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ANALYSIS OF INFLATION AND INTEREST RATES ON THE ECONOMIC GROWTH IN INDONESIA

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ABSTRACT

This study aims to determine the effect of inflation and interest rate on economic growth in Indonesia and to determine the strategy of increasing economic growth in Indonesia. The data were analyzed using descriptive analysis and regression analysis. The descriptive analysis explained that the growth of inflation and interest rate. Based on regression analysis, there is a positive influence between inflation on economic growth and the negative influence between the interest rate on economic growth in Indonesia. Strategies for increasing economic growth through human resources, entrepreneurs, employment, investment, export, and infrastructure.

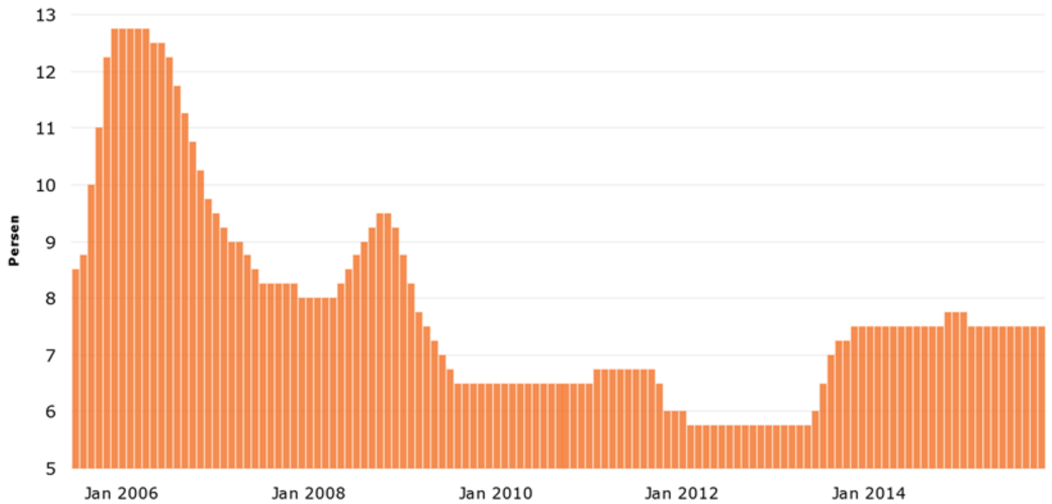
Keywords: inflation, interest rate, economic growth

Introduction

Historically, the level and volatility of inflation in Indonesia are higher than in other developing countries. While other developing countries experienced inflation rates of between 3-5 percent per year in the 2005-2014 period, Indonesia had an average annual inflation rate of around 8.5 percent in the same period. In 2015, the inflation rate was under control. This means that the government can reduce the money supply by increasing the interest rates and by reducing the budget for non-productive projects.

Figure 1. Rate of Inflation in Indonesia 2001-2016

Bank Indonesia (BI) opens an accommodative monetary policy space in line with low inflation and efforts to encourage domestic economic growth. Thus, the central bank can explicitly cut the benchmark interest rate going forward.



Source: Indonesian Central Bank, 2019

Figure 2. BI Rate Period 2006-2015

Lowering interest rates by the central bank will increase the investment so that it can increase economic growth.

Table 1. Inflation Rate dan BI Rate in Indonesia Period 2009-2018

Year	Inflation (%)	Interest Rate (%)
2009	2.78	6.5
2010	6.96	6.5
2011	3.79	6.75
2012	4.3	5.75
2013	8.36	7
2014	8.36	7.5
2015	3.35	7.5
2016	3.02	5.25
2017	3.61	4.5
2018	3.13	4.25

Source: Indonesian Central Bank, 2019

Economic growth is one achievement that is the main priority for a country. The government will do strategies that can support economic growth and achieve welfare for the community.

Table 2. Economic Growth in Indonesia Period 2009-2018

Year	Economic Growth (%)
2009	4,63
2010	6,22
2011	6,17
2012	6,03
2013	5,56
2014	5,01
2015	4,88
2016	5,03
2017	5,07
2018	5,17

Source: Central Bureau of Statistic, 2019

Indonesian economic growth in 2018 will grow by 5.17 percent. Growth occurs throughout the business field. The highest growth was achieved by the Other Services Business Field at 8.99 percent; followed by Company Services at 8.64 percent; and Health Services and Social Activities
by 7.13 percent.

Based on the source of Indonesian economic growth in 2018, the source of growth the highest came from the Manufacturing Industry Business Field by 0.91 percent; followed Large-Retail Trade, Car-Motorcycle Repair by 0.66 percent; Construction by 0.61 percent; Agriculture, Forestry, and Fisheries 0.50 percent; and information and Communication 0.36 percent. While Indonesian economic growth from the field of other businesses by 2.14 percent.

