

MACROECONOMIC IMPACT ON SHARE PRICES: EVIDENCE FROM INDONESIA

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Abstract- Objectives: This paper intends to examine the macroeconomic impact of measuring proxies using Exchange Rates, BI_Rate, and Inflation on share prices of banking companies on the Indonesia Stock Exchange. **Design / methodology / approach:** This paper uses a quantitative approach to the process of obtaining knowledge that requires data in the form of numbers as an instrument to test the hypothesis. Macroeconomic variables use proxies for measuring exchange rates, BI_Rate, inflation and share prices obtained from the company's financial statements and the website of the Indonesia Stock Exchange at www.idx.co.id, www.ojk.go.id, www.bi.go.id and www.yahoofinance.com. **Finding:** The findings show that the exchange rate has a positive impact on the share prices of banking companies on the Indonesia Stock Exchange, so that the findings can be used by investors to carry out fundamental analysis to have relevant information. Meanwhile, BI_Rate, inflation has no impact on stock prices, meaning that BI_Rate and inflation tend not to have a value relevance to the share price of banking companies on the Indonesia Stock Exchange. **Practical Implications:** The research results are recommended for banking customers to increase the effectiveness and efficiency of banking performance and to contribute to the banking literature. **Originality:** Previous research was conducted to test macroeconomics on banking stock prices. The findings concluded that macroeconomics had an impact on share prices. The novelty in this paper the researcher includes control variables as variables to strengthen the findings in this study.

Keywords: *Share prices, Macroeconomics*

1. Introduction

There are several basic macro elements that originate outside the company which consist of economic, environmental, political, legal, social, cultural, security, educational, and other factors that cannot be controlled by the company, but have a major effect on the company in determining investment (Ratnawati

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& Yuhertiana, 2019; Ahmadi, Amin, & Madi, 2017; Imawati & Adnyana, 2015; Kohar, Ahmar, & Suratno, 2018b). Macro fundamentals are formed from the BI interest rate, gross domestic revenue, increase in the price of goods or services and the value of the US dollar exchange rate against the Indonesian rupiah (Ratnawati & Yuhertiana, 2019; Imawati & Adnyana, 2015; Ahmadi et al., 2017; Kohar et al. ., 2018b). Meanwhile, micro-fundamentals originate from control in the company and are used for further company development (Ratnawati & Yuhertiana, 2019; Kohar et al., 2018b; Ahmadi et al., 2017). Company development, especially in management, places a number of policies in the company's operational activities, namely the consideration of carrying out investment, policies for implementing funding, and policies on obtaining dividends (Ratnawati & Yuhertiana, 2019; Ahmadi et al., 2017; Kohar et al., 2018b). The speed of the rapid increase in the price of goods and services will advance the increase in the value of raw materials and various types of operating costs at the company, causing the selling value of the product to increase and will decrease the level of purchasing power in the community (Kohar et al., 2018b; Ahmadi et al., 2017 ; Ratnawati & Yuhertiana, 2019). The increased interest rate (BI_Rate) is clearly very burdensome for company activities to make new investment, especially for companies that already have high loans, because they are prone to not being able to pay their obligations, it will have an impact on the company's financial performance (Ahmadi et al. , 2017; Kohar et al., 2018b; Ratnawati & Yuhertiana, 2019). The state of the exchange rate has tended to weaken over the past 6 (six) years, but the Composite Stock Price Index tends to increase every year (Kohar et al., 2018b; Ahmadi et al., 2017; Ratnawati & Yuhertiana, 2019).

This study intends to assess the extent of the macroeconomic impact in calculating share prices by exploring and empirically testing the micro and macroeconomic impacts on company share prices. Based on the background of the phenomenon as well as the results of previous research, it raises problems related to the issue of the importance of the macroeconomic role as the root of the problem on the share prices of banking companies that have been listed on the Indonesia Stock Exchange, thus forming a problem formulation What is the impact that macroeconomics has on company share prices banking on the Indonesia Stock Exchange? By looking at the macroeconomic impact on the company's share price, the results of this study can be used as a management decision maker. The company's share price can change up and down in a fast tempo in minutes or even seconds, (Muhammad & Rahim, 2015; Kohar, Ahmar, & Suratno, 2018a; Hutasoit, Sinaga, Marbun, Sembiring, & Sinaga, 2019; Gultom, Purba, Zepria, & Sinaga, 2019).

This research is expected to be able to apply knowledge to the public and investors regarding the impact caused by macroeconomics on company share prices and can also be used as input for the progress of the company and can be used as a comparison, especially in assessing the impact caused by macroeconomics on company stock prices in the banking sector listed on the Indonesia Stock Exchange.

2. Literature Review and Hypothesis Development

2.1 Efficient Market Theory

According to Fama, (1970) explains that the efficient market is the share market price which describes the information on the Stock Exchange. Not only that, market prices are moving rapidly towards new information in share price shifts (Li, Ye, & Strbac, 2020; Mohan et al., 2021; "No Title," nd; Tian, Sošić, & Debo, 2020; Valencia N, Sanabria, González A, Arizmendi P, & Orjuela C, 2021; X. Wang & Huang, 2021). The secret to interpreting the market is information efficient is to explore the share price and accounting information systems. (Fama, 1970; F. Fama, 2013; Brown, Lo, & Lys, 1999) explain that there are 3 (three) important arrangements in the efficient market, namely: Efficient market is weak, Efficient market is half strong, and Efficient market is strong.

2.2 Value Relevance of Accounting Information

Value relevance is a study to determine the relationship between financial reporting value and share prices in the capital market. Financial reporting must be relevant and reliable (Almujamed & Alfraih, 2020; Choi, Choi, Choi, & Chung, 2020; Crenna, Marques, La Notte, & Sala, 2020; Figlioli, Lemes, & Lima, 2020; Kalantonis, Schoina, Missiakoulis, & Zopounidis, 2020; Ricci, Scafarto, Ferri, & Tron, 2020; Zainy & Al-Temimi, 2020). Financial reporting is deemed relevant if it can be used in estimating business decisions and confirming forecasts that have been agreed upon. Relevant financial reporting in financial statements has a strong attachment to corporate value (Barth, Beaver, & Landsman, 2001; Hodder, Hopkins, Wahlen, & Zimmerman, 2006; Brimble & Hodgson, 2007). (Holthausen & Watts, 2001) in “The Relevance of the value relevance literature for financial standard setting” value relevance is divided into 3 (three) namely: a. Relative Association studies alternative size bottom line. b. Incremental association c. Marginal information content studies.

