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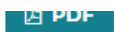
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Modeling Business Performance and Macroeconomic Factors to Explain Stock Market Returns in LQ45 Indonesia Stock Exchange (IDX)

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Abstract

The purpose of this study is to confirm the effect of business performance and macroeconomics on stock returns in the industrial sector in the Indonesia Stock Exchange LQ45 index. This study examines eight variables from business performance and macroeconomics, namely: current ratio, debt-equity ratio, total asset turnover, return on equity, inflation rate, interest rate, exchange rate, and political stability to be tested for the effect on the stock return of the industrial sector. Using Generalized Least Square techniques, it is concluded that the Industrial sector in the Indonesia Stock Exchange is strongly influenced by macroeconomic factors rather than business performance factors. This is common in capital markets which are mostly dominated by foreigners because foreign investors are very sensitive to changes in a country's macroeconomic conditions especially if it is related to political conditions. The managerial implications of this research are: decision makers and investors must pay more attention to the factors of political stability in investing, while the government is obliged to maintain political stability to increase the trust of both local investors and foreign investors. From the iteration results, there are two multivariate regression models which are statistically considered the most suitable. The originality of this study is to prove statistically that political stability is very influential on LQ45 stock returns in the industrial sector on the Indonesia Stock Exchange.

Keywords: Business performance; macroeconomic variables; political stability; stock return; LQ45.

1. Introduction

The development of industry 4.0 is becoming a concern of governments in various parts of the world, not an exception in Indonesia. President-elect, Ir. Joko Widodo has determined that Indonesia must catch up with the industrial sector so that the infrastructure sector is built to support the industrial sector. The government's attention to the industrial sector certainly attracts investors to invest in the sector in the form of factory establishment and investment in the capital market. The amount of investment that enters through the capital market shows the confidence level of the investor in the economy of a country, so the development of the capital market needs special attention. The development of the capital market is generally valued by the returns that investors can obtain in a certain period, while the return itself is influenced by various factors such as business performance factors and macroeconomic factors. The factor of business performance that affects the company's stock price is reflected in several company financial ratios, while inflation, interest rates, currency exchange rates, and political stability reflect macroeconomic factors.

Human nature is a risk converter, as well as the nature of investors, so when facing a risk, the investors will consider the return they want. If the risk he

faces is felt to be incompatible with the return he will get, the investor will shift his investment to another place that is considered commensurate with the risk with the return he will get. Political stability is included in the systematic risk category because it is associated with the risk of changes in government policy. It is suspected that there is an influence of political stability on changes in stock returns on the Indonesia Stock Exchange LQ45 index. For this reason, this study includes a new independent variable, namely political stability, which is an originality in the research of stock returns in the industrial sector that is incorporated in the Indonesia Stock Exchange LQ45 index. The reason for choosing stocks incorporated in the LQ45 index rather than the Composite Stock Price Index is that most of the shares incorporated in the Composite Stock Price Index are less actively traded, thus the Composite Stock Price Index as an indicator of capital market activity is assessed not right (Tandelilin, 2017).

2. Literature

2.1 Investment

Investment is a person's commitment to delay consumption for a certain period in order to gain profit in the future by entering the collected funds from the delay of consumption into productive assets.

2.2. Signaling Theory

The signaling theory states that investors need information signals to determine whether they will invest their shares or not, published information will give a signal to investors and it will be interpreted as good news or bad news (Hartono, 2016). The type of information that can be used by investors as a signal is a business performance report and a report on macroeconomic conditions in which the stock exchange is located. Business performance can be traced through financial ratios in the company's financial statements, while macroeconomic conditions can be traced from the inflation rate, interest rate, exchange rate, and political stability.

2.3. Stock Prices and Stock Returns

The stock price on the stock exchange is the equilibrium of the demand and supply of shares in the capital market (Hartono, 2016). While stock returns are obtained from the difference between the stock price at a time with the previous period's stock price divided by the previous period's stock price (Tandelilin, 2017). Return from an investment is the goal for both investors and speculators in various types of investments, including the stock market

