

MACROECONOMIC DETERMINANT VARIABLES IN LQ45 RETAIL AND CONSUMER GOODS SECURITIES PERFORMANCE INDEX

Fanny Septina

International Business Management, Universitas Ciputra Surabaya

fanny.septina@ciputra.ac.id

Abstract

The research aimed to examine the changes of macroeconomic variables which affected securities performance in retail and consumer goods industry. Investors who wanted to get return in the short-run and long-run from the securities should concern the economic circumstances too, besides other systematic risks. Those industries produced consumer goods and gave direct impacts to the market. Securities performance was proxied by the return of securities. Macroeconomic variables were proxied by return LQ45 Index, consumer price index (IHK-Indeks Harga Konsumen), inflation rates, Gross Domestic Product (GDP), interest rates (BI Rate), and exchange rates of Indonesian Rupiah to US Dollar. Samples were monthly securities trading LQ45 Index of retail and consumer goods firms from January 2014 to July 2016, also the macroeconomic data from Bank of Indonesia. The data taken were assumed during the period of Joko Widodo's presidency. The research methods were multifactor regressions and correlation.

Keywords: Stock market performance, macroeconomic, performance of retail and consumer goods securities, Joko Widodo's presidency.

Introduction

The volatility of economic circumstances in Indonesia has encouraged the government to apply proper policies. Macroeconomic factors, fiscal policies and also, politics have affected the volatility of securities in Indonesia. Hussainey and Ngoc (2009) proved that industrial production positively gave impacts to securities prices in Vietnam. The empirical study of Sampath (2011) tested dynamic's changes between macroeconomic variables and securities

prices in India on post-liberalization periods. The result showed that macroeconomic variables such as industrial production index, real effective exchange rates and wholesale price index statistically affected securities prices significantly in the long-run.

This research was based on the dynamic of economic situations changes during certain periods, starting from Joko Widodo's presidency, linked to securities performance of retail and consumer's goods industry which produced and distributed consumer goods, investigated direct

impacts on consumer goods and securities performance.

Literature Review

Macroeconomic Variables

Macroeconomic variables such as consumer price index, inflation, exchange rates and interest rates were included in the systematic risk that affected securities market. Systematic risks rose due to the implication of economic situations and equity market liquidation (Gallati, 2003:26).

Bodie, Kane and Marcus (2011:731) stated that there were numbers of domestic macroeconomic variables. The increasing in earnings followed the increasing in security prices. The increasing security prices was affected by interest rates, risks, inflation rates, and other variables. Gross domestic product (GDP) measured the economic growth by the total production of goods or services. The GDP growth showed the economic expansion: there was a chance for companies to increase their sales. Industrial productions proxied by consumer price index (IHK – Indeks Harga Konsumen) measured the economic activities by focusing on manufacturing.

Unemployment rates were used to measure the economics at full capacity. This factor did not concern the employer only, the power of the economic of the country related to unemployment rates was also associated with with some other production factors. Most studies found how strong the production capacity was may affect potential outputs and actual outputs.

Inflation was a condition which the product prices increased. Such a condition, called economic overheated, took place when the prices tended to be were higher. As such, the demands

for goods or services got were higher than those of production rates. Other factors such as high interest rates would decrease the present values of future cash flows. As a result, investments were no longer interesting. Some debts could push the increasing in interest rates by increasing credit's demand. Consumer's and produser's optimistic or pesimistic also impact to economic performance of the state. For example, if the consumer believed in the increasing in payroll in the future, then there would be more expenditures and investments. Consequently, the production would increase and push the economic circulation.

Security Market and Macroeconomy

Security market price index included in leading economic indicators, serving as one of the indicators to show the economic condition in the future by the volatility of securities prices (Bodie, Kane and Marcus, 2011:739). Montiel (2011:49) said investment decision was connected with the rise of current cost for future's economic benefit. In the market economy, the decisions were made by private and public sectors.

From the sight of the macroeconomy, private firms had a goal to maximize the wealth of the owner. Private firms would choose to invest in the most valuable project which gives the real interet rates. The concept of risk-return trade-off stated that higher expected rate of return, higher risk. Private firm would choose the project that gives higher return over interest rates and risk premium. The insentive to invest in private sector would be higher, economy would state higher interest rates for private sector, when the expected private rates of return of domestic investment increase, the risk would decrease, then the demands of real interest rates by savers were

lower (Montiel, 2011:49). Private return did not always give higher return because there were some projects held together, with the government offering lower expected return.

If there were riskiness investments, then there were demands for risk premium by risk averse investors. Irreversible characteristic in the most of capitals, once they were investing capitals, it was likely not to move other capitals. The important point taken from the case concerned the opportunity cost of an investment. The incentive of no investment would increase uncertain conditions that would later make investment decision difficult.

