The Impact of Government of Expenditure on Economic Growth in Myanmar

By

LAE, Yin Htwe

THESIS

Submitted to

KDI School of Public Policy and Management

In Partial Fulfillment of the Requirements

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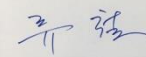
For the Degree of

MASTER OF PUBLIC POLICY

Committee in charge:

Professor Won Hyuk LIM, Supervisor

Professor Cheol LIU

Professor Tae Jong KIM

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ABSTRACT

This thesis researched "The impact of government expenditure on economic growth in Myanmar". The study period is from 1990 to 2015 annual time series data. This study attempts to examine what kind of relation exists. Before analyzing the long-run effect, Unit Root test and Breusch-Godfrey Serial Correlation LM test, CUSUM Square test, Heteroscedasticity test, Jarque Bera Normality test are used to overcome the uncertainty over the variables. In addition, this study applied ARDL bound test of cointegration. The ARDL result shows that government investment expenditure adversely affects the economy in long-run period, but the expenditure of consumption and human capital have direct impact on economic growth. The outcome of analysis reveal that investment expenditure of government reduces economic growth and increasing government investment expenditure does not effect the economy development in the long run while consumption and human capital directly affect economy.

Keywords: government spending, economic growth, diagnostic tests, ARDL model, Bound test

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Chapter 1

Introduction

1.1 Economy Background

Myanmar became an independent country in 1948 from British colonization. It introduced market-oriented policies in 1948 but reverted back to socialism in 1962. However, the government changed the economic condition back from socialism to a market-oriented economy with a 20-year long-term plan in late 1988. As recently as 2011, Myanmar was still recognized as a deportee state in accordance with U.S Sanction. Starting from the 2010-2011 fiscal year, Myanmar's political system changed from a military governance system to a democratic system through the 2010 general elections in Myanmar in accordance with the 2008 constitution.

As a result, the elected government started to implement the Framework for Economic and Social Reforms (FESR) to get higher improvements in the development of the socio-economic life of the citizens. It was the beginning point of fiscal decentralization to achieve sustainable economic management (FESR, 2012). As a part of fiscal decentralization, the Public Financial Management (PFM) system in Myanmar was strengthened and modernized. As a logical follow-up analysis, a Public Expenditure Review (PER) was conducted with the technical assistant of the World Bank and funding from AusAID. The findings pointed out the strengths and weaknesses of the existing budget allocation and revenue mobilization system and were an important step in designing the public finance management reform strategy (World Bank, 2015). In accordance with this strategy, the government expenditure increases will continue gradually. Political changes lead to changes in economic policies and priorities for government expenditures' allocation and for the procurement of revenues which directly relate to the fiscal deficit.

As a consequence of this change in policy, the government fiscal policy changed and the country shifted to more productive, labor intensive activities. Government expenditure on development priorities and budget policies shifted to accelerate the delivery of essential public services. The elected government will focus on improving education, health, and social infrastructure. Therefore, this thesis will ascertain if this has contributed to the country's economic growth.

1.2 Myanmar's Budget system

Myanmar fiscal year is starting April 1st to March 31st. Myanmar's budget system includes revenues and expenditures with each having three accounts: the current account, the capital account, and financial (debt) account. Myanmar's budget allocation system can be divided into two main periods, prior to and post 2011 when fiscal decentralization began. Before 2011 when the government of President U Thein Sein was elected in accordance with the 2008 Constitution, there was only one Union (Central) Fund Account. The whole budget process was centralized by the government. Moreover, a bottom-up system was used for budget allocation. The central government allocated all the required amounts which were submitted by the respective line ministries, departments, and agencies. From 2012, the system of budget was decentralized with include the Union (Central) budget and seven states and seven regions (local) budgets. Moreover, in 2014, the new budget system introduced a Top-Down system by using the medium-term fiscal framework (MTFF) which is a policy-based budgeting approved by the Cabinet. Therefore, the government was trying to regulate fiscal policy by controlling the budget deficit.

Aung (2015) described that the process of budget in Myanmar comprises 4 steps; " the budget planning and preparation stage; budget formulation and approval stage; budget

implementation and execution stage; and the budget evaluation, reporting, and auditing stage"
(p.3).

Myanmar's government budget approval system has the following steps. State-level administrative institutions submit their budget to the budget department under the MOPF which assigned for analyzing the recurrent budget, capital budget, and the foreign exchange budget. After examination of the budget proposals, they submit them to the vice-president. According to the 2008 constitution, after the estimated budgets of union institutions are edited by a vice-president, then submit to the Financial Commission. The budget allocations for local government are also edited by the other vice-president assigned by the president. After approved by the financial commission, the estimated budget and Budget Bill submit to the Parliament for the respective fiscal year together with its recommendations. After approval by the Parliament, the Budget Law is promulgated.

1.3 Structure of Government Expenditure

In Myanmar, government expenditure can be divided into three types based on kinds of expenditure. In this study, the other types of expenditure were conducted by the study of Dereje (2012) into consumption, investment and human capital expenditure.

The empirical analysis by Dereje (2012), government spending can be classified into three categories. There are consumption, investment, and human capital expenditure. Extracting current expenditure for health and education from total current expenditure is considered as consumption expenditure. Extracting capital expenditure for health and education from total capital expenditure is assumed as investment expenditure. The expenditure of health and education is considered by the sum of capital and recurrent expenditure. This expenditure also known as the human capital of government.

1.4 Statement of the Problem

Tun (2016) revealed the effect of fiscal deficit and government spending on the GDP of Myanmar by using the OLS method with time series data set from 1970-2015. This study revealed that fiscal deficit has a neutral relationship with the growth of economic while government spending has a adversely significant effect on economic growth. However, this study was conducted only with total government expenditure. Therefore, I would like to analyze the effect of government expenditure based on different kinds of spending. This study will fill the gap. From this study, I would like also to investigate 'How does government expenditure effect economic growth in Myanmar?'

In Myanmar, the government's revenue mobilization and expenditure allocations system have changed after 2010. Myanmar is currently using expansionary fiscal policy and the quick growth of government expenditure across the different sector. The growth of real GDP recovered to 5.6 percent in 2011 from 5.3 percent in 2010 after fiscal reform although it suddenly decreased from 12 percent in 2007 to 3.6 percent in 2008 because of Cyclone Nargis. Real GDP growth rate gradually increased during the transition period up to 8.7 percent in 2014 and then it declined to 7.35 percent in 2015 while the growth rate of developing countries declined to 4.3 percent in 2015 (World Bank, 2016).

Based on the above points, my study will fill these gaps by analyzing the impact of three kinds of government expenditure: investment expenditure, consumption expenditure and human capital expenditure with regard to the government spending from 1990 to 2015 of Myanmar. Therefore, my study's contribution is to provide updated evidence of the effect of government spending on economy in Myanmar.

