

Influence of Inflation Targeting Framework (ITF) Policy In Moderate Monetary Variable: Study of Countries Implementing ITF

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ABSTRACT

The purpose of the study was to test the effectiveness of the moderation of inflation targets on actual inflation in countries implementing the ITF. The analytical Model used is Moderated Regression Analysis (MRA). Data used by the data panel of the country of Thailand, Philippines, Indonesia, New Zealand, Australia, Turkey, Japan, Singapore, Brazil and Qatar from 2015 to 2017. The findings stated that inflation targets become effective variables for the moderate amount of money supply and significant impact on actual inflation in the countries of Thailand, Philippines, Indonesia, New Zealand, Australia, Turkey, Japan, Singapore, Brazil and Qatar.

Keywords: MRA, regression, inflation

1. INTRODUCTION

The Inflation Targeting Framework (ITF) is the framework of monetary policy relatively recently applied by the countries of the world. The success of countries implementing the ITF framework in maintaining price stability and encouraging improved economic conditions, encouraged other countries to participate in adopting the ITF as its monetary policy framework (Tommy & Darma, 2017)

The Inflation targeting proved to be well implemented compared to multiple objectives (Dilla & Anggraeni, 2016). Currently, no fewer than 42 countries have adopted the ITF framework, both developed and developing countries (Kadir et al., 2008).

The inflation Target, which is flexible, trustworthy, and conveyed transparently, can be a good effort in order to keep inflation low (Parkin, 2013). Inflation Target is very decisive in the process to control the inflation rate (Ftiti & Walid, 2013; Romdhane & Mensi, 2014; Solanes & Flores, 2009; Vega & Winkleried, 2005)

Other empirical studies also show different results i.e. the inflation target is small and insignificant to the formation of inflation (Willard, 2006). Application of the ITF is not proven to promote real economic growth and stabilize inflation rate (Sheridan, 2004).

The impact of inflation target on inflation is still confusing, meaning that there can be influence and can be no effect. From some of the above opinions, it can be said that there is no certainty about the application of the inflation targeting framework policy (Tugcu & Ozturk, 2009).

From the central Bank, inflation can be influenced by monetary policy through the determination of the interest rate (Tugcu & Ozturk, 2009). When the interest rate rises, it causes inflation to decrease (Oforegunam & Ebiringa, 2012). Interest rates negatively and significantly affect inflation (Hidayat, 2010; Robert, 2008)

The results of the study (Soilfida, 2006) The amount of money supply positively and significantly to the inflation rate. This means that

if the amount of money circulating in the community increases, then the inflation rate will also increase (Bose, 2014; Nguyen, 2015).

Testing of causality between the amount of money supply and the inflation rate. By using quarterly data, results obtained statistically indicate that the amount of money supply has a more significant influence on inflation (Djanin, 2011; Dumairy, 2012).

The variable target inflation, interest rates and the amount of money supply, is assumed to have an influence on inflation. Where inflation specific becomes variable moderation to interest rate variables and amount of money supply. With the application of Moderated Regression Analysis (MRA) Cointegration method. Research is conducted in several countries in the world that have the policy of inflation targeting framework (ITF), namely the countries of Thailand, Philippines, Indonesia, New Zealand, Australia, Turkey, Japan, Singapore, Brazil and Qatar.

In addition to this section of the introduction, the second part of the study will discuss Methodologi, the third part will analyse the results and the discussion and the fourth part of the conclusion.

2. METHOD

The Moderated Regression Analysis (MRA) method was implemented in this study. The data used is the panel data from the years 2015 to 2017. Inflation regression model as follows:

$$IFL = \beta_0 + \beta_1 r + \beta_2 M2 + \beta_3 ITF + \mu_t \quad (1)$$

Where inflation (IFL) is the ratio of changes to price indexes of a period against the previous period price index. Interest Rate (R) is the central bank's interest rate. The amount of money supply (M2) is the ratio of money supply to GDP. Inflation target (ITF) is the inflation target of the central Bank. Data panel sourced from World Development indicator, World Bank.

$$IFL = \beta_0 + \beta_1 r + \beta_2 M2 + \beta_3 ITF + \beta_4 r.ITF + \beta_5 M2.ITF + \mu_t \quad (2)$$

Where, r. ITF is a variable interaction between interest rates and inflation targets. M2. The ITF is a variable interaction between the amount of money circulating with the inflation target. Mt is a random mistake. The expected sign of the study is $\beta_1 < 0$ meaning the interest rate influence on negative coefficient of inflation. $\beta_2 > 0$ means the influence of the amount of money supply to the inflation of positive coefficients. $\beta_3 > 0$ means the influence of inflation target on negative coefficient of inflation. $\beta_4 < 0$ is the influence of inflation target moderation on interest rates on negative coefficient of exchange rate. $\beta_5 > 0$ is the influence of inflation target in the amount of money circulating against the positive coefficient.

The estimate step of the research model involves three steps: first, the classic assumption test. Secondly, if variables meet the classic assumption Test, then the third model Ordinary Least Square (OLS) test will be conducted, conducting a Moderated Regression Analysis (MRA) test to analyse the influence of the target inflation moderation on interest rate variables and the amount of money circulating and analyzing their impact on actual inflation.

