

GOVERNMENT SPENDING AND ECONOMIC GROWTH IN TANZANIA

1970-2010

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CERTIFICATION

This is to certify that I have gone through the dissertation for Nelson John Ruturagara and found it in a form acceptable for the partial fulfillment of the requirement for the degree of a Master's of Science in economics of the Open University of Tanzania.

Dr. Khatibu G.M. Kazungu

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Date

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DECLARATION

I, Nelson John Ruturagara, hereby declare that this dissertation for fulfillment of Master of Science in Economics is my own original work unless where quoted for learning purpose. It has not been presented at any University for a similar or any other degree award.

Signature

Date

DEDICATION

This dissertation is dedicated to my wife Agnes, my daughters Mariana, Debora and Anne my sons John and Fred whose love and inspiration encouraged me to complete this work.

ABSTRACT

The objective of this paper is to analyze the impact of government spending on economic growth in Tanzania for the period 1970-2010. We find that government expenditure is positively correlated with economic growth. Moreover, we find that only public expenditure of the current period and lagged in two period, growth of GDP lagged in one period and growth of education expenditure of the current period are significant in explaining economic growth of Tanzania. Lastly we find that error correction term is negative and significant at 5% indicating that the model converge to the equilibrium steady state in the long-run.

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This dissertation is made possible through the help and support from everyone. Different people have made significant contribution in accomplishing this fine work.

I am obliged to mention my supervisor Dr. Khatibu Kazungu, for his endless advice. His great role has made this work look the way it is now.

My sincere gratitude to Dr. Ngaruko, Dr. Mutasa, Dr Lokina, Dr. Aikaeli and Yabu my core instructors for their tireless instructions that have helped me construct fruitful ideas.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

The government expenditure of Tanzania like other countries in the world has been increasing since independence. The government expenditure results from the role played by the government to the society (Stiglitz, 1988). According to Stiglitz, the government performs different functions. These include; provision of legal and institutional framework, financing the social activities, purchasing goods and services in order to provide the functioning of its different organs. Also the government intervenes in the economy in order to correct the inequalities caused by the market system and alleviate poverty. For this purpose the government can redistribute income and wealth through the expenditure side of its budget (Mulamba, 2009).

There has been much debate among scholars on the relationship between government spending and economic growth. The major concern is whether there is contribution of such expenditure components to the long run steady state growth rate of the economy. Government activity may directly or indirectly increase total output through its interaction with the private sector. Lin (1994) outlines some important ways in which government can increase growth. These include provision of public goods and infrastructure, social services and targeted intervention (such as export subsidies). The main objective of this study is to examine the impact of government spending on economic growth in Tanzania over the period of 1970 to 2010.

Various studies have been conducted to examine this relationship, to date; there has been no consensus in both theoretical and empirical analysis regarding the size of government on economic growth. Some scholars have found a negative relationship between the size of government and growth (Landau, 1983; in a cross-sectional study of 104 countries. Grier and Tullock, 1987; studied 115 countries on a cross-sectional, time series analysis, using data averaged over 5-year intervals. 1989; Barro, 1990), others have found a positive relationship (Ram, 1986; Ascheruer, 1989; Sáez and García (2006)). Kormendi and Meguire (1985), studied based on post-war data from 47 countries and found no significant relationship between.

According to Barro (1990), the nature of the impact of public expenditure on growth depends on its form. He also argues that expenditure on investment and productive activities should contribute positively to growth, whereas government consumption spending is anticipated to be growth-retarding.

However, in empirical work it is difficult to determine which particular items of expenditure should be categorized as investment or consumption. Furthermore, empirical evidence with regards to the direction (Positive or negative) of the relationship between public sector spending and growth is inconsistent. This may be due to difference in location, methodology employed, data used and/or sample period. In a very recent debate regarding the evidence for OECD countries, Folster and Henrekson (1999) argue that the relationship is negative whereas Agell *et al* (1999) respond that it is not significant. Furthermore, there is no agreement regarding the direction of causality between public spending and economic growth, implying a

potential endogeneity problem in regression analysis (Folster and Henrekson, 1999). The actual relationship between public spending and growth is not well understood and there is a need for more empirical studies (Grier and Tullock, 1989).

