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# Inflation and Economic Growth Tradeoff, and Its Impact on Indonesia Poverty

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There was tradeoff between inflation and economic growth in Indonesian economy over the last three decades, from 1990 to 2021. When economic growth tended to increase, inflation would also increase. The increasing scale of business sectors due to the increasing of economic growth shifted price and wage setting in the same direction, then increasing labor demand, and decreasing poverty. This study used a VAR model to estimate tradeoff between inflation and economic growth, and OLS model to estimate the relationship between economic growth and the poverty, and also between inflation and poverty. A VAR model explained that there was a positive bi-direction causality between inflation and economic growth, however, there was uncertainty whether economic growth caused inflation, or whether inflation caused economic growth. Although economic growth had a positive effect on reducing poverty, but due to the tradeoff between inflation and economic growth, then economic policies had to be designed to fully controlling inflation during the persistence of economic growth to prevent an increasing of poverty. Expected inflation and long run inflation target should always be a major concern when setting monetary policy to avoid higher economic fluctuation that could stimulate increasing of inflation and poverty.

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# 1. Introduction

Economic growth is a necessary condition of development in every country including Indonesia. Sufficient economic growth will have the ability to create economic prosperity through increased on employment rate and thus reduced poverty rates (Acemoglu & Robinson, 2012; Todaro & Smith, 2012; Kraay & Raddatz, 2007; Beinhocker, 2006). However, when economic growth continues to increase, the country will experience a warming economic situation triggered by an overall increase in prices known as inflation (Blanchard, 2017; Romer, 2012; Binyamini & Razin, 2008). Rising and sustainable inflation will further have an impact on reducing people's purchasing power when it is not accompanied by an increase in people's income. In this case, the increase of inflation will directly reduce the level of prosperity and then lead to an increase in the poverty rate.

For more than three decades – from 1990 to 2021 –, Indonesia reached an average economic growth at the level of 4.71%, the poverty rate was 14.48% and inflation was 8.98%. The average of Indonesian economic growth, poverty rate and inflation are included when Indonesia experienced the economic crisis in 1998, the financial crisis in 2008 and the economic recession as a result of the corona virus pandemic in 2020 (Figure 1).

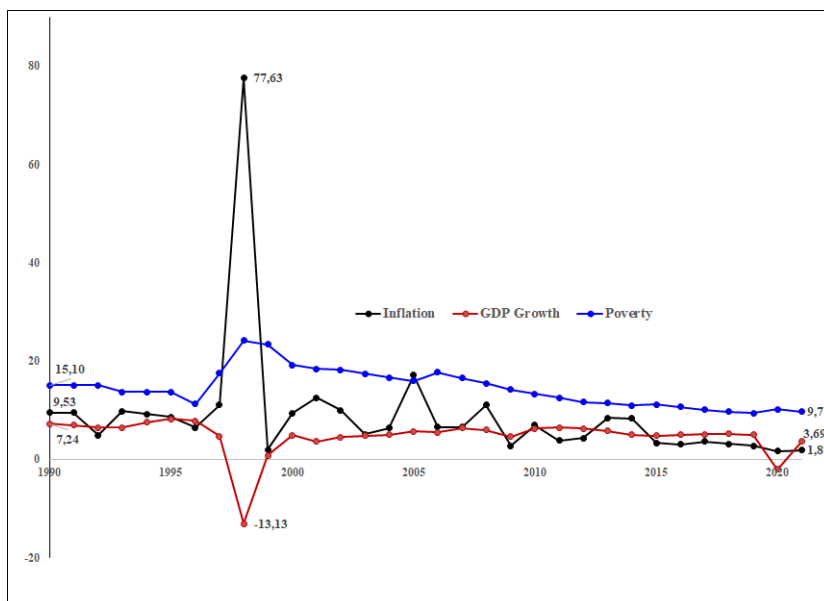


Figure 1. Real economic growth, inflation rate and poverty rate in Indonesia in the period of 1990–2021 (percent)

Source: Bank Indonesia (2023); The Financial Services Authority (2023) – by processed