1.5 Claim of the Study

H1: There is a long run relationship between government investment spending and economic growth

H2: There is a long run relationship between government consumption spending and economic growth

H3: There is a long run relationship between government human capital expenditure and economic growth

1.6 Research Question(s)

How does government spending contribute to economic growth in the long run in Myanmar?

Does an increase or decrease in government expenditure help or hinder economic growth?

1.7 Objective of the Study

Myanmar is currently using expansionary fiscal policy and the quick growth of government expenditure across different sectors. This has caused concern among policy makers. Over the last 20 years, the expenditure of government grew faster than the rate of GDP. Given these fiscal scenario, an explanation of this requires studying the effect of government spending on GDP. Therefore, the objective of this study is to examine how government expenditure influences the growth of economic in Myanmar. More specifically, the following objectives are conducted-

(1) To examine the effect of government spending on the growth of economic in Myanmar

(2) To examine what kind of relationship exists between government spending and growth of economic measured by GDP

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Chapter 2

2. Literature Review

The relationship between government spending and the growth economic has been studied for a long time by macroeconomic researchers. There are different theories and empirical works on government spending and the economic development that have proposed over time.

2.1 Theoretical Literature Review

According to the Keynesian theory, increase in the spending of government expenditure has directly effects on the economy through the multiplier effect which results in higher saving, increasing demand for money and increasing investment which stimulate the economy. For instance, temporary reduction in tax can significantly cause an increase in aggregate demand because individuals will consume more or put more money into savings. If the government spending creates positive externalities and linkages, that can be positive effect on the growth of economic. The effect can be different from country to country. The Keynesians view that increasing government expenditure can occur short- run and long- run effect. Thus, they motivate the government intervention in the economic system via the fiscal policies as this performs a critical role in the process of improvement.

On the other hand, the theory of Neo classical expresses that government spending has negative effect on the growth of economic due to crowding out of investment on private sector (Devereux, 1992). In addition, studies by Floster and Henrekson (1999) suggested that increasing government spending can effect on economic growth. The classical economists assume fiscal policies to be inefficient as it crowds out private investment. When government spending is raised, the role of public goods also increased, thus causing a reduction in private investment for welfare including education, health, and other services. Further, if an increase in government

expenditure leads to the budget deficit, then the government may increase tax or borrowing. At that time, borrowing can increase interest rates and cause debt burden.

Nevertheless, the new classical proposition of Ricardian Equivalence states that there is no relation between government spending and the aggregate demand. Aggregate demand cannot be affected by fiscal deficit if spending and saving ways of consumers depend on both their current income and their future expectation. In this view, when the government consumes more (i.e. dissaving), the private sector save more in expectation of the higher tax will come in the future. There will be no changes in total saving and therefore, no change in total investment and total output. Bagdigen and Cetintas findings are consistent with Ricardian Equivalence and state that the government expenditure supposed as an impact but not effect in GDP growth using the co-integration test (Bagdigen & Cetintas, 2004).

2.2 Empirical Literature Review

There are many empirical studies related to government expenditure and economic growth. The Keynesian theory claims that government spending has directly effect on economic growth. Some empirical research supports the Keynesian theory. Eminer (2015) finds that these two variables have a positive relation North Cyprus by using the annual data from 1989 to 2015 in North Cyprus. The variables used in the analysis are GDP as the dependent variable and government debt, productive expenditure and non- productive expenditure as independent variables with ADF test, cointegration test, and ARDL approach.

Torki (2015) examined that total government spending and current expenditure have a positive effect on economic growth of Jordan during the period between 1980 and 2013. The result supports the Keynesian theory. However, capital spending did not effect on economic growth. This can be assumed capital expenditure is required a longer period to drive the effect on

economic growth. Dereje (2012) examined that human capital spending has directly effect on economic growth for Ethiopia during the period between 1971 and 2011. This result also supports the Keynesian theory. However, investment and consumption spending did not effect on economic growth for the case of Ethiopia. In addition, Dandan (2011) also revealed that there is a positive relation between government spending and economic growth for the case of Jordan using annual data for 27 years. Increasing government expenditure leads to the growth of the Jordanian economy which seems consistent with the Keynesian's theory. This study also describes that government should emphasize on investment expenditure for human resources development. The interrelationships among capital expenditure on agriculture, education, health economic infrastructure and economic growth had different results in Nigeria. This study used multiple regression models based on a modified endogenous growth framework. As a result of this study, although capital expenditure on agriculture did not cause any significant effect on economic growth, capital expenditure on education had positive and significant effects. Therefore, economic infrastructure expenditure has a direct and strong relationship with economic growth (Ebong 2016). Because of the empirical analysis, the study finds that investment in education and infrastructure are highly significant. Thus, this study describes that public expenditure should focus on the costs of education and economic infrastructure.

There are two types of government spending that are productive and nonproductive. Government spending on health and education is nonproductive while high in skills of labor and raise the output growth. The key factor to improve the efficiency of labor is education. In this view, economic growth is taken as performance for overcoming poverty and delivering the higher living standard of society (Kakar, 2011). This study is consistent with the study of Ebong(2016).

Neoclassical theory denotes that there is a negative relationship between government spending and the growth of economy. The expenditure of government has an inverse relation and no significant on economic growth (Romer, 1990). Some studies provide the same concept with Neoclassical theory. The results obtained by Ketema (2006) for Ethiopia showed that productive spending has an inverse relation with growth of real GDP of Ethiopia, which again reveals the efficiency and poor quality nature of public investment on the growth of real GDP for the period 1960-61 to 2003-04. Ahang (2013) revealed that increasing changes in government size can cause an inverse relation with economic growth for the case of selected Islamic countries. In addition, this study found a statistical inverse in that government size increase, economic growth decreases. Mehdi (2012) investigated that increasing government size can effect on economic growth negatively by using STR with annual data for the period of 1960-2009 in Italy. Barro (1991) suggests that government spending on the consumption has negative effect on economic growth by using a sample of 98 countries during the period 1960 and 1985. Easterly and Rebello (1993) investigated that government investment and consumption expenditure have had an inverse relation with economic growth by using level effect and composition effect with panel data for the period of 1970-2013 for 28 countries. However, human capital expenditure has a positive impact for this case. Tun (2016) examined that government has a negative effect on economic growth. This study used OLS regression for 46 years in the case of Myanmar.

