International Journal of Indonesian Business Review

Vol.4 No.1, 2024
e-ISSN: 2827-9840
PP.76-87

The Determinants of Firm Value: Commodity Prices, Exchange Rates, Inflation, and Business Risk as Intervening Variable

Pristina Nugraheni[1], Asep Risman[2]
[1,2,] Universitas Mercu Buana, Jakarta, Indonesia
Email: [1]55121110066@student.mercubuana.ac.id, [2] asep.risman@mercubuana.ac.id

DOI: https://doi.org/10.54099/ijibr.v4i1.1134

ARTICLE INFO

Research Paper

Article history:
Received: 24 October 2024
Revised: November 2024
Accepted: 18 February 2025

Keywords: Commodity price, Exchange rate, Inflation, Business risk, Firm value

ABSTRACT

Purpose – The objective of this study is to examine The Determinants of Firm Value: Commodity Prices, Exchange Rates, Inflation, and Business Risk as Intervening Variable. The population in this study consists of the mining sector and plantation sub-sector companies listed on the Indonesia Stock Exchange from 2017 to 2022.
Methodology/approach – The sampling technique used is purposive sampling, resulting in a total of 31 research samples used in this study. The data analysis techniques employed in this research are panel data regression and the Sobel test.
Findings – The analysis results indicate that Commodity Prices and Exchange Rate have a significant negative effect on Firm Value; Inflation does not affect Company Value and Business Risk has a significant positive effect on Firm Value; Commodity Prices and Exchange Rate have a significant positive effect on Business Risk; and Inflation does not effect on Business Risk; Business Risk can mediate the effect of Commodity Prices and Exchange Rate on Firm Value; and Business Risk is not able to mediate the effect of Inflation on Firm Value.

INTRODUCTION

Globalization of the economy promotes the integration of various economic systems and the merging of markets, thereby creating a state of interdependence among various market segments, including stock, commodity, and foreign exchange markets. The proliferation of affordable internet facilities that span all regions and the ease of access to information is facilitating transactions between countries that previously had regional boundaries. This condition allows companies to enhance their value, yet simultaneously elevates the potential for business risk.

Indonesia, a prominent global producer of commodities, offers a promising avenue for the export of these products to an array of developed markets in Asia, Europe, and the Americas. Despite its status as a leading commodity producer, Indonesia is susceptible to fluctuations in commodity prices, which can impact the selling price of these commodities.

The mining and agriculture sectors are among the primary drivers of Indonesia's economic growth. The commodities these sectors produce generate foreign exchange and income for the companies involved. The mining and plantation sectors are subject to a duality of influences, both positive and negative,

emanating from domestic and global economic developments. Those engaged in the mining sector and plantation sub-sector are exposed to a greater degree of business risk.

In light of the distinctive characteristics of the commodity business, the management of companies in this sector, in their pursuit of enhanced company value and risk management, direct their attention not only towards the financial aspects of their operations but also towards the fluctuations of currency exchange rates and global commodity prices (Risman, 2015). The current economic conditions in Indonesia have resulted in intense competition between companies. In such a competitive environment, companies are driven to enhance their performance to achieve their desired outcomes. One of the primary objectives of a company is to maximize profits to enhance its value (Irfani, 2020).

Fluctuations in the stock prices of companies in the commodity sector, such as mining and plantations, are influenced by global commodity prices, exchange rates, and inflation. These fluctuations can subsequently impact firm value. Furthermore, business risk also inevitably affects firm value due to fluctuations in commodity prices, exchange rates, and inflation. This study is distinct from previous research in that it considers external company factors and business risk variables as mediating variables.

Various studies have found diverse results on the factors that impact firm value. According to a recent study by Swari & Pristiana (2020), commodity prices have a negative effect on firm value. However, other studies conducted by Alao & Oloni (2015) and Risman et al. (2017) shown that commodity prices have a positive effect on firm value. The exchange rate is also a significant factor influencing firm value. While research by Šimáková (2017) suggests a negative impact of the exchange rate on firm value, studies by Risman et al. (2017), Ihsan et al. (2018), and Samudra & Widyawati (2018) indicate a significant positive effect of the exchange rate on firm value. Additionally, inflation is another influential factor. Swari & Pristiana (2020) and Priyambudi & Thamrin (2021) found a negative effect of inflation on firm value, while Pasaribu et al. (2019) and Soeharjoto et al. (2021) reported a positive effect of inflation on firm value. Overall, these studies highlight different perspectives on the impact of commodity prices, exchange rates, and inflation on firm value.

Consequently, further investigation into firm value is necessary to provide a comprehensive overview and additional information regarding macroeconomic factors that affect firm value, particularly in mining sector companies and the plantation subsector. The objective of this study is to analyze the effect of commodity prices, exchange rates, and inflation on firm value, with business risk serving as a mediating variable.

LITERATURE REVIEW

Firm Value

The firm value represents a specific condition that a company has attained as a result of public trust in the company, which has been demonstrated through its activities over a defined period since its establishment. Firm value can be defined as the present value of future cash flows, which are susceptible to risks that may result in deviations. The determination of these cash flows, which consist of income and costs, is dependent upon managerial decision-making concerning investment and funding, as well as macroeconomic factors, including currency exchange rates (Risman, 2021). Additionally, firm value is frequently interpreted as the value per share (Ross et al., 2015).