This study focuses on Indonesian economy over the past three decades, from 1990 to 2021 to

explore the relationship between economic growth and inflation and its impact on the poverty rate. In this study, an explanation of Indonesian economic growth and inflation tradeoff will be discussed to understand whether the persistence of economic growth will be generating persistence inflation and whether the persistence inflation will affect poverty rate in the opposite direction. The results of this study are expected to be one of the references for establishing monetary policy regarding the long run inflation target through an explanation of whether inflation has led to a persistence level as a result of the persistence of economic growth

### Literature Review

Referring to Figure 1, it is quite clear that the rate of economic growth tends to correspond to the inflation rate. Economic growth is positively related to inflation rate, or it had an upward sloping relationship. High economic growth tended to be followed by high inflation rate, and vice versa, that was, when economic growth was low, inflation rate also tended to be low (Aghion, Angeletos, Banerjee & Manova, 2010; Aghion & Howitt, 2006). An upward sloping relationship between economic growth and inflation rate in Indonesian economy fitted to Romer (2012) and Blanchard (2017) where  $\pi_t = \pi_t^e + \lambda(\ln Y_t - \ln \bar{Y}_t) + \varepsilon_t^s$ ,  $\lambda > 0$  where  $\bar{Y}$  is the level of output (associated with wages and employment) that would prevail if prices were fully flexible, or natural rate of output or potential output or full employment output or flexible price output,  $\pi^e$  is expected inflation or core inflation or underlying inflation. The  $\lambda(\ln Y_t - \ln \bar{Y}_t)$  term implies that at any time there is an upward sloping relationship between inflation and output. The  $\varepsilon_s$  term capture supply shocks.

Furthermore, the economic growth data in Figure 1 also tended to correspond to the poverty rate. Economic growth was negatively related to the poverty rate or it had a downward sloping relationship. As economic growth increased, the poverty rate tended to decline, and conversely, when economic growth decreased, the poverty rate tended to increase. The increase in employment rate in the period of increasing economic growth would result an increased of consumption, then encouraged various other economic sectors enjoyed the trickle-down effect so that there was a continuation of labor absorption, reducing unemployment rate and poverty rate (Chu, Cozzi, Furukawa & Liao, 2017; Blanchard, Cerutti & Summers, 2015; Demetriades & Hussein, 1996).

Nevertheless, the negative relationship between economic growth and the poverty rate does not run linearly as stated above. The positive relationship between economic growth and inflation, in the short run will not increase poverty rate because the increasing in prices when

economic growth increasing will also actually be responded by an increasing of wages, which would further improve people's welfare. Conversely, when there was a persistent economic growth that caused an economic warming situation and then increasing inflation rate, this economic situation would eventually reduce purchasing power and would continue on increasing the poverty rate.

The economics literature had explained that economic growth has a positive effect on inflation, and the impact of inflation is an overall increasing in prices which in turn decreases the prosperity of society in the long run but not in the short run (Chu, Cozzi, Furukawa & Liao, 2017; Todaro & Smith, 2012; Gali, 2011; Kraay & Raddatz, 2007; Beinhocker, 2006; Mankiw, 2000). The continuous decline in people's prosperity stemmed from the persistence of inflation. The persistence of highly inflation rate stemmed from the persistence of economic growth, over time would certainly increasing poverty rate. Thus, a persistence increasing in economic growth could certainly increase the poverty rate when inflation could not be managed through proper monetary and fiscal policies.

In the above relationship  $\pi_t = \pi_t^e + \lambda(\ln Y_t - \ln \bar{Y}_t) + \varepsilon_t^s$ ,  $\lambda > 0$ , higher economic growth in the period  $t$  than economic growth in the previous period or compared to natural growth rates, will push inflation to higher levels (Lechtaler & Tesfaselassie, 2019; Blanchard, 2018; Bloom, 2014; Romer, 2012). This increasing in inflation rate to a certain extent will trigger the business sectors to increase their output, increasing prices and then further increasing wages (Blanchard, 2017; Romer, 2012). Referring to Okun's law that  $u_t - u_{t-1} = -\beta(Y_t - \bar{Y}_t)$  where  $u$  is unemployment rate, the higher economic growth in the period  $t$  than previous period or natural growth rates, would encourage an increasing in employment rate as a result of the increasing in prices (Balk, Rambaldi & Rao, 2020; Blanchard, 2018; Romer, 2012). This increasing in employment rate would reduce unemployment rate, and then reducing poverty rate (Acemoglu & Robinson, 2012; Todaro & Smith, 2012; Kraay & Raddatz, 2007; Beinhocker, 2006).

