FISCAL POLICY INSTRUMENTS AND ITS IMPACT ON THE GROWTH LEVEL OF MALAYSIAN ECONOMY

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Abstract

The intent of this study was to observe and recognize the influence and effect of the fiscal policy combinations chosen by the Malaysian government on the economic growth level of Malaysia. The goal is to identify and find the correlation or cause and effect relation between Gross Domestic Product level of Malaysia and the fiscal policy instruments used. In this study we tested correlation, regression and causality relations between the Gross Domestic product in Malaysia and the fiscal policy instruments during the time frame of 15 years from 2002-2016. Different empirical test done to identify if any relation exists indicates that there is some sort of relationship amongst the fiscal policy instruments and the growth rate of Malaysia. Fiscal policy is based on a theory that states that the government of a country can influence their macroeconomic productivity level by either enlarging or reducing their tax level and spending which in turn would curb the inflation to a healthy level and increase employment while at the same time help reduce poverty. The objective of the study was to investigate and find out the relationship between fiscal policy instruments and the GDP growth rate, and to find out the type and extent of the relation existing between fiscal policy instruments and economic growth. Different empirical researches have also been carried out on the implication of fiscal policy on the Gross Domestic Product with varying results. However, there isn't much commonality between all the results as all the researches have been conducted using varying amount and various types of variables, as well as various different types of tests, were conducted. Variables were identified by the researcher and various tests have been done in the literature to discover the relation amongst the fiscal policy instruments and economic growth of a country. The correlation analysis suggests that there is a positive and strong relationship amid GDP growth and inflation. There is no direct relationship between unemployment and the GDP. The granger causality test is used to discover if there are any cause and effect relation existing between random variables. Regression analysis is used by researchers to predict the behavior of the dependent variable based on the behavior of the independent variables in simpler words it is used to comprehend which of the independent variables are related to the dependent variables and to determine the form of this relationship. After the overall analysis of the result, the researcher concluded that the results obtained through various testing methods will be useful for decision making process.

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Introduction

Macroeconomic policies are an integral aspect of the development and the growth of the economy of any nation. Governments create and use macroeconomic policies for the long-term stability and development of an economy. It is also used by the governments to reduce inflation, recession and the unemployment rate which comes with it from getting out of hand. Unfavorable economic policies can create uncertainty in the economy which in turn discourages investment. Hence, limiting the chances is of growth in the economy. Uncertainty in an economy can also lead to the reduction of the potential of the long-term growth in economy (Adeeb et al).

Economic policy is classified in two types:
- Monetary policy
- Fiscal policy

There is also another macroeconomic policy known as the trade policy, but it isn't a major macroeconomic policy. These two policies are the major tools used by the governments to manage their economy. Here in this study, the main focus of the researcher is the fiscal policy.

Fiscal policy is the means through which a country's government regulates their spending and tax rate to observe and impact aggregated demand of nation and economy. Fiscal policy is based on a theory that states that the government of a country can influence their macroeconomic productivity level by either enlarging or reducing their tax level and spending which in turn would curb the inflation to a healthy level and increase employment while at the same time help reduce poverty.

Fiscal policy can affect the economic growth either directly or indirectly. The direct effect is through governmental spending for the purpose of development which in turn produces skilled labor that leads to an increase in productivity and growth in the economy. The direct effect is through changing the monetary variables and the economic variables in the economy. (Adeeb et al).

Studies have also shown that the fiscal policy has a substantial part in the economic development of developing countries as it helps create employment openings, increases research and development and also develops a country's infrastructure and makes it stronger. (James et al, 2014).

Fiscal policy has always been the neglected one out of all the macroeconomic policies until the recent crisis as during the crisis period monetary policy failed to achieve goals that the government had set up and wasn't performing and providing the desired results.

The functions and the objectives of the fiscal policy have gained eminence in the current crisis as the governments have now stepped in to back up financial systems, jumpstart economic growth and lessen the impact of the crisis on the group affected by it. (Horton and EL Gananiny, 2009).

There are two kinds of fiscal policies and both of them are effective. It depends on a country's government to choose whichever one does prefer and serves their need the best. Each of the policies have an opposite effect to the other.

The Gross domestic product of an economy or commonly known as GDP of a country is the fundamental indicator that is used to check the health of the economy. It contains the value of the goods and services produced during the span of a year in a country by its residents as it factor cost. GDP also includes public and private investment, consumption and next exports.

