

# **The Impact of Government Expenditure on Economic Growth in Malaysia**

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## **Abstract**

Government spending is a major component of Gross Domestic Product (GDP). The matter of overspending comes into the perspective where it might be deemed inevitable but necessary. If the government's budget is being overspent, it may have failed to address the real element that may boost productivity. Therefore, this research is conducted to study the impact of government expenditures on the economic growth in Malaysia using independent variables like development expenditure, education, healthcare, and gross fixed capital formation from 1980 to 2020 as guidelines. Findings of this study show development expenditure is positively significant affecting Malaysia economic growth, while education, healthcare, and gross fixed capital formation are negatively significant. A long-run relationship is also detected for the model used in this study.

**Keywords:** Government Expenditure, Economic Growth, Education, Gross Fixed Capital Formation, Healthcare

## **1. Introduction**

For decades, the extent of government expenditure and its impact on long-run economic growth, as well as vice versa, has been a topic of intense debate. The purpose of this study is to look at the relationship between government spending and economic development in Malaysia from 1980 to 2020. Since the country's independence in 1957, many policies have been introduced as tools for the country's economic orientation. These initiatives have had a significant impact on the pattern of government spending. This study utilizes the most spending budget for development expenditure, education, healthcare, and gross fixed capital formation to determine the extent of the efficacy of each of the government expenditures on gross domestic product. Few contradicting theories have been discussed before such as Wagner's law regarding public expenditure. He found that it is endogenous to economic growth, meaning that expenditure increases along with increase in national income, proving a long-term bi-directional relationship. On the contrary, Keynesian theory stated an exogenous relationship between expenditure and the national output, that an increase in government expenditure improves economic growth. There was also a neo-classical theory by Solow where he firmly suggested a no long run impact of government expenditures on economic growth.

As an important tool, government spending can contribute to a country's economic progress, especially Malaysia. It also indicates the occurrence of economic expansion, as economic growth is closely related to the long-term economic position. In addition, government spending is a crucial aspect that must be increased in order to maintain high levels of economic growth. This is due to the fact that government spending is a key component that may be used to help the economy recover (Abdullah, 2010). Moreover, recent controversial spending made by 1MDB and few mega projects like 118 tower and High Speed Rail, Malaysia needs to adjust its spending and prioritize what's best for the country.

Government spending is a major component of Gross Domestic Product (GDP) and refers to public expenditure on goods and services. Setting budget targets, adjusting taxation, boosting public expenditure, and public infrastructure are all very effective tools for influencing growth in the economy of every country, including Malaysia. As a developing country that excelled in productivity growth throughout the 1980s, Malaysia economic health, and the country's economic output has slowed down in recent years due to occurrence of a variety of unexpected events. From the Asian Financial Crisis in 1997 to World Economic Crisis in 2008, Malaysia has taken its toll and yet still able to come out of the crisis with carefully planned expenditure. The most recent outbreak of Covid-19 again put the Malaysia economy at strain where the government has implemented the Movement Control Order (MCO) which further put pressure on the economy. In 2020, Malaysia GDP was recorded to drop at -17.2 percent in the second quarter of that year and in the first quarter of 2021, it dropped more by 0.5 percent. The prolonged COVID-19 pandemic has compelled governments to implement countercyclical steps to counter the crisis's impact. In this context, the Federal Government implemented an early policy reaction by injecting a sizable fiscal infusion into the economy to stimulate it (Fiscal Outlook, 2021).

Then, the matter of overspending comes into the perspective where it might be deemed inevitable but necessary. The government's budget is being overspent and it may have failed to address the real element that may boost productivity. Based on the data gained from Bank Negara Malaysia, the overall real spending in 2018 for both operations and development expenditures were RM289 billion, compared to RM280 billion approved in the expected federal spending for 2018. The RM9 billion of the supplementary budget of RM19.6 billion is not more budget sought, but rather a reclassification of expenditure from operational to development expenditure. Other than that, the government was also forced to fund previous administration obligations without the requisite provision in the preceding budget. According to Gifari (2016), an increase in government spending that is not accompanied by an increase in receipts results in a budget deficit that must be funded which highly impacts on the economic growth of a country.