However, although higher economic growth has always been the government's target in order to achieve a higher level of public welfare, there are still obstacles that limiting the sustainability of economic growth. Sustainable economic growth must be always managed as a part of long run inflation target that will be achieved by monetary policy (Lechtaler & Tesfaselassie, 2019; Falk, Becker, Dohmen, Enke, Huffman & Sunde, 2018; Gali, 2011). When the economic situation begins to get warm up due to the continuance of economic growth, it will also immediately encourage an increasing in inflation. This situation will distort aggregate economic development because a persistence increasing in inflation rate will

reduce economic growth in the next period, leave a higher inflation and then reduce people's purchasing power (Bloom, 2014; Binyamini & Razin, 2008; Aghion & Howitt, 2006; Mankiw, 2000).

In order to discuss inflation and economic growth tradeoff, and its impact on Indonesia poverty, the structure of this paper is divided as follows. Section 2 describes method, Section 3 describes results and discussion, and Section 4 is conclusion

## 2. Method

This paper used data from Indonesian economy over the period from 1990 to 2021, described the Indonesia economic growth, inflation rate and poverty rate, published by the Indonesian Central Bureau of Statistics (BPS) to evaluate the inflation and economic growth tradeoff and its impact on in Indonesian poverty rate.

This study used a VAR (Vector Autoregressive) method in order to trace the Impulse Response Factor (IRF), which is the effect of economic growth shocks on inflation at current period to the next several periods (King, Stock & Watson, 1995; King & Watson, 1994). This model will help to estimate bi-direction causality relationship between economic growth and inflation. Economic growth will help to estimate future inflation rate, and inflation rate will help to estimate future economic growth. Actual inflation  $\pi$  affected by expected inflation  $\pi_{t-1}$  and actual economic growth, similarly, actual economic growth  $Y_t$  affected by economic growth in the previous period  $Y_{t-1}$  and expected inflation  $\pi_{t-1}$ . Furthermore, this study used OLS (Ordinary Least Square) model, to estimate the effect of inflation to poverty rate.

### VAR Model

The estimation of the proposed model is that there is a bi-direction causality between real economic growth and inflation. This simultaneous bi-direction causality equation is formulated as:

$$\pi_t = \beta_1 + \beta_2 \pi_{t-1} + \beta_3 Y_t + \epsilon_{1t} \dots \dots \dots (1)$$

$$Y_t = \gamma_1 + \gamma_2 Y_{t-1} + \gamma_3 \pi_{t-1} + \epsilon_{2t} \dots \dots \dots (2)$$

or in matrix notation is formulated as:

$$\begin{bmatrix} \pi_t \\ Y_t \end{bmatrix} = \begin{bmatrix} \beta_{11} \\ \beta_{21} \end{bmatrix} + \begin{bmatrix} \beta_{12} & \beta_{13} \\ \beta_{22} & \beta_{23} \end{bmatrix} \begin{bmatrix} \pi_{t-1} \\ Y_{t-1} \end{bmatrix} + \begin{bmatrix} \epsilon_{1t} \\ \epsilon_{2t} \end{bmatrix} \dots \dots \dots (3)$$

where  $Y_t$  and  $Y_{t-1}$  are the real economic growth in period  $t$  and  $t-1$ ;  $\pi_t$  and  $\pi_{t-1}$  are inflation in the period  $t$  and  $t-1$ ;  $\beta_1, \gamma_1$  are intercept;  $\beta_2, \gamma_2$  are the coefficient of dependent variable to independent variable, and  $\epsilon_t$  is residual.

### OLS Model

To estimate the relationship between inflation rate to poverty rate, this study used OLS model that is formulated as:

$$(pov_t - pov_{t-1}) = \alpha + \theta(\pi_t - \pi_{t-1}) + \varepsilon_t \dots \dots \dots (4)$$

where  $pov_t$  and  $pov_{t-1}$  are poverty rate in period  $t$  and  $t-1$ ;  $\pi_t$  and  $\pi_{t-1}$  are inflation rate in period  $t$  and  $t-1$ ;  $\alpha$  is intercept;  $\theta$  is coefficient of independent variable and  $\varepsilon_t$  is residual.

