MANFA'AH
Journal of Islamic Business and Management

journal homepage: www.manfaah.tazkia.ac.id

Research paper
MANFA'AH – Journal of Islamic Business and Management 3 (1), 2023, 33-49

The Impact of Mining Commodity Prices and Macroeconomic Variables on Sharia Compliant Coal Stocks Returns: Evidence from Indonesia (2018–2022)

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ARTICLE INFO

Keywords:
Sharia-compliant stocks, coal, macroeconomic variables, VECM.

ABSTRACT

This study examines the impact of mining commodity prices and macroeconomic variables on sharia-compliant coal stock returns in Indonesia from 2018 to 2022. Using the Vector Error Correction Model (VECM), the analysis covers short- and long-term effects of coal, oil, natural gas, and gold prices, along with inflation, interest rates, and exchange rates. The sample includes nine sharia-compliant coal companies listed on the Indonesia Stock Exchange. The results show no significant short-term effects, while in the long-term coal, natural gas, gold, inflation, interest rates, and exchange rates significantly influence returns, but oil prices do not. The findings highlight the role of commodity and macroeconomic dynamics in shaping Islamic investment performance.

ABSTRAK

Penelitian ini mengkaji pengaruh harga komoditas pertambangan dan variabel makroekonomi terhadap return saham batubara syariah di Indonesia periode 2018–2022. Dengan metode Vector Error Correction Model (VECM), penelitian ini menganalisis pengaruh jangka pendek dan panjang dari harga batubara, minyak, gas alam, dan emas, serta inflasi, suku bunga, dan nilai tukar. Sampel penelitian terdiri atas sembilan perusahaan batubara syariah yang terdaftar di Bursa Efek Indonesia. Hasil penelitian menunjukkan bahwa dalam jangka pendek tidak terdapat pengaruh signifikan. Namun dalam jangka panjang, harga batubara, gas alam, emas, inflasi, suku bunga, dan nilai tukar berpengaruh signifikan, sedangkan harga minyak tidak. Temuan ini menegaskan pentingnya dinamika komoditas dan kondisi makroekonomi terhadap kinerja investasi syariah

1. Introduction

Capital markets play a pivotal role within a nation's financial system, serving as a conduit for channeling surplus funds from investors to corporations in need of capital (Arifardhani, 2020; Tandelilin, 2017). These funds are allocated to business expansion, operational growth, and working capital (Rustiana & Ramadhani, 2022). For investors, capital markets offer opportunities for capital gains and dividend income, while for companies, they provide essential financing to sustain competitiveness and growth. As such, capital markets are widely regarded as one of the key indicators of economic development (Wardhani, 2006).

In Indonesia, the modern capital market was inaugurated in 1977 with the establishment of the Jakarta Stock Exchange (now the Indonesia Stock Exchange/IDX). The first listed company was PT Semen Cibinong, which has since evolved into PT Solusi Bangun Indonesia Tbk. Since then, the IDX has grown substantially, hosting 833 listed firms to date. A milestone in the development of Islamic capital markets was marked on May 12, 2011, when the IDX introduced the Indonesia Sharia Stock Index (ISSI), comprising all stocks classified as sharia-compliant. As of June 2023, 534 listed equities were screened as sharia-compliant, alongside specialized indices such as the Jakarta Islamic Index

(JII), JII70, IDX-MES BUMN17, and IDX Sharia Growth. These indices provide Muslim and non-Muslim investors with diverse benchmarks for ethical and compliant investment opportunities. To provide a clearer overview, Figure 1 illustrates the performance of the ISSI over the past five years (2018–2023). Despite temporary contractions, particularly during the COVID-19 pandemic in 2020, the index has demonstrated relative resilience and stability, reflecting the growing role of sharia capital markets in Indonesia.

Figure 1. Indonesia Sharia Stock Index (ISSI), 2018–2023

Stock investment, however, inherently entails high risk due to volatility driven by investor trading behavior and external shocks. The energy sector, in particular, exhibits higher systematic risk, reflected in beta values greater than that of the market index (Hasan, 2014). Stock prices are shaped by both firm-specific factors and macroeconomic variables such as inflation, interest rates, and exchange rates (Hasanah, 2017). Government economic policies—including monetary interventions, fiscal regulation, and currency policies—also exert external influence (Alwi, 2003; Zulfikar, 2016; Blanchard, 2006). Moreover, investor sentiment itself has been shown to contribute significantly to stock price fluctuations (Suryanto, 2017).

Coal, crude oil, and natural gas remain central to the global energy supply chain (Suleymanli et al., 2020). Their uneven geographical distribution creates dependencies among exporting and importing nations, reinforcing the strategic significance of these commodities. Indonesia, recognized since 2011 by the International Energy Agency as the world's largest coal exporter, continues to hold a dominant position (Najib, 2016). Accordingly, fluctuations in coal prices carry substantial implications for both macroeconomic stability and capital market performance. For investors, the correlation between energy indicators and stock market dynamics is particularly crucial in informing portfolio diversification and risk management strategies (Guliyeva, 2023).

Within Indonesia, the energy sector accounts for 10.44% of the Jakarta Composite Index (JCI) market capitalization, ranking second only to the financial sector. The sector also generated significant state revenues of IDR 315 trillion in 2022, exceeding the government's target by 139%, largely driven by commodity price surges amid global supply disruptions following the Russia–Ukraine conflict. In recognition of the sector's importance, the IDX has introduced the IDXENERGY index, which aggregates 80 energy related stocks, including those in coal, oil, natural gas, and alternative energy.

Coal mining equities represent a compelling investment vehicle due to their dual appeal of capital gains and dividend yields. Over the past five years, sharia-compliant coal stocks in Indonesia have generated an 81% cumulative return, outperforming the broader JCI (3.4%), the LQ45 index (−13%), and the IDX Finance index (20%). This performance underscores both the volatility and opportunity inherent in the sector, particularly for dividend-oriented investors. Figure 3 compares the returns of sharia-compliant coal stocks with broader market benchmarks, namely the Jakarta Composite Index (IHSG), IDX Finance, and LQ45, over the period 2018–2022.