While Central Bank increases the interest rate it will reduce economic growth, as shown in the graph below. Based on historical data from Central Bank and the Central Bureau of Statistics, increasing in BI rate affects the decline in economic growth.

Based on the explanation above, the problems can be identified as follows :

1. How inflation influences on economic growth?
2. How interest rate influences on economic growth?
3. What strategies to increase economic growth?

The aims of this research can be identified :
1. The effect of inflation on economic growth
2. The effect of interest rate on economic growth
3. To determine the strategy in increasing economic growth

Literature Review and Empirical Studies

Dornbusch et al., (2008:39) Inflation is the rate of change in prices, and the price level is the cumulation of past inflations.
According to Latumaerissa (2011: 23) which can be grouped into several groups
- low Inflation (<10%)
- Moderate inflation (10% -30%)
- High inflation (30% -100%)
- Hyperinflation (>100%)

Boediono (2014:76), interest rate are prices of the use of loanable funds. The interest rate is one indicator in determining whether someone will invest or save. Mishkin (2008: 4), the interest rate is the cost of the loan or the agreed price for the loan.

Novianto (2011: 22), based on its shape, interest rate are divided into two types, namely: (1)The nominal interest rate is the interest rate in the value of money (2)The real interest rate is the interest rate is influenced by inflation

Economic growth is one indicator of development success. Economic growth is the process of increasing output per capita in the long run. So that economic growth is an increase, that it causes increasing on welfare (Sukirno, 2013)

Putong (2010:141), economic growth is an accretion on national income in a certain period.
The structuralists argue that inflation is important for growth in developing countries (Guru, 2015). In addition, decreasing the money supply leads to an increase in the unemployment rate which leads to a decrease in economic growth; inflation is detrimental to economic growth (Snowdon and Vane, 2005)

Observed facts of the exchange rate and interest rate management on macroeconomic variables that would culminate into economic growth are sluggish and not impressive let alone being sustainable (Obansa et al., 2013).

Mamo (2012), A negative correlation between inflation and economic growth. Ayo et al. (2012). In the long run, inflation has a negative effect on economic growth. Existence of the unidirectional causality running from economic growth to inflation.

Tabi and Ondoa (2011), Inflation, money, and economic growth in Cameroon. It is shown that the increase in money supply increases growth and that growth causes inflation; however, an increase in the money supply does not necessarily increase inflation. Sattarov (2011), Inflation and economic growth are positively related to the long-run relationship.

Mutinda (2014), The Effect of Lending Interest Rate on Economic Growth of Kenya. Lending interest has a strong bearing on economic growth; it is imperative that the government puts policies in place to check the interest rate. Udoka and Anyingang (2012), The Effect of Interest Rate Fluctuation on the Economic Growth of Nigeria. There existed an inverse relationship between the interest rate and economic growth in Nigeria, meaning that an increase in interest rates will decrease the GDP of the country, thus retarding the growth of the real sector. Maiga (2017), Impact of Interest Rate on Economic Growth in Nigeria. The result found that the interest rate has a slight impact on growth; however, the growth can be improved by lower the interest rate which will increase the investment. As a result of the study was found out that Nigerian authorities should set interest rate policies that will boost economic growth.

Wuri (2018), The Role of Investment in the Indonesian Economic Growth. The result of the research indicates that domestic investment and foreign investment variables have a long-term relationship with economic growth. In the short-term, domestic investment and foreign investment variables also show significant influences. There are positive and significant influences of domestic investment on economic growth. This research is expected to become a recommendation and information to the government and policymakers.

Methodology and Data

The data were analyzed using descriptive analysis and regression analysis. The descriptive analysis explained that the growth of inflation and interest rate.

The data used in this research is secondary data, inflation, interest rate, economic growth for the period 2009-2018 and other sources from Bank Indonesia and Badan Pusat Statistik (BPS)

Discussion on Empirical Results

Descriptive analysis

Table 3: Inflation, Interest Rate, dan Economic Growth in Indonesia Period 2009-2018

Year	Inflation (%)	Interest Rate (%)	Economic Growth (%)
2009	2.78	6.5	4.63
2010	6.96	6.5	6.22
2011	3.79	6.75	6.17
2012	4.3	5.75	6.03
2013	8.36	7	5.56
2014	8.36	7.5	5.01
2015	3.35	7.5	4.88
2016	3.02	5.25	5.03
2017	3.61	4.5	5.07
2018	3.13	4.25	5.17

Source: Process data, 2019

In 2009, the inflation rate was far below the target, which only reached 2.78 percent, this was caused by deflation in goods determined by the government, such as oil and electricity — inflation of 2.78 percent. So far, the inflation rate tended above 5 percent.

