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THE EFFECT OF MACROECONOMIC AND FINANCIAL PERFORMANCE ON SYSTEMATIC RISK AND STOCK RETURNS: STUDY ON COMPANIES OF BASIC INDUSTRY AND CHEMICALS LISTED ON THE INDONESIA STOCK EXCHANGE DURING PERIOD OF 2011-2015

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ABSTRACT
This study aims to examine and describe the partial influence of macroeconomic and financial performance on systematic risk, and to test the partial effect of Macroeconomic, Financial Performance, and Systematic Risk on Stock Returns. The analytical method used in this study is the Partial Least Squares Warp-PLS. Regressions employ formative indicator models. The analysis method produces test results for the outer model in forming variable values, as well as shows the influence and relationship between exogenous-endogenous and endogenous-endogenous variables. Hypothesis testing is determined by the path coefficient value based on the criteria for the value of goodness of fit and quality indices. The findings of this study are: (1) macroeconomic negatively affect systematic risk; (2) macroeconomic does not affect stock returns; (3) financial performance does not affect systematic risk; (4) financial performance affects stock returns; and (5) systematic risk affects stock returns. The results of the overall model based on criteria of the model fit and quality indices employing the Wrap-PLS show that macroeconomic, financial performance, and systematic risk simultaneously affect on Stock Returns. The hypothesis model in this study has not included indicators of industrial variables as the top-down of the valuation process model. Thus, future researchers interested in the concept of good risk-return trade-off are suggested to add indicators of industrial variables in the research analysis model. The results of this study can help investment managers in Indonesia to identify several important indicators and variables as part of decision-making in the formation of portfolios. This study uses complex formative indicators in the formation of variables and also in the analysis of the influence of exogenous-endogenous and endogenous-endogenous variables.

KEY WORDS
Macroeconomic, financial performance, systematic risk, stock returns.

Theoretically, investment is the placement of money at present to obtain uncertain future income; the uncertainty of the results that will be obtained in the future is caused by the possibility of changes in macroeconomic and firm's financial performance. In situation where macroeconomic indicators are good, formed by an increase in Gross Domestic Product, increased exports, a decline in inflation rates and interest rates as well as improvement in other macroeconomic indicators such as the foreign exchange rates currency or the international crude oil price, will encourage the growth of consumption and investment, there will be a decline in the level of systematic risk; on the oher hand, a bad economic situation will increase the level of systematic risk. Systematic risk of each company may vary over time depending on changes in economic conditions (Bos and Newbold, 1984). The results of previous studies by Bell and Krueger researchers in 1989), Patro, Wald, and Wu (2002), Drobetz *et al*. (2015), and Boz *et al.* (2015) show that empirically macroeconomic negatively affect systematic risk levels.

Stock returns refer to shareholder income originating from the distribution of company profits in the form of dividends or from capital gains; stock returns are also influenced by macroeconomic variables. Good macroeconomic conditions will increase investment demand, which results in the increased bid, stock prices, and capital gains. Therefore, better

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macroeconomic conditions will have a positive impact on the stock return. The Arbitrage Pricing Theory (APT) proposed by Ross (1976) states that stock return is a linear function of several economic factors. Research related to the development of the Arbitrage Pricing Theory has been done by Ross (1980); Chen (1983), and Chen *et al.* (1986) confirming that some macroeconomic variables, i.e. interest rate risk, business cycle risk, inflation, and changes in risk premiums are the determinants of stock returns. Kazi (2008), Virk (2011), Humpe et al. (2009), and Zhu (2012) revealed that there is a positive effect of macroeconomic variables on the variable stock return.

Financial performance is the output of financial statement analysis, which results in a liquidity ratio, efficiency ratio, leverage, and profitability as indicators of financial performance. Low current ratio illustrates the low ability of companies to fulfill short-term liabilities thus increasing the risks faced by investors; on the other hand, a high current ratio illustrates the availability of current assets in meeting short-term obligations that the level of short-term creditor risk will be lower. Companies that have a higher current ratio will be more flexible in facing a crisis and less sensitive to economic changes that indicate a lower βeta (Drobetz *et al*., 2015; Boz *et al.* 2015). High leverage illustrates the high use of debt as a source of funding that will have implications for capital costs and the present value of future cash flows as well as on stock returns. However, the use of debt balanced with stock equity indicates well-finance conditions that will increase stock returns. Asset efficiency is closely related to profitability because the higher asset turn over will have an impact on profitability and affect stock returns. Therefore, stakeholders can use financial performance to estimate systematic risk and stock returns. Beaver, Kettler, and Scholes (1970) confirm that financial statement data is very useful in predicting market risk. Hamada (1972) and Mandelker and Rhee (1984) write that differences in accounting data produced by various financial decisions can have information about systematic risk of shares. It is also stated that the use of broader and more detailed financial ratios is the most effective tool for estimating stock returns (Lai *et al*., 2016). Some research results show that financial performance has an effect on stock returns (Kheradyar *et al.*, 2011; Ozlen, 2014; Anwar and Maryam, 2016).

