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Stock Price, Trade Balance, and GDP: Interrelationships (Evidence from Indonesian Stock Exchange 2005- 2020)

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ABSTRACT

This research's focus are on the interrelationships between the three variables, namely the stock price, trade balance and GDP. Using 240 data quarterly between 2005-2020 using VECM Analysis. The results obtained show that in Indonesia Stock Exchange (IDX) there is no significant effect between the combined stock price and TB and vice versa. There is no significant two-way effect between stock prices and GDP. There was a significant influence between GDP on trade balance but not vice versa. The results of this study can enrich research in the field of macroeconomics and finance and can practically be a reference for observers for the Indonesian stock market.

Keywords: GDP, Trade Balance, IDX, Stock Market, VECM

INTRODUCTION

A good share investment requires basic information about a country's macroeconomic conditions. Macroeconomics will cause demand and supply movements in the stock market. Macroeconomic factors are proven to have an influence on stock price movements in almost all stock exchanges (Adjasi, Harvey, & Agyapong, 2008; Tarika & Seema, 2011; Eita, 2012; Talla, 2013; Forson & Janrattanagul, 2014; Celebi & Honig, 2019). If there are negative predictions about the state of the economy in the future, investors can reduce investment or allocate funds to other stocks that are considered safer (Florackis, Giorgioni, Kostakis, & Milas, C, 2014). Marcellino, Stock, and Watson, (2003) mentions macroeconomic variables that affect stock price movements were inflation, real output growth, trading activities and monetary aggregates. Other macroeconomic variables that influence were the amount of money in circulation and the trade balance (Mehrara, 2007; Barakat, Elgazzar, & Hanafy, 2016). Rahayu (2021) stated that trade is one of the alternatives to achieve a development, especially if it has already achieved something international scale, namely international trade.

Macroeconomic factors experienced by each country certainly have different sensitivity (Bilson, Brailsford, & Hooper, 2001). There are differences in macroeconomic factors that affect stock movements in developed and developing countries. Feinberg and Tokic (2004) mentioned that communication and information technology has a significant effect on changes in stock prices and GDP of developing countries. Franses and Mees (2011) mentioned the role of news originating from the United States would be easily responded to in the world stock markets.

Developing countries which are majority as emerging markets will be more sensitive to changes in macro conditions compared to developed countries (Montiel, 2011). Emerging market is an economically less developed country but in the process of strengthening the market to be more stable. Investors must pay attention to macroeconomic conditions in investing in emerging markets (Astuti & Mahardika, 2020). Information on stock movements can be known through a country's stock index which will be a reference and indicator for investors in the stock market. Besides functioning as an indicator, the stock index also functions as a benchmark of a country's capital market performance. IDX as an Indonesian stock index had experienced a very significant change. According to the IDX movement trend, when there is a decline in the value of IDX in a given year, the following year will be predicted to experience a significant increase. The highest point of IDX increase occurred in 2009. In the previous year the value of IDX fell by 50%, but in 2009 the value of IDX could increase by 83%. IDX's ability to recover from economic factors amid the global recession was proven. The recovery period required by IDX is less than one year. This has made many investors interested in investing in IDX and making Indonesia an Emerging Market.

Investors in choosing a strategy must first analyze to see the factors that cause IDX movements. As an emerging market macroeconomic factors must be highly considered. Macro IDX movements are influenced by GDP (Gross Domestic Product), the money supply, sectoral stock prices, oil prices, inflation, and interest rates. This is reinforced through the study of Desfiandi, Desfiandi, and Hapzi (2017) and Huy, Dat, and Anh (2020) who revealed that changes in GDP will have an impact on the movement of IDX.

GDP growth will provide a positive stimulus to IDX. This relates to the release of one-quarter economic growth data accompanied by an index of business confidence and foreign exchange reserves. GDP will reflect a country's economic performance. Thus GDP can act like a catalyst in the stock market (Ezeoha, Ebele, & Ndi Okereke, 2009). Alexius & Sp̓ang (2018) revealed the link between stock price movements in a country's GDP. Stock market liquidity is a strong indicator that measures growth in real GDP per

capita. Changes or fluctuations in GDP will affect consumption or dividends (Gonzalo, Lee, & Yang, 2008).