The firm value is influenced by several external factors, including the inflation rate, interest rate, exchange rate, gross domestic product, budget deficit, investment, trade balance, and balance of payments (Handini & Astawinetu, 2020). In this study, firm value is proxied by Tobin's Q. Tobin's Q is considered an effective measure of firm value, as it incorporates not only market value and debt but also market expectations of future cash flows and company business risks, as well as the company's growth potential (Irawati & Komariyah, 2019). The following is the formula for calculating firm value:

$$q = \frac{(MVS+D)}{T\,A} \qquad (1)$$

Commodity Price

Commodity prices are determined in perfectly competitive or organized markets through various mechanisms, including exchanges, physical commodity markets, and commodity futures exchanges. In this study, the variable representing commodity prices is proxied by the value of stock price sensitivity to changes in commodity prices (α), namely the regression coefficient value of commodity price fluctuations on stock returns (Risman et al., 2017). The following is the formula for calculating:

$$\text{RHS} = a + \alpha\, \Delta H + e \qquad (2)$$

Fluctuations in commodity prices have the potential to impact the firm value, given their influence on the production process. This can indirectly affect the share price, depending on whether the company is a producer or consumer of commodities. An increase in commodity prices has the effect of raising the cost of raw materials for companies that consume commodities. This, in turn, has the effect of reducing cash inflows and lowering stock prices.

H1: Commodity prices have a positive effect on firm value.

The company's revenue and expenses are susceptible to fluctuations in price, which introduces a risk factor. Hamma et al. (2014) demonstrated that commodity prices, particularly those of oil, exhibit volatility, which in turn affects business risk.

H2: Commodity prices have a positive effect on business risk.

Exchange Rate

A currency exchange rate is the price of a country's currency in another (Jager & Jepma, 2017). Exchange rates are also called exchange ratios, which show how prices in different countries compare (Salvatore, 2011). The exchange rate refers to the value of one unit of foreign currency in terms of domestic currency or the opposite. In this case, the exchange rate of the Indonesian rupiah (IDR) against the United States dollar (USD) is the price of one USD in IDR. Alternatively, it can be interpreted as the price of one rupiah against one USD (Risman, 2021). The U.S. dollar exchange rate against the rupiah is proxied by the stock price sensitivity value to changes in the U.S. dollar exchange rate against the rupiah (β), namely the regression coefficient value of stock returns on the U.S. dollar exchange rate against the rupiah. The following is the calculation formula:

$$\text{RHS} = a + \beta\, \text{Kurs} + e \qquad (3)$$

The theory of the law of one price in the theory of purchasing power parity posits that exchange rate discrepancies emerge as a consequence of price divergences or price shifts, which are proxied by the inflation rate in other countries relative to domestic conditions (Risman, 2021). In the commodity companies mining sector and the plantation sub-sector listed on the Indonesia Stock Exchange (IDX) will experience fluctuations in currency exchange rates, leading to a depreciation of the local currency against foreign currencies, namely the US dollar. This can potentially enhance company profits, thereby increasing company value.

H3: The exchange rate has a positive effect on firm value.

The role of exchange rates in export and import transactions is of significant importance, as they facilitate the translation of prices that utilize different currencies between countries. Fluctuating exchange rates can affect a company's cash flows and stock returns due to changes in the value of the local currency compared to other currencies. The depreciation or appreciation of a currency can impact production costs and, consequently, the business risk of the company in question.

H4: The exchange rate has a positive effect on business risk.

Inflation

Inflation refers to the general and ongoing increase in prices (Asnah, 2021). There are two primary causes of inflation: excess liquidity/money/exchange rate influenced by the state's role in monetary policy (Central Bank), and production pressure influenced by the state's role in executing policies held by the Government (Government), such as fiscal, infrastructure development policies, regulations, and others (Mankiw, 2007). The formula utilized to calculate inflation is as follows:

$$INF_n = \frac{IHK_n - IHK_n - 1}{HK_n - 1} \times 100 \qquad (4)$$

According to the APT theory with 4 factors model, one of the factors that affect stock prices is inflation (Chen et al., 1986). An increase in the inflation rate will prompt investors to engage in arbitrage, selling stocks while simultaneously purchasing inflation-risk-free assets. An increase in the inflation rate leads to a decrease in consumer purchasing power. Higher inflation means higher production costs and less profit, which means lower stock prices and firm value.
H5: Inflation has a negative effect on firm value.
The rate of inflation has an impact on the costs incurred by companies. High inflation reduces a company's profitability, as sustained price increases affect people's purchasing power, which in turn affects demand (Gitman et al., 2014). An increase in inflation will result in higher production costs, which will subsequently impact sales and profits. In order to maintain profitability, it is essential to offset the rise in costs through an increase in sales.
H6: Inflation has a positive effect on business risk.