A Keynesian theory suggests that expenditure made by a government is necessary because it stimulates the economy. Hence, having a sustainable economy and spending the correct money in the right location are crucial to compensate for the spending made by a government; let alone an overspent. Therefore, this research is conducted to study the impact of government expenditures on the economic growth in Malaysia using independent variables like development expenditure, education, healthcare, and gross fixed capital formation from 1980 to 2020 as guidelines.

By recognizing the link between government spending and economic growth, this study may assist legislators in examining present policy and weighing its level of effectiveness in relation to the essential role in the growth from a statistical point of view. In addition, this study might also provide some guidance to legislators in defining the country's future without overspending. Besides, the perks of assessments from this research could provide relevant

information that can be used by future researchers to justify support as far as the impact of government expenditure has on a country's economic growth. It is also an eye opener for the public to be aware of the importance of government expenditure in developing and improving the country's economy. This study might give an insight to the public as far as government expenditure is concerned.

## **2. Literature Review**

### **2.1 Economic growth**

Economic growth is defined as a rise in an economy's productive capacity, as a consequence of which the economy can produce more commodities and services (Palmer, 2012). According to Piketty (2014), economic growth may be quantified by changes in a country's Gross Domestic Product (GDP) which can be decomposed into its population and economic elements by writing it as population times per capita GDP, which is expressed as percentage changes. Many studies have been conducted in order to determine the link between government spending and economic growth. Gifari (2016) stated that the findings of these investigations have been mixed and shown either negative or positive effects of government spending on economic growth. Although finding of linear relationship between government spending and economic growth are common, more non-linear relationship were recorded by an extensive literature, showing that after a certain extent, government spending no longer contributes to economic growth (Olaoye et. al. (2020); Kim et. al. (2018); Atems (2019); Culha (2017)).

### **2.2 Development Expenditure**

According to Ahuja and Pandit (2020), government expenditure plays an important role in economic policy, often used by the governments as a tool to promote strong and sustainable growth through budgetary expansion. As mentioned earlier, Keynesian theory agrees with perspective of development expenditure by government regulates economic growth; especially in trouble economy showing that Keynes favours expansionary fiscal policy (increase in spending boosts domestic consumption). On the contrary, Wagner's law emphasizes economic growth as the principal determinant of increase in public sector expenditure. Meanwhile, other studies (Attari & Javed, 2013; Amusa & Oyinlola, 2019) fixated on the varieties of spending and argued that development expenditure is much more productive and efficient, and as a result promotes long-term growth than recurrent expenditure. According to Amusa and Oyinlola (2019), based on his research on the government's expenditure effectiveness in Botswana from 1985 to 2016, in the short run, both recurrent and development expenditure have a significant positive net effect. Meanwhile, recurrent and development expenditures have a long-run significant positive effect on growth. However, the impact of development expenditure is minor. The similar result was found by Sidek and Asutay (2020) based on his research on 30 developed and 91 developing countries within the years of 1984 until 2017. Some of the 91 developing countries used in the study are Malaysia, Botswana, Bangladesh and others, while some of the 30 developed countries used are Austria, Belgium, Denmark and others. In contrary, in the findings of Gifari (2016), the development spending in Malaysia from 1970 to 2014 has a significant negative impact on the economic growth in the long run. One possible explanation is that the Malaysia government used

such expenditure excessively, resulting in higher taxes and/or having to borrow to finance the government expenditures, which may impede overall economic growth. On the other hand, Jin (2020) research found different results on the government development spending in China and India for the year of 1985 to 2005. They stated that the development spending in China is negative and statistically significant, on the contrary, in the case of India, has found that the development expenditure has a positive and statistically significant effect.

