


## U.S. Tariff Policy and the Joint Reaction of Indonesia's Stock and Gold Markets

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Article Info	ABSTRACT
<b>Keywords:</b> Stock, Gold Price, Reciprocal Tariff, 3SLS.	The United States exerts a substantial influence on the global economy. Its trade policies not only directly affect its trading partners but also generate broader multiplier effects across other national economies. This study examines the impact of the reciprocal tariff policy announced by the United States government in February 2025 on stock and gold prices in Indonesia. Using the Three-Stage Least Squares (3SLS) method, the results show that the tariff policy significantly influences both variables. Gold prices respond positively two weeks after the tariff announcement, while stock prices react negatively in the same week, rebound in the following week, and decline again in the second week. Furthermore, changes in gold prices significantly affect stock prices at the fourth lag, whereas changes in stock prices have no significant effect on gold prices. These empirical findings are consistent with the Efficient Market Hypothesis, Rational Expectations Theory, the Hedging and Safe Haven Asset Hypothesis, and the Asset Substitution Hypothesis. Overall, the study demonstrates that Indonesian investors respond rationally to global policy changes in line with financial market dynamics.
This is an open access article under the <a href="https://creativecommons.org/licenses/by-nc/4.0/">CC BY-NC</a> license 	<b>Corresponding Author:</b> Rahmi Afzhi Wefielananda Universitas Andalas Padang, Indonesia <a href="mailto:rahmiafzhi@eb.unand.ac.id">rahmiafzhi@eb.unand.ac.id</a>

### INTRODUCTION

The United States inaugurated its newly elected president, Donald Trump, on January 20, 2025. Under the new administration, several new regulations were introduced, one of which was the imposition of tariffs on U.S. imports. Initially, a 10 percent tariff was applied to imports from China starting February 4, 2025. This tariff rate was subsequently raised to 20 percent on March 4, 2025. At the same time, Canada and Mexico were also subjected to a 25 percent import tariff (Grantham-Phillips, 2025).

On February 13, 2025, President Donald Trump also announced plans to impose reciprocal tariffs on countries other than China, Canada, and Mexico (Grantham-Phillips, 2025). The rationale behind this policy was the persistent U.S. trade deficit, which was perceived as a threat to national security and economic stability. Many U.S. trading partners were considered to impose higher import tariffs on American goods compared to what the United States applied in return. This situation affected the industrial supply chain and domestic consumption in the United States (The White House, 2025).

The U.S. tariff rate was determined based on a formula that divides the percentage of the U.S. trade deficit by the value of U.S. imports from the respective country (CSIS, 2025). Based on this tariff rate, the U.S. government implemented reciprocal tariff adjustments for each country. Initially, the reciprocal tariff imposed on Indonesia on April 2, 2025, was set at 32 percent.

Although the enforcement of the reciprocal tariff was postponed for 90 days starting April 9, 2025, investors appeared to remain concerned about the potential escalation of trade wars, including those involving Indonesia. This concern was reflected in the performance of the Indonesian stock market index, which grew by 4.7 percent on April 10, 2025, but remained below that level for the rest of the period until the end of October 2025.

Rao et al. (2025) found that investors in countries with trade deficits against the United States exhibited mixed reactions, reflecting their preliminary assessments of the potential negative impacts of the tariff policy. Similarly, Kaczmarek et al. (2025) found that the effects of the U.S. reciprocal tariff policy on partner countries' financial markets varied depending on each country's trade and economic conditions.

These findings are further supported by Akhtaruzzaman et al. (2025), who observed that countries maintaining close trade relationships with the United States experienced a sharper decline in stock prices beyond the normal level following the implementation of the U.S. tariff policy. In contrast, countries with looser trade relations with the U.S. recorded an increase in stock prices after the policy was enacted.

Gjerstad et al. (2021) also found that tweets from President Trump's social media account containing the word "tariff" led to a decline in stock prices within 30 to 45 minutes after the tweet was released. Meanwhile, gold prices—as a form of safe investment during times of uncertainty following such tweets—tended to increase.

When financial markets face uncertainty due to tariff policies, gold is expected to serve as one of the safe haven assets for investors to store their wealth. In Indonesia, gold prices have also risen sharply since April 2025, although the increase has been somewhat volatile (Investing.com, 2025).

The presence of speculative uncertainty among the public has driven gold prices upward as a safe haven asset following the U.S. tariff policy (Belder, 2025). Chiang (2022) also found that global stock market volatility and economic instability in the United States, the United Kingdom, the European Union, and China were among the key drivers of rising gold prices. For investors in both the United States and India, gold serves as a long-term hedging instrument (Manuj, 2021).