Systematic risk is an undiversifiable risk through the distribution of portfolios; therefore, systematic risk (β_M) is a risk relevant in the process of investment decisions. β_M is a measure of the sensitivity of stock returns on variations in market returns (Fama and French, 2004) then βM indicates the sensitivity of changes in stock returns to variants of the overall stock market return (R_M). Risk-return Trade-off (Merton, 1973) is based on the assumption that investors are risk averse so any increase in risk will be accompanied by a request to increase the level of return. Thus, the expected stock returns must be based on the level of systematic risk. Some research results relating to the Risk-return Trade-off are Fama *et al.* (2004), Ghsyel *et al.* (2005), Bali and Peng (2006), Bali and Levey (2009), Darrat *et al.* (2011) and Mollik *et al.* (2015), and Bora and Adhikary (2015).

LITERATURE REVIEW

The Effect of Macroeconomic variables on Systematic Risk

The initial stage in the process of evaluating investment plans in stocks is to carry out an economic analysis. Based on the results of the macroeconomic analysis, investment managers can make decisions on whether to continue or withdraw their investment in shares. Stock price fluctuations are part of uncertainties, often called as risks, namely deviations of realized stock returns. The type of risk this study discusses is the one that cannot be diversified by portfolio, known as systematic risk or market risk (β_M). Merton (1973), Fama and French (1993), Bos and Newbold (1984), Hiller *et al*. (2010) state that macroeconomic variables are a source of systematic risk. The Merton model is the theoretical basis of the work of Jagannathan and Wang (1996), Lettau and Ludvigson (2001), Gomes *et al.* (2003), and Lewellen and Nagel (2006), Drobetz, Menzel, and Schoder (2015) stating that “beta risk” tends to be higher during a bad economic regime and will be lower in good economic conditions. Some researchers who also have hypotheses with regard to the role of macroeconomic variables on risk and stock returns include Shanken

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(1990), Fama and French (1993), Patro, Wald, and Wu (2002), Kazi (2008), Virk (2011), and Singh, Mehta, and Varsha (2011), and Boz, Plans, and Guerrero (2015).

The first indicator in macroeconomic variables is GDP, which is expressed as a the total output value of the goods or services produced by a country; thus, GDP also describes total consumption demand in a given time in a country. In other words, GDP also reflects total output and total national expenditure that GDP is a determinant of the performance of companies as a whole. Aldolfatto (2005) states that GDP is measured by the total final value of goods and services produced domestically. GDP growth raises a sense of optimism for investors to expand capital to meet increasing market demand so GDP growth will have an impact on company performance and the risk decreasing of business failure. Duy and Thoma (1998) and Paul and Mallik (2001), by using the co-integration technique between macroeconomic and financial variables of companies, have found that GDP growth has a significant effect on stock prices, where the sensitivity of stock price variability is determined by the value of systematic risk.

Export and Import are transactions in international trade. The increase in exports will increase the international reserve; on the contrary, the increase in imports will decrease the international reserve. Therefore, theoretically, the indicator of exports tends to shape the macroeconomic variables positively and have a negative impact on systematic risk. Imports will form macroeconomic conditions negatively and have a positive impact on risk, which tends to increase systematic risk.

Inflation reflects purchasing power that has an impact on aggregate demand and supply; if income does not change while the price of goods and services increases due to inflation, then total consumption will decrease. In general, an increase in inflation is mainly due to an increase in production costs so inflation results in a decline in real economic activity and profitability. Therefore, players of the financial market and capital will respond negatively to an increase in inflation so it will have an impact on increasing risk and reducing stock returns. Patro, Wald, and Wu (2002) have conducted research in 16 capital markets of OECD countries and found that inflation has a positive effect on systematic risk (market risk). Research in several other capital markets shows inflation also has a significant positive effect on systematic risk (Al Qaisi, 2011; Mir and Hatami, 2013).

Interest rate factors in macroeconomic variables have an important role because the interest rate is used as a measure of opportunity costs in investment decisions. The interest rate describes the current condition of the economy as well as the description of investment opportunities in the future. The increase in interest rates has a negative impact on companies that finance businesses with credit because the overall cost of capital will increase that the financial burden becomes heavier. Some studies show that interest rates negatively affect market returns (Kazi, 2008; Duy and Thoma, 1988; Paul and Mallik, 2001; Joseph and Vezos, 2006).

The volatility of the exchange rate of the domestic currency against foreign currencies reflects the economic and financial stability of a country; besides, real conditions indicate that forex derivative instruments are alternative products for investors in the money and capital markets. Therefore, the market risk of companies whose sources of funding are from export, foreign loans, and liabilities for import transactions will be very sensitive to changes in foreign exchange rates. Mir and Hatami (2013) indicate a positive influence of foreign exchange rates on systematic risk. Research conducted by Patro, Wald, and Wu (2002) in 16 OECD countries found that imports have a negative effect and exports have a significant positive effect on systematic risk.

The increase in world oil prices not only affects the income of companies engaged in oil exploration and trade, but it also affects the income of non-oil companies in all business sectors. This is because oil is still the main energy source for transportation, electricity, and energy for industries. The increase in oil prices will increase the cost of production and reduce profits and future cash flow. In other words, the price of oil is a determinant factor for systematic risk and stock returns. The price of crude oil has a positive effect on systematic risk. Research conducted by Mir and Hatami (2013) shows a positive correlation between oil prices and systematic risk.