The following is the formula used for the calculation of GDP

GDP=(EXPORTS–IMPORTS) + CONSUMPTION+NET INVESTMENT+GOVERMENTAL SPENDINGS AND INVESTMENT

A lot of research papers have been written and are available on both the matter of fiscal policy and Gross domestic product of a country. Some of the studies are by Hansson and Henerekson (1994), Anderson and Babula (2008).

Objective of this Study
- To investigate and find out the relationship between fiscal policy instruments and the GDP growth rate.
- To find out the type and extent of the relation existing between fiscal policy instruments and economic growth.

The rest of the paper is structured as follows, literature review which reviews the literature related to the topic of fiscal policy and its impact on the economic growth levels. Followed by the methods used to test the variables of the study and find the relationship between them. Analysis of the test results is done and the understanding or explanation of the results and finally ends with concluding remarks.

Literature Review

Comprehensive theoretical research or literature is also available about the influence of the fiscal policy on the GDP growth level as well as on the fiscal policy instruments like tax rate and inflation. Various empirical researches have also been carried out on the implication of fiscal policy on the Gross Domestic Product with varying results. However, there isn't much commonality between all the results as all the researches have been conducted using varying amount and various types of variables, as well as various different types of tests, were conducted.

Ruman. K (2016) concluded in his study about the effects of fiscal policy on the economic growth in Pakistan during the period of 2002-2014 that 3 out of the 4 variables chosen by him did in fact have an effect on the economic growth. He concluded that the total revenue, total expenditure and governmental defense and development expenditure does indeed play a part in Pakistan's economic growth and that the interest rate doesn't have any similar impact on the economic growth, but it does support economic growth.

Aregbyen (2007) has established that there exists a positive association between a nation's fiscal policy and its economic development. Solomon.O (2018) in his research state that the fiscal policy has a key role that it plays in the sustenance of the economic growth and the macroeconomic stability.

Ali et al (2009) in their cross-country research to check the effect of the monetary policy and fiscal policy on the economic growth in the South Asian countries established that the monetary policy is much more significant for the economic growth than fiscal policy. They also stated they wouldn't ignore the impact of fiscal policy even though it seems insignificant when compared to the impact of monetary policy.

Bogolib (2015) and Chugunov. I et al (2016) in their respective study also established that the fiscal policy instruments have a positive influence on the economic growth.

Gemmell. N et al (2006) in their study concluded that there is a significant impact of the fiscal policy on the economic growth levels but only in the short run provided that the fiscal policy changes are not reversed. Perotti (2002) also conducted a similar study in which he studied the impact of the fiscal policy on the 5 different OECD countries. He concluded that the effects of the fiscal policy on the economic growth and its numerous components were pretty faint. Hence proving that there is no relation between the fiscal policy instruments and the economic growth level in the long run.

Zagler and Durnecker (2003) in their study regarding fiscal policy and economic growth concluded that fiscal policy is a short run issue and stated that the positive economic growth, in the long run, can be achieved by spending on public infrastructures and education.

Biau and Girard (2005) in their research regarding the impact of the fiscal policy instruments on the economic growth levels in France reached a conclusion that fiscal policy has a positive impact on the investment and consumption component of the GDP of France. While Adeeb et al (2014) conducting their study on the effects of both monetary and fiscal policy on the GDP in Pakistan concluded that the monetary policy has an influence on Pakistan GDP while the fiscal policy doesn't. Even if the impact existed, they ruled it to insignificant. Similar conclusion was drawn by Abata et al (2012) in their study which stated that the monetary policy has much more significant and powerful impact on the economic growth than the fiscal policy. Findings in these researches were coherent with many other researches done like the ones by Anisate and Flolorunso (2002), Have and Enu (2014), and Adefeso and Mobolaji (2010).

While Balogun (2007) in his study that uses the simultaneous equation model states that neither of the polices promoted economic growth in an economy it was instead a source of stagnation and persistent inflation. Baum and Koester (2011) in their study concluded that fiscal policy could only to be used to affect the economy when there is a positive gap in the economy. Finally, Maku (2015) in his study was the one that concluded that the fiscal policy as opposed to monetary has a greater impact on the economic development of Nigeria during 1970-2011.

Various different researchers got conflicting results to one another. Akai et al (2002) revealed that this was due to some researchers using wrong data or variables in their study. But the difference could also come about as a result of geographical and political conditions.

Research Methodology

This research analyses the relationship between the fiscal policy and the GDP growth rate of Malaysia using traditional Granger Causality test and regression analysis.