2.3 Micro and Macroeconomics

Exchange value is the exchange rate of a currency with other currencies (Ahmadi et al., 2017; Ratnawati & Yuhertiana, 2019; Kohar et al., 2018b; Imawati & Adnyana, 2015). Exchange rates are determined by the foreign exchange market, which remains open 24 hours a day apart from weekends on various types of currency trading (Ahmadi et al., 2017; Ratnawati & Yuhertiana, 2019; Kohar et al., 2018b; Imawati & Adnyana, 2015). Currency exchange rates are generally influenced by the exchange of capital goods and services in international trade (Ahmadi et al., 2017; Ratnawati & Yuhertiana, 2019; Kohar et al., 2018b; Imawati & Adnyana, 2015). A reduction in local currency will create high imported goods that create pressure to finance merchant credit by commercial banks and the risk of failure will increase, (Ratnawati & Yuhertiana, 2019; Kohar et al., 2018b; Imawati & Adnyana, 2015; Ahmadi et al., 2017). The condition of the exchange rate has tended to weaken over the last 6 (six) years, but the Composite Stock Price Index tends to increase every year. This condition is not in accordance with the theory which explains that the weakening of the exchange rate will cause a decrease in share prices which will also have an impact on the decrease in the Composite Stock Price Index (Ratnawati & Yuhertiana, 2019; Kohar et al., 2018b; Imawati & Adnyana, 2015). If the exchange rate weakens, the share price will decline (Ratnawati & Yuhertiana, 2019; Kohar et al., 2018b; Imawati & Adnyana, 2015; Ahmadi et al., 2017). If the exchange rate strengthens, the share price will increase. The progress of the company is a parameter of the company's success in maintaining the continuity of the company's operations, in this case it can be seen from the growth in profits and the addition of company assets (Ratnawati & Yuhertiana, 2019; Kohar et al., 2018b; Imawati & Adnyana, 2015; Ahmadi et al., 2017)

The settlement interest rate (BI rate) of capital borrowed by other parties is called interest (Ahmadi et al., 2017; Ratnawati & Yuhertiana, 2019; Kohar et al., 2018b; Imawati & Adnyana, 2015). Interest expressed as a percentage of capital is called the interest rate (Ratnawati & Yuhertiana, 2019; Kohar et al., 2018b; Imawati & Adnyana, 2015; Ahmadi et al., 2017). So the interest rate is the percentage of capital borrowed from other parties (Ahmadi et al., 2017; Ratnawati & Yuhertiana, 2019; Kohar et al., 2018b; Imawati & Adnyana, 2015). Determination of interest rates in Indonesia on funding costs and BI_rate credit interest (Ahmadi et al., 2017; Ratnawati & Yuhertiana, 2019; Kohar et al., 2018b; Imawati & Adnyana, 2015). BI_rate is a procedure made by Bank Indonesia regarding interest rates, which is informed to the public that represents monetary policy (Ahmadi et al., 2017; Ratnawati & Yuhertiana, 2019; Kohar et al., 2018b; Imawati & Adnyana, 2015).

A high increase in the price of goods or services can lead to an increase in raw material prices and an

increase in company operating costs, which will cause product selling prices to increase and will cause people's purchasing power to decline (Ahmadi et al., 2017; Ratnawati & Yuhertiana, 2019; Kohar et al., 2018b; Imawati & Adnyana, 2015). This will result in a decrease in sales figures in the company, which causes the company's profit and financial performance to decrease (Imawati & Adnyana, 2015; Kohar et al., 2018b; Ahmadi et al., 2017; Ratnawati & Yuhertiana, 2019). When interest rates are high, of course, it will be very burdensome for the company's operational costs to make new investments, especially in companies that have high loan ratios, because they are worried that they will not be able to pay off their obligations, so that it will affect the company's financial performance (Ratnawati & Yuhertiana, 2019; Kohar et al., 2018b; Imawati & Adnyana, 2015; Ahmadi et al., 2017).

2.4 Share Price

Shares are proof of ownership of capital value in a company, a written letter with a clear nominal value, company name, and rights and obligations explained to shareholders, the willingness of shares to be sold (Aytimur & Cakmak, 2021; Bergant, 2021; Cappelli, Cerqueti, D'Urso, & Di Iorio, 2021; Carta, Ferreira, Podda, Reforgiato Recupero, & Sanna, 2021; Chen et al., 2021; Diop & Kengne, 2021; Doncato & Costa, 2021; Jing, Siahkouhi, Qian, & Wang, 2021; Marc et al., 2021; Muhammad & Rahim, 2015). Stocks are a tool to obtain excess funds so that analysis of stocks grows both fundamentally and technically (Muhammad & Rahim, 2015). Various types of literature describe different recommendations but the goal is the same, namely to provide high benefits for the wearer, and to have a continuous impact on provisions (Betancor et al., 2021; Deng et al., 2021; Hedgecock & Pan, 2021; Kallarakkal, Muthukumar, Alagarsamy, Pugazhendhi, & Naina Mohamed, 2021; Liu, Liu, Da, Zhang, & Guan, 2021; R. Wang, He, & Diao, 2021; Yang, Wei, Li, & He, 2021). In general, there are 3 (three) parties that participate in the stock market, namely: (1) investors, (2) speculators and (3) government. The three parties keep their goals and interests together, as the government regulates and directs the stock market according to the conditions and targets to be achieved in the short and long term development plans, (Muhammad & Rahim, 2015).