From the perspective of gold and stock prices, Chirwa & Odhiambo (2020) found that the global stock index has a dynamic impact on gold prices in both the short and long run. Qian et al. (2019) also found that the stock index, represented by the S&P 500, has a negative effect on gold prices. In contrast, Kusumawati & Asandimitra (2017) found the opposite relationship between gold and stocks, where changes in global gold prices have a positive effect on Indonesia's Composite Stock Price Index (IHSG).

Several theories are relevant to understanding the relationship between tariff policies and their effects on financial markets and asset prices. The Efficient Market Hypothesis

proposed by Fama (1970) emphasizes that information plays a key role in determining stock prices. The Rational Expectations Theory suggests that market participants act rationally and adjust based on available information. The Hedging Theory by Demarzo & Graduate (1991) explains how financial market participants protect themselves from future losses. The Safe Haven Asset Theory by Baur & Lucey (2010) describes assets that move inversely with riskier assets during times of market distress. Finally, the Asset Substitution Theory by Walsh (1980) posits that when one asset serves as a substitute for another, changes in the price of one asset will influence the demand for its substitute.

The implementation of the reciprocal tariff policy by the United States in 2025 has generated various responses across the global economy, including in Indonesia, affecting both financial markets and asset movements. This policy has the potential to heighten uncertainty among economic agents, prompting a shift in investors' preferences toward safer assets compared to the more volatile stock market. In this context, this study is essential to analyze the simultaneous impact of the reciprocal tariff policy on the dynamics of stock and gold prices in Indonesia.

## METHODS

### Research Approach and Design

This study employs a quantitative approach using the Three-Stage Least Squares (3SLS) method developed by Zellner & Theil (1962). This method is an extension of the Two-Stage Least Squares (2SLS) and Seemingly Unrelated Regression (SUR) approaches. The 3SLS method captures the endogeneity effects among the research variables and addresses error correlation across the equations. Data processing was conducted using STATA software.

This research is associative/causal in nature, aiming to explain the relationships among reciprocal tariff policy, stock prices, and gold prices by using quantitative (numerical) data analyzed through statistical testing.

### Data Collection Techniques

Data collection in this study was conducted in two stages: literature review and documentation study. The literature review involved examining relevant academic journals, research reports, and official websites containing information related to the study variables. Meanwhile, the documentation study was conducted by retrieving secondary data from reputable online sources that provide quantitative information on the research variables.

### Research Variables

#### 1. Reciprocal Tariff

The reciprocal tariff serves as an exogenous independent variable, unaffected by other variables in this study. It represents an international trade policy in which a country's imposition of tariffs on imports is reciprocated by similar measures from its trading partners.

#### 2. Stock Price

The stock price acts as a dependent variable influenced by both the tariff policy and fluctuations in gold prices. Additionally, it is considered an endogenous variable, as there exists a bidirectional causal relationship between stock prices and gold prices.

### 3. Gold Price

The gold price functions as the second dependent variable, influenced by the tariff policy and stock price movements. This variable is also endogenous to stock prices due to the bidirectional causal relationship between them within financial market dynamics.

#### Population and Sample

The population in this study comprises all data on the Jakarta Stock Exchange Composite Index and Jakarta gold market prices per gram. The research sample consists of weekly data on IHSG and gold prices covering the period from early 2022 to August 2025, selected to represent market conditions after the easing of shocks caused by the COVID-19 pandemic during 2019–2021.

Data on the Jakarta Stock Exchange Composite Index were obtained from the website Investing.com, while data on gold prices in Indonesia were sourced from the BPS Indonesia through its publication on the average gold price in the Jakarta market. The tariff variable is represented using a dummy variable, where a value of (0) indicates the period before the implementation of the reciprocal tariff policy, and a value of (1) indicates the period after the policy announcement, beginning in the second week of February 2025.

#### Variable Measurement and Research Model

The relationship among tariff, stock price, and gold price is analyzed using the Three-Stage Least Squares (3SLS) model in a time-series framework. Following Granger (1969), causality is analyzed through the inclusion of lagged dependent variables. Thus, lag effects are incorporated to examine causal relationships between stock and gold prices. For exogenous variables, the lag length may start from  $j = 0$  (Hsiao & Wang, 2007).