The following are the variables selected for this study

- The real rate of GDP growth
- Tax revenue
- Government debt
- Inflation

Dependent variable: GDP growth rate

Independent variables: Inflation, government debt, tax revenue.

Various tests have been done in the literature to discover the relation amongst the fiscal policy instruments and economic growth of a country.

The following tests are done in this study for analysis:

1. Descriptive stats
2. Unit root test
3. Correlation
4. Regression
5. Granger causality

Data were collected from wroldbank.org. Tests were done using e-views

The lag of 2 was chosen for all the tests done.

The limitations of this study are that the data used and available is going to give us results regarding the relation of the variables in the long-term rather than the short-term as there wasn't enough or suitable data for all the variables available in the monthly format. Data for the research was available in the long term but not enough long-term data was available to get accurate results. Results of the tests conducted by us in this research would be weak, but as they are still worth mentioning as the literature review above states that there might be some sort of short-term impact of fiscal policy on the economic growth of a nation. The other limitation in our study is the unavailability of data regarding other variables that could have been used in the study for greater accuracy.

Results and Discussion

Descriptive stat

The results of the descriptive stats are shown above. The results indicate that out of the variables the government debt has the highest mean value of 47.41 and the inflation rate has the lowest

mean value of 3.49. the results also indicate that the average GDP growth rate in Malaysia is around 5.11.

The skewness shows that all the variables are normally distributed except the GDP growth rate. This is found by looking at the p value. The p-value is greater than 5% indicates that the data is normally distributed.

Table: 1 Table showing skewness that, the variables are normally distributed except the GDP growth rate

	GDP_GROWTH	GOVERNMENT_DEBT	INFLATION	TAX_REVENUE
Mean	5.113635	47.41432	3.497715	14.88794
Median	5.390988	49.55982	3.299202	14.82639
Maximum	7.424847	54.42667	10.38876	17.44700
Minimum	-1.513529	39.79975	-5.992098	13.33220
Std. Dev.	2.004714	5.285612	4.039920	0.938719
Skewness	-2.496003	-0.226627	-0.458244	1.051865
Kurtosis	9.328679	1.478965	3.402549	5.037630
Jarque-Bera	40.60769	1.574366	0.626248	5.361011
Probability	0.000000	0.455125	0.731159	0.068529
Sum	76.70452	711.2148	52.46572	223.3190
Sum Sq. Dev.	56.26432	391.1278	228.4933	12.33672
Observations	15	15	15	15

Unit root test

The unit root of the data is found to examine if the data is stationary or if it isn't. The first unit root test was done in level and it confirmed that some of the variables were stationary and that it can be used for further testing. The variable that was stationary at the level is inflation, tax revenue and GDP growth rate.

Further unit root test in 1st difference was done to the remaining variable and it was stationary at 1st difference.

Table: 2 A Table showing the unit root test of Government Debt

Null Hypothesis: GOVERNMENT_DEBT has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.088673	0.6886
Test critical values:	1% level	-4.004425	
	5% level	-3.098896	
	10% level	-2.690439	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
and may not be accurate for a sample size of 14

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GOVERNMENT_DEBT)
Method: Least Squares

Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GOVERNMENT_DEBT(-1)	-0.191776	0.176156	-1.088673	0.2977
C	9.708730	8.334293	1.164913	0.2667

R-squared	0.089889	Mean dependent var	0.687885
Adjusted R-squared	0.014047	S.D. dependent var	3.372796
S.E. of regression	3.349023	Akaike info criterion	5.386778
Sum squared resid	134.5915	Schwarz criterion	5.478072
Log likelihood	-35.70745	Hannan-Quinn criter.	5.378327
F-statistic	1.185209	Durbin-Watson stat	2.017226
Prob(F-statistic)	0.297679		

Table: 2 B Table showing the unit root test of Government Debt

Null Hypothesis: GOVERNMENT_DEBT has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.088673	0.6886
Test critical values:	1% level	-4.004425	
	5% level	-3.098896	
	10% level	-2.690439	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
and may not be accurate for a sample size of 14

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GOVERNMENT_DEBT)
Method: Least Squares

Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GOVERNMENT_DEBT(-1)	-0.191776	0.176156	-1.088673	0.2977
C	9.708730	8.334293	1.164913	0.2667

R-squared	0.089889	Mean dependent var	0.687885
Adjusted R-squared	0.014047	S.D. dependent var	3.372796
S.E. of regression	3.349023	Akaike info criterion	5.386778
Sum squared resid	134.5915	Schwarz criterion	5.478072
Log likelihood	-35.70745	Hannan-Quinn criter.	5.378327
F-statistic	1.185209	Durbin-Watson stat	2.017226
Prob(F-statistic)	0.297679		

