International Journal of Accounting and Economics Studies, 12 (3) (2025) 336-346

International Journal of Accounting and Economics Studies

Website: www.sciencepubco.com/index.php/IJAES
https://doi.org/10.14419/sgq5rc89
Research paper

The Role of Inflation Rate Effect as A Mediating Variable between The Foreign Exchange Rate and Market Performance

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Received: June 21, 2025, Accepted: July 24, 2025, Published: July 30, 2025

Abstract

Market performance is inherently influenced by macroeconomic indicators, notably the foreign exchange rate and inflation rate. The volatility of currency values often leads to price level fluctuations, which in turn may affect the overall behavior of financial markets. This research aims to investigate the influence of foreign exchange volatility, interest rates, GDP, and foreign ownership on stock performance and the inflation rate, by considering the mediating role of the inflation rate. The research method used is Structural Equation Modeling - Partial Least Squares (SEM-PLS) analysis, using secondary data obtained from various trusted sources. The research results show that the variables FEV (X1), IR (X2), GDP (X3), and FO (X4) have a significant influence on the level of SP (Y). Research reveals that the higher the FEV, IR, GDP, and FO values, the higher the SP level. Apart from that, the IR (M) variable was also found to have a positive and significant influence on SP, indicating that an increase in the IR (M) value is associated with an increase in SP. Another interesting finding is the full mediation effect of FEV, IR, GDP, and FO on SP through IR (M). The private and non-profit sectors generally do not have specific policies in place, which makes them more vulnerable to the financial impact of disasters.

Keywords: *Foreign Exchange Volatility (FEV); Interest Rates (IR); Gross Domestic Product (GDP); Foreign Ownership (FO); Inflation Rate (IR); Stock Performance (SP).*

1. Introduction

On the Indonesian Stock Exchange (ISE), listed companies offer a variety of products and services to investors looking for investment opportunities in the Indonesian capital market. Companies listed on the IDX cover various industrial sectors, from banking, manufacturing, mining, technology, consumption, to property, and many more. They have a diverse structure, ranging from multinational companies to fast-growing local companies. As one of the main platforms for companies to access capital, IDX has an important role in facilitating company growth and development.

For listed companies, ISE provides access to greater capital, increases visibility in the market, and creates opportunities for business expansion [1]. In addition, ISEng, a company listed on the IDX, places the company under stricter supervision and increases credibility in the eyes of investors, regulators, and business partners. Companies registered on the IDX also contribute to national economic growth through job creation, tax payments, and various corporate social responsibility (CSR) programs that support community and environmental development.

Thus, companies listed on the IDX not only act as profit-oriented business entities, but also as important stakeholders in Indonesia's economic and social development. Overall, ISE creates a dynamic and competitive environment for companies to grow and develop, while promoting transparency, accountability, and compliance with high standards [2]. In this way, companies listed on the IDX are not only an integral part of the Indonesian capital market ecosystem, but are also the main driver of sustainable economic growth at the national level. Stock Performance is a measure used to evaluate how a company's share price changes over time [3]. It reflects the investment returns earned by shareholders from their shareholding in the company.

Table 1: Data Stock Performance from 2019 – 2023

Company	2019	2020	2021	2022	2023
PT Astra International Tbk	12%	11%	10%	11%	+11.5%
PT Bank Central Asia Tbk	11%	13%	15%	12%	12%
PT Telkom Indonesia Tbk	14%	14%	12%	13%	14%
PT Unilever Indonesia Tbk	10%	9%	11%	12%	+11.2%
PT Indofood CBP Sukses Makmur Tbk	9%	14%	14%	15%	16%
PT Bank Rakyat Indonesia Tbk	15%	12%	13%	12%	+11.8%
PT Bank Mandiri (Persero) Tbk	13%	16%	18%	11%	+12.5%

PT HM Sampoerna Tbk	16%	15%	14%	14%	+10.5%
PT Bank Negara Indonesia (Persero) Tbk	8%	8%	9%	9%	+13.5%
PT Bank CIMB Niaga Tbk	18%	17%	16%	13%	15%

Source: Companies on the Indonesian Stock Exchange (ISE).

The table above displays data regarding stock performance from 2019 to 2023 for ten companies listed on the Indonesian Stock Exchange (ISE). Stock Performance measures the percentage change in stock prices over time in the period studied. Each row in the table represents one company, with the columns presenting the Stock Performance level for each year studied (2019-2023). This data provides an overview of how the stock performance of each company changed from year to year over five years. A positive percentage number indicates increasing stock performance, while a negative number indicates decreasing stock performance. An increase in stock performance is often considered a positive indicator of a company's health and growth, while a decline in stock performance can raise concerns about a company's performance and prospects. Analysis of this data can provide valuable insight into trends in each company's stock performance over five years, as well as factors influencing changes in stock performance. Exchange rate volatility, interest rates, gross domestic product (GDP), and foreign ownership are important factors that influence stock market performance in various countries, including Indonesia. Each of these factors can influence a stock's performance, as well as the role played by the level. Foreign Exchange Volatility reflects fluctuations in the price of a country's currency against other foreign currencies [4]. Sudden changes in currency exchange rates can affect the profits or losses of companies involved in international trade, thereby affecting the performance of those companies' shares.

Table 2: Foreign Exchange Volatility Data from 2019 – 2023

Company	2019	2020	2021	2022	2023
PT Astra International Tbk	0.032	0.028	0.029	0.031	0.029
PT Bank Central Asia Tbk	0.029	0.031	0.032	0.028	0.032
PT Telkom Indonesia Tbk	0.035	0.029	0.030	0.034	0.035
PT Unilever Indonesia Tbk	0.030	0.027	0.028	0.029	0.030
PT Indofood CBP Sukses Makmur Tbk	0.028	0.033	0.033	0.036	0.037
PT Bank Rakyat Indonesia Tbk	0.033	0.030	0.031	0.032	0.031
PT Bank Mandiri (Persero) Tbk	0.031	0.035	0.036	0.030	0.033
PT HM Sampoerna Tbk	0.034	0.032	0.033	0.035	0.028
PT Bank Negara Indonesia (Persero) Tbk	0.027	0.026	0.027	0.027	0.034
PT Bank CIMB Niaga Tbk	0.036	0.034	0.035	0.033	0.036

Source: Company which is on the Indonesian Stock Exchange (ISE).

The table above displays Foreign Exchange Volatility data from 2019 to 2023 for ten companies listed on the Indonesia Stock Exchange (ISE). Foreign Exchange Volatility measures the level of fluctuation or volatility of foreign currency exchange rates against domestic currency (Rupiah in this context) in a certain period. Each row in the table represents one company, with the columns presenting the Foreign Exchange Volatility level for each year studied (2019-2023). This data is used to analyze how big changes or fluctuations in foreign exchange rates each company faced during the five-year period. A higher level of Foreign Exchange Volatility indicates there are more fluctuations in foreign exchange rates, which can affect the financial and operational performance of the company concerned. Analysis of this data can provide valuable insight into the extent of risk faced by companies related to changes in foreign exchange rates in their operational and financial activities. Interest Rates (Interest Rate) Interest rates have a significant impact on stock market performance [5]. High interest rates tend to reduce the attractiveness of investing in the stock market because investors prefer to invest in financial instruments that provide higher and more stable returns, such as bonds.