The 3SLS model used in this study modifies the equation structure of Bakhsh et al. (2017), consisting of two simultaneous equations where *ihsg* and *emas* serve as endogenous variables. The equations are specified as follows:

$$l\_stock_t = c_1 + \sum_{j=1}^n \alpha_{1j} l\_stock_{t-j} + \sum_{j=1}^n \beta_{1j} l\_gold_{t-j} + \sum_{j=0}^n \gamma_{1j} tariff_{t-j} + u_{it}$$

$$l\_gold_t = c_2 + \sum_{j=1}^n \alpha_{2j} l\_stock_{t-j} + \sum_{j=1}^n \beta_{2j} l\_gold_{t-j} + \sum_{j=0}^n \gamma_{2j} tariff_{t-j} + u_{it}$$

Notes:

*l\_stock* = natural logarithm of stock prices

*l\_gold* = natural logarithm of gold prices

*tariff* = tariff policy

*c* = constant term

$\alpha, \beta, \gamma$  = parameter coefficients

*t* = time period

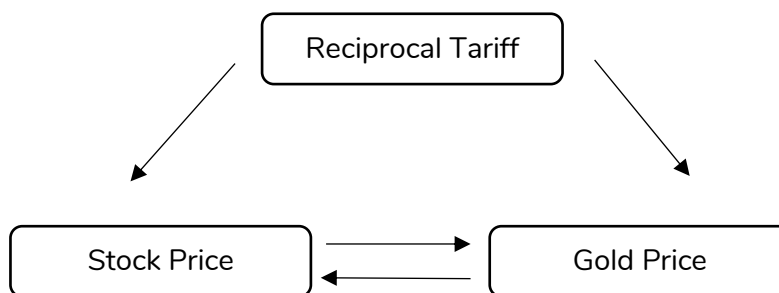
*j* = lag length

*n* = maximum number of lags

*u* = error term

### Conceptual Framework

The conceptual framework of this study is built upon the correlation between tariff and stock prices, tariff and gold prices, and the dynamic causality between stock prices and gold prices. These hypotheses are statistically tested within the following research framework:



**Figure 1.** Research Framework

Source: Processed by the Researcher, 2025

Figure 1 illustrates the flow of the study, showing the direct effects of the tariff policy on stock and gold prices, as well as the bidirectional relationship between the two assets, consistent with the supporting theoretical foundations.

### Research Hypotheses

Based on the background, objectives, theoretical framework, and problem formulation, this study identifies the financial and asset market responses in Indonesia to the U.S. reciprocal tariff policy introduced under President Trump. Accordingly, the tariff policy serves as an exogenous variable, while stock prices and gold prices are treated as endogenous variables. The hypotheses of this study are as follows:

- $H_{1a}$ : The implementation of reciprocal tariffs affects stock prices.
- $H_{1b}$ : The implementation of reciprocal tariffs affects gold prices.
- $H_{1c}$ : Stock prices affect gold prices.
- $H_{1d}$ : Harga emas mempengaruhi harga saham.

## RESULTS AND DISCUSSION

### Stationarity Test

According to Robinson (1991), the Three-Stage Least Squares (3SLS) method is considered statistically valid when the error components and endogenous variables in the dataset are in a stationary condition. If stationarity is not satisfied, the estimation results may become biased because the asymptotic distribution properties of the 3SLS estimator are not fulfilled. In this study, the stationarity test was conducted using the Augmented Dickey–Fuller (ADF) test, with the output results presented in Table 1.

**Table 1.** Results of the Augmented Dickey–Fuller (ADF) Test

Variable	Mackinnon approx p-value
l_stock	0.3469
l_gold	0.9983
tariff	0.9076

d_l_stock	0.0000
d_l_gold	0.0000
d_tariff	0.0000

Source: Processed by the Researcher, 2025

Table 1 shows that, at the level form, the variables in this study ( $l\_stock$ ,  $l\_gold$ , and  $tariff$ ) are not stationary at the 5% significance level, as their respective p-values exceed 0.05. Meanwhile, at the first difference, all variables ( $d\_l\_stock$ ,  $d\_l\_gold$ , and  $d\_tariff$ ) become stationary at the 5% significance level, with p-values below 0.05. Therefore, this study proceeds using the first-differenced variables, leading to the following model specification adjustment:

$$d\_l\_stock_t = c_1 + \sum_{j=1}^n \alpha_{1j} d\_l\_stock_{t-j} + \sum_{j=1}^n \beta_{1j} d\_l\_gold_{t-j} + \sum_{j=0}^n \gamma_{1j} d\_tariff_{t-j} + u_{it}$$

$$d\_l\_gold_t = c_2 + \sum_{j=1}^n \alpha_{2j} d\_l\_stock_{t-j} + \sum_{j=1}^n \beta_{2j} d\_l\_gold_{t-j} + \sum_{j=0}^n \gamma_{2j} d\_tariff_{t-j} + u_{it}$$

### Selection of the Optimum Lag

To produce accurate and balanced research results, it is necessary to determine the appropriate lag length through a Monte Carlo simulation. Ozcicek & McMillin (1999) explain that the determination of lag length aims to obtain an efficient estimation model. The model selection can be carried out by comparing the values of AIC, SIC, PIC, and other modified criteria such as KAIC and KASIC, with the smallest value indicating the optimal lag.