### 2.3 Education

Education has an important part in a country's growth in terms of knowledge generation and distribution (Mercan, 2014). Education spending is considered an investment in human capital since it aids in skill building and increases the ability to work and create more skilled workers. Countries invest in education to elevate their human resources, which will increase growth (Suwandar et al. (2021). Today, it is unquestionable that education has a significant impact on economic growth. Most of the previous findings indicated that government spending on education had a positive and statistically significant effect on the rate of growth of real GDP. According to Ibrahim (2016) in his research on Nigeria from 1980 to 2014, a positive and statistically significant effect on the rate of growth was recorded. This is supported by Akingba et al. (2018) where they investigated the long-term effects of health capital on Singapore's economic growth from 1980 to 2013. The result indicated expenditure on education also has a significant and positive long-run impact on Singapore's GDP per capita. Similarly, Chin et al. (2021) and Forson et al. (2021). However, results found by Kamis et al. (2020) and Forson et al. (2021) postulated that education expenditure has a negative significant relationship on the Malaysia and 25 economies in sub-Saharan Africa's economic growth respectively. On the contrary, according to Suwandar et al. (2021) on their study for Indonesia from 1988 until 2018, Abubakar & Mamman (2020) on 37 Organisation for Economic Co-operation and Development (OECD) countries from 1980 to 2018 and Gifari (2016) on Malaysia from 1970 to 2014, education expenditure has no significant impact on economic growth.

### 2.3 Healthcare

Today, despite the economic slump, healthcare remains one of the fastest-growing industries, with a consistent rate of growth (Triviron, 2019). According to the World Health Organization (WHO), the government plays a significant role in providing a higher quality of life for residents through a good health system since health is a key predictor of economic development for enhancing a population's health (Kamis et al., 2020). However, debates rage on whether forcing individuals to spend money on healthcare or subsidizing healthcare is a good thing. According to certain research, improvements in health can lead to an increase in GDP and vice versa since it plays a key role in the quality of human capital. Increased healthcare spending boosts human capital productivity, which contributes positively to economic growth (Raghupathi and Raghupathi, 2020). Past research has found health expenditure to have a positive significant relationship that will increase productivity and result in higher economic growth in Malaysia for the period of 1987 until 2016 (Kamis et al., 2020). This finding is consistent with Chin et al. (2021) in their attempt to investigate the role of infrastructure in economic growth in the 59 countries participating in the Belt and Road Initiative (BRI) for the year 2000 to 2015. Furthermore, a finding by Uddin (2020) revealed that within the 120 developing Organisation of

Islamic Cooperation (OIC) and non-OIC countries between 1996 to, the countries with higher healthcare spending grow faster than countries where the spending are absent or lower and has been found to have a significant positive effect on economic growth, as evidenced by the findings of Ahsan and Haque (2017). Contracting result by Ibrahim (2016) suggested expenditure in the health sector has an insignificant effect on the GDP. This is concurred by Gifari (2015) which stated the same insignificant result on economic growth.

## 2.4 Gross Fixed Capital Formation

Domestic investment, or gross fixed capital formation (GFCF), has been identified as a critical component in facilitating economic growth and employment (Meyer and Sanusi, 2019). It is basically a net investment, which is a component of GDP calculated using the expenditure method (OECD, 2015). Empirical research has found a strong positive association between investment and economic growth. Such findings have been reported by Ledhem and Mekidiche (2021) and Chin et al. (2021) indicating investments are boosting economic growth in Southeast Asia for the study year of 2013 to 2019, and 59 belt and road initiative (BRI) countries for the year 2000 to 2015. Besides, Content et al. (2014) did research on the importance of GFCF for economic growth in the Central African Economic and Monetary Community (CEMAC) sub-region in 1980 until 2010. They revealed that private investment, as measured by gross capital formation, is both positive and significant. Other than that, from an investment standpoint, GFCF is an important component of GDP growth because it has a positive and significant long-term impact on economic growth in Pakistan for the period of 1981 to 2014 (Ali, 2017). The similar result is found by Suwandar et al. (2021) in his study of Indonesia from 1986 to 2018. Consistently, study made by Yakubu et al. (2021) found GFCF has a positive and significant effect on economic growth in the short run as well as long run, indicating the importance of domestic investment in Turkey from 1970 until 2017.