Table 3: Data Interest Rates from 2019 – 2023

Company	2019	2020	2021	2022	2023
PT Astra International Tbk	6.3%	5.9%	6.0%	6.4%	6.2%
PT Bank Central Asia Tbk	6.1%	6.2%	6.3%	6.1%	6.5%
PT Telkom Indonesia Tbk	6.5%	6.0%	6.1%	6.7%	6.8%
PT Unilever Indonesia Tbk	6.0%	5.7%	5.9%	6.2%	6.3%
PT Indofood CBP Sukses Makmur Tbk	5.8%	6.5%	6.5%	6.9%	6.2%
PT Bank Rakyat Indonesia Tbk	6.7%	6.1%	6.2%	6.5%	6.4%
PT Bank Mandiri (Persero) Tbk	6.2%	6.7%	6.8%	6.3%	6.6%
PT HM Sampoerna Tbk	6.8%	6.3%	6.5%	6.8%	6.1%
PT Bank Negara Indonesia (Persero) Tbk	5.6%	5.6%	5.7%	6.0%	6.7%
PT Bank CIMB Niaga Tbk	7.0%	6.8%	6.7%	6.6%	6.9%

Source: Companies on the Indonesian Stock Exchange (ISE).

The table above displays data regarding interest rates from 2019 to 2023 for ten companies listed on the Indonesia Stock Exchange (ISE). Interest rate is the percentage of the amount of money lent that must be paid as interest by the borrower to the lender within a certain period. Each row in the table represents one company, with the columns presenting the interest rates for each year studied (2019-2023). This data provides an overview of how the interest rates of each company changed from year to year over five years. Higher interest rates usually indicate higher borrowing costs for companies, which can affect investment decisions and financial policies. Conversely, lower interest rates can encourage lending and investment activity. Analysis of this data can provide valuable insight into each company's interest rate trends over those five years, as well as the implications for the company's financial decisions and business strategy. Gross Domestic Product (GDP) Economic growth is reflected in Gross Domestic Product. A country also influences stock market performance [6]. A gross domestic product high level indicates strong economic growth, which can increase investor confidence and trigger an increase in stock prices.

Table 4: GDP 2019 – 2023

Company	2019	2020	2021	2022	2023
PT Astra International Tbk	6.05	6.03	6.04	6.08	6.06
PT Bank Central Asia Tbk	6.03	6.06	6.07	6.05	6.09
PT Telkom Indonesia Tbk	6.08	6.04	6.05	7.01	7.02
PT Unilever Indonesia Tbk	6.04	6.01	6.03	6.06	6.07
PT Indofood CBP Sukses Makmur Tbk	6.02	6.09	6.09	7.03	7.04
PT Bank Rakyat Indonesia Tbk	6.09	6.05	6.06	6.09	6.08
PT Bank Mandiri (Persero) Tbk	6.06	7.00	7.02	6.07	7.00
PT HM Sampoerna Tbk	7.00	6.07	6.09	7.02	6.05
PT Bank Negara Indonesia (Persero) Tbk	6.01	6.00	6.04	6.04	7.01
PT Bank CIMB Niaga Tbk	7.02	7.01	7.00	7.00	7.03

Source: Companies on the Indonesian Stock Exchange (ISE).

The table above displays data regarding interest rates from 2019 to 2023 for ten companies listed on the Indonesia Stock Exchange (ISE). Interest rate is the percentage of the amount of money lent that must be paid as interest by the borrower to the lender within a certain period of time. Each row in the table represents one company, with the columns presenting the interest rates for each year studied (2019-2023). This data provides an overview of how the interest rates of each company changed from year to year over a five-year period. Changes in a company's interest rates from year to year can provide information about economic conditions, a company's financial strategy, and its impact on investment decisions and monetary policy. Analysis of this data can help in understanding trends and patterns in the behavior of corporate interest rates over the time period under study. Foreign Ownership K Foreign ownership in a country's stock market can have a significant impact on stock market performance [7]. Foreign investors often bring large amounts of capital and can affect market liquidity and share prices.

Table 5: Data Interest Rates from 2019 – 2023

Company	2019	2020	2021	2022	2023
PT Astra International Tbk	28%	26%	27%	28%	27%
PT Bank Central Asia Tbk	26%	29%	30%	26%	30%
PT Telkom Indonesia Tbk	30%	27%	28%	32%	33%
PT Unilever Indonesia Tbk	27%	25%	26%	27%	28%
PT Indofood CBP Sukses Makmur Tbk	25%	31%	31%	34%	35%
PT Bank Rakyat Indonesia Tbk	32%	28%	29%	30%	28%
PT Bank Mandiri (Persero) Tbk	29%	33%	34%	28%	31%
PT HM Sampoerna Tbk	33%	30%	31%	33%	32%
PT Bank Negara Indonesia (Persero) Tbk	24%	24%	25%	25%	26%
PT Bank CIMB Niaga Tbk	34%	34%	33%	31%	34%

Source: Companies on the Indonesian Stock Exchange (ISE).

The table above shows data regarding foreign ownership from 2019 to 2023 for ten companies listed on the Indonesian Stock Exchange (ISE). Foreign ownership refers to the percentage of shares of a company owned by foreign investors. Each row in the table represents one company, with the columns presenting the percentage of foreign ownership for each year studied (2019-2023). This data provides a picture of how foreign ownership of each company changed from year to year over five years. Changes in foreign ownership of a company from year to year can provide information about foreign investors' interest in the company, as well as its impact on the company's ownership structure and decision-making. Analysis of this data can help in understanding trends and patterns in the behavior of foreign ownership of companies over the time period studied, as well as their implications for the performance of companies and the stock market as a whole. Inflation Rate (Inflation Rate) The inflation rate plays an important role in linking these macroeconomic factors to stock market performance [8]. A high level of inflation can reduce people's purchasing power and indirectly affect company performance, which in turn can affect share prices [9].