1.2 Statement of the Problem

Although government expenditure has been increasing overtime, its impact on the economic growth in the country is still an empirical issue. In some cases the government expenditure has not been translated into a meaningful economic growth to the country (Grier and Tullock, 1989). It is observed that government expenditure has been increasing faster than the economic growth. Although, there is a direct relationship between the government expenditure and economic growth but what cause the other is not well known. Therefore, this study intends to find out whether there is a causal relationship between the government expenditure and economic growth in Tanzania. Most of the studies have come with contradicting results about the relationship between government expenditure and economic growth. The actual relationship between public spending and growth is not well understood and there is a need for empirical study to be undertaken (Grier and Tullock, 1989).

1.3 Objectives of the Study

The main objective of this study is to investigate the relationship between government Spending and economic growth in Tanzania using time series data for the period 1970-2010.

Specific objectives of the study are:

- i. To investigate the role of education expenditure on boosting economic growth.

- ii. To examine relationship between government development expenditure and economic growth.
- iii. To find out the effects of health expenditure on economic growth.
- iv. To test causality between government spending and economic growth.

1.4 Significance of the Study

The findings of this study will contribute greatly to the existing literature on the relationship between the government expenditure and economic growth. Therefore this study can serve as the reference for further studies on all issues concerning the relationship between government expenditure and economic growth. Moreover the impact of government expenditure on economic growth has been an important subject among scholars for several years now. The findings of the study will be useful to policy makers and it will complement previous studies to create the basis of expenditure preference that relies on the relative contribution of the government expenditure to economic growth. Finally, the study can be used as a reference during budget setting, for proper allocation of revenue to the sector which promotes economic growth.

1.5 Scope and Limitation of the Study

This study covers the 1969/70-2009/10 period and focusing on Tanzania mainland. The period chosen is sufficient because it covers the period before and after implementation of structural adjustment programme in Tanzania. The study covers only the selected sectors which are education, health, defense and export. There are various limitations associated with this study. Firstly, the study covers only the selected sectors of the economy. This might end up with wrong conclusion about

growth and development which is the multi-sectoral function of the economy. Moreover, studying all sectors of economy is time consuming and expensive. Secondly, difficult in availability of data in some sectors such as defense and others, has led to use the consolidated data which might distort the consistency of the data. Finally, the financial constraint that has lead to get information for a short period of time and sometimes to take the data of different sectors in a single source which might reduce the consistency of the data.

1.6 Organization of the Study

This study is divided into six Chapters. Apart from chapter one, Chapter two provides a Review of economic growth and government spending in Tanzania. Chapter three presents literature reviews while chapter four describes the methodology used in the study. Chapter five presents and discusses the empirical findings and chapter six provides conclusion and recommendations of the study.

CHAPTER TWO

2.0 REVIEW OF ECONOMIC GROWTH AND PUBLIC SPENDING IN TANZANIA

2.1 Introduction

This chapter presents information on economic growth and government expenditure in Tanzania during the 1969/70-2009/10 period. It has three sections. Section 2.1 presents trend of economic growth in Tanzania since independence. Section 2.2 presents the trend of government spending in Tanzania. Section 2.3 presents the relationship between the government expenditure and economic growth in Tanzania during the study period.

2.2 Trend of Economic Growth in Tanzania

In the space of the few decades, Tanzania moved from colonialism to independence to socialism and then to a market- oriented developing economy. Each of these stages involved significant change, with different economic institutions and economic incentives (Mbelle, 2005).