According to the Ricardian Equivalence Hypothesis, public spending did not effect on economic growth in the long run (Bagdigen & Cetintas). It means that government spending had no effect on the growth of economic performance. Bagdigen found that there is no evidence relation between variables in the case of Turkish. There is no strong relation between average growth rates of real GDP and government consumption expenditure. This study base on panel

data series for 47 countries (Kormendi and Meguire, 1985). Rahman (2012) confirmed that there is no relationship between fiscal deficits and output growth during 2000 to 2011 with ARDL model in the case of Malaysia. He did not found a significant relationship in the long run. His finding is consistent with Tan (2006). Tan (2006) also studied the Malaysian case during 1966 to 2003. He used Granger causality test with annual data to analyse relationships between fiscal deficit and output growth. He found no link between them both in the short-run and long-run. His study is consistent with Velnampy (2013) for the case of Sri Lanka.

Furthermore, there are numerous studies related to relationship between government spending and economic growth. Kweka and Morrissey (2000) showed the effect of expenditure on GDP base on annual data for the case of Tanzania. They formulated a simple growth accounting model and decomposed the expenditure into three types: investment, consumption, and human capital. They confirmed that higher physical investment were associated with lower levels of economy. Although, consumption spending have a positive impact on economic growth but expenditure on human capital was insignificant. Yovo (2017) revealed that government investment spending can promote GDP while government consumption spending has adversely effect on GDP growth. However, this study point out that private investment has directly effect on growth of real GDP of Togo.

Devarajan, Swaroop and Zou studied whether changes in the size of spending can cause a significant effect on the economy. This study based on data from 43 developing countries over 20 years. Further, as a contrast, this study also illustrates that investment spending has adversely effect on economic growth. By contrast, the growth of population does not effect on economic growth (Alexiou, 2009). Bose (2007) observe that capital spending can effect directly to GDP but recurrent spending did not effect.

The government of Myanmar is currently using expansionary fiscal policy and the government's revenue mobilization and expenditure allocations system changed after 2010. This study attempts to analyze the time series annual data from 1990 to 2015 to identify whether the effect of government expenditure had significant effects on GDP or not by applying the data from the Budget Department under the MOPF, WBI of World Bank and IMF. We are trying to evaluate whether the growth rate of the economy can be affected by government expenditure.

Chapter 3

3. Overview of Myanmar Economy and Government Spending

Myanmar has a population of over 50 million and it is a country in Southeast Asia. The country is centralized, consisting of the central government and fourteen regional governments. However, the central government has a strong influence. Agriculture is the main sector and over 70 % of the population lives in rural areas. Agriculture contributes 27% of GDP, industry (35%), manufacturing (21%) and services (39%) in 2016.

### 3.1 Real GDP Growth Rate of Myanmar

Figure1. Growth Rate of Real GDP
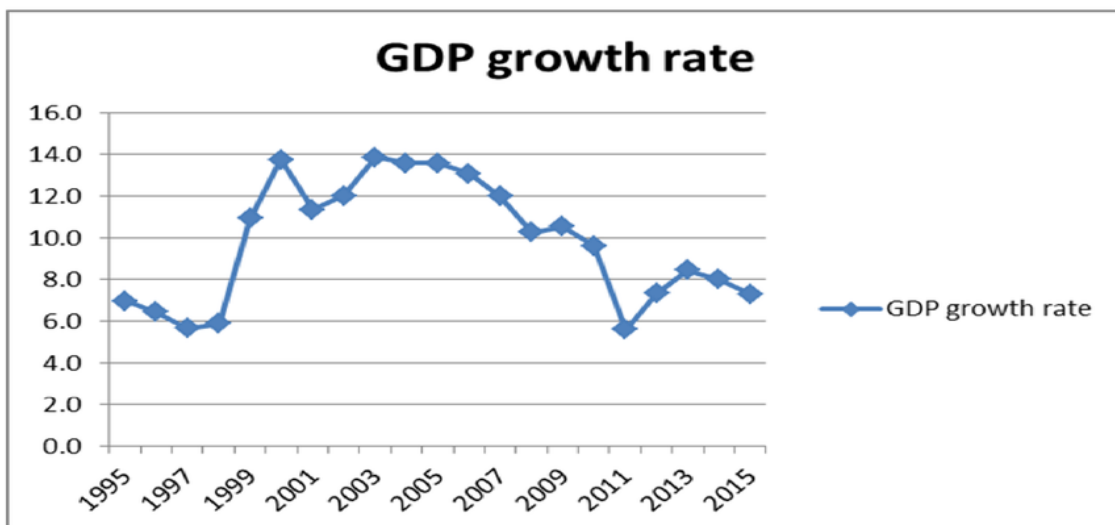
Source: Computed based on data obtained from WDI (World Bank Indicators)

As observed from figure1, growth rate is fluctuating because inflation rate is high and unstable. During 1995 and 1998, the GDP growth rate decreased because the agriculture sector declined due to the effect of climate change in that year. However, the GDP growth rate increased after 1998 because the agriculture sector improved. Myanmar's real GDP growth rate recovered to 5.6% in 2011 from 5.3% in 2010 after fiscal reform although it suddenly decreased

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from 12% in 2007 to 3.6% in 2008 because of cyclone Nargis. Myanmar's real GDP growth rate gradually increased during transition period up to 8.7% in 2014 and then it declined to 7.35% in 2015 while growth rate of developing countries decline to 4.3 % in 2015 (World Bank, 2016). Although we can say that Myanmar had almost stable economic growth with an average real GDP growth rate 6.25%, the inflation rate is also high, unstable and greater than the economic growth until before 2011 with the exception of 2000, 2004.