## 3. Methodology

### 3.1 Introduction

This study makes use of data from secondary resources. The data are collected annually from 1980 to 2020 (40 years) in Malaysia. All quantitative data are gathered from a variety of trustworthy sources, primarily the World Development Indicators Databank, Bank Negara Malaysia, and the United Nations Conference on Trade and Development (UNCTAD). Like most cases, quantitative data is employed in the regression procedure. Economic growth is the dependent variable; development expenditure, education, healthcare, and gross fixed capital formation are the independent variables. The Gross Domestic Product (GDP) (Ringgit Malaysia, constant price) will be used as a proxy for economic growth and foreign direct investment (FDI) (Ringgit Malaysia, constant price) for development expenditure. Meanwhile, education expenditure for education, healthcare expenditure for healthcare; and gross fixed capital formation all in percentage of GDP.

### 3.2 Model of Study

Time series analysis is used in this study, where the data is a set of evaluations on the values considered by variables at different times. The model is used to understand the basic concepts of the observed data's strengths and structures. The model of this study is derived in the following manner:

$$\ln GDP_t = \alpha + \beta_1 \ln DE_t + \beta_2 \ln EDU_t + \beta_3 \ln HC_t + \beta_4 \ln GFCF_t + \varepsilon_t \quad (1)$$

where GDP is Gross Domestic Product, DE is development expenditure, EDU is education, HC is healthcare, GFCF is Gross Fixed Capital Formation,  $\beta$  is coefficient,  $\varepsilon$  is error,  $t$  is time and  $\ln$  is natural logarithm.

### 3.3 Data Analysis

The software used to evaluate the data for this study is EViews version 12 and method employed is Dynamic Ordinary Least Squared (DOLS). The correlation test, unit root test (Augmented Dickey-Fuller & Phillips-Perron), and cointegration test are among the tests on the list.

A correlation test is performed to determine whether or not there is multicollinearity. The existence of a strong correlation between the explanatory variable and the independent variable is referred to as multicollinearity. This study is using a pair-wise correlation test to see if there is a problem with multicollinearity. If the pair-wise correlation of the two independent variables is highly correlated (greater than 0.8), a multicollinearity problem exists. Due to that both variables cannot be estimated at one time. Next, unit root test is performed on the data prior to the regression process if the data is proven to have no multicollinearity problem. The unit root test, on the other hand, is a test that determines the presence of a unit root in the data and clarifies the data's stationary status. According to Granger and Newbold (1974), the existence of non-stationary variables might lead to erroneous regression. If the series is non-stationary, the model will produce erroneous results. The Augmented Dickey Fuller (ADF) and Phillip and Perron's (PP) tests are used for this purpose. The null hypothesis is the series has a unit root. Then, after confirming all variables are free of unit root, cointegration test essentially determines if there would be a long-run link between the non-stationary series that is usually used in time series analysis. When two non-stationary random variables are cointegrated, it means that they have a long-term relationship. The null hypothesis in this test is "No Cointegration." Thus, the two series are cointegrated if the null hypothesis is rejected. The steps of analysis is simplified as follows:

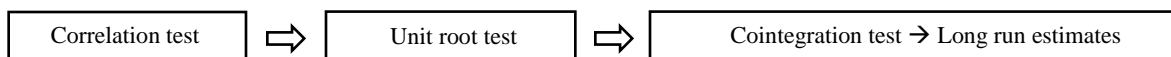


Figure 1: Steps of analysis

## 4. Data Analysis and Findings

This part will show the empirical findings on the relationship between economic growth and government spending in Malaysia from 1980 to 2020. This section presented the estimated results for correlation test, unit root test, cointegration test, and long-run estimation.

