
THE IMPACT OF LENDING INTEREST AND DEPOSIT INTEREST ON INFLATION RATE IN AUSTRALIA, SOUTH KOREA, AND INDONESIA

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Abstract

This study aims to analyze the effect of lending rate and deposit interest rate to inflation rate in Australia, South Korea, and Indonesia. This paper observed 42 data with 3 cross-section countries which have the Financial Services Authority. This paper utilizes lending rate, deposit interest rate, and inflation (consumer price index) generated from World Bank from 2004 to 2017. This paper employs panel data method. Chow test result revealed that the lending rate has a positive effect on the inflation rate. Meanwhile, the deposit interest rate has a negative relationship with the inflation rate. The F test simultaneously revealed that the Prob (F-statistic) value is 0.0000 which < 0.05 . Thus, the independent variable simultaneously affects the dependent variable. Meanwhile, the partial T-test revealed that the t table is less than t calculated that is $3.296102 > 2.02269$. Thus, it rejects the null hypothesis (H_0). It means that the lending rate has a positive effect on the inflation rate. Meanwhile, the t calculated of deposit interest rate is less than t table that is $-2.497266 < 2.02269$. Thus, the null hypothesis (H_0) is accepted. It indicates that the deposit interest rate affects inflation rate negatively.

Keywords: lending interest, deposit interest, inflation

Introduction

There is various research about factors determines the inflation rate. A study by Langi *et al.*, (2014) stated that the Central bank of Indonesia interest rates affects inflation positively significant. The study is different from Deviana (2014) which stated that the Central bank of Indonesia interest rates affects inflation negatively significant. These two studies then concluded by Rahmawati Dwi and Hidayat Wahyu (2017) which stated that the Central Bank of Indonesia affects inflation rate negatively or positively significant both in short and long term.

However, many research only describes how Central Bank of Indonesia's interest rates affect the changes in the inflation rate without considering that the changing the Central Bank's interest rate also change the policies of each banking institution in determining the lending rates and deposit rates that lead to the change in the inflation rate in a certain year. This research was conducted to observe how the role of lending rates and deposit rates affect the inflation rate in 3 countries that have an agreement in the economic field, that are Australia, South Korea, and Indonesia.

A study by Deviana (2014) stated that a stable economy both in a developed and developing country can be seen in from the price stability or inflation rate where there is a price fluctuation will cause losses for producers and consumers. This will also cause a disrupted economy. People do not have the motivation to work, increasing unemployment, lack of interest in saving and various other economic instability. The change in inflation rate in Australia, South Korea, and Indonesia is also affected by interest rate. The interest rate can be a lending rate or deposit interest rate. Higher lending and deposit interest rate will lead to an increasing number of savings. Meanwhile, a lower lending rate will lead to an increasing number of small, medium enterprises and also the large company in expanding their business. The large interest rates offered by banks will greatly affect the use of money by the public both individuals and entrepreneurs. According to (Kuncoro, 2015) an indicator in measuring the inflation rate is the Consumer Price Index (CPI). The changes in CPI every time shows changes in the prices of commodities consumed by the public. The determination of the goods and services is carried out through a cost of living survey conducted by various survey agencies in each country.

The global financial crisis in 2008 affects not only the global economy but also in the Australia economy. This condition has an impact on direct and indirect investment and also on trade. The monetary crisis generally described as a condition where money demand exceeds the money supply. It shows the liquidity is quickly evaporating because the money in the market is withdrawn from the bank. The higher change of deposit interest rate does not lead to a better market. Monetary crisis according to (Busuioc-Witowski, 2010) has three forms that are: currency, banking, and foreign debt. Research by (Kaminsky dan Reinhart, 1999) classifying financial crises into three forms, namely the exchange rate crisis, the banking crisis, and the twin crisis or crisis that simultaneously originates from the banking and exchange rate. When GFC (The Global Financial Crisis) spread throughout the world, Australia was in good fiscal status and has no foreign debt. GFC is one of the biggest crisis conditions due to its impact that make many countries difficult to stabilize their economy. The financial crisis will lead to an economic crisis for a country that is experiencing a decline in GDP, drying up liquidity, and up and down due to inflation or deflation. Australia also has a factor that makes this country sensitive to GFC impacts.

A study by Priestley (2010) explained Australia's growth that has increased and until 2009 the recession did not happen in Australia as the other country. The role of Australian Central Bank is to maintain the liquidity by applying *Lender Of Last Resort (LOSR)* where the financial institutions in Australia are refusing to provide the lending. This policy affects investment rate, consumption, and government expenditure. Another factor is the agreement with China that continues despite the crisis. These two countries commit to carrying on economic consolidation. Australia admits that China is becoming the main market in Australia.