Table: 2 C Table showing the unit root test of Government Debt

Null Hypothesis: GOVERNMENT_DEBT has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.088673	0.6886
Test critical values:	1% level	-4.004425	
	5% level	-3.098896	
	10% level	-2.690439	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
    and may not be accurate for a sample size of 14

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GOVERNMENT_DEBT)
Method: Least Squares

Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GOVERNMENT_DEBT(-1)	-0.191776	0.176156	-1.088673	0.2977
C	9.708730	8.334293	1.164913	0.2667
R-squared	0.089889	Mean dependent var		0.687885
Adjusted R-squared	0.014047	S.D. dependent var		3.372796
S.E. of regression	3.349023	Akaike info criterion		5.386778
Sum squared resid	134.5915	Schwarz criterion		5.478072
Log likelihood	-35.70745	Hannan-Quinn criter.		5.378327
F-statistic	1.185209	Durbin-Watson stat		2.017226
Prob(F-statistic)	0.297679			

Table: 2 D Table showing the unit root test of Government Debt

Null Hypothesis: GDP_GROWTH has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.243066	0.0065
Test critical values:	1% level	-4.004425	
	5% level	-3.098896	
	10% level	-2.690439	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
    and may not be accurate for a sample size of 14

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GDP_GROWTH)
Method: Least Squares

Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP_GROWTH(-1)	-1.206975	0.284458	-4.243066	0.0011
C	6.165377	1.577701	3.907824	0.0021
R-squared	0.600048	Mean dependent var		-0.083398
Adjusted R-squared	0.566719	S.D. dependent var		3.216976
S.E. of regression	2.117546	Akaike info criterion		4.469956
Sum squared resid	53.80799	Schwarz criterion		4.561250
Log likelihood	-29.28969	Hannan-Quinn criter.		4.461505
F-statistic	18.00361	Durbin-Watson stat		2.061931
Prob(F-statistic)	0.001141			

Table: 3 Table showing the unit root test of Tax Revenue

Null Hypothesis: TAX_REVENUE has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.857117	0.0130
Test critical values:	1% level	-4.004425	
	5% level	-3.098896	
	10% level	-2.690439	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
and may not be accurate for a sample size of 14

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TAX_REVENUE)
Method: Least Squares

Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TAX_REVENUE(-1)	-0.699950	0.181470	-3.857117	0.0023
C	10.21377	2.721122	3.753514	0.0028
R-squared	0.553527	Mean dependent var		-0.263620
Adjusted R-squared	0.516321	S.D. dependent var		0.864021
S.E. of regression	0.600901	Akaike info criterion		1.950790
Sum squared resid	4.332981	Schwarz criterion		2.042084
Log likelihood	-11.65553	Hannan-Quinn criter.		1.942339
F-statistic	14.87735	Durbin-Watson stat		1.837104
Prob(F-statistic)	0.002281			

Table: 4 Table showing the unit root test of Inflation

Null Hypothesis: INFLATION has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.339244	0.0055
Test critical values:	1% level	-4.004425	
	5% level	-3.098896	
	10% level	-2.690439	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
and may not be accurate for a sample size of 14

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(INFLATION)
Method: Least Squares

Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INFLATION(-1)	-1.226827	0.282728	-4.339244	0.0010
C	4.342485	1.526639	2.844474	0.0148
R-squared	0.610757	Mean dependent var		-0.083991
Adjusted R-squared	0.578320	S.D. dependent var		6.544403
S.E. of regression	4.249734	Akaike info criterion		5.863153
Sum squared resid	216.7229	Schwarz criterion		5.954447
Log likelihood	-39.04207	Hannan-Quinn criter.		5.854702
F-statistic	18.82904	Durbin-Watson stat		1.987996
Prob(F-statistic)	0.000963			

Correlation

The correlation analysis suggests that there is a positive and strong relationship amid GDP growth and inflation. While GDP growth rate and government debt share a moderate yet negative relation. There is also a negative but moderate relationship existing between GDP growth and tax revenue. All things considered, the results show that there is only one strong relation be it negative or positive between any of the variables with the GDP growth rate.

