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THE IMPACT OF MACROECONOMIC VARIABLES TOWARDS ECONOMIC GROWTH IN MALAYSIA

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ABSTRACT

Macroeconomic variables are the main indicators signalling the current trends in the economy and influence the economic growth. Some of the variables are moving significantly with the economics theory while others are not. Thus, this study tries to analyse empirically how these variables influencethe economic growth in Malaysia. The data was taken annually from 1987 to 2017.Regression was run on the variables and the result shows that economic growth is positively affected inflation and population while unemployment and interest rate in the sample period have negative impacts on economic growth.

INTRODUCTION

Malaysia is still an agricultural based nation in most of its economic activities. The main agricultural products in Malaysia is rice, rubber and palm tree kernels. In addition, Malaysia's manufacturing sector accounts for about 45 percents of the economy. It includes processed rubber, processed palm oil, and electronics. Natural resources that contributed to gross domestic product (GDP) growth are tin, petroleum, and natural gas. The growth of economics may increase or decrease based on the macroeconomic variables. The Classical Keynesian theory stated that there is significant and positive relationship between economic growth and some macroeconomic variables, such as inflation, population and others. While negative relationship between economic growth and unemployment and interest rate. Hidayat *et al.* (2014) support the theory and claimed that the inflation and population are desired in the economic growth. They found that inflation and population are positively related to the economic growth in Indonesia. Even the inflation is low (below than 10%), the growth is stable. The Monetarists Theory however, had a view that inflation and population are not desired to growth. It is supported by Mwakanemela and Kasidi (2013). They found negative relationship among the variables.

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They indicated that inflation and population are harmful to the economic growth. If population increase but people are not turn into workforce, it will give negative impact to the economic growth. Based on the theories, researchers come out with different opinions on the relationship of macroeconomic variables and economic growth. Thus, this paper tries to fill the gap by investigating the impact of macroeconomic variables toward economic growth in Malaysia. Does inflation, population, unemployment and interest rate positively influence the economic growth in Malaysia? The scope of investigation will only focus on the variables of inflation, population, unemployment and interest rate since the variables are the most important factors that may affect the economic growth (Fischer, 1993).To analyse the data, this paper use time series analysis. The data was taken from the Central Bank Files and World Bank Data: inflation (consumer prices), population growth, unemployment rate, interest rate and GDP growth for the period of 1987-2017.

Literature Review

Inflation and Economic Growth:(Behera 2014; Sweidan 2004) conducted a study to analyse the impact of inflation on economic growth. They both found that there is positive correlation existing between inflation and economic growth. Sweidan (2004) created a structural break and it is positively related at inflation rate of 2% but at higher rate, the effect to

GDP turned to be negative. Moreover, (Hussain, *et al.*, 2016; Nurina, 2016; Samuel and Teddy, 2014) found negative impact of inflation on GDP. Nurina, (2016) stated that the impact of high inflation rate will increase poverty in the country. Due to high inflation rate, the production cost will increase and decrease the production capacity thus output will decline.

Population and Economic Growth: Thuku *et al.* (2013) supported the economic theory where the higher the population, the higher the economic growth. They analyse the variables using Time series data from year 1963 to 2009 and employed VAR analysis techniques. Adewole (2012) also found the same conclusion but using the OLS estimation analysis. However, Ahmad and Ahmad (2016) and Afzal (2009) found negative relationship between population and economic growth. They both agreed that Pakistan which has bigger population will give lower in growth as its investment contribution was very low and diminished the saving rate. Ahmad and Ahmad (2016) said that Pakistan also has bad impact on the education and health as the population increases but economic growth decreases.

Unemployment and Economic Growth: Mohseniand Jouzaryan (2016) used Autoregressive Distributed Log (ARDL) to analyse the relationship of unemployment and economic growth in Iran. They found that the relationship is significant and negative in long term. Similarly, in Arab countries, study done by Abdul Khaliq *et al.* (2014) showed negative relationship between the variables. Banda *et al.* (2016) however found positive impact between unemployment and economic growth when he studied the case in South Africa. It causes internal factor of South Africa is endowed with a lot of resources both human and minerals.

Interest Rate and Economic Growth: Most of researchers previously found that interest rate has negative relationship with economic growth. (Babalola *et al.* 2015; Saymeh and Orabi, 2013; Hidayat *et al.,* 2014; Udoka and Anyingang, 2012) have tested their variables accordingly and concluded with the same finding that interest rate is significant and negatively related to economic growth. Thus, if the interest rate is higher, it will retard the growths especially in real sector. In Nigeria for example, Udoka and Anyingang (2012) have recommended to the country to have a strong monetary policy to enhance the lending activities among the sectors. This is to improve the productive economic activities.

MATERIALS AND METHODS

This paper aimed to determine the relationship between macroeconomic toward economic growth through time series data method. In this study, the statistical software used is e-views 9 and Microsoft excel. E-views is used to regress all the variables data that have been collected. Data was collected from Central Bank Files and World Bank Data: inflation (consumer prices), population growth, unemployment rate, interest rate and GDP growth for the period of 1987-2016.

Model Specification: This paper adapts the econometric model adopted by Alimi and Atanda (2011) to investigate the macroeconomic variables and economic growth. Inflation, population growth, unemployment rate and real interest rate are used as the proxy for macroeconomic variables because they are major indicators of output performance in the economy. Real Gross Domestic Product is used as a proxy for economic growth. The model can be expressed as:

$$GDP = INF + POP + UNEMP + INT \qquad (1)$$

Where, GDP is Real Gross Domestic Product, INF is inflation rate, POP is population growth, UNEMP is unemployment rate and INT is interest rate.