South Korea is known as its economy and technology that growth rapidly. The rapid growth in South Korea is inseparable from government intervention in financial markets and international trade. Since the administration of President Park Chung Hee in 1961, the industrialization of the country has been export-oriented (Arungbudoyo, 2015). Industry orientation has changed from light industry to heavy industry. During his administration, various work programs were implemented such as the Saemaul Undong Movement, the Five-Year Development Plan, the

Economic Planning Board (EPB), as well as various policies such as Export-Oriented Industrialization (EOI) Policy and Heavy Chemical Industry (HCI) Policy. Research by Mochtar (1996) cited by Putri (2018) explained that the Saemaul Undong Movement was a movement that aimed to develop and modernize rural areas. The program is by forming cooperation with low-interest rates based on local initiatives, labor utilization, as well as material and work skills. The program aims to raise the spirit of independence, cooperation and mutual assistance to improve the standard of living of the people in the local village. The impact of this movement is progress in the agricultural sector, a reduced unemployment rate, increased investment in rural areas, and a drastic increase in household income within 10 years.

In Indonesia, a high increase in inflation occurred during the monetary crisis in 1998 which caused the Indonesian economy to become unstable. The inflation increases by 77,63 %. According to Atmaja (1999:63) cited by Langi *et al.*, (2014:45) stated that the high increase of inflation is caused by the imported commodity and the increase in foreign debt as a result of the exchange rate of the rupiah which has been depreciated by the US dollar and other currencies. Exchange rate stability on foreign currency especially the American dollar is the first step to control the inflation rate. However, Inflation Targeting Framework (ITF) by monetary authority is fairly effective to obtain the low and stable inflation rate. In 2005, the application of ITF became a reference for changes in the post-crisis monetary policy framework. In principle, the monetary policy framework adopts a policy framework to be more credible and makes the application of interest rates as operational targets and its policies are anticipatory. This is expected to encourage a decrease in inflation persistence (Langi *et al.*, 2014).

Lending rate, deposit interest rate, and inflation rate in Australia, South Korea, and Indonesia can be seen in table 1.1 below:

Table 1.1 Lending Interest, Deposit Interest, and Inflation in Australia, South Korea and Indonesia (%)

| Country | Year | CPI | Lending Interest | Deposit Interest |
|-------------|------|--------|------------------|------------------|
| Australia | 2004 | 2.3433 | 6.6125 | 3.5083 |
| Australia | 2005 | 2.6919 | 7.0500 | 3.8500 |
| Australia | 2006 | 3.5553 | 7.2583 | 3.8917 |
| Australia | 2007 | 2.3275 | 7.6125 | 4.0625 |
| Australia | 2008 | 4.3504 | 8.1958 | 4.5292 |
| Australia | 2009 | 1.7711 | 8.9083 | 4.7250 |
| Australia | 2010 | 2.9184 | 6.0208 | 3.0792 |
| Australia | 2011 | 3.3039 | 7.2792 | 4.2125 |
| Australia | 2012 | 1.7628 | 7.7375 | 4.3375 |
| Australia | 2013 | 2.4498 | 6.9750 | 3.9167 |
| Australia | 2014 | 2.4879 | 6.1792 | 3.2500 |
| Australia | 2015 | 1.5083 | 5.9500 | 2.9042 |
| Australia | 2016 | 1.2770 | 5.5750 | 2.3042 |
| Australia | 2017 | 1.9487 | 5.4208 | 2.1417 |
| South Korea | 2004 | 3.5907 | 6.2367 | 4.2508 |