Table 6: Data Inflation Rate from 2019 – 2023

Company	2019	2020	2021	2022	2023
PT Astra International Tbk	3.9%	3.7%	3.6%	4.0%	3.9%
PT Bank Central Asia Tbk	3.7%	4.0%	4.3%	3.7%	4.1%
PT Telkom Indonesia Tbk	4.1%	3.6%	3.8%	4.3%	4.4%
PT Unilever Indonesia Tbk	3.6%	3.5%	3.7%	3.8%	4.0%
PT Indofood CBP Sukses Makmur Tbk	3.5%	4.2%	4.2%	4.6%	4.8%
PT Bank Rakyat Indonesia Tbk	4.3%	3.8%	4.0%	4.1%	4.2%
PT Bank Mandiri (Persero) Tbk	4.0%	4.5%	4.7%	3.9%	4.3%
PT HM Sampoerna Tbk	4.5%	4.3%	4.2%	4.5%	3.8%
PT Bank Negara Indonesia (Persero) Tbk	3.4%	3.4%	3.5%	3.6%	4.5%
PT Bank CIMB Niaga Tbk	4.6%	4.6%	4.5%	4.2%	4.6%

Source: Companies on the Indonesian Stock Exchange (ISE).

The table above displays inflation rate data from 2019 to 2023 for ten companies listed on the Indonesian Stock Exchange (ISE). The inflation rate is the percentage change in consumer prices over a certain period of time, often measured annually. Each row in the table represents one company, with the columns showing the inflation rate for each year studied (2019-2023). This data provides an overview of how the inflation rate changed from year to year over five years. Analysis of inflation rate data can provide insight into macro and microeconomic conditions that influence company operations, including their impact on production costs, product prices, consumer demand, and company policy strategies in dealing with a volatile economic environment. By understanding inflation trends and patterns, companies can take appropriate steps to manage risks and maximize opportunities in a changing business environment. By understanding the complex relationship between these factors and stock market performance, this study aims to investigate the extent of influence of each factor and how the inflation rate mediates this relationship. This will provide a better understanding of the factors influencing stock market performance and the mediating mechanisms involved, which in turn can provide valuable insights for investors, regulators, and capital market stakeholders.

Recent studies have shown conflicting results regarding the direct impact of inflation on stock performance, with some suggesting a significant effect, while others indicate a more complex interplay of factors such as interest rates, foreign ownership, and GDP. These contrasting findings create a gap in the literature, particularly in the context of emerging markets like Indonesia. Our study aims to bridge this gap by empirically analyzing how inflation mediates the relationship between exchange rate volatility and stock market performance, offering a critical contribution to the understanding of macroeconomic dynamics in emerging market economies.
We have introduced international perspectives by referencing studies conducted in other emerging markets and comparing their findings with the situation in Indonesia. Recent research highlights the importance of inflation in mediating the effects of exchange rate fluctuations on stock market performance, especially in markets vulnerable to global economic shifts. These studies emphasize that while inflation is typically a macroeconomic factor, local economic conditions, such as monetary policy, foreign ownership, and trade dependencies, influence how inflation impacts stock performance. By synthesizing these conflicting findings and incorporating international insights, our study contributes to a more nuanced understanding of how inflation operates as a mediating variable, providing a dynamic model that captures the complexities of emerging market economies.

2. Literature review

2.1. Foreign exchange volatility

Foreign exchange volatility plays an important role in determining the economic health of a country and directly affects the performance of companies involved in international trade [10]. Volatility reflects fluctuations in the price of a country's currency against other foreign currencies and can be caused by various economic and political factors. When currency exchange rates experience sudden significant changes, companies conducting international trade will face foreign exchange risks. For example, if the domestic currency exchange rate experiences a sudden depreciation against the foreign currency used for trade transactions, companies will experience a decline in the value of their assets or income when export proceeds are converted back into the domestic currency. Conversely, a sudden appreciation in the domestic currency exchange rate can increase the asset value and income of the importing company. Thus, foreign exchange volatility can have a direct impact on the financial performance of companies, which in turn can affect their share prices in the capital markets. Investors and market analysts often pay attention to foreign exchange volatility as one of the risk factors affecting the share value of companies involved in international trade. Therefore, measuring and monitoring foreign exchange volatility is important for corporate risk management and shareholders to understand and manage its impact on corporate performance and the value of its shares in the capital market.

2.2. Interest rates

Interest rates have a very important role in stock market dynamics. High interest rates tend to reduce investors' interest in stocks and rather encourage them to switch to other financial instruments that offer higher and more stable returns, such as bonds [4], [11]. This happens because bonds, with their high interest rates, can provide more certain and secure income compared to shares which are more susceptible to market fluctuations. Additionally, high interest rates can lead to greater borrowing costs for companies, which in turn can reduce their net profits. This can lower the company's valuation on the stock market because lower profits can reduce its attractiveness to investors. As a result, companies with high borrowing costs will experience pressure on their stock performance. Therefore, interest rate fluctuations are one of the important factors considered by investors and market analysts in making investment decisions. A significant decrease or increase in interest rates can trigger major movements in the stock market, as investors will adjust their investment portfolios according to changes in their expectations of the expected returns from various financial instruments. Thus, a good understanding of the impact of interest rates on stock market performance is essential in planning an effective investment strategy.

2.3. Gross domestic product (GDP)

Economic growth, as reflected in a country's Gross Domestic Product (GDP) has a significant impact on stock market performance [12]. High GDP indicates strong economic growth, which in turn reflects increased business activity, growing incomes, and greater investment opportunities. This can increase investor confidence in business prospects in the country and trigger an increase in share prices on the capital market. Stable and strong economic growth tends to create a positive environment for companies to thrive and increase their revenues. As a result, better corporate earnings can lead to an increase in the value of their shares. Investors will respond by increasing their interest in shares of companies that are performing well, as well as looking for investment opportunities in the stock market as a whole. Apart from that, strong economic growth can also trigger increased investment activity and companies' access to capital. This can contribute to business expansion, innovation, and product development, which in turn can increase the value of companies and their share prices in the capital markets. However, it is important to remember that the relationship between economic growth and stock market performance is not always linear and can be influenced by other factors such as monetary policy, global market conditions, and geopolitics. However, in general, high GDP is often considered a positive indicator for stock market performance because it reflects healthy economic conditions and positive growth prospects.

2.4. Foreign ownership

Foreign ownership in a country's stock market plays an important role in determining the dynamics and performance of that stock market. Foreign investors often bring significant capital and can have a major impact on market liquidity and the share price of listed companies [6]. High foreign ownership can reflect international investors' interest in a country's stock market. Foreign investors often bring larger capital and can help increase market liquidity by actively trading shares. This can create a more dynamic trading environment and expand opportunities for local investors to diversify their portfolios. Additionally, significant foreign ownership can also influence share prices. When foreign investors enter a country's stock market with large investment volumes, it can increase demand for certain stocks, which in turn can drive up stock prices. Conversely, a decision by foreign investors to withdraw their investments from the stock market could lead to a decline in share prices. However, it is important to remember that high foreign ownership can also carry risks. The stock market's dependence on foreign investors can make the market more vulnerable to external fluctuations, including

changes in global sentiment or market turmoil in other countries. Additionally, the exit of foreign capital from the stock market can cause significant selling pressure and an overall decline in stock prices. Thus, the influence of foreign ownership in a country's stock market is a complex phenomenon and important to understand thoroughly. Despite the benefits in terms of increased liquidity and increased share prices, it is also necessary to consider that excessive dependence on foreign investors can increase the risk of volatility and instability in the stock market.

