Indonesia Auditing Research Journal, 10 (2) (2021), pp. 69-75

Published by: Institute of Accounting Research and Novation (IARN)

Indonesia Auditing Research Journal

Journal homepage: https://journals.iarn.or.id/index.php/ARJ/index

Analysis of the influence of the money supply and the rupiah exchange rate on stock returns of state-owned banks in the 2008-2010 period

Ramita Nurbaisya

Management Study Program, Indonesian College of Economics Banking School Jakarta, Indonesia

Article Info

Article history:

Received Jun 02, 2021
Revised Jun 15, 2021
Accepted Jun 30, 2021

Keywords:

Money Supply;
Rupiah Exchange Rate;
Stock Returns.

ABSTRACT

Stock is one of the most popular capital market instruments among investors. Investors need information that can help them to make investment decisions, this information is collected in order to find out how much return they will receive as well as to prevent risks that may arise in the future. One of the information that investors need is the macroeconomic factors which could affect the stock price such as money supply, inflation, and the rupiah exchange rate. The objective of this study is to see the influence of macroeconomic variables (money supply and rupiah exchange rate) toward the stock returns of two state commercial banks, that is, Bank Mandiri and Bank Rakyat Indonesia, during the period of 2008-2010. This research uses multiple regression analysis models, t-tests.

Corresponding Author:

Ramita Nurbaisya
Management Study Program
Indonesian Banking School of Economics, Jakarta,
Jl. Kemang Raya No. 35, RT. 6/RW. 1, Bangka, Kec. Mampang Prpt., City of South Jakarta,
Email: mitasya@mail.com

1. INTRODUCTION

The success of the economy in Indonesia cannot be separated from the banking sector, especially the role of banking as a source of financing for the domestic industry. The development of the private banking industry is currently very rapid, as is the development of the government-owned banking industry which is also developing. The development of the Indonesian economy is also influenced by various market sectors, one of which is the capital market. With the existence of the capital market, it will be easier for companies to obtain funds so that economic activity in various sectors can be increased. With the improving economy in Indonesia, the number of issuers on the Indonesia Stock Exchange has also increased.

With the existence of the capital market, it will be easier for companies to obtain funds so that economic activity in various sectors can be increased. With the improving economy in Indonesia, the number of issuers on the Indonesia Stock Exchange has also increased. The Indonesia Stock Exchange is a trading place for stocks from various industries in Indonesia. The increase in the number of issuers will lead to a better direction for interested parties, among others, for companies it will be easier to obtain capital, and investors will get returns. Investors are interested in investing their funds in the capital market because investing in shares promises a higher rate of return, both from dividends and from capital gains.

The risks faced in investing can be in the form of systematic risk and unsystematic risk. Systematic risk cannot be avoided because this risk is a form of economic change that cannot be

controlled by the company, while unsystematic risk can be minimized by diversifying. To prevent risks that may come in the future, investors carry out analysis, namely fundamental analysis and technical analysis.

In conducting fundamental analysis, investors need to look at the condition of the company itself, industry conditions, and the economic conditions in which the company operates. As for technical analysis, investors can see trends from the stock prices they choose. Therefore investors need information that can assist in their decision to invest. Investors must believe that the information they receive is correct information. Stock investment is very vulnerable to political and economic situations because the stock market will react if there is a domestic crisis. This situation often causes foreign and domestic investors to lose confidence in investment.

One of the factors that can affect stock prices in a capital market is macroeconomic conditions. Bodie, Kane, and Marcus in their book entitled "Investment" reveal several macroeconomic factors that can affect stock prices, including the level of money supply, inflation, exchange rates, and interest rates. Since the economic crisis occurred in Indonesia, the macroeconomic situation has become very uncertain. The increased money supply caused inflation to soar, and the rupiah exchange rate, especially against the US dollar, continued to decline. The impact of the crisis in Indonesia which caused uncertain macroeconomic conditions also had an impact on the condition of the capital market in Indonesia. One of the affected company stock prices is the share price of state-owned banks.