Business Risk
Business risk is defined as "loss or accident exposure." From the perspective of financial management, risk is defined as the discrepancy between the anticipated rate of return and the actual rate of return realized (Indrawati & Sumiati, 2019). Business risk is the potential for loss or adverse outcomes due to uncertainty of future investment decisions. It is usually measured by the standard deviation of earnings before interest and taxes (EBIT) (Mardiyanto, 2009). In this study, business risk is represented by the degree of operating leverage (DOL) ratio. The DOL ratio is an effective way to assess a company's financial vulnerability to sales volatility (Risman et al., 2017). The formula used is as follows:

$$DOL = \frac{\Delta\, EBIT}{\Delta\, Sales} \qquad (5)$$

Business risk can be defined as the risk of adverse effects on a company's financial position caused by fluctuations in margins, sales volumes, and profits that fall below the company's fixed cost base (Thian, 2021). The impact of risk on firm value aligns with the tenets of hedging theory. This conceptual framework posits that hedging represents a risk mitigation strategy that can enhance firm value through a range of mechanisms, including the reduction of agency costs, the alleviation of management investment shortfalls, the compensation of managers, the mitigation of financial distress and bankruptcy costs (Risman, 2015).
H7: Business risk has a negative effect on firm value.
The literature shows that there is no direct influence between commodity prices, exchange rates, and inflation on firm value. Several studies, including Šimáková (2017), Pujiati & Hadiani (2020), Hamidah et al., (2015), and Nursalim et al., (2021) show this. Analyses should include mediating variables like business risk. The impact of commodity prices on business risk is contingent upon price uncertainty, which can precipitate discrepancies in revenue from commodity sales that subsequently influence the company's cash flow. A decline in commodity prices can result in revenue deviations that may ultimately lead to a cash flow deficit for a given company.
H8: Business risk can mediate the effect of commodity prices on firm value.
The conversion of foreign currency to local currency will result in currency depreciation, which will subsequently affect the company's cash flow. The existence of currency depreciation will prove advantageous to the company in meeting its obligations and will serve to mitigate the company's risk. As posited by Jacque (2019), exchange rate risk pertains to the unforeseen impact of fluctuations in exchange rates on the value of a firm. For companies engaged in the production of commodities in the mining and plantation sectors that engage in export activities, the local currency can depreciate against the US dollar, which may serve to mitigate the risk of cash flow deficits resulting from company revenues.
H9: Business risk can mediate the effect of exchange rate on firm value.

Commodity producer companies, particularly those in the mining sector and plantation subsectors, continue to be influenced by global commodity prices. Among the factors affecting these companies' income is inflation. The occurrence of business risks will have an impact on the company's cash flow.
H10: Business risk can mediate the effect of inflation on firm value.

METHOD

The research design employed by the author is that of casual research, which is intended to test hypotheses and ascertain the relationship between the influence of one or more independent variables on the dependent variable, which is mediated by a variable (intervening/mediating variable). The independent variables are commodity prices (X_1), exchange rates (X_2), and inflation (X_3), while the dependent variable is firm value (Y). Concurrently, business risk (Z) is employed as an intervening or mediating variable.

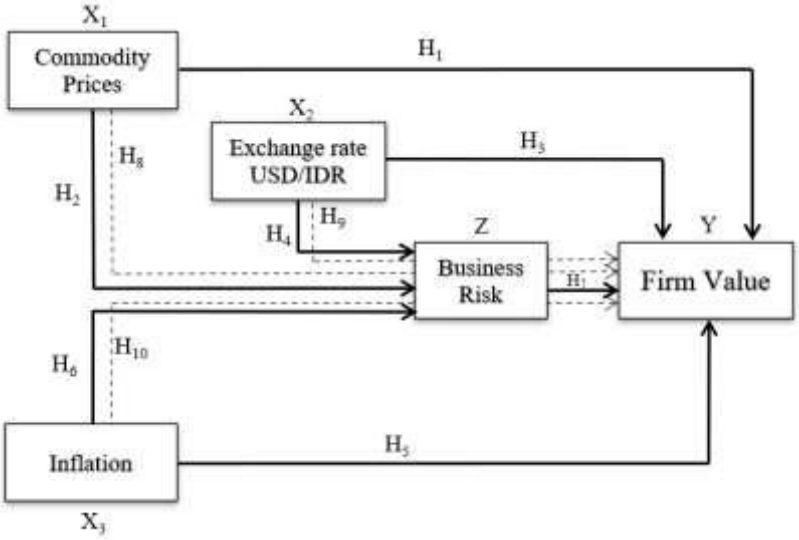

Figure 1. Conceptual Model

The population in this study are mining sector issuers and plantation sub-sectors listed on the Indonesia Stock Exchange during 2017-2022, amounting to a total of 71 companies. A non-probability sampling method with a purposive sampling technique was employed to obtain a population of 31 companies. This study utilizes panel data, a combination of time series and cross-sectional data, with a total of 186 observations.