#### 4.1 Correlation Test

Table 1. Correlation Test

	<b>GDP</b>	<b>FOR</b>	<b>DOM</b>	<b>LAB</b>	<b>TO</b>	<b>SAV</b>
<b>GDP</b>	1.000000					
<b>FOR</b>	0.712228	1.000000				
<b>DOM</b>	0.927632	0.724990	1.000000			
<b>LAB</b>	0.041834	0.650288	0.123154	1.000000		
<b>TO</b>	0.595420	-0.041967	0.360215	-0.626606	1.000000	
<b>SAV</b>	0.975246	0.576178	0.894885	-0.146217	0.694493	1.000000

Notes: The asterisks \* denotes significance at 5%.

According to Table 1 above, no strong correlation is detected amongst all independent variables where all values are recorded below than 0.8. The correlation between development expenditure and education is -0.6441, education and gross fixed capital formation is -0.0328, education and the healthcare is 0.7828, education and healthcare is -0.4471, education and gross fixed capital formation is -0.1158, healthcare and gross fixed capital formation is -0.3716. The negative sign indicates that they are negatively correlated while the positive sign means otherwise.

#### 4.2 Unit Root Test

Table 2. Unit Root Tests

Series	Level		First Difference	
	ADF	PP	ADF	PP
<b>LGDP</b>	-2.2450	-3.2047	-4.2529***	-4.2529***
<b>LDE</b>	-3.1614	-3.0330	-3.5485**	-3.5485**
<b>LEDU</b>	-3.2096	-2.4857	-3.2071*	-3.2071*
<b>LHC</b>	-1.9172	-1.8240	-4.2529***	-4.2529***
<b>LGFCF</b>	-2.5888	-1.7583	-3.5485**	-3.5485**

Notes: The asterisks \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.

Table 2 displays the results of unit root tests for both Augmented-Dickey Fuller (ADF) and Phillip- Perron (PP) tests in level, I(0) and first difference, I(1). All variables are found to be not significant at level for both ADF and PP. Hence, the test is continued with the first difference where for both tests, economic growth and healthcare are significant at 1 percent with the value of -4.2529 and -4.2529 respectively. Next, development expenditure and gross fixed capital formation show significant results at 5 percent with values of -3.5485 and -3.5485 respectively. Finally, education gives a significant result at 10 percent with values of -3.2071 and -3.2071 respectively. Therefore, null hypothesis is rejected indicating there is no unit root or the data is stationary.

#### 4.3 Cointegration Test

Table 3. Cointegration Test

Lc statistic	Stochastic Trends (m)	Deterministic Trends (k)	Excluded Trends (p2)	Prob.*
0.50344	4	0	0	> 0.2

Based on Table 3, the Lc statistics value is 0.5034 which is greater than the probability value 0.2. The null hypothesis states that series are cointegrated and thus it fails to reject the  $H_0$  which means there is a cointegration detected. Therefore, there is a long-run equilibrium between economic growth and its determinants.

#### 4.4 Long Run Estimation

Table 4. Long-run Estimation Test

Dependent Variable	LGDP			
	Coefficient	Standard Error	t-statistics	p-values
LDE	1.7463	0.1044	16.7206	0.0000***
LEDU	-1.0097	0.2153	-4.6892	0.0034***
LHC	-1.2764	0.3443	-3.7074	0.0100***
LGFCF	-2.9230	0.1969	-14.8454	0.0000***
C	-1.9941	2.5304	-0.7881	0.4606
R <sup>2</sup>	0.9975	Mean dependent variance		26.5633
Adjusted R <sup>2</sup>	0.9876	S.D. dependent variance		0.9037
S.E. of regression	0.10058	Sum squared resid		0.0607

Notes: The asterisks \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.