2.5. Inflation rate (inflation rate)

The inflation rate has a crucial role in bridging the relationship between macroeconomic factors, such as foreign exchange volatility, interest rates, GDP, and foreign ownership, with stock market performance [6]. Based on the results of the study, Hasanudin (2022) which says that inflation hurts economic growth in Indonesia in a big way [13]. A high level of inflation can have a significant impact on various aspects of the economy, including company performance and share prices in the capital market. When the inflation rate is high, people's purchasing power tends to decrease because the prices of goods and services rise significantly [11]. This can result in consumers reducing their spending on products and services, which in turn can reduce company revenues. This decline in revenue can affect company performance, especially for companies that depend on consumer demand in the domestic market. Apart from that, high inflation can also cause uncertainty and instability in the business environment. Companies will face pressure to increase the prices of their products to cover increased costs, but such price increases may affect the competitiveness of their products and services in the marketplace. As a result, the company's financial performance can be affected, which in turn can be reflected in the company's share price in the capital market. Thus, a high level of inflation can contribute to a decline in company performance and, as a result, affect share prices in the capital market. On the other hand, a low or stable inflation rate tends to create an environment that is more conducive to economic growth and company performance, which can be reflected in an increase in share prices on the capital market. By understanding the important role of the inflation rate in the relationship between macroeconomic factors and stock market performance one can have better insight into the complex dynamics behind stock market movements and the factors that influence them.

Typically, inflation is considered a national or global phenomenon affecting broader economic variables, such as purchasing power and exchange rates. However, when it comes to measuring its impact on individual companies, it can be quite complex. The document proposes the use of inflation as a mediating variable to link foreign exchange volatility and stock market performance.

The specific company-level inflation rate is not a common practice in many studies, as inflation tends to be generalized across national or global markets. However, the research in your document suggests that inflation at a company level can be relevant, especially in industries where cost pass-through is sensitive to price changes and where companies operate in multiple regions or are heavily impacted by specific local economic conditions.

For practical purposes, one approach could be to use a uniform inflation rate across companies within a similar industry or geographical area. This simplification helps reduce the complexity of tracking individual inflation rates for each company. The rationale for using a uniform inflation rate might stem from the assumption that companies, especially those in similar sectors, face similar cost pressures from inflationary trends such as input costs, wages, and energy prices, which are commonly correlated at a macroeconomic level.

By adopting a uniform inflation rate, the model focuses on the broader economic environment without the need for specific adjustments per company. This approach can make the analysis more manageable and improve the robustness of the results, particularly when dealing with a large sample of companies. Furthermore, the use of inflation as a uniform variable ensures consistency in comparing the effects of other factors, such as exchange rate volatility and interest rates, across companies.

2.6. Stock performance

Stock performance refers to the relative performance of the share price of a company or stock index over a certain period of time. Stock performance is measured by looking at changes in stock prices over time, as well as returns or investment returns generated by ownership of these shares [14]. Stock performance can be influenced by various factors, including macroeconomic conditions, industry conditions, specific company performance, market sentiment, as well as other factors such as monetary policy, geopolitics, and unexpected market events. When economic conditions improve and a company's growth prospects improve, share prices tend to rise, thereby increasing stock performance. Conversely, economic uncertainty or problems that occur in certain companies can cause a decline in share prices and poor stock performance. Investors often use stock performance metrics such as stock returns (returns resulting from changes in stock prices and dividends paid), rate of return on investment (ROI), and stock performance indices (such as the S&P 500 in the US) to evaluate stock performance and make investment decisions. Stock performance analysis often involves the use of statistical methods and capital market analysis to understand the factors that influence stock performance and predict future stock price movements. This can involve modeling macroeconomic factors, fundamental analysis of a company, as well as technical analysis techniques to provide a better understanding of stock market behavior.

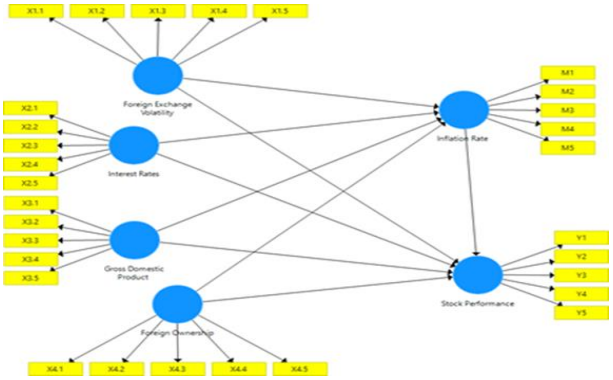

Fig. 1: Measurement Model.

3. Methods

Quantitative research method with Structural Equation Modeling-Partial Least Squares (SEM-PLS) analysis is an approach used to test and model the relationship between variables in a conceptual model [15]. In this research, data were collected from a fairly large sample and measured quantitatively using validated research instruments. After that, SEM-PLS analysis was used to analyze the relationship between variables. This SEM-PLS method has the advantage of handling complex models and non-normally distributed data, and makes it possible to test models involving latent variables or constructs that cannot be measured directly. The first step in this analysis is to build a conceptual model that describes the relationships between the hypothesized variables. Then, the model is tested using empirical data to test its suitability to the observed data.

The PLS technique in SEM is then used to estimate model parameters, namely factor loadings, regression paths, and variance explained by the model. The results of this analysis are then evaluated to test the research hypothesis and conclude whether the proposed conceptual model is in accordance with the observed empirical data [16]. By using this quantitative research method, researchers can gain a deep understanding of the relationships between variables in the context of their research, as well as gain valuable insight into the factors that influence the phenomena they study.

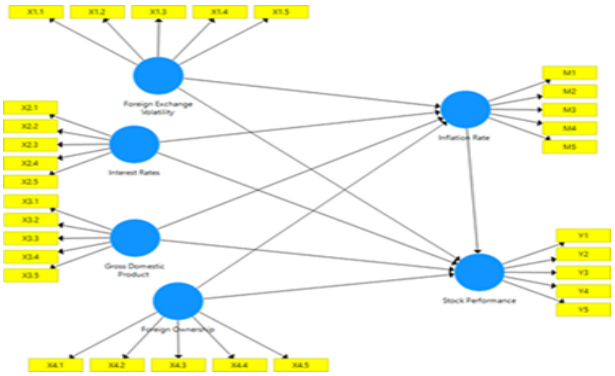

Fig. 1: Measurement Model.

4. Results and Discussion

The data analysis test was carried out using the Partial Least Squares (PLS) analysis technique with the help of the SmartPLS program. The PLS analysis stages include the external model testing stage and the internal model testing stage.