RESULT AND DISCUSSION

RESULT

Panel Data Regression Model Estimation

Table 1. Hasil Pemilihan Model Regresi

Test	Criteria	Statistical	Test Result	Conclusion
Chow	*Cross section Chi-square*	28.486071	0.5447	CEM best model
Hausman	*Cross-section random*	5.036841	0.8311	REM best model
Langrange Multiplier	*Obs*R-squared*	6.311302	0.0974	CEM best model

Source: Data processed with Eviews 10

The results of the model selection test, as presented in Table 1, indicate that the Common Effect Model is the optimal choice. Two regression equation models are employed in this study. The first regression equation is employed to analyze the effect of four variables—commodity prices (X_1), exchange rates (X_2), inflation (X_3), and business risk (Z)—on firm value (Y) as an independent variable. The second regression equation is used to analyze the effect of commodity prices (X_1), exchange rates (X_2), and inflation (X_3) on business risk (Z) as an independent variable. Based on this explanation, the regression equation model used in this study is:

$$\text{Firm Value} = \alpha + \beta_1 \text{Commodity Price} + \beta_2 \text{Exchange Rate} + \beta_3 \text{Inflation} + \beta_4 \text{Business Risk} + \varepsilon_1$$

$$\text{Business Risk} = \alpha + \beta_1 \text{Commodity Price} + \beta_2 \text{Exchange Rate} + \beta_3 \text{Inflation} + \varepsilon_1$$

Classical Assumption Test

Normality Test

The normality test of the residuals uses the Jarque-Bera (J-B) test with the significance level used is α = 0.05; the results are as follows:

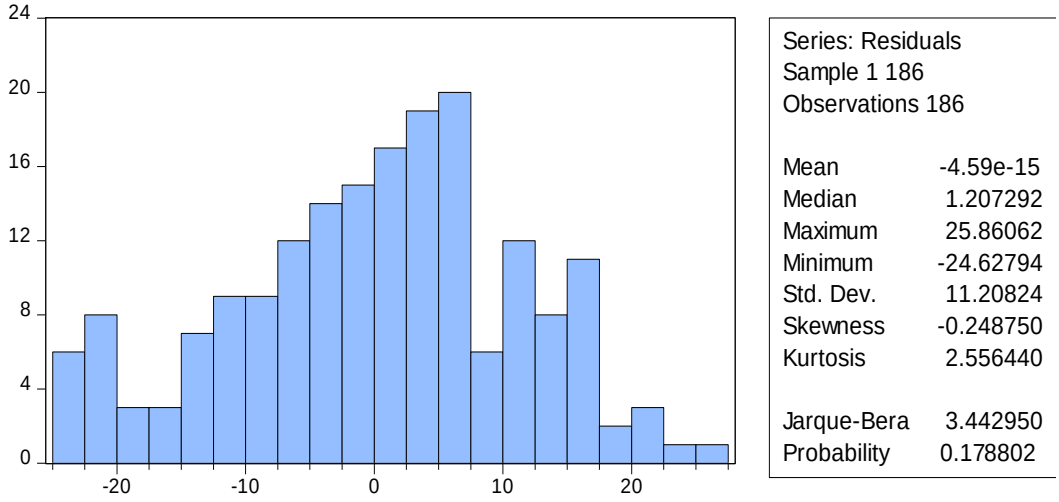

Figure 2. Normality Test with Jarque-Bera Test
Source: Data processed with Eviews 10

Based on Figure 2, it is known that the probability value of the J-B statistic is 0.178802 or it can be said that the probability value> 0.05. This means that the residuals are normally distributed, which means that the normality assumption is met.

Multicollinearity Test

In this study, multicollinearity symptoms can be seen from the variance inflation factor (VIF) value. If the VIF value> 10 then this is an indication of multicollinearity. The results of multicollinearity testing the VIF value on each variable < 10. It can be concluded that there are no symptoms of multicollinearity between independent variables.

Table 2. Multicollinearity Test Results with VIF

Independen Variable	VIF
Oil Commodity Price	1,881528
Coal Commodity Price	2,044149
CPO Commodity Price	1,667937
Gold Commodity Price	2,142256

Tin Commodity Price	1,723881
Nickel Commodity Price	1,575366
Exchange rate	1,954643
Inflation	1,438788

Source: Results of Eviews 10 software

Goodness of Fit Model

This study employs structural model fit test parameters for path analysis, specifically the calculation of the predictive relevance (Q^2) value. This analysis evaluates the relationship between the independent and dependent variables in the two regression models. To calculate the Q^2 value, it is necessary to have the R^2 value of each existing regression equation ${R_1}^2 = 0{,}227337\ dan\ {R_2}^2 = 0{,}123493$. By using the formula, it is obtained:

$Q^2 = 1 - (1 - {R_1}^2)(1 - {R_2}^2)$

$Q^2 = 1 - (1 - 0{,}227337)(1 - 0{,}123493)$

$Q^2 = 0{,}32276$

Following the aforementioned calculations, the Q^2 value is 0.32276, which corresponds to the $Q^2 > 0$ value. This indicates that the regression model has a relevant prediction of 0.32276, which is acceptable and feasible for use in explaining the phenomenon under investigation in this study. Therefore, it can be concluded that the Q^2 value is within the range of $0.15 \leq Q^2 < 0.35$, which corresponds to a moderate level of relevance in the prediction. This implies that the independent variable has moderate predictive relevance in the formation of the dependent variable.