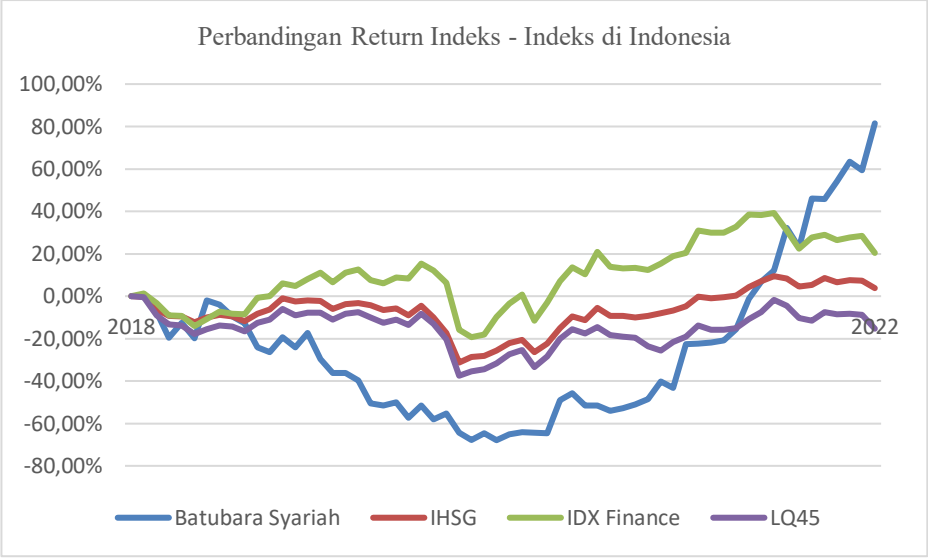

Figure 3. Comparative returns of Sharia coal stocks, IHSG, IDX Finance, and LQ45 indices, 2018–2022

The superior performance of sharia-compliant coal equities relative to broader market indices raises important questions regarding the external drivers of such returns. Prior studies have examined the interplay between commodity prices and mining stock returns. For instance, Hasan and Ratti (2014) demonstrated a significant positive relationship between coal prices and mining stock returns in Australia, though natural gas was not considered. Similarly, Edri et al. (2021) highlighted the influence of crude oil prices on Indonesian mining stocks but omitted coal and gas. These gaps underscore the need for a more comprehensive analysis that simultaneously incorporates coal, oil, and natural gas prices alongside macroeconomic variables.

Given the critical role of coal in Indonesia's economy, the volatility of energy markets, and the growing importance of sharia-compliant investments, this study seeks to examine the extent to which mining commodity prices and macroeconomic variables influence the returns of sharia-compliant coal stocks in Indonesia during 2018–2022. By doing so, it aims to contribute both to academic discourse and to the practical decision-making of investors and policymakers operating within Islamic finance frameworks.

2. Literature Review

2.1. Arbitrage Pricing Theory (APT)

Arbitrage Pricing Theory (APT) is a financial theory developed by Stephen A. Ross in 1976 (Prowanta, 2020). This theory explains the movement of financial asset prices, such as stocks and bonds, by linking risk and return (Tandelilin, 2017). APT is an equilibrium model between return and risk based on the law of one price, which states that two assets with the same characteristics must be sold at the same price (Suteja, 2016). APT assumes that asset prices are influenced by multiple risk factors, known as "pricing factors" or "systematic risk factors." The theory emerged as an alternative to the Capital Asset Pricing Model (CAPM), developed by William Sharpe. The fundamental difference between APT and CAPM lies in the number of systematic risk factors considered: APT incorporates multiple factors, while CAPM considers only a single factor, namely market risk (Tandelilin, 2017).

Systematic risks in APT may include interest rate risk, inflation, economic growth, market conditions, exchange rates, political factors, and sector-specific factors. For example, systematic risk factors in the mining sector include commodity prices, global demand, political risk, operational risk, exchange rate fluctuations, as well as geological and exploration risks. The mathematical formula underlying APT is as follows (Tandelilin, 2017):

$$\mathbf{Ri = E\,(Ri) + \beta1 * F1 + \beta2 * F2 + ... + \beta n * Fn + ei}$$

Where:

Ri = actual return of security i

E(Ri) = expected return of security i

F = deviation of systematic factor F from its expected value

bi = sensitivity of security i to factor i

ei = random error

2.2. Islamic Investment

Investment is the activity of allocating a certain amount of funds at present to obtain future benefits in the form of profits (Prowanta, 2020). For instance, an investor purchases shares today with the expectation of receiving returns in the future through dividends or capital gains (Tandelilin, 2017). Investment may also be defined as the commitment to sacrifice current consumption in order to increase future consumption (Prowanta, 2020). The ultimate objectives of investment include reducing the pressure of inflation and achieving a better standard of living in the future (Suteja, 2016).

From an Islamic perspective, investment is categorized as a muamalah activity, which refers to human interactions and transactions that are fundamentally permissible unless there is evidence that prohibits them (Arifardhani, 2020). Abdalloh (2018) defines Islamic investment as an investment aligned with Sharia principles, involving the allocation of funds into halal assets through methods consistent with Islamic teachings. Such investments must avoid riba (usury), gharar (excessive uncertainty), maysir (gambling), khamr (alcohol), and other activities prohibited by Allah SWT in the Qur'an and the Hadith of the Prophet Muhammad (peace be upon him). This principle is in line with the Islamic legal maxim (qawa'id fiqhiyyah) number 50, which states:

ألأَصْلُ فِي الشُّرُوْطِ فِي الْمُعَامَلاَتِ الْحِلُّ وَالْإِبَاحَةُ إِلاَّ بِدَلِيْلٍ

"The original ruling in stipulations within muamalah is permissibility unless there is evidence to the contrary".

Sharia-compliant investment is regulated by the Indonesian Council of Ulama (MUI) through fatwas issued by the National Sharia Board (DSN). At least 17 DSN-MUI fatwas are directly related to the Islamic capital market. Among them are:

a. DSN-MUI Fatwa No. 40/DSN-MUI/X/2003 concerning the Capital Market and General Guidelines for the Application of Sharia Principles in the Capital Market.
b. 2.DSN-MUI Fatwa No. 80/DSN-MUI/III/2011 on the Application of Sharia Principles in Equity Securities Trading Mechanisms on the Regular Market of the Stock Exchange.
c. 3.DSN-MUI Fatwa No. 124/DSN-MUI/XI/2018 on the Application of Sharia Principles in the Implementation of Custody Services and Transaction Settlement of Securities and the Management of Integrated Investment Infrastructure.
d. 4.DSN-MUI Fatwa No. 138/DSN-MUI/V/2020 on the Application of Sharia Principles in Clearing and Guaranteeing Settlement of Exchange Transactions on Equity Securities.
e. 5.DSN-MUI Fatwa No. 135/DSN-MUI/V/2020 on Sharia-compliant Stocks.

The concept of investment is also illustrated in the Qur'an, specifically in the story of Prophet Yusuf (Joseph, peace be upon him) when he advised the king to store a portion of the harvest for future needs. This is reflected in Surah Yusuf (12:47):

قَالَ تَزْرَعُوْنَ سَبْعَ سِنِيْنَ دَاَبًاۚ فَمَا حَصَدْتُّمْ فَذَرُوْهُ فِيْ سُنْۢبُلِهٖٓ اِلَّا قَلِيْلًا مِّمَّا تَأْكُلُوْنَ

"Yusuf said, 'You will plant for seven consecutive years as usual, and what you harvest leave in its spikes, except for a little which you eat."

