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The Impact of Macro Economic Indicators on Economic Growth in Indonesia, Malaysia and Singapore

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Abstract

Economic growth refers to the development of a country's economic activity is causing the goods and services produced within the community to grow and increase the prosperity of the community in the long term. The economic growth is one of the indicators used to assess the success of development. In the actual economic activity, economic growth showed the physical economic development taking place in a country, such as increasing the number and production of industrial goods, development of infrastructure, increase the number of public facilities such as schools, hospitals, roads, development of manufacturing goods, and so on. In principle, not all of the negative impact of inflation on the economy. Especially in case of mild inflation are inflation below ten percent. The inflation rate is the annual percentage increase in the general price level as measured by the consumer price index. The relationship between economic growth and macroeconomic indicators has long been a popular issue of debate in the literature of economic development. In this content, the primary purpose of this research is to analyze macroeconomic indicators of Indonesia and economic growth using panel data approach. To compare with another countries in developing countries so will use Malaysia and Singapore. Also in this research will analyze the relationship between inflation and interest rate with economic growth because inflation and interest rate closely related to macro economy and economic growth in a country.
This research will used quantitative research. Data collection method in this research is documentation with secondary data since year 1990-2015. The hypothesis in this study is done by using correlation Pearson test. Based on the analysis data, the result showed that there is relationship between interest rate and economic growth and there any relationship between inflation and economic growth. Suggestions for future research is to add another variables that affecting economic growth such as exchange rates, crude oil price.

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INTRODUCTION

Economic growth refers to development of country's economic activity that related to the goods and services produced within in the community that grow and increase the prosperity of the community in the long term. The economic growth is one of the indicators used to assess the success of development. In the actual economic activity, economic growth showed the physical economic development taking place in a country, such as increasing the number and production of industrial goods, development of infrastructure, increase the number of public facilities such as schools, hospitals, roads, development of manufacturing goods, and so on.

In principle, not all of the negative impact of inflation on the economy. Especially in case of mild inflation are inflation below ten percent. Mild inflation it can encourage economic growth. This is because inflation is capable of encouraging employers to further increase its production. Entrepreneurs eager to expand production, due to the increase in prices is the entrepreneurs get more profit. In addition, increased production positively impact others, namely the availability of new jobs. Inflation will have a negative impact if the value exceeds ten percent.

The inflation rate is annual percentage increase in the general price level as measured by the consumer price index. With inflation the price of goods has increased, so people's purchasing power will decline. This will lowering the interest of investors to invest and a decline in the share price company. Consequently, it would cause Index Price decreased (Adyuta, 2011).

The interest rate according to Reilly and Brown (2003: 422) is the price on the borrowed funds. The increase in the interest rate of Bank Indonesia Certificates followed by a rise in interest rates on deposits. Interest rates on deposits tend to have negative effect the stock price, so the higher the level deposit rates then stock prices tend to diminishing the resulting decline in ecnonomic growth.

The relationship between economic growth and macroeconomic indicators has long been a popular issue of debate in the literature of economic development. In this content, the primary purpose of this research is to analyze macroeconomic indicators of Indonesia and economic growth using panel data approach. Indonesia's economic condition as the above, has caused many social problems are complex, such as the emergence of high unemployment, increased poverty, productivity and quality of labor is low, and the decline of small and medium enterprises that become the foundation of the people. In addition, the current world economic developments lead to global economic activity moves from one country to another freely, resulting in uncertainty of market access of the world economy. World economic conditions like this, brings the trend on increasing bilateral and multilateral agreements between countries as economic actors in the international community that eventually resulted in the emergence of a new law in each country.

To compare with another countries in developing countries so will use Malaysia and Singapore. Also in this research will analyze the relationship between inflation and interest rate with economic growth because inflation and interest rate closely related to macro economy and economic growth in a country.

The reason to choose Indonesia, Malaysia and Singapore because these three countries have the similar economic development and also economic policy one each others, so to compare it will be more reasonable and interesting to choose Indonesia, Malaysia and Singapore rather than another countires in Asia. Also the GDP forecast in the future, these three countries is the top three ranking in South East Asia.

Based on the description above, so in this research will analyze the impact of interest rate and inflation on economic growth in Indonesia as thrid ranking GDP growth, also in comparison with another countris such as Singapore and Malaysia. The model used is regression analysis and secondary data.

