JURNAL BISNIS MAHASISWA
Journal homepage: https://jurnalbisnismahasiswa.com
E-ISSN: 2807-2219

Inflation and Coal Prices: Analyzing Their Influence on Mining Sector Stock Returns in Indonesia

Johny Sumarna Putra*, Mani Motameni
University Of Mazandaran, Mazandaran Province, Iran

ARTICLE INFORMATION

Article History
Received: May 22, 2024
Revised: June 30, 2024
Approved: July 20, 2024
Published: July 31, 2024

Keywords
Inflation, Coal Prices, Returns, Influence

***Corresponding Author**
talkwithjohny2@gmail.com

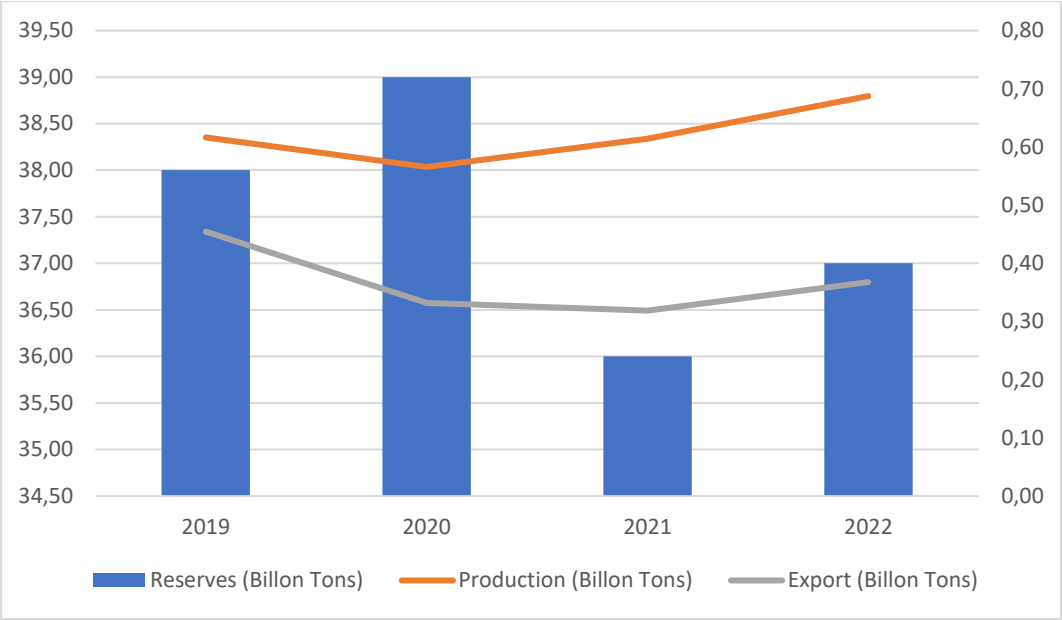
DOI
10.60036/jbm.v4i3.art17

ABSTRACT

This research examines the influence of coal prices and inflation on mining sector stock returns in the short and long-term using monthly data from the period January 2009 – December 2020. Data analysis in this study used the Autoregressive Distributed-Lag (ARDL). Based on the results, it can be concluded that in the short term, inflation exerts a negative and significant impact on stock returns in the mining sector. Conversely, coal prices do not influence stock returns in this sector. The long-term findings mirror this pattern, demonstrating that inflation continues to have a negative and significant effect on mining sector stock returns, while coal prices remain uninfluential. Policymakers, investors, and financial actors are advised to consider energy related objectives and developments, particularly in the coal sector, as critical indicators for financial decision-making. It is also important to consider that the timeframe chosen for decision making will significantly impact investment performance, as any variation in time can greatly influence the results. It acknowledges that other factors, such as the Rupiah exchange rate, interest rates, and additional variables, also potentially affect these returns. It is recommended that future studies expand the scope of investigation to include these additional factors to attain a more thorough understanding of the determinants of stock returns in the mining sector.