## 3. Result and Discussion

This study explained about the tradeoff between inflation and economic growth, and how inflation and economic growth affected the poverty rate in Indonesia for 3 decades, from 1990 to 2021. The results and discussions are divided into two parts according to the focus of the discussion.

### Inflation and Economic Growth Tradeoff

The estimation of the VAR model (Table 1) explained that inflation in the period  $t-1$  and economic growth in the period  $t-1$  are positively related to the inflation in the period  $t$ , similarly, inflation in the period  $t-1$  and economic growth in the period  $t-1$  are also positively related to the economic growth in the period  $t$  as expressed in the equations below:

$$\pi_t = 5.1051 + 0.1147 \pi_{t-1} + 0.5920 Y_{t-1} \dots \dots \dots (5)$$

and

$$Y_t = 2.9222 + 0.0168 \pi_{t-1} + 0.3263 Y_{t-1} \dots \dots \dots (6)$$

Based on those equations, the effect of economic growth in the period  $t-1$  was 59.20% toward inflation in the period  $t$ , greater than the effect of inflation in the period  $t-1$  on inflation in the period  $t$  that was 11.47%. A 1 basis point increasing in last year economic growth would lead to current year inflation rate by 0.5920 basis points, while a 1 basis point increasing in last year inflation rate would lead current year inflation rate by 0.1147 basis points. Thus, the

current year inflation rate was triggered by last year inflation rate and last year economic growth.

The simultaneous equation in the VAR model further explained that the contribution of economic growth in the period  $t-1$  was 32.63% to economic growth in the period  $t$ , greater than the effect of inflation in the period  $t-1$  which was 1.68%. The 1 basis point increasing in economic growth last year will lead an increasing in economic growth in the current year by 0.3263 basis points, while the 1 basis point increasing in last year inflation rate will only affect the increasing in current year inflation rate by 0.0168 basis points. Thus, economic growth in the current year was triggered by last economic growth and last year inflation rate.

VAR model estimation explained that economic growth would initially affect inflation rate. The increasing in inflation rate would further affect both price setting and wage setting which shifted in a positive direction by similar proportion. Both the increasing in price setting and wage setting would further increase the escalation of the real sectors of economy which then resulted in an increasing of aggregate economic output that was reflected in the increasing of economic growth. The persistence of economic growth would therefore encourage the persistence of inflation rate. It was now clear that there was tradeoff between inflation and economic growth in Indonesian economy over the last three decades, from 1990 to 2021.

**Table 1.** VAR model estimation between inflation and economic growth

| Vector Auto Regression (VAR) Model                   |          |             |           |                                                    |          |             |           |
|------------------------------------------------------|----------|-------------|-----------|----------------------------------------------------|----------|-------------|-----------|
| Inflation ( $\pi$ )                                  |          |             |           | Economic Growth ( $Y$ )                            |          |             |           |
| $\pi_t = 5.1051 + 0.1147 \pi_{t-1} + 0.5920 Y_{t-1}$ |          |             |           | $Y_t = 2.9222 + 0.0168 \pi_{t-1} + 0.3263 Y_{t-1}$ |          |             |           |
|                                                      | Constant | $\pi_{t-1}$ | $Y_{t-1}$ |                                                    | Constant | $\pi_{t-1}$ | $Y_{t-1}$ |
| Std. Error                                           | 7.6861   | 0.3019      | 1.0351    | Std. Error                                         | 2.1373   | 0.0840      | 0.2878    |
| $p$ -value                                           | 0.6642   | 0.3800      | 0.5719    | $p$ -value                                         | 1.3673   | 0.2005      | 1.1337    |
| $R^2$                                                | 0.0119   |             |           | $R^2$                                              | 0.0814   |             |           |
| Adj. $R^2$                                           | -0.0596  |             |           | Adj. $R^2$                                         | 0.0158   |             |           |

Increasing in inflation rate driven by increasing in economic growth was inevitable because there was always a tradeoff between inflation and economic growth. Although inflation rate had generally an impact on reducing people's purchasing power, but in a certain limit of time or in the short run, this increasing in inflation rate actually triggered an increasing economic growth in the next period due to the increasing of aggregate demand stemmed from an increasing of economic growth (Balk, Rambaldi & Rao, 2020; Lechthaler & Tesfalassie, 2019;

Chu, Cozzi, Furukawa & Liao, 2017; Blanchard, Cerutti & Summers, 2015). The increasing in aggregate demand would further stimulate the real business sectors to increase their prices and also increase wages (Blanchard, 2017; Romer, 2012). In such a situation, employment rate would increase and unemployment rate would decrease in accordance with to Okun's Law which explained that economic growth was negatively related to unemployment rate.