Hypothesis Test

Direct Effect Test (t-Tes)

This study aims to determine the significant of the effect of commodity prices (oil, coal, CPO, gold, tin, and nickel), exchange rates, inflation, and business risk on firm value, as well as the effect of commodity prices, exchange rates, and inflation on business risk. Following the regression estimation data presented in Table 2, the results of the hypothesis testing conducted on the effect of commodity prices, exchange rates, inflation, and business risk on firm value are as follows:

Table 3. Results of t-Test of the Effect of Commodity Prices, Exchange Rates, Inflation, and Business Risk on Firm Value

Independent Variable	Coefficient	t-Statistic	Prob	Conclusion
Oil Commodity Price	-7,34590	-1,511464	0,1325	Oil Commodity Price does not affect firm value
Coal Commodity Price	-22,68830	-2,136885	0,0340	Coal Commodity Price has a negative effect on firm value
CPO Commodity Price	-0,64986	-0,231282	0,8174	CPO Commodity Price does not affect firm value
Gold Commodity Price	1,39616	0,644592	0,5200	Gold Commodity Price does not affect firm value
Tin Commodity Price	-0,74369	-0,316271	0,7522	Tin Commodity Price does not affect firm value
Nickel Commodity Price	3,58562	0,550072	0,5830	Nickel Commodity Price does not affect firm value
Exchange rate	-65,71642	-2,667723	0,0083	The exchange rate has a negative effect on firm value
Inflation	65,09948	0,817684	0,4146	Inflation does not affect firm value
Business Risk	0,23341	3,204599	0,0016	Business Risk has a positive effect on firm values

Source: Data processed with Eviews 10

Following the regression estimation data presented in Table 3, the hypothesis test results about the influence of commodity prices, exchange rates, and inflation on business risk are as follows:

Table 4. Results of t-Test of the Effect of Commodity Prices, Exchange Rates, and Inflation on Business Risk

Independent Variable	Coefficient	t-Statistic	Prob	Conclusion
Oil Commodity Price	15,79721	3,241864	0,0014	Oil Commodity Price has a positive effect on business risk
Coal Commodity Price	-28,88320	-2,689416	0,0078	Coal Commodity Price has a negative effect on business risk
CPO Commodity Price	4,83094	1,679276	0,0949	CPO Commodity Price does not affect business risk
Gold Commodity Price	-1,37338	-0,615089	0,5393	Gold Commodity Price does not affect business risk
Tin Commodity Price	-2,23788	-0,924472	0,3565	Tin Commodity Price does not affect business risk
Nickel Commodity Price	-7,52139	-1,122094	0,2633	Nickel Commodity Price does not affect business risk
Exchange rate	65,79967	2,638797	0,0091	The exchange rate has a positive effect on business risk
Inflation	32,87706	0,400345	0,6894	Inflation does not affect business risk

Source: Data processed with Eviews 10

Indirect Effect Test (Sobel Test)

In this study, the objective was to ascertain the degree to which business risk (Z) acts as a mediator in the relationship between commodity prices (X_1), exchange rates (X_2), and inflation (X_3) on firm value (Y). To this end, the Sobel Test was conducted. The fundamental premise of the Sobel test is to ascertain whether the Z-value of the calculated X_1, X_2, X_3, and Y coefficients is greater than or equal to the Z-table value of 1.96. If the calculated Z-value exceeds the value in the Z-table, it can be concluded that there is a mediating influence (Ghozali, 2018). The results of the Sobel test are presented below:

Table 5. Mediation Test Results using the Sobel Test

Variable	Indirect effect	Z Sobel	Z Tabel (Z = 1,96)
Oil Commodity Price → Business risk → Firm value	3,687258	2,279055	Larger
Coal Commodity Price → Business risk → Firm value	-6,741685	2,060073	Larger
CPO Commodity Price → Business risk → Firm value	1,127599	1,487427	Larger
Gold Commodity Price → Business risk → Firm value	-0,320563	0,604063	Larger
Nickel Commodity Price → Business risk → Firm value	-0,522348	0,888249	Larger
Tin Commodity Price → Business risk → Firm value	-1,755583	1,059048	Larger
Exchange rate → Business risk → Firm value	15,358433	2,037056	Larger

Inflation → Business risk → Firm value	7,673900	0,397257	Larger

Source: Data processed with Eviews 10

DISCUSSION

Commodity prices, especially coal, has a negative effect on firm value. The results of this study align with the theoretical framework regarding firm value, which posits that a company's value is contingent upon the present value of all anticipated future cash flows. Such projections are based on past operational and financial performance, as well as future business prospects. A decline in commodity prices will directly impact a company's revenue and profitability. In this study, the firm value is proxied by Tobin's Q, which measures value over the long term. Fluctuations in commodity prices are temporary and do not always affect the long term.

Coal commodity prices have a significant negative effect on business risk and petroleum commodity prices have a significant positive effect on business risk. Price uncertainty will affect the company's income and expenses, so the company faces price risk. Fluctuations in commodity prices can significantly affect the level of business risk faced by the company. Companies engaged in downstream industries such as mining, manufacturing, and trading often depend on commodities as the main raw material or product handled. If there are fluctuations in the price of these commodities, it will have a direct impact on the company's production costs and revenues. The more volatile the price movement, the greater the uncertainty the company faces in planning its finances and business operations. This increases operational, financial, and strategic risks due to the mismatch between planning and market conditions.