| | | | | |
|-------------|------|---------|---------|---------|
| South Korea | 2005 | 2.7540 | 5.9042 | 3.8742 |
| South Korea | 2006 | 2.2418 | 5.5933 | 3.7217 |
| South Korea | 2007 | 2.5350 | 5.9875 | 4.5033 |
| South Korea | 2008 | 4.6737 | 6.5517 | 5.1742 |
| South Korea | 2009 | 2.7567 | 7.1683 | 5.8708 |
| South Korea | 2010 | 2.9392 | 5.6492 | 3.4825 |
| South Korea | 2011 | 4.0258 | 5.5117 | 3.8567 |
| South Korea | 2012 | 2.1872 | 5.7575 | 4.1525 |
| South Korea | 2013 | 1.3014 | 5.3958 | 3.7008 |
| South Korea | 2014 | 1.2747 | 4.6433 | 2.8908 |
| South Korea | 2015 | 0.7061 | 4.2633 | 2.5358 |
| South Korea | 2016 | 0.9717 | 3.5333 | 1.8092 |
| South Korea | 2017 | 1.9445 | 3.3675 | 1.5575 |
| Indonesia | 2004 | 6.0640 | 16.9350 | 10.5900 |
| Indonesia | 2005 | 10.4532 | 14.1242 | 6.4433 |
| Indonesia | 2006 | 13.1086 | 14.0508 | 8.0792 |
| Indonesia | 2007 | 6.4066 | 15.9792 | 11.4108 |
| Indonesia | 2008 | 10.2266 | 13.8617 | 7.9758 |
| Indonesia | 2009 | 4.3864 | 13.5983 | 8.4925 |
| Indonesia | 2010 | 5.1342 | 14.4983 | 9.2783 |
| Indonesia | 2011 | 5.3560 | 13.2516 | 7.0167 |
| Indonesia | 2012 | 4.2796 | 12.4033 | 6.9308 |
| Indonesia | 2013 | 6.4125 | 11.7950 | 5.9467 |
| Indonesia | 2014 | 6.3949 | 11.6575 | 6.2642 |
| Indonesia | 2015 | 6.3631 | 12.6050 | 8.7525 |
| Indonesia | 2016 | 3.5258 | 12.6625 | 8.3367 |
| Indonesia | 2017 | 3.8088 | 11.8883 | 7.1659 |

Source: World Bank, 2019

a. Deposit Interest

Deposit stated as saving which can be made at a certain time according to an agreement made with the bank as stated by (Purnamahadi, 2011) in Act Number 10 of 1998. Deposits have a term and can be withdrawn after the due date. Deposit rates are relatively higher when compared to savings rates. Deposit rates are given following market developments and are given monthly according to the due date. Savings in the form of deposits are also long-term or short-term investments. Savings deposits have due date choices that are one month, three months, six months, twelve months and twenty-four months. If savings deposits are disbursed before the due date, then a penalty will be imposed according to the policies of each bank.

The customer money deposited as savings deposits in each bank has different interest rates between banks. Savings deposits that have met the requirements are guaranteed by the

government from the risk of default by certain banks. This condition will make customers feel safe in saving their money as savings deposits for one, three, six, twelve or two months.

b. Lending Interest

According to Karl dan Fair (2001: 635), the lending interest is the annual interest payment from a debtor lending in the form of a percentage of the lending obtained from the amount of interest received each year divided by the lending amount. Lending interest can also be explained as bank profits received from borrowing some money by the debtor which will be used as capital for the development of certain businesses. Credit facilities still dominate as income for each bank in operation in Indonesia from the balance sheet. It implies that the policy of lending rates becomes a very important and strategic policy. Thus, in terms of determining the interest rate, various factors should be considered and supported by a good calculation and recording system.

c. Inflation

Inflation is the average price of good and services in an economy increases over the period. When the increasing price only happens to several goods and services, it can not be described as inflaton. There are descriptions of inflation from economist experts :

- Gardner Ackley in Iswardono (1997) stated that inflation is a continuous increase in the prices of goods and services.
- Venieris and Sebold in Anton Herman to Gunawan (1991), explained inflation as the tendency of increasing prices over a while. When the increase in price happens only once, it cannot be described as inflation.

Inflation is determined by :

- Inflation arising from the demand for strong goods or also called Demand-Pull Inflation. This condition occurs because aggregate demand rises when the economy is in full employment. Thus, the increase in demand does not encourage an increase in production, but only encourages an increase in price or also called pure inflation.
- Inflation arising from rising production costs or also called Cost-Push Inflation. This condition occurs because the aggregate supply is reduced. It means that the supply level is lower than the demand level. Aggregate supply decreases due to an increase in production costs.

Inflation that occurs due to the budget deficit can be overcome by printing new money is inflation originating from within the country (domestic inflation). Meanwhile, the inflation that occurs due to increase price in other countries that have a trade relationship is called imported inflation. This condition will cause an increase in domestic daily costs (due to an increase in import costs) and also an increase in production costs (for imported machinery). Inflation will affect many factors including:

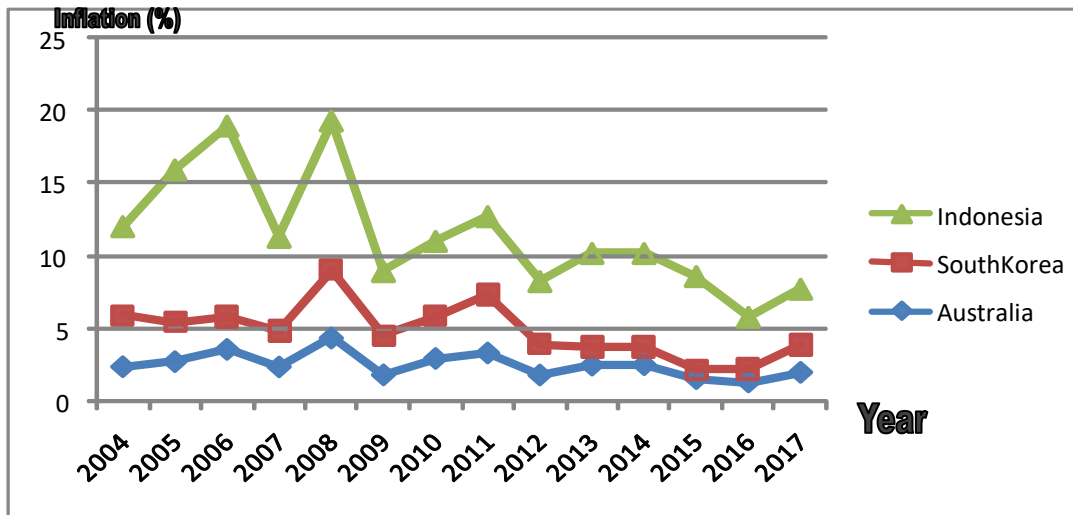
a. The change in income level

When inflation occurs, people who have a fixed income will find it difficult to buy various needs. However, for some entrepreneurs, rising prices will increase production and open employment and lead to increased economic growth. Changes in income level

b. Changes in interest rates and interest in saving

When inflation occurs, people's desire for saving will decrease due to the increased cost of living necessities. There will be a tendency for an increase in deposit interest rates to increase interest in saving and a decrease in lending rates to increase the entrepreneur's response to increasing business development capital. However, if deposit interest rates and inflation rates are in the same position, then the public interest in saving will decrease.

Figure 1.1. Inflation in 3 Countries



Source: World Bank, 2019

Research Method

The research framework in this study explains the impact of lending rate on inflation rate in three countries that are Indonesia, Australia, and South Korea. The second analysis is the impact of deposit interest rate in inflation rate in the 3 countries.

Figure 2.1. Theoretical Framework

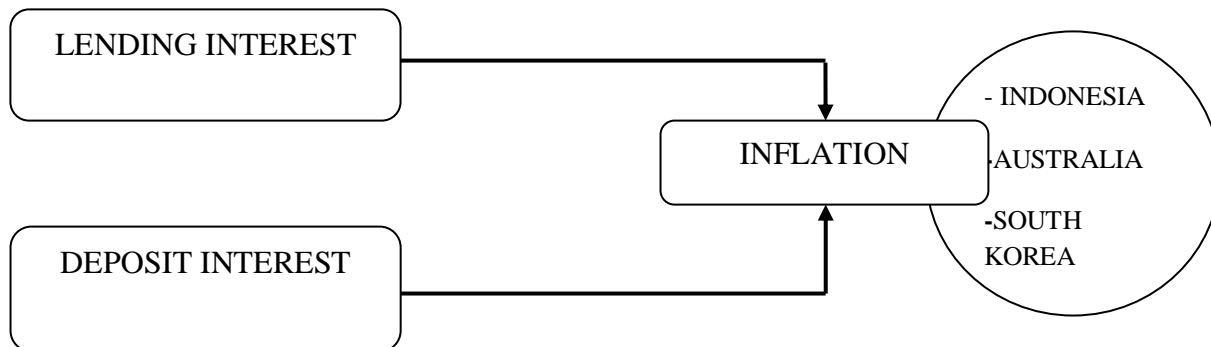


Figure 2.1 explains the dependent and independent variable. The dependent variable of this study is inflation. The independent variable from this study is lending rates and deposit interest rates. Based on interest rate theory, the lending rate has a positive relationship with the change in the

inflation rate. When lending interest getting lower, businessman tends to expand their business by prolonging lending application that leads to the decreasing inflation. Meanwhile, when the deposit interest rate increase then the people who have the funds will choose deposits to obtain deposit interest as a profit. Thus, the consumption level will decrease that leads to a decrease in the inflation rate

This study employs panel data which is the combination of cross-section and time-series data. The value of one variable In cross-section is collected for several units of observation N at one time T. The equation from the panel data method is as follows:

$$Y_{it} = \beta_1 + \beta_2 X_{1it} + \beta_3 X_{2it} + \mu_{it} \dots\dots\dots (1)$$

$$i = 1, 2, 3 \dots N$$

$$t = 1, 2, 3 \dots T$$

where:

- Y_{it} = dependent variable
- $\beta_{1,2,3}$ = intercept
- $X_{1,2}$ = independent variable
- i = *time series* data
- t = *cross section* data
- N = the number of *cross section*
- T = the number of *time series*

Before running panel data regression, several tests are first performed to determine the most appropriate model. According to Gujarati (2004), three models can be employed, they are Common Effects Model (Panel Least Squares), Fixed Effect Model, and Random Effect Model. The first step is performing Common Effect Model. Then, Fixed Effect Model is performed, and after obtaining the results, a Chow Test will be conducted to determine whether the Common Effect Model is the best compared to the Fixed Effect Model or vice versa. The $F_{table} > F_{statistic}$ rejects the null hypothesis (H_0) which means that the appropriate model is the Fixed Effect. When the $F_{statistic} > F_{table}$, H_1 is rejected, which means that the Common Effect Model is the most appropriate.

If the results in the Chow Test stage show that the Fixed Effect is the most appropriate model, it will proceed to the Hausman Test stage to compare whether the Fixed Effect or Random Effect is the best. If the statistical value is better than the critical value, then H_1 is accepted and the most appropriate method is Fixed Effect. If the critical value is better than the statistical value, then H_0 is accepted, which means that Random Effect is the most appropriate. If the Chow Test results show that the Common Effect is the most appropriate, then directly to the next stage, the Lagrange Multiplier Test to compare the best between Common Effects or Random Effects. Lagrange Multiplier Test is determined by looking at the probability (P) value. If the value of $P < 0.05$ then H_1 is accepted, which means that the Random Effect is the most appropriate. If the value of $P > 0.05$, then H_0 is accepted, then it means Common Effect is the most appropriate. The equation of the effect of lending interest rates and deposit interest rates on the inflation rate is as follows:

$$Y = f(X_1, X_2) \dots\dots\dots (2)$$

The equation is as follows:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + e$$

Where:

α : Constanta

$\beta_{1,2}$: Coefficient from each independent variable

X_1 : Lending interest

X_2 : Deposit Interest

i: Cross Section

t: Time Series

e: Random error

Result and Discussion

The impact of lending rate, deposit interest rates on inflation rate in three countries (Australia, South Korea, and Indonesia).

Table 3.1. Common Effect Model

Dependent Variable: Y
 Method: Panel Least Squares
 Date: 06/07/19 Time: 03:01
 Sample: 2003 2016
 Periods included: 14
 Cross-sections included: 3
 Total panel (balanced) observations: 42

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|--------|
| C | -0.855636 | 0.666649 | -1.283488 | 0.2069 |
| X1 | 0.805494 | 0.222029 | 3.627872 | 0.0008 |
| X2 | -0.441622 | 0.345507 | -1.278183 | 0.2087 |
| R-squared | 0.601697 | Mean dependent var | 3.821883 | |
| Adjusted R-squared | 0.581271 | S.D. dependent var | 2.645293 | |
| S.E. of regression | 1.711749 | Akaike info criterion | 3.981658 | |
| Sum squared resid | 114.2733 | Schwarz criterion | 4.105777 | |
| Log-likelihood | -80.61482 | Hannan-Quinn criter. | 4.027153 | |
| F-statistic | 29.45771 | Durbin-Watson stat | 1.718124 | |
| Prob(F-statistic) | 0.000000 | | | |

Source : Processed Data

Table 3.2. Fixed Effect Model

Dependent Variable: Y
 Method: Panel Least Squares
 Date: 06/07/19 Time: 03:04
 Sample: 2003 2016
 Periods included: 14
 Cross-sections included: 3
 Total panel (balanced) observations: 42

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------|-------------|------------|-------------|--------|
| C | -3.013775 | 2.112544 | -1.426610 | 0.1621 |
| X1 | 1.448379 | 0.439422 | 3.296102 | 0.0022 |
| X2 | -1.102107 | 0.441326 | -2.497266 | 0.0171 |

Effects Specification

Cross-section fixed (dummy variables)

| | | | |
|--------------------|-----------|-----------------------|----------|
| R-squared | 0.658047 | Mean dependent var | 3.821883 |
| Adjusted R-squared | 0.621079 | S.D. dependent var | 2.645293 |
| S.E. of regression | 1.628351 | Akaike info criterion | 3.924357 |
| Sum squared resid | 98.10655 | Schwarz criterion | 4.131222 |
| Log-likelihood | -77.41149 | Hannan-Quinn criter. | 4.000181 |
| F-statistic | 17.80049 | Durbin-Watson stat | 1.887770 |
| Prob(F-statistic) | 0.000000 | | |

