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Asymmetric responses of fiscal policy to the inflation rate in Indonesia

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Abstract

This paper examines the responses of fiscal policy to the inflation rate in Indonesia based on the annual data from 1971 to 2017. We use a nonlinear autoregressive distributed lag model (NARDL) to investigate the pattern of those responses. This study finds the existence of a long-run equilibrium relationship among set variables of the budget deficit, government spending, and inflation rate. The results also reveal asymmetric responses of both fiscal variables to the inflation rate in short and long-run models. We also assert that government spending contributes higher than budget deficit on the increase in the inflation rate. These findings fill the literature regarding the empirical findings of asymmetric effects of fiscal policy on the inflation rate. This paper also concludes the important role of the fiscal policy on the price stabilization through government spending management. It implies that the central government should review the quality of government spending allocation in all sectors to eliminate inflationary effects of various fiscal policies.

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1. Introduction

Fiscal policy has played an important role in the price stabilization in recent years. Previous studies highlight that the practice of fiscal policy is an important factor in controlling the inflation rate in some countries (Hossain, 2005; Mohanty & John, 2015; Thanh, 2015). Under the fiscal regime, inflation is the fiscal phenomenon as known as the Fiscal Theory of Price Level (FTPL) (Cochrane 1999; Sims 1994; Tran 2018; Aloui and Guillard 2018). The central government may apply fiscal policy regarding price stability through various instruments such as government debt, budget deficit, and government spending. Previous studies highlight that fiscal variables significantly affect the price level in some various cases (Bhattacharya 2014; Nguyen 2015; Halka and Szafranski 2018). Although none country which only applied a single policy either monetary or fiscal policy regarding the price stabilization, some recent papers have focused on the role of fiscal policy on the inflation rate (Auerbach, Gale, and Harris 2010; Javid, Arif, and Abdul 2008; Fakher 2016).

Indonesia has experienced unique phenomena regarding the dynamic behavior of inflation in the long period. Under the long term development plan started in 1971, Indonesia has applied the prudent fiscal policy to stabilize the economy. At the beginning of that period, the inflation rate reached 40 percent, and it has declined gradually for a decade as a result of a successful stabilization policy. Unfortunately, the deep monetary crisis which attacked Asian countries in 1997 caused the inflation rate in Indonesia in 1998 reached 58%, which was the highest inflation since1971 (Figure 1). The global financial crisis in 2008 also contributes to the increasing inflation rate at about ten percent. Responding to this situation, the central government focused on economic recovery and price stabilization by applying contractive fiscal policy. As a result, the central government has successfully managed inflation rate at one digit in the last decade.

Previous studies highlight the important role of fiscal policy on stabilizing the price level in Indonesia (Adrison 2002; Thanh 2015; Nguyen 2015). However, these studies have not intensively considered the dynamic responses of fiscal policy on the inflation rate. One of the important aspects of a recent analysis of economic policy is the asymmetric response of fiscal policy on various economic indicators (Tran 2018). Understanding to the asymmetric responses of fiscal variables on inflation may help the fiscal authority formulating an appropriate policy regarding the price stabilization policy.

This research aims to analyze the implementation of the fiscal theory of price level for the Indonesian case. Several previous research using FTPL generally have not deeply discussed the asymmetry responses of fiscal variables on the inflation rate. Only a few studies which analyze the issue of asymmetric effects of fiscal variables on inflation for Indonesian case (Adrison 2002). Therefore, it is important to conduct a further study regarding such criterion of fiscal policy on the inflation rate. This research contributes to the literature regarding the pattern of fiscal policy responses to inflation rate. Such research on the Indonesian case may be useful for other countries regarding government budget management and economic stabilization policy.

2. Related literature

There have been some studies regarding the impact of fiscal policy on inflation rate across countries. However, the results of these studies mention various conclusions. A few papers find the significant effects of the budget deficit and government spending on inflation (Fakher, 2016; Khundrakpam, 2010). Other studies also highlight the positive effect of budget deficit on inflation rate in numbers of countries (Lin and Chu 2013; Raji,

Juzhar, and Jantan 2014; Mohanty and John 2015). Meanwhile, some studies also mention that the budget deficit has an impact on the inflation rate, especially in the short-run model (Fakher, 2016; Nguyen, 2015; Nikolaos & Constantinos, 2013). The previous studies highlight that fiscal rules have significantly contributed to the price stabilization in various developing countries.