3.2 Trends of Recurrent Government Expenditure

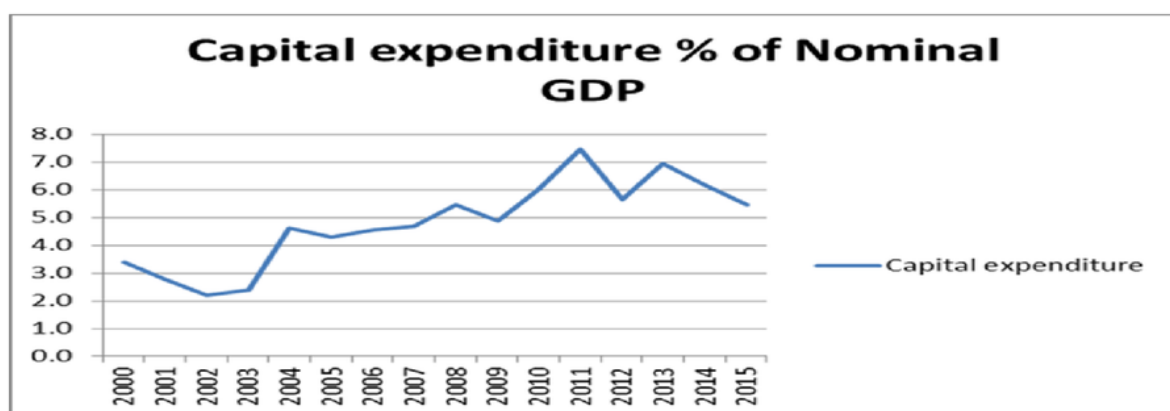Figure2. Recurrent Government Expenditure as % of Nominal GDP
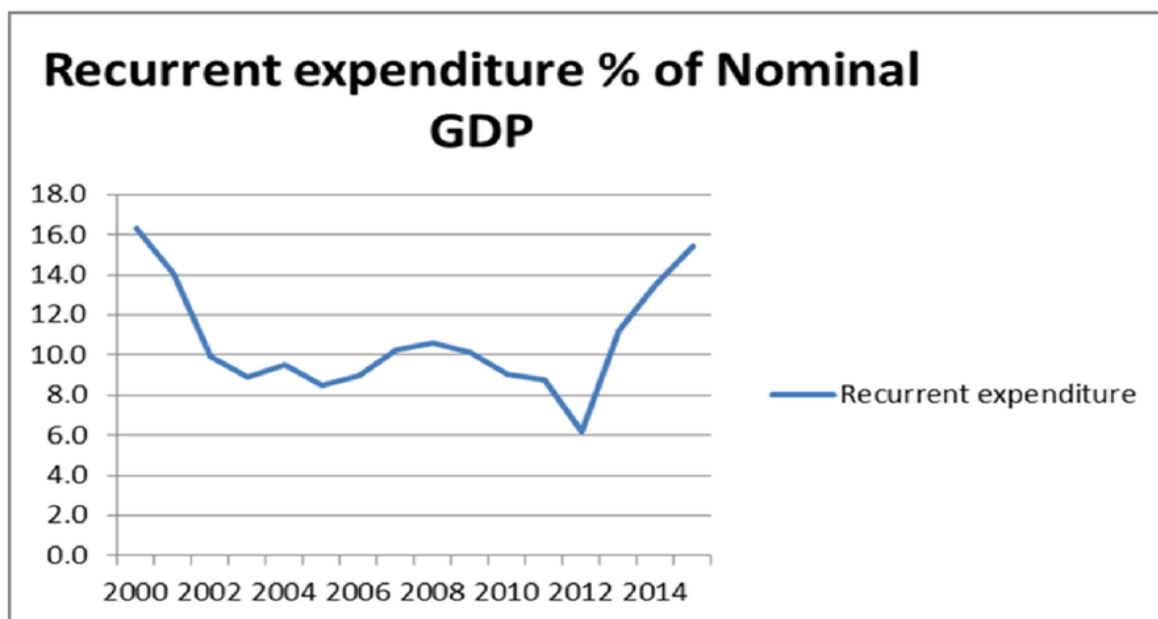
Source: Computed based on data obtained from Budget Department (Myanmar)

From figure2, the share of annual recurrent expenditure to nominal GDP was over 16% in 2000. However, the portions of annual recurrent expenditure to nominal GDP continuously decreased about 10% after 2000, because the government adopted new financial system for the SEEs. The SEEs are transferred from Government Account to their Own fund account due to the new financial system. They have to perform their business by their own fund. Therefore,

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government does not need to support for some expenditure after 2012-2013 fiscal year. However, on the other side, the government increases the current expenditure to grant State and Regions for poverty alleviation from 2013. Hence, the portion of current expenditure increases again after 2013.

3.3. Trends of Capital Expenditure

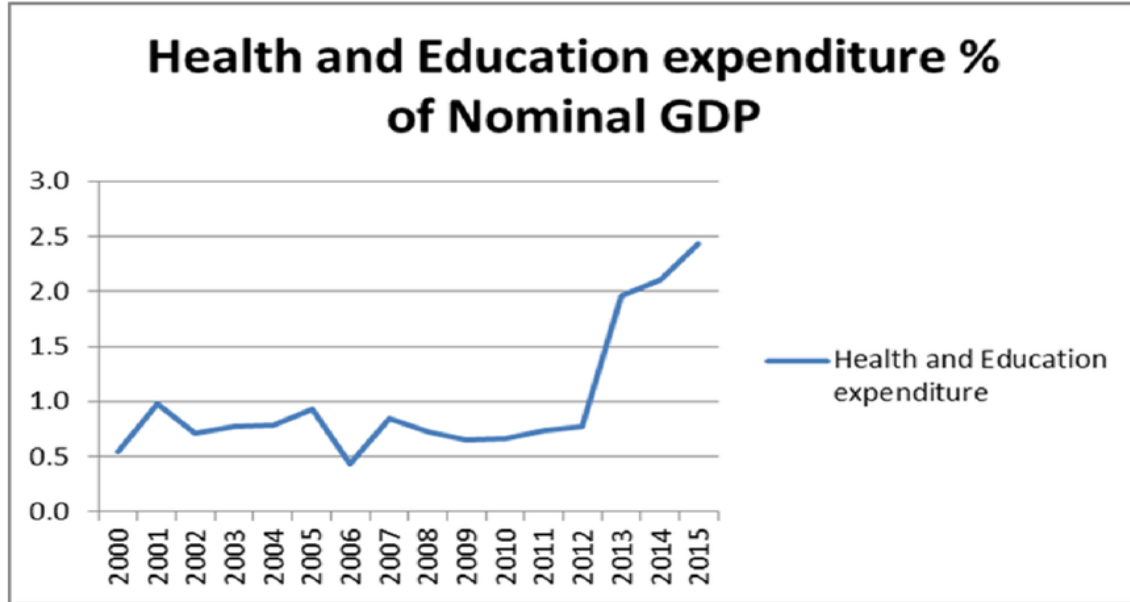Figure3. **Capital Expenditure as % of Nominal GDP**

Source: Computed based on data obtained from Budget Department (Myanmar)

From figure3, the share of annual capital expenditure to nominal GDP was nearly4% in 2000. However, the portions of annual capital expenditure to nominal GDP continuously increased around 7% after 2000. The government established a new capital, Nay Pyi Taw, in 2006. The government spent a lot of money to develop infrastructure in the new capital. Therefore, the portion of capital expenditure was increased during those years.

3.4. Trends of Health and Education Expenditure

Figure 4. Health and Education Expenditure as % of Nominal GDP

Source: Computed based on data obtained from Budget Department (Myanmar)

From figure4, before 2012, the share of annual human capital expenditure to nominal GDP only had nearly 1% of nominal GDP. After 2012, Myanmar's political system changed from a military governance system to a democratic system. The elected government increase health and education expenditure. Therefore, health and education expenditure dramatically increase over 2% of nominal GDP.

Chapter 4

4. Data and Methodology

4.1. Data Selection

To investigate my research questions, I will use a quantitative method by employing multiple regression analysis and a time series dataset for a 26- year period (1990-2015). In my study, RGDP is the dependent variable while the independent variables are government investment expenditure, government consumption expenditure and government human capital expenditure. The data of RGDP will be taken from planning department under the MOPF. The data of government expenditure will be obtained from Budget department under the Ministry of Planning and Finance of Myanmar.