2.3. Islamic Capital Market

The capital market serves as a platform where sellers and buyers of securities—such as equities and bonds—interact to facilitate capital flows (Suratman, 2020). Zulfikar (2016) defines the capital market as a venue for long-term financial instruments to be traded, whether in the form of debt or equity, and issued by the government, public authorities, or private corporations. Similarly, Tandelilin (2017) emphasizes that the capital market functions as a bridge between entities requiring funds (demand side) and those with surplus capital

(supply side) through the trading of securities. The Islamic Capital Market (ICM), according to Abdalloh (2018), encompasses all activities within the capital market that comply with the principles of Islamic law (sharia). It ensures that investment activities are free from elements prohibited in Islam, including riba (interest), gharar (excessive uncertainty), maysir (gambling), bribery, and other unlawful activities. The ICM thus integrates both financial intermediation and religious compliance, serving as a vital pillar of Islamic finance in Indonesia and beyond.

2.4. Sharia Stocks

Equities represent ownership claims in a corporation and are often referred to as stocks or shares in capital market transactions (Tandelilin, 2017; Prowanta, 2020). Stockholders are entitled to dividends distributed by the firm when profits are realized.

Sharia-compliant stocks are those that adhere to Islamic investment principles (Abdalloh, 2018). Companies classified as sharia-compliant must not engage in prohibited activities such as gambling, usury, or speculative transactions. Furthermore, financial ratios play a crucial role in the classification: the ratio of interest-bearing debt to total assets must not exceed 45%, and revenues derived from non-halal activities must not exceed 10% of total income. In Indonesia, the regulatory foundation for sharia-compliant stocks is established under the Otoritas Jasa Keuangan (OJK) Regulation No. 17/POJK.04/2015 concerning the Issuance and Requirements of Sharia Securities in the form of Shares by Sharia Issuers or Public Companies. This regulatory framework provides clear guidelines for issuers and ensures that investors operate within a transparent and standardized Islamic financial system.

2.5. Stock Indices

A stock index is a statistical indicator reflecting the performance of selected groups of equities within the capital market. Indices are calculated based on a basket of stocks over a specified period (Tandelilin, 2017; Jones, 2019). As Bodie et al. (2019) highlight, indices serve as benchmarks that enable investors and analysts to monitor market trends, evaluate investment portfolios, and identify potential risks and opportunities. In Indonesia, the Jakarta Composite Index (JCI/IHSG) acts as the principal indicator representing the overall market performance. Alongside this, the Indeks Saham Syariah Indonesia (ISSI) was introduced by the Indonesia Stock Exchange (IDX) as a comprehensive benchmark of all sharia-compliant stocks listed in the market. The ISSI thus not only mirrors the dynamics of Islamic equity investments but also reinforces the role of sharia finance in Indonesia's capital markets.

2.6. Inflation

Interest rate is the cost of borrowing money or the return from lending, expressed as a percentage of the principal (Karl and Fair, 2001). In Indonesia, the central reference is the Bank Indonesia (BI) rate, which serves as a monetary policy instrument to control inflation, stabilize the rupiah, and guide capital flows. By adjusting the BI rate, policymakers influence borrowing costs, household consumption, and corporate investment decisions. In theory, higher interest rates increase the discount rate applied to future cash flows, which generally leads to lower stock valuations. Conversely, lower rates tend to stimulate investment and boost stock market performance. Empirical studies by Dewi et al. (2018), Elfiswandi et al. (2020), and Ahfazhi et al. (2019) confirmed that changes in the BI rate significantly affect the performance of Indonesian mining and energy-related stocks, consistent with global findings on the transmission of monetary policy to capital markets.

2.7. Interest Rate

Interest rates represent the cost of borrowing capital or the return on savings, expressed as a percentage of the principal (Karl & Fair, 2001). In Indonesia, the Bank Indonesia (BI) rate functions as the central policy tool to manage inflation, stabilize the rupiah, and guide capital flows. By raising or lowering the BI rate, policymakers influence borrowing costs, consumer spending, and investment activity. Interest rates have been widely studied in relation to stock market performance. Empirical evidence suggests that higher interest rates typically depress equity valuations by increasing discount rates and reducing future cash flows. Dewi et al. (2018), Elfiswandi et al. (2020), and Ahfazhi et al. (2019) confirmed that fluctuations in the BI rate have a significant impact on Indonesian mining and energy-related stocks, aligning with global findings on monetary policy transmission.

2.8. Exchange Rate

The exchange rate defines the price of one nation's currency relative to another, acting as a critical

determinant in international trade and capital markets (Mankiw, 2007). Abimanyu (2004) explains that the equilibrium exchange rate is determined by supply and demand dynamics in foreign currency markets.

For this study, the Indonesian rupiah is benchmarked against the U.S. dollar, which dominates international commodity trading, including coal transactions. Exchange rate volatility directly affects export competitiveness and profit margins for resource companies. Previous research such as Asaad (2021), Ahfazhi et al. (2019), and Dewi et al. (2018) found strong evidence that exchange rate fluctuations significantly influence equity returns in Indonesia's mining sector, both through trade balance adjustments and investor sentiment.

2.9. Commodity Prices

Coal is a hydrocarbon-based solid fuel and organic matter compressed under long-term pressure (Prijono, 1992). It is widely used as an alternative energy source alongside oil and natural gas. In Indonesia, coal reference prices are regulated by the Ministry of Energy and Mineral Resources through the Harga Batubara Acuan (HBA), which is determined based on four international coal price indices: the Indonesia Coal Index, Platts Index, Newcastle Export Index, and Newcastle Global Coal Index (Saputra, 2023). Several studies have investigated the effect of coal prices on coal stock performance, including Hasan & Ratti (2014), Adi (2022), and Wiputra & Winstinindah (2012).

Crude oil, on the other hand, is a fossil fuel formed from ancient marine organisms over millions of years. According to Koesoemadinata (1987), it is extracted through drilling and refined into usable energy. Numerous studies have examined the relationship between oil prices and stock markets, especially in developed economies. Hasan & Ratti (2014) analyzed the effect of oil on coal company returns, while Endri et al. (2021) and Ningsih & Muthmainnah (2019) confirmed that oil prices have a significant positive impact on stock performance. Other relevant contributions include Guliyeva (2023), Suleymanli et al. (2020), and Akbulaev et al. (2022).