Tanzania has emerged from this period of significant economic transition as one of the most rapidly growing economies in sub-Saharan Africa. For the first time since independence, it has broken out of the cycle of short-lived accelerations in growth that has characterized many low-income countries. It has been enjoying strong uninterrupted growth since the mid-1990s. During 1992/93–2008/09 period, inflation remained in single digit while the debt burden fell dramatically. However, the level of

public spending increased significantly permitting expansion of public services and also, international reserves rose sharply (BoT, 2011). Tanzania has experienced exceptional sustained growth acceleration since 1996, making it one of the fastest-growing countries in sub-Saharan Africa. The country remains poor with per capita GDP of just US\$550 in 2009. It is on track to meet only about half of the Millennium Development Goals. To increase growth and promote development in the coming years, policymakers will need to focus on accelerating pro-poor growth, meeting macroeconomic challenges and limiting vulnerabilities but preparing for the worst (Robinson et al., 2010). The economic growth of Tanzania can be subdivided into two phases which are:- Before Structural Adjustment (1961-86) and After Structural Adjustment Programme reform (1987-present).

2.1.1 Before Structural Adjustment Programme Period (1961-1986)

This period was characterized by two sub periods; Post independence (1961-1966), Socialism period (1967-1985). Post independence phase was characterized by a market economy with economic policy favoring the development of the private sector. Throughout this period, the economy remained fairly open and markets were free from government intervention. In this phase, the economy performed well whereby the Real GDP grew at 5.7 percent per year driven in large part by the agricultural sector. Agricultural value added averaged 53 percent of GDP compared to 5.3 percent for the manufacturing sector. Per capita income grew by 2 percent per year which is the highest rate ever recorded in Tanzania since Independence. Inflation was less than 4 percent per year and there was a favorable balance of payments and stable prices. Nearly 60 percent of export earnings came from the primary agricultural crops (Amani et al., 2003).

The socialism period starts in the period when Tanzania adopted socialism under the Arusha declaration in 1967 and ended in 1985. Under socialism most private enterprises including financial institutions were nationalized and managed as state companies. Economic performance during the period was somewhat uneven. Real GDP growth averaged 4.7 percent per year. Investment was high throughout the 1970s though it declined in 1973-75. Growth in per capita income was still positive at 0.7 percent per year and inflation averaged 10 percent per year. The balance of payments worsened (-4.3 percent of GDP). Exports accounted for 11.4 percent of GDP, mainly dominated by traditional agricultural exports which accounted for almost 60 percent of total exports. Producers of export cash crops faced declining prices due to inefficiency of the marketing boards. The share of imports to GDP (16.4 percent) was higher than that of exports which led to negative trade balance (BoT, 2011).

In this phase the Economic performance continued to be worsened and reached a crisis level between 1980 and 1985 when inflation soared to 36 percent per annum and the balance of payments deteriorate. The government instituted crisis policies and strategies. It includes the National Economic Survival Programmes (NESP) of 1981 and 1982, and 1983 Structural Adjustment Programmes (SAP). The goals were to increase export revenue and eliminate food shortages through tighter control of public expenditure and increased production. In 1983, a modest devaluation was attempted with some positive effects on agro-exports but the gap between the official and parallel rates widened. The real GDP growth fell and in some years it was negative

(Refer Table 2.1). Per capita income fell by 1.5 percent per year during 1980-85. Agricultural growth declined though its contribution to the economy remained high at 50 percent of GDP. The number of parastatals increased from about 40 entities in 1966 to about 450 by the mid-1980s (Amani et al., 2003).

Generally, the second phase experienced high fall in economic growth compared with other phases. Sometimes it is called the shock phase. Tanzania experienced a number of economic problems which made the rate of growth to fall and some cases it was negative. With an exclusion of the beginning of the second phase between 1966 and 1970 where the economy performed well and the real GDP increased by 4.3 percent per annum on average. In addition, the inflation rate continued to be below 10 percent and per capita income increased by the average of 2.5 percent per annum (Mbelle, 2005).

The country faced the following economic problems which made the country to perform poorly. In early 1970s there were structural weaknesses within the economy even if it didn't harm the economy much since the economy increased by 5 percent. In 1973 there was oil shock while in 1973 and 1974 there was a severe droughts which caused shortage of food and raw materials countrywide. Also collapse of East Africa in 1977 worsened the economic situation due to the fact that most of the common infrastructures ceased to operate in joint basis. Kagera war of 1978/79 costs the country about 4.1 TShs billion which was equivalent to annual export earnings of 1979. The trade among partner states, declined by 78 percent during 1976-1977 periods (BoT, 2011).