**Table 2.** Results of Optimum Lag Selection

Lag	LL	LR	FPE	AIC	HQIC	SBIC
0	1053.13	—	3.00E-08	-11.657	-11.6282*	-11.586*
1	1056.87	7.479	3.00E-08	-11.654	-11.597	-11.512
2	1059.17	4.6039	3.00E-08	-11.635	-11.549	-11.422
3	1061.35	4.3703	3.10E-08	-11.615	-11.5	-11.331
4	1069.25	15.797*	3.0e-08*	-11.6584*	-11.515	-11.304

Source: Processed by the Researcher, 2025

Table 2 shows that in this study there are two alternative lag lengths identified, namely lag 1 and lag 4. Based on the HQIC and SBIC criteria, the recommended optimal lag is lag 1, while the LR, FPE, and AIC tests indicate that lag 4 is a more appropriate choice. Therefore, lag 4 is selected as the optimum lag in this study. This selection is also consistent with the findings of Ozcicek & McMillin (1999), who stated that the lag length should not be too large to avoid increasing projection errors, and not too small to prevent autocorrelation in the model.

### Autocorrelation Test

King (1981) explains that, based on the Durbin-Watson theory, the presence of correlation among error terms over time can result in inconsistent interpretation of the results. Therefore, it is necessary to perform an autocorrelation test on time-series data to ensure that residuals across time in this study are not correlated with each other. The autocorrelation test was conducted for both equations, namely  $d\_l\_stock_t$  and  $d\_l\_gold_t$ . Tables 3 present the results of the autocorrelation tests for these two equations.

**Table 3.** Results of Autocorrelation Test for the Stock Equation

Equation	Lag (p)	Chi-Square ( $\chi^2$ )	df	Prob > $\chi^2$
Stock	4	3.715	4	0.4459
Gold	4	1.535	4	0.8205

Source: Processed by the Researcher, 2025

Table 3 show probability values of 0.4459 and 0.8205, respectively, indicating that the null hypothesis ( $H_0$ ) cannot be rejected at the 5% significance level. The null hypothesis of the autocorrelation test states that there is no autocorrelation in the regression equations. Therefore, these results indicate that all equations in this study are free from serial correlation in the residuals, meaning the model satisfies the classical assumption of residual independence.

### Multicollinearity Test

Multicollinearity describes the existence of a linear relationship among the independent variables in the study. When this condition occurs in the analyzed equation, the accuracy of the estimated regression coefficients decreases, making the interpretation of the results less reliable (Gujarati & Porter, 2012). The results of the multicollinearity test for the stock and gold equations in this study are presented in Table 4.

**Table 4.** Results of the Multicollinearity Test

Variable	Lag	VIF	1/VIF
$\Delta \ln \text{STOCK}$	L2	1.43	0.6998
	L3	1.34	0.7446
	L1	1.29	0.774
$\Delta \text{TARIFF}$	L4	1.26	0.7966
	L3	1.24	0.8047
$\Delta \ln \text{HSG}$	L4	1.21	0.8268
	$\Delta \text{TARIFF}$	L2	1.16
$\Delta \ln \text{GOLD}$	L1	1.13	0.8845
	L2	1.1	0.9107
	L1	1.09	0.9184
	L4	1.08	0.9232
$\Delta \text{TARIFF}$	L3	1.07	0.9337
$\Delta \text{TARIFF}$	—	1.06	0.9396
Average VIF	—	1.19	—

Source: Processed by the Researcher, 2025

The VIF column in Table 4 shows values lower than 10, indicating that the null hypothesis ( $H_0$ ), which states that there is no multicollinearity among the variables in each equation, cannot be rejected. This result suggests that the estimated regression coefficients can be considered stable.

### Heteroskedasticity Test

Heteroskedasticity, or the presence of unequal variance in the residuals, can lead to incorrect statistical inferences. White (1980) explains that if a linear regression model suffers from heteroskedasticity, the estimated parameters become biased due to the changing

variability of the error term over time. Table 5 presents the results of the heteroskedasticity test for the stock and gold equations in this study.