4.2. Methodology

This paper uses time series annual data of 1990-2015 to examine the impact of government spending on the growth of economic development with Stata software. Regarding the explanatory variables, several studies used different sets of explanatory variables for the regression analysis based on the respective nature of the country. The variables used in the regression model are based on the study of Dereje (2012) and Ketema (2006). However, some variables are discarded due to the complicated system and too difficult to collect the data. In order to avoid spurious problem, the first step is to check the test for stationary. ADF unit root test and PP unit root test are utilized to test for stationary. After testing for stationary, ARDL Bound Testing analysis is conducted to examine the long run relationship between variables. The ARDL equation for this study can be stated as follow:

$$\Delta (\ln RGDP) = \beta_0 + \beta_1 \Delta \ln IE_{t-1} + \beta_2 \Delta \ln CE_{t-1} + \beta_3 \Delta \ln HE_{t-1} + \ldots\ldots + \varepsilon_t \ldots.$$

Where,

lnRGDP = Natural Log of Real Gross Domestic Product

lnIE = Natural Log of government investment expenditure

lnCE = Natural Log of government consumption expenditure

lnHE = Natural Log of government human capital expenditure

4.3. Estimation Results

The first step of time series data analysis is to check stationary test. It is the most important test because choosing the proper methodology for the set of data depends on the integration of the variables. First, we perform the Unit Root test with the ADF and PP test. For both test, the null hypothesis confirms that variables are non-stationary and the alternative hypothesis confirms the stationary. According to the results, all variables are stationary when first differentiation is taken. Therefore, the results from ADF test and PP test describe that all variables are stationary when first differentiation is taken.

Table 4.1 Results for ADF Test

Variables	Level				First Difference				Comment
	Intercept		Trends & Intercept		Intercept		Trends & Intercept		
	t-value	p-value	t-value	p-value	t-value	p-value	t-value	p-value	
lnRGDP	-0.490	0.3144	-2.237	0.4688	-5.013	0.0000*	-4.891	0.0003*	I(1)
lnIE	-1.056	0.1510	-0.969	0.9482	-3.957	0.0003*	-4.026	0.0081**	I(1)
lnCE	-0.194	0.4240	-2.552	0.3026	-4.855	0.0000*	-4.744	0.0006*	I(1)
lnHE	0.504	0.6906	-2.372	0.3946	-6.595	0.0000*	-7.005	0.0000*	I(1)

Table 4.2 Results for PP Test

Variables	Level				First Difference				Comment
	Intercept		Trends & Intercept		Intercept		Trends & Intercept		
	t-value	p-value	t-value	p-value	t-value	p-value	t-value	p-value	
lnRGDP	-0.451	0.9013	-2.302	0.4327	-5.022	0.0000*	-4.895	0.0003*	I(1)
lnIE	-1.015	0.7476	-1.337	0.8785	-3.957	0.0017*	-4.010	0.0085**	I(1)
lnCE	-0.174	0.9415	-2.679	0.2449	-4.857	0.0000*	-4.742	0.0006*	I(1)
lnHE	0.991	0.9942	-2.236	0.4694	-6.658	0.0000*	-7.483	0.0000*	I(1)

*,**and *** indicate that the null hypothesis has rejected at 1%,5% and 10% level, respectively. I(1) = Series is stationary when first differentiation is taken.

To avoid the uncertainty of our series, we chose the ARDL model bound testing approach which can be used all variables are stationary when first differentiation is taken. In addition, ARDL approach is suitable for small samples. In our study, sample size is only 26 observations. Therefore, we are sure to choose the ARDL Bounds testing approach. The only restriction for ARDL approach is that any variable in the model must not be stationary at second difference I(2).

Bound test

The ARDL bound test is a very useful test to apply for time series data with small or finite sample size. The name of ARDL comes from the dependent variable being explained by the lag values of the variables. Therefore, a basic equation for ARDL model as follow:

$$y_t = \beta_0 + \beta_1 y_{t-1} + \text{-----} + \beta_p y_{t-p} + \varepsilon_t \tag{1}$$

Where ε_t is a random disturbance term.

The ARDL equation for our study can be stated as follow:

$$\Delta (\ln RGDP) = \beta_0 + \beta_1 \Delta \ln IE_{t-1} + \beta_2 \Delta \ln CE_{t-1} + \beta 3 \Delta \ln HE_{t-1} + \ldots + \varepsilon_t \ldots \tag{2}$$

Where Δ indicates the operator of the first difference and the random disturbance term is ε_t.

The structural lags are established by using AIC. The result of AIC with various lags for our variables is shown in the following table.

Table 4.3 Results from AIC

Lag no. Variables	0	1	2	3	4
lnRGDP	4.84	2.28*	2.37	2.45	2.54
lnIE	4.15	-.26*	-.18	-.09	-.01
lnCE	3.69	-.37*	-.28	-.20	-.17
lnHE	4.01	.86	.79*	.85	.88

Note. * indicate that the smallest value of Akaike information criteria (AIC).

The smaller the AIC is the better model. Thus, the lag with lowest AIC value is the best one for respective variable. A key assumption in the ARDL of Pesaran (2001) is that error of the UECM equation must be serially independent and the model must be dynamically stable. Therefore, we initially need to check the serially independence by applying the Breusch-Godfrey Serial Correlation LM test in Stata. If the probability of Chi- Square is greater than 5% significance level, we fail to reject. According to the results, the value of probability of chi-square (0.41) is greater than 0.05 which means that the residuals are not serially correlated.

The CUSUM square test is used to check the stable of model. The result of CUSUM square test for model is shown in figure 1 and, which show that the model is stable because the line of the cumulative sum of errors square is located within the critical lines. It means, the model does not have systematic shocks.