Natural gas is also a major global energy source (Suleymanli, 2020). It primarily consists of methane (CH4), with smaller proportions of ethane (C2H6), propane (C3H8), and butane (C4H10). Previous literature has explored its impact on stock markets. For instance, Suleymanli et al. (2020) examined gas price effects on the Ukrainian stock index, while Akbulaev et al. (2022) studied its influence across Russia, Turkey, Brazil, and India. Guliyeva (2023) extended this research to global stock indices, including the Moscow Exchange (RTSI), Borsa Istanbul (XU100), Bovespa (BVSP), Nifty 50 (NSEI), S&P 500, FTSE 100, and Nikkei 225.

Gold, as a precious and durable metal, has long been recognized as a store of value (Pudya, 2019). Its durability and scarcity make it highly valued, often used for jewelry and investment (Gustina, 2013). Gold is particularly attractive because it can be easily liquidated and historically provides protection against inflation (Suharto, 2013). Several studies have investigated the causal relationship between gold and stock markets, including Avazkhodjaev et al. (2022), Al-Ameer et al. (2018), and Asaad (2021). Together, these findings highlight that coal, oil, natural gas, and gold represent critical commodity factors influencing stock performance, particularly within resource-based sectors such as coal mining.

2.10. Previous Studies

Research on the impact of coal prices on coal mining stock performance has been widely conducted by previous scholars. The first notable study is by Hasan and Ratti (2015), which found that coal prices exert a significant positive effect on coal sector stock returns. Oil prices were also found to have a significant positive impact, whereas currency depreciation had a negative effect on coal company returns. Interestingly, the influence of coal and oil prices was consistent across both developed and emerging markets. The study employed a multi-factor Arbitrage Pricing Theory (APT) panel data model.

A more recent contribution by Adi (2022) utilized the Structural Equation Model (SEM) with GeSCA software to test the relationships and causal impacts among variables. The findings revealed that coal sales prices significantly and positively affected coal sales revenue, which in turn significantly influenced coal stock prices. Moreover, crude oil prices exhibited a positive correlation with gas prices, and vice versa, though the magnitude of oil's influence on gas prices was stronger than the reverse effect. Similarly, Hasan and Ratti (2014) examined the effects of coal, oil, exchange rates, and interest rates on coal mining stock returns listed on the Australian stock exchange. Their findings confirmed that higher revenues driven by coal price increases had a significant positive impact on stock returns. Oil prices were also statistically significant and positively related to returns, while the Australian dollar–U.S. dollar exchange rate had a positive effect. Collectively, interest rates, exchange rates, and coal prices were statistically significant determinants of coal stock returns. Specifically, a 1% increase in coal prices raised returns by 0.15%–0.17%, while a 1% increase in oil prices elevated returns by 0.06%–0.08%. This study also employed a multi-factor APT panel model.

Endri et al. (2021) investigated determinants of stock returns in Indonesian mining companies listed on

the IDX between 2014–2018 using panel data with a Random Effects Regression model via EViews. They found that oil prices had a significant positive effect on returns, while the rupiah exchange rate negatively and significantly influenced returns.

In another study, Lubis (2019) applied multiple linear regression analysis using SPSS 23, focusing on the impact of Bank Indonesia interest rates and the rupiah exchange rate on coal mining stock prices during 2014–2017. The findings indicated that the BI rate had a significant negative impact, as did the rupiah exchange rate.

Earlier, Wiputra and Winstinindah (2012) revealed that returns of Indonesian coal mining stocks were not significantly influenced by international coal prices. Instead, the Jakarta Composite Index (JCI) had a significant positive impact, suggesting that domestic market dynamics play a larger role. Using multiple linear regression, they confirmed that while coal commodity prices were not significant, the combined effect of coal prices and JCI significantly influenced coal mining stock returns.

Ningsih and Muthmainnah (2019) further contributed by analyzing inflation, exchange rates, SBI interest rates, and global oil prices on the mining sector stock index. Their study found that inflation had no significant effect, while exchange rates had a significant positive influence. SBI interest rates were insignificant, whereas world oil prices were the most influential variable, significantly driving mining stock index performance.

Similarly, Dewi et al. (2018) investigated oil and gas mining sub-sector companies and demonstrated that exchange rates, interest rates, and unemployment rates jointly influenced stock prices. In particular, the exchange rate had a significant negative effect, while interest rates had a significant positive effect. They applied multiple regression analysis in their study.

Finally, Hidayati and Sukmaningrum (2019) employed a Vector Error Correction Model (VECM) using STATA to analyze the Jakarta Islamic Index (JII). Their findings showed that in the short run, inflation, exchange rates, SBIS, industrial production index, and oil prices had no significant effect. However, in the long run, inflation, exchange rates, SBIS, and industrial production index all significantly influenced JII, while oil prices remained insignificant.

In a related study, Fitriyanti and Herlambang (2016) found that world oil prices had no significant partial effect on JII, while exchange rates significantly influenced it. Bank Indonesia interest rates were insignificant. Nevertheless, when considered simultaneously, all variables significantly affected JII. The study utilized multiple linear regression with SPSS 22.

3. Methodology

3.1. Research Method

This study investigates the performance of sharia-compliant coal sector stocks listed on the Indonesia Stock Exchange (IDX). A quantitative approach was employed, as the data utilized are nominal in nature, encompassing stock prices, commodity prices, and inflation rates. Quantitative research involves systematic procedures of data collection and analysis, focusing on the measurement of variables that can be expressed numerically. The primary objective of quantitative research is to describe and explain relationships among variables, test hypotheses, and generate generalizable conclusions based on empirical evidence (Sidik Sunaryo). To achieve these objectives, this study applies the Vector Autoregression (VAR) and Vector Error Correction Model (VECM) methodology. Data processing and hypothesis testing were conducted using the EViews 9 software package, ensuring robust econometric analysis and reliable results.

