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Analysis of Determinants of Stock Transaction Volume and its Effect on the IDX Composite in IDX 2010-2020 Period

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Abstract: This study analyzes the impact of cash supply, dollar exchange rate, yuan exchange rate, Shanghai composite index (SSE composite index) on the IDX composite with transaction volume as a mediating variable (Case Study on Companies Listed on the Indonesia Stock Exchange in 2010 - 2020). The review was led utilizing 121 examples comprising of month to month information for all factors from 2010 to 2020. The information handling strategy utilized various straight relapse investigation procedures. The outcomes showed that to some extent cash supply, dollar exchange rate, SSE composite index had a critical constructive outcome on the IDX composite. To some degree, just the yuan exchange rate has no huge impact on the IDX composite. At the same time, cash supply, dollar exchange rate, yuan exchange rate and the SSE composite index simultaneously affected the IDX composite. The cash supply and the SSE composite index record have a critical constructive outcome on transaction volume. To some extent, exchange rate and yuan exchange rate have no critical impact on transaction volume. The cash supply, exchange rate, yuan exchange rate and SSE composite index simultaneously significantly affect on transaction volume. Simultaneously, cash supply, exchange rate, yuan exchange rate and SSE composite index significantly affect the IDX composite with exchange volume as an interceding variable.

Keywords: Money Supply, Dollar Exchange Rate, Yuan Exchange Rate, Shanghai Composite Index (SSE Composite Index), IDX composite and Transaction Volume

INTRODUCTION

The capital market has three types of instruments, including stocks, bonds, and derivatives. Of the various types of capital market instruments, stocks are the most popular type of business among investors, where stocks can provide an attractive rate of return. In basic terms, shares can be characterized as investment or responsibility for individuals or elements within an organization (Lubis in Megawati and Noor Salim, 2018). The IDX composite is used as a reflection of capital market activity in general, considering that for investors, the IDX composite is a guide to find out developments in the capital market. In the capital market, the index has several capacities, including measuring market trends,

indicators of benefit levels and benchmarks in portfolio or mutual fund performance. The capacity of the capital market can oscillate in accordance with changes in existing macroeconomic assumptions. The hesitation that occurs in the capital market can be related to changes that occur in several macroeconomic factors (Tandelilin, 2010).

The IDX composite movement in the IDX capital market from June 2010 to June 2020 has an upward trend. Starting in 2011, the IDX composite continued to increase, an increase of 33% compared to 2010. However, in 2020 the IDX decreased by 23%, which is thought to be the influence of the global covid-19 issue. IDX composite is influenced by various macro and micro factors. Megawati and Noor Salim (2018), there are internal and external factors which affect the capital market, an investor must have an understanding of the pattern of stock price movements or the value of the IDX composite.

The causes of changes in stock prices, among others, can arise from the influence of changes in the money supply, the dollar exchange rate, the yuan exchange rate, the Shanghai Stock Exchange Composite Index (SSE composite) and transaction volume. Sudiyatno in Choiriyah and Yuliana (2018), the development of stock value and stock transaction volume is able to frame the pattern of value and transaction volume. The presence of stock trading resulted in large changes to stock prices which were quite significant.

Boediono in Wibowo, Arifati and Raharjo (2016) states that the money supply is one of the factors in the financial sector that is considered significant and fundamental. Meanwhile, research by Otorima and Kesuma (2016) reveals where the money supply has a negative effect on the IDX composite. The results of the research of Maria Widyastuti, Dewantoro and WS Panjaitan (2017), the money supply in shares has a positive and significant influence on the changes in the IDX composite in the IDX.

International business interactions or multinational organizations will later require a payment method that can be recognized by each country, for example the combination of the European currency exchange rate with the Euro and the Chinese currency exchange rate with the yuan (Ardiansyah, 2015). The effect of the rupiah exchange rate on the IDX composite proves that if the rupiah depreciates, the IDX composite can weaken even more. If the rupiah appreciates, the IDX composite will strengthen.

Changes in world stock exchanges were immediately responded to by trading in Indonesian stocks, where the development of the Indonesian stock market moved in accordance with the development of world stock exchanges. (Endri, 2019). The results of the research by Bery and Worokinasih (2018) show that the SSE composite has a positive and significant influence on the IDX composite.

The following research aims to obtain empirical evidence regarding the effect of the money supply, the dollar exchange rate, the yuan exchange rate and the Shanghai Composite Index (SSE composite index) on the Indonesia Composite Index (IDX composite) with transaction volume as an intermediary variable.

LITERATURE REVIEW

Fahmi (2013:3) Abdul Halim's opinion, investing in essence is placing various funds in the present with the aim of obtaining income in the future. In addition, US economists Paul R. Krugman and Maurice Obstfeld revealed that the output used by private organizations to obtain output in the future is called investment. Of course, the process of making a profit by making these investments requires careful analysis and calculations without compromising the preparation guidelines. The importance of prudence or preparation is one of the important sources of capital for investors, this is evidenced by the reality that occurs from the negligence of many banks in Indonesia, both private and government.

Capital market

Tandelilin (2010:26) The capital market is a gathering place for parties who have reserves of funds with individuals who need capital in trading securities. The capital market is also seen as a business opportunity for the exchange of securities which are generally more than one year old, including stocks and bonds. The place to trade securities is known as a stock exchange. Furthermore, the stock exchange is the true significance of the capital market. In Indonesia, there is only one exchange, namely the combination of the Jakarta Stock Exchange (JSX) and the Surabaya Stock Exchange (SSX), which changed its name to the Indonesia Stock Exchange (IDX).

Stock Exchange

Hermuningsih (2012:3), based on Law no. 8 of 1995 concerning the capital market: Stock exchange is a party that selects and provides a framework or means to trade securities from various meetings that intend to exchange securities between them. In essence, the stock exchange is a party that provides media for securities trading, including shares and the media is used to exchange securities against individuals (securities organizations). In order for the exchange of securities to run in a safe, orderly and efficient manner, the stock exchange manages and directs the securities exchange system and further controls the protection requirements that can be exchanged in trading through stock trading guidelines. A security is a tradable financial asset, including acknowledgments of debt, shares, bonds, commercial paper, proof of debt, participation units in collective investment contracts (mutual funds), futures contracts for securities (options) and any derivatives of securities.