INTRODUCTION

The mining sector has an important role in the global economy, since commodities such as coal are the main energy source for many countries. Coal is Indonesia's mainstay export commodity which offers a stable source of national income due to its abundant reserves. The huge potential of coal faces a complex dilemma. Ideally with such large reserves, coal could be an energy source to overcome limited energy supplies, especially in the domestic sector. However, this condition is also faced with the reality of fluctuating and unpredictable trends in demand for coal energy sources. On the other hand, inflation is a macroeconomic indicator that reflects a general increase in the prices of goods and services, which can also affect the value of investments in the stock market.

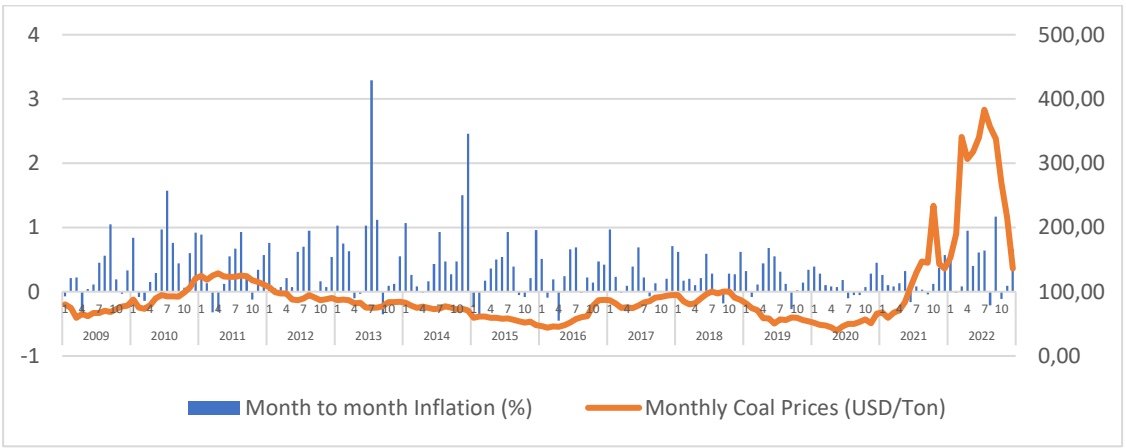


Source: Statistics Indonesia and National energy Council

Figure 1. Coal Reserves, Production and Exports, 2019-2022 (Billion Tons)

According to the Ministry of Energy and Mineral Resources (ESDM), the realization of Non-Tax State Revenue (PNBP) in the mineral and coal subsector reached IDR 152.16 trillion until November 2023. This achievement exceeds 178% of the target set by the Ministry of Energy and Mineral Resources (ESDM). The State Revenue and Expenditure Budget (APBN) is currently set at IDR 85 trillion.

The huge potential of coal faces a complex dilemma. Ideally with such large reserves, coal could be an energy source to overcome limited energy supplies, especially in the domestic sector. However, this condition is also faced with the reality of fluctuating and unpredictable trends in demand for coal energy sources. Fluctuating coal prices can affect the financial performance of mining companies and, in turn, their stock returns.



Source: Statistics Indonesia and Google Finance

Figure 2. Month to Month Inflation and Monthly Coal Prices, 2009-2022

On the other hand, inflation is a macroeconomic indicator that reflects a general increase in the prices of goods and services, which can also affect the value of investments in the stock market. Inflation is an economic phenomenon that occurs in an economic system and is worth discussing, especially considering its broad impact on the economy as a whole. Inflation can reduce the competitiveness of exported goods and result in a current account deficit.

Inflation is defined as the percentage increase in prices in a particular year compared to the previous year (Sukirno, 2010). According to (Sunariyah, 2006), high inflation causes a decrease in the profitability of a company, resulting in reduced dividend distribution and a decrease in people's purchasing power, giving rise to a negative relationship between high inflation and the capital market economy. (Samsul, Capital Markets and Portfolio Management, 2016) also stated that apart from the rupiah exchange rate, inflation is an economic factor that influences stock performance.

