oil prices. The results of this VD show that the amount of contribution from interest rates and world oil prices is still smaller than other factors such as interest rates and the composite stock price index.

This study has several limitations. First, it only focuses on four macroeconomic variables, namely exchange rates, interest rates, the Composite Stock Price Index (IHSG), and world oil prices, which may not fully capture all the determinants of gold prices. Second, the study utilizes monthly time-series data from 2018 to 2023, which might not reflect real-time investor behavior or market sentiment in more frequent intervals. Third, the VECM method used in this study assumes linear relationships, while non-linear dynamics in the gold market could also be relevant. These limitations open opportunities for further research to include more variables, alternative methods, and different data frequencies to gain a deeper understanding.

This study only uses four independent variables while the factors that influence gold prices are certainly more than those used in this study. Therefore, for further research, it is expected to use a combination with other variables. In addition, for further researchers, they can use other models in estimating. There are many alternative models and methods that can be used by further researchers to get better results.

The government is advised to improve the sophistication of technology and quality human resources in order to explore mining materials such as gold with more efficient production costs so that they can meet the demand for gold in Indonesia at a stable price. Fluctuations in gold prices influenced by macroeconomic variables such as exchange rates and interest rates need to be a serious concern for the government, especially the monetary authorities, in maintaining economic stability; therefore, it is recommended that the government through Bank Indonesia always maintain the stability of the rupiah exchange rate and set a balanced interest rate policy that is responsive to global dynamics, so as not to cause price fluctuations in investment instruments such as gold which can have a wider impact on inflation expectations and the stability of the national financial system.

For investors or portfolio managers, the results of this study provide implications that gold prices are highly influenced by the dynamics of exchange rates, interest rates, and stock market conditions, so that an adaptive investment strategy based on macroeconomic analysis is needed to minimize the risk of loss; therefore, it is recommended that investors not only use gold as a hedge asset, but also actively monitor global economic developments and domestic monetary policies in order to optimize asset allocation in investment portfolios more wisely and in a balanced manner.

Fluctuations in gold prices in the international commodity market have a significant impact on Indonesia's economic resilience, especially in terms of exchange rate stability and foreign exchange reserves. Therefore, it is recommended that the Indonesian government further strengthen policies that integrate international commodity price movements into national economic planning, as well as

develop diversification of economic sectors so as not to be too dependent on global commodity price fluctuations. In addition, increasing the capacity to manage foreign exchange reserves and the stability of domestic financial markets is also needed to strengthen Indonesia's economic resilience in the face of global market uncertainty.

REFERENCES

Aylin Erdoğdu. (2017). The Most Significant Factors Influencing the Price of Gold: An Empirical Analysis of the US Market. *Economics World*, *5*(5). https://doi.org/10.17265/2328-7144/2017.05.002

Chai, J., Zhao, C., Hu, Y., & Zhang, Z. G. (2021). Structural analysis and forecast of gold price returns. *Journal of Management Science and Engineering*, *6*(2), 135–145. https://doi.org/10.1016/j.jmse.2021.02.011

Desy Nursanti, T. (2004). *The Development of Option Market and The Role of Indonesia….* www.kpei.co.id/page/contrak-opsi-saham-kliring?

Gujarati, D. N., Porter, D. C., & Gunasekar, S. (2011). *Basic Econometrics*. McGraw-Hill Education.

Gusnindar, G. W., & Syafri. (2023). Faktor Pengaruh Harga Emas Dengan Metode Error Correction Model (ECM). *Jurnal Ekonomi Trisakti*, *3*(2), 2359–2366. https://doi.org/10.25105/jet.v3i2.16556

Harry M. Markowitz. (1959). *Portfolio Selection: Efficient Diversification of Investments* (16th ed.). John Wiley & Sons.

Kesarditama, F., Haryadi, & Vyn Amzar, Y. (2020). Pengaruh inflasi, nilai tukar rupiah per dollar Amerika, harga minyak mentah dunia dan indeks harga saham gabungan terhadap harga emas di Indonesia. In *Journal Perdagangan Industri dan Moneter* (Vol. 8, Issue 2).

Keynes, J. M. (1936). *The General Theory of Employment, Interest, and Money* (1st ed.). Macmillan & Co., London (Inggris).

Khaliq, A. (2018). Efek Kebijakan Moneter Terhadap Return Harga Emas Di Indonesia. *Business Management Journal*, *14*(1). https://doi.org/10.30813/bmj.v14i1.1121

Latifah, E., Sutjipto, H., Mangara, T. H., Harahap, M. N., & Syaifudin, R. (2024). Analysis of Factors Affecting Indonesian Government Debt. In *Jurnal Ilmu Manajemen dan Ekonomika* (Vol. 17, Issue 1).

Mankiw, N. G. (2006). *Principles of Economics* (4th ed.). South-Western College Publishing.

Qian, Y., Ralescu, D. A., & Zhang, B. (2019). The analysis of factors affecting global gold price. *Resources Policy*, *64*. https://doi.org/10.1016/j.resourpol.2019.101478

Shakil, M. H., Mustapha, I. M., Tasnia, M., & Saiti, B. (2018). Is gold a hedge or a safe haven? An application of ARDL approach. *Journal of Economics, Finance and Administrative Science*, *23*(44), 60–76. https://doi.org/10.1108/JEFAS-03-2017-0052

Siti, *, Mainal, A., Haziqah, A., Selamat, M., Dinie, N., Majid, S. A., Nabill, K., & Noorzee, I. (2023). Factors Influencing the Price of Gold in Malaysia. In *Information Management and Business Review* (Vol. 15, Issue 3).

Soraya Nurulhuda, E., & Kosasih. (2019). Pengaruh Inflasi, Kurs Dolar AS, dan Suku Bunga (BI) terhadap Penentuan Harga Emas (Studi Empiris: PT ANTAM Tbk Tahun 2014–2018). In *KINERJA Jurnal Ekonomi dan Bisnis* (Vol. 2, Issue 1). www.logammulia.com

Suharto, T. (2013). *Harga emas Naik atau Turun Kita Tetap Untung* (Cet 1). Elek Media Komputindo.

Sunaryo. (2023). Fenomena Keterkaitan Jangka Pendek & Jangka Panjang Permintaan Emas, Kurs, Suku Bunga dan Inflasi dengan Harga Emas Penerapannya dengan Error Correction Model (ECM). *Program Studi Magister Manajemen, Fakultas Ekonomi Dan Bisnis Universitas Islam As-Syafiiyah*, *29*(2), 71–89. https://doi.org/10.55122/mediastima.v29i2.754