The exchange rate, specifically the exchange rate of the US dollar against the rupiah, has a considerable negative impact on firm value. This finding lends further support to the theory of purchasing power parity and Abritage Pricing Theory (APT), which posits that asset prices are determined by some risk factors that affect returns. Exchange rates are regarded as a key economic factor with the potential to influence asset pricing (Zheng & Chen, 2013). In this study, the US dollar depreciated during the study period (2017-2022), which had an impact on production costs and company profits. In Indonesia, the US dollar is a significant currency utilized in the calculation of the real effective exchange rate (REER), which is employed in international trade transactions. Additionally, the 2017-2022 research period was marked by the global impact of the ongoing pandemic of COVID-19, which significantly affected economic conditions across the globe and had a notable impact on nearly all business sectors. The existence of this problem can also be regarded as an external factor that causes depreciation, thereby increasing production costs and reducing the company's profit and book value.

Exchange rates have a significant positive effect on business risk. As Nurwani (2016)asserts in his research, companies that primarily engage in product exports will experience a positive impact if the rupiah currency appreciates against the currency of the export destination country. An increase in the value of the rupiah tends to result in a reduction in the cost of doing business. Such an outcome would facilitate more effective company operations and lead to increased sales. The findings of this study are corroborated by prior research conducted by Shim et al. (2020) and Pan (2023), which asserts that exchange rates exert a substantial positive influence on business risk. Fluctuations in currency exchange rates can result in either currency depreciation or appreciation. In the event of a depreciation of the rupiah against the currency of the export destination country, the product price in the destination country's currency will become more competitive, thereby increasing export competitiveness. Nevertheless, a depreciation of the currency may also result in the cost of imported raw materials and spare parts becoming more expensive, which could potentially lead to an increase in production costs. Fluctuations in currency exchange rates impact a company's production costs, thereby increasing the business risks it faces.

Inflation does not affect firm value. The share price of mining sector companies and plantation sub-sectors, which are subject to fluctuations in price following global commodity prices, will inevitably be influenced by inflation. A decline in stock price impacts a firm value. This study supports the APT theory, which suggests that inflation affects purchasing power and economic conditions, subsequently influencing company income expectations. In Indonesia, inflation remained stable between 2017 and

2022, fluctuating between 2-4%, which limited its impact on firm value, especially in the mining and plantation sectors.

Inflation has no impact on business risk. In the context of low to moderate inflation rates, the impact on business risk is less discernible. In the context of low inflation rates, companies are deemed to possess the capacity to adjust product selling prices in response to rising production costs. Furthermore, they can mitigate risks through the use of hedging strategies, which involve the formation of long-term contracts or the utilization of specific financial instruments. During the research period, fluctuations in Indonesia's inflation rate tended towards stability, with an average inflation rate below 10%.

The impact of business risk on firm value is statistically significant and positive. A high level of business risk is indicative of a high degree of income volatility. The higher the business risk faced by the company, the more stable the company's condition is likely to be, given that it is still able to generate profits. A company that is able to generate substantial profits despite high operating costs is likely to have a positive company value. It is assumed that companies are capable of applying the principles of hedging theory, which is a risk mitigation effort that can increase firm value through various means, including reducing agency costs, overcoming management investment shortages, compensating managers, reducing costs, addressing financial distress and bankruptcy.

Business risk can mediate the effect of oil and coal commodity prices on firm value. The results of this indirect effect test, can be interpreted that an increase in commodity prices will reduce business risk and increase firm value along with an increase in company income. Conversely, a decline in commodity prices can lead to an expansion of business risk, which in turn may precipitate a reduction in firm value. Nevertheless, effectively managed business risk can serve as a mitigating factor against the adverse effects of commodity price volatility on firm value. Companies that are able to effectively manage their business risks by minimizing exposure to changes in commodity prices, maintaining product quality, and consistently demonstrating cost-effectiveness will be able to maintain company value despite the decline in commodity prices. As posited by Bartram in Risman et al. (2017), fluctuating commodity prices will have an impact on the company's production process, which in turn affects the company's value. It is possible for companies to exert control over fluctuations in commodity selling prices by entering into long-term contracts, developing brand advantages based on product quality, and implementing efficient production and operational costs. Therefore, despite fluctuations in commodity prices, the company can maintain profitability. The more effectively a company manages its business risks, the less the impact of commodity price changes on the company's fundamental operations.

Business risk can mediate the effect of exchange rates on firm value. Exchange rates represent one of the macroeconomic factors that can affect firm value, particularly in the context of internationally traded companies. Fluctuations in exchange rates can result in an increase or decrease in the cost of imported raw materials, as well as a corresponding impact on revenue from export sales, which in turn affects the profitability of the company. In this context, business risks, such as operational risk, market risk, and financial risk, function as mediating factors that can alter the direct impact of exchange rate fluctuations on firm value. Business risk plays a pivotal role in mediating the impact of exchange rates on firm value. Fluctuations in exchange rates can influence a firm's operating costs, revenues, and cash flows, which subsequently affect the firm's value as perceived by investors and other stakeholders. The implementation of effective risk management strategies, such as hedging or diversification of revenue sources, enables companies to mitigate or regulate the adverse effects of exchange rate fluctuations, thereby ensuring the stability of the company's value. Conversely, firms that lack robust risk management strategies may witness heightened volatility in firm value as a consequence of exchange rate shifts. Therefore, business risk acts as a mediator, elucidating the relationship between exchange rate fluctuations and their impact on firm value. Effective risk management strategies can assist firms in mitigating the adverse effects of exchange rate changes, thereby maintaining or even enhancing firm value.