Bank Indonesia maintains a BI rate of 6,5 percent. Rising inflation is caused by a lack of food ingredients, especially rice, so the price of rice was increased. Moreover, to overcome rising inflation, Bank Indonesia raised interest rates. Bank Indonesia hopes that inflation will return to normal if food supply problems are resolved.

On the other hand, in 2010, inflation was increased to 6,96 percent. At the end of the year 2010, public optimism in 2011 hoped the world economy was recovering. Because inflation was high, it was caused by the rising of the price of food ingredient as rice, chili, and others.

The threat of inflation continues was raised. It caused Bank Indonesia to raised interest rates; however, if the interest rate was high, that credit was reduced. And then the investment was reduced too; it caused economic growth in Indonesia was low.

Because of extreme weather, it was continuous that rice supply was enough to fulfill national needs so that the government opens the door to import the rice. If the government did import the rice, and then the price of rice is low, and then inflation is low to 3,79 percent in 2011. The government sets import the rice before the harvest period so that rice price was not low.

Low inflation is 4,3 percent in 2012 from January until December was caused by the global price of food ingredient was low, and delay of increasing electricity tariff and BBM. On the other hand, the low price effect of global rice on to import food as soybean that caused the price of food was low.

Badan Pusat Statistik (BPS) reports that inflation was 8,38 percent in 2013. While the government's target on APBN is 7,2 percent. The main cause of increasing Bahan Bakar Minyak (BBM) is a premium Rp 6.500/liter and solar Rp 5.500/liter. BBM was the big contribute that caused inflation between the other.

Increasing the price of BBM made the price commodities was increased too. The transportation in the city contributed to inflation was 1,75 percent. The following is the list of a big push of inflation in 2013.

Table 4: List of the Factor of Inflation

The Factor of Inflation	Percentage
Bawang Merah	0,38
Tarif Listrik	0,38
Cabai Merah	1,31
Ikan Segar	0,3
Beras	0,2
Nasi Lauk	0,2
Rokok Kretek Filter	0,19
Tarif Angkutan Udara	0,19
Tarif Tukang Bukan Mandor	0,16
Upah Pambantu Rumah Tangga	0,1

Source: Central Bureau of Statistic, 2013

Bank Indonesia reports there were three factors in its height inflation in January 2014, which reaches 1,07 percent.

a. The effect of natural disasters that it many cities in Indonesia since the early years that make the price of food is raise. Every year tend inflation in January is high, which is caused by the production of food is reduced because of natural disasters like floods and volcanic leaks. That causes distribution, and food supply is hampered.
b. Increasing the price of LPG 12 Kg by Pertamina per 1 January 2014.
c. The decrease in the exchange rate makes the price of import good is costly.

While in 2016, inflation is 3,02 percent. According to Governor Deputy of Bank Indonesia, four factors make inflation was low in 2016.

1. There is good coordination between the government and Bank Indonesia
2. Aggregate supply exceeded aggregate demand
3. Control of stabilization of exchange rate
4. The expectation of the low inflation from the public

For the period 2008-2018, if inflation is low that Bank Indonesia will reduce interest rates to increase the money supply. Moreover, the low-interest rate will increase investment and then economic growth becomes better.

Regression Analysis

The data used in regression analysis is secondary data; there are inflation, interest rate and economic growth period 2009-2018.

Based on regression analysis, there is a positive influence between inflation on economic growth (0,103) and negative influence between interest rate on economic growth in Indonesia (-0,126)

$$\mathbf{Y = 5{,}694 + 0{,}099X1 - 0{,}126X2}$$

Table 5: Regression Analysis

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.285	1.113		4.749	.002
	Inflation	.097	.108	.374	.892	.402
	Interest rate	-.060	.207	-.121	-.289	.781

a. Dependent Variable: Economic Growth

Hypothesis testing results

1. Coefficient of determination

The coefficient of determination is used to measure the effectiveness of an independent variable on the dependent variable. In this study, which independent variables are inflation and interest rates and the dependent variable is economic growth.

Table 6: Determination Coeffisien of Economic Growth

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.327[a]	.107	-.148	.61830

a. Predictors: (Constant), Interest rate, Inflation

Based on the table, R^2 is 0,107. This value means that 10.7% of economic growth is influenced by inflation and interest rates while the remaining 89,3 % of economic growth variables are influenced by the other variables not examined in this study.