As an implication of FTPL, the recent studies present that the government spending as part of the main instruments of fiscal policy has an important impact on the price level (Fakher, 2016; Kumar, 2015). Moreover, Fakher (2016) found a significant impact of government spending on price change both in a long and short-run relationship. Another paper emphasizes that fiscal expansion shifted the monetary authority under low inflation (Kumar 2015). We may infer that empirical evidence in various countries supports the fiscal theory of the price level (Xu and Serletis 2017; Javid, Arif, and Abdul 2008). Government spending as an important instrument of fiscal policy has a direct impact on the price level, which indicates the effectiveness of the fiscal policy.

Some previous studies highlight the significant impact of the budget deficit and government spending on inflation rate (Adrison, 2002; Nguyen, 2015; Thanh, 2015). Based on these studies, we may infer that the budget deficit has a strong relationship with the inflation rate in the long run. Meanwhile, government spending significantly affects the price level both in the short and long term. Specifically, Adrison (2002) notes that government spending shocks contribute to the increase in consumer price in Indonesia. Therefore, the inflation rate increases as an impact of government spending growth. This phenomenon indicates that the practice of fiscal policy in Indonesia is in line with the fiscal theory of price level.

The other important factors of the price determinants are the pattern responses of the fiscal instruments. The recent studies regarding these issues found the asymmetric relationship between inflation and its factors in developing countries such as Iran and India (Ajaz, Nain, and Kamaiah 2016; Falahi and Hajamini 2017; Bahmani-oskooee, Harvey, and Niroomand 2018). The next challenge regarding the study of FTPL is to explore whether the responses of fiscal variables on inflation exhibit symmetry or asymmetry. The empirical finding may results recommendation for the Indonesian government to conduct an effective fiscal policy.

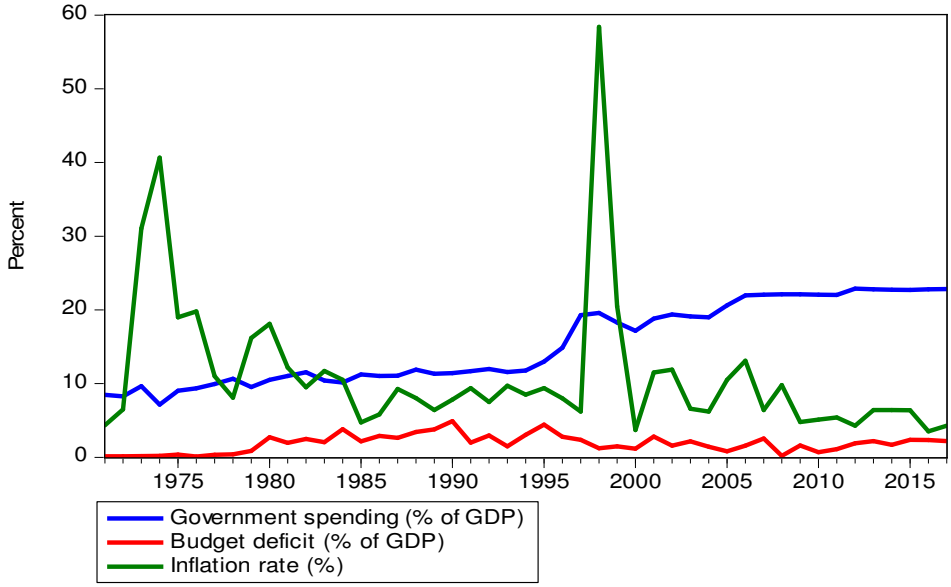
3. Data Description and Methodology

3.1.Data description

This research estimates the responses of fiscal variables on the inflation rate in the Indonesian case. We examine the asymmetric effects of the budget deficit and government spending on the inflation rate based on annual time series data 1971-2017. The inflation rate data are from several annual statistical reports of the Bank Indonesia (http://www.bi.go.id/en/). The inflation rate is the annual growth of the Consumer Price Index (CPI).

Meanwhile, the data of budget deficit and government spending are from several annual reports of Indonesia Fiscal Policy Agency (http://www.fiskal.kemenkeu.go.id/). The budget deficit is the annual total government expenditure minus total revenue. The variable of government spending is the annual total government expenditure minus subsidies and transfer. Budget deficit and government spending variables are in percent of real Gross Domestic Product.