Share

Fahmi (2013:81-88) Shares are

- 1) Proof of ownership of capital or assets in an organization.
- 2) Paper containing the nominal value, name of the organization along with supervision over the obligations and rights disclosed to each owner.
- 3) Inventory ready for sale.

In the capital market, there are two kinds of stocks which are most in demand by the general public, namely common stock and preferred stock. Where the two types of shares have implications and special rules.

IDX Composite (Indonesia Composite Index)

Tandelilin (2010: 86) states that the IDX composite uses all listed stocks as one part of the index calculation. Every capital market has an index which consists of stocks as the basis for calculating the price index. Samsul (2015: 136), IDX composite is determined every day or consistently during trading hours based on need. Hermuningsih (2012: 133), the index on the IDX is determined using the weighted average method depending on the number of listed shares (market value) or the Market Value Weighted Average Index. The basic formula for calculating the Index is:

$$IHSG = \frac{\text{Nilai Pasar (P1. Q1 + P2. Q2+ ... +Pi. Qi + Pn. Qn)}}{(\text{Nilai Dasar})} \times 100$$

Remarks:

P : Closing Price (occurring price) for the th miten

Q : The number of shares used for index calculation (number of listed shares)for the issuer to-i

Transaction Volume

Transaction volume is the number of shares exchanged from day to day in the capital market at a price agreed by traders and stock buyers through stock intermediaries. Transaction volume is important for investors which gives an idea of the health of a securities traded in the capital market. For investors, the most important thing before investing is the level of liquidity of a securities (Taufiq and Wahidahwati, 2018). Transaction volume is the liquidity element of a stock in the capital market. Exchange activity is estimated using Trading Volume Activity (transaction volume activity) (Husnan in Firmansyah and Hadijono, 2016). Mufidah, Susyanti and Slamet (2018) The calculation of transaction volume is:

$$TVA = \frac{\text{Number of shares } i \text{ traded at time } t}{\text{Number of shares } i \text{ outstanding at time } t}$$

Amount of Money Supply

Bank Indonesia defines money supply as commitments related to monetary system (Central Banks, Commercial Banks and Rural Banks/BPR) to the domestic private sector (except the central government and non-residents). Commitments which are part of the money supply are cash held by the general public (other than commercial banks and rural banks), demand deposits, quasi-money which are held by the domestic private sector, as well as securities other than shares issued by the monetary system which are claimed by the domestic private sector with a remaining term of one year. The money supply can be characterized from a narrow perspective (M1) and from a broad perspective (M2). M1 consists of cash which is held by the general public as well as demand deposits (giro is referred to in rupiah),

$$M1 = C + D$$

Description :

M1 = the amount of money in circulation in the narrow sense C = Currency (banknotes + coins)

D = demand deposit or check

M2 consists of M1, quasi-money (savings, deposits in rupiah and foreign currency, demand deposits in foreign currencies) and securities which are issued by a monetary system owned by the domestic private sector with the largest balance in one year (www.bi.go.id).

Exchange rate

Murtini and Septivanie (2016) The exchange rate is the price of a country's currency which is measured against other currencies. According to Sukirno (2015:397) the rupiah exchange rate is the exchange rate, namely the price of a currency in another currency. The exchange rate is one of the fundamental prices in an open economy, because it has a significant effect on the current account balance and other macroeconomic variables.

Shanghai Stock Exchange Composite Index or SSE composite

The Shanghai Stock Exchange (SSE) is the largest stock trading company in the People's Republic of China. Located in the city of Shanghai, China. It was founded on November 26, 1990 and started procedures on December 19, 1990. This stock trading is a non-profit association supervised by the China Securities Regulatory Commission (CSRC). The SSE composite or the SSE Composite, also known as the Shanghai Composite, is one of the most frequently used markers to reflect the performance of the SSE market. Other notable lists used on the Shanghai Stock Exchange include the SSE 50 Index and the SSE 180 Index. As of May 2012, a total of 932 organizations have listed their shares on the SSE. As of December 2011, the cost of offering on SSE was US\$2.3 trillion in world market

capitalization. The exchange period on SSE trading is 09:30 to 11:30 and 13:00 to 15:00 consistently from except Saturday, Sunday and holidays determined by the exchange manager (id.wikipedia.org).

HYPOTHESIS DEVELOPMENT

The Effect of the Money Supply on the IDX Composite

Mohamad in Wibowo, Arifati and Raharjo (2016) reveals where the more cash flows in the ownership of the general public, the higher the stock price. Where individuals will look for ways to share their assets. Previous studies which have been carried out by Widyastuti, Dewantoro as well as Panjaitan (2017), Rahmatika (2017) and Pahlevi (2019) show the results that there is an influence between the money supply in the IDX composite.

The Effect of the Dollar Exchange Rate on the IDX Composite

The exchange rate is an element of a country's economic stability which affects the performance of the stock exchange. If the demand for the rupiah exchange rate is smaller than the supply of rupiah currency, the rupiah exchange rate may depreciate or potentially vice versa. For investors, the devaluation of the exchange rate in dollars shows that the Indonesian economic perspective is declining (Endri, 2019). Murtini and Septivanie (2016) The depreciation of the rupiah exchange rate in foreign currencies has an impact on increasing the cost of importing raw materials and facilities needed for business, which leads to an increase in production costs. Therefore, the weakening of the rupiah exchange rate has a negative impact on the national economy, thereby reducing stock performance. Previous studies which have been carried out by Daulay and Krisnanto (2019), Megawati and Noor Salim (2018), Kusuma and Badjra (2016) show that there is an influence between the dollar exchange rate on the IDX composite.