2.4.1 Share Price

The share price is the price that applies to the exchange at a certain time. Share prices can fluctuate up or down in fast times, minutes or seconds, (Muhammad & Rahim, 2015; Kohar et al., 2018a; Hutasoit et al., 2019; Gultom et al., 2019). This can happen because it depends on the demand or supply between the buyer and the seller of shares (Dewi & Hidayat, 2014; Juanamasta et al., 2019; Rusdiyanto, Agustia, Soetedjo, & Septiarini, 2020; Rusdiyanto, Hidayat, Tjaraka, et al., 2020). Some of the conditions and situations that indicate these shares have fluctuated, namely: Micro and macroeconomic conditions, the company's decision to expand its business, for example opening new branch offices or sub-branch offices in domestic or international areas, sudden changes of directors, directors or commissioners of companies those involved in criminal acts and cases have entered court, the company's performance ability has decreased over time, systematic risk is a risk system that takes place as a whole and involves the company, the influence of market psychology that has succeeded in suppressing the technical conditions of buying and selling shares (Bardhan & Vaghela, 2021; Cappelli et al., 2021; Chakole, Kolhe, Mahapurush, Yadav, & Kurhekar, 2021; Huang, Qiu, & Li, 2021; Islam, Karim, Khatun, & Arefin, 2021; Kumar Chandar, 2021; Liao, Kuo, & Chan, 2021; Singh & Henge, 2021; Sirohi, Jain, Jha, & Vashist, 2021; Uma & Naidu, 2021; Muhammad & Rahim, 2015; Kohar et al., 2018a).

The share market price is the market price chosen by investors with the meeting between supply and demand (de Castro Filho, da Costa Dias, de Andrade, & Facó, 2021; Napoli, Giuffrida, & Trovato, 2021; Tektaş, Karakul, & Mizrahi, 2021; Thakkar & Chaudhari, 2021; Tomer, Anand, Shandilya, & Tiwari, 2021).

The meeting can occur because investors agree on the price of a share, the share market price is created through a process between supply and demand in the capital market. Share prices can experience fluctuating changes over time (Muhammad & Rahim, 2015). Changes are related to the strength of demand and supply, if a share experiences excess demand, then the share price tends to go up, and vice versa if the share is oversupply, the share price tends to fall (Muhammad & Rahim, 2015).

2.5 Hypothesis Development

The company valuation describes the results of the investor's understanding in order to see the company that is contained in the company's stock market price. The share market price in a company is the share market's response to the totality of the company's condition which reflects the shareholder's capital or the company's wealth as a result of investment decisions and asset management which is realized in the form of share prices (Narsa & Pratiwi, 2012; Rusdiyanto & Narsa, 2018a). When the share price rises, indicating that the share is active on the stock exchange, dealers have not kept the share for too long.

The condition of a country's macro economy is a factor that can affect the performance of companies in that country (Additya, Singa, & Maulana, 2018) so that macroeconomic conditions have an impact on share price activeness. The expertise of investors in interpreting and planning macroeconomic conditions in the future will be very meaningful in making productive investment decisions, so investors need to consider a number of macroeconomic parameters that can help investors interpret and plan macroeconomic conditions (Additya et al., 2018). Macroeconomic indicators related to the capital market, namely the rise and fall of interest rates, the value of inflation, the value of the rupiah exchange rate, the unemployment rate, and stagnant growth (Additya et al., 2018).

The exchange rate is the exchange rate of the currency that has been determined in a decision by Bank Indonesia. The exchange rate procedure was determined to only apply until 1997. After 1997 the procedure for the rupiah exchange rate against the dollar depended on the conditions of the market mechanism. Economies around the world have entered the era of globalization which has a huge impact on foreign investors entering financial markets in developing countries. The sensitivity of shares in the capital market can be seen during fluctuations in domestic currency rates (Chandra, Efni, & Emrinaldi, 2018; Kewal, 2012), (Khasanah & Darmawan, 2018; Pamungkas & Darwan, 2018; Harsono & Wonokinasih, 2018). Indonesia uses a floating exchange rate, the movement of the rupiah can have an impact on international competitiveness. This condition can reduce the company's performance so that the company's stock price can decrease. If the value of the rupiah declines, the investment portfolio of US dollar holders can differentiate between the Indonesian capital market and the potential domestic sector, foreign investors who control share ownership on the Indonesia Stock Exchange tends to have US dollar values on the stock price index will increase. From the above explanation, the researchers concluded the following hypothesis:

H1: Exchange rate has a positive impact on share prices

The interest rate is monitored directly by Bank Indonesia through BI_Rate. BI_Rate describes the response of the Central Bank to the impending pressure of inflation to stay at the specified goals (Febriana, Sumiati, & Ratnawati, 2018; Additya et al., 2018; Sari, 2018; Handayani, Susyanti, & Slamet, 2018). BI_Rate is an interest rate policy that describes the monetary policy stance determined by Bank Indonesia and published. Low interest rate policies can motivate people to invest rather than save, and vice versa, (Additya et al., 2018). From the above explanation, the researchers concluded the following hypothesis :

H2: BI_Rate has a positive impact on share prices

Inflation is a process of continuously increasing general prices for goods or services, the impact of normal inflation, namely the low purchasing power of the community, this is due to the fact that the level of people's income has decreased (Additya et al., 2018; Febriana et al., 2018; Sari. , 2018; Handayani et al., 2018). Economic movements and growth have an impact on increasing demand for goods or services which will cause inflation (Additya et al., 2018). From the above explanation, the researchers concluded the following hypothesis:

H3: Inflation has a positive impact on share prices

3. RESEARCH METHODS

3.1 Types of Research Approaches

This type of research uses descriptive quantitative research, descriptive quantitative research is a research method based on theory and research results. The population and sample of this study use the company's financial statements from 2010-2017. This study uses a descriptive approach method to determine the existence of macroeconomic variables and share price variables in the company.