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Hypothesis 1: Macroeconomic variables affect systematic risk.

The Effect of Macroeconomic Variables to Stock Returns

Changes in indicators of macroeconomic variables, such as an increase in GDP will have an impact on the investment opportunities and increased consumption, and the interest rate has an impact on the cost of capital. Thus, macroeconomic variables simultaneously affect cash flows of many companies and risk-adjusted discount rate, and it can affect the availability of the number and types of investment opportunities in the real sector. Flannery and Protopapadakis (2002), Boz *et al*. (2015), and Lai and Cho, 2016) say that macroeconomic variables affect stock returns. The hypothesis based on the Multi-factor Model Theory (Chen, Roll and Ross, 1986; Opfer and Bessler, 2004) derived from the Arbitrage Pricing Theory APT (Ross, 1976) states that stock returns are determined by several economic factors. Economic growth is related to total national expenditure and national production (GDP) and inflation is also the driving factor of investment and premium return. Mukherjee and Naka (1995), Millan (2001), Chauduri and Smile (2004), Narayan and Sharma (2011), Virk (2011), Winkelmann *et al.* (2013), and Bender *et al.* (2013) state that stock returns are a linear function of several economic factors.

In CAPM, interest rates of government securities generally used as risk-free returns in determining stock return expectations of individual investors and portfolio returns (Hill, 2010), while stock returns are used as a discount rate factor for dividend income in estimating stock prices (Reily and Brown, 2012). Thus, in the DDM model the cost of capital is also used as a discount factor to determine the stock price (Gordon, 1962; Modigliani and Miller 1961; Gitman and Zutter, 2012). Some research results prove that interest rates are negatively related to the stock market (Kazi, 2008; Duy and Thoma, 1988; Paul and Mallik, 2001; Joseph and Vezos, 2006; Pettenuzzo, Timmermann, and Valkanov, 2014).

Inflation is related to the increase in prices of goods and services caused by demand-pull inflation. Inflation can also be caused by an increase in production costs, where the most common cause of rising production costs is an increase in labor wages and an increase in oil prices. Thus, inflation results in a decrease in consumption. Inflation that is caused by the increase in production costs has an impact on decreasing aggregate demand and reducing investment opportunities,as well as stock returns, will decline. Several studies indicate that inflation affects the stock return (Feldstein, 1980; Fama, 1981; Geske and Roll, 1983; Singh, Mehta, and Hoguet, 2008; and Varsha, 2011). Oil is an input in the production process, so changes in oil prices affect the cost of production as a whole; it will also affect profits and stock prices (Huang *et al.*, 1996; Aloui *et al*., 2009). Crude oil prices also affect stock returns (Boyer *et al*., 2007; Martinez *et al.*, 2014).

Hypothesis 2: Macroeconomic variables affect stock returns.

Figure 1 shows the relationship between the outer and inner model, which illustrates the role of indicators in forming variables of macroeconomic, systematic risk, and stock return. The model also illustrates the influence of the macroeconomic variable on systematic risk and stock return.

The Effect of Financial Performance on Systematic Risk

The main function of financial managers is to maximize shareholder wealth by increasing stock market prices. To achieve this condition positive capital gains are needed as well as dividends because both are determinants of stock prices. Then the financial manager's decisions related to investment decisions and financial decisions greatly affect financial performance. . Beaver et al. (1970) states that there is a relationship between accounting information and systematic risk. Financial performance is determined by financial ratios, namely liquidity, activity, leverage and profitability. The high current liquidity ratio is related to the company's strength in fulfilling its short-term obligations which results in a decrease in the level of risk. Profitability is related to the ability to provide dividend income. So liquidity and profitability have a negative effect on systematic risk, and have a positive

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effect on the stock return. Research conducted by Alaghi (2013), Iqbal and Shah (2012), Biase and D'Apolito (2013) shows that liquidity has a negative effect on systematic risk.

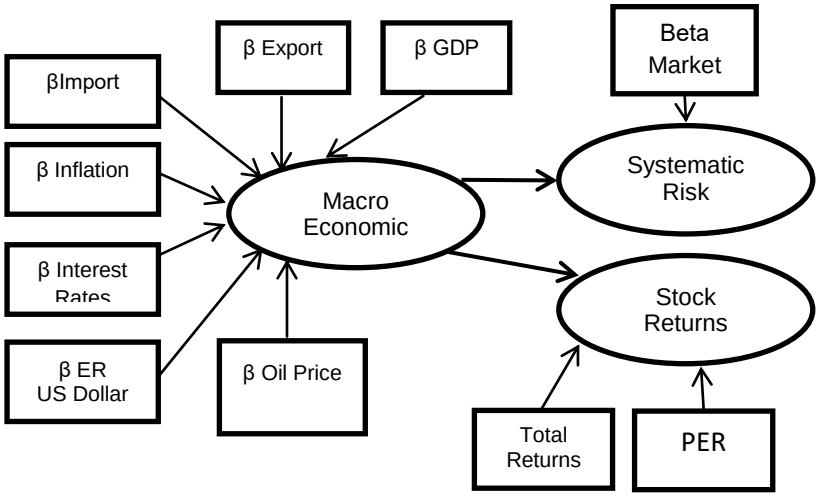

Figure 1 - Conceptual framework on the effect of macroeconomic variables on systematic risk and stock return