Previous research shows mixed results regarding the influence of coal prices on stock returns. Several studies have found that there is no significant influence of coal prices on stock returns (Fathurahman, 2023), while other research shows that there is a positive influence of coal prices on earnings per share, which can have an impact on stock returns (Najib, 2022). Regarding inflation, several studies have found that inflation does not have a significant effect on stock returns in the mining sector (Hasi, 2022), while other research shows that inflation has a positive and significant effect on the composite stock price index (Hertina, 2018).

Based on several studies, researchers tried to examine how strong the influence of inflation and coal prices is on stock market returns in energy and mining sector companies listed on the Indonesia Stock Exchange. There are two questions that will be answered in this research, namely (a) Does inflation have a significant effect on stock market returns in energy and mining sector companies listed on the Indonesia Stock Exchange and (b) Does coal prices have a significant effect on stock market returns in energy sector companies? and mining listed on the Indonesian Stock Exchange.

LITERATURE REVIEW

Coal is a natural hydrocarbon compound that comes from the fossil remains of trees. Available coal reserves are relatively abundant compared to crude oil. This fact is the reason for coal to be used as an alternative to the role of crude oil in industry. Coal is an alternative energy that is experiencing rapid growth, both in terms of production and consumption. It is an important component of the world's electricity generation. Apart from that, coal is the second largest energy supplier after petroleum.

The prospect of coal mining in Indonesia is faced with various challenges. Throughout 2022 until now, various challenges in the coal industry will continue, including the decline in coal prices. The decline in coal prices caused companies to face a decline in income, some even experienced an income deficit (Arif, 2014).

The increase in global coal prices will benefit domestic coal producing companies. Apart from increasing company profits, mining company shares will be the main target of investors. This also has a significant impact on the movement of the ICI (Indonesian Stock Exchange Composite Stock Price Index) because these shares have a large market capitalization.

Coal production in Indonesia has increased due to rising coal prices which have had a positive impact on share prices in the mining sector. Price is a unit of value given to an item as information from the producer/owner of the item. The price of coal in Indonesia is actually agreed between the seller and the buyer at a certain time, referring to the coal price issued and enforced by the Directorate General of Minerals and Coal, known as the Coal Benchmark Price (HBA). Determination of Coal Benchmark Prices (HBA) has been regulated through Regulation of the Director General of Minerals and Coal Number 515.K/32/DJB/2011. Indonesian coal prices fluctuate daily, monthly or annually. HBA is strongly influenced by macroeconomic conditions because it is a commodity that is traded internationally (Arif, 2014).

The function of the HBA itself is as a price reference for the HPB (standard price of coal). Coal price fluctuations are observed based on market conditions, demand and supply of coal itself. Every month, the Directorate General of Minerals and Coal issues HBA. The reference coal

price is obtained from the average of the Indonesia Coal Index (ICI), Newcastle Export Index (NEX), Global coal Newcastle Index (GCNC), and Platt's 5900 in the previous month, with quality equivalent to calories of 6,322 kcal. /Kg Gross as Received (GAR), total water content 8%, sulfur content 0.8% when received (ar), and ash content 15% ar.

The calculation of the coal benchmark price is determined using the following formula:

HBA = 25% ICI + 25% Platts + 25% NEX + 25% GC

Source: (Arif, 2014)

Notes:
HBA = Coal Benchmark Price [US$/ton]
ICI = Indonesian Coal Index [US$/ton]
Platts = Platts Benchmark Price [US$/ton]
NEX = New Castle Export Index [US$/ton]
GC = New Castle Global Coal Index [US$/ton]

Fluctuations in the Indonesian Coal Benchmark Price (HBA) depend on supply and demand, supply from major producers, Indonesian government regulations regarding coal exports, and technological developments (Edward, 2009). According to (Awan, 2020), high coal prices affect the stock price index and the rise and fall of coal prices creates uncertainty and volatility in the stock market. (Ndlove, 2021) found that there is a positive relationship between coal prices and the Indonesian stock price index. However, something different was revealed by (Sari, 2021) and (Sharifzadeh, 2021), that there is no relationship between coal prices and IHSG in Indonesia.