Neo Classical Growth Theory

Neo-classical growth theory as formulated by Solow (1957) postulates that in the long run two critical factors determining growth rate of an economy are exogenously given respective rates of growth of total factor productivity and population. However, in the medium term the rate of accumulation of physical capital and therefore the savings rate are likely to influence the growth rate of the economy (Froyen, 1998). For a long time economists have associated the "level of total factor productivity" with the "level of technology" which has become an endogenous variable determined by the model's variables in the path breaking work of new generation economists such as Romer (1990, 1992) and Mankiw, N.G. et al. (1995). On the other hand Harberger (1998) prefers to call "growth in total factor productivity" the "real cost reductions" and points out that besides "technological progress", major factors that can generate reductions in "real cost of production" are: lowering inflation; eliminating price controls or interventions in credit markets; eliminating the costs imposed on an economy by conceived regulations and bureaucratic hurdles; trade liberalization in the form of removal of tariffs, quotas and other kinds of protective measures; privatization that enables real cost reductions; a sound legal and institutional framework in which individuals are protected against arbitrary (Serhan Ciftcioglu, Nermin Begovic, 2008). Incursions on their property and other economic rights. Actually all these various forms of "real cost reductions" that result from factors other than technological progress can be considered as source of growth in "efficiency" with which firms use the existing resources together with a given level of technology.

Weil (2005) suggests that the level of total factor productivity in neo-classical production function is given by the product of the "level of technology" and the "level of efficiency". There is a body of literature, which suggests that the degree of "openness" of economy (which is positively related to trade liberalization that Harberger lists as one of the sources of total factor productivity growth) can positively affect the long-run growth rate of an economy (Romer, 1986, 1992; Grossman and Helpman, 1991; Barro and Salai-Martin, 1995). The main argument behind this hypothesis is that producing relatively larger share of domestic output for global export markets and increased availability of imports in domestic markets will expose domestic firms to increased competitive pressures forcing them to innovate and or adopt new technologies at a faster rate and use their resources more efficiently so as to lower their cost of production.

In addition to pressure of competition, producing larger amount of output for global markets will allow the domestic firms to take advantage of 'economies of scale', which would enable them to further reduce their unit cost of production. Similarly 'lower inflation' allows for reductions in 'real cost of production' simply because, as Harberger (1998) points out, it enables economic agents to perceive the actual prices correctly so that they make rational investment decisions.

Economic Growth

The literature on economic growth have pointed out that accumulation of stock of external debt as well as fiscal deficits could exert adverse effects on economic growth through their impact on investment rate and therefore the rate of accumulation of physical capital. Intuitively higher government saving rate (measured as the percentage of budget surplus in GDP (Gross Domestic Product)) is likely to affect economic growth positively through two channels: (1) countries which have higher government saving rates also tend to have greater overall savings and investment, and therefore grow faster; and (2) higher government saving indicates sound overall macroeconomic management, which lowers risks for investors and increases investment leading to higher rate of economic growth (Fischer, 1993; Barro, 1991; and Sachs and Warner, 1996; Hernandez, 2004).

On the other hand, the arguments about the possible negative impact of "accumulation of stock of external debt" on economic growth have been usually formulated in the context of

"debt overhang" hypothesis which arises in a situation in which debtor country benefits very little from the return to any additional investment because of debtservice obligations, and in case there is some likelihood that in the future, debt will be larger than the country's repayment ability, expected debt-service costs will discourage further domestic and foreign investment (Krugman, 1988, Sachs, 1989).

Patillo et al. (2004) using large panel data set of 61 developing countries over the period 1969-98 have shown that increased "external indebtedness" negatively affected economic growth through its adverse effects on physical capital accumulation and total factor productivity growth.

Inflation

Inflation is one of the indicators of the macroeconomic factors are defined as the tendency of prices to rise in general and continuously. However, when prices were only found in one or two kinds of goods only, it can not be referred to as inflation unless such increases had an impact on most of the price increases of other goods. Indicators are often used to measure the rate of inflation is the Consumer Price Index (CPI) in which the change in CPI over time shows the price movement of goods and services consumed by society (Dritzaki, 2005).