Leverage is related to the use of funding sources that have a fixed burden intended to increase shareholder income. Funding sources that have a fixed burden include debt and preferred stock. Both of these funding sources create fixed financial costs that can have a positive or negative impact on financial performance. In good economic conditions, the use of financial leverage can have a positive impact on financial performance and stock returns. Nonetheless, theoretically, high leverage tends to increase systematic risk. Some studies have found that leverage has a positive effect on systematic risk (Faff *et al.*, 2002; Bhatti *et al.*, 2010; Biase and D'Apolito, 2012; Alaghi, 2013).

A company's ability to generate profit (profitability) is the main measure in assessing company performance. Some researchers use the profitability measure of ROA (Lee and Hooy, 2012; Amorim, Lima, and Murcia, 2012; Alaghi, 2013; Iqbal and Shah, 2013). They found that Return On Assets (ROA) has a positive effect on systematic risk. However, Biase and D'Apolito (2012) found negative effects of EPS on systematic risk—in which a higher ability of a company to generate profits will lead to a decrease in systematic risk.

Hypothesis 3: Financial performance affects systematic risk.

The Effect of Financial Performance on Stock Returns

Financial performance is a determinant factor for stock returns because dividend to be received is highly dependent on profitability and other financial indicators. In the research concept (Fama and French, 1992; Mukherji *et al.*, 1999; Lewellen, 2004; Kheradyar *et al*., 2011), state that fundamental financial performance depicted in financial ratios is determinant factors for stock return. Lai and Cho (2016) describe that financial ratios are a measure of financial performance accepted by financial norms as an effective tool for predicting stock returns.

Investor income as shareholders is determined by Earnings per Share (EPS) and in cash dividends, as well as capital gains (Brentani, 2004; Hirt and Block, 2008; Nikolai and Bazley, 2010). Some other financial ratios as determinants of stock returns are Free Cash Flow (FCF), debt or equity ratio, and firm business risk (Brigham and Erhardt, 2011). Based on these explanation can be concluded that stock price fluctuations are also determined by the financial performance of companies in addition to being determined by economic factors.

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Hypothesis 4: Financial performance affects stock returns.

Figure 2 shows the relationship between the outer and inner model, which describes the role of indicators in forming variables of financial performance, systematic risk, and stock return. The model also illustrates the influence of financial performance on systematic risk and stock return.

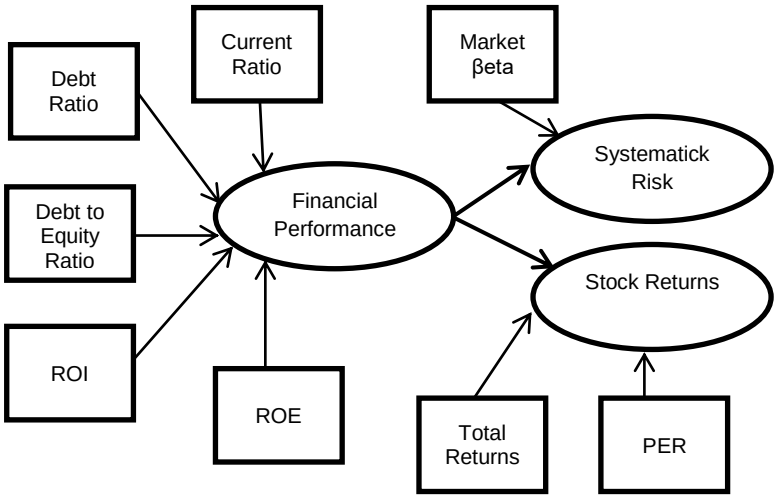

Figure 2 - Conceptual framework on the effect of financial performance on systematic risk and stock returns

The Effects of Systematic Risk on Stock Returns

Risk-return Trade-off is a fundamental assumption of a rational investor attitude, meaning that determination of the outcome of an investment is always based on a combination of risk and return choices (Ehrhardt and Brigham, 2011). Merton (1973) confirms the positive relationship between risk and returns. Fama and French (2004) also have the same statement that there is a positive relationship between risk and stock returns. Risk-return trade-off is the development of the assumption of risk-averse investors in the Modern Portfolio Theory (Markowitz, 1952) which states that investors will determine the choice of portfolio in stocks that have a higher stock return at a certain level of risk, or will choose a lower risk portfolio at a certain level of stock return.