One of the most significant monetary phenomena encountered in almost all countries is inflation. Inflation is a condition characterized by a continuous increase in general prices, or a situation where the value of money decreases due to an increase in the money supply not being balanced by an increase in the supply of goods (Setyaningrum & Muljono, 2016). The issue of inflation and its impact on economic activity and stock markets has again attracted the attention of households, investors and policy makers after four decades of relatively stable inflation variations (Chiang & Chen, 2023).

Inflation is the tendency for prices to rise generally and continuously. This describes a situation where the price of goods increases and the value of the currency weakens. Inflation is defined as the tendency to increase overall product prices, resulting in a decrease in purchasing power. An increase in the price of just one or two goods cannot be considered inflation unless the increase extends to other goods, causing a general increase in prices.

Inflation arises due to pressure from the supply side (cost-push inflation), from the demand side (demand-pull inflation), and from inflation expectations. Factors that contribute to cost-push inflation can be caused by exchange rate depreciation, the impact of foreign inflation, especially from trading partner countries, increases in government-administered commodity prices, and negative supply shocks due to natural disasters. and distribution is disrupted. The cause of demand-pull inflation is the high demand for goods and services compared to their availability. In a macroeconomic context, this condition is described by real output exceeding potential output or total demand (aggregate demand) exceeding the economy's capacity. Meanwhile, inflation expectations are influenced by the behavior of society and economic actors, whether they are more adaptive or forward-looking (Kuncoro, 2009).

Typically, inflation indices are created to monitor price level fluctuations among various segments of society, such as consumers, producers, wholesalers, and retailers. Examples of these indices include the Consumer Price Index (CPI), Producer Price Index (PPI), and Wholesale Price Index (WPI) (Sathyanarayana & Gargesa, 2018).

(Anisa, 2018) inflation has no effect on the share price index for the mining sector in Indonesia. However, it is different from research (Sudiyatno, 2010) and (Wadiran, 2013) which states that inflation affects stock returns in coal mining companies.

Return is the result obtained from an investment (Jogiyanto, 2009). Return is the rate of return that an investor enjoys on the investment he makes. Without a level of profit obtained from an investment, investors will not carry out investment activities. Therefore, every investment, both short term and long term, has the main goal of achieving a profit called return, either directly or indirectly (Ang, 1997).

The main objective of investors in making investments is to obtain a return (rate of return). All investors aim for the highest rate of return on their investment, even though in reality the return on that investment cannot be guaranteed. This investment uncertainty is called risk, which is measured by the return variance. Investors need objective information regarding potential company performance to maximize profits in the form of stock returns.

Stock returns are used as a measure in the business world. The value of a stock return shows or reflects the economic performance of a country in a certain period. Developing countries pay great attention to stock performance because shares are one component that greatly influences a country's economic performance. According to (Chikwira & Mohammed, 2023), the one-way causal relationship between the stock market and economic growth in the short run is positive and statistically significant up to 10%. (Toan Ngoc Bui, 2021) find positif impact of stock market development on economic growth among emerging markets and developing economies (EMDEs) in Asia. (Borteye & Peprah, 2022) summarized that there is a high positive association between stock market development and economic growth in Ghana. (Elgehani, Elfeituri, & Elkrghli, 2023) find a positive relationship between stock market and economic growth in the Gulf Countries (GCC) during the period 1993-2019. The study conducted by (Bian Jiang-Ze, 2024) reveals a significant negative correlation between stock market development and the regional economic development gap, this finding suggests that a well-developed stock market can promote coordinated development within regional economies. It can be concluded that stock movements have a significant effect on economic movements.

METHODS

This research examines the influence of macroeconomic variables such as inflation and coal prices on mining sector stock index returns. The population used in this research is data collected from various sources including Google Finance and Statistics Indonesia (BPS), coal prices based on Reference Coal Prices (HBA), mining sector stock index returns. The sample used in this research was monthly data from the period January 2009 – December 2020 totaling 144 samples.