The motivation for conducting research in the capital market sector was due to the rapid development of the capital market in Indonesia, especially after the government made various regulations in finance and banking including the capital market. The participants in the capital market have realized that trading in securities can provide a fairly good return for them, and at the same time make a major contribution to the development of our country's economy. The investment instruments discussed in this study are stocks. Given the stock (stock) is one of the most popular capital market instruments among investors. Issuing shares is one of the company's choices when deciding to fund the company.

2. RESEARCH METHOD

Selection of Research Object, Population is a generalization area consisting of objects or subjects that have certain quantities and characteristics determined by researchers to be studied and conclusions drawn. In this study, the population was all state-owned commercial banks (BUMN) listed on the Indonesia Stock Exchange (IDX) during the study period from 2008 to 2010. The type of research used in this study was descriptive causality. Descriptive causality is a type of research that explains the causal relationship between the independent variables (money supply and exchange rates) and the dependent variable (stock returns).

The sample is part of the number and characteristics possessed by the population. The sampling technique by means of purposive sampling. Purposive sampling is a sample taken with a specific purpose or purpose (Sekaran, 2000). Sampling based on the subjective considerations of researchers, where the requirements made as criteria must be met as a sample. In this study using a sample of government-owned commercial banks listed on the Indonesian Stock Exchange.

Research Variables, Independent or Independent Variables (x) In this study, the money supply refers to broad money (Narrow Money = M2). The operational definition used in this study is the change in the money supply (M2), and is defined as follows:

$$PJUB = \frac{M2t - M2t\text{-}1}{M2t\text{-}1} \quad \text{.....(1)}$$

Rupiah Exchange Rate (X3). In this study, the exchange rate data used is the rupiah exchange rate against the US dollar. The exchange rate used is the middle value between the buying rate and the selling rate at the end of each month. The growth of the rupiah exchange rate can be calculated by the formula:

$$PKURS = \frac{ERt - ERt\text{-}1}{ERt\text{-}1} \quad \text{.....(2)}$$

Data Collection Techniques. The data collection method used in this study is the documentation method. The documentation method is to find data about things or variables in the form of notes, transcripts, books, newspapers, magazines, inscriptions, meeting minutes, agendas and so on (Arikunto, 2002). Existing documents were studied to obtain data and information in this study. The type of data used is secondary documentary data which contains historical data regarding the money supply in the rupiah exchange rate as well as data regarding the share price of each of the state-owned commercial banks during the study period. Secondary data in this study is data sourced from published records of BI, BPS, IDX, JSX Statistics and Indonesian Capital Market Directory (ICMD).

3. RESULTS AND DISCUSSIONS

Classic assumption test.

The classical assumption test aims to determine whether the regression model obtained can produce a good linear estimator. The analytical model used will produce an unusual estimator if it fulfills several classical assumptions.

Normality test.

The normality test aims to find out whether in the estimation model, the dependent variable and independent variable have a normal distribution or not. A good estimation model is having normal or close to normal data distribution. Testing for normality in this study used the Kolmogorov-Smirnov test as shown in the following table:

Table.1 Kolmogorov-Smirnov Normality Test

		JUB	Exchange rate	BMRI	BBRI
N		36	36	36	36
Normal Parameters a,b	Means	1.173153	-,036281	2.768803	1.857550
	std. Deviation	1.9554193	4.4612597	14.48504	13.49228
MostExtreme Differences	absolute	,104	, 196	, 172	,124
	Positive	,104	, 196	, 172	, 117
	Negative	-.082	-,154	-,155	-,124
Kolmogorov-Smirnov Z		,625	1.177	1.032	,743
asymp. Sig. (2-tailed)		,830	,125	,237	,639

Source: Processed Data

In the table above it can be seen that the significance value of the Kolmogorov-Smirnov test for the money supply is 0.830; for the rupiah exchange rate of 0.125; for Bank Mandiri's stock return of 0.237; and for BRI stock return of 0.639. So from the results above, it can be concluded that the independent variable and the dependent variable are normally distributed because their significance value is above 0.05.