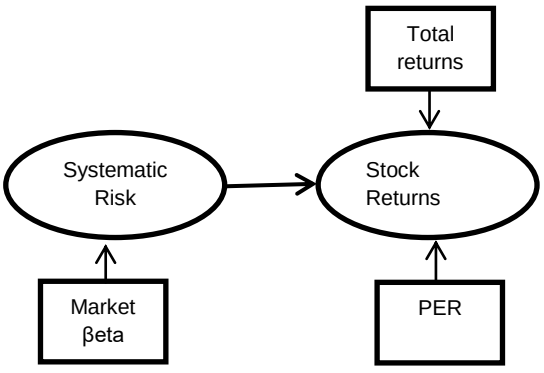

Figure 3 - Conceptual framework on the effect of systematic risk on stock returns

Hill (2010: 62) state that the βeta factor reflects the expectation of future stock returns related to market changes. Ross, Westerfield, and Jordan (2009) suggest that the compensation investors receive from their financial assets comes from systematic risk

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because this risk cannot be stimulated through portfolio distribution, while non-systematic risks can be stimulated through portfolio distribution, so the relevant risk is systematic risk. The results of previous studies show a positive relationship between systematic risk and stock returns (Bali and Peng, 2006; Burlacu, Fontaine, Garces, and Seasholes, 2012; Sizova *et al.,* 2012; Mollik, 2013). Other studies, however, have resulted in the finding that systematic Risk has a negative effect on stock returns (Hasan, Kamil, Mustafa, and Baten, 2012). The results of the Nwani Research (2015) on the UK Stock Exchange from 1996 to 2013 confirm that systematic risk positively affected stock returns.

Hypothesis 5: Systematic risk affects stock returns.

Based on several hypothesis formulations and the conceptual model, a hypothesis model can be constructed as presented in figure 4.

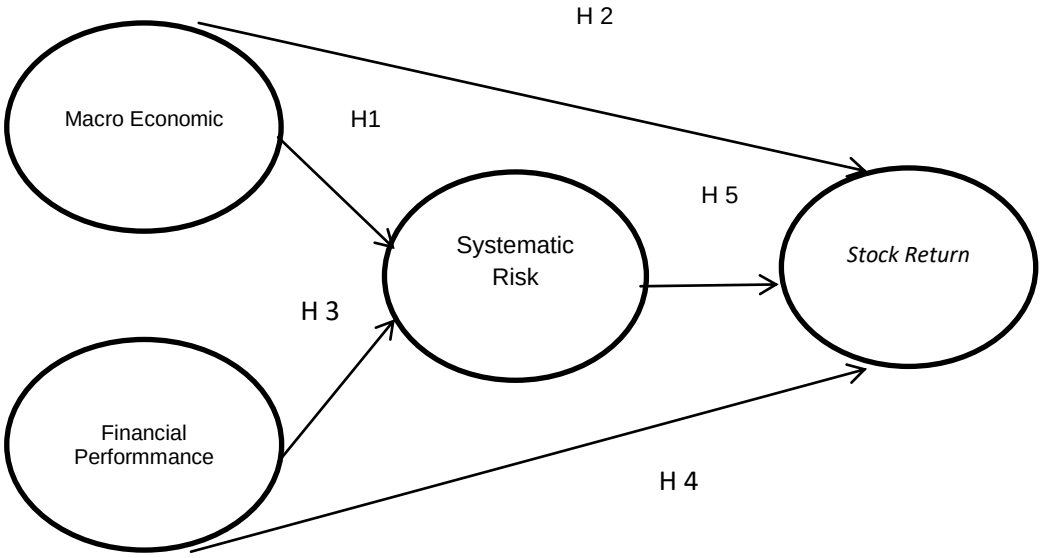

Figure 4 - Hypothesis Model

H1: Macroeconomic variables affect systematic risk
H2: Macroeconomic variables affect stock returns
H3: Financial performance affects systematic risk
H4: Financial performance affects stock returns
H5: Systematic risk affects stock returns

METHODS OF RESEARCH

Population and Sample

The population of this study is the companies of basic industry and chemicals sector listed on the Indonesia Stock Exchange year 2011- 2015. The total population in this sector in 2015 was 62 companies. From the population the sample was determined based on the following criteria:

1. Companies of the basic industry and chemicals sector listed on the Indonesia Stock Exchange during the research period.
2. The company continuously publishes complete financial statements in the form of results of financial ratio analyses and monthly share prices throughout the research period of 2011-2015.

Based on the criteria, a sample size of 50 companies was obtained.

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Indicators of Variables and Formulas