Figure 1: The behavior of the data of inflation, budget deficit, and government spending



3.2.Methodology

In this research, we attempt to analyze the dynamic responses of fiscal policy on the inflation rate. We used a standard nonlinear autoregressive distributed lag (NARDL) model, which was developed by (Shin, Yu, and Greenwood-Nimmo 2014). Previous studies have applied this method focusing the analysis on the long-run and short-run inflation model (Ajaz, Nain, and Kamaiah 2016; Bahmani-oskooee, Harvey, and Niroomand 2018). Specifically, NARDL is recently used to elaborate on the presence of an asymmetric relationship between the dependent and its explanatory variables. The asymmetric NARDL model includes the partial sum decompositions in constructing the long-run and short-run relationship. Applying this approach, we may consider the long-run relationship between data series p_t and x_t as the following asymmetric regression:

$$p_t = \beta^+ x_t^+ + \beta^- x_t^- + v_t \qquad (1)$$

Variable p_t is the dependent variable such as inflation rate, x_t is a $(k \times 1)$ vector of the independent variable, and v_t is the error term. The coefficient β^+ and β^- denote the related asymmetric long-term parameters. Variable x_t is decomposed as follows.

$$x_t = x_0 + x_t^+ + x_t^- \qquad (2)$$

The component of x_t^+ and x_t^- are the partial sum of process positive (+) and negative (-) changes in x_t, which are defined as follows:

$$x_t^+ = \sum_{i=1}^{t} \Delta x_i^+ = \sum_{i=1}^{t} \max(x_i, 0) \quad \text{and} \quad x_t^- = \sum_{i=1}^{t} \Delta x_i^- = \sum_{i=1}^{t} \min(x_i, 0)$$

According to Shin et al., (2014), the asymmetric error correction model relating to the Equation (1) in NARDL (m,n) model is:

$$\Delta p_t = \rho p_{t-1} + \theta^+ x^+_{t-1} + \theta^- x^-_{t-1} + \sum_{j=1}^{m-1} \delta_j \Delta p_{t-j} + \sum_{j=0}^{n} (\pi^+_j \Delta x^+_{t-j} + \pi^-_j \Delta x^-_{t-j}) + \varepsilon_t \quad (3)$$

Coefficient $\theta^+ = -\rho\beta^+, \theta^- = -\rho\beta^-$ and the term ε_t is residual. The terms *m* and *n* indicate the number of lag length for the dependent and independent variables, respectively. The optimum lag length of this model may be determined using information criteria such as Schwarz Criterion (SC) or Akaike Information Criterion (AIC).

Equation (3) explains the relationship between variable p_t and x_t, which contain a component of positive and negative changes of the independent variable. This study elaborates the responses of the budget deficit and government spending on the inflation rate. Therefore, we consider constructing the model of inflation (p_t), which contains independent variables the budget deficit (b_t) and government spending (g_t) in different equations. Specifically, equation (4) and (5) describe these models.

$$\Delta p_t = \rho p_{t-1} + \theta^+ b^+_{t-1} + \theta^- b^-_{t-1} + \sum_{j=1}^{m-1} \delta_j \Delta p_{t-j} + \sum_{j=0}^{n} (\pi^+_j \Delta b^+_{t-j} + \pi^-_j \Delta b^-_{t-j}) + \varepsilon_t \quad (4)$$

$$\Delta p_t = \rho p_{t-1} + \theta^+ g^+_{t-1} + \theta^- g^-_{t-1} + \sum_{j=1}^{m-1} \delta_j \Delta p_{t-j} + \sum_{j=0}^{n} (\pi^+_j \Delta g^+_{t-j} + \pi^-_j \Delta g^-_{t-j}) + \varepsilon_t \quad (5)$$

To find the best individual model based on this equation, we applied the general-to-specific approach. Before interpreting the empirical model, it is important to verify the presence of co-integrating relationship as well as the long-run and short-run asymmetric impact of explanatory variables on the dependent variable. The existence co-integrating relationship in the model is tested using bounds-test (F_{pss}) of Pesaran, Shin, & Smith, (2001). The F_{pss} is used to test the null hypothesis of no co-integration relationship between the dependent and independent variables. It means that the coefficients of the lagged level variables are jointly equal to zero. Specifically, the null hypothesis statement is stated as $H_0 : \rho = \theta^+ = \theta^- = 0$. The decision to accept or reject the null hypothesis is based upon the value of F_{pss} compared to critical values of upper and lower bounds. We reject the null hypothesis if F_{pss} is greater than the upper bound critical value.