Inflation may arise because of the pressure from the supply side (cost push inflation), on the demand side (demand pull inflation), and from inflation expectations. Factors that cause the occurrence of cost push inflation is the depreciation of the exchange rate, the impact of inflation abroad, especially countries trading partner, increased commodity prices are regulated by the government (administered price), or due to the negative supply shocks caused by natural disasters and disruption of distribution. Factors that cause the occurrence of demand pull inflation is high demand for goods and services relative to availability. In the macroeconomic context, this condition is described by the total demand (aggregate demand) is greater than the capacity of the economy. Meanwhile, the factor of inflation expectations are influenced by the behavior of the people and economic players using the inflation rate expectations in the decision of economic activities. The inflation expectations are more likely to be adaptive or forward looking.

Some of the empirical literature that produced evidence for a negative relationship between inflation rate and economic growth include Fischer (1993), Briault (1995), Barro (1991, 1996), Kormendi and Meguire (1985) and Guerrero (2003). Some others have suggested that it's not the level of inflation but rather its volatility that has negative impact on long-run growth rate of an economy (AlMarhubi, 1998; Judson and Orphanides, 1996). On the other hand, Barro (1995) reported that inflation volatility has no impact on long-run growth. And findings of Sarel (1996), Bruno and Easterly (1995) and Ghosh and Phillips (1998) have suggested that the nature of the effect of the level of inflation on economic growth could depend on the sample of the countries and/or the time period chosen for study.

Interest Rate

Interest rate is one indicator of macroeconomic factors are defined as the size of the fees to be paid by the borrower on the loan he received and also the size of the remuneration derived by lenders on its investments. Weston and Brigham (1998) says that the interest rate could affect the company's profits in two ways: (1) because the interest rate is the cost, therefore, the higher the interest rate, the lower the benefits to be obtained by the company if the other things are being considered constant; (2) because the interest rates affect the level of economic activity, and therefore may affect the benefits to be obtained by the company. Therefore, the effect on profit of the company, then the interest rate will affect stock returns received by investors.

Research Framework

The relationship between interest rate and inflation on economic growth can be explained

as follows: the higher interest rate and inflation this indicate that economic performance in a country is good so this will affecting higher economic growth, so it can be say there is positive relationship betwen them.

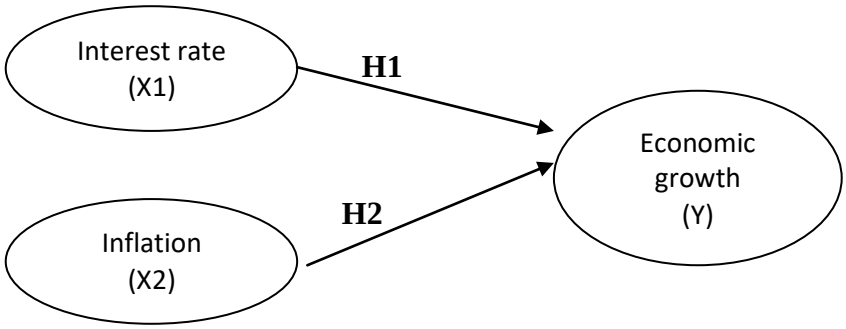

Figure 1. Research Framework

METHODS

This research will used quantitative research. Quantitative research methods is one of the designated research is a systematic, planned and structured clearly from the outset to the creation of the research design. Another definition states quantitative research is research that requires the use of a lot of numbers, ranging from data collection, interpretation of these data, as well as the appearance of the results. Similarly, at the conclusion stage of the research will be better when accompanied by pictures, tables, graphs, or other display.

According Sugiyono, quantitative research method can be interpreted as a method of research that is based on the philosophy of positivism, is used to examine the population or a particular sample. The sampling technique is generally done at random, data collection using research instruments, quantitative data analysis / statistics with the aim to test the hypothesis that has been set (Sugiyono, 2012: 7). Quantitative methods are often also referred to traditional methods, positivistic, scientific and discovery methods. Quantitative methods called traditional methods, because this method is long enough to use so it's been a tradition, as a method for research. This method is referred to as a method of positivistic because based on the philosophy of positivism. This method is referred to as the scientific method because this method has met scientific principles, namely concrete, empirical, objective, measurable, rational and systematic. This method is also called the discovery method because with this method can be found and developed a variety of new science and technology. This method is called quantitative methods for research data in the form of figures and usingstatistical analysis.