Based on price setting  $P = (1 + m)W$  where  $P$  is price,  $m$  is markup and  $W$  is wage, then the increasing in  $m$  as a result of increasing in aggregate demand promoted an increasing of both price and real wage as explained by the relationship equation  $\frac{W}{P} = (1 + m)$  where  $\frac{W}{P}$  is real wage. Furthermore, based on wage setting  $W = PF(u, z)$  where  $P$  is the price,  $F(u, z)$  is a function of the unemployment rate  $u$  and catchall variables  $z$  and  $u$  are negatively related to  $W$  while  $z$  is positively related to  $W$ , then the real wage increase indicated by  $\frac{W}{P} = F(u, z)$  will lower the unemployment rate (Blanchard, 2017).

Economics literatures explained that persistent economic growth always tended to be more expected than fluctuating economic growth. Nevertheless, in the long run persistent economic growth would promote a persistent increasing on inflation as well (Balk, Rambaldi & Rao, 2020; Lechthaler & Tesfalassie, 2019; Bloom, 2014; Binyamin & Razin, 2008). A persistence increasing of aggregate demand accompanied by an increasing of prices would have an impact on increasing of demand for money. An increasing in demand for money which is responded through an increasing in supply of money to keep prices constant, over time will trigger a warm economic situation which marked by an increasing of inflation rate. Furthermore, an increasing of inflation rate will reduce people's purchasing power, then lead to a decreasing of economic growth as a result of counter policies set by the central bank through an increasing of interest rate (Lechthaler & Tesfalassie, 2019; Blanchard, 2017; Romer, 2012; Demetriades & Hussein, 1996). It is clear that there is a tradeoff between inflation and economic growth, which will eventually be followed by economic contraction through an increasing of interest rate.

On the tradeoff perspectives, it seems, as if that economic growth will promote a problem on economic in the form of higher inflation rate which directly reducing people's purchasing power. In this situation, increasing of inflation rate that occurs in the short run is needed to reduce unemployment rate according to the Phillips curve (Aghion, Angeletos, Banerjee & Manova, 2010; Blanchard, 2018; Gali, 2011; Mankiw, 2000). Therefore, what becomes important in the framework of the tradeoff between inflation and economic growth is about the macroeconomic policies that come with it. It needs a macroeconomic policy that primarily



focused on controlling inflation rate in accordance to the long run inflation rate targeted by the central bank. The long run inflation rate target is an important variable for evaluating ongoing economic growth. It will help central bank in using monetary policy that fit to accompany such ongoing economic growth. This is also help to avoid an economic warming situation which will later be difficult to control by both monetary policy and fiscal policy.

To explain the movement of inflation stemmed from economic growth shocks and the movement of economic growth stemmed from inflation shocks, the VAR model estimation explained them through the Impulse Response Factor (IRF) as shown in Figure 2. The IRF is important to understand whether the impact of the economic growth shock will cause economic warming, and to be able to understand about the duration of the shock occurred, and its impact until it leads to equilibrium condition. Through the IRF, macroeconomic policies can be immediately set up to managing the shocks.

Based on the IRF in Figure 2, the response received by inflation due to the shocks of economic growth increased sharply after the first year to the second year, then began to decline until it was close to equilibrium level starting in the fifth year. Meanwhile, the response received by economic growth due to inflation shocks reached its peak level in the second year and then decreased to close to equilibrium level starting in the fifth year. Nevertheless, the response received by inflation due to the economic growth shocks was higher when it reached the peak level than to the response received by economic growth due to inflation shocks. Thus, Indonesia's economic growth over the past 3 decades had more impact on inflation. In this case, prices and wages adjustment proceeded more slowly in order to stimulate economic growth in the later period.