Table: 5 Table showing the variables and the GDP growth rate

	D(GDP_GROWTH)	D(GOVERNMENT_DEBT)	D(INFLATION)	D(TAX_REVENUE)
D(GDP_GROWTH)	1.000000	-0.542482	0.802748	-0.556613
D(GOVERNMENT_DEBT)	-0.542482	1.000000	-0.762917	0.185086
D(INFLATION)	0.802748	-0.762917	1.000000	-0.433389
D(TAX_REVENUE)	-0.556613	0.185086	-0.433389	1.000000

Table: 6 Table showing the pair-wise ganger causality test

Pairwise Granger Causality Tests

Sample: 2002 2016
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
D(GOVERNMENT_DEBT) does not Granger Cause D(GDP_GROWTH)	12	1.48770	0.2895
D(GDP_GROWTH) does not Granger Cause D(GOVERNMENT_DEBT)		0.04930	0.9522
D(INFLATION) does not Granger Cause D(GDP_GROWTH)	12	3.11238	0.1079
D(GDP_GROWTH) does not Granger Cause D(INFLATION)		1.34588	0.3202
D(TAX_REVENUE) does not Granger Cause D(GDP_GROWTH)	12	0.07538	0.9281
D(GDP_GROWTH) does not Granger Cause D(TAX_REVENUE)		13.0365	0.0044
D(INFLATION) does not Granger Cause D(GOVERNMENT_DEBT)	12	2.63720	0.1401
D(GOVERNMENT_DEBT) does not Granger Cause D(INFLATION)		0.38746	0.6925
D(TAX_REVENUE) does not Granger Cause D(GOVERNMENT_DEBT)	12	0.91318	0.4442
D(GOVERNMENT_DEBT) does not Granger Cause D(TAX_REVENUE)		6.67337	0.0239
D(TAX_REVENUE) does not Granger Cause D(INFLATION)	12	6.29312	0.0273
D(INFLATION) does not Granger Cause D(TAX_REVENUE)		7.63826	0.0174

Granger causality

The granger causality test is used to discover if there are any cause and effect relation existing between random variables. The result of greater than 5% indicates that there is a strong cause and effect relationship between the variables. The result of less than 5% gives an indication that no cause and effect relationship exists amongst the variables.

Hypothesis:

H0 no cause and effect relation exists
H1 cause and effect relation exists

Decision rule:
   • Reject H0 if value <5%
   • Accept H0 if value >5%

Using the decision rule, we can conclude that there is no cause and effect relation between the inflation, tax revenue, government debt and the GDP growth rate. But there is a cause and effect relation between GDP growth rate and tax revenue. So it could be said that the GDP growth rate causes tax revenue. There also exists causality between inflation and tax revenue as well as government debt and tax revenue. So, it could be said that all the fiscal policy instruments don't really have a cause and affect relation with the GDP growth rate of Malaysia.

Regression analysis

Regression analysis is used by researchers to predict the behavior of the dependent variable based on the behavior of the independent variables in simpler words it is used to comprehend which of the independent variables are related to the dependent variables and to determine the form of this relationship.

The coefficients in the results below tell us the direction of the relationship between each variable. In our result, government debt and inflation share a positive relationship with the GDP growth rate. the other variable shares a negative relationship with the GDP growth rate.
The R-squared and the adjusted R-square: it is a measure of success of regression. In ideal situation the higher value is an indication of a better model and that the variables can be better predicted. The Adjusted R-square is a similar concept the value is usually equal to or less than the R-squared value. The R-squared in our results show 70% which is greater than 60% so it is accepted. This result indicates that our regression model is nicely fitted and is able to predict the behavior of the dependent variables.

Table 7. Table showing the Least squares method

Dependent Variable: D(GDP_GROWTH)
Method: Least Squares

Sample (adjusted): 2003 2016
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.344082	0.582743	-0.590453	0.5680
D(GOVERNMENT_DEBT)	0.079213	0.263578	0.300528	0.7699
D(INFLATION)	0.374170	0.148127	2.526008	0.0301
D(TAX_REVENUE)	-0.901380	0.738101	-1.221215	0.2500

R-squared	0.700742	Mean dependent var		-0.083398
Adjusted R-squared	0.610965	S.D. dependent var		3.216976
S.E. of regression	2.006515	Akaike info criterion		4.465632
Sum squared resid	40.26103	Schwarz criterion		4.648220
Log likelihood	-27.25943	Hannan-Quinn criter.		4.448731
F-statistic	7.805325	Durbin-Watson stat		2.174846
Prob(F-statistic)	0.005627			

The F-statistic is used to test the overall significance of a regression model that has more than one independent variable.