By the early of 1980s there was a severe decline in economic and macroeconomic imbalances. Between 1981 and 1984, the production declined steadily in sectors and also real per capita declined each year. In 1985 there was economic crisis reflected in high inflation rate, deteriorating balance of payments and low economic growth. Generally this phase was characterized by a slowdown in economic growth. GDP growth rate declined from 4.2 percent in early 1970s to -2.4 percent in 1983. The low rate was from cash crops and deterioration of the manufacturing sector (Yabu, 2005).

2.1.2 After Structural Adjustment Programme Period (1987-Present)

This phase commenced in 1987, and it is called reform phase. Tanzania adopted different policies in order to solve the economic problems occurred in the second phase. The effort to relieve the economy started in the later phase of the second phase. A country instituted crisis policies including NESP in 1981 and 1982. These policies aimed to reduce inflation, promote improvement of export production and marketing to overcome shortage of foreign exchange prevailed. Furthermore adoption of SAP in 1983 aimed at prudent use of foreign currency, restraint on the government and parastatals expenditure, self sufficiency in food, interest rate liberalization and measures to curb expansion in domestic credit among others. These policies failed to bring the expected result due to three debilitating factors. These include prevailing institutional bottlenecks that hampered their implementation as well as dependence on foreign resources. Moreover inadequacy of policies adopted whereby the country was pressurized by the financiers to launch Economic Recovery Programme (ERP I and II) in 1986 (Yabu, 2005).

The early stages of the reform process yielded mixed results. From 1986 to 1992, real GDP on average grew at 5 percent per year and per capita income increased by 1.2 percent per year (Figure 2.1). Agricultural production increased significantly. Growth of the manufacturing sector turned from a negative 4 percent per year between 1967 and 1985 to positive growth thereafter (Mbelle, 2005).

In spite of the fact that many industries eventually collapsed due to increased import competition, Investment increased slightly with development of the private sector. However, agricultural investment remained low, inflation heightened (to 30 percent per year) and the trade balance was still negative. There was a massive devaluation (official exchange rate increased from Tsh 51.7 in 1987 to Tsh 335 per US dollar in 1992) although the premium in the parallel foreign exchange market increased. Given export incentives and increased diversification into non-traditional exports, commodity exports rose steadily in real terms. Imports as well grew by 56 percent and accounted for 28 percent of GDP compared to 9 percent for exports (Mbelle, 2005).

In the post-reform period of 1993 to 2010, real GDP continued to grow at around 3–5 percent per year (Figure 2.1) and per capita income grew by less than 1 percent per year. The dominance of the agriculture sector is still notable although a few other sectors such as tourism, mining and transport are now more important than before. Macroeconomic stability has remarkably been achieved, with inflation falling to a single digit rate for example 6 percent in 2000 (Mbelle, 2005). Foreign exchange reserves increased from the equivalent of 6 weeks worth of imports in 1995 to more

than 4 months worth of imports in 2000. The official and parallel exchange rates were unified and now determined by market forces (URT, 2001).



Figure 2.1: Gross Domestic Product (GDP) growth rate in Tanzania (1970-2010)

Figure 2.1 shows the trend of GDP growth rate in Tanzania for 1970-2010 periods. It shows that Tanzania experienced high economic growth in fiscal year 2004 (7.8 percent) and 2008 (7.8 percent). It also depicts that Tanzania experienced negative economic growth in fiscal year 1981 (-0.5 percent) and in fiscal year 1983 (-2.4 percent).

2.2 Trends of Government Expenditure in Tanzania

Government spending is categorized into recurrent expenditure and development expenditure. Recurrent expenditure is concerned with spending on government services, salaries, fuel, stationary, and utilities, while development expenditure is concerned with spending on government projects like construction of schools, health facilities like hospitals, health centres, dispensaries Infrastructure like road and

railways. In most annual budget, recurrent expenditure is allocated about 60 percent while Development expenditure is allocated about 40 per cent of the budget. In general expenditures have grown faster than revenue, such that budget deficit has become a notable feature in Tanzania. The major source of government revenue has always been taxation, grants and aid from donor agents, like World Bank, IMF, and individual countries.