Figure4.1. CUSUM square test results
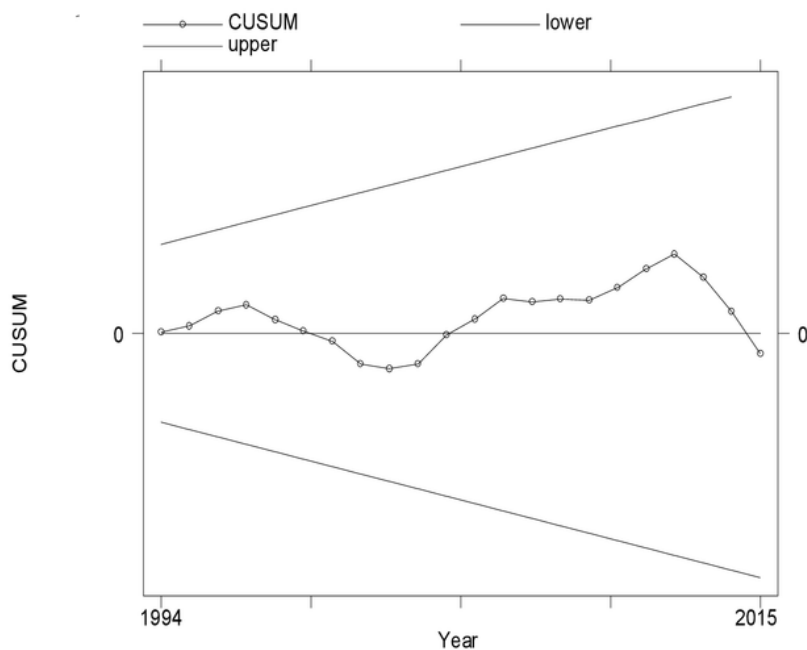
Heteroscedasticity is checked to analyze the robustness of the model. Breusch- Payan heteroscedasticity test is carried out to know whether the error terms have a constant variance or not. For Breusch- Payan test, the null hypothesis confirms that there is constant variance while the alternative hypothesis confirms the no constant variance. According to the results, the probability value of chi- square (0.83) is greater than 0.05, therefore the variance of the residuals is homoscedastic.

The normal distribution of the error terms is checked by The Jaeque- Bera normality test. According to the results, the probability value of chi- square (0.63) is greater than the 5% significance level. Thus, the model is normally distributed in the estimated equation.

Therefore, we can conclude that the error terms of our model is serially independent, homoscedastic and normally distributed. Thus, the generated results are applied for reliable interpretation.

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Table3. ARDL Result of the Estimated Equation for Long Run

Variable	Coefficient	Std. error	t- statistic	p- value
dlnIE	-4.20792	1.66232	-2.53	0.085***
dlnCE	7.146403	2.262881	3.16	0.051***
dlnHE	3.903048	.70639999	5.53	0.012**
R^2	.9924991			
Adjusted R^2	.949994			

and * indicate the rejection of the null hypothesis at 5% and 10% level, respectively.**

In this result, the values of R squared and adjusted R squared are 99% and 94%, respectively. The value of R squared is rather high (99%), which means that the explanatory variables can explain almost all of the economic growth with the remaining due to the error term.

The stability of model need to be make sure after checking the residual diagnostic test. we used Bounds Test to examine between the variables.

H_0 : (no long -run relation)

H_1 : (a long- run relation exists)

Thus, the comparison of F- statistic value and the critical values are as follow:

Table 4.4 The Bound test for cointegration analysis (F-Statistic)

Critical Value	Lower Bound Value	Upper Bound Value
1%	2.72	3.77
5%	3.23	4.35
10%	4.29	5.61

In addition, t- statistic value of the bound test will be compared with the critical values tabulated.

Table 4. 5 The Bound test for cointegration analysis (t-Statistic)

Critical Value	Lower Bound Value	Upper Bound Value
1%	-2.57	-3.46
5%	-2.86	-3.78
10%	-3.43	-4.37

The value of F- statistic is 11.772 and it greater than the upper bound value of 5.61 at the 10% level of significance. It means that there is a long run relationship among the variables. The estimated coefficients of dlnRGDP, dlnIE,dlnCE and dlnHE are calculated from the result of estimated ARDL model and they are expressed as follow:

$$lnRGDP = -1.42 - 4.27lnIE *** + 7.14lnCE** + 3.90lnHE** + \varepsilon_t$$

4.3. Discussion

According to the ARDL long- run estimation results, economic growth was affected by the three variables in my study. Government expenditure has significantly influence on growth at the level of 5% and 10% with estimated coefficient value respectively. The actual relation between government spending and economic growth is not easy to measure and more empirical research are necessary.

Investment government spending has adversely effect on economic growth as the p-value is smaller than 10% significant level. If one percent increases in government investment expenditure while other variables are kept constant, economic growth decreases (4) percent in the case of Myanmar. The result is consistent with the study of Tun (2016) and Kweka and Morrissey (1996), which stated that higher government spending on investment causes decreasing the growth of economy. When government spending is raised, the role of public goods also increases thus reducing private investment for welfare including education, health and

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other services. Further, an increase in government expenditure may increase interest rates and cause debt burden.

This result may be mainly based on the country's historical economic background. The negative relationship indicates the inefficient of government investment in Myanmar. In Myanmar, there are two factors caused to Burma's economic underperformance such as the government spending on military and the SEEs sector. Capital investments in 2009/2010 accounted for around 63% the Union Budget compared to an average of 18.6% for lower middle-income countries (PER, 2016). It is possible to agree that government investment cannot explain GDP growth in Myanmar probably because the government invested a lot in building industries to implement import-substituting policy. According to the study of Swe (2015), the government built 15 textile industries, 17 foodstuff industries, 13 pharmaceutical industries, 17 ceramic industries, 11 general industries and maintenance and 13 paper and chemical industries. A total of 86 new factories were built between 1988 and 2006 to promote economic growth. However, most of these industries were import – dependent and import –substitution industries accelerating foreign exchange requirement rather than reducing it. On the other hand, the government established a new capital, Nay Pyi Taw in 2006. The government spent a lot of money to develop infrastructure in the new capital. The government also spent a huge amount of expenditure on defense spending. It was 10 percent of total expenditure in 1990, 16 percent in 1995, 14 percent in 2005, 18 percent in 2013 and 15 percent in 2015 respectively.

According to the ARDL long -run estimation results, consumption government expenditure has directly effect on GDP growth. If one percent increases in expenditure while other variables are kept constant, economic growth increases (7) percent in the case of Myanmar.

This result is consistent with the theory of Keynesian, which stated an increase in the consumption (recurrent) expenditure causes saving to increase and therefore, increase output.

According to the Keynesian theory, increasing government spending has positive effects on GDP through the multiplier effect which results in higher saving, increasing demand for money and increasing investment which stimulate the economy. This may imply that high consumption in Myanmar has strong effect on human economic behavior in that it is likely to trigger employment, profitability and investment.

According to the results, human capital expenditure has directly effect on economic growth as the p- value is smaller than 5% level of significance. If one percent increases in human capital expenditure while other variables are kept constant, economic growth increases (3) percent in the case of Myanmar. The result is consistent with many studies. There are two types of government spending that are productive and nonproductive. Government spending on health and education is nonproductive while higer the skills of of labor and raising the growth of GDP. Therefore, human capital expenditure can improve economic growth of the country.