Table 1 - Variables and Indicators

No	Variable	Indicators	Formula
1	Macroeconomic variables	Beta GDP nominal	$\beta_{GDP} = \frac{\text{Cov } Ln\,\text{GDP}, Ln\,\text{SP}}{\text{Var } Ln\,\text{GDP}}$
		Beta of FOB value of Indonesia's Exports	$\beta_{Ekspor} = \frac{\text{Cov}(Ln\,\text{Ekp}; Ln\,\text{Sp})}{\text{Var } Ln\,\text{Ekspor}}$
		Beta of Indonesia's Imports	$\beta_{Impor} = \frac{\text{Cov}(Ln\,\text{Im}, Ln\,\text{Sp})}{\text{Var } Ln\,\text{Impor}}$
		Beta of inflation	$\beta_{Infl} = \frac{\text{Cov}(Ln\,\text{Infl}, Ln\,\text{Sp})}{\text{Var } Ln\,\text{Inflasi}}$
		Beta of BI rates	$\beta\,\text{BI Rate} = \frac{\text{Cov}(Ln\,\text{BI Rate}, Ln\,\text{Sp})}{\text{Var } Ln\,\text{BI Rate}}$
		Beta of Spot rate USD dollar/IDR between banks (ER)	$\beta\,\text{Er} = \frac{\text{Cov}(Ln\,\text{Er}, Ln\,\text{Sp})}{\text{Var } Ln\,\text{Er}}$
		Beta of Crude Oil Price (COP)	$\beta COP = \frac{Cov(Ln COP, Ln Sp)}{Var\, Ln\, COP}$
2	Financial Performance	Current Ratio (CR) values	$CR = \frac{Current\, Asset}{Current\, Liabelities}$
		Debt Ratio (DR) value	$\text{DR} = \frac{Total\, Debt}{Total\, Assets}$
		DER values	$\text{DER} = \frac{Total\, Liabelities}{Shareholders\, Equity}$
		ROI value	$\text{ROI} = \frac{Net\, Income}{Total\ \ assets}$
		ROE value	$ROE = \frac{Net\, Income}{Stockholders\, Equity}$
3	Systematic Risk	βeta of markets	$\beta_i M = \frac{Cov(R_i, R_M)}{\sigma^2 R_M}$
4	Stock Returns	Total Returns	$\text{TR} = \frac{(\text{P}_1 - \text{P}_0) + \text{D}_1}{\text{P}_0}$
		PER	$\text{PER} = \frac{\text{Price per Share}}{Earning\, per\, Sahre}$

In which:
SP = Stock Price
Cov = Covariance
β = Elasticity measures the responsiveness of indicators of macroeconomic variables for SP of each sample company so there is a variation of indicator values for each company
Var = Variance (σ^2) of independent variables
BI Rate = Prime rate of Central Bank of Indonesia

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RESULTS AND DISCUSSION

Significant Indicators

Table 2 illustrates the significant indicators that meet the criteria for forming variable values so they are called variable profiles.

Table 2 - Variable Profiles

No	Variable	Significant Loading Indicators		
1	Macroeconomic variables	X1.3	X1.5	X1.7
		0.904 (P< 0.01)	0.833 (P< 0.01)	0.928* (P< 0.01)
2	Financial Performance	(X2.1)	(X2.5)	
		0.958* (P< 0.01)	0.889 (P< 0.05)	
3	Systematic Risk	Y1.1		
		1* (P< 0.01)		
4	Stock Returns	Y2.1		
		1* (p< 0.01)		

Macroeconomic variables Profile

Table 2 shows that the value of macroeconomic variables as a research variable is formed by three (3) indicators, namely import, interest rates, and crude oil prices—all indicators are measured by the elasticity of indicators of macroeconomic variables (βeta) on stock prices. Loading factor of βeta import is positive, meaning that the increase in imports tends to increase the value of macroeconomic variables, whereas the decrease in imports tends to decrease the value of macroeconomic variables. Data shows that 75.12% of Indonesia's total imports in the period 2011-2015 are imports of raw material and support goods, which means that most of the raw material needed by the manufacturing industry is dependent on other countries. Therefore, import transactions are responded positively to increase the value of macroeconomic variables. The findings of this study are the same as those of Frankel and Romer (1999), Humpage (2000), Kogit *et al.* (2011) that imports are positively correlated with economic growth.

The results of the analysis show that the βeta interest (X1.5) has a positive loading factor value of 0.833 ($p<0.01$) which has a very significant effect on the formation of macroeconomic variables. This means that in the period of 2011-2015, the interest rate formed macroeconomic variables positively or the increase in interest rates in that period tended to increase the value of macroeconomic variables. The positive effect of interest rate on the macroeconomic variables might occur due to the low-interest-rate that an increase in the interest rate would encourage saving and hold back consumption so it could increase the provision of funds.

The βeta oil price (X1.7) has a positive loading factor value of 0.928 ($p<0.01$) which has a very significant effect on the formation of macroeconomic variables. This means that the increase in the βeta oil price of oil tends to increase the value of macroeconomic variables. Crude oil prices during the study period dropped dramatically from the US$ 96.80 per barrel in 2011 to the US$ 94.03 in the following year, and in 2015, the oil price continued to drop dramatically to the US$ 49.16. The decline in crude oil prices in a row for 5 years has resulted in a decrease in overall production costs.

Financial Performance Profile

Some of the significant indicators in the formation of financial performance variable are current ratio (X2.1) and Return on Equity or ROE (X2.5). The loading factor for current ratio is 0.958 ($p<0.01$) meaning that the increase in the current ratio tends to increase the value of financial performance variable, whereas the decrease in the Current Ratio will decrease the

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value of financial performance. The ROE indicator (X2.5) has a positive loading factor of 0.889 ($p<0.05$). The positive sign can be interpreted that the increase in ROE tends to increase the value of financial performance, whereas a decrease in ROE tends to decrease the value of financial performance.

Systematic Risk Profile

Systematic risk as a research variable is formed by one market βeta indicator (β_M) with a loading factor value of 1 ($p<0.01$), which means that β_M perfectly forms the value of the systematic risk variable. The interpretation of these statistical values is that increasing β_M tends to increase systematic risk; conversely, the decrease in β_M tends to decrease systematic risk.