**Table 5.** Results of the Heteroskedasticity Test

Equation	Test Statistic	Value	Prob > $\chi^2$
Stock	$\chi^2(1)$	0,15	0,7026
Gold	$\chi^2(1)$	3,25	0,0714

Source: Processed by the Researcher, 2025

In Table 5, the probability values for the heteroskedasticity test are 0.07026 for the stock equation and 0.0714 for the gold equation. Both values exceed the 5% significance level, indicating that the null hypothesis ( $H_0$ ) cannot be rejected. In conclusion, the data in this study do not exhibit heteroskedasticity and therefore meet the requirements for statistical validity.

### Regression Results and 3SLS Model Estimation

After all stages of data testing met the statistical requirements, the next step was to present the regression results and the 3SLS model estimation based on the data and previously determined lag lengths. The regression results for both equations are shown in Table 6.

**Table 6.** Regression Results

Equation	Obs	R <sup>2</sup>
$\Delta \ln(\text{STOCK})$	186	0.2873
$\Delta \ln(\text{GOLD})$	186	0.0842

Source: Processed by the Researcher, 2025

Table 6 shows that the R<sup>2</sup> value for the stock equation is 0.2873, meaning that 28.73% of the variation in stock price changes can be explained by the variables included in this study. Meanwhile, the R<sup>2</sup> value for the gold equation is 0.0842, indicating that 8.42% of the variation in gold price changes can be explained by the variables in the model, while the remaining variation is explained by factors not included in the study.

Furthermore, the estimation results are presented in Table 7, which provides a more detailed explanation of the effect of each variable based on its lag period.

**Table 7.** Estimation Results

Dependent Variable	Indepen- dent Variable	Lag	Coefficient	Std. Error	p- Value	95% CI (Lower–Upper)
$\Delta \ln \text{STOCK}$	$\Delta \ln \text{STOCK}$	L1	0.3639918	0.07	0.000	[0.2262 – 0.5017]
		L2	0.1841561	0.07	0.013	[-0.3291 – - 0.0392]
		L3	0.1169789	0.07	0.109	[-0.0262 – 0.2602]
		L4	0.2024574	0.06	0.004	[-0.3384 – - 0.0665]

Dependent Variable	Indepen-dent Variable	Lag	Coefficient	Std. Error	p- Value	95% CI (Lower–Upper)	
ΔlnGOLD	ΔlnGOLD	L1	- 0.0277018	0.08	0.755	[-0.2021 – 0.1466]	
		L2	0.1312199	0.08	0.142	[-0.0438 – 0.3063]	
		L3	- 0.1538301	0.08	0.081	[-0.3264 – 0.0188]	
		L4	0.2419998	0.08	0.006	[0.0682 – 0.4158]	
	ΔTARIFF	L1	0.0516184	0.01	0.000	[0.0240 – 0.0792]	
		L2	- 0.0665733	0.01	0.000	[-0.0946 – 0.0385]	
		L3	0.0180802	0.01	0.221	[-0.0109 – 0.0470]	
		L4	- 0.0188748	0.01	0.204	[-0.0480 – 0.0102]	
	Constat	—	- 0.0532678	0.01	0.000	[-0.0801 – 0.0265]	
		—	0.0004695	0.00	0.685	[-0.0018 – 0.0027]	
	ΔlnGOLD	ΔlnGOLD	L1	-0.035619	0.07	0.625	[-0.1784 – 0.1071]
			L2	0.0070181	0.07	0.924	[-0.1363 – 0.1503]
			L3	0.0293428	0.07	0.684	[-0.1120 – 0.1707]
			L4	0.1068123	0.07	0.141	[-0.0355 – 0.2491]
ΔlnSTOCK		L1	- 0.0903475	0.05	0.116	[-0.2031 – 0.0224]	
		L2	0.009126	0.06	0.880	[-0.1095 – 0.1278]	
		L3	-0.062107	0.05	0.299	[-0.1793 – 0.0551]	
		L4	- 0.0654836	0.05	0.249	[-0.1768 – 0.0458]	
ΔTARIFF		L1	- 0.0022016	0.01	0.849	[-0.0248 – 0.0204]	
		L2	0.0271176	0.01	0.021	[0.0042 – 0.0501]	

Dependent Variable	Indepen-dent Variable	Lag	Coefficient	Std. Error	p-Value	95% CI (Lower–Upper)
		L3	- 0.0145982	0.01	0.228	[-0.0383 – 0.0091]
		L4	-0.002493	0.01	0.838	[-0.0263 – 0.0213]
		—	0.0065639	0.01	0.558	[-0.0154 – 0.0285]
	Constant	—	0.0032836	0.00	0.001	[0.0014 – 0.0051]