The movement of GDP and IDX can also affect the country's trade balance (Antonakakis, Gupta, & Tiwari, 2018). GDP will reflect the welfare of the people in a country. Public welfare will include income, the money supply, and the real exchange rate in both short and long term. Baharumshah (2001) mentions a stable long-term relationship between the trade balance and income, the money supply and the exchange rate. In addition, the trade balance related to GDP also correlates with the stock price in a country. The relationship that emerges between the stock price and the trade balance depends on the underlying strength. Policies designed for the stock market will also have an impact on the trade balance (Antonakakis et al., 2018). Thus, the trade balance, IDX, and GDP are related to one another. Although many studies have revealed the influence of macroeconomic factors on changes or shifts in stock prices. Mehrara (2007) found the stock market has no relationship with the money supply, trade balance and industrial production.

Differences of opinion related to share price shifts from economic factors are still an interesting thing to discuss. These inIn addition, there are no studies examining the causality relationship between the variables of stock prices, GDP, and the Trade Balance. The purpose of this study is to establish the causation of changes in both directions. in stock prices through the Composite Stock Price Index (IDX) in the period of 2005-2020 with changes in the value of GDP and the Trade Balance.

The inconsistency of research results on the influence of both macroeconomic and microeconomic variables on stock prices and the intercorrelation relationship between the three is the research gap raised in this study.

LITERATURE REVIEW

Effect of GDP on IDX

Gross domestic product (GDP) index is one of indicator of economic performance of a country. It is one of the components that forming macroeconomic variables in the main economic fundamental factors that can affect stock price movements. The main economic fundamental factors are factors that reflect macroeconomic variables. (Fama, 1981; Campbell & Shiller, 1987; Balvers, Cosimano, & McDonald, 1990 ; Funashima, Iizuka, & Ohtsuka, Y., 2020). Therefore, GDP growth is a positive signal for domestic and foreign investors that the country has investment potential in the future. The growth of gross domestic product is information that reflects economic conditions and can influence investors' decisions in the financial markets. This investor decision will later influence IDX's dynamic movements. Franses and Mees (2011) said that data on payroll, manufacturing cost, exports activities, and other major economic indicators will beneficial for investors decision making based on stock price movements.

Referring to the Efficient Market Hypothesis says that all available infromation are reflected on stock price movements (Bodie, Kane, Marcus, 2018). Stock prices are the first variable to change in response to new information because they represent the knowledge of economic agents (Beaudry & Portier, 2014). When investors get an information signal that a company's performance is growing, investors will flock to buy these shares, so IDX will significantly rise due to market demand. Funding obtained through the sale of shares, provides a great opportunity for companies to invest or develop markets or create innovations or other strategies with the aim of increasing company profitability. As suggested by Endogenous economic growth theory that increased competition will create growth (Hsueh, Tsao, Tu, Chiu, & Liu, 2014).

Supporting the previous statement, the study of Feinberg and Tokic (2004) also said that investment in information and communication technology (ITC) had significantly effect the GDP and stock value in each of the Asia-Pacific NICs and developing countries. This research shows that ITC investment will increase national productivity, which then will lead investors to high expectations of the company'selucrativeness projection, and positively affect the market value of the shares (Feinberg & Tokic, 2004). Thus, there is a causal relationship between the growth of gross domestic product on Indonesian's stock market index (IDX), and then IDX influences the growth of gross domestic product. However, in several previous empirical studies explained that there was no influence between the growth of gross domestic product and stock prices (Franses & Mees, 2011; Modis, 2007). In addition, no causality arguments were made or causality research and there was no attempt to understand the mechanism behind the correlation between gross domestic product and stock prices (Modis, 2007).
H1: Gross Domestic Product (GDP) affects IDX
H2: IDX influences Gross Domestic Product (GDP)

Effects of the Trade Balance on GDP
The trade balance has a significant role in the country's economy that reflects the country's trade conditions in a certain period indicated through net exports and net imports. One way to explain the views on the trade balance that can reflect the effects of past actions and future expectations by drawing parallels between state and household policies of a country or public company (Canto, 2018). Various forms of economic and financial relations with foreign countries assume different types of balance sheets as trade balance or balance of payments within a certain period or usually within a period of one year.