After Independence and Arusha Declaration in 1967, the major emphasis of the government was to expand the provision of social services on equal basis. As a result the social sectors particularly education, health and rural water received high priority. To enhance equity, these were offered freely to all people. Together, they led to an expanded government bureaucracy, minimized role of the private sector and self – help initiatives. All these led to a considerable growth in government expenditure.

High government expenditure was recorded in the 1970 this period was marked by adoption of nationalization policy in 1971 and decentralization of government administrative system 1972 which expanded the administrative machinery and staffing. Both policies resulted in a massive growth of government spending. Other development issues that caused government expenditure to go up were the 1973/74 and 1978 oil price which increased the oil import bill, the 1974/75 drought which brought in famine, government was forced to import food stuffs to supplement the domestic supply; coffee boom of 1976 which boosted the country foreign exchange earning to finance increased expenditures and improve the balance of payment, the East African Community break up in 1977 disrupted trade among member states

necessitated the use of investible resource towards developing our infrastructure, Also the 1978/79 Kagera war with Uganda exacerbated the problem of foreign exchange constraints and Expenditure.

The levels of government expenditure have been increasing over time due to reasons mentioned early. Between 1970 – 1990 government spending on public debt grew from 6.8 percent of total spending in 1970 to about 30 percent in 1990 and then from 30.9 percent in 2001 to 32.2 percent in 2010. The trend of government expenditure in education sector in 1970s differs from that of 1980s, 1990s, 2000s, and 2010s. Education sector has experienced a gradual decline in government expenditure from 13.6 percent in 1970 to 12.0 percent in 1980 slowing down to 6.9 percent in 1990 before rising to 16.1 percent in 2000 then slowed to 9.3 percent in 2010.

The economic crisis of 1980s resulted in various cuts in public expenditure that affected the health sector. Health budget of 1982/83 was just 57% in real term of what had been in the 1977/78 (Ministry of Health, Tanzania 1980.) There was a decline of government expenditure on health services from 6.1 percent in 1970 to 4.9 percent in 1990. However, it rose from 3.7 percent in 1995 to 6.7 percent in 2001 and became 9.1 percent in 2009. In 1980, government expenditure on defense was 11.1 percent, which is high compared to 7.1 percent in 1970. It dropped to 6.2 percent in 1990 before rising to 7.9 percent in 2001 and then 8.2 percent in 2009. Government spending on economic service decline from about 38 percent in 1970 to about 16 percent in 1989, and then rose from 22.1 percent in 1990s to 22.5 percent in 2001 and then 28.2 percent in 2010. The decline in government spending on

economic services led to poor production and the overall performance of the economy. Figure 2.2 below shows the trend of expenditures on education, health, defense and public investment in Tanzania between 1970 and 2010.