Source: Processed by the Researcher, 2025

The estimation results above can be expressed in the following equations:

$$d\_l\_stock_t = 0,00047 + 0,36399 d\_l\_stock_{t-1} - 0,18416 d\_l\_stock_{t-2} + 0,11698 d\_l\_stock_{t-3} - 0,20246 d\_l\_stock_{t-4} - 0,02770 d\_l\_gold_{t-1} + 0,13122 d\_l\_gold_{t-2} - 0,15383 d\_l\_gold_{t-3} + 0,24200 d\_l\_gold_{t-4} - 0,05327 d\_tariff_t + 0,05162 d\_tariff_{t-1} - 0,06657 d\_tariff_{t-2} + 0,01808 d\_tariff_{t-3} - 0,01888 d\_tariff_{t-4}$$

$$d\_l\_gold_t = 0,00328 - 0,09034 d\_l\_stock_{t-1} + 0,00913 d\_l\_stock_{t-2} - 0,06211 d\_l\_stock_{t-3} - 0,06548 d\_l\_stock_{t-4} - 0,03562 d\_l\_gold_{t-1} + 0,00702 d\_l\_gold_{t-2} - 0,02934 d\_l\_gold_{t-3} + 0,10681 d\_l\_gold_{t-4} - 0,00656 d\_tariff_t - 0,00220 d\_tariff_{t-1} + 0,02712 d\_tariff_{t-2} - 0,01460 d\_tariff_{t-3} - 0,00250 d\_tariff_{t-4}$$

The estimation results of the 3SLS model presented in the table and equations above indicate that, for the stock equation, the variables that significantly affect stock prices at the 5% confidence level are stock prices at lag 1, lag 2, and lag 4; gold prices at lag 4; and the tariff variable at lag 0, 1, and 2.

The stock price at lag 4 has a coefficient of  $-0.20$ , indicating that a 1% increase in stock prices will lead to a 0.20% decrease in stock prices four weeks later. Meanwhile, the stock price at lag 2 has a coefficient of  $-0.18$ , showing that a 1% rise in stock prices will reduce stock prices two weeks later by 0.18%. Conversely, the stock price at lag 1 has a positive coefficient of 0.36, meaning that a 1% increase in stock prices in the previous week will raise current stock prices by 0.36%. These findings illustrate the short-term dynamics of stock prices, where an increase in the previous week strengthens current prices, but increases from two to four weeks earlier tend to create a correction or decline effect.

Furthermore, changes in gold prices significantly affect stock prices after four weeks, with a coefficient of 0.24. This indicates that a 1% increase in gold prices will raise stock prices by 0.24% four weeks later.

From the tariff perspective, the estimation results show a rapid and layered response to tariff changes. In the same week, an increase in tariffs reduces stock prices by 0.05%. One week later, stock prices rebound by 0.05%, but two weeks after that, they decline again by 0.07%. This pattern demonstrates an initial market reaction to tariff policy that is short-term and volatile before reaching a new adjustment equilibrium.

Meanwhile, the variable that significantly affects gold prices is the tariff at lag 2. The estimation results show that the tariff announcement from two weeks earlier significantly increases gold prices by 0.03%. This finding suggests that changes in tariff policy take approximately two weeks to be reflected in the gold market, as investors tend to shift their portfolios toward safe-haven assets such as gold following price adjustments resulting from the policy change.

## Discussion

The estimation results of the 3SLS model in this study reveal simultaneous relationships among tariff implementation, stock prices, and gold prices. Based on these estimation results, the findings correspond with existing economic theories and previous studies, indicating that this research serves as an empirical implication of established theoretical frameworks.

First, the results from the stock price equation show that previous stock price dynamics influence current stock prices. In the short term, specifically within one week, investors in the financial market remain driven by expectations based on past price conditions, where an increase in last week's prices is expected to continue into the following week. However, after two to four weeks, investors begin to adjust their expectations in accordance with the Efficient Market Hypothesis (EMH) and Rational Expectations Theory, where market participants update their views rationally and engage in profit-taking, leading to price corrections. This indicates that the financial market responds rapidly to new information, but the price adjustment process occurs gradually as investor expectations evolve over time.

Meanwhile, regarding gold prices, there is a positive relationship with stock prices after a four-week lag. This phenomenon aligns with the Asset Substitution Theory, which suggests that investors tend to shift their wealth from gold to stocks once market risk is perceived to decline and economic conditions stabilize. This finding is also consistent with the study by Kusumawati and Asandimitra (2017), which found a positive relationship between changes in gold prices and stock price movements.