Entering the era of globalization where the world economy has been integrated, the trade balance has a big impact on almost all macroeconomic variables, including economic growth, output levels, economic fluctuations, and unemployment rates (Zhao, 2013). The situation also allows a country to experience an increase in international trade, for the position of the trade balance, the country can import more for what it exports, or export less for what it imports (Kohli, 2004). There are 4 arguments about the relationship between exports - imports and GDP called the export-led growth (ELG) hypothesis, 1) export growth leads, which are carried out through foreign trade have an impact on the expansion of production and employment; 2) foreign exchange growth generated due to export growth, makes it possible to import for capital needs, which then increases the potential for production of an economy; 3) the volume of international trade and competition in the export market leads to economies of scale and accelerated production processes; 4) exports and production growth have a strong reciprocal link, which can be read as empirical evidence supporting export-led growth (ELG) hypothesis (Amiri & Gerdtham, 2011).

Export-import growth through trade will increase income, welfare (Kohli, 2004) and accelerate economic growth (Michaely, 1977) which is shown through the contribution of trade to GDP and is a source of foreign exchange for the country (Prakash and Maiti, 2016). Thus, GDP and trade balance have a mutually influential relationship. However, some previous research revealed that the trade balance is opposite in almost all open economies, but also varies from country to country. In this case, previous research mostly explains that the trade balance is more negatively correlated with GDP in developing countries than in developed countries (Zhao, 2013). Research by Aguiar and Gopinath (2007) stated that the average correlation coefficient of testing in developing countries is -0.51, whereas in developed countries it is -0.17, this demonstrates that the association between trade balance and GDP is stronger in the developing world than in the industrialized world. The research of Boz, Daude and Bora Durdu (2011) also found that trade balance is stronger against developing countries than developed countries.

The study contradicts the results of Michaely's (1977) study which states that there is a correlation between export-import growth in this case the trade balance with economic growth or GDP. Shahbaz's research (2012) implies that trade openness and economic growth have a feedback relationship.
H3: GDP significantly influences the Trade Balance
H4: The Trade Balance has a significant effect on GDP

Effect of Trade Balance on IDX
Trade balance as one of the macroeconomic variables becomes a benchmark for foreign investors to invest in a country, especially Indonesia. As stated earlier in the Efficient Market Hypothesis which says that stock price movements reflect all available information (Bodie, Kane, Marcus, 2018), shows that competition between investors maximizing earnings in an efficient market will ensure all information regarding changes Macroeconomic variables are reflected in current stock prices, so investors cannot obtain abnormal profits through prediction of stock movements (Mehrara, 2007). There are 2 ways in which stock prices can affect the trade balance, namely through the impact of corporate or individual household wealth to some extent, and through the effect of exchange rates (Antonakakis et al., 2018). An increase in stock prices, will increase the expected income of corporate households, which will then have an impact on investment decisions, funding, and consumption, while through the movement of the fixed value, will affect the provisions of international trade which have an impact on changes in prices of domestic goods and goods abroad, which then has an indirect impact on the deficit or surplus of the trade balance (Fratzscher & Straub, 2013; Simo-Kengne, Gupta, & Aye, 2015).

According to economic theory, the trade deficit does not always reflect a poor scenario, because the trade balance deficit also signals that the domestic economy is growing and will continue to carry out a domestic economy over time. (Antonakakis et al., 2018). However, the trade balance deficit in the long run also has a bad impact, this will lead to reduced employment, which then impacts on declining national productivity, thereby increasing imports and widening the trade balance deficit (Antonakakis et al., 2018). Therefore, the trade surplus or deficit signals foreign investors about the domestic economy in making decisions for foreign investment, one of which is through the purchase of shares on the Indonesia Stock Exchange. The capital investment then has an impact on the movement of IDX domestically.