Chapter 5

5. Conclusion and Policy Recommendation

5.1. Conclusion

This study has tried to empirically examine the effect of government spending on the growth of economic in Myanmar. In considering the nearest development in time series analysis, this study analyzed long-run impact of government spending on real GDP using ARDL bound test procedure taking annual data from 1990 to 2015.The natural logarithm of real GDP is taken as dependent variable while the natural logarithm of government investment expenditure, government consumption expenditure and human capital expenditure are taken as independent variables. According to the result of ARDL approach, there is a mix result on the growth of economic development. It was found that government investment spending has adversely effect on the growth of economy. On the other hand, the estimation results show consumption and human capital expenditure have directly effect on economic growth. Therefore, this study can conclude government spending has significant relationship with economy growth that effect economy. In Myanmar, increasing government spending on investment does not encourage economy in order increasing more and more. On the other hand, in some expenditure such as consumption and human capital it is known that recurrent, health and education expenditure, those expenditures directly effect on economy. Thus, increasing those expenditures can boost economy in order increasing more and more. Hence, this research can support various impact of government spending regarding economic growth. By revealing that, the findings will provide direction for policy makers regarding which expenditures to effect through fiscal policy action.

5.2. Policy Recommendation

According to the finding of this paper and the country's current situation, the following policy recommendations are reached. This study has supported empirical results on the effect of public spending on the growth of real GDP of Myanmar. Those empirical findings emphasize a useful of policy and theoretical implications for the sustainable growth and improvement of the country.

Government spending on investment has adversely significant effect on economic growth. Most of public investment in Myanmar is not efficient. So, it is hard to record a positive impact on GDP. Therefore, such high spending did make a negative contribution to GDP growth. There could be many other factors influencing these results, such as inefficient projects, lack of transparency, lack of quality of projects, lack of evaluation, especially lack of monitoring on the huge projects. Therefore, all government funded projects could be well-implemented to prevent inefficient and reduce the economic growth. In this point, the project appraisal plays a vital role in choosing projects effectively. In Myanmar, huge projects are being conducted by the PRS under the Planning department for project appraisal and monitoring. In addition, private investment projects are being conducted by the DICA of MOPF. However, there are many limitations in the project selection and implementation process. In Myanmar, the performance of project appraisal does not deliver as a strong instructor for choosing projects and most of line ministries have not seen the PA by the PRS as a useful step in the project implementation process due to the lack of specific guidelines for the line ministries, PRS, budgeting process and PA process (KSP with Myanmar, 2016). Therefore, the government should consider strengthen guidelines to improve the procedures of PA&M. Further, the government should emphasize huge projects and feasibility projects to promote infrastructural development of the country. Another

policy recommendation would be to accelerate Myanmar's PA system effectively and efficiently. There are two kinds of guideline to promote the PA system in Myanmar. The first type is guideline for implementation in the process of defining the scope of PA&M works. The second type is guideline for analysis of PA&M works (KSP with Myanmar, 2016). By doing so, government funded projects (capital expenditure) are prevented inefficient and contribute substantial effect on economic growth. As a developing country, our country focuses, on infrastructure development. In current, Myanmar's infrastructure development is lower than other countries in the region. Thus, the government should take action on investment to ensure long-run sustainable development with the participation of private sector and foreign direct investment. The participation of private sector and foreign direct investment can raise economic growth. In addition, funding the unprofitable SOEs, high national defense expenditure are need to be reducing and should take actions in policy making effectively.

Public spending on consumption has a positively effect on economic growth. Government consumption expenditure included consumption items such as wage and salaries, subsides to employees, allowances cost, which expenditure contribute the people through the multiplier effect in higher saving, increasing demand for money and increasing investment. Hence, the government should increase its spending on consumption by ensuring the well-being of people and relevance to the people's motivation.

Government spending on human capital can promote economic growth. Hence, the government should be directed mainly on investment expenditure for human resources development. The government of Myanmar is emphasizing to promote human resources development. The government should take actions on the quality of investment for education and

health sector. In addition, the government should expand its spending on education and health care delivery by promoting the effectiveness of service delivery in various institutions.

Although this study emphasized on the government expenditure, the government should focus on the revenue mobilization of country to overcome the budget deficit. Fiscal deficit occurs when government exceed government revenues. Myanmar's government revenue system is different from other countries. Thus, the government should emphasize on revenue mobilization to increase the government revenues. The main sources operating government revenues are tax revenues at 37%, revenues from State Owned enterprises at 49% and other sources at 14% in 2016-2017 fiscal year. Therefore, revenues mainly depend on the SOE sectors. Although, the percentage of SOEs revenue in total revenue is quite large in Myanmar, total expenditure of SOEs is also a big portion of expenditures. Some SOEs are facing with loss and incurring some fixed costs and labor costs although the factory is not really running. Therefore, the government should focus on tax revenue mobilization to achieve fiscal stability and long-run sustainable growth. In Myanmar, tax revenue to GDP ratio is low compare with other some neighboring countries. Moreover, the government is planning to introduce a new type of tax, it is known as Value Added Tax (VAT). Before 2016, there are 16 types of tax revenue in Myanmar. The government added 5 new taxes after 2016. Thus, total of 21 types of tax revenue are collecting for fulfillment of government revenues in current.

Therefore, policy recommendation would be to accelerate tax system reform process effectively and efficiently. Another policy recommendation would be consider to private most of the SOEs that show continuous large deficit and SOEs which are implemented for using isolated economic system such as Industry for producing automobile, clothes and so on. Besides, the government should lay down fiscal policy to improve intergovernmental fiscal transfer system to

control the fiscal deficit of local governments. I would like to also suggest further work to find the significant impact on GDP of Myanmar by classifying detail expenditure in order to analyse more and more.

References

Ahang, M. R. (2013). The Effect of Government Size on Economic Growth in Selected Islamic Countries. *ournal of American Science, 9*, 72-80.

Alexiou, C. (2009). Government Spending and Economic Growth : Econometric Evidence from the South Eastern Europe (SEE). *Journal of Economic and Social Research 11(1), 11*(1), 1

Aung, M.K (2015) Myanmar's Budget System Reform (Considering Japanese Experiences). https://www.mof.go.jp/pri/international_exchange/visiting_scholar_program/ws2015_aung2.pdf

Bagdigen, Muhlis & Cetintas, Hakan. (2004). Causality between Public Expenditure and Economic Growth: The Turkish Case. *Journal of Economic and Social Research, 6*(1), 53-72

Barro, R. J. (2007). Economic Growth in a Cross Section of Countries. *The Quarterly Journal of Economics, 106*(2), 407-443.

BOSE, N. (2007). PUBLIC EXPENDITURE AND ECONOMIC GROWTH : A DISAGGREGATED ANALYSIS FOR DEVELOPING COUNTRIES. *The Manchester School, 75*(5), 533

Dandan.M (2011). GOVERNMENT EXPENDITURES AND ECONOMIC GROWTH IN JORDAN. *International Conference on Economics and Finance Research, 4*, 467-471.

Dereje,M. (2012). The Impact of Government Expenditure on Economic Growth of in Ethiopia.   Jimma University, Jimma, Ethiopia

Devarajan.S & Swaroop.V & Zou.H . (1996). The composition of public expenditure and economic growth. *Journal of Monetary Economics, 37*, 313 344.