As explained in the previous section that it was important to set long run inflation target as an indicator for establishing macroeconomic policy, the IRF in Figure 2 could help monetary authorities taking the important strategy whether to immediately set up monetary policy as a counter-policy against shocks stemmed from economic growth, or could still allow the persistence of economic growth without any consequences to economic warming indicated by the persistence of the inflation rate stemmed from economic growth shocks. Furthermore, an important source of variance of inflation and economic growth (Table 2) showed that in the first year, the source of variance of inflation was 100% stemmed from inflation shocks itself. In the second year, 99.22% of variance of inflation stemmed from inflation itself and 0.78% stemmed from economic growth shocks. Starting from third year, variance of inflation decreased slightly, stemmed from the inflation shock itself to get stable level at 99.05%, while variance of inflation stemmed from economic growth shocks tended to increase sharply since

the third year at 0.92% and then get stable level at 0.95%.

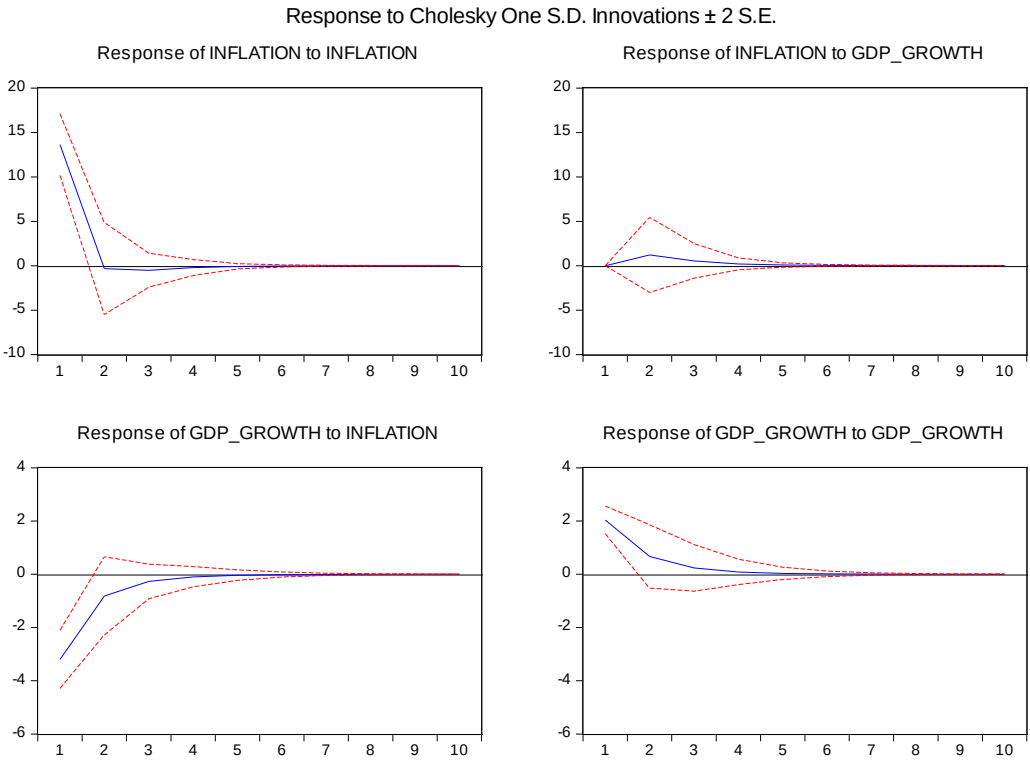


Figure 2. IRF on a VAR model estimation between inflation and economic growth

Although the effect of economic growth in the period  $t-1$  was more dominant in influencing inflation rate in the period  $t$  compared to the influence of inflation rate in the period  $t-1$  according to the VAR model estimation, the variance of inflation rate (or inflation deviations from its mean value) was mainly due to the shocks stemming from inflation rate. The variance of inflation rate stemmed from economic growth shocks was in a very smaller range and was less likely in resulting variance of inflation. Therefore, to manage the variance of inflation rate, the inflation rate in the current year required managing economic growth that is not far from the natural growth rate. The basic need to manage economic growth around natural growth rate was because the effect of economic growth in period  $t-1$  to inflation rate in period  $t$  was greater than the effect of inflation rate in period  $t$ . Thus, long run inflation target had to be the focus attention of monetary and fiscal authorities in managing the tradeoff between inflation and economic growth.