Data analysis in this research uses the Autoregressive Distributed-Lag (ARDL) method. The Autoregressive Distributed-Lag model is also known as a dynamic model because it describes the time flow of the dependent variable in relation to values in the past at points in the Autoregressive and Distributed-Lag models. often used intensively in econometric analysis. This is different from the ECM (Error Correction Model) model which can only be applied if the data is not stationary at a level but is stationary at the same level of data differentiation and there is cointegration between the variables studied. The Autoregressive Distributed-Lag model can be used to solve models with different levels of stationarity.

RESULTS

Stationarity Test

The stationarity test was carried out to prevent lacung regression from occurring. In this research, the method used to test data stationarity is the unit root test method. The model used in this test is the Augmented Dickey Fuller model.

Table 1. Dickey Fuller Augmented Unit Root Test

Variable	Probability	
	Level	First Difference
Return	0,0000*	
Inflation	0,0000*	
Coal Prices	0,3971	0,0000*

Notes: * Stationary at α = 1%

Based on the table above, the return and inflation variables are stationary at the level, while the coal price variable is stationary at the First Difference level.

Cointegration Test

The cointegration test is carried out to determine the long-term balance between variables. In this research, the cointegration test uses the Bound Test method, namely comparing the F-Statistic Value with the Bound Test value. The criteria used are:

- If the F – Statistical Value is greater than I(1), then there is cointegration which indicates the existence of a long-term relationship.
- If the F – Statistical Value is smaller than I(1), then there is no cointegration which indicates there is no long-term relationship.

Table 2. Bound Test Cointegration Test

Test Statistic	Value	K
F-Statistic	25,63396	2
Critical Value Bounds		
Significance	**I (0) Bounds**	**I (1) Bounds**
10%	2,63	3,35
5%	3,1	3,87
2,5%	3,55	4,38
1%	4,13	5

Based on table 2, the F statistic value is greater than the I(1) value, namely 25.63396 > I (1) so that there is long-term cointegration between the variables being tested or it could be said that the variables move together in the long term.

Stability Test (CUSUM Test)

Figure 3 shows the cumulative recursive residual value is within the band or it could be said that the blue CUSUM line does not go beyond the red dotted line, the significant limit is 5%. So, it can be said that in the model there is stability in the estimated parameters that influence stock returns in the mining sector during the research period.

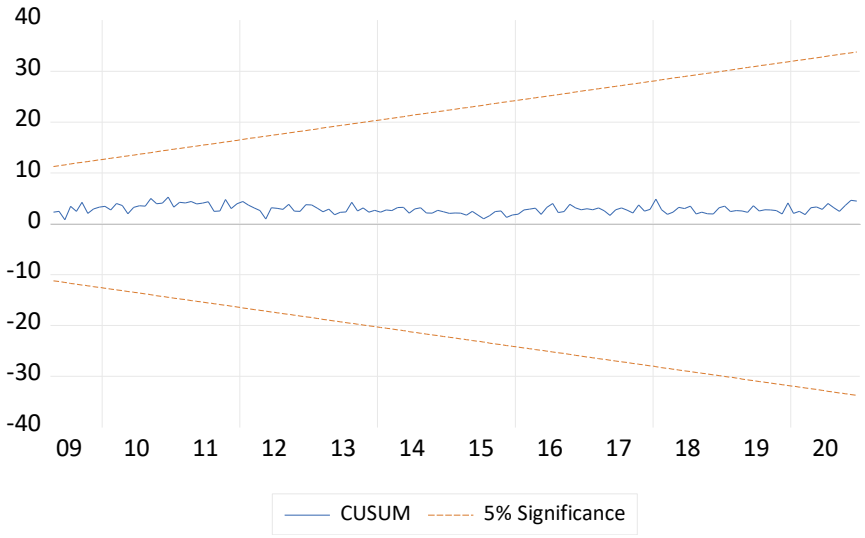


Figure 3. CUSUM Test

Classic Assumption Test

Based on the results of the normality test, autocorrelation test and heteroscedasticity test, it can be concluded that in the regression the data is normally distributed and there are no autocorrelation and heteroscedasticity problems.