The results of Antonakakis, Gupta and Tiwari (2018) said that the empirical study results remained robust with other parameters, indicating that the association between trade balance and stock prices in the United States was not constant, but varied in a heterogeneous manner through time. The empirical test, in particular, indicates that the link between the trade balance and stock prices in general is strongly positive between 1800 and 1870, but then becomes significantly negative. (Antonakakis et al., 2018). Research by Fratzscher, Juvenal and Sarno (2010) conducted in the United States also suggests that shocks to the capital market and shocks to housing prices have been the main determinants of US current accounts in the past, accounting for up to 30% of the United States trade balance movements on the horizon 20 quarter.
H5: Trade Balance has a significant effect on IDX
H6: IDX significantly influences the Trade Balance

RESEARCH METHOD

Data
This study's data set spans the years January 2005 to December 2020. and an analysis was conducted using 240 data. Closing data related to IDX is collected from each site

idx.co.id, and trade balance data from trading economics (2020) while GDP data from bi.go.id (Indonesian central bank).

Methodology

We first analyze the characteristics of data from an econometric perspective using descriptive statistics and regression analysis tests in consideration of the nature of problems and quantum data. This will render easier to employ Granger causality tests, vector error correction models (VECM), variance decomposition tests, impulse response analysis, and other tests to establish long-term equilibrium relationships and short-term dynamics between variables. In augmented Dickey-Fuller (ADF), the root unit is used to determine the stationary property of variables and the sequence of variable integration. Cointegration regression with the Johansen cointegration technique is used to assess the long-run equilibrium connection between variables.

VECM was used to determine the presence of short-term disequilibrium and the amount of correction required to achieve a long-term equilibrium relationship between them.. If there is no correlation between the variables, the Granger test (Granger, 1969) is acceptable for assessing short-term correlations. The conventional Granger test, on the other hand, is improperly calculated when variables are co-integrated, necessitating the adoption of the error correction method advocated by Engle and Granger (1987) to find both long- and short-term causal links between variables. According to VECM, changes in one variable depend on both changes in other explanatory variables and the degree of disequilibrium in cointegration relationships (described by the term error correction). Therefore, VECM is beneficial in determining both long- and short-term causality.

Aside from the significance of conducting the causality test, empirical results based on the causality test do not specify the direction or intensity of the causal relationship between the variables under consideration, nor do they describe the evolution of that relationship. The endogenous level of the variables utilized in this study was investigated using the variance decomposition test. This illustrates how one variable's prediction error share changes when other variables change. As a result, it is feasible to determine the relative importance of each variable, which leads to oscillations in the other variables. Similar to how Granger's causality test-based empirical conclusions help to qualify the flow of influence, impulse response analysis estimates can provide us with quantitative thoughts regarding impacts for some future periods. We might examine how each variable responds to input from other variables in the system using the projected original signal from the VAR system. In more detail, IRF essentially depicts the dynamic response path of a variable as a result of a standard deviation shock to a different variable.

RESULTS

Data Stationarity Testing

Data Stationarity Testing uses the Augmented Dickey Fuller (ADF) test. To determine whether or not a stationary variable can be seen through t-statistics, if the t-statistic value is smaller than the critical value at various levels of confidence, it can be said to be a stationary variable. Variables that are not stationary differencing will be done to correct the variable stationarity.

Table 1. Stationarity Test Results

Variabel	Level	1st different	2nd different
GDP	-1.2994	-2.4236	-10.2456
	(0.6241)	(0.1401)	(0.0000)
IDX	-0.9452	-6.4499	-6.62342
	(0.7668)	(0.0000)	(0.0000)
Trade Balance	-4.4263	-9.4989	-8.5809
	(0.0007)	(0.0000)	(0.0000)

Table 1 shows the results of the first stationarity test, only the trade balance variable is stationary, while the other variables are not stationary, so differentiation is necessary. The first differentiation shows that the IDX variable and the trade balance are stationary but the GDP variable is not stationary, so the differentiation needs to be done again. After the second differentiation can be seen that all three variables have been stationary. So that further testing can be done.