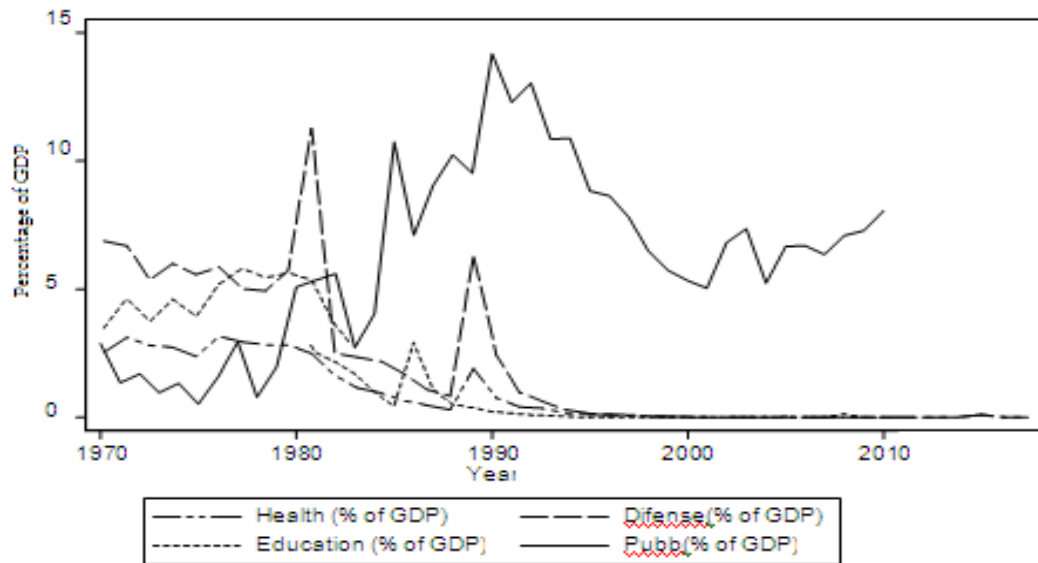


Figure 2.2: The trend of expenditures on Education, Health, Public investment and Defense in Tanzania, 1970-2010

Source: National Bureau of Statistics- various reports

2.3 Relationship between Government Expenditure and Economic Growth in Tanzania

The government expenditure and GDP of Tanzania have been increasing since independence. The rates of increase between them do differ, whereby the government expenditure has been increasing at higher rate than GDP. This has led to budget deficit and subsequently rises of public debt both internal and external (BOT, 2011). Since independence the country has been experiencing a deficit budget with exception of four years which are 1989, 1990, 1992 and 2001. The growth rates of

these years were as 2.6 percent, 6.8 percent, 1.8 percent and 6.0 percent respectively. The inflation rates under the same years were 30.4 percent, 35.9 percent, 21.9 percent and 5.1 percent respectively (Mbelle, 2005; BoT, 2011).

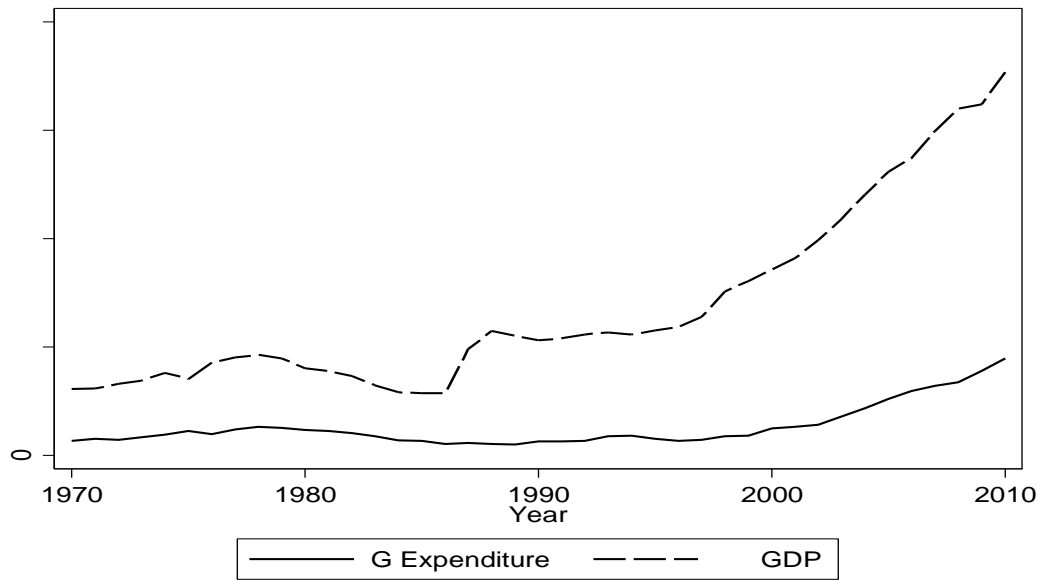


Figure 2.3: The Trend of Real GDP and Total Government Expenditure in Tanzania, 1970-2010

The highest economic growth rate was recorded in the first phase of the economic policy and at the very early stage of the second phase. Under this period a country had market economy and mixed economy respectively. During the period of 1965-1966, the growth rate was 7.8 percent. This is the rate which has not recorded in the economy of Tanzania. Since the economy was privately owned, the government spending was low even if it faced budget deficit (Mbelle, 2005).