Heteroscedasticity Test

The heteroscedasticity test is used to determine whether there is deviation from the classical assumption of heteroscedasticity, to see whether there is an unequal variance from one residual to another observation. To detect the presence or absence of symptoms of heteroscedasticity by means of the Park Test method, namely by regressing the residual value (Lnei2) with each dependent variable (LnX1 and LnX2).

Table.2 Results of the Bank Mandiri Heteroscedasticity Test

Variable	t	sig
LnX1	-0.937	0.355
LnX2	0.045	0.965

Source: Processed Data

Table.3 Results of Bank Rakyat Indonesia Heteroscedasticity Test

Variable	t	sig
LnX1	-1,361	0.182
LnX3	0.733	0.469

Source: Processed Data

Autocorrelation Test.

Autocorrelation means that there is a correlation between members of the observation with other observations at different times. The autocorrelation test is used to determine whether there is a correlation between members of a series of observations sorted by time (time series data) or space (cross section data). detecting the presence or absence of autocorrelation symptoms using the Durbin-Watson (DW) method.

Table 3. Autocorrelation Test Results

	Durbin Watson
Mandiri Bank	1,888
Bank Rakyat Indonesia	1,822

Source: Processed Data

Multicollinearity Test.

Multicollinearity is used to test whether the regression model finds a correlation between the independent variables, that is, there is a linear relationship between the independent variables in the regression model. To detect the presence or absence of multicollinearity symptoms by testing the correlation coefficient (r) between the independent variables. Multicollinearity can be seen from the tolerance value and the opposite variance inflation factor (VIF).

Multiple Regression Analysis.

Regression analysis is used to assess the ability to predict or predict. The equation is as follows:

$Y = b_0 + b_1JUB + b_2EXR + e$

Information:

Y = Stock Returns
bo =Constant
b1, b2 =Regression coefficients for x1 and x2
JUB =Money supply growth (M2)
EXR =Growth of the rupiah exchange rate against the US dollar e =Confounding variable

Table 4. Bank Mandiri Multiple Regression Results

Model	*Unstandardized Coefficients*		t	sig
	B	*std. Error*		
(Constant)	2,270	1,786	1,271	0.212
Amount of Money in Circulation	0.345	0.794	0.434	0.667
MarkExchange Rupiah	-2,579	0.348	-7,407	0.000

Source: Processed Data

Bank Mandiri Stock Return = 2.270 + 0.345JUB – 2.579EXR.

Table 5. Bank Rakyat Indonesia's Multiple Regression Results

Model	*Unstandardized Coefficients*		t	sig
	B	*std. Error*		
(Constant)	1,878	1,740	1,079	0.288
Amount of Money in Circulation	-0.089	0.774	-0.115	0.909
MarkExchange Rupiah	-2,318	0.339	-6,831	0.000

Source: Processed Data

BRI Stock Return = 1.878 – 0.089JUB – 2.318EXR.

Coefficient of Determination (r2)

The coefficient of determination is one of the statistical values that can be used to determine whether there is an influence relationship between two variables. The coefficient of determination is also used to measure and see how good or bad the data is used to estimate the regression equation. This study uses more than two independent variables, therefore the authors use another alternative, namely the value of adjusted r2. Adjusted r2 is adjusted for the number of independent variables and sample size.

Table 6. Regression Results of the Coefficient of Determination (r2)

	Adjusted R Square	*std. Error Of The Estimates*
Mandiri Bank	0.602	9.1348322
Bank Rakyat Indonesia	0.565	8.9014532

Source: Processed Data

Hypothesis test.

t test (Partial).