The Jarque-Bera probability value normality test is 0.86 or greater than α: 0.05, so it can be concluded that the normality assumption is met. The results of the autocorrelation test with the Breusch-Godfrey Serial Correlation LM Test show a probability value of 0.73 or greater than α: 0.05, so it can be concluded that the non-autocorrelation assumption is met. The results of the homoscedasticity test using the Breusch-Pagan-Godfrey Test show a probability value of 0.19 or greater than α: 0.05, so it can be concluded that the homoscedasticity assumption is met.

Coefficient of Determination Test

Based on the results of data processing, the coefficient of determination was 0.370620 or 37.06%. This means that the variables Inflation and Coal Prices influence Share Returns in the Mining sector by 37.06%. Meanwhile, the rest is explained by other variables that are not in the model.

F-Statistics Test

Based on the results of data processing, the F-statistic probability result is 0.000000, where this value is smaller than the significance level, namely 0.05. Thus, the Inflation and Coal Price variables together influence the Mining sector's Stock Return.

Partial T Test (Hypothesis Test)

Table 3. Short Term and Long Term ARDL Estimates

Variable	Short Term			Long Term		
	Coefficient	*t-statistic*	*Prob*	*Coefficient*	*t-statistic*	*Prob*
Inflation	-0.131319	-2.191306	0.0302	-0.047900	-2.191306	0.0316
Coal Prices	0.005829	0.866153	0.3880	0.002126	0.866153	0.3836

Based on table 3, the short-term and long-term estimated ARDL regression results can be analyzed as follows:

a) Inflation

The results of short-term testing obtained a t-statistic value of -2.191306 and a probability of 0.0302. With this value, the probability value is smaller than 5% or 0.05. In the long term, the t-statistic is -2.191306 and the probability is 0.0316. With this value, the probability value is smaller than 5% or 0.05. These results reject H0 and accept H1, so it can be concluded that the Inflation Rate in the short and long term has a negative and significant effect on the Mining Sector Stock Price Index Return.

b) Coal Prices

The results of short-term testing obtained a t-statistic value of 0.866153 and a probability of 0.3880. With this value, the probability value is greater than 5% or 0.05. In the long term, the t-statistic is 0.866153 and the probability is 0.3836. With this value, the probability value is greater than 5% or 0.05. These results accept H0 and reject H1, so it can be concluded that coal prices in the short term and long term have no effect on the Mining Sector Stock Price Index Return.

CONCLUSION

Based on the test results using the ARDL method, it can be concluded that in the short term inflation has a negative and significant effect on Mining Sector Stock Returns. Meanwhile, coal prices have no effect on mining sector stock returns. In the long term, it shows the same phenomenon, namely inflation has a negative and significant effect on Mining Sector Stock Returns. Meanwhile, coal prices have no effect on mining sector stock returns.

Based on economic theory, inflation can have a negative effect on mining company stock returns for several reasons: (a) Production Costs: Inflation often increases production costs because the prices of raw materials and labor tend to rise. For mining companies, this can mean higher operational costs, which can reduce profit margins and stock returns. (b) Commodity Demand: Inflation can affect global demand for commodities. If inflation is high, purchasing power decreases, which can reduce demand for commodities and depress prices, thereby negatively impacting mining companies' earnings and stock returns. (c) Interest Rates: When inflation rises, central banks may raise interest rates to control it, which can increase borrowing costs and reduce investment in the mining sector. This can also lower expectations of stock growth and returns. (d) Exchange Rates: High inflation can weaken local currency exchange rates, affecting revenues and costs for mining companies operating in many countries. These exchange rate fluctuations can add uncertainty and risk, which investors do not like. (e) Economic Uncertainty: Uncontrolled inflation can create economic uncertainty, which makes investors more cautious. This can lead to withdrawal of investment from the stock market, including shares of mining companies, which reduces stock returns.