Next step is to verify the existence of long-run and the short-run asymmetric relationship among the examined variables. For these purposes, we applied a standard Wald-test procedure for restriction variables in the empirical model. Using standard F-statistic, we reject the null hypothesis of symmetric response if the F-statistic is significant. Moreover, we also conduct similar restrictions test for the long-run symmetry based on the null hypothesis statement as $H_0 : \theta^+ = \theta^-$. The null hypothesis of short-run symmetry is $H_0 : \sum_{j=0}^{q} \pi^+_j = \sum_{j=0}^{q} \pi^-_j$. According to this testing procedure, they are three possibilities relationship in the asymmetric NARDL model: (1) the presence of asymmetric relationship only in the long-run model; (2) asymmetric model is only in the short-run model; and (3) the asymmetric empirical model captures both the long and the short-run model. Finally, the adjustment process from short-run disequilibrium to its long-run equilibrium is explained by the asymmetric cumulative dynamic multipliers as follows:

$$k_h^+ = \sum_{j=0}^{h} \frac{\delta y_{t+j}}{\delta x_t^+}, k_h^- = \sum_{j=0}^{h} \frac{\delta y_{t+j}}{\delta x_t^-}, h = 0,1,2.....$$

Coefficient k_h^+ and k_h^- are multiplier effects of positive and negative changes of independent variables. As $h \to \infty$, k_h^+ and k_h^- tend to be equal with the asymmetric long-run coefficient β^+ and β^- respectively.

4. Empirical Results and Discussion

The first step of the analysis procedure in this study is to present the descriptive statistic of the data. The data used in this research is the annual data covering the period of 1971-2017. The variables are the inflation rate (p_t), the budget deficit (b_t), and government spending (g_t). Table 1 presents the descriptive statistic indicators of all examined variables.

Table 1: Descriptive statistic of examined variables

Statistical Indicators	Inflation (p_t) (%)	Budget Deficit (b_t) (% of GDP)	Government Spending (g_t) (% of GDP)
Mean	11.163	1.868	15.295
Median	8.100	1.959	11.980
Maximum	58.400	4.914	22.887
Minimum	3.530	0.106	7.160
Standard Deviation	9.909	1.186	5.422

Source: www.bi.go.id/en/ and www.fiskal.kemenkeu.go.id/

Table 2: Results of the unit root test

Variables	Intercept only		Intercept and Trend	
	Test Statistics	Lags	Test Statistics	Lags
Data level				
p_t	-2.449	5	-2.601	5
b_t	-2.430	2	-2.230	2
g_t	-0.509	2	-2.275	2
First difference				
Δp_t	-4.679	5	-4.653	5
Δb_t	-5.233	2	-5.266	2
Δg_t	-5.019	2	-4.987	2
Significance level	Critical value			
1%	-3.596		-4.192	
5%	-2.933		-3.520	
10%	-2.604		-3.191	

Note: All the level data has a unit root. Meanwhile, all the first difference data are stationer. We use the Akaike Information Criteria (AIC) to find the number of optimum lag.

As explained in the previous section, this study used NARDL model as a general-to-specific approach for estimating the asymmetric analysis. We may implement this method without considering the order of integration of the variables (Ajaz, Nain, and Kamaiah 2016). However, before we proceed to the asymmetric estimation, we first should conduct the stationary testing for all variables. We employ the Augmented Dickey-Fuller (ADF) unit root test, which is appropriate for the small samples in standard unit root test. In this case, we conduct a unit root testing on data series in two ways, intercept only and intercept and time trend component. Our results present that the data contains unit root in the level, implying that the variables are non-stationary. Otherwise, these results reveal all variables are stationary in the first difference at 1% level of significance (Table 2). Therefore, these results indicate that all variables stationary in order one or we generally state as I(1).