2.4. Financial Ratios that Influence Stock Returns

According to Kasmir (2012) and Subramanyam & Wild (2010), financial ratios are the results of comparison of numbers in the company's financial statements to be analyzed in order to get an overview of the conditions and trends of the company. The results of the study of Martani et al. (2009) and Estuari (2010) concluded that the Current Ratio did not significantly affect stock returns, this is similar to the results of the Öztürk & Karabulut (2018) study. Meanwhile, Erdogan et al. (2015) concluded that Current Ratio has a significant effect on stock returns. The results of Öztürk & Karabulut (2018), Estuari (2010) and Martani et al. (2009) concluded that the Debt Equity Ratio had no significant effect on stock returns, while Erdogan et al. (2015) concluded that these variables had a significant effect on stock returns. Martani et al. (2009) study concluded that Total Asset Turnover had a significant effect on stock returns, which contradicts the results of research by Muhayatsyah (2012) and Asmi (2014) which stated that Total Asset Turnover did not significantly influence stock returns. The study of Martani et al (2009) and Chambers et al (2013) concluded that Return on Equity had a significant effect on stock returns, which is contrary to the results of the research

by Djamil et al. (2013) and Maditinos, et al. (2009) which states Return on Equity had no significant effect on stock returns.

2.5. Macroeconomic Variables that Influence Stock Prices

Singh et al. (2011), Kasman et al. (2011) and Rahman et al. (2009) in their paper state that exchange rates had a significant effect on stock returns, whereas Nasir & Mirza (2011) state that exchange rates had no significant effect on stock returns. Tarazi & Gallato (2012), Singh et al. (2011) and Rjoub et al. (2009) in their paper state that the inflation rate had a significant effect on stock returns while Muhayatsyah (2012) and Mardiyati & Rosalina (2013) state that the inflation rate had no significant effect on stock returns. Rjoub et al. (2009), Kasman et al. (2011) and Rahman et al. (2009) in their paper state that interest rates had a significant effect on stock returns while Mardiyati & Rosalina (2013) state that interest rates did not have a significant effect on stock returns. Boutchkova et al. (2012) argue that industry and industrial stocks were related to political risk. Liu et al. (2017) conclude that political power had a significant effect on stock returns. This is in line with the Asongu (2012) study, whereas the results of Chau et al. (2014) state that the political situation had no effect or if there was little influence on the market.

Because there are differences in conclusions from the researchers above, this research is carried out with the following research models:

$$R = \beta_{1i} + \beta_2 CR_{it} + \beta_3 DER_{it} + \beta_4 TATO_{it} + \beta_5 ROE_{it} + \beta_6 INF_{it} + \beta_7 INT_{it} + \beta_8 EXR_{it} + \beta_9 PS_{it} + v_{it}$$

Notes:

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$ = coefficient

R = Actual Return of Stock

CR = Current Ratio

DER = Debt Equity Ratio

TATO = Total Asset Turnover

ROE = Return on Equity

INF = Inflation Rate

INT = Interest Rate

EXR = Exchange Rate

PS = Political Stability

v_{it} = Term of error

3. Methods

3.1. Data and Data Collection Method

The purpose of this study is to confirm the effect of business performance and macroeconomics on stock returns in the industrial sector in the Indonesia Stock Exchange LQ45 index. Data was taken from

the financial statements of industrial sector companies in the fourth quarter which were consistently listed in the Indonesia Stock Exchange LQ45 index during 2013–2018.

3.2. Population dan Sample

The population of this research is all industrial sector stocks that found on the Indonesia Stock Exchange, but because most of the shares on the Indonesia Stock Exchange are not actively traded, the industrial sector stocks that are consistently listed in the LQ45 Indonesia Stock Exchange index during 2013–2018 are taken as a sample. Using purposive sampling the number of samples collected during that period was 72 samples.

3.3. Data Analysis Techniques, Variable Operationalization, and Hypothesis

Because the data collected is a combination of cross section data and time series, the panel data is formed. Panel data can be processed using the Common Effects model, Fixed Effects Model, or Random Effects Model; the Hausmann Test can determine the right technique. If using the Common

Effects Model and Fixed Effects techniques, the classic assumption test is still needed, while the test is not needed in the Random Effects Model technique because REM has used the generalized least squares (GLS) method and GLS has been able to produce estimates that meet the best linear unbiased estimator (Gujarati, 2009).

Operationalization variables for this study as table 1.

Hypothesis:

H₀ : There is no significant influence of the current ratio, debt-equity ratio, total asset turnover, return on equity, inflation rate, interest rate, exchange rate, and political stability simultaneously and partially towards stock returns of industrial stocks incorporated in the Indonesian Stock Exchange LQ45.

H_a : There is the significant influence of the current ratio, debt-equity ratio, total asset turnover, return on equity, inflation rate, interest rate, exchange rate, and political stability simultaneously and partially towards stock returns of industrial stocks incorporated in the Indonesia Stock Exchange LQ45.