The Effect of the Yuan Exchange Rate on IDX Composite

Kusnanto (2017) The impact of the devaluation of the yuan has a very large impact on the world economy, which is reflected in the decline in currency exchange rates and the decline in stock prices in most countries. Impact on Indonesia on August 11 2015, the rupiah exchange rate weakened 0.41% to a level of Rp 13,607 and the IDX composite fell 2.66% to a level of 4,622.59. The results showed that the devaluation of the yuan had an impact on the IDX composite fluctuations. Another effect of the Chinese government's yuan devaluation policy on Indonesia is that goods made in China are cheaper than goods made in Indonesia. This causes consumers to switch to items made in China, where goods made in Indonesia do not sell well and are detrimental to Indonesian sellers. This is certainly less favored by investors, so that investors can sell shares and in total there will be a decline in the IDX composite. (Murtini and Septivanie, 2016). Previous research by Murtini and Septivanie (2016) and Ardiansyah (2015) revealed where there is an influence between exchange rate changes in the stock price index.

The Effect of the SSE composite index on the IDX Composite

In 2015, the global economy was experiencing a slowdown, including China. This is because the exploding air bag on the Chinese financial market made the Chinese stock exchange sharply corrected. The current situation is exacerbated by the Chinese government's exposure to Greek debt defaults. The fall in stock prices caused investors to panic selling. Thus, the Asian stock exchanges fell and the IDX composite record on the Indonesia Stock Exchange was no exception. Compared to several countries in Southeast Asia, the IDX composite experienced the largest decline. The sharp decline in the IDX composite among trades in other ASEAN countries revealed that the IDX composite in general was powerless

to deal with the situation on the Chinese stock exchange. (Ardiansyah, 2015). Previous studies which have been carried out by Endri (2019), Bery and Worokinasih (2018) and Tarigan,

The Effect of the Money Supply on the Volume of Transactions

The development of investment in a country can affect the economic development of that country. The better the economy of a country, the better the development of its people. This more significant degree of success is generally communicated by the individual's salary level. With a raise, many individuals will have abundant reserves. An abundance of assets can be kept as a reserve fund or put resources into securities exchanged in the capital market. One of the clues to see the behavior of the market or investors is to look at the development of the volume of stock transactions in the capital market (Ruaida and Jamal, 2020). Previous research by Ruaida and Jamal (2020) showed results where there was an influence between the money supply in transaction volume.

The Effect of the Dollar Exchange Rate on Transaction Volume

The low domestic exchange rate in this situation, the rupiah against the dollar, will weaken the rupiah conversion standard, which will result in higher liabilities of organizations (banks) in foreign currency. That way, it will be increasingly difficult for banks to fulfill their commitments, which in turn affects the transaction volume of bank shares at a low level. Thus, the higher the conversion scale of the rupiah to the dollar makes the rupiah exchange rate stronger, so it will be easier for banks to fulfill their commitments and will have an impact on increasing transaction volume (Wulandari, Andriani and Nurjihadi, 2017). Previous research by Rahmi and Jamal (2019) and Wulandari, Andriani and Nurjihadi (2017) showed the results that there was an influence between the dollar exchange rate on transaction volume.

The Effect of the Yuan Exchange Rate on Transaction Volume

Stock performance affects various variables, one of which is social, economic and political variables. These variables can be in the form of statements related to the government, one of which is the decline in the value of the yuan which was reported by the People's Bank of China (PBOC) on August 11, 2015. In this phenomenon there is the impact of monetary strategies around the world, especially as a description of the market response. against a statement, then around the statement will get an abnormal return (Tandelilin, 2010: 223). Besides abnormal returns, market response can also be shown from transaction volume, especially Trading Volume Activity (TVA) (Husnan in Saputri and Herlambang, 2016).

The Effect of SSE Composite Index on Transaction Volume

The capital markets of countries in the same region can influence each other. China is one of the countries in Asia with the fifth largest capital market capitalization in the world. This has an influence on the stock indexes of other countries in the region, one of which is the IDX capital market in Indonesia. This is in accordance with Triyono's research, Indarto and Santosa (2016) revealing that the SSE composite index has a positive direction in the stock price index. So that the SSE composite index can have an influence on fluctuations in transaction volume on the IDX capital market.

The Effect of Transaction Volume on IDX Composite

Chorihand Yuliana (2018) There is a sale and purchase of shares resulting in changes in share prices which are quite significant. When stock prices rise, it will have an impact on the IDX composite. Firmansyah and Hadijono (2016) Transaction volume is an indicator

which is used to prove the level of investor interest in a stock. The higher the transaction volume, the more frequently the stock is traded. Previous studies which have been carried out by Widayastuti, Dewantoro and Panjaitan (2017), Choiriyah and Yuliana (2018) show the results that there is an influence between transaction volume on the IDX composite.

Framework

In this study, the researcher presents a frame of mind which is shown in Figure 1. under:

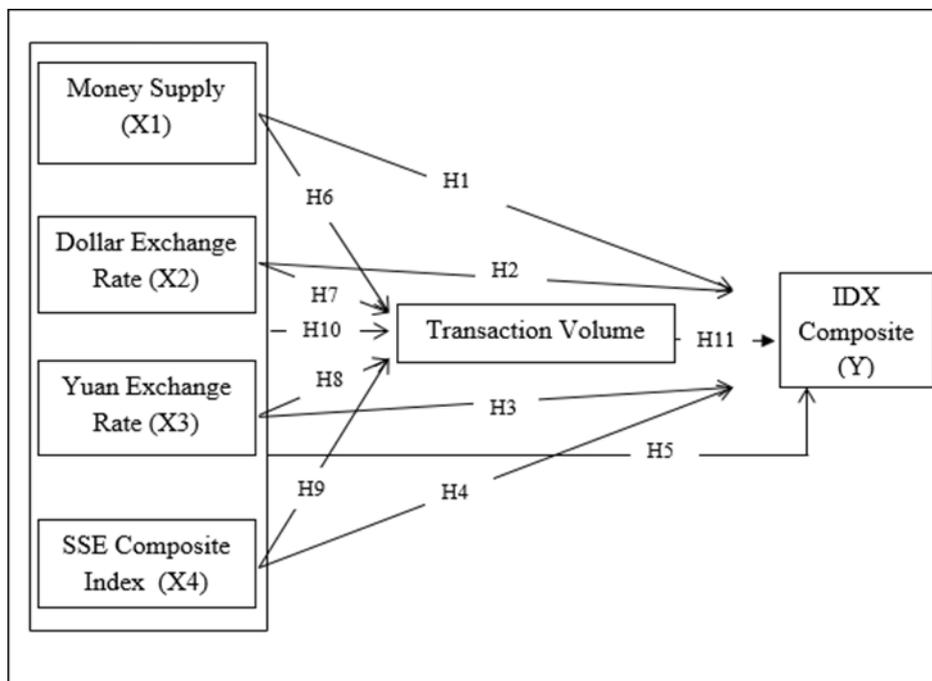


Figure 1. Framework

Based on the framework that has been described, the hypotheses that might be developed are:

- H1: It is suspected that there is a significant effect on changes in the money supply on the IDX composite on the IDX.
- H2: It is suspected that there is a significant effect of changes in the dollar exchange rate on the IDX composite on the IDX.
- H3: It is suspected that there is a significant effect of changes in the yuan exchange rate on the IDX composite on the IDX.
- H4: It is suspected that there is a significant effect of changes in the SSE composite index on the IDX composite on the IDX.
- H5: It is suspected that there is a simultaneous influence on changes in the money supply, the dollar exchange rate, the yuan exchange rate and the SSE composite index on the IDX composite on the IDX.
- H6: It is suspected that there significant influence on changes in the money supply on the volume of stock transactions on the IDX.
- H7: It is suspected that there significant influence on changes in the dollar exchange rate on the volume of stock transactions on the IDX.
- H8: It is suspected that there is a significant effect of changes in the yuan exchange rate on the volume of stock transactions on the IDX.
- H9: It is suspected that there is a significant effect of changes in the SSE composite index on the volume of stock transactions on the IDX.
- H10: It is suspected that there is a simultaneous influence on changes in the money supply, dollar exchange rate, yuan exchange rate and the SSE composite index on the volume of stock transactions on the IDX.

H11: It is suspected that there is a simultaneous effect on changes in the money supply, dollar exchange rate, yuan exchange rate and the SSE composite index on the IDX composite with stock transaction volume as the intervening variable.

RESEARCH METHODS

The following research uses a descriptive type of research with a quantitative approach using secondary data. The type of data used is time series data. The research data started from June 2010 to June 2020. The population of this study includes data on the money supply, the dollar exchange rate, the yuan exchange rate, and the SSE composite index, transaction volume and IDX composite for the period June 2010 - June2020. The sample for this study is a saturated sample where all time series data variables are used as samples in the study.

Table 1. Definition of Operational Variables

No.	Variable	Measurement	Scale
1	Total Money Supply (X1)	How much money the individual really has. This variable is measured by utilizing the amount of money in circulation from a broad perspective (M2) which includes how much currency, demand deposits, and quasi-money are distributed consistently by Bank Indonesia. The unit is in rupiah. Downloaded from the web address https://www.bps.go.id/ M1 + Quasi Money	Ratio
2	Dollar Rate (X2)	The rupiah exchange rate against the US dollar uses the middle rate issued by Bank Indonesia per month during June 2010-June 2020 which is expressed in units of rupiah per one US dollar. Downloaded from the web address https://www.bi.go.id/ (Selling Rate + Buying Rate)/2	Ratio
3	Yuan Exchange Rate (X3)	The size of the rupiah exchange rate against the yuan uses the middle rate provided by Bank Indonesia consistently during June 2010-June 2020 which is expressed in units of rupiah per one yuan. Downloaded from the web address https://www.bi.go.id/ Selling Rate + Buying Rate)/2	Ratio
4	SSE Composite Index (X4)	Data SSE composite index In the following study, it was taken from the official Yahoo website address, namely www.finance.yahoo.com with the search code ^SSEC. The data taken is monthly closing data for the period June 2010 - June 2020. $SSEC = \frac{\sum \text{Market Capability} \times 100}{\sum \text{Basic Value}}$	Ratio
5	Transaction Volume (Z)	Transaction volume is obtained from the BPS data center in the form of monthly data for each month period. Downloaded from the web address https://www.bps.go.id/ $TVA = \frac{\sum \text{Shares traded}}{\text{Listed shares}}$	Ratio

6	Indonesia Composite Index (IDX COMPOSIT) (Y)	The IDX composite level is consistently provided by the Indonesia Stock Exchange. The data used is the rate of development of the IDX composite (close price) consistently during the monitoring period. The data is used in focus units of point (BPS). The data is obtained from the official website address of yahoo, namely: www.financet.yahoo.com $JKSE = \frac{\sum \text{Market Capability}}{\sum \text{Basic Value}} \times 100$	Ratio
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In data analysis, researchers used the help of Eviews 10 software in processing data. Analysis of the data used in the study, namely classical assumption test, model accuracy test, multiple linear regression analysis and hypothesis testing.

In using multiple linear regression analysis, the equation model in this study is as follows:

Models (1)

$$Y = \alpha_1 + \beta_1 \cdot X_1 + \beta_2 \cdot X_2 + \beta_3 \cdot X_3 + \beta_4 \cdot X_4 + e$$

Models (2)

$$Z = \alpha_2 + \beta_5 \cdot X_1 + \beta_6 \cdot X_2 + \beta_7 \cdot X_3 + \beta_8 \cdot X_4 + e$$

Models (3)

$$Y = \alpha_3 + \beta_9 \cdot X_5 + e$$

Description :

Y : IDX composite

X2 : Dollar Exchange Rate

Z : Transaction Volume

X3 : Yuan Exchange rate

α : Constant

X4 : SSE composite index

β : Independent Variable Regression Coefficient

X5 : Transaction Volume

X1 : Money Supply

e : Standard Error

In the regression test, there is a coefficient of determination test (adjusted R square). The coefficient of determination defines the relative impact of many independent factors in the model on the IDX composite, then the remainder is the impact generated by various factors outside the model. In addition, the regression test is the F test and t test. The F test was used to test the effect of independent factors simultaneously on the IDX composite. If the F-test has a significance level below 5%, this means that each independent factor has a critical concurrent impact on the IDX composite.