Source: Processed Data

Table 3.3. Chow Test

Redundant Fixed Effects Tests

Equation: Untitled

Test cross-section fixed effects

| Effects Test | Statistic | d.f. | Prob. |
|--------------------------|-----------|--------|--------|
| Cross-section F | 3.048579 | (2,37) | 0.0595 |
| Cross-section Chi-square | 6.406644 | 2 | 0.0406 |

Cross-section fixed effects test equation:

Dependent Variable: Y
 Method: Panel Least Squares
 Date: 06/07/19 Time: 03:08

Sample: 2003 2016
 Periods included: 14
 Cross-sections included: 3
 Total panel (balanced) observations: 42

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|--------|
| C | -0.855636 | 0.666649 | -1.283488 | 0.2069 |
| X1 | 0.805494 | 0.222029 | 3.627872 | 0.0008 |
| X2 | -0.441622 | 0.345507 | -1.278183 | 0.2087 |
| R-squared | 0.601697 | Mean dependent var | 3.821883 | |
| Adjusted R-squared | 0.581271 | S.D. dependent var | 2.645293 | |
| S.E. of regression | 1.711749 | Akaike info criterion | 3.981658 | |
| Sum squared resid | 114.2733 | Schwarz criterion | 4.105777 | |
| Log-likelihood | -80.61482 | Hannan-Quinn criter. | 4.027153 | |
| F-statistic | 29.45771 | Durbin-Watson stat | 1.718124 | |
| Prob (F-statistic) | 0.000000 | | | |

Source: processed data

The probability value of the Chow Test is 0.0406. It is significantly different from α 0.05. It implies that the test rejects the null hypothesis (Ho). Thus, the FEM model is the most appropriate.

Table 3.4. Random Effect Model

Dependent Variable: Y
 Method: Panel EGLS (Cross-section random effects)
 Date: 06/07/19 Time: 03:12
 Sample: 2003 2016
 Periods included: 14
 Cross-sections included: 3
 Total panel (balanced) observations: 42
 Swamy and Arora estimator of component variances

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------|-------------|------------|-------------|--------|
| C | -0.855636 | 0.634169 | -1.349223 | 0.1850 |
| X1 | 0.805494 | 0.211212 | 3.813678 | 0.0005 |
| X2 | -0.441622 | 0.328674 | -1.343646 | 0.1868 |

Effects Specification

| | S.D. | Rho |
|----------------------|----------|--------|
| Cross-section random | 3.63E-08 | 0.0000 |

Idiosyncratic random 1.628351 1.0000

Weighted Statistics

| | | | |
|--------------------|----------|--------------------|----------|
| R-squared | 0.601697 | Mean dependent var | 3.821883 |
| Adjusted R-squared | 0.581271 | S.D. dependent var | 2.645293 |
| S.E. of regression | 1.711749 | Sum squared resid | 114.2733 |
| F-statistic | 29.45771 | Durbin-Watson stat | 1.718124 |
| Prob (F-statistic) | 0.000000 | | |

Unweighted Statistics

| | | | |
|-------------------|----------|--------------------|----------|
| R-squared | 0.601697 | Mean dependent var | 3.821883 |
| Sum squared resid | 114.2733 | Durbin-Watson stat | 1.718124 |

Source: processed data

Table 3.5. Hausman Test

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
|----------------------|-------------------|--------------|--------|
| Cross-section random | 6.097158 | 2 | 0.0474 |

Cross-section random effects test comparisons:

| Variable | Fixed | Random | Var(Diff.) | Prob. |
|----------|-----------|-----------|------------|--------|
| X1 | 1.448379 | 0.805494 | 0.148481 | 0.0952 |
| X2 | -1.102107 | -0.441622 | 0.086742 | 0.0249 |

Cross-section random effects test equation:

Dependent Variable: Y

Method: Panel Least Squares

Date: 06/07/19 Time: 03:15

Sample: 2003 2016

Periods included: 14

Cross-sections included: 3

Total panel (balanced) observations: 42

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------|-------------|------------|-------------|--------|
| C | -3.013775 | 2.112544 | -1.426610 | 0.1621 |
| X1 | 1.448379 | 0.439422 | 3.296102 | 0.0022 |
| X2 | -1.102107 | 0.441326 | -2.497266 | 0.0171 |

Effects Specification

Cross-section fixed (dummy variables)

| | | | |
|--------------------|-----------|-----------------------|----------|
| R-squared | 0.658047 | Mean dependent var | 3.821883 |
| Adjusted R-squared | 0.621079 | S.D. dependent var | 2.645293 |
| S.E. of regression | 1.628351 | Akaike info criterion | 3.924357 |
| Sum squared resid | 98.10655 | Schwarz criterion | 4.131222 |
| Log-likelihood | -77.41149 | Hannan-Quinn criter. | 4.000181 |
| F-statistic | 17.80049 | Durbin-Watson stat | 1.887770 |
| Prob(F-statistic) | 0.000000 | | |

Source: Processed data

The Hausman test revealed that the probability score is $0.0474 < 0.05$. The test fails to reject the H_1 hypothesis. It implies that the FEM model is more suitable.