Table 1. Variable Operationalization

NO	VARIABLE	CONCEPT	INDICATOR	SCALE
1.	Actual Return	Return is the profit from investment (Fahmi, 2017)	$\frac{P_t - P_{t-1} + D_t}{P_{t-1}}$ (source of data from finance.yahoo.com)	Ratio
2.	Current Ratio	Assessment of the company's ability to meet short-term obligations (Mishkin, 2015)	Current Assets Current Liabilities	Ratio
3.	Debt Equity Ratio	Assessment of the company's ability to fulfill long-term obligations (Mishkin, 2015)	Total Liabilities Total Equity	Ratio
4.	Total Asset Turnover	The assessment of company effectiveness uses the resources that are owned (Mishkin, 2015)	Sales Total Assets	Ratio
5.	Return on Equity	Assessment of a company's ability to generate profits (Mishkin, 2015)	NIAT Total Equity	Ratio
6.	Inflation Rate	Assessment of price level increases (Mishkin, 2015)	Inflation rate per year (source of data from www.bi.go.id)	Ratio
7.	Interest Rate	The benchmark interest rate set by Bank Indonesia	BI 7-day Repo Rate (source of data from www.bi.go.id)	Ratio
8.	Exchange Rate	Rating of prices of US dollars against Rupiah (Mishkin, 2015)	1/JISDOR USD-IDR (source of data from www.bi.go.id)	Ratio
9.	Political Stability	The tendency of the government to survive either because of conflict, coups, people's unrest or political overthrow (Suhandinata, 2013)	Vulnerability Indicators: Emerging Countries (source of data from www.bbvaereasearch.com)	Ratio

4. Results

The Hausman test is used to determine whether the panel data is the Fixed Effect Model or Random Effect Model. If the probability Chi-Square is greater than or equal to 0.05, the model is Random Effect; if it is less than 0.05, then the model is a Fixed Effect.

From the results of the Hausman Test, the following results are obtained:

Correlated Random Effects - Hausman Test			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0	6	1

From the results of the Hausman Test, it was concluded that the data would be processed using the Random Effect Model.

From the results of the iterations as much as 30 times the following results are obtained as in the appendix.

From this iteration the equation model is chosen which has a significant probability F-stat, with as many significant independent variables as possible. Based on these criteria the results of the 14th iteration and 30th iteration meet the requirements, so there are two models of equations selected, namely:

Equation A:

$$R = -5.67 - 37.12INF + 36.41INT + 103683EXR - 4.87PS$$

$$0.0173^{**} \quad 0.0985^* \quad 0.0054^{***} \quad 0.0701^*$$

Prob(F-stat) = 0.01**

and

Equation B:

$$R = -5.47 + 0.04CR - 0.11DER - 0.03TATO + 0.23ROE$$

$$0.60 \quad 0.60 \quad 0.89 \quad 0.59$$

$$-36.81INF + 36.26INT + 103030EXR - 4.87PS$$

$$0.023^{**} \quad 0.11 \quad 0.0074^{**} \quad 0.0797^*$$

Prob(F-stat) = 0.09*

5. Discussions

Equation A and Equation B have a low adjusted R-squared; this indicates that many other variables influence stock returns. All of the independent variables that can be collected in this study, which are the inflation rate, exchange rate, and political stability variables have a partial and simultaneous significant effect in equation A, and equation B. Equation A has one significant variable more than equation B, which is the variable exchange rate. Simultaneously equation A also has a better level of significance than equation

B. In the statistical test equation A is slightly better than equation B, and the results of this study show that only macroeconomic variables have a significant effect on stock returns. The results of this study are in line with the results of research by Rjoub et al. (2009) which only included macroeconomic variables as independent variables.

The coefficient of INF in equation A has a negative direction of -37.12; this means that every 1% increase in the inflation rate will reduce stock returns by 37.12% assuming other independent variables do not change. The coefficient of INT in equation A has a positive direction of 36.41; this means that every 1% increase in interest rate will increase stock returns by 36.41% assuming other independent variables do not change. The coefficient of EXR in equation A has a positive direction of 103683. This means that every 1% increase in exchange rate will increase stock returns by 103683% assuming other independent variables do not change, the magnitude of this variable because the exchange rate in this paper uses direct quotation so that a 1% increase in US Dollar is roughly equivalent to IDR 150 at the exchange rate of IDR 15,000 / USD. Political stability taken from bbvaresearch.com has a sign of negative to positive, the more negative the number indicates political stability in a country the better and vice versa. The coefficient of PS in equation A has a negative direction of -4.87; this means that every 1% increase in political stability, which signifies an increasingly unstable political state, will reduce stock returns by 4.87% assuming other independent variables do not change.