Montiel (2011:50) said that higher real interest rates was the amount of dollar invested at the present time which later resulted in consumption in the future, "*total saving in the economy was likely to be an increasing function of the real interest rates*". Higher equilibrium of real interest rates was the signal for interesting investments. Then, higher project return would absorb social opportunity cost from the resources. Lower real interest rates showed that the project gave lower returns.

Research Method

Data

This research used secondary data from Indonesian Stock Index (IDX) such as corporate annual reports listed in LQ45 Index, trading days in Yahoo-Finance's website, inflation rates, interest rates and exchange rates Indonesian Rupiah to US Dollar in Bank of Indonesia's website. The population included numbers of the firms listed in LQ45 Index of February 2016. Samples were firms in retail and consumer goods industries which produced consumer goods, and they were assumed to have direct impacts on

economic society: PT HM Sampoerna Tbk, PT Gudang Garam Tbk, PT Indofood Sukses Makmur Tbk, PT Indofood CBP Tbk, PT Kalbe Farma Tbk, PT Matahari Department Store Tbk, PT Matahari Putra Prima Tbk dan PT Unilever Tbk.

Hypotheses

The return of LQ45 Index, consumer price index, inflation rates, the growth of gross domestic product (GDP), interest rates and exchange rates of Indonesian Rupiah to US Dollar would affect the return of retail and consumer goods securities significantly.

Variables

This research used Macro Factor Model (Bodie, Kane dan Marcus, 2011:446),

$$r_p = \alpha_t + \beta_1 R_{LQ45} + \beta_2 IHK_t + \beta_3 Inf_t + \beta_4 GDP_t + \beta_5 IR_t + \beta_6 ER_t + \epsilon_t$$

r_p = monthly return of securities of retail dan consumer goods,

R_{LQ45} = return of LQ45 index,

IHK_t = the growth of consumer price indexes proxy of industrial production growth,

Inf_t = changes of inflation rates,

GDP_t = the growth of gross domestic product,

IR_t = interest rates (also called BI Rate),

ER_t = changes of exchange rates of Indonesia Rupiah to US Dollar.

Hypotheses Testing

Tools for analyze using multiple regression with softwares were SPSS-IBM 20.0 for Windows:

1. Classic assumption testing
2. Hypotheswastesting
 - a. Coefficient regression one testing (F-Test)
 - b. Coefficient regression partial testing (t-Test)
 - c. Coefficient determinant testing (R^2)

The analyzing process were done by using Microsoft Excel 2007, multiple regression analysis, and correlation analysis.

Results and Discussion

Classic assumption testing was employed in order to prove the reliability of regression model and the validity of data. The autocorrelation were done by using Durbin Watson's table for six independent variables, 31 samples. The computation showed there was no autocorrelation $2.337 > 1.9198$. Multicollinearity testing showed VIF value > 5 , no multicollinearity. Normality testing with P-P Plot chart showed the value of dependent variable around diagonal lines. Scatterplot chart showed there was no heterocedasticity, the distribution of dependent variable spread widely.

Table 1
F-test for Return Portfolio Regression Model

Model	F	F_0 vs F-table	Sig.	Sig. 5%	Notes
Return portfolio	5.263	$5.263 > 4.17$	*0.001	$0,001 < 0.05$	Significant

Notes: *significantly $\alpha = 0.05$ or < 0.05

Sources: Yahoo Finance, Bank Indonesia, Badan Pusat Statistik, Analyzed by Researcher

F-test was conducted to examine the effects of whole independent variables on the dependent variable. The result showed that it affects the

return of retail and consumer goods securities significantly.

Table 2
T-test for Return Portfolio Regression Model

Variables	Y2014-July 2016		
	Coeff.	t-test	Sig.
(Constant)	-0.680	-1.159	0.258
rLQ45	0.708	3.484	*0.002
CPI	0.001	0.408	0.687
Inflation	-0.012	-1.111	0.277
GDP_growth	2.016	0.389	0.700

IR	6.889	2.103	*0.046
ER_usd	-0.039	-0.121	0.904

Notes: *significantly $\alpha = 0.05$ or < 0.05

Sources: Yahoo Finance, Bank Indonesia, IDX, Badan Pusat Statistik, Analyzed by Researcher.

The results of T test showed that return of LQ45 index and interest rates (BI rates) significantly

affected the return of retail and consumer goods securities.

Table 3
Coefficient Determinant for Return Portfolio Regression Model

R	R Square	Adjusted R Square
0.754	0.568	0.460

Sources: Yahoo Finance, Bank Indonesia, IDX, Badan Pusat Statistik, Analyzed by Researcher.