Next is the t test, which is used to test the impact of each independent factor on the IDX composite. The reason for choosing the t-test is assuming the level of importance is below 5%, then the independent factor significantly affects the IDX composite by examining the direction of the impact, regardless of whether it is positive or negative.

RESULTS AND DISCUSSION

Descriptive Analysis Results

Table 2. Research Descriptive Statistics

	IDX COMPOSITE	DOLLAR	USD	YUAN	SSE	VT
mean	4961,794	4276894.	12083.12	1851,589	2784.270	157056.2
median	4905,390	4358802.	13084.00	1969.510	2852.350	128263.0
Maximum	6605,630	6468194.	16367.01	2309.120	4611,740	415074.0
Minimum	2913,680	2217589.	8508.000	1316,530	1979.210	55616.00

Std. Dev.	920.0420	1213320.	2138,864	299.3146	514,4105	77966.39
Skewness	-0.042112	-0.020030	-0.395687	-0.632304	0.619268	1.236897
Kurtosis	2.089246	1.807976	1.693777	1.895239	3.989432	3.885017
Jarque-Bera	4.217689	7.171898	11.75964	14.21614	12.66944	34.80217
Probability	0.121378	0.027710	0.002795	0.000818	0.001774	0.000000
Sum	600377.0	5.18E+08	1462057.	224042.3	336896.7	19003801
Sum Sq. Dev.	1.02E+08	1.77E+14	5.49E+08	10750707	31754184	7.29E+11
Observations	121	121	121	121	121	121

Multiple Linear Regression Analysis

Table 3. Results of Multiple Linear Regression Analysis Against Variable Y
 Dependent Variable: IDX COMPOSITE_Y
 Method: Least Squares
 Date: 06/28/21 Time: 10:15
 Samples: 1 121
 Included observations: 121

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	0.023094	0.014705	1.570467	0.1190
JUB_X1	0.959122	0.098364	9.750731	0.0000
DOLLAR_X2	0.831204	0.355562	2.337719	0.0211
YUAN_X3	0.525327	1.246399	0.421476	0.6742
SSE_X4	1.029146	0.321959	3.196510	0.0018
R-squared	0.984425	Mean dependent var		1.097768
Adjusted R-squared	0.983888	SD dependent var		0.289519
SE of regression	0.036750	Akaike info criterion		-3.728918
Sum squared resid	0.156664	Schwarz criterion		-3.613389
Likelihood logs	230.5995	Hannan-Quinn Criter.		-3.681997
F-statistics	1832,925	Durbin-Watson stat		1.988095
Prob(F-statistic)	0.000000			

Source: Processed Data

Table 4. Results of Multiple Linear Regression Analysis Against Variable Z
 Dependent Variable: VT_Z
 Method: Least Squares
 Date: 06/28/21 Time: 10:44
 Samples: 1 121
 Included observations: 121

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	-0.212255	0.237688	-0.892998	0.3737
JUB_X1	0.796046	0.267375	2.977268	0.0035
DOLLAR_X2	-0.852512	2.018170	-0.422418	0.6735
YUAN_X3	0.430210	0.473870	0.907865	0.3658
SSE_X4	1.059319	0.422931	2.504710	0.0136
R-squared	0.808959	Mean dependent var		4.395503
Adjusted R-squared	0.802371	SD dependent var		0.489090
SE of regression	0.217427	Akaike info criterion		-0.173460
Sum squared resid	5.483860	Schwarz criterion		-0.057931
Likelihood logs	15.49430	Hannan-Quinn Criter.		-0.126539
F-statistics	122.7997	Durbin-Watson stat		2.097483
Prob(F-statistic)	0.000000			

Source: Processed Data

Table 5. Results of Multiple Linear Regression Analysis of Variable Z Against Variable Y

Dependent Variable: IDX COMPOSITE_Y

Method: Least Squares

Date: 06/29/21 Time: 10:49

Samples: 1 121

Included observations: 121

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	4.664426	0.306407	15.22297	0.0000
VT_Z	0.322734	0.025819	12.49969	0.0000
R-squared	0.567654	Mean dependent var		8.491710
Adjusted R-squared	0.564020	SD dependent var		0.192047
SE of regression	0.126806	Akaike info criterion		-1.275922
Sum squared resid	1.913499	Schwarz criterion		-1.229711
Likelihood logs	79.19330	Hannan-Quinn Criter.		-1.257154
F-statistics	156.2423	Durbin-Watson stat		0.381856
Prob(F-statistic)	0.000000			

Source: Processed Data

Simultaneous Test of Regression Equation 1

$$Y = \alpha + \beta_1 * JUB + \beta_2 * DOLLAR + \beta_3 * YUAN + \beta_4 * SSE$$

$$Y = 0.023094 + 0.959122 * JUB + 0.831204 * DOLLAR + 0.525327 * YUAN + 1.029146 * SSE$$

Based on the results of the F test in table 4.2, it is shown that the Prob F-Statistic yields a figure of 0.000000 and is below 0.05, this proves that Ho is rejected, so that all independent variables (money supply, dollar exchange rate, yuan exchange rate and SSE composite index) simultaneously have a significant influence on the IDX composite variable during the period from June 2010 to June 2020.

The coefficient of determination (Adjusted R-squared) based on table 4.2 obtained a value of 0.983888 or 98.39%. These results show that the variation in the IDX composite value is influenced by independent variables, namely the money supply, the dollar exchange rate, the yuan exchange rate and the SSE composite index, while 1.61% of the variation in the IDX composite value is influenced by other factors.

REGRESSION EQUATION PARTIAL TEST

The Effect of the Money Supply on the IDX Composite

Based on the results of multiple linear regression analysis in table 4.2, the money supply has a probability value (0.000), this value is below the significance level (0.05), so it can be concluded that the money supply indicator has a significant effect on the IDX composite. The coefficient on the money supply indicator shows value (0.959122). The figure (0.959122) shows that if the money supply indicator increases by around 1%, while other independent variables are fixed, the IDX composite will increase by around 95.91%.