Quantitative research is a study which is positioned as a value-free. In other words, quantitative research strictly apply the principles of objectivity. Objectivity was obtained among others, through the use of instruments that have been tested for validity and reliability. Researchers who conducted a quantitative study to reduce such things that can create bias, for example as a result of the inclusion of the perception and personal values. If the study appear bias that then quantitative research will be far from the rules of real scientific techniques (Sudarwan Danim, 2002: 35).

Population and Sample

Population in this research is all the data about interest rate, inflation and economic growth from Indonesia, Malaysia and Singapore. Technique sampling used in this research is purposive sampling. Sample in this research are data about interest rate, inflation and economic growth from Indonesia, Malaysia and Singapore in period 1990-2015.

Data Collection Method

Data collection method in this research is documentation with secondary data since year 1990-2015.

Type Data and Source of Data

Data in this research used is secondary data. Source of the data is from www.bi.go.id for Indonesia, and World Bank data for Singapore and Malaysia.

Technique Analysis Data

There are two types of tests used in the study, the normality test and hypothesis testing.

1. Normality test

   Normality test is useful in the early stages of the selection methods of analysis. If are normal, then use parametric statistics, and if not normally used non parametric statistics. The purpose of this normality test is to determine whether the regression model or residual confounding variable has a normal distribution. This testing is necessary because to do the t test and F test assumes that the value of the residuals follow a normal distribution (Mulyani 2007). The means used to detect whether the residuals follow a normal distribution or not is the chart analysis. If the data spread around the diagonal line or histogram chart shows the pattern of a normal distribution, then the regression model to meet the assumptions of normality, as previously.
2. The hypothesis in this study is done by using correlation Pearson test.

$$r = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{[\, n\Sigma x^2 - (\Sigma x)^2 \,][\, n\Sigma y^2 - (\Sigma y)^2 \,]}}$$

3. Regression analysis

   Y = a + b1X1 + b2X2

   Whereas:

   Y = economic growth

   a = constanta

   b1-b2 = coefficient beta

   X1 = interest rate

   X2 = inflation
4. Significant Partial Test (Test - t)

   For hypothesis testing, test criteria as follows:

   Ho is accepted if Sig. t > 0,05

   Ha accepted if Sig. t < 0,05
5. To determine the dominant factors that influence economic growth used the biggest coefficient beta.

RESULTS AND DISCUSSION

Descriptive Statistic

Sample in this research are from period year 1990-2014. Descriptive statistic reflects the minimum value, mean, maximum value and standard deviation from all data research.

Table 1. Descriptive Statistic Indonesia

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
GDP Growth (%)	25	-13.10	9.00	5.1280	4.18793
Interest rate	25	4.00	12.75	7.6140	2.04480
Inflation	25	2.35	15.00	8.7228	2.78089
Valid N (listwise)	25				

Table 1. showed the minimum value of GDP growth is -13.10% and maximum value 9%, mean 5.1280% with 4.18793. Interest rate has minimum value 4% and maximum value is 12.75%, and mean is 7,6140% with standard deviation 2.04480. Variable inflation has minimum value 2.35% and maximum value 15%, mean has 8.7228% with standard deviation 2.78089.

Table 2. Descriptive Statistic Malaysia

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
GDP Growth (%)	25	-7.40	10.00	5.9640	3.92268
Interest rate	25	1.20	8.54	4.5592	1.83575
Inflation	25	1.57	3.00	2.0144	.38574
Valid N (listwise)	25				

Table 2. showed the minimum value of GDP growth is -7,40% and maximum value 10%, mean 5,96460% with 3,92268. Interest rate has minimum value 1,20% and maximum value is 8.54%, and mean is 4,5592% with standard deviation 1.83575. Variable inflation has minimum value 1.57% and maximum value 3%, mean has 2.0144% with standard deviation 0.38574.

Table 3. Descriptive Statistic Singapore

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
GDP Growth (%)	25	-2.20	15.20	6.3080	4.11257
Interest rate	25	1.13	13.90	6.1812	4.26476
Inflation	25	1.90	12.90	5.7000	3.31772
Valid N (listwise)	25				

Table 3. showed the minimum value of GDP growth is -2,20% and maximum value 15,20%, mean 6,3080% with 4,11257. Interest rate has minimum value 1,13% and maximum value is 13,90%, and mean is 6,1812% with standard deviation 4.26476. Variable inflation has minimum value 1.90% and maximum value 12,90%, mean has 5.700% with standard deviation 3.31772.