The results of R-Square 0.568, indicating that the independent variables affected the

Table 4
Correlation for Return Portfolio Regression Model

Correlation	R_p
rp	1
R_LQ45	0.651107
CPI	-0.06477
Inflation	-0.07532
GDP	0.146537
IR	0.252694
ER USD	-0.43349

Notes: the stronger correlation if the score closer into 1 (range between 0 to 1)

Sources: Yahoo Finance, Bank Indonesia, IDX, Badan Pusat Statistik, Analyzed by Researcher.

The strongest opposite direction at 0.43 was exchange rates USD, higher exchange rates then lower securities prices and the result was lower return, in thwas research it did not give significant impacts. The strenght or weakness of exchange rates of Indonesia Rupiah to US Dollar was not responded by securities market, especially for

dependent variable of 56.8%. The rest was explained by other variables using the regression model.

The correlation table describes the correlation between dependent variable and independent variables. Positive correlation at 0.65 was proved by return of LQ45 index as a proxy of security market's return. It gave impacts directly on the volatility of securities prices of retail goods portfolio securities. The second was 0.25 interest rates (BI rates), monetary policies responded by the changes of securities prices.

retail and consumer goods portfolio's securities.

However, for the testing process of validity and significancy data, this present study employed regression model using Microsoft Excel 2011. The result showed the same results using SPSS. Independent variables which affects the return of retail and consumer goods securities were return of

LQ45 index and interest rates (BI Rates). The research period start from January 2014 to July 2016, with assumption at Joko Widodo's presidency.

The return of LQ45 index e interacted with return of retail and consumer goods securities; meanwhile, the volatility of LQ45 index would affect the volatility of retail and consumer goods industry's securities. Haryanto and Riyatno (2007) in Makaryanawati and Uhum (2009) said that interest rates affected non manufacture's securities significantly more than that manufactures. It was because almost of raw materials were affected by the exchange rates. The changes of securities market affected short term interest rates and pushed the changes of securities prices (Rigobon and Sack, 2001). The results of Rigobon and Sack's research (2001) showed about five percents of the increasing securities prices for one-trading-day transaction would result in the increasing interest rates. The same magnitude would give impacts to policies as a result of anticipation (Rigobon and Sack, 2001). Huang and Hantat (2011) used some methods such as unit root test, VAR model, causality test, impact response function and variance decomposition to test the interaction of securities return, interest rates and industrial production. Their study showed that securities return wa affected by industrial production and interest rates. However, industrial production had no correlation with interest rates.

Some studies about the correlation of securities market and interest rates resulting some different implications. Fama (1981) in Chen and Wu (2013) securities

return had negative correlation to short-term interest rates it shows the expected inflation. Abdullah and Hayworth (1993) in Chen and Wu (2013) in United State, securities return had positive correlation to money supply's growth and inflation rates, but it had negative correlation to interest rates. Titman and Warga (1989) in Chen and Wu (2013) there was positive correlation between securities return and the changes of interest rates. Bohl et al. (2007) in Chen and Wu (2013) there was positive correlation between securities return and interest rates depend on heterocedasticity, the correlation between two variables were positive when the shock of volatility of securities return had risen.

The study of Chen and Wu (2013) stated that negative and positive correlation between securities return and interest rates were subject to the changes of interest rates. Shiller (1988) in Chen and Wu (2013) interest rates affected securities prices in two ways. First, the changes of securities prices describes investors expectation of future value of assets, investors expect to the decrease in interest rates. Fixed income securities would appreciate if interest rates decreased. Second, cost of capital woulddecrease and stimulate securities prices, correlation between two variables were negative.

Significancy's effect of the changes of interest rates to securities return was supported by Chen and Wu (2013). If the central bank increase in interest rates, investors would stay to hold hwasinvestments on securities rather than invest on fixed-income-securities because securities prices

would rise, the interaction was positive or in the same direction. The increasing ratios of securities prices also were affected by interest rates (Bodie, Kane and Marcus, 2011:731).

Next statement of Chen and Wu (2013) were not match with was research. Chen and Wu (2013) stated that there were few investors who believe in the interest rates would keep increase at equilibrium, cost of capital would stay on the highest point. Central bank policies would stop to increase in interest rates and investors switch to invest in fixed-income-securities, hope the interest rates decreases. When interest rates decreases, investors choose to invest in securities because lower cost of capital then correlation of securities return to interest rates was negative.

The significant effects of interest rates on return of LQ45 retail and consumer goods industry's securities during certain periode of time gave different practical implications. If interest rates rose investors would tend to invest securities. As a consequence, there were positive expectations in the future economics. If interest rates fell then investors tend to invest in fixed assets (for example, reksadana) or credit in high-price-assets (example, houses). It has same implication with Rigobon and Sack (2001) statements that it would result in anticipations. The results of this research showed Indonesian investors were risk-takers. The results of this study were were different from those of Haryanto and Riyatno (2007) who found that the lower interest rates, investors tended to invest securities of BEI listed firms. For them, the investors were risk-averse.