Stock Return Profile

Table 2 shows that the stock return variable is formed by two indicators, namely Total Return (Y2.1) and PER (Y2.2). Based on the results show that only one indicator is significant in the formation of the stock return variable, namely Total Returns with the value of loading factor of 1 and $p<0.01$. This means that Total Return forms stock returns perfectly.

Hypothesis Testing

Direct Effect Test

The hypothesis testing in this study employs the direct effect test and the results of the analysis are presented in Table 3. The model test is based on the criteria of goodness of fit and quality indices as a rule of thumb measure of the relationship between latent variables and assumptions.

Table 3 - Path Coefficients of Direct Effect

Direct Effect Test					
No	Relationship between Variables (Explanatory Variables → Response Variables)		Nd Quality Indices	p-value	Note
1	Macroeconomic variables	Systematic risk	-0.529	<0.01 ***	Highly significant
2	Macroeconomic variables	Stock Returns	-0.037	0.284	Not significant
3	Financial performance	Systematic risk	0.072	0.132	Not significant
4	Financial performance	Stock Return	0.350	<0.01 ***	Highly significant
5	Systematic risk	Stock Return	0.604	<0.01 ***	Highly significant

Table 4 - Model Fit and Quality Indices

No	Model fit and quality indices	Fit Criteria	Analysis Results	Note
1	Average path coefficient (APC)	p < 0.05	0.318 (p<0.001)	Very good
2	Average R-squared (ARS)	p < 0.05	0.422 (p<0.001)	Very good
3	Average adjusted R-squared (AARS)	p < 0.05	0.413 (p<0.001)	Very good
4	Average block VIF (AVIF)	Acceptable if <= 5, ideally <= 3.3	1.037	Ideal
5	Average full collinearity VIF (AFVIF)	Acceptable if <= 5, ideally <= 3.3	1.235	Ideal
6	Tenenhaus GoF (GoF)	Small >= 0.1, medium >= 0.25, large >= 0.36	0.509	Ideal
7	Sympson's paradox ratio (SPR)	Acceptable if >= 0.7, ideally = 1	0.800	Ideal
8	R-squared contribution ratio (RSCR)	Acceptable if >= 0.9, ideally = 1	0.996	Ideal
9	Statistical suppression ratio (SSR)	Acceptable if >= 0.7	1.000	Ideal
10	Nonlinear bivariate causality direction ratio (NLBCDR)	Acceptable if >= 0.7	0.800	Ideal

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Based on the comparison between the results of the analysis with fit criteria in Table 4, it can be seen that the results of hypothesis testing have fulfilled the criteria for the goodness of fit and quality indices.

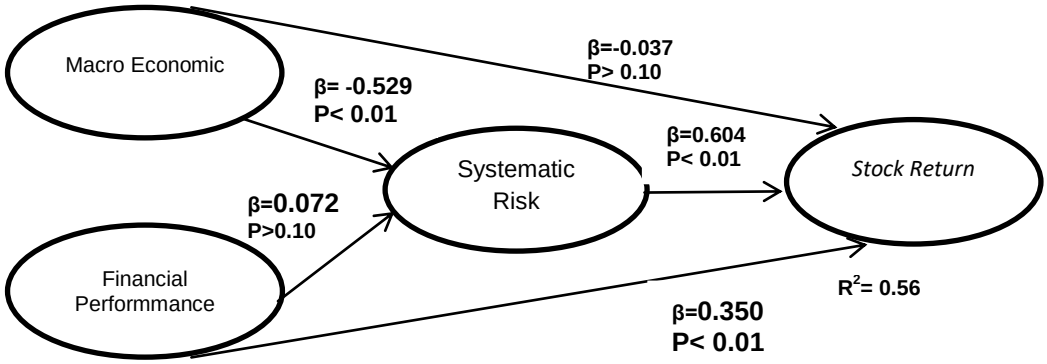

Figure 5 - Path Coefficient and Coefficient of Determination

Hypothesis Testing 1

Table 3 shows the direct effect of each explanatory variable on the response variable. The statistical tests show that the direct effect of macroeconomic variables on systematic risk results in a path coefficient -0.529 with a p-value <0.01 (highly significant). Thus, the first hypothesis that macroeconomic variables affect systematic risk is proven statistically. The negative influence of macroeconomic variables on systematic risk is interpreted that when the growth of macroeconomic variables is good, marked by a decline in imports, will be followed by an increase in international reserves. In addition, a decrease in interest rates affect to lower capital costs which results in an increase in overall debt coverage. Also, the decline in the crude oil price from $ 96.80 per barrel in 2011 to $ 49.16 in 2015 had improved the efficiency and profitability of the business sector. Thus, the overall empirical evidence of the indicators forming macroeconomic variables in the period of 2011-2015 affects the level of systematic risk. The results of this study are consistent with the results of research by Wald And Wu (2002), Gomes *et al.* (2003), Lewellen and Nagel (2006), Mir and Hatami (2013), Boz *et al.* (2015), and Drobetz *et al.* (2015).