Result of Correlation Testing

The result of correlation testing of Indonesia as follows:

Table 4. Correlation Testing Indonesia

Correlations				
		GDP Growth (%)	Interest rate	Inflation
GDP Growth (%)	Pearson Correlation	1	.620**	.620**
	Sig. (2-tailed)		.001	.001
	N	25	25	25
Interest rate	Pearson Correlation	.620**	1	.494*
	Sig. (2-tailed)	.001		.012
	N	25	25	25
Inflation	Pearson Correlation	.620**	.494*	1
	Sig. (2-tailed)	.001	.012	
	N	25	25	25

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 4. showed that the correlation between GDP growth and interest rate is positive 0.620 with p-value 0.001 and significant in level 1%. The correlation between GDP

Growth and inflation is positive 0.620 with p-value 0.001 and significant in level 1%. The correlation between interest rate and inflation is positive 0.494 with p-value 0.012 and significant in level 5%. So the hypothesis accepted.

Table 5. Correlation Testing Malaysia

Correlations

		GDP Growth (%)	Interest rate	Inflation
GDP Growth (%)	Pearson Correlation	1	.815**	.624**
	Sig. (2-tailed)		.000	.001
	N	25	25	25
Interest rate	Pearson Correlation	.815**	1	.650**
	Sig. (2-tailed)	.000		.000
	N	25	25	25
Inflation	Pearson Correlation	.624**	.650**	1
	Sig. (2-tailed)	.001	.000	
	N	25	25	25

**. Correlation is significant at the 0.01 level (2-tailed).

Table 5. showed that the correlation between GDP growth and interest rate is positive 0.815 with p-value 0.000 and significant in level 1%. The correlation between GDP Growth and inflation is positive 0.624 with p-value 0.001 and significant in level 1%. The correlation between interest rate and inflation is positive 0.650 with p-value 0.000 and significant in level 1%. So the hypothesis accepted.

Table 6. Correlation Testing Singapore

Correlations

		GDP Growth (%)	Interest rate	Inflation
GDP Growth (%)	Pearson Correlation	1	.461*	.716**
	Sig. (2-tailed)		.020	.000
	N	25	25	25
Interest rate	Pearson Correlation	.461*	1	.604**
	Sig. (2-tailed)	.020		.001
	N	25	25	25
Inflation	Pearson Correlation	.716**	.604**	1
	Sig. (2-tailed)	.000	.001	
	N	25	25	25

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 6. showed that the correlation between GDP growth and interest rate is positive 0.461 with p-value 0.020 and significant in level 5%. The correlation between GDP Growth and inflation is positive 0.716 with p-value 0.000 and significant in level 1%. The correlation between interest rate and inflation is positive 0.604 with p-value 0.001 and significant in level 1%. So the hypothesis accepted.

Regression Analysis

Table 7. Regression Analysis Indonesia

Coefficientsa						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-6.788	2.570		-2.641	.015
	Interest rate	.850	.350	.415	2.427	.024
	Inflation	.624	.257	.415	2.426	.024

a. Dependent Variable: GDP Growth (%)

Table 7. showed that the variable interest rate has p-value 0.024 and significant in level 5%. The variable inflation has p-value 0.024 and significant in level 5%.

Table 8. Regression Analysis Malaysia

Coefficientsa						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-4.276	2,582		-1.656	.112
	Interest rate	1.514	.340	.709	4.458	.000
	Inflation	1.656	1.617	.163	1.024	.317

a. Dependent Variable: GDP Growth (%)

Table 8. showed that the variable interest rate has p-value 0.000 and significant in level 1%. The variable inflation has p-value 0.317 and not significant.

Table 9. Regression Analysis Singapore

Coefficientsa						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.175	1.250		.940	.358
	Interest rate	.044	.180	.046	.245	.809
	Inflation	.853	.231	.688	3.686	.001

a. Dependent Variable: GDP Growth (%)

Table . showed that the variable interest rate has p-value 0.809 and not significant. The variable inflation has p-value 0.001 < 0.01 and significant in level 1%.

CONCLUSION

The conclusion as follows: there is relationship between interest rate and economic growth and there any relationship between inflation and economic growth. Suggestions for future research is to add another variables that affecting economic growth such as exchange rates, crude oil price.

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