Business risk cannot mediate the effect of inflation on firm value. The share price of mining sector companies and the plantation sub-sector is subject to fluctuations in accordance with global commodity prices. Consequently, inflation will exert an influence on the share price of these companies. An

inflationary environment exerts a detrimental influence on the financial performance of a company. When inflation reaches a certain threshold, it can prompt investors to shift their capital into tangible assets. An inflation rate that is too high causes an increase in production costs that is not proportional to the increase in selling prices. This can result in a reduction of the company's profit margin. Furthermore, elevated inflation rates diminish a company's profitability, as sustained price increases impact consumer purchasing power, which in turn affects demand. A reduction in demand will result in a corresponding decline in sales, despite the maintenance of production costs at a constant level. The effectiveness of hedging against business risk will apply if inflation conditions are moderate. In high inflation conditions, hedging does not have a direct impact in maintaining the stability of the company's value.

CONCLUSION

Based on the test results, it can be concluded that commodity prices and exchange rates have a significant negative effect on firm value; inflation does not affect firm value and business risk has a significant positive effect on firm value; commodity prices and exchange rate have a significant positive effect on business risk; and inflation does not effect on business risk; business risk can mediate the effect of commodity prices and exchange rate on firm value; and business risk is not able to mediate the effect of inflation on firm value. The findings of this study can inform the decision-making processes of companies or industry players in the plantation and mining sectors. In particular, the results may be used to inform the planning and evaluation of company policies. Companies engaged in the commodity industry are subject to fluctuations in commodity prices, currency exchange rates, and inflation. Consequently, it is important for companies to understand these trends and to consider them when making plans, strategies, and financial decisions.

REFERENCES

Alao, E. M., & Oloni, E. F. (2015). The Effect of Commodity Price Changes on Firm Value: Study of Food and Drinks Service Industry in Nigeria. *European Journal of Accounting Auditing and Finance Research*, *3*(6), Article 6. https://doi.org/10.37745/ejaafr.2013

Asnah, D. (2021). *Pengantar Ilmu Ekonomi Makro*. Yogyakarta. Deepublish.

Chen, N.-F., Roll, R., & Ross, S. A. (1986). Economic Forces and The Stock Market. *The Journal of Business*, *59*(3), 383. https://doi.org/10.1086/296344

Ghozali, I. (2018). *Aplikasi Multivariate dengan Program IBM SPSS 25 (Edisi 9)* (9th ed.). Semarang. Universitas Diponegoro.

Gitman, L. J., Juchau, R., & Flanagan, J. (2014). *Principles of Managerial Finance-Pearson* (14th ed.). England. Pearson Higher Education AU.

Hamidah, H., Hartini, H., & Mardiyati, U. (2015). Pengaruh Inflasi, Suku Bunga BI, Profitabilitas, dan Risiko Finansial terhadap Nilai Perusahaan Sektor Properti Tahun 2011-2013. *JRMSI - Jurnal Riset Manajemen Sains Indonesia*, *6*(1), 395–416. https://doi.org/10.21009/JRMSI.006.1.04

Hamma, W., Jarboui, A., & Ghorbel, A. (2014). Effect of Oil Price Volatility on Tunisian Stock Market at Sector-level and Effectiveness of Hedging Strategy. *Procedia Economics and Finance*, *13*, 109–127. https://doi.org/10.1016/S2212-5671(14)00434-1

Handini, S., & Astawinetu, E. D. (2020). *Teori Portofolio dan Pasar Modal Indonesia*. Surabaya. Scopindo Media Pustaka.

Ihsan, H., Rashid, A., & Naz, A. (2018). Exchange Rate Exposure and Firm Value: An Assessment of Domestic Versus Multinational Firms. *THE LAHORE JOURNAL OF ECONOMICS*, *23*(1), Article 1. https://doi.org/10.35536/lje.2018.v23.i1.A3

Indrawati, N. K. & Sumiati. (2019). *Manajemen Keuangan Perusahaan*. Malang. UB Press.

Irawati, A. E., & Komariyah, E. F. (2019). The Role of Capital Structure on The Effect of Dividend Policy and Business Risk on Firm Value (Evidence from Indonesian Manufacturing Company). *The Indonesian Journal of Accounting Research*, *22*(02). https://doi.org/10.33312/ijar.463

Irfani, A. S. (2020). *MANAJEMEN KEUANGAN DAN BISNIS; Teori dan Aplikasi*. Gramedia Pustaka Utama. https://books.google.co.id/books?id=qln8DwAAQBAJ

Jacque, L. L. (2019). *International Corporate Finance: Value Creation with Currency Derivatives in Global Capital Markets*. New Jersey. John Wiley & Sonsiley.