3.2 Research Variable Model Specifications

The variables in this study consisted of Macroeconomic variables projected with exchange rates, BI rate, inflation and company's share prices and adding control variables as comparisons, the control variables included were CAR, LDR, NPLnet, ROA, ROE, BOPO,. The operational definition is as follows:

3.3 Operational Definition of Variables and Variable Measurement

This study uses 4 (four) types of variables in order to produce a regression model in measuring the relevance of corporate value, namely:

1)Independent Variable

1. Exchange rate

Exchange rate is the exchange rate of the Indonesian rupiah against the United States dollar. The measurement of the exchange rate is done by finding the middle value of the selling price and the purchase price and then taking the average for a period of 1 (one) month (Imawati & Adnyana, 2015). The formula that can be used to calculate the exchange rate is as follows:

$$\text{Middle Exchange rate} = \frac{\text{Selling price} + \text{Buying price}}{2}$$

2. Interest is the percentage of capital obtained from the interest rate. The interest rate is the percentage of settlement of loan capital from other parties. The BI rate is a policy made by Bank Indonesia to regulate publicly published interest rates to describe monetary policy, (Ahmadi et al., 2017; Kohar et al., 2018b). The formula that can be used to calculate the interest rate (BI Rate) is as follows:

BI_Rate Average for 1 Year:

3. Inflation Rate

In this study, what is meant by the inflation rate is the increase in prices as a whole. The data used in this study is the average inflation rate for the month, at which time the company made its first public offering which is expressed in percent units (Imawati & Adnyana, 2015).

2) Dependent Variable

The dependent variable used in this study is the closing share price (Rusdiyanto & Narsa, 2018b; Kohar

et al., 2018a).

3) Control Variable

CAR, LDR, NPLnet, ROA, ROE, BOPO, (Rusdiyanto, Hidayat, Soetedjo, et al., 2020)

3.4 Stages of Estimation

3.4.1 Population and Sample

The population in this study used banking companies on the Indonesia Stock Exchange in 2010-2017. The sample in this study used banking companies on the Indonesia Stock Exchange in 2010-2017.

3.4.2 Data Analysis Techniques and Descriptive Statistical Analysis

The research analysis uses descriptive statistical data analysis method, multiple regression analysis, to test the macroeconomic hypothesis on the stock price of banking companies. Descriptive statistical analysis describes data from values average, standard deviation, variant, minimum, and maximum.

3.4.3 Analysis Model

The analysis model proves the impact of macroeconomic variables on the share price variable in banking companies, the analysis model uses multiple linear regression analysis to illustrate the effect of macroeconomic variables on share price variables in banking companies. The empirical research model is as follows:

$$NP_t = \alpha + \beta_1 NK + \beta_2 BI_Rate + \beta_4 TI + \beta_5 CAR + \beta_6 LDR + \beta_7 NPL + \beta_8 ROA + \beta_9 ROE + \beta_{10} BOPO + \epsilon \dots \dots (1)$$

Table 0-1: Variable description

Information	Description
NP_t	= Share Price
α	= Constant
$\beta_1, \beta_2, \beta_3$	= Variable regression coefficient of $NB_t, USD, SBI, INF, CAR, LDR, NPL, ROA, ROE, BOPO$
NK	= Rupiah Exchange Rate Against USD
BI_Rate	= BI Interest Rate
TI	= Inflation
CAR	= Capital Adequacy Ratio
LDR	= Loan to Deposits Ratio
NPL net	= Non Performing Loan
ROA	= Return On Asset
ROE	= Return On Equity
BOPO	= Operating Costs Compared to Operating Income
ϵ	= Error Standard

Analysis and Discussion

3.5 Description of Research Results

Testing of research results has specific research data to convey estimates about several variables to be tested. The normality test was also carried out to find the distribution of the research data used. The following is the descriptive statistical data from the sample.

Table 0-2: Descriptive statistics

Variable	N	Min	Max	Mean	Std. Dev
Share Price	128	470.00	1327.00	5721.1484	3395.39651
Exchange rate	128	9097.00	14657.00	11520.0312	1761.46531

<i>BI_Rate</i>	128	121.00	7363.00	4005.3438	2641.41861
<i>Inflation</i>	128	3.07	8.40	5.2172	1.48160
<i>CAR</i>	128	12.02	22.98	17.3105	2.28970
<i>LDR</i>	128	61.89	116.29	90.2520	13.36729
<i>NPL net</i>	128	0.31	3.83	1.3427	1.09657
<i>ROA</i>	128	1.01	5.15	2.9575	1.08258
<i>ROE</i>	128	5.54	43.83	22.5307	7.85129
<i>BOPO</i>	128	57.08	89.91	73.2891	8.34103
<i>Valid N (listwise)</i>	128				

From the table above, the Exchange Rate and BI_Rate have a higher value than inflation. Inflation is much lower than the Exchange Rate and BI_Rate is more than the Exchange Rate, and BI_rate lists more of the fair value of the value of financial assets and liabilities than inflation. The increase in value of exchange rate and BI_rate, respectively, indicates that the collection of information regarding the relevance of the company's fair value in relation to the value of its financial assets and liabilities. Thus the barometer of the exchange rate and BI_rate are better than the measure of inflation. The exchange rate, the higher the BI rate, will have an effect on economic conditions that tend to fluctuate and are not normal towards the company's share price in the banking sector.

3.6 Regression Analysis

All variables in this study are declared stationary at degree 0, so these variables can be immediately used in the regression equation. The regression results of the research variables are as follows:

4. Table 3.6-1: Regression Analysis

Variable	Coefficient	t	Sig.t
<i>Constant</i>	7077.986	1.147	0.254
<i>Exchange rate</i>	0.185	3.477	0.001**
<i>BI_Rate</i>	0.109	1.496	0.137
<i>Inflation</i>	193.490	-1.150	0.253
<i>CAR</i>	146.313	-2.441	0.016
<i>LDR</i>	34.432	0.403	0.688
<i>NPL net</i>	556.091	-1.212	0.228
<i>ROA</i>	835.882	-1.897	0.060
<i>ROE</i>	76.515	3.104	0.002
<i>BOPO</i>	83.829	-2.683	0.008
R	= 0.743		
R Square	= 0.552		
F	= 16.167		
Sig.F	= 0.000		
Bound Variable: Share price (NB _t)			

5 Discussion

Exchange rates have a positive and significant effect at the 5% level on share prices. The result of this research is that the exchange rate has value relevance to share prices. This coefficient shows that the exchange rate has a positive relationship with share prices. So that investors can use the explanation of exchange rates in assessing the share price of companies in the banking sector. Exchange rates represent general expectations for investors. The results of this test show that investors will prefer shares that have

high exchange rates than shares that have low exchange rates. The large number of investors demand for shares with high exchange rates, so that the company's share price rises. Conversely, a low exchange rate tends to lower the company's share price. The results of this study agree with the results of his research (Prasetioningsih, Taunay, & Fathoni, 2016; Malau, 2018), while according to (R. Sari, 2018) the rupiah exchange rate variable negatively impacts share prices.