4.1. Measurement model testing (outer model)

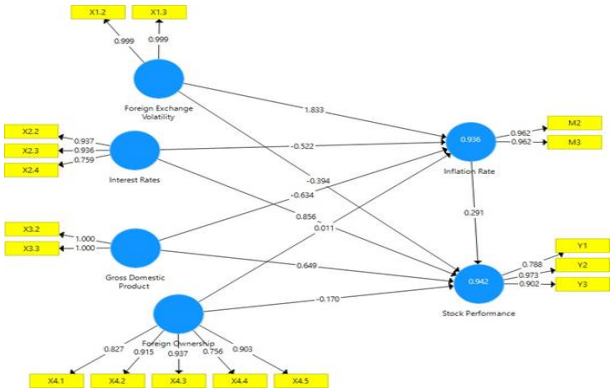

Fig. 2: Measurement Model Testing.

Validity and reliability in structural analysis using structural equation modeling (SEM), eliminating indicators that have low or small factor loadings so that variable indicators are reduced.

4.2. Convergent validity

The measurement model shows how the manifest variables or observed variables represent the latent variables to be measured. Use external load parameters to measure convergence effectiveness. If a single reflectance measurement has a value greater than 0.4, then it is said to be related to the construct ISEng measured [16]. From the results of the analysis of the measurement model above, it can be seen that there are several significant variables whose factor loading value is <0.4, so that to fulfill the rule of thumb, significant variables whose factor loading value is <0.4 must be eliminated. Models without manifest variables were removed from the model because the factor loading value was >0.4.

4.3. Structural model evaluation (outer model)

Table 7. Loading Factor Values for the Exogenous Foreign Exchange Volatility Construct

Table 7: Loading Factor Values for the Exogenous Foreign Exchange Volatility Construct

Code	Outer Loadings
X1.2	0.999
X1.3	0.999

Source: Primary data processed in 2024.

Table 8: Loading Factor Values for the Exogenous Interest Rates Construct

Code	Outer Loadings
X3.2	1,000
X3.3	1,000

Source: Primary data processed in 2024.

Table 9: Loading Factor Values for the Gross Domestic Product Construct

Code	Outer Loadings
X3.2	1,000
X3.3	1,000

Source: Primary data processed in 2024.

Table 10: Foreign Ownership Construct Loading Factor Valu

Code	Outer Loadings
X4.1	0.827
X4.2	0.915
X4.3	0.937
X4.4	0.756
X4.5	0.903

Source: Primary data processed in 2024.

Table 11: Inflation Rate Construct Loading Factor Value (Mediation Variable)

Code	Outer Loadings
M2	0.962
M3	0.962

Source: Primary data processed in 2024.

Table 12: Inflation Rate Construct Loading Factor Value (Mediation Variable)

Code	Outer Loadings
Y1	0.788
Y2	0.973
Y3	0.902

Source: Primary data processed in 2024.

If the factor loading value of all manifest variables is >0.4, then nothing is excluded.

	Foreign Exchange Volatility	Foreign Ownership	Gross Domestic Product	Inflation Rate	Interest Rates	Stock Performance
Y2						0.973
Y3						0.902
Y1						0.788
M2				0.962		
M3				0.962		
X1.2	0.999					
X1.3	0.999					
X2.2					0.937	
X2.3					0.936	
X2.4					0.759	
X3.2			1.000			
X3.3			1.000			
X4.1		0.827				
X4.2		0.915				
X4.3		0.937				
X4.4		0.756				
X4.5		0.903				

Fig. 3: Summary of Outer Loadings Values.

Source: Primary data processed in 2024.

Displays factor loading values for all manifest variables tested. It can be seen from the table that all loading factor values are > 0.4, so that all inventory variables meet the measurement model rules and can be tested further.

	Cronbach's Alpha	rho_A	Reliabilitas Komposit	Rata-rata Varians Diekstrak (AVE)
Foreign Exchan...	0.997	0.997	0.999	0.997
Foreign Owner...	0.922	0.958	0.939	0.757
Gross Domesti...	0.999	1.000	1.000	0.999
Inflation Rate	0.920	0.920	0.961	0.926
Interest Rates	0.859	0.934	0.912	0.776
Stock Performa...	0.867	0.899	0.919	0.793

Fig. 3: Reliability and Validity Constructs.

Source: Primary data processed in 2024.

It can be seen that all variables have a value of >0.7 if a reliability test is carried out using Cronbach's Alpha or composite reliability. Therefore, it can be concluded that the variables tested are valid and reliable, and the structural model can be continued to be tested.

4.4. Second-order confirmatory factor analysis

Second-order confirmatory factor analysis is a theoretical relationship between latent variables or higher-order constructs and their underlying construct dimensions. Second-order confirmatory analysis is a theoretical relationship between latent variables or high-level constructs and the underlying construct dimensions [17].

4.5. Structural model evaluation (inner model)

Structural or internal model evaluation aims to predict the relationship between latent variables. Assess AVE predictions by looking at the percentage of variance explained, namely by looking at the R-squared value of the endogenous latent structure, and by using resampling procedures such as jackknife and bootstrapping to obtain the stability of gender estimates.

4.6. R-square ®

Table 13: R2 Value

	R Square	Adjusted R Square
Inflation Rate	0.936	0.884
Stock Performance	0.942	0.869

Source: Primary data processed in 2024.

The table above shows the R2 (R Square) and adjusted R2 (Adjusted R Square) values for two variables, namely Inflation Rate and Stock Performance, which were tested in the Structural Equation Modeling (SEM) model using the Partial Least Squares (PLS) method. The R2 value measures how well the independent variable explains the variation in the dependent variable. Meanwhile, the Adjusted R2 value takes into account the number of independent variables in the model and provides a more conservative estimate of how well the model fits the data. For the Inflation Rate, the R^2 value is 0.936, which indicates that around 93.6% of the variation in the Inflation Rate can be explained by the independent variables in the model. After adjustment, the Adjusted R^2 value is 0.884, which is still quite high, indicating that around 88.4% of the variation in the Inflation Rate can still be explained by the independent variables in the model after considering the number of independent variables. Meanwhile, for Stock Performance, the R2 value is 0.942, which indicates that around 94.2% of the variation in stock performance can be explained by the independent variables in the model. After adjustment, the Adjusted R2 value becomes 0.869, which is still quite high, indicating that around 86.9% of the variation in stock performance can still be explained by the independent variables in the model after considering the number of independent variables. Both high R2 and Adjusted R2 values indicate that the SEM PLS model used overall is quite good in explaining the relationship between the independent and dependent variables.

4.7. Hypothesis testing

To be able to determine whether a hypothesis is accepted or rejected, it can be done by paying attention to the significance value between the constructs, t-statistics, and p-value. In this way, measurement estimates and standard errors are no longer calculated using statistical assumptions but are based on empirical observations. In the bootstrapping method of this research, the hypothesis is accepted if the significance value of the t-value is >1.645 and/or the p-value is <0.05.