Table 2. Variance decomposition on a VAR  
model estimation between inflation and economic growth

| Inflation ( $\pi$ )<br>Period     | S.E.     | $\Pi$    | $Y$      |
|-----------------------------------|----------|----------|----------|
| 1                                 | 13.64037 | 100.0000 | 0.000000 |
| 2                                 | 13.69757 | 99.22414 | 0.775863 |
| 3                                 | 13.71775 | 99.07596 | 0.924045 |
| 4                                 | 13.72100 | 99.05482 | 0.945179 |
| 5                                 | 13.72145 | 99.05195 | 0.948046 |
| 6                                 | 13.72151 | 99.05157 | 0.948431 |
| 7                                 | 13.72152 | 99.05152 | 0.948483 |
| 8                                 | 13.72152 | 99.05151 | 0.948490 |
| 9                                 | 13.72152 | 99.05151 | 0.948491 |
| 10                                | 13.72152 | 99.05151 | 0.948491 |
| Economic Growth ( $Y$ )<br>Period | S.E.     | $\Pi$    | $Y$      |
| 1                                 | 3.793030 | 71.12662 | 28.87338 |
| 2                                 | 3.936012 | 70.33150 | 29.66850 |
| 3                                 | 3.952474 | 70.21764 | 29.78236 |
| 4                                 | 3.954614 | 70.20213 | 29.79787 |
| 5                                 | 3.954898 | 70.20005 | 29.79995 |
| 6                                 | 3.954936 | 70.19977 | 29.80023 |
| 7                                 | 3.954942 | 70.19973 | 29.80027 |
| 8                                 | 3.954942 | 70.19973 | 29.80027 |
| 9                                 | 3.954942 | 70.19973 | 29.80027 |
| 10                                | 3.954942 | 70.19973 | 29.80027 |
| Cholesky Ordering: $\pi$ $Y$      |          |          |          |

In terms of economic growth, the variance of economic growth in the first year stemmed from inflation shocks by 71.13% and from the economic growth shocks itself by 28.87%. Since the second year, the variance of economic growth stemming from the inflation shocks decreased slightly to 70.33% and then reached a stable level at 70.20%, while the variance of economic growth stemmed from economic growth shocks itself increased in the second year to become 29.67% then reached a stable level at 29.80%.

Furthermore, the causality relationship between economic growth to inflation rate, and between inflation rate to economic growth as explained in the VAR model did not indicate the existence of Granger causality (Table 3). The test results did not explain the existence of a Granger causality in the tradeoff between inflation and economic growth in three decades on Indonesian economy. Over the past three decades there had been no certainty of causality

from economic growth to inflation rate, and no certainty causality of inflation rate to economic growth.

Table 3. Granger causality on a VAR model estimation between inflation and economic growth.

Pairwise Granger Causality Tests  
Sample: 1990 2021 ; Lags: 2

| Null Hypothesis:                 | <i>Obs</i> | <i>F</i> -Statistic | Prob.  |
|----------------------------------|------------|---------------------|--------|
| $\pi$ does not Granger Cause $Y$ | 30         | 0.13109             | 0.8777 |
| $Y$ does not Granger Cause $\pi$ |            | 0.57261             | 0.5713 |

Sipahutar (2021) explained that there was a negative expected inflation coefficient on the Phillips curve in Indonesian economy. With this negative expected inflation coefficient, the tradeoff between inflation and unemployment was unstable in the short run. This negative expected inflation coefficient would affect central bank to determine the framework of monetary policy. Central bank would face difficulties in managing interest rate when faced economic shocks. A monetary contraction policy would lower output, increasing unemployment rate and inflation rate, but a monetary expansion policy would not promote a significant output growth. Therefore, monetary expansion policy needed to be maintained over a longer period of time in order to increase output and purchasing power in such a way that expected inflation then became positive through a dynamic process according to the modified Phillips curve.

### Poverty Rate on Inflation and Economic Growth Tradeoff

Due to the economic growth as described in the previous section, price setting and wage setting shift in the same direction. This shifting the promoted an increasing in employment rate in the real business sectors. The persistence demand of labor in real business sectors would produce a continuous business derivative effect, then increasing wage, consumption, stimulating the real business sectors to continue increasing their output and so on. This situation would be a positive leverage for reducing unemployment rate (Acemoglu & Robinson, 2012; Kraay & Raddatz, 2007; Beinhocker, 2006).