The probability (F-stats): the p value should be less than 5% to be significant and, in our result, it is lower than 5%, its around 0.56% which indicates that all our variables can jointly affect or influence our dependent variable which is GDP growth rate.

The Durbin Watson stat value tells us whether there exists an auto serial correlation in our model or not. The Durbin Watson stat value in our result is 2.17 which are in between 1.5 and 3 and it indicates that there is no serial correlation in our model.

Lagging indicators and the Gross Domestic Product

At purchaser's price gross domestic product is the sum of gross value added by all resident manufacturers and producers in the country. In addition, that taxes less subsidies not counting in the cost of the products. It is calculated not including deductions for depreciation of fabricated assets and degradation on natural resources. Given data are in local currency unit (LCU).

Table 8: Table showing the lagging indicators of gross domestic product from the year 2009 to 2019

Gross Domestic Product			Purchasing Power Parity		Consumer Price Index		Unemployment Rate	
Year	GDP value in million (LCU)	Change in %	Value (LCU per $)	Change in %	Value (LCU)	Change in %	Un-employment Rate (%)	Annual Change in %
2019	1,510,692	4.37	1.6	-1.84	121.5	0.66	3.32%	-0.03
2018	1,447,451	5.48	1.6	-1.72	120.7	0.88	3.35%	-0.06
2017	1,372,309	9.81	1.7	3.80	119.6	3.87	3.41%	-0.03
2016	1,249,697	6.18	1.6	1.70	115.1	2.09	3.44%	0.34
2015	1,176,941	6.37	1.6	4.13	112.8	2.10	3.10%	0.22
2014	1,106,443	8.62	1.5	2.26	110.5	3.14	2.88%	-0.23
2013	1,018,614	4.88	1.5	1.28	107.1	2.11	3.11%	0.07
2012	971,252	6.53	1.5	-0.85	104.9	1.66	3.04%	-0.01
2011	911,733	10.99	1.5	3.26	103.2	3.17	3.05%	-0.20
2010	821,434	15.23	1.4	6.03	100.0	1.62	3.25%	-0.44
2009	712,857	-7.42	1.3	-6.70	98.4	0.58	3.69%	0.35
2008	769,949		1.4		97.8		3.34%	0.11

Source: Compiled from world atlas data Malaysia, https://knoema.com/atlas/Malaysia/topics/Economy/Inflation-and-Prices/Purchasing-power-parity

Changes in GDP and purchasing power parity

During the year 2019, gross domestic product was 1,510,692 million MYR. This is an increase of 740,743 million MYR from 2008. The changes in GDP growth rate has been decreasing in

2018 and 2019. During the year 2017 the growth rate was 9.81 percent. In the year 2018 and 2018 it was 5.48 and 4.37 respectively.

Number of unit LCU requires to purchase the similar amounts of goods and services in the domestic country market as the $ would buy in the USA is called as purchasing power parity conversion factor.

Table 8 shows the purchasing power parity from the year 2009 to 2019.in the same way of gross domestic product, the changes in purchasing power parity also lagging negatively during the years 2017 and 2018 at (-)1.72 and (-)1.84 respectively against (+) 3.80 in the year 2017.

Table 9 shows the R value of purchase parity

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.895[a]	.802	.782	124754.29254

a. Predictors: (Constant), Purchase parity

Table 10 shows the level of significance of purchase parity

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	629911194539.837	1	629911194539.837	40.473	.000[b]
	Residual	155636335074.829	10	15563633507.483		
	Total	785547529614.667	11			

a. Dependent Variable: GDP
b. Predictors: (Constant), GDP= -2166991.439 + 2146882.927 * purchase parity

Since the level of significance at 5 percent is.000, which is less than 0.05, hence there is a significant relationship between the purchase parity and the GDP.

Table 11 shows the coefficient correlation of purchase parity

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2166991.439	513082.027		-4.223	.002
	Purchase parity	2146882.927	337461.472	.895	6.362	.000

a. Dependent Variable: GDP

Consumer price index and unemployment rate

Regarding consumer price index, the laspeyres formula is generally used. This consumer price index reflects the changes in the cost to average number of customers of obtaining a bundle of services and goods that could be fixed or flexible at specified intervals. Normally this interval is calculated as yearly.

Changes in consumer price index have been steadily increasing from the year 2012 to 2017. It has decreased in the year 2018 and 2019. These changes in the consumer price index directly influence the GDP. Likewise, the GDP growth rate was decreasing in 2018 and 2019. Annual changes in unemployment rates were sustainable. Varying the annual changes in the unemployment rate was less during the year 2014. All other years, from 2008 to the un-employment rate was more than 3 percent.