The results of this study support the theory of Sudirman (2015:155) which reveals that the growth in the money supply allows the public to increase their investment, especially by investing in a portfolio of stocks or other securities. The growing interest in various types of shares for investors was able to encourage the increase in the value of the IDX composite as an illustration of the increase in the prices of various types of shares in the capital market. The

results of this review are in agreement with Pahlavi's research (2019), Rahmatika (2017), Widyastuti, Dewantoro and WS Panjaitan (2017) who stated that the money supply had a positive influence on the IDX composite.

The Effect of the Dollar Exchange Rate on the IDX Composite

In table 4.2 of the regression results, the dollar exchange rate has a probability value ranging from (0.0211). This value is below the significance level (0.05). It can indicate the dollar exchange ratesignificant influence on the IDX composite. The coefficient on the dollar exchange rate indicator shows the number 0.831204. A positive sign indicates a unidirectional movement between the dollar exchange rate and the IDX composite. The figure 0.831204 shows if the dollar rate indicator increases by around 1% then other independent variables are fixed where the IDX composite can increase around 83.12%.

Sudirman (2015:164) There are 2 (two) theoretical methodologies made in writing to understand the relationship between exchange rates and stock prices, in particular: First, the good market approach (Dornbusch and Fischer, 1980) reveals where the eye adjustment money affects the competitiveness of the organization, which thus affects the organization's income or on the other hand the cost of funds and then its share price. At the macro level, the effect of currency trading on the capital market is highly dependent on the level of openness of the domestic economy and the sustainability of the trade balance; Second, the portfolio balance approach (Franke 1993) which underlines the role of capital account transactions. The expansion of stock returns (increase in the stock market) will attract capital flows, thereby increasing the demand for the domestic currency and causing the exchange rate to appreciate. The results showed a positive correlation between the dollar exchange rate against the IDX composite in accordance with the results of research by Al-Azizah, Daulay and Krisnanto (2019), Megawati and Noor Salim (2018), Kusuma and Badjra (2016).

The Effect of the Yuan Exchange Rate on IDX Composite

Based on the results of the multiple linear regression test in table 4.2, it can be seen that the yuan exchange rate has a probability value of (0.6742), this indicates that the probability value is above the significance level (0.05). Based on these results, the yuan exchange rate indicator does not significantly affect the IDX composite. The coefficient value of the yuan exchange rate indicator is (0.525327). A positive sign on this value indicates the movement of the yuan exchange rate indicator is in line with the IDX composite.

This study cannot support the theory of Murtini and Septivanie (2016), the results of research on the positive correlation of the effect of the yuan exchange rate on the IDX composite according to the portfolio approach theory. In this methodology, resources are viewed as tradable. Each increase/decrease in an asset affects two things, either expanding interest in a resource or making changes by trading one resource for another. This proves that the IDX composite is a sign for investors to obtain optimal profits. Strategically, investors' reaction to selling their shares when stock developments are generally high and buying shares at a generally low and stable stock price is seen as a profitable strategy. This indicates a strong speculative tension in the stock market on the grounds that the yuan exchange rate affects the rupiah exchange rate. The results of this study are in accordance with Kusananto's research (2017), but not in accordance with the research of Djameluddin, Ardoni and Aty Herawati (2020), Murtini and Septivanie (2016) which showed the sensitivity of the yuan exchange rate to the IDX composite.

The Effect of the SSE Composite Index on the IDX Composite

Based on the results of multiple linear regression in table 4.2, the SSE composite index has a probability value ranging from (0.0018). This value is below the significance level

(0.05), it can be concluded that the SSE composite index has a significant effect on the IDX composite. The coefficient on the SSE composite index variable shows the number (1.029146). The positive sign on the coefficient indicates the movement of the SSE composite index in the same direction as the IDX composite. The coefficient value indicates that each increase in the SSE composite index is around 1% then other independent variables are fixed where the IDX composite is able to increase by around 102.91%.

The results of this study are in accordance with Sudirman's theory (2015:163), foreign factors are one of the consequences as well as capital markets that are unavoidable from globalization. This situation allows for the impact of advanced stock markets to have on emerging stock markets. The results of the study stated that the SSE composite index had an effect on the IDX composite, namely the research of Tarigan, Suhandak and Topowijono (2019), Endri (2019), Bery and Worokinasih (2018), research by Polia and Seftarita (2017).

Test Simultaneous Regression Equation 2

$$Z = \alpha_2 + \beta_5 * JUB + \beta_6 * DOLLAR + \beta_7 * YUAN + \beta_8 * SSE$$

$$Z = -0.212255 + 0.796046 * JUB - 0.852512 * DOLLAR + 0.430210 * YUAN + 1.059319 * SSE$$

Based on the results of the F test in table 4.3, it is shown that the Prob F-Statistic produces a number (0.000) and is below the significance level (0.05), these results prove that H_0 is rejected, so that all independent variables (JUB, DOLLAR, YUAN and SSE composite index) simultaneously affect significant in the transaction volume variable for the period June 2010 to June 2020.

The coefficient of determination (Adjusted R-squared) based on table 4.3 obtained a value of 0.802371 or 80.24%. These results indicate that the variation in the value of transaction volume is influenced by independent variables, namely the money supply, the dollar exchange rate, the yuan exchange rate and the SSE composite index, while 19.76% of the variation in the value of the transaction volume affects other factors.

Partial Test of Regression Equation 2

The Influence of the Money Supply on Transaction Volume

Based on the results of multiple linear regression analysis in table 4.3, the money supply has a probability value (0.0035), this value is below the significance level (0.05), where it can be concluded that the money supply indicator has a significant effect on transaction volume. The coefficient of the money supply indicator shows the value (0.796046). The plus value indicates the direction of movement of the money supply in the direction of transaction volume. The figure (0.796046) shows that if the money supply indicator increases by around 1%, then other independent variables remain where the transaction volume can increase by around 79.60%.

In line with the theory of Samsul (2015: 210) which states that the more money circulating in the ownership of the general public, the higher the stock price, where individuals will look for ways to divide their assets. How much money in circulation will cause interest rates to fall, so individuals tend not to put resources into banks but put resources into stocks. Moreover, assuming the money supply increases, the interest rate will decrease and the volume of stock exchange will increase, so the market will be bullish. Assuming that the money supply decreases, the interest rate will increase and the volume of stock transactions will decrease, which means the market can become bearish. An increase in the money supply can affect stock investment.