Table 4 shows that a 1 percent increase in development expenditure decreases economic growth by 1.7463 percent and vice versa. Thus, the null hypothesis is rejected, showing that development expenditure has a significant impact on economic growth. Meanwhile the coefficient results demonstrate that education, healthcare, and gross fixed capital formation decreases by 1.0097 percent, 1.2764 percent and 2.9230 percent respectively when there is an increase of 1 percent in the economic growth and vice versa. The null hypothesis was rejected since the coefficients for the education, healthcare, and gross fixed capital formation are significant at 1 percent. In addition, according to Table 7, the adjusted R-squared is 0.99, indicating that 99 percent of the dependent variable; economic growth is explained by the independent variables, while the other 1 percent is explained by other unknown factors. Due to detection of a long-run equilibrium, the model that was developed based on the results is shown as follows:

$$\ln\text{GROWTH} = -1.9941 + 1.7463\ln\text{DE} - 1.0097\ln\text{EDU} - 1.2764\ln\text{HC} - 2.9230\ln\text{GFCF} \quad (2)$$

(16.7206)      (4.6892)      (3.7074)      (14.8454)

#### 4.4 Discussion

Based on the estimated result, development spending on economic growth is found to be significant, indicating that development expenditure increases economic growth in Malaysia. This result is supported by Amusa and Oyinlola (2019) and Sidek and Asutay (2020). Spending made on expenditure leads to an increase in standard of living and causes a good economic growth in return. Next, education has been found to have a negative significant impact on economic growth in Malaysia. This outcome is consistent with the findings by past researchers Kamis et al. (2020) and Forson et al. (2021). According to Kamis et al. (2020), the relationship between education and economic growth could be negative and not necessarily positive. Innovation comes from human resources, especially the scientific and engineering fields, but



when the market of labour force could not provide enough high skilled job opportunities to the graduates, the results would not be reflected in the economic growth. Hence, even with high spending in education, failure of planning what's crucial in the future would not turn to a fruitful outcome.

Following that, the healthcare variable in this study is found to have a significant but negative impact on Malaysia economic growth. The finding is however inconsistent with the past studies. Therefore, it is assumed that the difference in the range of time series taken for research is one of the reasons that caused the difference in finding. The latest year used in the analysis for the past research was only until 2016. Up until year 2016, Malaysia's real GDP growth was consistently having swing period, unlike this study that employs until 2020 with a sudden huge drop. Therefore, the results of this study may differ compared to previous studies.

Finally, gross fixed capital formation also has a negative significant impact on Malaysia economic growth. Just like healthcare, gross fixed capital formation also has different findings than previous studies. According to Ali (2017), gross fixed capital formation has three major components: the gross fixed capital formation private sector, the gross fixed capital formation public sector, and the gross fixed capital formation general government sector. However, his study employed only two of them, gross fixed capital formation from private sector and public sector. The findings indicated that the private capital has been found to have encouraging and beneficial impacts on economic growth, but public capital is classed to have negative consequences on growth. Since this study runs the data for Malaysia gross fixed capital formation in general, it might be assumed that the data gained is for the public capital investment, which might be one of the reasons why this finding contradicts with others' findings.

## **5. Conclusions**

The purpose of this study is to examine the impact of development expenditure, education, healthcare, and gross fixed capital formation on Malaysia economic growth. The data for this analysis was obtained from World Development Indicators Databank, Bank Negara Malaysia, and the United Nations Conference on Trade and Development (UNCTAD) in the form of time-series data spanning 40 years, from 1980 to 2020. In a nutshell, this study achieved the objective of finding out the relationship between government spending and economic growth. The impact of the independent variables, which include development expenditure, education, gross fixed capital formation, and healthcare has been identified. Each variable has a significant impact on Malaysia economic growth, where development expenditure is positively significant while the rest of the variables; education, healthcare, and gross fixed capital formation are negatively significant. Aside from that, a long-run relationship is also detected for the model used in this study.

This study solely looks at four aspects of government spending: development, education, healthcare, and gross fixed capital formation. The findings provide valuable evidence for policymakers and related authorities that the correct metric of government spending can boost economic growth while drawing global attention to Malaysia's significant role as an outstanding player in accelerating economic growth alongside other major countries. Wise spending is key to help the government achieve prosperity in its economy. However, there are numerous different sorts of government spending that future researchers may employ in order to obtain a more

reliable and consistent finding as a determinant of economic growth such as military expenditure, defense and security expenditure, and social services expenditure.

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