6. Conclusion

From the results of the study, it can be concluded that the Industrial sector on the Indonesia Stock Exchange was mostly influenced by macroeconomic factors rather than the factor of business performance. The finding usually happens in capital markets which are mostly dominated by foreigners because foreign investors are very sensitive to changes in a country's macroeconomic conditions especially if it is related to political conditions, and foreigners control Indonesian capital market transactions by 40% (Kencana, 2018). There are at least four macroeconomic variables which partially or simultaneously have a significant effect on stock returns; the four variables are the inflation rate, interest rate, exchange rate, and political stability.

The coefficient of INF in equation A and B has a negative direction. This means that an increase in the inflation rate will reduce stock returns. The coefficient

also illustrates that the increase in inflation will reduce investor confidence in the stock market, so it is essential to be able to keep the inflation rate low so that investor confidence continues to increase.

The coefficient of INT in equation A and B has a positive direction, and this means that any increase in interest rate will increase stock returns. Relatively higher interest rates compared to other countries will attract foreign investors to put their money into banks in the country, then the banks will compete in channeling funds to various sectors including the industrial sector. The industrial sector that gets loans with credit interest rates is relatively low because competition between banks can increase profits because the company's WACC is low, the increase in corporate profits will increase investor confidence and increase stock returns.

The coefficient of EXR in equation A and B has a positive direction; this means that an increase in the exchange rate will increase stock returns. This study uses the direct quotation rate ratio, so the increase in the exchange rate referred to here is the strengthening of the USD against IDR. The strengthening of the USD will make the buying price of shares on the Indonesian stock exchange cheaper in the eyes of foreign investors who have the USD currency. This will make foreign investors able to buy more shares with the same amount of USD as long as the country's political conditions are stable. On the one hand, this is good for increasing stock returns, but if foreign investors already feel the stock price reaches its peak, they can immediately sell the shares and make the stock exchange sharply decline.

The coefficient of PS in equation A and B has a negative direction as big as, this means that any increase in political stability numbers which indicates increasingly unstable political conditions of a country will reduce stock returns. This is in line with reality that when a country's political conditions experience instability, investors will attract investment from the country's capital market so that it will reduce stock returns. The originality from this study is to prove statistically that political stability has a significant effect on LQ45 stock returns in the industrial sector.

The managerial implications of this research are: decision makers and investors must pay more attention to the factors of political stability in investing. While the government is obliged to maintain political stability to increase the trust of both local investors and foreign investors.

This research has proven that macroeconomic factors, namely the inflation rate, interest rate, exchange rate, and political stability have a partial and significant effect, but there are still many other factors

that can be included in the equation. Also, for further research, the number of periods and number of companies can also be modified.

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www.bi.go.id

Appendix:

Variables	C	CR	DER	TATO	ROE	INF	INT	EXR	PS	Adj R ²	F
Iteration 1											
Coef.	0.45					-6.41				0.03	3.09
Sign.						0.0945*					0.08*
Iteration 2											
Coef.	0.67						-8.68			0.05	4.63
Sign.							0.0415**				0.03**
Iteration 3											
Coef.	-0.11							3190.40		0.01	0.05
Sign.								0.82			0.81
Iteration 4											
Coef.	0.73								-1.19	0.03	2.93
Sign.									0.10*		0.09*
Iteration 5											
Coef.	0.69					1.35	-9.99			0.04	2.30
Sign.						0.86	0.24				0.11
Iteration 6											
Coef.	-2.92					-17.82		52349.14		0.11	5.22
Sign.						0.0027***		0.0123**			0.00***
Iteration 7											
Coef.	0.63					-3.91			-0.60	0.02	1.67
Sign.						0.53			0.61		0.20
Iteration 8											
Coef.	-0.90						-12.65	24208.13		0.07	3.70
Sign.							0.011**	0.12			0.02**
Iteration 9											
Coef.	0.51						-13.98		0.99	0.04	2.46
Sign.							0.18		0.58		0.09*
Iteration 10											
Coef.	-1.02							30112.97	-2.24	0.06	3.13
Sign.								0.0869*	0.0189**		0.049**
Iteration 11											
Coef.	-2.93					-17.99	0.16	52545.49		0.09	3.43
Sign.						0.12	0.99	0.0283**			0.02**
Iteration 12											
Coef.	0.53					1.41	-15.38		1.00	0.03	1.63
Sign.						0.85	0.24		0.58		0.19
Iteration 13											
Coef.	-0.95						-10.54	26169.94	-0.46	0.06	2.45
Sign.							0.32	0.15	0.82		0.07*
Iteration 14											
Coef.	-5.67					-37.13	36.42	103683.50	-4.87	0.13	3.5
Sign.						0.0173**	0.0985*	0.0054***	0.0701*		0.01**
Iteration 15											
Coef.	0.34	-0.05	-0.14	-0.08	0.32					0.01	0.19
Sign.		0.56	0.56	0.71	0.48						0.94
Iteration 16											
Coef.	0.61	-0.04	-0.12	-0.05	0.27	-6.35387				0.02	0.72
Sign.		0.62	0.61	0.84	0.54	0.1091					0.61
Iteration 17											
Coef.	0.84	-0.04	-0.12	-0.03	0.24		-8.66			0.00	1.02
Sign.		0.58	0.59	0.90	0.58		0.0492**				0.41
Iteration 18											
Coef.	0.09	-0.05	-0.14	-0.09	0.32			3487.753		0.06	0.16
Sign.		0.56	0.56	0.70	0.48			0.81			0.98
Iteration 19											
Coef.	0.90	-0.05	-0.13	-0.04	0.26				-1.194819	0.02	0.70
Sign.		0.57	0.58	0.87	0.56				0.12		0.62
Iteration 20											
Coef.	0.86	-0.05	-0.12	-0.03	0.24	1.45	-10.06			0.01	0.84
Sign.		0.58	0.59	0.90	0.58	0.85	0.25				0.54
Iteration 21											
Coef.	-2.73	-0.04	-0.11	-0.05	0.24	-17.65		51907.16		0.06	1.75
Sign.		0.60	0.61	0.84	0.57	0.004***		0.0162**			0.12

Variables	C	CR	DER	TATO	ROE	INF	INT	EXR	PS	Adj R2	F
Iteration 22											
Coef.	0.79	-0.04	-0.12	-0.04	0.26	-3.78			-0.62	0.03	0.64
Sign.	0.61	0.60	0.88	0.56	0.56				0.61		0.69
Iteration 23											
Coef.	-0.71	-0.05	-0.13	-0.04	0.24		-12.59	24168.07		0.02	1.29
Sign.	0.53	0.57	0.87	0.59		0.0144**	0.13				0.27
Iteration 24											
Coef.	0.68	-0.04	-0.12	-0.04	0.25		-13.72		0.95	0.01	0.89
Sign.	0.59	0.60	0.88	0.58		0.20			0.61		0.51
Iteration 25											
Coef.	-0.83	-0.05	-0.14	-0.03	0.24			30209.49	-2.24	0.01	1.12
Sign.	0.51	0.54	0.88	0.58				0.0964*	0.0234**		0.36
Iteration 26											
Coef.	-2.73	-0.04	-0.11	-0.05	0.24	-17.67	0.02	51935.99		0.05	1.48
Sign.	0.60	0.62	0.84	0.57	0.14	1.00		0.036**			0.19
Iteration 27											
Coef.	0.70	-0.04	-0.12	-0.04	0.25	1.51	-15.22		0.95	0.02	0.76
Sign.	0.58	0.60	0.88	0.58	0.85	0.26			0.61		0.62
Iteration 28											
Coef.	-2.56	-0.04	-0.12	-0.03	0.23	-14.33		53248.19	-0.88	0.05	1.58
Sign.	0.57	0.60	0.88	0.60	0.06*			0.0144**	0.46		0.16
Iteration 29											
Coef.	-0.77	-0.05	-0.13	-0.03	0.23		-10.25	26351.79	-0.51	0.01	1.09
Sign.	0.53	0.57	0.88	0.59		0.35	0.16		0.81		0.37
Iteration 30											
Coef.	-5.47	-0.04	-0.11	-0.03	0.23	-36.81	36.26	103030.40	-4.87	0.08	1.77
Sign.	0.60	0.60	0.89	0.59	0.023**	0.11	0.0074***		0.0797*		0.09*

Notes: * Significance at 10 per cent level
 ** Significance at 5 per cent level
 *** Significance at 1 per cent level