According to economic theory, there are several reasons why coal prices may not have a significant influence on mining company stock returns: (a) Business Diversification: Mining companies often have diversified portfolios, relying not only on coal but also on minerals and other resources. This diversification can reduce the impact of coal price fluctuations on the company's overall stock returns. (b) Long-Term Contracts: Many mining companies sell their production through long-term contracts at fixed prices, which can protect them from short-term coal price volatility. (c) Operational Efficiency: Mining companies with high operational efficiency may be able to maintain profitability even if coal prices fall, because they can reduce production costs and maintain profit margins. (d) Influence of Other Factors: Other factors such as government policy, regulatory changes, labor costs, and new technology can also influence mining company stock returns, regardless of changes in coal prices. (e) Elasticity of Demand: If demand for coal is price inelastic—that is, demand remains stable even if prices change—then changes in coal prices may not have a large impact on mining companies' revenues. (f) Hedging

and Derivative Instruments: Mining companies may use hedging and derivative instruments to manage coal price risk, which can reduce the impact of price changes on stock returns.

Based on the research that has been carried out, the author considers this research to have several limitations, namely the factors that influence Mining Sector Stock Returns in this research consist of 2 variables, namely the Inflation Level and Coal Prices, while there are still other factors that influence Mining Sector Stock Returns such as Rupiah Exchange Rate and Interest Rates and other variables. The author hopes that future research can continue research on other factors that influence Mining Sector Stock Returns.

REFERENCES

Ang, R. (1997). *The Intelligent Guide to Indonesian Capital Market.* Jakarta: Mediasoft Indonesia.

Anisa, I. (2018). *The Influence of Macroeconomics and World Mining Commodity Prices on the Mining Sector Stock Price Index in Indonesia.* Malang: Faculty of Administrative Sciences, Brawijaya University.

Arif, I. (2014). *Indonesian Coal.* Jakarta: Gramedia Pustaka Utama.

Awan. (2020). Coal Price Volatility and Stock Market Performance in Emerging Markets. *Journal of RIsk and Financial Management*, 162.

Bian Jiang-Ze, Q. Q.-L.-Y.-J.-J. (2024). Stock markets, local governments leverage, and regional economic development: Evidence from China. *Pacific-Basin Finance Journal*.

Borteye, E. A., & Peprah, W. K. (2022). Correlates of Stock Market Development and Economic Growth: A Confirmatory Study from Ghana. *International Journal of Economics and Finance*, 1-18.

BPS. (2023). *Non-Oil and Natural Gas Mining Statistics 2018-2022.* Jakarta: Statistics Indonesia.

Chiang, T. C., & Chen, P.-Y. (2023). Inflation risk and stock returns: Evidence from US aggregate and sectoral markets. *The North American Journal of Economics and Finance*.

Chikwira, C., & Mohammed, J. I. (2023). The Impact of the Stock Market on Liquidity and Economic Growth: Evidence of Volatile Market. *Economies Journal*, 155.

DEN. (2023). *Outlook Energi Indonesia 2023.* Jakarta: National Energy Council.

Diaz, & Gracia. (2016). Oil price shocks and stock returns of oil and gas corporations. *Finance Research Letters*, 1-6.

Edward. (2009). *Energy Trading and Investing: Trading, Risk Management and Structuring Deals in the Energy Market.* McGraw-Hill Education.

Elgehani, L., Elfeituri, H., & Elkrghli, S. (2023). *The Impact of Stock Markets on Economic Growth in the Gulf Countries (1993–2019).* Benghazi: Libyan International Medical University, Faculty of Business Administration.

Fathurahman, M. M. (2023). *The Influence of Coal Prices and Capital Structure on Stock Returns with Profitability as an Intervening Variable.* Malang: Maulana Malik Ibrahim State Islamic University (UIN) Faculty of Economics.

Hasi, R. A. (2022). *The Influence of Inflation, Interest Rates and Rupiah Exchange Rates on Mining Sector Share Prices on the Indonesian Stock Exchange.* Bogor: Pakuan University Faculty of Economics and Business.

Hertina, D. (2018). Mining Sector Index: Impact of Inflation, SBI Interest Rates, and Exchange Rates. *Journal Accounting and Finance*, 31-42.

Jogiyanto. (2009). *Portfolio Theory and Securities Analysis.* Yogyakarta: BPFE.

Kraft, J., & Kraft, A. (1978). On the Relationship Between Energy and GNP. *Journal of Energy and Development*, 401-403.