The t test is used to determine whether there is influence of the independent variables, namely the money supply and the rupiah exchange rate on the dependent variable, namely partial stock returns. The criteria for this t test are if –t table < t count < t table then Ho is accepted and if –t table > t count > t table then Ho is rejected. The t table value can be found in the t table with df = 33 (36-2-1) on the 2-sided test (significance 0.025), then the t table value is 2.035. The results of the SPSS test from the arithmetic t test can be seen in the following tables:

Table 7. Test Results t

Model	Mandiri Bank		Bank Rakyat Indonesia	
	t	sig	t	sig
(Constant)	1,271	0.212	1,079	0.288
JUB	0.434	0.667	-0.115	0.909
Exchange rate	-7,407	0.000	-6,831	0.000

Source: Processed Data

Test f (Simultaneous).
The f test is used to determine whether there is influence of the independent variables, namely the money supply and the rupiah exchange rate on the dependent variable, namely stock returns simultaneously.

Table 8. f test results (ANOVA)

	Regression	
	F	Sig
Mandiri Bank	27,502	0.000
Bank Rakyat Indonesia	23,706	0.000

Source: Processed Data

Compatibility with the Theory Basis.
The Effect of the Money Supply on Stock Returns.
The money supply is the amount of money in circulation both in the hands of the public and in banks (Wikipedia). Macroeconomic variables are usually indicators that investors pay attention to, in general, for the strong correlation between macroeconomic conditions and stock returns, one of which is the money supply.

Based on the results of partial hypothesis testing, the money supply variable has a value of –t table < t count (-2.305 < 0.434) at Bank Mandiri and a value of –t table < t count (-2.035 < -0.115) at Bank Rakyat Indonesia. In accordance with these results, all Ho are accepted, which means that the money supply does not have a significant effect on the stock returns of Bank Mandiri and Bank Rakyat Indonesia partially. The results of the money supply variable that does not have a significant effect on stock returns are due to the presence of several variables or other factors that are more likely or lead to significant results to be able to influence stock prices.

Mandiri Bank.
After seeing the results of the analysis and discussion above, it turns out that the money supply variable does not have a significant effect on Bank Mandiri's stock returns. Bank Mandiri needs to pay attention to changes in the rupiah exchange rate, because if the rupiah depreciates against the US dollar, the company needs more rupiah to finance the management of its foreign exchange portfolio, such as hedging costs and foreign exchange costs. So to prevent this from happening, the company should optimize costs as optimally as possible by suppressing non-essential expenses so that the company's profits will not drop drastically and its share price will not decrease either.

Bank Rakyat Indonesia.
After seeing the results of the analysis and discussion above, it turns out that the money supply variable does not have a significant effect on Bank Rakyat Indonesia stock returns, but another variable, namely the rupiah exchange rate, has a significant influence on Bank Rakyat Indonesia stock returns. As with Bank Mandiri, Bank Rakyat Indonesia also needs to pay attention to changes in the rupiah exchange rate because if the rupiah depreciates against the US dollar, the company needs more rupiah to finance the management of its foreign exchange portfolio, such as hedging costs and foreign exchange costs.

4. CONCLUSION

Partially, the money supply variable does not have a significant effect on Bank Mandiri's stock returns. This can indicate that the money supply variable is not a consideration for investors in buying and selling shares and analyzing stock returns. Investors to assess stock returns have not utilized this information effectively in making decisions to invest their capital in shares. In addition, the money supply variable does not affect stock returns, perhaps because the money supply does not affect stock returns directly but through other variables such as inflation rates and interest rates. Partially, the money supply variable does not have a significant effect on Bank Rakyat Indonesia's stock returns. This can indicate that the money supply variable is not a consideration for investors in