The data employed are monthly time series spanning the period January 2018 to December 2022, obtained from reputable sources including Investing.com, RTI Bisnis, Statistics Indonesia (BPS), Bank Indonesia (BI), the Financial Services Authority (OJK), Yahoo Finance, the Indonesia Stock Exchange (IDX), the World Gold Council, and the U.S. Energy Information Administration (EIA). The population of this study comprises all coal mining companies listed on the IDX, totaling 19 firms. From this population, 9 companies were selected as the research sample through a purposive (judgmental) sampling technique. Purposive sampling is defined as the deliberate selection of samples based on specific characteristics relevant to the study's objectives (Pridiana & Muis, 2009; Sugiyono, 2007). In this research, the criteria included only coal companies categorized as sharia-compliant and firms that had not been subject to trading suspension within the last five years. After applying these screening criteria, the following nine companies were selected as the final research sample:

Stock Code	Company Name	Market Capitalization	Assets
ADRO	Adaro Energy Indonesia Tbk.	IDR 81 Triliun	IDR 147 Triliun
BYAN	Bayan Resources Tbk.	IDR 630 Triliun	IDR 52 Triliun

PTBA	Bukit Asam Tbk.	IDR 37 Triliun	IDR 46 Triliun
ITMG	Indo Tambangraya Megah Tbk.	IDR 29 Triliun	IDR 42 Triliun
HRUM	Harum Energy Tbk.	IDR 17 Triliun	IDR 20 Triliun
BSSR	Baramulti Suksessarana Tbk.	IDR 10 Triliun	IDR 7 Triliun
MBAP	Mitrabara Adiperdana Tbk.	IDR 6 Triliun	IDR 4 Triliun
KKGI	Resource Alam Indonesia Tbk.	IDR 2 Triliun	IDR 3 Triliun
SMMT	Golden Eagle Energy Tbk.	IDR 2 Triliun	IDR 1 Triliun

Table 1. Sharia-Compliant Coal Companies Listed on IDX (2018–2022)

The analysis was conducted through the following econometric stages:

a. Stationarity Test
b. Optimal Lag Length Selection
c. Stability Test
d. Cointegration Test
e. Granger Causality Test
f. VECM Estimation
g. Impulse Response Function (IRF)
h. Variance Decomposition Analysis

4. Results and Discussion

4.1. Results

1) Stationarity Test

The collected data were initially subjected to a stationarity test as the first stage of analysis. The results of the unit root test at the level are presented below:

Group unit root test: Summary
Series: BATUBARA, MINYAK, GAS, EMAS, INFLASI, RATE, EXCHANGE, RETURN
Date: 06/28/23 Time: 06:54
Sample: 2018M01 2022M12
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 3
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-0.55728	0.2887	8	468
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.01443	0.0013	8	468
ADF - Fisher Chi-square	58.9291	0.0000	8	468
PP - Fisher Chi-square	54.3771	0.0000	8	472

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Table 1. Stationarity Test Results at Level

The table above summarizes the results of the stationarity test at the level stage. Based on these findings, it can be observed that the variables failed to reject the null hypothesis of non-stationarity under the Levin, Lin &

Chu test, as the p-value exceeded the 5% significance threshold. Consequently, the data were found to be non-stationary at level and required transformation into their first differences to achieve stationarity. The subsequent section presents the results of the unit root test at the first-difference level:

Group unit root test: Summary
Series: BATUBARA, MINYAK, GAS, EMAS, INFLASI, RATE, EXCHANGE, RETURN
Date: 06/28/23 Time: 06:58
Sample: 2018M01 2022M12
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 4
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-14.8757	0.0000	8	459
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-16.9094	0.0000	8	459
ADF - Fisher Chi-square	239.761	0.0000	8	459
PP - Fisher Chi-square	255.963	0.0000	8	464

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Table 2. Stationarity Test Results at the First Difference Level

After conducting the stationarity test at the first difference level, it was found that the p-value is smaller than the 5% significance level (0.05), indicating that the data are stationary at the first difference level.

2) Optimal Lag Length Test

This test aims to determine the lag length that provides the most accurate and efficient estimation of the relationships among variables in the VAR/VECM model. Several methods are commonly used in selecting the optimal lag length, including information criteria such as the Akaike Information Criterion (AIC), the Bayesian Information Criterion (BIC), and statistical tests such as the Lagrange Multiplier (LM) test. The results of the lag length selection conducted by the author are presented in Table 3:

VAR Lag Order Selection Criteria
Endogenous variables: D(BATUBARA) D(MINYAK) D(GAS) D(EMAS) D(INFLASI) D(R...
Exogenous variables: C
Date: 06/28/23 Time: 07:09
Sample: 2018M01 2022M12
Included observations: 56

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1979.942	NA	9.42e+20	70.99792	71.28726*	71.11010*
1	-1902.665	129.7146*	6.00e+20*	70.52375*	73.12778	71.53333
2	-1853.405	68.61175	1.16e+21	71.05019	75.96890	72.95716
3	-1793.238	66.61408	1.96e+21	71.18706	78.42046	73.99144

Table 3. Optimal Lag Length Test Results

Based on the results presented in Table 3, it can be concluded that lag 1 is selected as the most optimal lag length in this study. Therefore, lag 1 will be used in the subsequent VAR/VECM analysis.

3) Stability Test

The stability test aims to examine the long-term stability of a VAR or VECM model, ensuring that the model used can generate consistent estimates over time. The results of the stability test conducted by the author are presented in Table 4:

Roots of Characteristic Polynomial
Endogenous variables: D(BATUBARA) D(MINYAK) D(GAS) D(EMAS) D(INFLASI) D(RATE) D(EXCHANGE) D(RETURN)
Exogenous variables: C
Lag specification: 1 1
Date: 06/28/23 Time: 07:10

Root	Modulus
0.666721	0.666721
-0.487106 - 0.065379i	0.491474
-0.487106 + 0.065379i	0.491474
-0.179476 - 0.257215i	0.313642
-0.179476 + 0.257215i	0.313642
0.272851 - 0.069905i	0.281663
0.272851 + 0.069905i	0.281663
-0.124121	0.124121

No root lies outside the unit circle.
VAR satisfies the stability condition.

Table 4. Stability Test Results

Referring to Table 4, it can be observed that all modulus values are less than 1, indicating that the data used in the VAR model are already stable

.

4) Cointegration Test

This test aims to examine whether a stable long-term relationship exists among the variables in this study. If no cointegration is found among the variables, the chosen model is a VAR model; conversely, if cointegration exists among the variables, the appropriate model is the VECM. The results of the cointegration test in this study are presented in the following table:

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.742937	292.0434	159.5297	0.0000
At most 1 *	0.674133	214.6125	125.6154	0.0000
At most 2 *	0.568739	150.7004	95.75366	0.0000
At most 3 *	0.428342	102.7609	69.81889	0.0000
At most 4 *	0.381567	70.88569	47.85613	0.0001
At most 5 *	0.338300	43.49341	29.79707	0.0008
At most 6 *	0.182685	19.95564	15.49471	0.0099
At most 7 *	0.137886	8.456976	3.841465	0.0036

Trace test indicates 8 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Table 5 Cointegration Test Results

Based on the results of the cointegration test shown in the table above, it is evident that all eight variables exhibit cointegration, as indicated by the probability values, all of which are below 0.05 (5%) in accordance with the significance level of this study. This implies that the VECM model is more suitable than the VAR model for this research due to the presence of cointegration among the variables.