The period between 1967 and 1985 was dominated by socialist policies. The government expenditure increased sharply due to the fact that the government became the major provider of all social services. Government spending rose from 12

percent in early 1970s to 24.1 percent in 1975 before rising to 30.4 percent of GDP in 1980 (Yabu, 2005). The growth rate in the second phase (1967–1985) declined in average to 2.9 percent. The relationship between government expenditure and economic growth seemed to be ambiguous. For instance while the government expenditure in 1981 and 1983 was increased by more than 30 percent of GDP, the Growth rate was negative (BoT, 2011). The contradicting relationship between the government expenditure and economic growth in this period may be due to various economic problems occurred in this phase. The increase in government expenditure failed to raise economic growth due to the fact that economic growth depends on various factors apart from government spending (Yabu, 2005).

Tanzania experienced a series of economic crises and natural calamities between 1970 and 1985. These cause severe setbacks in the economy and accumulation of a debt. The total external debt as a percentage of GDP rose from the average of 35.6 percent in 1970s to 44.9 percent in the 1980s before it peaked to 164.9 percent in 1994. The significant rise in indebtedness corresponds to the periods 1973–1974, 1978-1979 and 1985–1987. The first and second coincided with the first and second oil crises respectively while the third corresponds to the funding of structural adjustment programs (BoT, 2011).

The specific factors which worsened the economy during the second phase are as follows; Firstly, external/domestic shocks in 1973-74 due to oil price shocks followed by drought in 1974/75 and the situation were aggravated by second oil price shocks and deterioration of agricultural export due to drought and floods during the later part of the 1970s. Furthermore Kagera war of 1978/9 worsened the economy. It is only in

1976 over entire decade when the country had good time due to coffee boom. It is thus not surprising that fiscal deficits started to increase sharply in 1970s from less than 10 percent to 15.3 percent in 1981. Much of this was due to sharp increases in government spending which averaged above 30 percent of GDP between 1975 and 1985. These deficits triggered an increase of both domestic and external public debt (BoT, 2011).

Another factor was breakup of the East Africa Community (EAC) which necessitated substantial investment in infrastructure and other services that were previously provided by EAC which constrained massive borrowing (BoT, 2011). Also, worsening of the terms of trade in mid 1970s where the country traded in an environment of escalating world price for oil and manufactured goods. At the same time, a global recession dampened the demand for primary commodities in the wealthy countries that were major trading partners (Mbelle, 2005). Under the same period, the debt continued to grow at the rate above 15.0 percent. Likewise, poor tax administration, financial sector reform and privatization of parastatals companies and fluctuation in crop production due to natural calamities contributed on worsening the economy during this phase (BoT, 2011).

The third phase commenced in 1986, where the Tanzania adopted various economic reforms. The average growth rate of this phase was 4.4 percent. It has two sub-phases. The first sub-phase marked the initial phase of reform and covers 1986-1993 periods. The average growth rate was 3.2 percent. The second sub-phase commenced in 1994. It marks the intensification of reforms and the average growth rate was 5.6 percent (Mbelle, 2005).

Following a number of unsuccessful homegrown programmes and rising pressure from donors, Tanzania adopted an Economic Recovery Programme in 1986. This programme was typical of IMF/World Bank reform programmes prescribed to countries in economic crisis. The country has continued implementing incremental reforms until today. The key elements of the strategy included strengthening of state in controlling production and trade, devaluation. In addition raising producer prices and controlling budget deficits (BoT, 2011). Market forces were to determine the supply and demand of outputs and factor inputs, including foreign exchange. Trade, both internal and external was made freer. One of the main features of this period was the relaxation of import restriction (BoT, 2011).