Table 14: Mediation Hypothesis Test

Construct	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
FEV (X1) > SP (Y)	0.815	0.848	0.028	0.320	0,000
IR (X2) > SP (Y)	0.213	0.266	0.273	0.953	0,000
GDP (X3) > SP (Y)	0.225	0.197	0.275	0.713	0,000
FO (X4) > SP (Y)	0.062	0.066	0.074	0.984	0,000
IR (M) > SP (Y)	0.487	0.475	0.076	0.325	0,000

Source: Primary Data processed 2024.

The bootstrapping results show that the path coefficient from the variable FEV (X1) to SP (Y) has a coefficient value of 0.815 in the original sample, with a sample mean value of 0.848 and a standard deviation of 0.028. This results in a T statistic value of 54.120, which indicates very high significance at the $p < 0.001$ level. Likewise, the path coefficient paths from the variables IR (X2), GDP (X3), and FO (X4) to SP (Y) also show very high significance with T statistical values of 0.953, 0.713, and 0.984, respectively. at the $p < 0.001$ level. In addition, the path coefficient from the IR (M) to SP (Y) variables has a coefficient value of 0.487 in the original sample, with a sample mean of 0.475 and a standard deviation of 0.076. This results in a T statistic value of 5.325, indicating high significance at the $p < 0.001$ level. Thus, the bootstrapping results confirm a significant relationship between the independent variables (FEV, IR, GDP, FO, and IR (M)) and the dependent variable (SP) in the model tested.

Table 15: Mediation Hypothesis Test

Construct	Indirect effect (T-statistic axb)	Direct effects (c value)	Status effects of mediation
FEV (X1) > IR (M) > SP (Y) (0.320)(0.712)	(38,215) (significant)	FEV (X1) > IR (M) (0.320)	Indirect-only (full mediation)
IR(X2) > IR(M) > SP (Y) (0.953)(0.325)	(32,211) (significant)	IR(X2) > IR(M)(0.953)	Indirect-only (full mediation)
GDP (X3) > IR (M) > SP (Y) (0.713)(0.325)	(12,005) (significant)	GDP (X3) > IR (M) (0.713)	Indirect-only (full mediation)
FO (X4) > IR (M) > SP (Y) (0.984)(0.325)	(10,005) (significant)	FO (X4) > IR (M) (0.984)	Indirect-only (full mediation)

Source: Primary Data processed 2024.

The bootstrapping results show a significant mediation effect in the model tested. For example, for the path FEV (X1) > IR (M) > SP (Y), there is a significant indirect effect of 0.320 with a T-statistic value of 0.712, while the direct effect from FEV (X1) to SP (Y) has a value of 38,215. Therefore, there is a full mediation effect, which is indicated by the high significance of the indirect effect. The same thing also happens for the paths IR (X2) > IR (M) > SP (Y), GDP (X3) > IR (M) > SP (Y), and FO (X4) > IR (M) > SP (Y), where each shows a full mediation effect with a significant indirect effect value and a high direct effect value. Thus, the bootstrapping results confirm that the IR variable (M) mediates the relationship between the independent variables (FEV, IR, GDP, and FO) and the dependent variable (SP) in the model tested.

5. Discussion

5.1. Foreign exchange volatility on stock performance

The analysis results show that there is a significant relationship between Foreign Exchange Volatility (FEV) and stock market performance (Stock Performance, SP). The high path coefficient value of 0.815 shows the strong relationship between FEV and SP. In addition, the large T statistic of 54.120 indicates the strength of the significance of the relationship between the two variables. These findings are consistent with the initial hypothesis, which states that fluctuations in foreign exchange rates have a significant influence on stock market performance [18], [19]. With a p-value of less than 0.001, these results confirm that the relationship between FEV and SP does not occur by chance, but does have a statistically significant correlation [10]. Thus, it can be concluded that foreign exchange rate fluctuations can be an important factor influencing stock market movements and performance.

5.2. Interest rates on stock performance

In the analysis, there is a significant relationship between interest rates (IR) and stock market performance (SP), indicating the importance of the interest rate factor in influencing stock market movements. Even though the path coefficient value for the relationship between IR and SP (0.213) is lower compared to Foreign Exchange Volatility (FEV), the T statistic, which remains large (0.953), shows that the relationship remains statistically significant. A p-value of less than 0.001 confirms that the relationship between IR and SP does not occur by chance. Although the path coefficient is relatively lower, the existence of a positive and significant relationship indicates that changes in interest rates can have an important impact on stock market performance [14], [20]. Therefore, the results of this analysis provide valuable insights into the role of interest rates in the context of stock market dynamics.

5.3. Gross domestic product to stock performance

The results of the analysis show that there is a significant relationship between interest rates (Interest Rates, IR) and stock market performance (Stock Performance, SP). Even though the path coefficient value for the IR variable (0.213) is relatively lower than Foreign Exchange Volatility (FEV), the large T statistic (0.953) shows that there is a positive and significant relationship between IR and SP, with a p-value of less than 0.001. This confirms that although the direct influence of IR on SP is not as strong as FEV [12], IR still has a significant contribution to stock market performance [21]. Thus, investors and decision makers can consider the interest rate factor in carrying out their analysis and investment decision-making, because this factor has a significant influence on stock market movements.

5.4. Foreign ownership on stock performance

The results of the analysis show that the Foreign Ownership (FO) variable has a significant relationship with stock market performance (Stock Performance, SP). Even though the path coefficient value for FO (0.062) is relatively low, the large T statistic (0.984) shows that there is a positive and significant relationship between FO and SP, with a p-value of less than 0.001. This indicates that although the influence of FO on SP is relatively small, this influence still has high statistical significance [22], thus providing strong evidence of the existence of a relationship between FO and stock market performance [23]. Therefore, these results confirm that foreign ownership plays an important role in influencing stock market performance [24] and can be a factor that investors and decision makers need to consider in planning their investment strategies.

5.5. Inflation rate on stock performance

The results of the analysis show that there is a significant relationship between the inflation rate (IR (M)) and stock market performance (Stock Performance, SP). The estimated path coefficient of 0.487 indicates a positive influence between IR (M) and SP. In addition, the large T statistic value of 5.325 confirms the strength and significance of this relationship. This finding is also supported by the very low p-value, namely <0.001, indicating that the relationship between IR (M) and SP does not occur by chance. Thus, the results of the analysis confirm that the inflation rate has a significant influence on stock market performance [25]. This shows the importance of considering the inflation rate factor in investment analysis and planning in the stock market [26].

5.6. Foreign exchange volatility on stock performance through inflation rate

The analysis results show that there is a full mediating effect of Foreign Exchange Volatility (FEV) on stock market performance (Stock Performance, SP) through the Inflation Rate (IR (M)). These findings confirm that the influence of FEV on SP is not only direct, but is also significantly influenced by the mediation of IR (M). Furthermore, the indirect effect value from FEV to SP via IR (M) is 0.320, which is statistically significant. This suggests that most of the influence of FEV on SP is explained by the mediating effect via IR (M). In addition, the direct effect value from FEV to SP is large at 38.215, indicating that FEV has a strong direct influence on stock market performance, without the mediation of IR (M). Thus, these findings highlight the complexity of relationships between variables in stock market performance analysis [27]. The implication is that in planning investment strategies or making decisions related to financial markets, it is important to consider the direct effects and intermediate effects of factors such as foreign exchange rate fluctuations and inflation rates [28].