5) Granger Causality Test

The Granger causality test aims to determine whether there exists a cause–effect relationship between two or more variables by identifying whether changes in one variable significantly influence changes in another variable. Table 6 presents the results of the Granger causality test:

To / From	Return	Coal	Oil	Gas	Gold	Inflation	BI Rate	Exchange
Return	-	0.0888	0.6428	0.9298	0.8742	0.3242	0.3504	0.5820
Coal	0.0839	-	0.5555	**0.0030***	0.6140	**0.0002***	1.E-05	**0.0156***
Oil	0.2742	**0.0004***	-	**0.0023***	0.1431	4.E-06	**0.0003***	0.0668
Gas	**0.0240***	**0.0003***	0.6560	-	0.2848	9.E-05	3.E-05	0.0755
Gold	**0.0028***	**0.0357***	0.1198	0.0807	-	0.1496	**0.0042***	0.6153
Inflation	0.4070	**0.0234***	0.1629	0.5347	0.8985	-	2.E-06	**0.0375***
BI Rate	**0.0029***	**0.0085***	0.0541	**0.0210***	0.3015	0.0683	-	0.6678
Exchange	0.4324	0.1806	0.5766	0.4682	0.0758	0.5978	**0.0110***	-

Table 6. Results of Granger Causality Test

Note: The bold values with an asterisk (*) indicate statistically significant causal relationships.

If the p-value or probability is less than the significance level of 0.05, the variable is considered to have a significant causal effect. Based on the results in Table 6, several important findings can be highlighted. First, the coal price does not have a significant effect on stock returns, and conversely, returns do not affect coal prices. Similarly, oil prices are found to have no significant causal effect on returns, and vice versa. However, natural gas prices exhibit a significant causal effect on returns, although returns do not significantly influence natural gas prices. This indicates the presence of a unidirectional causal relationship from natural gas prices to returns. A similar unidirectional causality is observed in the case of gold prices, which significantly affect returns, whereas returns do not affect gold prices. In contrast, inflation is found to have no significant causal relationship with returns in either direction. Meanwhile, the interest rate demonstrates a significant causal effect on returns, although returns do not significantly influence the interest rate. This suggests a one-way causality from interest rates to returns. Finally, the exchange rate does not show any significant causal effect on returns, and vice versa. Overall, the Granger causality test results suggest that among the tested macroeconomic and commodity price variables, natural gas, gold, and interest rates play a significant role in influencing stock returns, albeit in a unidirectional manner.

6) VECM Estimation

The Vector Error Correction Model (VECM) test aims to examine both the short-term and long-term relationships among the variables investigated in this study, namely commodity prices (coal, oil, natural gas, and gold) and macroeconomic indicators (inflation, interest rate, and exchange rate). The results are presented separately for short-run and long-run estimations:

Variable	**Coefficient**	**t-Statistic**
CointEq1	-0.035033	-0.24256
C	0.746621	0.33807
D(BATUBARA(-1))	-0.042529	-0.25163

D(BATUBARA(-2))	-0.167100	-1.24682
D(MINYAK(-1))	-0.221416	-0.55515
D(MINYAK(-2))	-0.008232	-0.01841
D(GAS(-1))	-0.098988	-0.18050
D(GAS(-2))	0.148534	0.39777
D(EMAS(-1))	-0.080048	-0.20758
D(EMAS(-2))	0.435011	1.07240
D(INFLASI(-1))	0.006847	0.10104
D(INFLASI(-2))	0.021966	0.28403
D(RATE(-1))	-0.011235	-0.07667
D(RATE(-2))	0.083830	0.56010
D(EXCHANGE(-1))	-0.005157	-0.89710
D(EXCHANGE(-2))	0.005741	0.95726

Table 7. Short-Run Estimation of VECM Model

Variable	**Coefficient**	**t-Statistic**
BATUBARA(-1)	1.046395	**6.86494***
MINYAK(-1)	0.577509	1.78957
GAS(-1)	-5.009080	**-8.82150***
EMAS(-1)	0.683877	**3.43173***
INFLASI(-1)	-0.162175	**-4.29209***
RATE(-1)	0.175142	**3.96134***
EXCHANGE(-1)	-0.023904	**-3.46188***

Table 8. Long-Run Estimation of VECM Model

R-squared	**Adj. R-squared**
0.550156	0.354071

Table 9. R-squared of VECM Estimation

Table 7 presents the results of the short-run estimation of the VECM model. A variable is considered statistically significant if the t-statistic exceeds the critical t-table value of 2.0066468, calculated at a 5% significance level with 60 observations and eight research variables. Based on the results, none of the variables—coal, oil, natural gas, gold, inflation, interest rate, and exchange rate—show a significant effect on Islamic coal company stock returns in the short run during the 2018–2022 period.

Table 8 reports the results of the long-run estimation of the VECM model. In this case, several variables exhibit significant effects on stock returns. Coal prices demonstrate a significant long-term influence on Islamic coal company stock returns during the period of 2018–2022. Likewise, natural gas, gold, inflation, interest rate, and exchange rate are also found to significantly affect returns in the long run. The only exception is oil prices, which do not show a statistically significant effect on the dependent variable.

Table 9 presents the R-squared and adjusted R-squared values of the model. R-squared is a statistical measure that indicates the proportion of variance in the dependent variable explained by the independent variables. The adjusted R-squared value of 0.35 suggests that approximately 35% of the variation in Islamic coal company stock returns can be explained by the independent variables (coal, oil, natural gas, gold, inflation, interest rate, and exchange rate), while the remaining 65% is explained by other factors not included in this study. A higher

adjusted R-squared value generally reflects a better model fit and indicates that the selected variables are appropriate for explaining the dependent variable.

7) Impulse Response Function (IRF)

The Impulse Response Function (IRF) is a method used to determine the response of endogenous variables to a specific shock or disturbance (Firdaus, 2020). This approach is applied to analyze the short-term and long-term impacts of changes in one variable on other variables within the system. The IRF illustrates how a variable responds to shocks in other variables over time, thereby providing insights into the causal dynamics captured in the VECM model. The IRF is essential for identifying the extent to which shocks in one variable influence the behavior of others:

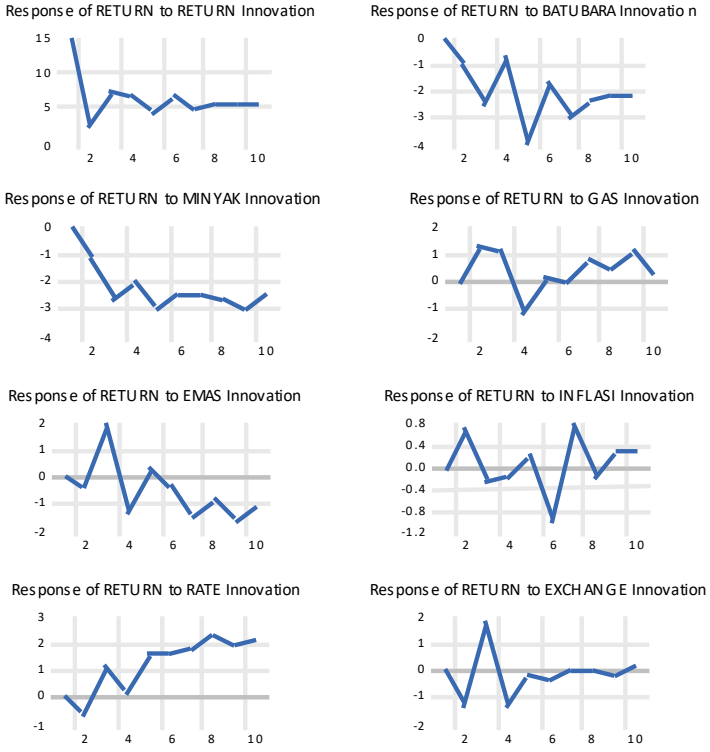

Table 10. Results of Impulse Response Function (IRF) Test

Based on the IRF analysis presented in Table 10, several conclusions can be drawn. First, coal prices generate the longest-lasting shocks to returns, with the effects persisting for up to ten periods. Beyond this point, the impact diminishes, as indicated by the stabilization of fluctuations in the graph. Each period in the IRF graph represents a monthly interval, implying that coal prices influence returns for approximately ten months before stabilizing. The x-axis of the IRF graph denotes the time horizon (periods) following the impulse, while the impulse itself represents a sudden change or shock in one of the variables at a specific point in time. Shocks originating from changes in oil prices stabilize more quickly, beginning around the sixth period. In contrast, natural gas prices do not produce significant impulse effects on returns throughout the observed horizon. Gold prices, however, exhibit notable shocks that persist until the eighth period, after which their effects begin to stabilize. Inflation does not generate significant shocks, as the magnitude of fluctuations remains relatively small and consistently below a value of 1. Finally, both interest rates and exchange rates display shock effects up to the sixth period, after which the impulse responses gradually stabilize over time.

Overall, the IRF analysis highlights that among the commodity price and macroeconomic variables, coal

and gold have the most persistent effects on stock returns, whereas oil, interest rate, and exchange rate exhibit moderate short-lived shocks. Inflation and natural gas, on the other hand, demonstrate minimal influence in terms of impulse responses.

8) Variance Decomposition

Variance Decomposition is employed to separate and identify the relative contribution of different factors in explaining the variation of a particular variable. This method decomposes the total variance of a variable into portions attributable to each explanatory factor. In doing so, Variance Decomposition provides insights into the extent to which each factor contributes to the variability of the dependent variable, thereby highlighting the most influential determinants.

Variance Decomposition of RETURN:

Period	S.E.	RETURN	BATUBARA	MINYAK	GAS	EMAS	INFLASI	RATE	EXCHANGE
1	14.54292	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	15.03681	97.27521	0.436136	0.555796	0.637806	0.038992	0.202939	0.197158	0.655965
3	17.34866	90.45738	2.432716	2.646983	0.911919	1.208425	0.185280	0.598531	1.558764
4	18.83694	89.29264	2.240461	3.384999	1.096900	1.536132	0.169845	0.515125	1.763895
5	20.09021	84.00678	5.693756	5.184225	0.967564	1.369756	0.161741	1.056200	1.559981
6	21.50946	83.27324	5.575876	5.824252	0.845401	1.262594	0.352166	1.492412	1.374056
7	22.59076	80.71871	6.691476	6.430825	0.910706	1.557200	0.429478	2.015610	1.245996
8	23.74533	79.30962	7.058920	7.041988	0.861209	1.503913	0.397132	2.699300	1.127913
9	24.84612	77.74708	7.206786	7.777538	0.979573	1.774334	0.376106	3.103407	1.035179
10	25.83923	76.99403	7.374428	8.018576	0.911672	1.804212	0.359845	3.579037	0.958199

Table 11. Results of Variance Decomposition

Based on the Variance Decomposition analysis presented in Table 11, the variable with the greatest influence on Islamic coal company stock returns (Y) is the return variable itself, both in the short run and in the long run. This indicates that the variation in returns is predominantly explained by its own past fluctuations. Coal prices (X1) exert some influence on stock returns, but the effect is not statistically significant, with the maximum contribution reaching only 7.3%. Similarly, oil prices (X2) also contribute to the variation in returns, though not significantly, with the highest contribution being approximately 8%. The remaining variables—namely natural gas prices, gold prices, inflation, interest rate, and exchange rate—do not demonstrate significant explanatory power for Islamic coal company stock returns, either in the short term or in the long term. This suggests that external shocks originating from these factors have limited ability to explain the variability of stock returns within the period under study. Overall, the Variance Decomposition results reinforce the finding that the dynamics of Islamic coal company stock returns are largely self-driven, with only minor contributions from commodity prices and macroeconomic indicators.

4.2. Discussion

1) The Effect of Coal Prices on Sharia-Compliant Coal Stock Returns

The VECM results indicate that in the short run, coal prices (X1) do not have a significant effect on Sharia-Compliant Coal Stock Returns (Y). At lag 1, the coefficient is -0.04 with a t-statistic of -0.25, while at lag 2, the coefficient is -0.17 with a t-statistic of -1.25. Both values are below the critical threshold of 2.01, suggesting no significant relationship. However, in the long run, coal prices exert a positive and significant influence, with a coefficient of 1.05 and a t-statistic of 6.86 (> 2.01). This implies that a 1% increase in coal prices will increase Sharia-Compliant Coal Stock Returns by 1.05%. This result aligns with Hasan and Ratti (2014), who documented a significant positive effect of coal prices on stock prices.

From an economic perspective, this outcome can be explained through two channels. First, in terms of economic expansion, coal price increases reflect growing energy demand, as observed during the COVID-19 pandemic when strong demand from China triggered a surge in coal prices (Kompas.com). Second, from an industry perspective, higher coal prices improve company profit margins, which in turn enhance stock returns in the long run. Conversely, the short-run insignificance may be attributable to the Market Efficiency Hypothesis (Fama, 1970), suggesting that the Indonesian capital market operates at a weak-form efficiency level, where responses to fundamental information are relatively delayed.

2) *The Effect of Oil Prices on Sharia-Compliant Coal Stock Returns*

In the short run, oil prices (X2) do not significantly affect Sharia-Compliant Coal Stock Returns. At lag 1,

the coefficient is -0.22 with a t-statistic of -0.56, while at lag 2, the coefficient is -0.01 with a t-statistic of -0.02 (< 2.01).