Determination of Optimal lag length

To understanding how long the dependent variable will require to react to variations in the other variables that are affected, it is useful to determine the optimal lag length. Several measures, including the Probability Ratio statistical tests, Final Prediction Error (FPE), Akaike Information Criteria (AIC), Schwarz Information Criteria (SC), and Hanna Quinn Information Criteria, can be used to identify the ideal lag time (HQ). Table 2 displays the outcomes of the test for the ideal lag length.

Table 2. Determination of Optimal Lag Length

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1634.860	NA	8.72e+25	68.24416	68.36111	68.28836
1	-1621.295	24.86817	7.22e+25	68.05398	68.52178	68.23076
2	-1598.837	38.36696	4.14e+25	67.49320	68.31185	67.80257
3	-1573.917	39.45639	2.16e+25	66.82987	67.99937*	67.27183
4	-1561.150	18.61897*	1.89e+25*	66.67290	68.19325	67.24745*
5	-1552.551	11.46477	2.00e+25	66.68963	68.56083	67.39676

Source: own research

Based on table 2 it can be seen the results of determining the optimal lag LR, FPE, and HQ criteria recommend a lag of 4, while the SC criteria recommend a lag of 3. So it can be concluded that the optimal lag selection in this study is lag 4.

VAR model stability test

The estimated results of the created VAR equation system must first be checked for stability using the VAR stability condition check, which consists of the roots of a characteristic polynomial on all variables used multiplied by the number of lags of each VAR. Based on the results of these tests, a VAR system is considered stable if all of the roots have compressive values smaller than one. The estimated VAR stability, which will be used for the IRF and FEVD analyses, has been stable, according to the findings of the VAR stability test in Table 3 for this study. This is due to the modulus range being 1.

Table 3. Stability Test of the VAR model

Root	Modulus
-0.169793 - 0.724278i	0.743914
-0.169793 + 0.724278i	0.743914
-0.392235 - 0.612564i	0.727381
-0.392235 + 0.612564i	0.727381
-0.186523 - 0.474644i	0.509978
-0.186523 + 0.474644i	0.509978

Source: own research

Cointegration Test

study is to establish whether groups of variables that are not stationary at these levels, i.e. when all variables have been stationary to the same degree, especially degrees 1, I, fulfill the requirements of the integration process (1). The cointegration test in this study employs the cointegration test method of the Johansen Trace Statistics test, which is based on the results shown in the Table. In order to determine how many sets of equations can adequately explain the entire system, the cointegration rank must first be determined. Trace statistics form the foundation for the cointegration testing criteria in this study. An alternate hypothesis indicating the quantity of cointegration is accepted so that it is possible to determine how many equations are cointegrated in the system if the trace statistic value is higher than the crucial value of 5 percent. This test will determine whether the variables we'll be looking at have a long-term impact. The VECM stage can proceed if cointegration is established to exist. However, VECM cannot continue if it is not supported by evidence.

Table 4. Cointegration Test

Unrestricted Cointegration Rank Test (Trace)				Unrestricted Cointegration Test (Maximum Eigenvalue)			
H0	Trace Statistic	Critical Value	Prob.**	H0	Max-Eigen Statistic	Critical Value	Prob.**
r=0*	174.9896	24.27596	0.0001	r=0*	84.66866	17.79730	0.0000
r≤1*	90.32091	12.32090	0.0001	r≤1*	60.98624	11.22480	0.0000
r≤2*	29.33467	4.129906	0.0000	r≤2*	29.33467	4.129906	0.0000

Source: own research

As shown in the table 4, the trace statistic and maximum value values in all hypotheses are more than the critical values with a significance level of 1% and 5%, respectively. In other words, neither the alternative hypothesis, indicating no cointegration, nor the null hypothesis, indicating no cointegration, can be discarded. The econometric analysis above shows that there was cointegration among the three variables in this study at the significance levels of 1% and 5%. The cointegration test's findings thus show that all variables have a stability/balance relationship and similar long-term movement patterns. In other words, all variables tend to adjust to one another during each short-term period in order to reach their long-term equilibrium.