Hypothesis Testing 2

The analysis of the effect of macroeconomic variables on stock returns produces a path coefficient of -0.037, with a p-value > 0.10 (not significant). Then, the second hypothesis is not statistically proven. The results of this study are consistent with the research conducted by Pethe *et al.* (2000) and Bhattacharyya and Mukherjee (2006). Based on the concept of the present value as a means of estimating stock prices, several indicators of macroeconomic variables, namely interest rates and oil prices, affect the cost of capital and operating efficiency; hence, in this study, macroeconomic variables affect stock returns.

Hypothesis Testing 3

The direct effect analysis of financial performance on systematic risk produces a path coefficient of 0.072 with a p-value > 0.10 (not significant). The findings of this study are not consistent with the research concept of Boz *et al.* (2015), Ball and Brown (1969), Hamada (1972), Ilha *et al.* (2009) that accounting information describes financial performance is a source of information for investors to determine market risk (β_M). Other researchers, however, found that several financial performance indicators become determinants of systematic risk indicators (Beaver *et al*., 1975; Belkaoui, 1978; Dingra, 1982; Alaghi, 2013; Boz *et al*., 2015).

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Hypothesis Testing 4

The analysis with Warp-PLS produces a positive path coefficient of 0.350 ($p<0.01$), meaning that financial performance has a positive effect on stock returns. The statistical value is interpreted that an increase in the value of financial performance tends to increase stock returns. In other words, a higher value of financial performance will bring a higher shareholder income calculated from total returns, i.e. income derived from capital gains and from dividends.

The indicators of Current Ratio (X2.1) and Return on Equity (X2.5) play a very consistent role in the formation of financial performance variable; it has a positive sign on the path coefficient because the company's ability to pay cash dividends is strongly influenced by the Current Ratio position, specifically in relation to the component of cash availability. Dividends as a measure of the amount of profit distribution to shareholders are largely determined by earnings available for common stocks and Return on Equity. The results of this study are consistent with the research concepts of Lai and Cho (2016), Fama and French (1992), Barbee, Mukherji, and Raines (1996), Mukherji, Kim, and Dhatt (1999), Lewellen (2006), Dimitropoulos *et al.* (2009), Barton *et al.* (2010), Kheradyar *et al.* (2011), Brian and Kevin (2016) that fundamental financial performance depicted in financial ratios is determinant factors for stock return. The results of this study are also consistent with the results of the research of Khan *et al.* (2013) in Ghi (2015) that financial performance positively affects stock returns. The indicator of financial performance that has the highest positive loading factor value is Current Ratio (X2.1) with a value of 0.958 and $p<0.01$, which is very significant in the formation of financial performance (Table 2); this means that when a company has better abilities to meet its short-term obligations, it tends to increase the value of financial performance and stock returns. This is consistent with the results of the study of Bagherzadeh, Safania, and Roohi (2013) and Anwaar (2016). The findings of this study are also consistent with the Dividend Policy Theory, where dividends are one component of stock returns in addition to capital gains. Theoretically, the dividend policy is determined by the cash liquidity because the larger cash liquidity and overall liquidity (Current Ratio) show the ability to of a company to pay greater dividends (Horne and Wachowicz, 2009: 482). Stock returns are formed by the total return indicator originating from the accounting profit in the form of profit distribution that depends on earnings results that is available for common stockholders, which is determined as Return on Equity (ROE).

The test on the fifth hypothesis results in a positive path coefficient of 0.604 ($p<0.01$). The findings of this study are consistent with the Risk-return Trade-off Theory (Merton, 1973; Sharp, 1964; Lintner, 1965; Mossin, 1968; Fama and French, 2004) that systematic risk positively affects stock returns. A positive sign on the path coefficient means that the increase in β_M tends to be followed by an increase in stock returns. The risk-return trade-off is based on the risk-averse assumption that rational investors will choose investments in stocks that have a lower level of risk on certain stock returns, or will invest in stocks that have a higher stock return at a certain level of risk. The results are consistent with research findings by Merton (1973), Black *et al.* (1972), Sharpe and Cooper (1972), Fama and Mc. Beeth (1973), Fama and French (1992), Clare *et al.* (1998), Hung et al. (2004), Ghysel *et al.* (2005), Bali and Peng (2006), Morelli (2007), Bali and Levy (2009), and Darrat *et al.* (2011) that systematic risk (βmarket) has a very strong positive effect on stock returns.

CONCLUSION

1. Macroeconomic variables negatively affect systematic risk—the first hypothesis can be statistically accepted. Formative indicators form the variable of macroeconomic variables with positive loading factors in this study. These indicators are βeta import (X1.3), βeta interest (X1.5), and βeta oil prices (X1.7), while the systematic risk variable is formed by the βeta market (Y1.1). The results of the analysis mean that an increase in macroeconomic variables will decrease systematic risk.
2. The results of the analysis in this study indicate that macroeconomic variables have no effect on stock returns.

3. Financial performance is formed by indicators of Current Ratio (X2.1), and Return on Equity (X2.5). Financial performance does not significantly affect systematic risk.
4. The results of this study prove that financial performance has a positive effect on stock returns. It means that an increase in financial performance will increase stock returns.
5. The results of the study indicate that systematic risk has a positive effect on stock returns. This means that an increase in systematic risk will be followed by an increase in stock returns.
6. Macroeconomic, financial performance, and systematic risk simultaneously affect Stock Returns.

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