3. RESULTS AND DISCUSSION

3.1 Classic Assumption Test

3.1.1 Normality

Result of calculation of Jarque-Bera probability value of 0.075394, then the value is compared with α value = 0.05. Because the value of probability is $0.075394 > \alpha = 0.05$, it can be concluded that the data used is distributed normally.

3.1.2 Heterokedastisity

Decision making is present or not heterokedastisity on the research model. Deduced from the probability value of Obs * R-squared. When the probability value of Obs * R-squared $< \alpha = 0.05$, then the model is exposed to heterokedastisity. The results of heterokedastisity test obtained the probability value of Obs * R-

squared $0.163669 > \alpha = 0.05$ means the free model of heterokedastisity problem.

3.1.3 Autocorrelation

The autocorrelation test on this study was conducted using a statistical value of Durbin-Watson (DW) to be taken from the regression results. The value of Durbin-Watson (DW) amounted to 0.920756 with DL 1.2138 and Du 1.6498 values. Results show no positive autocorrelation.

3.1.4 Multicolleaniritas Test

Multicolnearity detection aims to test the data, whether the regression model investigated

was found a correlation between the free variables. Multikoleanaritas test results showed no multikoleanirity relationship, the correlation value between the variables below 0.10. Berdasarkan Such results can be concluded that the empirical model used in the study is free from the problem of multicolinearity.

3.1.5 Ordinary Least Square (OLS)

A classic assumption test has been conducted against the research model. Results showed that the data was free of classical problems in research. Then the research can be concluded worthy to proceed. Ordinary Least Square (OLS) estimated results can be examined in table 1.

Table 1 Test Ordinary Least Square (OLS)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-8.346000	9.254345	-0.901847	0.3754
R	0.036082	0.055676	0.648064	0.5226
M2	0.071376	0.023564	3.029055	0.0055
ITF	2.330299	2.337582	0.996884	0.3280
R-squared	0.567872	Prob(F-statistic)		0.000059

Source: Processed Data evIEWS 8, 2020

Ordinary Least Square (OLS) estimate in table 1 indicates the amount of money supply (M2) significantly affects inflation in countries implementing the ITF. The increasing amount of money supply impacts the increase in inflation. A 1 percent increase in the amount of money supply will increase actual inflation by 0.07 percent.

Meanwhile, the rate hike does not have a significant direct influence on actual inflation in countries implementing the ITF. The inflation Target is also found to have no direct significant influence on actual inflation in some of the countries implementing the ITF. These findings support the results of previous research (Tugcu & Ozturk, 2009). The interaction between monetary variables in the implications of the Inflation Targeting Framework policy affects its effectiveness in maintaining actual inflation

stability. The instability of other monetary variable conditions will greatly affect the rate of inflation in the countries of Thailand, Philippines, Indonesia, New Zealand, Australia, Turkey, Japan, Singapore, Brazil and Qatar.

3.1.6 Moderated Regression Analysis (MRA)

An Ordinary Least Square estimate test result in table 1 shows that only the money supply has a significant influence directly against inflation. To see the interaction between free variables thoroughly then a moderated regression analysis (MRA) test. The inflation Target is the moderation of interest rates and the amount of money circulating. If the multiplication results between free variables with variables are hypothesized as significant moderation variables it can be concluded that the variables that are hypothesized as variables actually moderate the

relationship between the free variables and the corresponding variables.

The estimated results in table 2 indicate that the multiplication of the amount of money circulating with the inflation target (M2. ITF) significantly affects actual inflation in the countries of Thailand, Philippines, Indonesia,

New Zealand, Australia, Turkey, Japan, Singapore, Brazil and Qatar. This means that the inflation target variable becomes a moderation relationship variable between the variable money circulating with the inflation variable.

Table 2 Moderated Regression Analysis (MRA) test results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	712.4798	1722.079	0.413732	0.6827
R	645.2723	326.7191	1.975006	0.0599
M2	-718.8135	310.7414	-2.313221	0.0296
ITF	-177.9028	430.5089	-0.413238	0.6831
r.ITF	-161.3052	81.67778	-1.974897	0.0599
M2.ITF	179.7195	77.68445	2.313456	0.0296
R-squared	0.676826	Prob(F-statistic)		0.000028

Source: Processed Data eviews 8, 2020

Meanwhile, the multiplying interest rate variable with the inflation target (R. ITF) shows an insignificant influence on inflation. This means that inflation targets do not become variables that moderate the relationship between interest rates and inflation.

The value of the coefficient of determinant of R² is 67 percent of the total inflation variation in the countries of Thailand, Philippines, Indonesia, New Zealand, Australia, Turkey, Japan, Singapore, Brazil and Qatar. Can be explained by the monetary variables studied.

4. CONCLUSION

The effectiveness of the inflation targeting framework (ITF) policy implementation in maintaining the stability of inflationary levels will be influenced by interactions between the mutually affecting monetary variables. The inflation Target has succeeded in moderating the amount of money supply that affects the stability of inflation in the countries of Thailand,

Philippines, Indonesia, New Zealand, Australia, Turkey, Japan, Singapore, Brazil and Qatar. Thus, controlling the amount of money circulating becomes an important variable in drafting policies in determining the inflation target so that actual inflation stability can be achieved.

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