Conclusions and Suggestions

Macroeconomic variables which affects the return of retail and consumer goods industry's securities in Indonesia are return of LQ45 index and interest rates assumed during the period of Joko Widodo's presidency start from January 2014 to July 2016.

1. Security market condition gives impacts on the increasing or decreasing securities prices of retail and consumer goods industry in LQ45 index.
2. The changes of interest rates affects return of retail and consumer goods securities significantly, in the same direction (positive). Monetary policies of central bank (Bank of Indonesia) were responded by securities market.
3. Risk-return trade-off concept shows that investors choose project or investments with the highest return over interest rates and risk premium. When interest rates increases, investors tend to keep their investments in securities. When interest rates decreases, investors tend to choose to invest in fixed-income-securities such as reksadana or credit in high-price-assets, for example, buy a house.
4. Investors perspective formed in two ways, first, when interest rates increases, it would decrease in present value of future cash flow, investments would not interesting anymore. Second, higher interest rates describes exciting investments because it results higher return.

To invest in retail and consumer goods securities, investors have to consider the whole macroeconomic variables (securities market, consumer price index, inflation rates, GDP, interest rates and exchange rates) impacts on retail and consumer goods securities. However, the volatility of interest rates in Indonesia were relatively stable.

The future research should use the longer period data, five year periods of time Indonesian presidency would result in accuracy and clear clarification between the effects of macroeconomic factors to return of retail and consumer goods industry's securities in a certain presidency.

References

Badan Pusat Statistik. (2016). *IHK dan Inflasi 2014-2016*. Available at: <https://www.bps.go.id/linkTabelStatis/view/id/907>, Accessed on 1 Desember 2016.

Badan Pusat Statistik. (2016). *Laju Implisit PDB 2014-2016*. Available at: <https://www.bps.go.id/linkTableDinamis/view/id/1218>, Accessed on 1 Desember 2016.

Badan Pusat Statistik. (2016). *Kurs Mata Uang Asing*. Available at: <http://www.bi.go.id/id/moneter/informasi-kurs/transaksi-bi/Default.aspx>, Accessed on 2 Desember 2016.

Badan Pusat Statistik. (2016). *BI Rate 2014-2016*. Available at: <http://www.bi.go.id/en/moneter/bi->

[rate/data/Default.aspx](#), Accessed on 4 September 2016.

Bodie, Z., Kane, A., & Marcus, A.J. (2011). *Investments and Portfolio Management, Ninth Edition*. McGraw-Hill Irwin: New York.

Chen, G. R. & Wu, M. H., (2013). *How Does Monetary Policy Influence Capital Markets? Using a Threshold Regression Model*. Asia-Pacific Finance Markets. 20:31-47. Springer.

Gallati, R.R. (2003). *Risk Management And Capital Adequacy*. McGraw-Hill: New York.

Haryanto, M. Y. D., & Riyatno. (2007). Pengaruh Suku Bunga Sertifikat Bank Indonesia Dan Nilai Kurs Terhadap Risiko Sistematis Saham Perusahaan Di BEJ. *Jurnal Keuangan Dan Bisnis*: Vol.5, No.1, , page 24-40.

Huang, Y. C. & Hantat, C. (2011). The Interactions Among Stock Returns, The Term Structure Of Interest Rates And Economic Activities: Evidence From Taiwan. *African Journal of Business Management* Vol. 5(4), page 1334-1342,

Hussainey, K., & Ngoc, L.K. (2009). The Impact Of Macroeconomic Indicators On Vietnamese Stock Prices. *The Journal of Risk Finance* Vol. 10 No.4, pp. 321-332, Emerald.

Indonesian Stock Exchange. (2016). *IDX LQ45 February 2016*. Available at: idx.co.id, Accessed on 4 Agustus 2016.

Makaryanawati, & Ulum, M.(2009), Pengaruh Tingkat Suku Bunga Dan Tingkat Likuiditas Perusahaan Terhadap Risiko Investasi Saham Yang Terdaftar Pada Jakarta Islamic Index. *Jurnal Ekonomi Bisnis*: Tahun 14, No.1, March 2009.

Montiel, P.J.(2011).*Macroeconomics In Emerging Markets Second Edition*, Cambridge University Press: United States of America.

Rigobon, R. & Sack, B. (2001). *Measuring the Reaction of Monetary Policy to the Stock Market*.

Sampath, T.(2011). Macroeconomic Variables and Stock Prices in India: An Empirical Analysis.*The IUP Journal of Monetary Economics*: Vol. IX, No.4, pp. 25-35.

Yahoo! Finance.(2016). *Trading-day Securities*. Available at: <https://finance.yahoo.com/quote/history?p=>, Accessed on 20 Agustus 2016.