Devereux, M. I. (1992). Crowding Out Effects of Government Spending'. *The economic and Social Review, 23*(3), 199-221.

Easterly,W. & Rebelo,S. (1993). Fiscal Policy and Economic Growth: An Empirical Investigation. *Working paper, 4499*.

Ebong, F. (2016). Impact of Government Expenditure on Economic Growth in Nigeria : A Disaggregated Analysis. *3*(1), 113-12

Eminer, D. F. (2015). THE IMPACT OF BUDGET DEFICIT ON ECONOMIC GROWTH IN NORTH CYPRUS. *WEI International Academic Conference Proceeding*, 228

Fölster, Stefan &Henrekson, Magnus. (1999). Growth and the public sector: a critique of the critics. *European Journal of Political Economy, 15*(2), 337-3

Kormendi.R.C & Meguire.P.G (1985). Macroeconomic determinants of growth: Cross-country evidence. *Journal of Monetary Economics, 16*(2), 141-163

KAKAR, Z. K. (2011). Impact of Fiscal Variables on Economic Development of Pakistan. *Romanian Journal of Fiscal Policy, 2*(2), 1-10.

Ketema, T. (2006). THE IMPACT OF GOVERNMENT SPENDING ON ECONOMIC GROWTH: THE CASE OF ETHIOPIA. *ADDIS ABABA UNIVERSITY SCHOOL OF GRADUATE STUDIES* .

Kweka, Josaphat P & Morrissey, Oliver. (1996). Government Spending and Economic Growth in Tanzania , 1965-1996. *CREDIT Research Paper, 6*, 1-53.

Mehdi, S. (2012). The Impact of Government Size on Economic Growth: A Case Study in Italy. *Australian Journal of Basic and Applied Sciences, 6*(9), 616-621.

Rahman, N. H. (2012). The Relationship between Budget Deficit and Economic Growth from Malaysia ' s Perspective : An ARDL Approach The Relationship between Budget Deficit and Economic Growth from Malaysia ' s Perspective : An ARDL Approach. *ResearchGate*(Febuary).

Romer, P. M. (1990). Endogenous Technological Change. *University of Chicago, 98*(5).

Swe, T. (2015). Impact of inflation and fiscal deficit on economic growth of Myanmar. (Unpublished master thesis). National Graduate Institute for Policy Studies, Tokyo

Tan, E. C. (2006). FISCAL DEFICITS, INFLATION AND ECONOMIC GROWTH IN A SUCCESSFUL OPEN DEVELOPING ECONOMY. *Review of Applied Economics, 2*(1), 129-139.

Tanzi, V. (2004). A Lower Tax Future ? in the 21st Century. *Policy Series* .

Torki, M. (2016). The Impact of Government Expenditures on Economic Growth in Jordan (1980-2013). *International Business Research, 9*(1), 99-105.

Tun, T.,T. (2016). The Effect of Fiscal Deficit on the Economic Growth of Myanmar. (Unpublished master thesis). National Graduate Institute for Policy Studies, Tokyo

Velnampy, T. (2013). Fiscal Deficit and Economic Growth: A Study on Sri Lankan Economic Perspective. *Development Countries Studies, 3*(3), 166-175.

World Bank, Public Expenditure Review of Myanmar (2015).

Yovo, K. (2017). Public Expenditures , Private Investment and Economic Growth in Togo. *Theoretical Economics Letters*, 193-209.

```
ARDL regression
Model: ec

Sample: 1995 - 2015
Number of obs   = 21
Log likelihood = 20.425659
R-squared       = .99249991
Adj R-squared  = .9499994
Root MSE        = .24204445
```

D.dlnRGDp	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
ADJ						
dlnRGDp						
L1.	-1.565213	.4565873	-3.43	0.042	-3.018277	-.1121482
LR						
dlnIE	-4.20792	1.66232	-2.53	0.085	-9.498164	1.082324
dlnCE	7.146403	2.262821	3.16	0.051	-.0549025	14.34771
dlnHE	3.903048	.7063999	5.53	0.012	1.654968	6.151128
SR						
dlnRGDp						
LD.	.7678522	.4391364	1.75	0.179	-.6296757	2.16538
L2D.	.9410015	.356732	2.64	0.078	-.194279	2.076282
L3D.	.6365571	.217735	2.92	0.061	-.0563727	1.329487
dlnIE						
D1.	5.352604	.8304851	6.45	0.008	2.70963	7.995578
LD.	2.707134	1.149384	2.36	0.100	-.9507175	6.364986
L2D.	7.193823	1.03272	6.97	0.006	3.907247	10.4804
dlnCE						
D1.	-8.649011	.9381156	-9.22	0.003	-11.63451	-5.663508
LD.	-4.055647	.9425691	-4.30	0.023	-7.055322	-1.055971
L2D.	-8.018344	.9654215	-8.31	0.004	-11.09075	-4.945942
dlnHE						
D1.	-4.901737	1.330489	-3.68	0.035	-9.135945	-.6675287
LD.	-6.22526	1.336362	-4.66	0.019	-10.47816	-1.972361
L2D.	-5.526884	1.063108	-5.20	0.014	-8.910168	-2.1436
L3D.	-3.748328	.42536	-8.81	0.003	-5.102014	-2.394643
_cons	-1.425773	.4065764	-3.51	0.039	-2.719681	-.1318655

Stata 14. Output of Bound test

```
ARDL regression
Model: ec

Sample: 1995 - 2015
Number of obs   = 21
Log likelihood = 20.425659
R-squared       = .99249991
Adj R-squared  = .9499994
Root MSE        = .24204445
```

Pesaran/Shin/Smith (2001) ARDL Bounds Test
```
H0: no levels relationship                F =  11.772
                                          t = -3.428
```

Critical Values (0.1-0.01), **F-statistic**, Case 3

	[I_0] L_1	[I_1] L_1	[I_0] L_05	[I_1] L_05	[I_0] L_025	[I_1] L_025	[I_0] L_01	[I_1] L_01
k_3	2.72	3.77	3.23	4.35	3.69	4.89	4.29	5.61

```
accept if F < critical value for I(0) regressors
reject if F > critical value for I(1) regressors
```

Critical Values (0.1-0.01), **t-statistic**, Case 3

	[I_0] L_1	[I_1] L_1	[I_0] L_05	[I_1] L_05	[I_0] L_025	[I_1] L_025	[I_0] L_01	[I_1] L_01
k_3	-2.57	-3.46	-2.86	-3.78	-3.13	-4.05	-3.43	-4.37

```
accept if t > critical value for I(0) regressors
reject if t < critical value for I(1) regressors
```

```
k: # of non-deterministic regressors in long-run relationship
Critical values from Pesaran/Shin/Smith (2001)
```

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