Table 3.6. Fixed Effect Model

Dependent Variable: Y
 Method: Panel Least Squares
 Date: 06/07/19 Time: 03:04
 Sample: 2003 2016
 Periods included: 14
 Cross-sections included: 3
 Total panel (balanced) observations: 42

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------|-------------|------------|-------------|--------|
| C | -3.013775 | 2.112544 | -1.426610 | 0.1621 |
| X1 | 1.448379 | 0.439422 | 3.296102 | 0.0022 |
| X2 | -1.102107 | 0.441326 | -2.497266 | 0.0171 |

Effects Specification

Cross-section fixed (dummy variables)

| | | | |
|--------------------|-----------|-----------------------|----------|
| R-squared | 0.658047 | Mean dependent var | 3.821883 |
| Adjusted R-squared | 0.621079 | S.D. dependent var | 2.645293 |
| S.E. of regression | 1.628351 | Akaike info criterion | 3.924357 |
| Sum squared resid | 98.10655 | Schwarz criterion | 4.131222 |
| Log-likelihood | -77.41149 | Hannan-Quinn criter. | 4.000181 |
| F-statistic | 17.80049 | Durbin-Watson stat | 1.887770 |
| Prob(F-statistic) | 0.000000 | | |

Source: Processed data

Table 3.6 showed that:

1. The data is significant. It can be seen from the probability value of lending rate that is 0.0022 (It means that the probability value is < 0.05 . Thus, lending credit interest has a positive significant relationship with the inflation rate). The text explains that the higher lending rate will lead to a higher inflation rate. A 1% increase in interest rate will lead to 1.448379 % increase in inflation rate with assuming that the other variable is zero.
2. The data is significant. It can be seen from the probability value of the deposit interest rate that is 0.0171 (It means that the probability value is < 0.05 . Thus, the deposit interest rate has a negatively significant relationship with inflation). The text explains that the higher deposit interest rate will lead to lower inflation. A 1% increase in deposit interest rate will lead to a 1.102107% decrease in inflation rate with assuming that the other variable is zero.
3. The correlation value is 0.658047 (R-Squared or Adjusted R-Squared). Thus, independent variables explain the relationship with the dependent variable of 65%.
4. F-Test result revealed that the probability value of F-statistic is 0.000 which < 0.05 . it can be concluded that the independent variable affects the dependent variable simultaneously. Thus, it rejects the null hypothesis (H_0)
5. The partial T-Test revealed that :
 - a. The result revealed the t table value of lending rate is less than t calculated that is 2.02269 and 3.296102 respectively. Thus, it rejects the null hypothesis (H_0) and interest rate have a positive relationship with the inflation rate.
 - b. The result revealed that the deposit interest rate has t calculated value less than t table that is -2.497266 and 2.02269 respectively. Thus, it accepts the null hypothesis (H_0) and deposits interest rate have a negative relationship with the inflation rate.

Conclusion

This paper conclude that the Probability value of *Cross-section Chi-square* is 0,04 which $< 0,05$. It implies that the Fixed Effect is the most appropriate model. The result of the Fixed Effect Model, F-test, and T-test above revealed that lending interest affects the inflation rate positively significant. It showed that higher lending rate will lead to an increase in the inflation rate. Meanwhile, deposit interest affects the inflation rate negatively. It indicates that the increasing deposit interest rate leads to the decreasing inflation rate. This study showed that sustainable policy is necessary for controlling lending and deposit interest rates. Thus, the inflation rate is still constantly under control in Australia, South Korea, and Indonesia.

This study still needs improvement and further development to make better understanding in term of the factors that influence changes in lending rates, deposit rates, and inflation rates in 3 countries, that are Australia, South Korea, and Indonesia with a longer period of time with the aim of policy decisions monetary policy in accordance with the economic conditions of each country.