5.7. Interest rates on stock performance through inflation rate

The results of the analysis show that there is a full mediating effect of the Interest Rates (IR) variable on stock market performance (Stock Performance, SP) through the mediator variable Inflation Rate (IR (M)). These findings indicate that the influence of IR on SP is indirectly and significantly influenced by IR (M), with an indirect effect value of 0.953, which is proven to be significant. Apart from that, there is also a direct influence from IR on SP with a direct effect value of 32.211. The full mediation effect shows that the entire influence of the IR variable on SP can be explained through the mediation of the IR variable (M). Thus, the role of IR(M) as a mediator plays an important role in explaining the relationship between IR and SP. This shows the complexity of the relationship between these variables in the context of financial market analysis [29], and these findings imply that to fully understand the influence of IR variables on stock market performance [30], it is important to consider the role of IR(M) as a mediator [31].

5.8. Gross domestic product to stock performance via inflation rate

The results of the analysis show that there is a full mediation effect of Gross Domestic Product (GDP) on stock market performance (Stock Performance, SP) through the inflation rate (IR (M)). This is indicated by a significant indirect effect value of 0.713 and a direct effect value from GDP to SP of 12.005. The interpretation of this finding is that the influence of GDP on stock market performance does not only occur directly, but also through its influence on the inflation rate. In other words, a country's economic growth not only influences stock market performance directly, but also influences the inflation rate, which in turn influences stock market performance indirectly [32]. This full mediation effect shows the complexity of the relationship between economic variables and stock market performance. The implication is that economic policies that affect GDP can also have a significant impact on stock market performance through the inflation mechanism. Therefore, decision makers and regulators need to pay attention to these two factors in planning economic and investment policies that can affect the stability and growth of financial markets.

5.9. Foreign ownership on stock performance through inflation rate

The analysis reveals a full mediating effect of Foreign Ownership (FO) on stock market performance (SP) through the inflation rate (IR (M)). This indicates that the influence of FO on SP is largely explained by its impact on inflation, with the indirect effect of 0.984 being statistically significant. While FO also has a significant direct effect on SP (10.005), its impact is more pronounced through inflation. These findings highlight the importance of inflation management in shaping the relationship between foreign ownership and stock market performance, offering valuable insights for economic and investment policy design.

6. Conclusion

Based on the research results, it can be concluded that: (1) Foreign Exchange Volatility has a significant effect on Stock Performance. This shows that fluctuations in Foreign Exchange Volatility can influence Stock Performance positively. (2) Interest Rates also have a significant influence on Stock Performance. An increase in interest rates is related to an increase in Stock Performance. (3) Gross Domestic Product also has a significant influence on Stock Performance. An increase in Gross Domestic Product is related to an increase in Stock Performance. (4) Foreign Ownership has a significant influence on Stock Performance. Even though the influence is lower, Foreign Ownership still contributes positively to Stock Performance. (5) Inflation Rate has a significant effect on Stock Performance. The higher the Inflation Rate, the higher the Stock Performance. (6) Foreign Exchange Volatility on Stock Performance through the Inflation Rate shows a full mediation effect. This means that the influence of Foreign Exchange Volatility on Stock Performance is significantly influenced by the inflation rate. (7) Interest Rates on Stock Performance through the Inflation Rate also show a full mediation effect. The direct influence of Interest Rates on Stock Performance is also significantly influenced by Interest Rates. (8) Gross Domestic Product on Stock Performance via the Inflation Rate also shows a full mediation effect. The influence of Gross Domestic Product on Stock Performance is significantly influenced by the inflation rate. (9) Foreign Ownership on Stock Performance through the Inflation Rate also shows a full mediation effect. The influence of Foreign Ownership on Stock Performance is also significantly influenced by the inflation rate.

This study offers key practical implications for both regulators and investors. For regulators, it is crucial to implement proactive monetary policies to control inflation and manage exchange rate volatility to stabilize financial markets. Transparent communication of economic policies is also vital to building investor confidence. For investors, strategies such as inflation-linked bonds, commodity investments like gold, and global portfolio diversification are essential to hedge against inflation and exchange rate risks. Additionally, using derivative instruments like futures and options can help secure investment value amid market fluctuations. By adopting these recommendations, financial stability can be enhanced, and investors can better manage risks related to inflation and exchange rate volatility.

Acknowledgements

We would like to express our sincere gratitude to all the participants, financial experts, and researchers who contributed to the exploration of the role of the inflation rate as a mediating variable between the foreign exchange rate and market performance. Your insights and valuable contributions have greatly enriched this study and helped emphasize the critical relationship between these economic factors in shaping market outcomes. Additionally, we extend our appreciation to the institutions and organizations that provided the necessary resources and support for this research. Your commitment to advancing economic knowledge and understanding of market dynamics is crucial in fostering more informed financial decision-making and policies.

References

[1] D. Kumar, K. Sengupta, and M. Bhattacharya, "Macroeconomic influences on M&A deal outcomes: an analysis of domestic and cross-border M&As in developed and emerging economies," J. Bus. Res., vol. 161, p. 113831, 2023. https://doi.org/10.1016/j.jbusres.2023.113831.

[2] J. Kim, "Stock market reaction to US interest rate hike: evidence from an emerging market," Heliyon, vol. 9, no. 5, 2023. https://doi.org/10.1016/j.heliyon.2023.e15758.

[3] J. Heavilin and H. Songur, "Institutional distance and Turkey's outward foreign direct investment," Res. Int. Bus. Financ., vol. 54, p. 101299, 2020. https://doi.org/10.1016/j.ribaf.2020.101299.

[4] S. Gopalan and R. S. Rajan, "Does foreign bank presence affect interest rate pass-through in emerging and developing economies?," J. Macroecon., vol. 54, pp. 373–392, 2017. https://doi.org/10.1016/j.jmacro.2017.06.010.

[5] M. Vassalou, "Exchange rate and foreign inflation risk premiums in global equity returns," J. Int. Money Financ., vol. 19, no. 3, pp. 433–470, 2000. https://doi.org/10.1016/S0261-5606(00)00008-5.

[6] S. Breslin, "Foreign Direct Investment in the PRC: Preferences, Policies and Performance," Policy Soc., vol. 25, no. 1, pp. 9–38, 2006. https://doi.org/10.1016/S1449-4035(06)70125-4.