Kuncoro, M. (2009). *International Financial Management: An Introduction to Global Economics and Business.* Yogyakarta: BPFE.

Masood, Tvaronavičienė, & Javaria. (2019). Impact of oil prices on stock return: Evidence from G7 countries. *Insights Into Regional Development*, 129-137.

Najib, M. A. (2022). *The Influence of Coal Prices, Earnings per Share, and Return on Assets on Share Prices of Coal Mining Companies Listed on the Indonesian Stock Exchange.* Malang: Faculty of Economics and Business, Brawijaya University.

Ndlove. (2021). Impact of Coal Price Fluctuations on Stock Market Performance: Evidence from the South African Mining Industry. *Journal Resources Policy*, 102-129.

Putong, I. (2002). *Macro and Microekonomi.* Jakarta: Ghalia Indonesia.

Putra, & Robiyanto. (2019). The effect of commodity price changes and USD/IDR exchange rate on Indonesian mining companies' stock return. *Monetary and Banking Journal*, 97-108.

Putra, G. A., Mulyantini, S., & Arieftiara, D. (2021). Business diversification of coal mining companies as a strategy facing coal price volatility: The effect on company performance and share prices. *International Journal of Business Ecosystem & Strategy*, 38-50.

Putra, M. U., & Damanik, S. (2017). The influence of oil and gas and non-oil and gas exports on the position of Indonesia's foreign exchange reserves. *Wira Ekonomi Mikroskil Journal*, 245-254.

Samsul, M. (2008). *Capital Markets and Portfolio Management.* Jakarta: Erlangga.

Samsul, M. (2016). *Capital Markets and Portfolio Management.* Jakarta: Erlangga.

Sari. (2021). The Relationship between Coal Prices and Indonesian Stock Exhange (IDX) Composite Index. *Journal KnE Social Science*, 475-484.

Sathyanarayana, & Gargesa. (2018). An Analytical Study of the Effect of Inflation on Stock Market Returns. *IRA-International Journal of Management & Social Sciences*, 48-64.

Setyaningrum, R., & Muljono, M. (2016). Inflation, Interest Rates, and Exchange Rates on Stock Returns. *Journal of Economic Business Analysis*, 151-161.

Sharifzadeh. (2021). The Impact of International Coal Prices on Stock Market Return in Indonesia: Evidence from a Nonlinear ARDL Model. *International Journal of Energy Economics and Policy*, 281-288.

Sudiyatno, B. (2010). *The Role of Company Performance in Determining the Influence of Macroeconomic Fundamental Factors, Systematic Risk and Company Policy on Company Value.* Semarang: Master of Management Study Program, DIponegoro University.

Sukirno, S. (2010). *Macroeconomics: Introductory Theory.* Jakarta: PT. Raja Grasindo Persada.

Suliyanto. (2019). The Relationship between the Coal Price and the Stock Price of Indonesian Mining Companies. *International Journal of Energy Economics and Policy*, 152-156.

Sunariyah. (2006). *Introduction to Capital Market Knowledge.* Yogyakarta: UPP STIM YKPN.

Tandellin, E. (2010). *Portfolio and Investment (Theory and Application).* Yogyakarta: Kanisius.

Tertzakian, P., & Hollihan, K. (2009). *The End of Energy Obesity.* New Jersey: John Wiley & Sons, Inc.

Toan Ngoc Bui, T.-T. T. (2021). The impact of stock market development on economic growth: A GMM approach. *Investment Management and Financial Innovations*, 74-81.

Toman, M. T., & Jemelkova, B. (2003). Energy and Economic Development: An Assessment of the State of Knowledge. *The Energy Journal, International Association for Energy Economics*, 93-112.

Wadiran, M. M. (2013). Factors that Influence the Expected Return of Shares in Coal Mining Listed on the Indonesian Stock Exchange. *EMBA Journal: Journal of Economics, Management, Business and Accounting Research*, 1080-1193.

Wibisono, B. Y. (2015). *Impact of Coal Production on Economic Growth in Indonesia.*

Yoo. (2006). Causal relationship between coal consumption and economic growth in Korea. *Applied Energy*, 1181-1189.