Table 3: Dynamic asymmetric estimation

Variables	Equation (4)			Equation (5)		
	Coefficient	t-Statistic	p-value	Coefficient	t-Statistic	p-value
Constant	16.952	2.508	[0.019]**	16.142	3.506	[0.001]***
ρ	-1.024	-4.337	[0.000]***	0.249	0.549	[0.586]
θ^+	-2.921	-1.560	[0.131]	1.829	1.257	[0.218]
θ^-	-2.346	-1.292	[0.208]	-1.494	-8.881	[0.000]***
δ_1	0.236	1.312	[0.201]	0.423	3.748	[0.000]***
π_0^+	-0.493	-0.165	[0.870]	-2.568	-2.669	[0.012]
π_1^+	-8.132	-2.280	[0.031]**	8.433	8.480	[0.000]***
π_2^+	-2.412	-0.658	[0.516]	2.264	1.710	[0.097]*
π_3^+	1.034	0.282	[0.779]	3.936	2.986	[0.005]***
π_4^+	5.856	1.740	[0.094]*	2.367	2.367	[0.024]**
π_0^-	-7.235	-2.827	[0.009]***	4.511	1.735	[0.093]*
π_1^-	1.057	0.385	[0.702]	-5.819	-2.192	[0.036]**
π_2^-	-2.227	-0.834	[0.411]			
π_3^-	2.723	1.085	[0.288]			
π_4^-	-3.465	-1.396	[0.174]			
π_5^-	-5.075	-2.356	[0.026]**			
R-squared	0.72			0.88		
F-statistic	4.34***			20.96***		
F_{pss}	6.768***			26.380***		

Note: The final asymmetric NARDL specification is chosen using the general-to-specific approach, which eliminates all insignificant variables in the model with a maximum lag length of 7. F_{pss} is the F-statistic from the Bounds-test for a co-integration relationship based on equation (4) and (5). *, **, *** indicate significant at 10%, 5% and 1% significance level, respectively.

Next step, we proceed to conduct the analysis of the co-integrating relationship among the variables and the analysis of long-run and short-run asymmetries. For this purposes, we estimate an asymmetry ARDL model from the Equation (4) and (5).

According to the general-to-specific approach of NARDL, the estimation process starts by choosing max $p = max\ q = 7$ and dropping all insignificant lags. We summarize the empirical results of the final estimation in Table 3. Regarding co-integration analysis, the Wald coefficient restriction test is used to test that the lagged level variables are jointly equal to zero. The result F-statistic (F_{PSS}) is reported in the lower panel of Table 3. We reject the null hypotheses of no co-integrating relationship even though at 1 percent level. It implies the existence of a long-run relationship in a set of series variables, including inflation rate, budget deficit, and government spending. This finding is in line with the concept of the fiscal theory of price level (Javid, Arif, and Abdul 2008). The fiscal expansion leads to an increase in the price level.

As a consequence of the presence of the co-integrating relationship, we may consider analyzing long and short-run dynamic asymmetric estimation. Furthermore, we examine the existence of the long and short-run effects of the fiscal variables on inflation rate based on the empirical NARDL model. For these purposes, we employ Wald-test for long-run (W_{LR}) and short-run (W_{SR}) restriction variables to test the existence of asymmetric responses of fiscal variables on the inflation rate. The results of such testing are reported in Table 4. The p-values of W_{LR} for both models are less than 0.10, which imply rejecting the null hypothesis of the symmetric model. Therefore, the null hypotheses of long-run symmetric between the positive and negative components of both the budget deficit (b_{t-1}^{+} and b_{t-1}^{-}) and government spending (g_{t-1}^{+} and g_{t-1}^{-}) are rejected at 0.10 level of significance. Specifically, these findings indicate that the response of fiscal policies both the budget deficit and government spending on inflation rate is long-run asymmetry.

The symmetric test for a short-run relationship using W_{SR} gives a different result between Equation (4) and (5). The null hypothesis of a short-run symmetric relationship between positive and negative components of the budget deficit and the inflation rate is not rejected. Meanwhile, we reject such a null hypothesis of the short-run symmetric response of government spending on the inflation rate. For short-term responses, this study revealed that the effect of government spending on inflation rate is asymmetry.