BI_Rate has no positive impact on share prices. The results of this study mean that BI_Rate has no value relevance to share prices. The coefficient shows that BI_Rate also does not have a positive relationship with company share prices in the banking sector. So that investors can use interest rate information in assessing the share price of companies in the banking sector. BI_Rate is the general expectation for investors. The results of this test show that investors have no influence on high or low BI_Rate. The large number of investor requests for share prices is not influenced by high BI_Rate so that the company's share price rises (Wahyuningsih et al., 2018; R. Sari, 2018).

The inflation rate does not have a positive effect on share prices. The results of this study mean that inflation has no value relevance to share prices. This coefficient shows that the inflation rate does not have a positive effect on the company's share price. Investors can use an explanation of the inflation rate in assessing the share prices of companies in the banking sector. The inflation rate reflects the general expectations for investors. The results of this test, it can be said that investors like share prices even though the inflation rate is high compared to the low inflation rate (Wahyuningsih et al., 2018; R. Sari, 2018).

5. Conclusion

The findings show that the exchange rate has a positive and statistically significant relationship with a level of 5% on share prices, while BI_Rate, inflation has no effect on share prices. In relation to this conclusion, the results of this study hope to provide an explanation for investors to be more observant in paying attention to exchange rates as an evaluation material before carrying out investments related to share prices. The results of this study can be used as an evaluation material for banking companies in making business decisions related to macroeconomics of share prices. Business decision making is centered on the level of return on shares that companies in the banking sector will receive.

It is suggested that further research should use more sample companies, not only in the banking sector. In addition, further research is better to use a longer time span to identify the relationship between macroeconomics and share prices and to use audited annual financial report data and examine the relevance of macroeconomic measurement models, at the stage of the company cycle, such as research conducted by Black (1998).

Reference

- [1] Additya, Singa, B. M., & Maulana, T. A. (2018). Pengaruh Indeks Bursa Luar Negeri, Indikator Makroekonomi Dan Krisis Ekonomi Global Terhadap Indeks Harga Saham Gabungan Di Indonesia. *Jurnal Aplikasi Manajemen Dan Bisnis*, 4(2), 284–295.
- [2] Ahmadi, K. A., Amin, M., & Madi, R. A. (2017). Pengaruh Makro ekonomi Dan Fundamental Bank Terhadap Non Performing Loan (Studi Pada Bank Umum Swasta Nasional Devisa yang Terdaftar Di Bursa Efek Indonesia Periode 2012-2016). *Akuntansi*.
- [3] Almujaed, H. I., & Alfraih, M. M. (2020). Corporate governance and value relevance of accounting information: Evidence from Kuwait. *International Journal of Ethics and Systems*, 36(2), 249–262. <https://doi.org/10.1108/IJOES-08-2019-0140>
- [4] Aytumur, M., & Cakmak, A. (2021). Using positional sequence patterns to estimate the selectivity of SQL LIKE queries. *Expert Systems with Applications*, 165. <https://doi.org/10.1016/j.eswa.2020.113762>
- [5] Bardhan, A., & Vaghela, D. (2021). Performance Analysis of Indian Stock Market via Sentiment Analysis and Historical Data. *Lecture Notes on Data Engineering and Communications Technologies*, 52, 23–31. https://doi.org/10.1007/978-981-15-4474-3_3
- [6] Barth, M. E., Beaver, W. H., & Landsman, W. R. (2001). The relevance of the value relevance literature for financial accounting standard setting: another view \$. *Journal Of Accounting & Economics*, 31, 77–104.
- [7] Bergant, K. (2021). The role of stock-flow adjustment during the global financial crisis. *Journal of International Money and Finance*, 110. <https://doi.org/10.1016/j.jimonfin.2020.102261>
- [8] Betancor, M. B., MacEwan, A., Sprague, M., Gong, X., Montero, D., Han, L., ... Tocher, D. R. (2021). Oil from transgenic *Camelina sativa* as a source of EPA and DHA in feed for European sea bass (*Dicentrarchus labrax* L.). *Aquaculture*, 530. <https://doi.org/10.1016/j.aquaculture.2020.735759>
- [9] Brimble, M., & Hodgson, A. (2007). *Assessing the Risk Relevance of Accounting Variables in Diverse Economic Conditions* Author. Griffith.
- [10] Brown, S., Lo, K., & Lys, T. (1999). Use of R² in Accounting Research: Measuring Changes in Value Relevance over the Last Four Decades. *JEL*, (847).
- [11] Cappelli, C., Cerqueti, R., D'Urso, P., & Di Iorio, F. (2021). Multiple breaks detection in financial interval-valued time series. *Expert Systems with Applications*, 164. <https://doi.org/10.1016/j.eswa.2020.113775>
- [12] Carta, S., Ferreira, A., Podda, A. S., Reforgiato Recupero, D., & Sanna, A. (2021). Multi-DQN: An ensemble of Deep Q-learning agents for stock market forecasting. *Expert Systems with Applications*, 164. <https://doi.org/10.1016/j.eswa.2020.113820>
- [13] Chakole, J. B., Kolhe, M. S., Mahapurush, G. D., Yadav, A., & Kurhekar, M. P. (2021). A Q-learning agent for automated trading in equity stock markets. *Expert Systems with Applications*, 163. <https://doi.org/10.1016/j.eswa.2020.113761>
- [14] Chandra, A., Efni, Y., & Emrinaldi. (2018). Analisis pengaruh fundamental dan makro ekonomi terhadap kebijakan dividen dengan return on asset sebagai variabel intervening pada perusahaan manufaktur yang terdaftar di bursa efek indonesia tahun 2012-2015. *Jurnal Tepak Manajemen Bisnis*, X(2), 188–209.
- [15] Chen, L., Chen, M., Chen, Y., Chen, Y., Cheng, Y., & Zhao, N. (2021). Modelling and control of a novel AT-fed co-phase traction power supply system for electrified railway. *International Journal of Electrical Power and Energy Systems*, 125. <https://doi.org/10.1016/j.ijepes.2020.106405>
- [16] Choi, D., Choi, P. M. S., Choi, J. H., & Chung, C. Y. (2020). Does sustainable corporate governance