buying and selling shares and analyzing stock returns. Investors to assess stock returns have not utilized this information effectively in making decisions to invest their capital in shares. In addition, the money supply variable does not affect stock returns, perhaps because the money supply does not affect stock returns directly but through other variables such as inflation rates and interest rates. Partially, the rupiah exchange rate variable has a negative effect on Bank Mandiri stock returns. This is influenced by the existence of a foreign exchange portfolio owned by Bank Mandiri, which in turn will have an impact on the costs of managing the foreign currency portfolio that must be incurred by the bank, such as hedging costs and foreign exchange fees. Partially the rupiah exchange rate variable has a negative influence on stock returns of Bank Rakyat Indonesia. This is influenced by the existence of a foreign exchange portfolio owned by Bank Rakyat Indonesia, which in turn will have an impact on the costs of managing the foreign currency portfolio that must be incurred by the bank, namely hedging costs and foreign exchange costs. Simultaneously the variables of the money supply and the rupiah exchange rate have a significant influence on Bank Mandiri's stock returns. This can indicate that these three variables are taken into consideration by investors in buying and selling shares and analyzing stock returns at Bank Mandiri. Simultaneously the variable money supply and the rupiah exchange rate have a significant effect on stock returns of Bank Rakyat Indonesia. This can indicate that these three variables are taken into consideration by investors in buying and selling shares and analyzing stock returns at Bank Rakyat Indonesia.

References

Anoraga, P; Pakarti, P. Introduction to Capital Markets. Rineka Cipta, Jakarta.

Arikunto, S. 2002. Research Procedures: A Revised Edition Practice Approach. Rineka Cipta, Jakarta.

Body, Z; Kane, A; Marcus, AJ. 2007. Investments (7th Ed). McGraw-Hill, New York.

Brooks, C. 2002. Introductory Econometrics for Finance. Cambridge University Press, Cambridge.

Darmadji; Fakhrudin. 2001. Capital Markets: Question and Answer Approach (First edition). Salemba Empat, Jakarta.

Dewi, MG 2008. Analysis of the Influence of the Rupiah Exchange Rate, Inflation, and Interest Rates on Stock Returns (Case Study at PT. Indofood Sukses Makmur Tbk). Faculty of Economics Thesis. Atma Jaya Catholic University, Jakarta.

Elton, EJ. et al. 2007. Modern Portfolio Theory and Investment Analysis (6th edition). John Wiley and Sons, Hoboken.

Ghozali, I. 2001. Application of Multivariate Analysis with the SPSS Program. Diponegoro University Publishing Agency, Semarang. Indonesia Banking School, 2010. Thesis Preparation Guidelines and Techniques (Second Edition). Jakarta

Madura, J. 2006. International Corporate Finance (8th Edition). Thompson, Mason.

Mankiw, N.G. 2003. Macroeconomic Theory (Fifth Edition). Erlangga, translator for Imam Nurmawan, Jakarta.

Muchtar, M.A. 2005. Analysis of the Influence of SBI, Money Supply, Inflation and Rupiah Exchange Rate on the Performance of Equity Mutual Funds in Indonesia Period 1999.07-2004.11. Faculty of Economics Thesis. Padjadjaran University, Bandung.

Nazir, M. 2005. Analysis of the Influence of SBI, Exchange Rates, Inflation, and JCI on Stock Returns on the BEJ. Graduate Program Thesis. University of Indonesia, Depok.

Priyatno, D. 2008. Independent Learning SPSS for Data Analysis and Statistical Testing. Mediacom, Yogyakarta

Sekaran, U. 2006. Research Methods for Business, A Skill Building Approach (2nd Edition). John Wiley and Sons, New York.

Shapiro, A. 2003. Multinational Financial Management (5th Edition). Prentice-Hall International, Inc.; America.

Siamat, D. 2004. Introduction to Financial Institution Management (Third Edition). Intermedia, Jakarta.

Yulianti, D. 2009. Analysis of the Influence of Interest Rates, Inflation, and the Rupiah Exchange Rate on the Rate of Return of Shares in the Consumer Goods Industry Sector and the Property and Real Estate Sector. Faculty of Economics Thesis. University of Indonesia, Depok.

Widarjono, A. 2007. Econometrics: Theory and Applications for Economics and Business (second edition). Econisia, Yogyakarta.