[7] Z. Korzeb, P. Niedziółka, and S. Nistor, "Sovereign creditworthiness and bank foreign ownership. An empirical investigation of the European banking sector," J. Int. Financ. Mark. Institutions Money, vol. 89, p. 101857, 2023. https://doi.org/10.1016/j.intfin.2023.101857.

[8] C. B. Onuk and A. Fodor, "Turkish currency crunch: Examining behavior across investor types," J. Int. Financ. Mark. Institutions Money, vol. 85, p. 101760, 2023. https://doi.org/10.1016/j.intfin.2023.101760.

[9] H. Hasanudin, "The Effect of Investment Knowledge, Motivation, Minimum Capital and Risk Perception on Student Investment Interest in the Faculty of Economics and Business National University," Best J. Adm. Manag., vol. 1, no. 4, pp. 94–100, 2021. https://doi.org/10.56403/bejam.v1i4.94.

[10] S. S. H. Shah et al., "Dynamic association of stock market volatility, foreign portfolio investment and macroeconomic indicators by taking the impact of structural breaks," Heliyon, vol. 9, no. 8, 2023. https://doi.org/10.1016/j.heliyon.2023.e19115.

[11] Hasanudin, "The Effect of Inflation, Exchange Rate, BI Rate and Dow Jones Index to Indonesia Composite Index in Indonesia Stock Exchange on the Year 2013-2018," Int. J. Sci. Soc., vol. 3, no. 3 SE-Articles, Jul. 2021, https://doi.org/10.54783/ijsoc.v3i3.353.

[12] O. Çepni, Y. S. Hacıhasanoğlu, and M. H. Yılmaz, "Credit decomposition and economic activity in Turkey: A wavelet-based approach," Cent. Bank Rev., vol. 20, no. 3, pp. 109–131, 2020. https://doi.org/10.1016/j.cbrev.2020.06.001.

[13] H. Hasanudin, "THE INFLUENCE OF INFLATION AND EXCHANGE RATES ON INDONESIA'S ECONOMIC GROWTH," INFOKUM, vol. 10, no. 5, pp. 1270–1275, 2022.

[14] N. Alouane, I. Kahloul, and J. Grira, "The trilogy of ownership, income diversification, and performance nexus: empirical evidence from Tunisian banks," Financ. Res. Lett., vol. 45, p. 102180, 2022. https://doi.org/10.1016/j.frl.2021.102180.

[15] W. Abdillah and J. Hartono, Partial least square (PLS) Alternatif structural equation modeling (SEM) dalam penelitian bisnis, vol. 22. Yogyakarta: Penerbit Andi, 2015.

[16] I. Ghozali, Aplikasi analisis multivariate dengan program IBM SPSS 25. Semarang: Universitas Diponegoro, 2018.

[17] S. R. Dewi, "Buku Ajar Analisis Informasi Keuangan dan Bisnis," Umsida Press, pp. 1–332, 2021.

[18] H. Hasanudin and A. Kumaruza, "Effect of Interest Rates, Rupiah Currency Exchange Rates, World Gold Prices, and Dow Jones Index on Stock Prices of Property and Real Estate Companies with Inflation as Moderating Variables," 2020. https://doi.org/10.37010/fcs.v1i1.276.

[19] K. Koulikidou, A. Chantziaras, E. Dedoulis, and S. Leventis, "Regulatory enforcement, foreignness, and language negativity: Evidence from SEC comment letters," J. Int. Accounting, Audit. Tax., vol. 51, p. 100547, 2023. https://doi.org/10.1016/j.intaccaudtax.2023.100547.

[20] S. Ongena, I. Schindele, and D. Vonnák, "In lands of foreign currency credit, bank lending channels run through?," J. Int. Econ., vol. 129, p. 103435, 2021. https://doi.org/10.1016/j.jinteco.2021.103435.

[21] M. Amstad, F. Packer, and J. Shek, "Does sovereign risk in local and foreign currency differ?," J. Int. Money Financ., vol. 101, p. 102099, 2020. https://doi.org/10.1016/j.jimonfin.2019.102099.

[22] A. A. Unite and M. J. Sullivan, "The effect of foreign entry and ownership structure on the Philippine domestic banking market," J. Bank. Financ., vol. 27, no. 12, pp. 2323–2345, 2003. https://doi.org/10.1016/S0378-4266(02)00330-8.

[23] E. Wamboye and E. A. Tiruneh, "Exploring the nature, motives, and implications of foreign capital in Africa," Foreign Cap. flows Econ. Dev. Africa impact BRICS versus OECD, pp. 3–26, 2017. https://doi.org/10.1057/978-1-137-53496-5_1.

[24] A. K. Pradhan and G. S. Hiremath, "Nexus between external commercial borrowings and foreign exchange reserves in India: mercantilism or moral hazard?," Transnatl. Corp. Rev., vol. 15, no. 2, pp. 21–34, 2023. https://doi.org/10.1016/j.tncr.2023.09.002.

[25] S. Song, S.-H. Lee, and M. Makhija, "Operational hedging in foreign direct investments under volatile and divergent exchange rates across countries," J. World Bus., vol. 50, no. 3, pp. 548–557, 2015. https://doi.org/10.1016/j.jwb.2014.08.012.

[26] R. Kumar, "Stock markets, derivatives markets, and foreign exchange markets," Strateg. banks other Financ. institutions Theor. cases, pp. 125–164, 2014. https://doi.org/10.1016/B978-0-12-416997-5.00005-1.

[27] N. Atawnah, R. Zaman, J. Liu, T. Atawna, and A. Maghyereh, "Does foreign competition affect corporate debt maturity structure? Evidence from import penetration," Int. Rev. Financ. Anal., vol. 86, p. 102539, 2023. https://doi.org/10.1016/j.irfa.2023.102539.

[28] M. Cavallo and F. Ghironi, "Net foreign assets and the exchange rate: Redux revived," J. Monet. Econ., vol. 49, no. 5, pp. 1057–1097, 2002. https://doi.org/10.1016/S0304-3932(02)00122-8.

[29] Ö. Süer, H. Levent, and S. Şen, "Foreign entry and the Turkish banking system in 2000s," North Am. J. Econ. Financ., vol. 37, pp. 420–435, 2016. https://doi.org/10.1016/j.najef.2016.03.003.

[30] B. F. Yavas and R. K. Malladi, "Foreign direct investment and financial markets influences: Results from the United States," North Am. J. Econ. Financ., vol. 53, p. 101182, 2020. https://doi.org/10.1016/j.najef.2020.101182.

[31] B. Du, A. Serrano, and A. Vianna, "Institutional development and foreign banks in Chile," Int. Rev. Financ. Anal., vol. 58, pp. 166–178, 2018. https://doi.org/10.1016/j.irfa.2017.10.001.

[32] F. Demir, "Growth under exchange rate volatility: Does access to foreign or domestic equity markets matter?," J. Dev. Econ., vol. 100, no. 1, pp. 74–88, 2013. https://doi.org/10.1016/j.jdeveco.2012.08.001.