Table 5. Cointegration Vector

Cointegrating Eq:	D(D(GDP(-1)))	D(D(IDX(-1)))	D(D(TRADE_BALANCE(-1)))
CointEq1	1.000000	0.000000	-7.36467
			[-6.18049]
CointEq2	0.000000	1.000000	-996.921
			[-10.1382]

Source: own research
Information :
Numbers in brackets indicate the value of the t-test statistic

The balance cointegration vector shows the effect between trade balance on GDP and IDX.

a. An increase in trade balance of 1 million dollars will cause a decrease in GDP of 7.3647 million dollars, controlled by IDX
b. An increase in trade balance of 1 million dollars will cause a decrease in IDX of Rp 996,921, controlled by GDP

VECM Model

To conduct a causality test. Each data is presented in the form of an autoregression vector and is regressed on itself and lags from other variables. To test the causal relationship between the cointegrated markets, it will then be tested in the vector error correction model (VECM). In this case the test is performed with lag 2 (obtained from optimal lag 4 minus the amount of differentiation) as to provide consistency with previous tests. The t-statistic value is compared with the t table value with 57 degrees of freedom (number of observations - differentiation - 1) that is equal to 2.00. The statistical t value is shown by the value inside the square brackets. The test results are obtained as follows:

Table 6. VECM Model

Error Correction:	D(D(GDP),2)	D(D(IDX),2)	D(D(TRADE_BALANCE),2)
CointEq1	-2.765161	21.19601	0.081619
	(0.22923)	(14.9953)	(0.03864)
	[-12.0630]	[1.41351]	[2.11234]
CointEq2	0.024128	-0.388594	0.002792
	(0.00264)	(0.17264)	(0.00044)
	[9.14236]	[-2.25087]	[6.27561]
D(D(GDP(-1)),2)	1.147654	-8.044566	-0.058672
	(0.16374)	(10.7114)	(0.02760)
	[7.00896]	[-0.75103]	[-2.12577]
D(D(GDP(-2)),2)	0.502169	-0.195812	-0.029596
	(0.10809)	(7.07065)	(0.01822)
	[4.64601]	[-0.02769]	[-1.62446]
D(D(IDX(-1)),2)	-0.018328	-0.516787	-0.002143
	(0.00252)	(0.16517)	(0.00043)
	[-7.25898]	[-3.12888]	[-5.03525]
D(D(IDX(-2)),2)	-0.009443	-0.293543	-0.001267

	(0.00213)	(0.13925)	(0.00036)
	[-4.43607]	[-2.10804]	[-3.53223]
D(D(TRADE_BALANCE(-1)),2)	2.415975	-184.0225	1.309643
	(1.59187)	(104.135)	(0.26833)
	[1.51769]	[-1.76715]	[4.88072]
D(D(TRADE_BALANCE(-2)),2)	1.226363	-54.34140	0.411413
	(0.81898)	(53.5749)	(0.13805)
	[1.49743]	[-1.01431]	[2.98020]

Source: own research

The results showed that for the independent variable GDP it was obtained that GDP and IDX in the previous 1 and 2 days were significant in explaining GDP while for the trade balance variable both on days 1 and 2 days before were not significant in explaining GDP. For the error correction model (EC) illustrates the effect of the cointegration equation on significant GDP changes.

For the results of research on the independent variable IDX obtained IDX on 1 and 2 days before was significant in explaining that IDX. For GDP and trade baance variables in the previous 1 and 2 days and the trade balance in the previous 2 days is not significant in explaining IDX. For the error correction model (EC) illustrates the effect of the cointegration equation on significant GDP changes in the second cointegration.