In terms of tariffs, the empirical results exhibit a fluctuating pattern of influence. In the week of the announcement, tariffs exert downward pressure on stock prices as markets react negatively to policy uncertainty. However, one week later, stock prices rebound as investors rationally adjust their expectations, consistent with the Rational Expectations Theory. Two weeks later, stock prices decline again due to increased economic uncertainty following the implementation of tariff policies. This pattern aligns with the Efficient Market Hypothesis and is supported by the findings of Rao et al. (2025) and Akhtaruzzaman et al. (2025), who found that tariff policies induce cyclical fluctuations in stock prices across countries before markets reach a new equilibrium.

For the gold price equation, tariffs at lag 2 have a positive effect on gold prices, indicating that gold functions as both a hedging and a safe-haven asset when policy changes and market uncertainty increase. The market's response to tariff implementation, which emerges two weeks later, reflects the process of investor expectation formation, wherein market participants take time to assess the policy's impact before making investment decisions. This finding is supported by Belder (2025), Chiang (2022), and Manuj (2021), who

showed that tariff policies can drive up gold prices due to its role as a hedge against economic uncertainty.

The results also show that stock prices have no significant effect on gold prices. This indicates that fluctuations in gold prices in Indonesia during the study period were not directly influenced by stock market movements. Moreover, there was no substantial increase in gold prices following the reciprocal tariff implementation, suggesting that a gold price bubble projection had not yet formed during the observation period.

Based on the discussion of both equations, it can be concluded that stock and gold prices react to the tariff announcements imposed by the United States government. However, among the two endogenous variables assumed in this study, namely stock prices and gold prices, only gold prices were found to influence stock prices in Indonesia. Furthermore, the findings reflect the rational behavior of financial market participants in Indonesia in responding to global economic policy changes.

## CONCLUSION

This study aims to examine the dynamics of gold prices and financial markets resulting from the implementation of the reciprocal tariff policy imposed by the United States government in 2025, using the Three-Stage Least Squares (3SLS) method. In addition to analyzing the impact of tariffs on stock and gold prices, this method is also employed to capture the endogenous relationship between the two variables. Based on the results, gold prices, tariff policy, and stock prices at certain lag periods were found to significantly influence stock price movements, while gold prices were affected only by the tariff variable with a two-week lag. Empirically, these findings indicate that the financial and asset markets in Indonesia respond rationally to global policy changes, reflecting the behavior of investors who adapt to international economic dynamics. Based on the findings of this study, it is recommended that the government and policymakers consider the broader implications of tariff policies on the stability of domestic financial markets. Protectionist trade measures, such as reciprocal tariffs, may exert downward pressure on stock indices and indirectly trigger volatility in the prices of strategic commodities such as gold. Therefore, the formulation of economic policies should be accompanied by a careful evaluation of their potential systemic impacts on asset markets. For investors and market participants, it is essential to recognize that stock market dynamics can serve as an early indicator of global risk, making close monitoring of international tariff policies an integral part of hedging strategies. Meanwhile, future research is encouraged to expand the scope of analysis by incorporating additional external variables such as exchange rates, global interest rates, and the Economic Policy Uncertainty (EPU) Index to obtain a more comprehensive understanding of the transmission mechanisms of policy shocks on asset prices.

## REFERENCE

Akhtaruzzaman, M., Boubaker, S., Hegazi, A., & Manita, R. (2025). Does the U.S. reciprocal tariff announcement trigger financial contagion? *Journal of Accounting Literature*.