References

- Adwin S. Atmadja. *Inflasi indonesia :Sumber sumber Penyebab Dan pengendaliannya Jurnal Akuntansi dan Keuangan* Vol. 1, No. 1, Mei 1999 Universitas Kristen Petra.
- Busuioc-Witowski. 2010. *Theories about financial crises*. Studies and Scientific Researches. Economics Edition, 2010, issue, 15., 33.
- Case, Karl E., And Ray C, fair.2001. *Principles of Macroeconomics* Paperback Departemen Keuangan; DEPKOMINFO; BAPPENAS. (2008). *Memahami Krisis Keuangan Global: Bagaimana harus bersikap*. Jakarta.
- Deviana, Nyimas.2014.*Analisis Pengaruh Suku Bunga SBI, Suku Bunga Kredit dan Nilai Tukar terhadap Inflasi di Indonesia Periode Tahun 2006-2012*.Vol 12,No.2,Desember 2014.ISSN: 1829-5843. Jurnal Ekonomi Pembangunan. Jakarta: Universitas Sriwijaya
- Frederic S.Mishkin (2009). *The Economics Of Money, Banking And financial Market*. Edisi ke 8 Penerbit Salemba empat.
- Gujarati, Damodar N. 2007. *Dasar-Dasar Ekonometrika* Edisi Ketiga Jilid 1. Jakarta: Erlangga.
- Gujarati, Damodar N. dan Porter, Dawn C. 2015. *Dasar-Dasar Ekonometrika* Edisi Kelima Buku 2. Jakarta:Salemba Empat
- Gunawan, Anton Hermanto. 1991. *Anggaran Pemerintah dan Inflasi di Indonesia*. Jakarta: PT Gramedia Pustaka Utama.
- Indriyani, Siwi Nur. 2016. *Analisis Pengaruh Inflasi dan Suku Bunga Terhadap Pertumbuhan Ekonomi di Indonesia Tahun 2005 – 2015*. Vol.4.No.2 Mei 2016. ISSN: 2338-4794. *Jurnal*. Jakarta: Universitas Krisnadwipayana.
- Iwardono.1997. *Uang dan Bank*. Edisi 4. Yogyakarta: BPFE Kaminsky, G., & Reinhart, C. 1999. *The Twin Crisis: The Cause of Banking and Balance-of-Payments Problems*. American Economic Review, 473-500.
- Langi, Theodores M et al. 2014. *Analisis Pengaruh Suku Bunga BI, Jumlah Uang Beredar dan Tingkat Kurs Terhadap Tingkat Inflasi di Indonesia*. Vol 14 No.2 Mei 2014. Jurnal Berkala Ilmiah Efisiensi
- Mankiw, N. Gregory N. 2003. *Teori Makroekonomi Terjemahan*. Jakarta: PT. Gramedia Pustaka Utama
- Mankiw, N. Gregory. et al. 2013. *Pengantar Ekonomi Makro*, Edisi Asia. Jakarta: Salemba Empat.
- Nachrowi, N. Djalal dan Hardius Usman.2006. *Pendekatan Populer dan Praktis Ekonometrika untuk Analisis Ekonomi dan Keuangan*. Jakarta: LPFE Universitas Indonesia Nopirin.
1992. *Ekonomi Moneter*. Yogyakarta: BPFE
- Priestley, M. (2010, Oktober 12). Australia, China and the Global Financial Crisis. Retrieved from Parliament of Australia:

- [https://www.aph.gov.au/About Parliament/Parliamentary Departments/Parliamentary Library/pubs/BriefingBook43p/australiachinagfc](https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BriefingBook43p/australiachinagfc)
- Punamahadi, Wahyu. 2011. *Pengaruh Suku Bunga Deposito dan Inflasi Terhadap Jumlah Deposito Berjangka Pada Bank Umum di Indonesia Tahun 2004-2010*. Skripsi. Bogor: Institut Pertanian Bogor.
- Rahmawati, D.A Dwi dan Hidayat, Wahyu R. 2017. *Analisis Pengaruh Suku Bunga Sertifikat Bank Indonesia dan Jumlah Uang Beredar Terhadap Tingkat Inflasi di Indonesia Periode 2006.1-2015 (Pendekatan Error Correction Model)*. Vol 1 Jilid 1. Jurnal Ilmu Ekonomi.
- Samuelson, Paul A. dan Nordhaus, William D. 1995. *Ilmu Makroekonomi*. Jakarta : PT. Media Global Edukasi.
- Sukirno, Sadono. 2003. *Pengantar Teori Makro Ekonomi*. Jakarta: PT. Raja Grafindo Persada.
- Sukirno, Sadono. 2004. *Ekonomi Pembangunan*. Jakarta: LLPFE UI dan Bina Grafika.