The results obtained through the OLS method explained that there was a negative effect of changing of economic growth on changing of poverty rates (Table 4). An increasing in the changing of economic growth by one basis point would reduce the changing of poverty rate by

0.28 basis points as expressed in the equation  $\Delta pov = -0.2057 - 0.2781 \Delta Y$  where  $Y$  is economic growth and  $pov$  is the poverty rate. Furthermore, the changing of inflation rate had a positive effect on changing of poverty rate as in the equation  $\Delta pov = -0.1629 + 0.0446 \Delta \pi$  where  $\pi$  is inflation rate and  $pov$  is the poverty rate. An increasing in the changing of inflation rate by one basis point would increase the changing of poverty rate by 0.04 basis points.

The relationship between inflation rate and the poverty rate found in this study had been in accordance with the foundations of economic theory. The increasing of inflation rate, which was reflected in the increasing of prices, would certainly have an impact on reducing public consumption due to a decreasing in purchasing power. However, because the above model explained that change of economic growth would reduce of poverty rates, fluctuating of economic growth should be avoided through managing fiscal and monetary policies. Based on the tradeoff between inflation and economic growth as obtained through the VAR model mentioned above, fluctuating economic growth would certainly result in fluctuating inflation. Meanwhile, as in the OLS model obtained above, changing of inflation rate had a positive effect on changing of poverty rate, so that fluctuating of economic growth would produce fluctuating inflation in such a way that it would also produce a higher changing in the poverty rate (Falk, Becker, Dohmen, Enke, Huffman & Sunde, 2018; Bloom, 2014).

Table 4. OLS model estimation between economic growth to poverty, and between inflation to poverty.

| OLS Model                                  |          |              |                                              |          |            |
|--------------------------------------------|----------|--------------|----------------------------------------------|----------|------------|
| Inflation ( $\pi$ ) to Poverty ( $pov$ )   |          |              | Economic Growth ( $Y$ ) to Poverty ( $pov$ ) |          |            |
| $\Delta pov = -0.1629 + 0.0446 \Delta \pi$ |          |              | $\Delta pov = -0.2057 - 0.2781 \Delta Y$     |          |            |
|                                            | Constant | $\Delta \pi$ |                                              | Constant | $\Delta Y$ |
| Std. Error                                 | 0.3363   | 0.0181       | Std. Error                                   | 0.2869   | 0.0635     |
| $p$ -value                                 | 0.6318   | 0.0200       | $p$ -value                                   | 0.4791   | 0.0001     |
| $R^2$                                      | 0.1729   |              | $R^2$                                        | 0.3983   |            |
| Adj. $R^2$                                 | 0.1444   |              | Adj. $R^2$                                   | 0.3776   |            |

In addition, it would be proper to estimate that there was an inertia in price setting and wage setting due to the tradeoff between inflation and economic growth. This inertia would certainly affect the lateness of labor demand in relation to the increasing in the escalation of the real business sector which would further affect the level of poverty rate. Therefore, it would be necessary to conduct further studies on the tradeoff between inflation and economic growth, and its impact on the unemployment rate.

## 4. Conclusion

There has been a tradeoff between inflation and economic growth in the Indonesian economy over the last three decades, from 1990 to 2021. When economic growth is persistent, inflation will also increase. The increasing in escalation of business sectors shifts the price setting and wage setting in the same direction so that by increasing labor demanded, the poverty rate will decrease.

As economic literature explained that the tradeoff between inflation and economic growth would always occur, it is important for the government to manage fiscal and monetary policies in order to encourage economic growth. In the context of Indonesian economy, although changing of economic growth had a positive effect on reducing changing of poverty rate, and changing of inflation rate had a positive effect on increasing changing of poverty rate, managing the inflation rate is a very important in order to prevent an increasing in changing of poverty rate. Monetary policy stance in conjunction with expected inflation and long run inflation target should always be a major concern when setting monetary policy. Fluctuating economic growth needed to be avoided to minimize the impact of changing of inflation to the increasing in changing of poverty rate.

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