- enhance accounting practice? Evidence from the Korean market. *Sustainability (Switzerland)*, 12(7). <https://doi.org/10.3390/su12072585>
- [17] Crenna, E., Marques, A., La Notte, A., & Sala, S. (2020). Biodiversity Assessment of Value Chains: State of the Art and Emerging Challenges. *Environmental Science & Technology*, 54(16), 9715–9728. <https://doi.org/10.1021/acs.est.9b05153>
- [18] de Castro Filho, F. G., da Costa Dias, J. E., de Andrade, A. A., & Facó, J. F. B. (2021). Exploratory study on the behavior of the Brazilian financial market using Google Trends. *Smart Innovation, Systems and Technologies*, 198 SIST, 179–188. https://doi.org/10.1007/978-3-030-55374-6_18
- [19] Deng, Q., Zheng, F., Zhong, W., Pan, Q., Liu, Y., Li, Y., ... Liu, M. (2021). Nanoscale surface modification of P2-type Na_{0.65}[Mn_{0.70}Ni_{0.16}Co_{0.14}]O₂ cathode material for high-performance sodium-ion batteries. *Chemical Engineering Journal*, 404. <https://doi.org/10.1016/j.cej.2020.126446>
- [20] Dewi, S. P., & Hidayat, R. (2014). Pengaruh Net Profit Margin dan Return on Assets terhadap Harga Saham pada Perusahaan Otomotif yang Terdaftar di Bursa Efek Indonesia. *Jurnal Ilman*, 1(1), 1–10.
- [21] Diop, M. L., & Kengne, W. (2021). Piecewise autoregression for general integer-valued time series. *Journal of Statistical Planning and Inference*, 211, 271–286. <https://doi.org/10.1016/j.jspi.2020.07.003>
- [22] Doncato, K. B., & Costa, C. S. B. (2021). Micronutrient supplementation needs for halophytes in saline aquaponics with BFT system water. *Aquaculture*, 531. <https://doi.org/10.1016/j.aquaculture.2020.735815>
- [23] Fama, E. (2013). Session Topic: Stock Market Price Behavior Session Chairman: Burton G. Malkiel Efficient Capital Markets: A Review Of Theory And Empirical Work. *JSTOR*, 25(2), 28–30.
- [24] Fama, E. F. (1970). Efficient Capital Markets: A Review Of Theory And Empirical Work. *The Journal Of Finance*, 25(2), 383–417.
- [25] Febriana, R. S., Sumiati, & Ratnawati, K. (2018). Pengaruh Variabel Makroekonomi Dan Harga Saham Asing Terhadap Indeks Harga Saham Gabungan. *Jurnal Bisnis Dan Manajemen*, 5(1), 118–126.
- [26] Figlioli, B., Lemes, S., & Lima, F. G. (2020). In search for good news: The relationship between accounting information, bounded rationality and hard-to-value stocks. *Emerging Markets Review*, 44. <https://doi.org/10.1016/j.ememar.2020.100719>
- [27] Gultom, M. L., Purba, D. P., Zepria, & Sinaga, R. (2019). Pengaruh Current Ratio (Rasio Lancar), Return on Equity Dan Total Asset Turn Over (Tato) Terhadap Harga Saham Pada Sektor Consumer Goods Industry Di Bursa Efek Indonesia. *Jurnal Global Manajemen*, 8(1), 35–44.
- [28] Handayani, Y., Susyanti, J., & Slamet, A. R. (2018). Pengaruh Gross Domestic Product, Inflasi, Tingkat Suku Bunga, Dan Tarif Pph Badan Terhadap Harga Saham. *E-Jurnal Riset Manajemen*, 45–54.
- [29] Harsono, A. R., & Wonokinasih, S. (2018). Pengaruh Inflasi, Suku Bunga, Dan Nilai Tukar Rupiah Terhadap Indeks Harga Saham Gabungan (Studi pada Bursa Efek Indonesia Periode 2009-2013). *Jurnal Administrasi Bisnis*, 60(2), 102–110.
- [30] Hedgecock, D., & Pan, F. T. C. (2021). Genetic divergence of selected and wild populations of Pacific oysters (*Crassostrea gigas*) on the West Coast of North America. *Aquaculture*, 530. <https://doi.org/10.1016/j.aquaculture.2020.735737>
- [31] Hodder, L. D., Hopkins, P. E., Wahlen, J. M., & Zimmerman, J. L. (2006). Risk-Relevance of Fair-Value Income Measures for Commercial Banks Published by: American Accounting Association Linked references are available on JSTOR for this article: Risk-Relevance of Fair-Value Income

Measures for Commercial Banks. *The Accounting Review*, 81(2), 337–375.