In this model, all variables are assumed to be endogenous, affecting each other contemporaneously as well as with lags. In vector form, the equation is specified as:

$$GDP = \alpha_0 + \beta_1 INF + \beta_2 POP + \beta_3 UNEMP + \beta_4 INT + \mu \qquad (2)$$

Time Series Properties and Diagnostic Test: To investigate the time series properties of the variables to avoid spurious result. The Philip-Peron (PP) test with constant and linear trend is conducted to test for the order or integration of all series. The ADF test is based on the null hypothesis that a unit root test exists in the autoregressive representation of the time series. However, to adhere strictly to the underlying assumptions for an autoregressive model both the Breusch Pagan test for serial correlation and ARCH test for heteroscedasticity are employed as diagnostic test.

RESULTS AND DISCUSSION

Unit Root Test: This section of the study presents the empirical results of the unit root test and regression analysis. Before the discussion of the estimated autoregressive model, the Philip-Peron unit root result is shown in Table 1.

Table 1. Unit Root Test Results

Variables	1st difference	Status
GDP	16.4417 (0.0000)*	I(1)
INF	-6.8229 (0.0000)*	I(1)
POP	-4.4424 (0.0024)*	I(1)
UNEMP	-13.2740 (0.0000)*	I(1)
INT	-14.2264 (0.0000)*	I(1)

Note: * represent 5% level of significance.

The results of the unit root test shown in table 4.1 revealed that all the variables reject the null hypothesis at first difference. This implies that these variables are not stationary at level.

Ordinary Least Square Model: The estimated regression model,

$$GDP = \alpha_0 + \beta_1 INF + \beta_2 POP + \beta_3 UNEMP + \beta_4 INT + \mu \qquad (3)$$

$$GDP = 6.7623 + 0.1890\ INF + 4.715\ POP - 0.2676\ UNEMP - 0.1323\ INT + \mu \quad (4)$$

Table 2. The Ordinary Least Square (OLS) Results

Variables	Coefficient Value	t-Statistic
Constant	6.7624 (31.091)	6.1984 (0.0000)*
INF	0.1890 (0.2528)	0.7480 (0.4636)
POP	4.7152 (0.7625)	6.1837 (0.0000)*
UNEMP	-0.2676 (0.2089)	-1.2812 (0.2155)
INT	-0.1323 (0.0801)	-1.6503 (0.1153)
R -squared	0.8027	
Adjusted R-squared	0.7612	
F stat	19.3285 (0.0000)*	

*Note: * represent 5% level of significance.

The result shows there are positive relationship between inflation and economic growth. It means an increase of 1% in inflation rate will increase 0.19% of gross domestic product (GDP). It supported by Hussin and Malik (2011), Hidayat *et. al.* (2014). Since it positive relationship, researcher reject the

null hypothesis. The population and economic growth show positive relationship too. It means an increase of 1% in population growth will increase 4.715% of gross domestic product. This result supported by Swinnertonand Rogers (1999) and Thuku *et al.* (2013) indicated population growth and economic growths are both positively correlated and that an increase in population will impact positively to the economic growth in the country. The unemployment and GDP have negative relationship. It means an increase of 1% in unemployment rate will decrease 0.2676% of gross domestic product. This result is also similar to Umair and Ullah (2013) in their finding stated that unemployment insignificantly influences GDP. The interest rate and GDP also have negative relationship. It means an increase of 1% in interest rate will decrease 0.1323% of gross domestic product. This result is also similar to the studies done by Udoka and Anyingang (2012) have done a study in Nigeria to examine the effect of interest rate fluctuation on economic growth. The result shows there is inverse relationship between interest rate and economic growth. The R-squared showed the strength of the explanatory variables explained by the dependent variables. Based on the results (table 4.2), 80.27% change in GDP can be explained by inflation, population, unemployment and interest rate. The other 19.27% percentages can be explained by the other variables. The value of probability f-statistic is 0.0000% level of significant. Thus, the model is fit.

Conclusion and Recommendation

The conclusive outcome of the research study is that inflation and population are found as positive correlation for GDP, however unemployment and interest rate are found as negative correlation for GDP. Positive correlation between population and GDP parallel with government initiative which entitled a mother 3 months break after giving birth to her baby and in Selangor *"Skim Peduli Sihat"* has applied. Besides, in this research indicated there are negative relationship between unemployment and GDP and considered as full employment and stable. Besides, interest rates are found as negative relationship with GDP. Researcher suggests BNM can reduce interest rate since it gives positive impact towards GDP. As we know, lower in interest rate, attracts household and firm to apply bank loan. Household will use money loan to increase their purchasing power, however firm will use money loan to enhance their empire company product. Household buy more product, company produce more product, need more worker and surely government revenue will increase as well. Because of inflation give positive impact on GDP in this research, it will not be a problem if Malaysia gives low interest rate. Although inflation does not rise problem to Malaysia, researcher believes it only happens in the short term. So, BNM must control the rate of interest to avoid rate of inflation become higher than 3% in the long term. In a nut shell, besides the suggestion for BNM to reduce the interest rate, the researcher also suggests to future researcher to add more independent variables to sturdy the data. For example, investment and exchange rate data.

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