Table 4: Short and long-run asymmetry tests

	Equation (4)		Equation (5)	
	Statistic	p-value	Statistic	p-value
Symmetry tests:				
W_{LR} for long-run: $\beta^{+} = \beta^{-}$	2.932	[0.071]*	4.976	[0.013]**
W_{SR} for short-run: $\pi^{+} = \pi^{-}$	1.190	[0.285]	16.837	[0.003]***
Long-run effects:				
β^{+}	-2.502	[0.090]*	1.591	[0.021]**
β^{-}	-2.120	[0.159]	5.707	[0.005]***

Note: *, **, *** indicate significance at 0.10, 0.05 and 0.01 significance level, respectively.

The next section is to discuss the analysis of long-run effects based on the asymmetric NARDL model, as presented in the lower panel of Table 4. The coefficient b_t^{+} is statistically significant at the 0.10 level. Meanwhile, the coefficient b_t^{-} is insignificant despite at 0.10 level. The estimated long-run coefficient of b_t^{+} is -2.502,

implying that the budget deficit increase leads to the lower inflation rate. This finding is not in line with the previous studies, which generally found that the budget deficit has a positive relationship with the inflation rate (Lin and Chu 2013; Mohanty and John 2015). We may explain some reasons for the Indonesian case regarding the relationship between budget deficit and inflation rate. In this study, we use long-term data since 1971. At the 1970s, the inflation rate is relatively high at about 40 percent. As long as the development process, the central government has applied to tighten fiscal policy for about the last three decades. As a result, the inflation rate is stable at a level of less than 10 percent. The central government has also successfully maintained budget deficit at around 2 percent of GDP in the last decade. Therefore, a slight increase in budget deficit has been followed by a successful price stabilization policy.

Regarding government spending, both positive (g_t^+) and negative (g_t^-) estimated long-run coefficients are positive and statistically significant indicating that the finding is in line with several previous studies (Fakher, 2016; Kumar, 2015). The estimated long-run coefficient g_t^+ is 1.591 and g_t^- is 5.701. Therefore, we may conclude that a 1% increase in government spending as a percent of GDP leads to a 1.6 % increase in the inflation rate. Meanwhile, a 1% decrease in government spending leads to a 5.7% decrease in the inflation rate. These positive linkages between both positive and negative components of government spending and inflation are also in line with the demand-pull inflation theory. The results also highlight the important role of the public sector on the price stabilization through government spending management. Again, this finding is relevance with the fiscal theory of price level (Javid, Arif, and Abdul 2008; Xu and Serletis 2017).

The coefficient of multiplier effects describe the dynamic effects of the budget deficit and government spending on inflation. Figure 2 presents the multiplier effects of positive and negative changes in the budget deficit on the inflation rate. The gap between the effects of positive and negative components of the budget deficit on inflation is high during the first two periods. The higher budget deficit will lead to an increase in consumer price index during the two years after imposing the policy. It tends greater and reaches the maximum value in the fourth period. Finally, it has a zero difference starting at the beginning of the sixth year. It means that the effect of the budget deficit on inflation is symmetry starting in the seventh year. Therefore, the fiscal authority should immediately consider the inflationary effect of positive changes in the budget deficit.

Figure 3 exhibits the multiplier effects of positive and negative changes in government spending on inflation. The multiplier effects of the positive and negative component of government spending are greater than those of the budget deficit. At the end of the third-time horizon, the effect of the positive change in government spending is greater than the effect of negative change. The maximum point of different effects due to positive and negative changes in government spending on inflation occurs in the second period. Overall, we may conclude that the dynamic multipliers of the budget deficit and government spending are in line with the long-run asymmetric effects. The positive changes in the fiscal variables have a significant effect on the increase in the inflation rate in the Indonesian case. Therefore, the government may apply the fiscal surprise to manage inflation in the short-term (Bassetto and Cui 2017).