3. Partial test (T-Test)

Based on table 5, it is known that the sig.t value between the inflation (X1) and economic growth (Y) is equal to (0,402)> α = 0.05 and the sig.t value between the interest rate variables (X2) and (Y) is (0,781)> α = 0.05. This means that H_0 is accepted and H_0 is rejected, so it can be concluded that the dependent variable (Y) is not affected by the independent variables X1 and X2.

Implications for Business and Finance in Developing Countries Market

Sources of investment funding can come from within the country and from abroad. The government must be able to make foreign investors interested in investing their capital in Indonesia, as well as how to make the owners of capital in the country to continue to invest in Indonesia so that they do not invest their capital abroad. In this regard, the government must be able to prepare a conducive investment climate in the country (economic growth, interest rates, inflation, and domestic macroeconomic policies) so that economic actors feel safe in carrying out their activities.

In the context of the international economy, changes in interest rates can also affect the perceptions and interests of foreign investors to bring their funds into a country. For example, interest rates in Indonesia are higher than in other Southeast Asian countries, so foreign investors will be more interested in investing in Indonesia in the hope that they will get higher returns. Whereas if interest rates in Indonesia are lower, foreign investors will be less interested in investing here. If interest rates are too low, one of the domestic investors can go along with their funds to go abroad.

Strategies for increasing economic growth

To increase economic growth needs the effort of the government to develop all aspects. Economic growth supported by developed countries and global community prices. In the domestic, increasing investment and improving export.

The effort of the government to increase economic growth:

1. Increasing the quality of human resources

   In 2018 the government made significant investments to increase the quality of human resources. The budget for education reaches Rp. 444 trillion is 20 percent of APBN. From 250 million population is 60 percent, young adult. The government starts providing infrastructure in the many schools, quality of teacher, adaptive, adjustment majoring in school with industry, etc. Expected community education will be raise and able to compete with another country.

2. The increasing amount of entrepreneur

   The entrepreneur is one of the makers of employment that can increase the economy in the country. In 2017 the amount of entrepreneur Indonesia reached 3,1 percent of population. That is still far below Malaysia, with a ratio of 5 percent and Singapura 7 percent. While developed countries as Jepang and America have ratio of entrepreneur reach 11 and 12 percent. To increase the number of entrepreneurs, the government makes skim cheap credit as KUK (Kredit Usaha Kecil) with interest rate 9 percent. Lembaga Pengelola Dana Bergulir (LPDP) with interest rate 0,2-0,3 percent or Kredit Ultra Mikro that has loan maximal 10 million. That is one of stage the government hook young adult to start the business although in college

3. Make the new employment

Unemployment in Indonesia reaches 5,5 percent. That is pushed the contribution of the education sector can make labor that has the skill and can compete with foreign labor. The stage of government to reduce unemployment is to make an internship program in the service sector and give coaching skills. This way is an effort to facilitate the labor with hope participants already skills and professionals in the enter job market. Information development and technology of the internet can help a startup that makes the new employment. For example transportation as "Gojek" can allow the public to work rapidly.

4. Increasing investment

   Investment from the other country can be increasing development and economic growth. Capital investment can use the government to repaired infrastructure and advance the welfare of people. The government prepares strategies for convenience of investment in Indonesia:

   - Licencing process. To used technology of the internet with the licensing process rapidly
   - Optimize tax allowance dan tax holiday rapidly
   - Free up PPN (Pajak Pertambahan Nilai) for import of transportation
   - Gives deposit interest tax the lower one by an exporter
   - Full support from local government

5. Increasing the value of export

   - Expand export market until South Afrika, Irak, Bangladesh dan India.
   - Expand to nontraditional market
   - Diversification product, for example, halal product, wood products
   - Give incentive to entrepreneur UMKM, example tax cost, promotion cost
   - To increase the relationship of central government with local government
   - Cooperation between a nation on trade, for example, Free Trade Agreement (FTA), 2017 Indonesia had cooperation on international trade with Uni Eropa, Australia, Jepang, Pakistan, Iran, dan Chile.

6. Repair of infrastructure

   - The government keeps improving infrastructure development overall from Sumatra until Papua. Poor infrastructure influences attractiveness investment in Indonesia. The problem that might arise as high-cost transportation, power outage etc.
   - Of infrastructure aims to reduced cost of logistic. The high logistics cost can inhibit economic growth in a remote area. The big population can be a challenge for the government in infrastructure development.

Conclusion

The conclusion of this research is as follows: inflation has a positive effect on economic growth (0,103) if inflation is high and then economic growth will be raise. The interest rate has a negative effect on economic growth (-0,126). If the interest rate is high and then economic growth will be down. Strategies for increasing economic growth through human resources, entrepreneurs, employment, investment, export, and infrastructure.

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