The results of the research on the money supply have a significant positive effect on the volume of stock transactions according to the research of Yuliana, Wijaya and Haryetti (2014) and the research of Triani and Hamdani (2013). The research conducted by Ruaida and

Jamal (2020) shows that the t-test results for the money supply variable do not have a major impact on the volume of stock transactions. However, the regression coefficient of the money supply variable has a positive or direct relationship with stock trading.

The Effect of the Dollar Exchange Rate on Transaction Volume

In table 4.3 the results of multiple linear regression analysis, the dollar exchange rate has a probability value ranging from 0.6735. This value is above the significance level (0.05). This can indicate the dollar exchange rate does not significantly affect the volume of transactions. The coefficient value of the dollar exchange rate indicator is (- 0.852512). The negative sign on this value indicates that the movement of the dollar exchange rate indicator is not in line with the volume of transactions. The value of the coefficient indicates that each increase in the dollar exchange rate is around 1% while the other independent variables are fixed where the volume of transactions can decrease by around 85.25%.

The results of this study cannot prove the theory of Tandelilin (2010), the strengthening of the rupiah exchange rate in a foreign exchange is a positive sign for investors. By strengthening the rupiah exchange rate against foreign currencies, more investors can put resources into stocks. Because the strengthening indicates that the economy is in good condition and vice versa. This can have an impact on buying shares and increasing domestic stock prices. The results of this study are in line with the research of Kristanto and Indris (2016). This is not in line with previous research by Ruadi and Jamal (2020), Rahmi and Jamal (2019), Wulandari, Andriani and Nurjihadi (2017) which stated that if the rupiah exchange rate increased, it would affect the increase in stock transaction volume.

The Effect of the Yuan Exchange Rate on Transaction Volume

From the results of the multiple linear regression analysis in table 4.3, it can be seen that the yuan exchange rate has a probability value of (0.3658), this indicates that the probability value is below the significance level (0.05). Based on these results, the yuan exchange rate indicator does not have a significant effect on transaction volume. The coefficient value of the yuan exchange rate indicator is (0.430210). A positive sign on this value indicates the movement of the yuan exchange rate indicator in the direction of transaction volume. The results of the t-test of the yuan exchange rate variable on transaction volume cannot support a similar study conducted by Saputri and Herlambang (2016) which states that there has been a market reaction to the devaluation of the yuan since August 11, 2015 with the Average Trading Volume Activity (AATVA) variable.

The Effect of SSE composite index on Transaction Volume

Based on table 4.3 the results of multiple linear regression analysis, it is shown that the SSE composite index has a probability value ranging from (0.0136). This value is below the significance level (0.05), and it can be concluded that the SSE composite index significantly affects the transaction volume. A positive value indicates the direction of movement of the SSE composite index is in line with transaction volume. Figures (1.059319) indicate if the index indicator increases by around 1% while other independent variables are fixed where the volume of transactions can increase by around 105.93%. An increase in the SSE composite index can have an effect on stock investment.

Partial Test of Regression Equation 3: The Effect of Transaction Volume on IDX Composite

$$Y = \alpha_3 + \beta_9 * VT$$

$$Y = 4.664426 + 0.322734 * VT$$

Based on the results of the multiple linear regression analysis in Table 4.4, the

transaction volume has a probability value (0.0000), this value is below the significance level (0.05), then it is concluded that the transaction volume has a significant effect on the IDX composite. The coefficient on the transaction volume shows the value (0.322734). A positive value indicates the direction of movement of transaction volume is in line with the IDX composite. The coefficient value indicates that every increase in transaction volume is around 1% where the IDX composite can increase by around 32.27%. The coefficient of determination (Adjusted R-squared) based on table 4.3 obtained a value of 0.564020 or 56.40%. These results indicate that the variation in the IDX composite value is influenced by the transaction volume variable, while 45.03% of the variation in the IDX composite value is influenced by other factors.

The results of this study are in accordance with Husnan's theory (2009:341) that an increase in transaction volume will lead to an increase in the IDX composite. Several researchers have tested the direct effect of trading volume on the IDX composite. The positive and significant relationship between trading volume in the IDX composite is in accordance with the results of research by Widyastuti, Dewantoro and WS Panjaitan (2017). In contrast to the research of Choiriyah and Yuliana (2018), Taufiq and Wahidahwati (2016) state that transaction volume has a negative and significant effect on the IDX composite.

Coefficient of Determination (R2)

The coefficient of determination (R-squared) is a tool used to measure the model's ability to define the variation of the dependent variable.

Coefficient determination has a value range between 0 to 1. The value of the coefficient of determination close to 1 indicates the model can explain the variation of the dependent variable. While the value of the coefficient of determination (close to 0) indicates the model's ability to explain the variation of the dependent variable is limited.

Table 6. Value of Coefficient of Determination of Regression Equation

No.	R-Square . Regression Equation	Coefficient of Determination
1	$Y = 1 + 1 * JUB + 2 * DOLLAR + 3 * YUAN + 4 * SSE$	0.983888
2	$Z = 1 + 1 * JUB + 2 * DOLLAR + 3 * YUAN + 4 * SSE$	0.802371
3	$Y = 3 + 9 * VT$	0.564020

Source: Processed Data

The result of the addition of the coefficient of determination from the regression equation $(R22 + R32) > R12: (0.802371 + 0.56402) > 0.983888 = 1.366391 > 0.825973$.

This shows that the role of transaction volume as an intervening variable is very important in increasing the effect of the independent variables (JUB, DOLLAR, YUAN, SSE composite index) on the dependent variable. When compared to the R-Squared value from the regression equation analysis directly (without intervening variables) and by intervening intervening, the R-Squared value which reveals the ability of the independent variables in defining the dependent variable is greater in value by means of the intervening variable.