Jager, H., & Jepma, C. (2017). *Introduction to International Economics* (2nd ed.). New York. Bloomsbury Publishing.

Mankiw, N. G. (2007). *MAKROEKONOMI, edisi 6* (6th ed.). Jakarta. Erlangga.

Mardiyanto, H. (2009). *Inti Sari Manajemen Keuangan*. Jakarta. Grasindo.

Nursalim, A. B., Rate, P. V., & Baramuli, D. N. (2021). Pengaruh Inflasi dan Nilai Tukar Rupiah terhadap Dollar dengan Kurs Transaksi Tengah sebagai Gejala Resesi terhadap Perubahan. *Jurnal EMBA : Jurnal Riset Ekonomi, Manajemen, Bisnis dan Akuntansi*, *4*(9), 559–571. https://doi.org/10.35794/emba.v9i4.36403

Nurwani, N. (2016). Analisis Pengaruh Inflasi, Nilai Tukar Rupiah, dan Suku Bunga SBI terhadap Pergerakan Indeks Harga Saham Gabungan di Bursa Efek Indonesia. *EKONOMIKAWAN: Jurnal Ilmu Ekonomi dan Studi Pembangunan*, *16*(2), 166–178. https://doi.org/10.30596/ekonomikawan.v16i2.945

Pan, G. (2023). The Impact of Exchange Rate Fluctuation on Toyota Financial Performance and Its Hedging Strategy. *BCP Business & Management*, *43*, 270–276. https://doi.org/10.54691/bcpbm.v43i.4647

Pasaribu, U. R., Nuryartono, N., & Andati, T. (2019). Pengaruh Faktor Internal dan Eksternal Perusahaan terhadap Nilai Perusahaan. *Jurnal Aplikasi Bisnis Dan Manajemen*. https://doi.org/10.17358/jabm.5.3.441

Priyambudi, A. H., & Thamrin, H. (2021). *Analysis of the Effect of Macroeconomics and Firm Value on Consumer Goods Stock Returns*. *6*(8). www.ijisrt.com

Pujiati, A., & Hadiani, F. (2020). Analisis Pengaruh Profitabilitas, Kebijakan Dividen, Inflasi dan Nilai Tukar terhadap Nilai Perusahaan. *Journal of Applied Islamic Economics and Finance*, *1*(1), 160–170. https://doi.org/10.35313/jaief.v1i1.2400

Risman, A. (2015). The Causal Relationship Between Stock Prices and Exchange Rates. *Jurnal Ilmiah Manajemen Dan Bisnis*, *1*(2). https://doi.org/10.22441/jimb.v1i2.3682

Risman, A. (2021). *Kurs Mata Uang dan Nilai Perusahaan*. Pena Persada.

Risman, A., Salim, U., Sumiati, S., & Nur. (2017). Commodity Prices, Exchange Rates and Investment on Firm's Value Mediated by Business Risk: A Case from Indonesian Stock Exchange. *EUROPEAN RESEARCH STUDIES JOURNAL*, *XX* (Issue 3A), Article Issue 3A. https://doi.org/10.35808/ersj/725

Ross, P. S. A., Bradford D. Jordan, P., & Westerfield, R. W. (2015). *Fundamentals of Corporate Finance*. New York. McGraw-Hill Education.

Salvatore, D. (2011). *Introduction to International Economics*. New York. Wiley. m

Samudra, Y. P., & Widyawati, N. (2018). *Pengaruh Inflasi, Suku Bunga, dan Kurs Terhadap Nilai Perusahaan*. Jurnal Ilmu dan Riset Manajemen. *7*(8).

Shim, I., Özcan, ¸Sebnem Kalemli, & Liu, X. (2020). Exchange Rate Fluctuations and Firm Leverage. *IMF Working Papers*. 2020 International Monetary Fund.

Šimáková, J. (2017). The Impact of Exchange Rate Movements on Firm Value in Visegrad Countries. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, *65*(6), Article 6. https://doi.org/10.11118/actaun201765062105

Soeharjoto, S., Miyasto, M., & Mariyanti, T. (2021). Firm Value Determination with Inflation and Exchange Rate as a Moderating Variable (Study on The Manufacturing Industry Recorded in Indonesia Sharia Stock Index). *The International Journal of Accounting and Business Society*, *29*(2), Article 2. https://doi.org/10.21776/ub.ijabs.2021.29.2.5

Swari, A. B., & Pristiana, U. (2020). Pengaruh Makro Ekonomi terhadap Nilai Perusahaan dengan Kinerja Keuangan sebagai Variabel Intervening pada Perusahaan Sub Sektor Kontruksi dan Bangunan yang Terdaftar di BEI Tahun 2016—2018. *JURNAL EKONOMI MANAJEMEN (JEM17)*, *5*(2), Article 2. http://dx.doi.org/10.30996/jem17.v5i2.4612

Thian, A. (2021). *Manajemen Risiko Bisnis* (1st ed.). Yogyakarta. Penerbit Andi.

Zheng, X., & Chen, B. M. (2013). *Stock Market Modeling and Forecasting: A System Adaptation Approach*. London. Springer.