- [32] Holthausen, R. W., & Watts, R. L. (2001). The relevance of the value-relevance literature for financial accounting standard setting. *Journal of Accounting and Economics*, 31(1–3), 3–75. [https://doi.org/10.1016/S0165-4101\(01\)00029-5](https://doi.org/10.1016/S0165-4101(01)00029-5)
- [33] Huang, A., Qiu, L., & Li, Z. (2021). Applying deep learning method in TVP-VAR model under systematic financial risk monitoring and early warning. *Journal of Computational and Applied Mathematics*, 382. <https://doi.org/10.1016/j.cam.2020.113065>
- [34] Hutasoit, P. L., Sinaga, C., Marbun, R., Sembiring, S. A. T., & Sinaga, J. B. L. A. (2019). Pengaruh Net Profit Margin, Non Performing Loan Dan Capital Adequacy Ratio Terhadap Harga Saham Pada Perusahaan Perbankan Yang Terdaftar Di Bursa Efek Indonesia Periode 2014-2017. *Jurnal Aksara Public*, 3(2), 120–133.
- [35] Imawati, & Adnyana, I. M. (2015). Pengaruh Faktor-Faktor Mikro Dan Makroekonomi Terhadap Tingkat Underpricing Pada Saat Initial Public Offering (IPO). *Jurnal Ilmu Manajemen (Oikonomia)*, 13(2), 72–86. Retrieved from imma.setiya@gmail.com, madeadnyana99@yahoo.co.id
- [36] Islam, M. T., Karim, R., Khatun, S., & Arefin, M. S. (2021). Developing a framework for trend prediction of stocks prices. *Advances in Intelligent Systems and Computing*, 1200 AISC, 594–606. https://doi.org/10.1007/978-3-030-51859-2_54
- [37] Jing, G., Siahkouhi, M., Qian, K., & Wang, S. (2021). Development of a field condition monitoring system in high speed railway turnout. *Measurement: Journal of the International Measurement Confederation*, 169. <https://doi.org/10.1016/j.measurement.2020.108358>
- [38] Juanamasta, I. G., Wati, N. M. N., Hendrawati, E., Wahyuni, W., Pramudianti, M., Wisnujati, N. S., ... Umanailo, M. C. B. (2019). The role of customer service through customer relationship management (Crm) to increase customer loyalty and good image. *International Journal of Scientific and Technology Research*, 8(10), 2004–2007.
- [39] Kalantonis, P., Schoina, S., Missiakoulis, S., & Zopounidis, C. (2020). The impact of the disclosed r & d expenditure on the value relevance of the accounting information: Evidence from greek listed firms. *Mathematics*, 8(5). <https://doi.org/10.3390/MATH8050730>
- [40] Kallarakkal, K. P., Muthukumar, K., Alagarsamy, A., Pugazhendhi, A., & Naina Mohamed, S. (2021). Enhancement of biobutanol production using mixotrophic culture of *Oscillatoria* sp. in cheese whey water. *Fuel*, 284. <https://doi.org/10.1016/j.fuel.2020.119008>
- [41] Kewal, S. S. (2012). Pengaruh Inflasi, Suku Bunga, Kurs, Dan Pertumbuhan PDB Terhadap Indeks Harga Saham Gabungan. *Jurnal Economia*, 8(i), 53–64. <https://doi.org/http://dx.doi.org/10.21831/economia.v8i1.801>
- [42] Khasanah, Y. N., & Darmawan, A. (2018). Pengaruh Risiko Inflasi, Risiko Suku Bunga, Risiko Kurs Valuta Asing, Dan Leverage Terhadap Return Saham (Studi Pada Industri Manufaktur Sub Sektor Otomotif Dan Komponen Yang Terdaftar Di Bursa Efek Indonesia Periode 2006-2016). *Jurnal Administrasi Bisnis*, 57(1), 63–72.
- [43] Kohar, A., Ahmar, N., & Suratno. (2018a). Sensitivitas Faktor Ekonomi Makro Dan Mikro Dalam Memprediksi Volatilitas harga saham Perusahaan Sektor Industri Food & Beverages. *JIAFE (Jurnal Ilmiah Akuntansi Fakultas Ekonomi)*, 4(1), 85–100.
- [44] Kohar, A., Ahmar, N., & Suratno. (2018b). Sensitivitas Faktor Ekonomi Makro Dan Mikro Dalam Memprediksi Volatilitas Harga Saham Perusahaan Sektor Industri Food & Beverages. *JIAFE (Jurnal Ilmiah Akuntansi Fakultas Ekonomi)*, 4(1), 85–100.
- [45] Kumar Chandar, S. (2021). Stock price prediction based on technical indicators with soft computing models. *Advances in Intelligent Systems and Computing*, 1200 AISC, 685–699. https://doi.org/10.1007/978-3-030-51859-2_62

- [46] Li, J., Ye, Y., & Strbac, G. (2020). Stabilizing peer-to-peer energy trading in prosumer coalition through computational efficient pricing. *Electric Power Systems Research*, 189. <https://doi.org/10.1016/j.epsr.2020.106764>
- [47] Liao, M.-H., Kuo, W.-L., & Chan, Y.-L. (2021). Investment concentration and home bias. *Advances in Intelligent Systems and Computing*, 1195 AISC, 573–578. https://doi.org/10.1007/978-3-030-50399-4_56
- [48] Liu, N., Liu, C., Da, B., Zhang, T., & Guan, F. (2021). Dependence and risk spillovers between green bonds and clean energy markets. *Journal of Cleaner Production*, 279. <https://doi.org/10.1016/j.jclepro.2020.123595>
- [49] Marc, A. F., Guppy, J. L., Bauer, P., Mulvey, P., Jerry, D. R., & Paris, D. B. B. P. (2021). Validation of advanced tools to evaluate sperm function in barramundi (*Lates calcarifer*). *Aquaculture*, 531. <https://doi.org/10.1016/j.aquaculture.2020.735802>
- [50] Mohan, V., Bu, S., Jisma, M., Rijinlal, V. C., Thirumala, K., Thomas, M. S., & Xu, Z. (2021). Realistic energy commitments in peer-to-peer transactive market with risk adjusted prosumer welfare maximization. *International Journal of Electrical Power and Energy Systems*, 124. <https://doi.org/10.1016/j.ijepes.2020.106377>
- [51] Muhammad, T. T., & Rahim, S. (2015). Pengaruh Tingkat Likuiditas Dan Profitabilitas Terhadap Harga Saham Pada Perusahaan Manufaktur Yang Terdaftar Di Bursa Efek Indonesia (BEI). *Jurnal Akuntansi Aktual*, 3(2), 117–126.
- [52] Napoli, G., Giuffrida, S., & Trovato, M. R. (2021). The ‘value of solidarity’ in the public housing stock alienation. a case study in palermo (italy). *Green Energy and Technology*, 177–193. https://doi.org/10.1007/978-3-030-49579-4_13
- [53] Narsa, I. M., & Pratiwi, F. F. (2012). Internet Financial Reporting , Pengungkapan Informasi Website , Luas Lingkup Pelaporan Internet ,. *Jurnal Ekonomi Dan Keuangan*, (80), 259–273. <https://doi.org/dx.doi.org/10.24034/j25485024.y2014.v18.i2.2120>
- [54] No Title. (n.d.).
- [55] Pamungkas, B. C., & Darwan, A. (2018). Pengaruh Nilai Tukar USD Dan Bursa Asean Terhadap Indeks Harga Saham Gabungan (IHSG) (Studi pada Bursa Efek Indonesia Periode 2014 – 2016). *Jurnal Administrasi Bisnis*, 60(1), 73–81.
- [56] Ratnawati, T., & Yuhertiana, I. (2019). Analisis Pengaruh Fundamental Makro dan Fundamental Mikro Terhadap Struktur Kepemilikan , Kinerja Keuangan , dan Nilai Perusahaan pada Badan Usaha Milik Negara yang Terdaftar di Bursa Efek Indonesia. *Business and Finance Journal*, 4(1), 65–72.
- [57] Ricci, F., Scafarto, V., Ferri, S., & Tron, A. (2020). Value relevance of digitalization: The moderating role of corporate sustainability. An empirical study of Italian listed companies. *Journal of Cleaner Production*, 276. <https://doi.org/10.1016/j.jclepro.2020.123282>
- [58] Rusdiyanto, Agustia, D., Soetedjo, S., & Septiarini, D. F. (2020). The effect of cash turnover and receivable turnover on profitability. *Opcion*, 36(26), 1417–1432. <https://doi.org/10.1017/CBO9781107415324.004>
- [59] Rusdiyanto, Hidayat, W., Soetedjo, S., Tjaraka, H., Septiarini, D. F., Gazali, ... Rahayu, D. I. (2020). The Effect of Macroeconomics on Stock Prices : Case Study Indonesian. *Espacios*, 14(17), 26. Retrieved from <https://www.revistaespacios.com/a20v41n17/20411726.html>
- [60] Rusdiyanto, Hidayat, W., Tjaraka, H., Septiarini, D. F., Fayanni, Y., Utari, W., ... Imanawati, Z. (2020). The Effect of Earnig Per Share, Debt to Equity Ratio and Return on Assets on Stock Prices: Case Study Indonesia. *Academy of Entrepreneurship Journal*, 26(2), 1–10. Retrieved from <https://www.abacademies.org/articles/The-effect-of-earning-per-share-debt-to-equity-ratio-and-return-on-assets-on-stock-prices-1528-2686-26-2-338.pdf>