Table 12 shows the R value of consumer price index

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.995[a]	.990	.989	28345.17733

a. Predictors: (Constant), Consumer price Index

Table 13 shows the level of significance of Consumer price index

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	777513038835.212	1	777513038835.212	967.719	.000[b]
	Residual	8034490779.455	10	803449077.945		
	Total	785547529614.667	11			

a. Dependent Variable: GDP
b. Predictors: (Constant), GDP = 30584.846 +(-)2253809.335* Consumer price index

Since the level of significance level at 5 percent is .000, which is less than 0.05, hence there is a significant relationship between the customer price index and the GDP.

Table 14 shows the coefficient correlation of consumer price index

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2253809.335	107772.304		-20.913	.000
	Consumer price index	30584.846	983.177	.995	31.108	.000

a. Dependent Variable: GDP

Table 15 shows the coefficient correlation of unemployment rate and GDP

		GDP	Un-employment
GDP	Pearson Correlation	1	-.004
	Sig. (2-tailed)		.990
	N	12	12
Un-employment	Pearson Correlation	-.004	1
	Sig. (2-tailed)	.990	
	N	12	12

Regarding the unemployment and the GDP the level of significant at 5 percent is 0.990. Which is higher than 0.05. Hence there is no significant relationship between Unemployment and the GDP.

Earnings and minimum wages

The reason of minimum wages system is to safeguard the skilled and unskilled workers at the side of unduly less pay. This minimum wage is applicable to all workers who are employed and in required such minimum wage protection. This minimum wage system also protects to alleviating the poverty and reduces the economic inequality among men & women and assuring the right of all people to equal wages for equal work has done. If the minimum wage is increasing it could inspire macroeconomic growth. Similarly, the minimum wage is indexed to inflation it does not appear to have larger adverse employment effects.

Table showing the Minimum wages in Malaysia from 2008 to 2020.

Year	Value(MRY)	Change in %
2020	1200	9.09%
2019	1100	10.00%
2018	1000	-
2017	1000	-
2016	1000	11.11%
2015	900	-
2014	900	-
2013	900	-
2012	900	14.80%
2008	784	-

Compiled from Session 6 Malaysian wage indicators:

https://www.ilo.org/wcmsp5/groups/public/---dgreports/---integration/documents/meeting document/wcms_144773.pdf https://wageindicator.org/salary/minimum-wage/malaysia
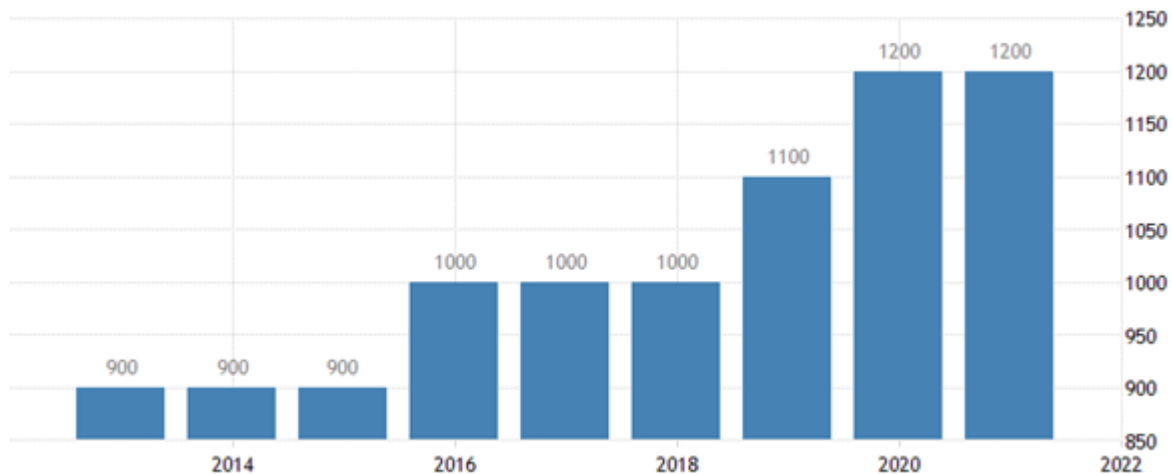
Source: Ministry of Human Resource Malaysia,
https://tradingeconomics.com/malaysia/minimum-wages