The Effect of the Covid-19 Pandemic on the IDX Composite and Transaction Volume

Table 7. IDX COMPOSITE Fluctuations in 2019-2020

YEAR	ICI	FLUCTUATION	%
2019:1	6,532.97	338.471191	5.46%
2019:2	6,443.35	-89.621093	-1.37%
2019:3	6,468.75	25.406738	0.39%
2019:4	6,455.35	-13.402832	-0.21%

2019:5	6,209.12	-246.234863	-3.81%
2019:6	6,358.63	149,511718	2.41%
2019:7	6,390.50	31.875977	0.50%
2019:8	6,328.47	-62.034668	-0.97%
2019:9	6,169.10	-159.368164	-2.52%
2019:10	6,228.32	59.214844	0.96%
2019:11	6,011.83	-216.486817	-3.48%
2019:12	6,299.54	287.708985	4.79%
2020:1	5,940.05	-359.491211	-5.71%
2020:2	5,452.70	-487,34375	-8.20%
2020:3	4,538.93	-913.773926	-16.76%
2020:4	4,716.40	177.472656	3.91%
2020:5	4,753.61	37.208984	0.79%
2020:6	4,905.39	151.780274	3.19%

Source: Processed Data

The data in table 4.6 reveals fluctuations in the IDX composite from January 2019 to June 2020. The table shows fluctuations in the IDX composite which are thought to have been affected by the covid-19 pandemic in March 2020. This is indicated by the largest decline in the IDX composite occurred in March 2020, namely by -16.76%. The decline in the IDX composite was caused by the impact of the covid-19 pandemic, stated by the Indonesian Ministry of Health (2020), that stock prices weakened amid market concerns about the huge impact of the covid-19 virus outbreak on the Indonesian economy. The results showed that the market gave a bad signal to investors after the news about the first covid-19 patient in Indonesia which in general would make investors sell shares.

Table 8. Transaction Volume Fluctuations in 2019-2020 (Million Shares)

YEAR	TRANSACTION VOLUME	FLUCTUATION	%
2019:1	293.512.00	47,003.00	19%
2019:2	272.166,00	- 21,346.00	-7%
2019:3	300,768.00	28,602.00	11%
2019:4	290.020.00	- 10,748.00	-4%
2019:5	284.584,00	- 5,436.00	-2%
2019:6	225,371.00	- 59,213.00	-21%
2019:7	400,624.00	175.253.00	78%
2019:8	338,713.00	- 61,911.00	-15%
2019:9	307.071,00	- 31,642.00	-9%
2019:10	383301.00	76,230.00	25%
2019:11	228,062.00	- 155,239.00	-41%
2019:12	238,175.00	10,113.00	4%
2020:1	164,351.00	- 73,824.00	-31%
2020:2	122.322.00	- 42,029.00	-26%
2020:3	143,293.00	20,971.00	17%
2020:4	158,484.00	15,191.00	11%
2020:5	137,187.00	- 21,297.00	-13%
2020:6	198.152.00	60,965.00	44%

Source: Processed Data

According to Suryanto and Muhyi (2017), the market response to information can be reflected in the volatility of stock transaction volumes. Dynamic stocks should be seen from the

high volume of exchange. However, stock prices that are too high can reduce the volume of stock transactions that occur in the market which reduces the capacity of certain investors to purchase shares.

The data in table 8 shows fluctuations in transaction volume from January 2019 to June 2020. It is suspected that due to the covid-19 pandemic in 2020, transaction volume has decreased. Seen in the table the value of the transaction volume after it is smaller than the value of the transaction volume before the covid-19 pandemic event. Based on the results of multiple linear regression analysis in the study, transaction volume has a significant and positive effect on the IDX composite. This proves that the decline in transaction volume is in line with the decline in the IDX composite in the capital market.

Nurmasari (2020), the results of the study show that there is a significant difference in the transaction volume of PT. Ramayana Lestari Sentosa, Tbk. before and after the announcement of the initial cases of covid-19 in Indonesia. Saputro's research (2020) shows that the volume of stock transactions in the Jakarta Islamic Index (JII) has increased significantly after the announcement of covid-19 in Indonesia. Another study from Dewi and Masithoh (2020) revealed that there was a significant difference in transaction volume before and after covid-19 on the IDX composite. Wicaksono and Adyaksana (2020) saw an increase in the average Trading Volume Activity (TVA) after the announcement of the covid-19 case as a global pandemic. This happened where many investors were worried that they would suffer big losses, so many investors sold their shares. Besides that, The decline in the company's stock price is actually used by investors to buy shares of a company at a low price in the hope of making a profit when the stock price rises again. This condition makes the transaction volume to be high.

CONCLUSIONS AND SUGGESTIONS

Conclusion

The results showed that partially the money supply, the dollar exchange rate, the SSE composite index had a significant positive effect on the IDX composite. Partially, the yuan exchange rate has no significant effect on the IDX composite. Simultaneously, the money supply, the dollar exchange rate, the yuan exchange rate and the SSE composite index significantly affected the IDX composite. Partially, the money supply and the SSE composite index have a significant positive effect on transaction volume. Partially the dollar exchange rate and the yuan exchange rate did not significantly affect the volume of transactions. Simultaneously, the money supply, the dollar exchange rate, the yuan exchange rate and the SSE composite index have a significant effect on transaction volume. Simultaneously, the money supply, the dollar exchange rate, the yuan exchange rate and the SSE composite index significantly affect the IDX composite with transaction volume as an intervening variable.

Suggestion

- 1) For Academics. There are limitations to the macroeconomic elements used as the basis for estimating the IDX composite, only regarding the money supply, dollar exchange rate, yuan exchange rate and transaction volume. It is hoped that the next research will pay attention to other factors that can influence the movement of the IDX composite. In addition, it is hoped that special comparative studies can be carried out in the period before and during the covid-19 pandemic.
- 2) For the Community. During the covid-19 pandemic, people were in a condition that was directed towards online-based activities. This condition is the right time to invest or buy shares. Investors should pay attention to information about the money supply, dollar exchange rate, yuan exchange rate and transaction volume. Where this information can be

- useful in predicting the IDX composite.
- 3) For the Government. In making or developing future economic policies, it is necessary to consider regulating the money supply in the community, stabilizing the exchange rate and regulating foreign stock investments in order to provide investors with confidence in strengthening Indonesia's economic stability and away from the monetary crisis.

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