- [61] Rusdiyanto, & Narsa, I. M. (2018a). Influence of Earnings Volatility, Net Income and Comprehensive Income on Stock Prices on Banking Companies on the Indonesia Stock Exchange. Working Paper.
- [62] Rusdiyanto, & Narsa, I. M. (2018b). Influence of Earnings Volatility, Net Income and Comprehensive Income on Stock Prices on Banking Companies on the Indonesia Stock Exchange. Working Paper *Managerial Auditing Journal*, 1–34.
- [63] Sari, R. (2018). Efek Faktor Makroekonomi pada Harga Saham: Metode Regresi Panel. *Relevance*, 1(1), 63–76.
- [64] Singh, B., & Henge, S. K. (2021). Neural Fuzzy Inference Hybrid System with Support Vector Machine for Identification of False Singling in Stock Market Prediction for Profit Estimation. *Advances in Intelligent Systems and Computing*, 1197 AISC, 221–227. https://doi.org/10.1007/978-3-030-51156-2_27
- [65] Sirohi, C., Jain, S., Jha, J., & Vashist, V. (2021). Integrating Behavioral Analytics with LSTM to Get Stock Predictions with Increased Accuracy. *Advances in Intelligent Systems and Computing*, 1165, 769–778. https://doi.org/10.1007/978-981-15-5113-0_63
- [66] Tektaş, B., Karakul, A. K., & Mizrahi, R. (2021). Forecasting the Day-Ahead Prices in Electricity Spot Market of Turkey by Using Artificial Neural Networks. *Advances in Intelligent Systems and Computing*, 1197 AISC, 1048–1055. https://doi.org/10.1007/978-3-030-51156-2_122
- [67] Thakkar, A., & Chaudhari, K. (2021). Fusion in stock market prediction: A decade survey on the necessity, recent developments, and potential future directions. *Information Fusion*, 65, 95–107. <https://doi.org/10.1016/j.inffus.2020.08.019>
- [68] Tian, F., Sošić, G., & Debo, L. (2020). Stable recycling networks under the Extended Producer Responsibility. *European Journal of Operational Research*, 287(3), 989–1002. <https://doi.org/10.1016/j.ejor.2020.05.002>
- [69] Tomer, M., Anand, V., Shandilya, R., & Tiwari, S. (2021). Classification of S&P 500 Stocks Based on Correlating Market Trends. *Advances in Intelligent Systems and Computing*, 1164, 271–278. https://doi.org/10.1007/978-981-15-4992-2_26
- [70] Uma, K. S., & Naidu, S. (2021). Prediction of intraday trend reversal in stock market index through machine learning algorithms. *Advances in Intelligent Systems and Computing*, 1200 AISC, 331–341. https://doi.org/10.1007/978-3-030-51859-2_30
- [71] Valencia N, C., Sanabria, A., González A, H., Arizmendi P, C., & Orjuela C, D. (2021). Neural network prediction and decision making system for investment assets. *Lecture Notes in Electrical Engineering*, 685 LNEE, 262–272. https://doi.org/10.1007/978-3-030-53021-1_27
- [72] Wang, R., He, X., & Diao, X. (2021). Input-output efficiency of environmental protection enterprises and its influencing factors: An empirical analysis of 279 listed enterprises in China. *Journal of Cleaner Production*, 279. <https://doi.org/10.1016/j.jclepro.2020.123652>
- [73] Wang, X., & Huang, G. Q. (2021). When and how to share first-mile parcel collection service. *European Journal of Operational Research*, 288(1), 153–169. <https://doi.org/10.1016/j.ejor.2020.05.049>
- [74] Yang, K., Wei, Y., Li, S., & He, J. (2021). Geopolitical risk and renewable energy stock markets: An insight from multiscale dynamic risk spillover. *Journal of Cleaner Production*, 279. <https://doi.org/10.1016/j.jclepro.2020.123429>
- [75] Zainy, H. Z. A.-A., & Al-Temimi, A. H. (2020). Impact of business model disclosure on the value relevance of accounting information for investors: Empirical analysis. *International Journal of Psychosocial Rehabilitation*, 24(9), 3199–3210. <https://doi.org/10.37200/IJPR/V24I9/PR290346>

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