Figure 2: Dynamic multiplier of budget deficit (b_t) on inflation

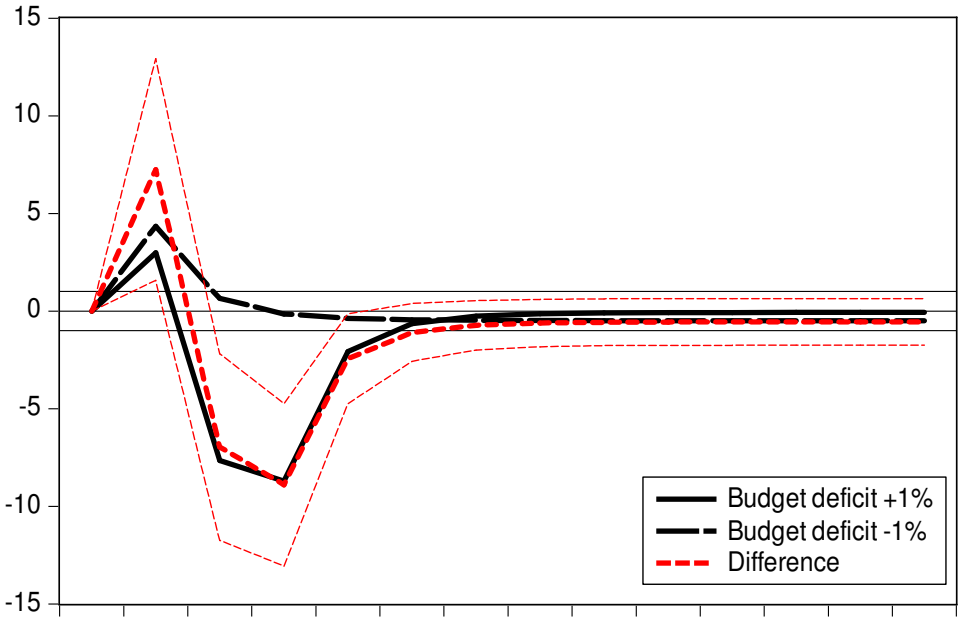
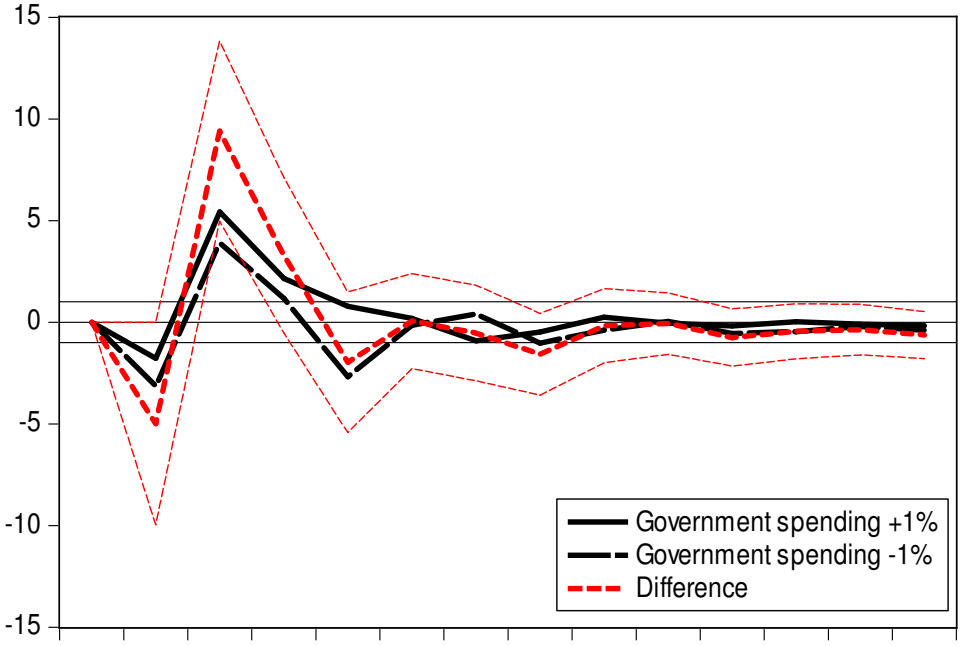


Figure 3: Dynamic multiplier of government spending (g_t) on inflation



Next step, we test the robustness of the empirical results. We conduct the testing on the stability of both long-run models by applying the cumulative sum (CUSUM) on the residuals of the asymmetric NARDL models. If the plot of CUSUM statistics stays within the critical bounds of 5% significance level, it indicates that the model is stable. Figure 4 and Figure 5 plot the CUSUM of asymmetric NARDL model of the budget deficit and government spending, respectively. The residuals of both models fall within the 95% confidence bands indicating the stability of estimated parameters.