Similarly, in the long run, oil prices remain insignificant, with a coefficient of 0.58 and a t-statistic of 1.79 (< 2.01). This finding contradicts Endri et al. (2021), who reported a significant positive influence of oil prices on stock prices.

This insignificance can be explained by the distinct functional roles of energy commodities. Coal is primarily used for electricity generation and industrial purposes, whereas oil is predominantly consumed for transportation and petrochemical production. Consequently, fluctuations in oil prices do not directly impact coal consumption or coal-related stock returns.

3) The Effect of Natural Gas Prices on Sharia-Compliant Coal Stock Returns

The short-run results indicate that natural gas prices (X3) have no significant effect on Sharia-Compliant Coal Stock Returns. At lag 1, the coefficient is -0.10 with a t-statistic of -0.18, while at lag 2, the coefficient is 0.15 with a t-statistic of 0.40 (< 2.01). In contrast, the long-run analysis reveals a significant negative effect, with a coefficient of -5.01 and a t-statistic of -8.82 (> 2.01). This suggests that a 1% increase in natural gas prices reduces Sharia-Compliant Coal Stock Returns by 5%. This result diverges from Suleymanli et al. (2020) and Guliyeva (2023), who found a positive impact of natural gas prices on stock performance.

This negative relationship can be explained by energy substitution effects. As natural gas becomes relatively more affordable and environmentally friendly, consumers and industries may substitute coal with gas, thereby reducing coal demand and negatively affecting coal stock returns. Additionally, environmental policies promoting cleaner energy use further strengthen this long-run negative relationship.

4) The Effect of Gold Prices on Sharia-Compliant Coal Stock Returns

In the short run, gold prices (X4) do not significantly influence Sharia-Compliant Coal Stock Returns. At lag 1, the coefficient is -0.08 with a t-statistic of -0.21, and at lag 2, the coefficient is 0.44 with a t-statistic of 1.07 (< 2.01). However, in the long run, gold prices exert a positive and significant impact, with a coefficient of 0.68 and a t-statistic of 3.43 (> 2.01). This implies that a 1% increase in gold prices raises Sharia-Compliant Coal Stock Returns by 0.68%. This finding contradicts Asaad (2021), who reported no significant relationship between gold and stock prices.

This result can be interpreted through the hedging theory. Gold is often regarded as a safe-haven asset and a hedge against economic uncertainty and inflation. Over the long run, increases in gold prices may coincide with higher coal prices, particularly during global crises such as the COVID-19 pandemic, leading to a positive correlation with coal stock returns.

5) The Effect of Inflation on Sharia-Compliant Coal Stock Returns

In the short run, inflation (X5) does not significantly affect Sharia-Compliant Coal Stock Returns. At lag 1, the coefficient is 0.01 with a t-statistic of 0.10, and at lag 2, the coefficient is 0.02 with a t-statistic of 0.28 (< 2.01). Conversely, in the long run, inflation exhibits a significant negative effect, with a coefficient of -0.16 and a t-statistic of -4.29 (> 2.01). This implies that a 1% increase in inflation reduces Sharia-Compliant Coal Stock Returns by 0.16%. This finding is consistent with Elfiswandi et al. (2020), who observed a negative impact of inflation on stock returns in Indonesia's mining and energy sectors.

This negative relationship can be explained by reduced purchasing power, rising production costs, and declining profitability of coal companies under high inflation. In the short run, the market may not adjust immediately to inflationary shocks, delaying their reflection in stock returns.

6) The Effect of Interest Rates on Sharia-Compliant Coal Stock Returns

The VECM results show that interest rates (X6) do not significantly affect Sharia-Compliant Coal Stock Returns in the short run. At lag 1, the coefficient is -0.01 with a t-statistic of -0.08, while at lag 2, the coefficient is 0.08 with a t-statistic of 0.56 (< 2.01). In the long run, however, interest rates have a significant positive effect, with a coefficient of 0.18 and a t-statistic of 3.96 (> 2.01). This indicates that a 1% increase in interest rates raises Sharia-Compliant Coal Stock Returns by 0.18%. This finding aligns with Dewi et al. (2018) and Elfiswandi et al. (2020), though it contrasts with Ahfazhi et al. (2019) and Ningsih (2019).

Economically, lower interest rates facilitate cheaper financing, enabling coal companies to expand operations and increase profitability, which attracts investors and improves stock returns in the long run. The

short-run insignificance may stem from high market volatility and investor reliance on other sentiments beyond monetary policy.

7) The Effect of the Exchange Rate on Sharia-Compliant Coal Stock Returns

In the short run, the rupiah exchange rate (X7) does not significantly affect Sharia-Compliant Coal Stock Returns. At lag 1, the coefficient is -0.01 with a t-statistic of -0.90, while at lag 2, the coefficient is 0.01 with a t-statistic of 0.96 (< 2.01). In the long run, however, the exchange rate exerts a significant negative impact, with a coefficient of -0.02 and a t-statistic of -3.46 (> 2.01). This means that a 1% depreciation of the rupiah reduces Sharia-Compliant Coal Stock Returns by 0.02%. This result is consistent with Ahfazhi et al. (2019).

The negative effect can be attributed to increased import costs and foreign debt obligations denominated in U.S. dollars. While exporters may benefit from a weaker rupiah, the adverse impact of higher foreign debt burdens often outweighs these advantages, thereby reducing profitability and stock returns. In the short run, daily fluctuations in the exchange rate are often influenced by transient factors such as economic news or monetary policy announcements, which may not directly affect the coal sector.

5. Conclusion

This study aims to examine the influence of mining commodity prices and macroeconomic variables on Sharia-Compliant Coal Stock Returns. The independent variables consist of coal prices, oil prices, natural gas prices, gold prices, inflation, interest rates, and exchange rates, while the dependent variable is the Sharia-Compliant Coal Stock Returns.

Based on the empirical analysis presented above, several conclusions can be drawn in line with the research objectives. The findings reveal that, in the short run, coal prices, oil prices, natural gas prices, gold prices, inflation, interest rates, and the rupiah exchange rate do not significantly affect Sharia-Compliant Coal Stock Returns during the 2018–2022 period. In contrast, in the long run, coal prices are found to have a significant influence on Sharia-Compliant Coal Stock Returns. Furthermore, natural gas prices, gold prices, inflation, interest rates, and the exchange rate all exhibit significant long-run effects on Sharia-Compliant Coal Stock Returns. Among the variables examined, only oil prices do not demonstrate a significant long-run impact on Sharia-Compliant Coal Stock Returns.

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