- Bakhsh, K., Rose, S., Ali, M. F., Ahmad, N., & Shahbaz, M. (2017). Economic growth, CO2 emissions, renewable waste and FDI relation in Pakistan: New evidences from 3SLS. *Journal of Environmental Management*, 196, 627–632. <https://doi.org/10.1016/j.jenvman.2017.03.029>
- Baur, D. G., & Lucey, B. M. (2010). Is Gold a Hedge or a Safe Haven? An Analysis of Stocks, Bonds and Gold. In *The Financial Review* (Vol. 45). <http://www.merriam-webster.com/>.
- Belder, D. (2025, August 27). *Navigating Uncertainty: How Trump's Tariffs Are Affecting the Gold Market*. <https://Investingnews.Com/Trump-Gold-Tariffs/>.
- BPS Indonesia. (2025, September 1). *Perkembangan Harga Rata-Rata Emas di Pasaran Jakarta (Rupiah)*. <https://www.bps.go.id/ld/statistics-table/2/mjQxMyMy/perkembangan-harga-rata-rata-emas-di-pasaran-jakarta.html>.
- Chiang, T. C. (2022). The effects of economic uncertainty, geopolitical risk and pandemic upheaval on gold prices. *Resources Policy*, 76, 102546. <https://doi.org/https://doi.org/10.1016/j.resourpol.2021.102546>
- Chirwa, T. G., & Odhiambo, N. M. (2020). Determinants of gold price movements: An empirical investigation in the presence of multiple structural breaks. *Resources Policy*, 69. <https://doi.org/10.1016/j.resourpol.2020.101818>
- CSIS. (2025, April 7). *Three Points on Trump's "Reciprocal" Tariffs*. <https://www.csis.org/analysis/three-points-trumps-reciprocal-tariffs>.
- Demarzo, P. M., & Graduate, K. (1991). Corporate Financial Hedging with Proprietary Information\*. In *JOURNAL OF ECONOMIC THEORY* (Vol. 53).
- Fama, E. F. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. In *The Journal of Finance* (Vol. 25, Issue 2).
- Gjerstad, P., Meyn, P. F., Molnár, P., & Næss, T. D. (2021). Do President Trump's tweets affect financial markets? *Decision Support Systems*, 147. <https://doi.org/10.1016/j.dss.2021.113577>
- Granger, C. W. J. (1969). INVESTIGATING CAUSAL RELATIONS BY ECONOMETRIC MODELS AND CROSS-SPECTRAL METHODS. *Econometrica*, 37(3), 424–438.
- Grantham-Phillips, W. (2025, May 26). *A timeline of Trump's tariff actions so far*. <https://www.pbs.org/newshour/economy/a-timeline-of-trumps-tariff-actions-so-far>.
- Gujarati, D. N., & Porter, D. C. (2012). *Dasar-dasar Ekonometrika* (5th ed., Vol. 1). Penerbit Salemba Empat.
- Hsiao, C., & Wang, S. (2007). Lag-augmented two- and three-stage least squares estimators for integrated structural dynamic models. *Econometrics Journal*, 10(1), 49–81. <https://doi.org/10.1111/j.1368-423X.2007.00199.x>
- Investing.com. (2025, September 1). *Jakarta Stock Exchange Composite (JKSE)*. <https://id.investing.com/indices/idx-composite-historical-data>.
- Kaczmarek, T., Demir, E., Rouatbi, W., & Zaremba, A. (2025). Tariffs announcement as a global stress test: Early stock market reactions to U.S. protectionism. *Finance Research Letters*, 85, 108080. <https://doi.org/10.1016/j.frl.2025.108080>

- King, M. L. (1981). THE ALTERNATIVE DURBIN-WATSON TEST An Assessment of Durbin and Watson's Choice of Test Statistic. In *Journal of Econometrics* (Vol. 17). North-Holland Publishing Company.
- Kusumawati, D. A., & Asandimitra, N. (2017). Impact of Global Index, Gold Price and Macro Economic Variable for Indonesia Composite Index. In *Research Journal of Finance and Accounting www.iiste.org ISSN* (Vol. 8, Issue 2). Online. [www.idx.co.id](http://www.idx.co.id)
- Manuj, H. (2021). Is gold a hedge against stock price risk in u.S. or indian markets? *Risks*, 9(10). <https://doi.org/10.3390/risks9100174>
- Ozcicek, O., & McMillin, W. D. (1999). Lag length selection in vector autoregressive models: symmetric and asymmetric lags. *Applied Economics*, 31(4), 517–524. <https://doi.org/10.1080/000368499324237>
- 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>
- Rao, A., Lucey, B., & Kumar, S. (2025). Financial market reactions to U.S. tariff announcements: Evidence from trade-surplus and trade-deficit countries. *Finance Research Letters*, 81. <https://doi.org/10.1016/j.frl.2025.107465>
- Robinson, P. M. (1991). Best Nonlinear Three-Stage Least Squares Estimation of Certain Econometric Models. *Econometrica*, 59(3), 755–786.
- The White House. (2025, February 1). *Fact Sheet: President Donald J. Trump Imposes Tariffs on Imports from Canada, Mexico and China*. <https://www.whitehouse.gov/fact-sheets/2025/02/fact-sheet-president-donald-j-trump-imposes-tariffs-on-imports-from-canada-mexico-and-china/>.
- Walsh, C. E. (1980). ASSET PRICES, SUBSTITUTION EFFECTS, AND THE IMPACT OF CHANGES IN ASSET STOCKS. *National Bureau of Economic Research*, 1–16.
- White, H. (1980). A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity. *Econometrica*, 48(4), 817–838.
- Zellner, A., & Theil, H. (1962). THREE-STAGE LEAST SQUARES: SIMULTANEOUS ESTIMATION OF SIMULTANEOUS EQUATIONS. *Econometrica*, 30, 54–78.