Figure 4: Plots of CUSUM statistics in NARDL model of Equation (4)

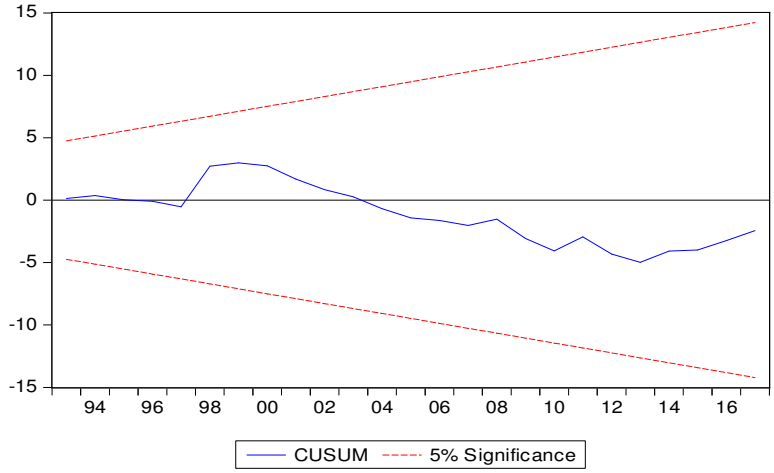
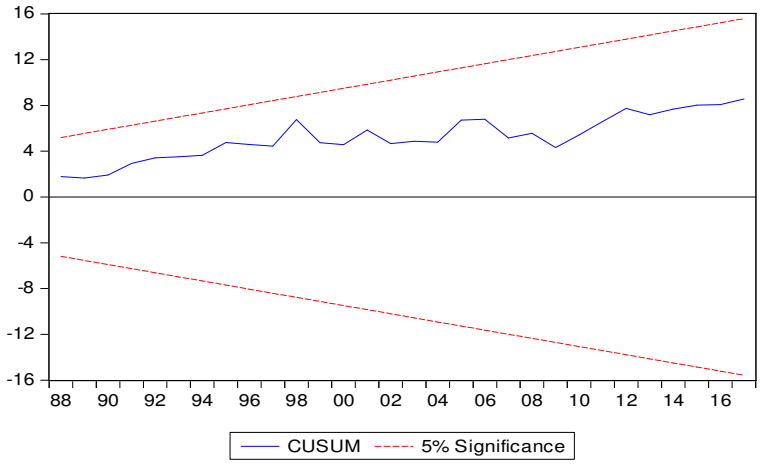


Figure 5: Plots of CUSUM statistics in NARDL model of Equation (5)



5. Conclusion

This paper examines the responses of fiscal variables on the inflation rate for the Indonesian case. For this purpose, this research uses a standard nonlinear autoregressive distributed lag model (NARDL). The results present the existence of a long-run co-integrating relationship implying the presence equilibrium relationship among a set of variables the budget deficit, government spending, and inflation rate. Therefore, this finding is in line with the fiscal theory of price level (FTPL). We also conclude that the positive changes in either budget deficit or government spending lead to an increase in the price level. Specifically, an increase in government spending has a greater impact than the impact of budget deficit on the inflation rate. Therefore, government budget management is an effective fiscal policy for price stabilization in Indonesia.

Regarding the responses of fiscal policy indicated by the budget deficit and government spending, this study reveals an asymmetric relationship between these fiscal variables and inflation rates in the long-run model. In the short-term, the effect of government spending on the inflation rate is also asymmetry. This study highlights that government spending is an effective fiscal instrument for price stabilization policy. The

positive linkage between government spending and inflation is also in line with the demand-pull inflation theory, which is widely known in the fundamental public economic literature. This paper also emphasizes the important role of the public sector on the price stabilization through government spending management.

Moreover, this research complements previous studies regarding the implementation of the fiscal theory of price level (FTPL) in government budget management (Xu and Serletis 2017; Javid, Arif, and Abdul 2008). Previous studies focusing on FTPL generally did not consider the asymmetric responses of government spending on the inflation rate. Therefore, this research contributes to the literature by providing information on asymmetric responses of government spending on the inflation rate both in the long and short-run models. A negative change in government spending has a greater impact on reducing the inflation rate than that of the negative change in the budget deficit. We may infer that the contractive fiscal policy will be effective in price stabilization. In the Indonesian context, the central government should review the quality of government spending allocation in all sectors so that the government activities do not create inflationary effects.

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