In the independent variable trade balance, it is obtained that the trade balance on the previous day and 2 days is significant in explaining trade balance while for the IDX variable and trade balance both on days 1 and 2 days before were not significant in explaining GDP. For the error correction model (EC) illustrates the effect of the cointegration equation on significant GDP changes. This explains that the cointegration vector that illustrates the suitability of Trade Balance for its long-term relationship with GDP and IDX has a significant effect on Trade Balance.

Causality Test

The Granger Causality Test is used to determine causality. Testing is done to evaluate whether or not there is a reciprocal link between the two variables. In other words, given that each variable in the study has the potential to either be endogenous or exogenous, does one variable have a significant causal link with the other variables? The VAR Pairwise Granger Causality Test and a significance threshold of 5% were used in this study's bivariate causality test. The results of the bivariate Granger Causality test analysis are presented in Table 7.

Table 7. Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
IDX does not Granger Cause GDP	56	3.82826	0.0090
GDP does not Granger Cause IDX		1.99201	0.1111
TRADE_BALANCE does not Granger Cause GDP		1.68211	0.1699
GDP does not Granger Cause TRADE_BALANCE		2.91208	0.0312
TRADE_BALANCE does not Granger Cause IDX	56	0.59632	0.6671
IDX does not Granger Cause TRADE_BALANCE		1.92153	0.1224

Source: own research

According to the data provided above, those who have a causation link have a lower probability value than alpha 0.05, therefore Ho will be rejected, indicating that a variable affects other variables. The reciprocity / causality relationship is known via the Granger test as follows; the IDX variable does not statistically significantly affect GDP so we reject the null hypothesis as well as the GDP variable does not significantly affect the stock price index so we reject the null hypothesis. Thus, it is concluded that there is no causality relationship between variables. The Trade Balance variable does not statistically significantly affect GDP so we reject the null hypothesis. Whereas the GDP variable significantly influences Trade Balance so we accept the null hypothesis. Thus, it was concluded that there is a direct causal relationship between variables. The Trade Balance variable does not statistically significantly affect IDX so we reject the null hypothesis as well as the IDX variable does not significantly affect Trade Balance so we reject the null hypothesis. Thus, it is concluded that there is no causality relationship between variables.

DISCUSSION

Not finding a significant relationship between GDP and stock price indexes in the market in Indonesia is the same result with research from Franses and Mees (2011) for sample data from the US stock market, and Modis (2007) which states the correlation between the Dow Jones Industrial Average (DJIA) Index and GDP on the United States Stock Market is not scientifically significant. In contrast to the findings of Feinberg and Tokic (2004), investment in information and communication technology (ITC) has a positive and significant effect on GDP and stock market value in each NIC of Asia-Pacific and developing countries (Hong Kong, Indonesia, South Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand) from 1992 to 2001.

While the statistical test results that measure the effect between the Trade Balance and the stock price index in Indonesia are in accordance with the findings (Antonakakis et al., 2018) which show the correlation between the trade balance relationship and stock prices with the 1972-2013 sample period significantly negative after 1870, and in contrast to the results of research by Fratzscher and Straub (2013).

In testing the relationship between GDP and trade balance, it was found that there was a significant influence by GDP on trade balance according to research from Michaely (1977) which showed there was a correlation between economic growth and exports, but there was no reverse relationship of trade balance to GDP.

CONCLUSION

Of the six hypotheses submitted, only 1 hypothesis was accepted. This reflects that not all macroeconomic factors show a strong connection. The condition of the Indonesian stock market has unique characteristics so that investors and macroeconomic observers need to identify any factors that signal the fluctuations in the stock market. The weakness of this study is that the range of years is not too long because of the limited access to information related to data years before 2005. Future studies may consider using other macroeconomic variables for funds or in combination with microeconomic factors to be able to enrich the results of studies that review financial and macroeconomic markets, especially in Indonesia, as one of the emerging markets for investors.

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DECLARATION OF CONFLICTING INTERESRTS
The authors declared no potential conflicts of interest.

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