Conclusion

The core purpose of this research is to determine the impact, and the effect of the fiscal policy instruments on the GDP growth rate of Malaysia. Several studies have been revised and reviewed to know the impact and the significance of microeconomic policies on the growth of the economy. After the overall analysis of the result, we can conclude that the results obtained through various testing methods in our research are quite similar to the ones we have studied in our literature review. All the tests were done and reach a similar conclusion that a relationship exists between the fiscal policy instruments and the economic growth rate of Malaysia and there is some correlation between them, but no causality exists between them. The study also analysis the lagging indicators of the GDP, the researcher made an attempt to study the relationship between GDP and the major lagging indicators such as purchase power parity, consumer price index and the unemployment rate. The results revealed that there was a significant relationship between GDP and Purchase power parity. Similarly, it has been a strong relationship between GDP and consumer price index. But there is no relationship exists between the unemployment rate and the GDP. So, it could be said that the changes in the growth rate of Malaysia during the period of 2002-2016 were due to the fiscal policy instruments but there isn't much detailed evidence available on it.

References

- Adeeb B, Saeed S, Ali F (2014) Do fiscal and monetary policies matter for growth? Empirical evidence from Pakistan. Jebu's. Econ. Manage.2(1): 001-0.10
- Adifeso, H.A and Mobalaji, H.I(2010) The fiscal policy and the economic growth in Nigeria: further empirical evidence. Pakistan journal of social sciences, 7(2), 137-142.
- Aregbyen, O (2007) Public Expenditure and economic growth in Africa, J Econ policy .1(1).1-37.

- Ajisafe.R. A and Falorunso.B. A (2002) The relative effectiveness of fiscal and monetary policy in microeconomic management in Nigeria. The African economic and business review, 3(1), pg. 23-40.
- Akai, N and M. Sakata (2002) fiscal decentralization contributes to economic evidence from state level cross section data for the US. Journal of urban economics 52-93108.
- Ali, Shiroma, S. Ali, A (2009) whether fiscal stance or the monetary policy is effective for the economic growth in the case of south Asian countries? The Pakistan dev. rev.47(4):79 1-799.
- Anderson, L and Babula, R (2008) The link between openness and long term economic growth.J.int.commerce.Econ.ppl 1-20.
- Balogun.E.2007 Monetary policy and economic performance of west African, monetary zone countries. Mpra. paper no 3408.
- Baum. A, Koester G.B, 2011. The impact of fiscal policy on economic activity over the business cycle evidence from threshold VAR analysis, Discussion series paper 1: Economic studies, no 03/2011.
- Bogolib, T (2015) Fiscal policy as an instrument of macroeconomical stability. Economic annals-XX1, 3-4, 84-87.
- Chagunov, I, and Makogon, V (2016) Budget policy under economic transformation. Economic Annals-XXI,3-4(2) ,66-69.
- Gemmell N, Kneller, R. Sanz I (2006) fiscal policy impacts on growth on OECD: Are they long or short run? university of Nottingham, UK. pp 1-26.
- Havi, E.D.K and Emu, P (2014) The effect of fiscal policy and monetary policy on Ghana's economic growth: which policy is more potent? International Journal of empirical finance, 3(2), 61-75.
- Henerekson, Hansson, P.A new framework of testing the effect of governmental spendings on growth and productivity. Public choice .81 (3/4) :381-401.
- Horton, M and El- Ganainy, A (2009) what is fiscal policy? finance and development pp 52-53.
- Maku, O.E. (2015) Fiscal policy and economic growth: a study of Nigerian economic perspective, journal of economic and sustainable development. 6(15), 86-92.
- Perotti R (2002) estimating the effect of fiscal policies in OECD countries. International seminar on macroeconomics, working paper series, working paper no 168, European central bank.
- Ruman Khan (2016), the impact of the fiscal policy on economic growth. A case study of Pakistan (2002-2014), Munich, Grin Verlag, www.grin.com/document/337248.
- Solomon, O. (2018) www.independant.academia.edu/Kingsooloo.

- Zagler, M and Durnecker, G (2003) fiscal policy and the economic growth. J. Econ. Surv 17(3): 397-418.

Websites
- www.reserchgate.com
- www.investopedia.com
- www.wallstreetmojo.com
- https://tradingeconomics.com/malaysia/minimum-wages
- https://www.ilo.org/wcmsp5/groups/public/---dgreports/---integration/documents/meetingdocument/wcms_144773.pdf
- https://wageindicator.org/salary/minimum-wage/malaysia
- https://knoema.com/atlas/Malaysia/topics/Economy/Inflation-and-Prices/Purchasing-power-parity