Production and productivity peaked up (Mbelle, 2005), mainly due to; increased producer prices (in real terms) motivated farmers. Agricultural output doubled within a year. Export crops fetched more in local currency terms. As well, availability of consumer goods acted as an incentive for farmers and workers alike to increase productivity in order to afford such goods. Furthermore, foreign exchange windows were increased in number, and firms could source imported inputs through an efficient window of their choice. This led to capacity utilization rates picking up, especially in manufacturing, thus leading to high productivity. Actually, it is in this period when the country experienced surplus budgets in 1989, 1990, 1992 and 2001 as (Refer Table 2.1). Furthermore the growth rate recorded was positive throughout the phase even though it was fluctuating. The highest economic growth rate was 7.8 Percent in 2004 while the lowest rate was 0.4 Percent in 1993 (BoT, 2011).

On the early period of the third phase, the inflation rate was high and the highest rate was 35.9 percent in 1990 while the lowest was 4.4 percent in 2005. However, the economic situation started to improve especially after 1995 (BoT, 2011 and Mbelle, 2005). This was due to major economic and financial sector reforms which were undertaken by government. Even if there was improvement, notwithstanding the debt situation remained gloomy. The level of debt had become enormous relative to the size of economy. Under this phase, the exchange rate between Tanzania shillings and US dollar increased persistently from 16.50 TShs per USD in 1986 to 1453.54Tshs per USD in 2010. The country experienced unfavorable overall balance of payment from 1986 to 2001.

The rest of the period of the phase except 2005, the country had favorable balance of payments (BoT, 2011). Persistence of deficit budget in almost all the time for all phases indicates that the government expenditure has been increasing faster than the economic growth. Table 2.1 shows the trend of some selected macroeconomic indicators. This chapter has presented the trends of economic growth and government expenditure of Tanzania since independence. The next chapter presents literature review on the causal relationship between government expenditure and economic growth. Table 2.1 illustrates the trend of some macroeconomic variables used in the study.

Table 2.1: The Trend of Macroeconomic Indicators

Year	PUB	PRINVEST	GDPcurr	EXPORT	HEALTH	DIFE	EDUC	pubb
1970	817	612	9173	1853	232.345	631.1256	319.6193	265.0357
1971	891	639	9814	1989	304.8971	657.0012	453.7851	132.3178
1972	923	701	11172	2277	313.3156	598.6751	418.8231	190.8613
1973	1089	890	13103	2581	358.1327	784.9651	603.9169	126.9504
1974	1223	1023	15994	2861	381.0711	890.0387	629.0452	212.8837
1975	1693	1070	19011	2764	601.5319	1113.901	989.6971	101.771
1976	2573	1925	24876	4109	732.7291	1248.735	1444.818	395.453
1977	3244	2421	28868	4518	816.0751	1422.302	1573.859	854.0659
1978	3050	3013	32933	3671	932.9413	1891.443	1853.103	263.956
1979	3566	3768	36283	4434	902.9936	4087.234	1948.565	714.4411
1980	4359	3252	42228	4776	688.4607	1055.64	1526.088	2144.452
1981	4677	4311	51753	5087	592.1854	1213.98	1312.678	2772.137
1982	5401	3998	61927	4230	584.9393	1354.026	1343.194	3472.867
1983	3534	4011	69522	4258	456.5412	1181.636	1181.636	1895.823
1984	4713	5733	85392	5055	401.8524	935.2201	854.8496	3456.298
1985	12875	9445	112213	4266	337.6645	935.9823	491.6869	12045.65
1986	17723	16018	148391	11227	2815.093	9396.507	4347.09	10560.82
1987	35894	41297	329486	16893	2522.09	8044.265	3565.663	29806.25
1988	56578	56789	506426	27042	2128.48	4965.321	2594.298	51855.22
1989	65021	64150	633752	52777	2180.116	3986.175	2508.175	60332.71
1990	121098	140678	830693	66561	1423.359	2483.526	1903.567	117771.1
1991	136572	144499	1086273	75981	1322.65	1660.263	1862.335	133387
1992	181113	201452	1369874	123966	1161.033	1587.669	1443.964	178508
1993	189858	300280	1725535	181148	1067.834	1282.45	1409.777	187380.4
1994	251834	424628	2298866	265177	911.361	620.9966	960.3615	249962.3
1995	268156	489915	3020499	390378	612.5337	622.0539	742.0092	266801.5
1996	326032	489358	3767642	455419	240.6249	532.5537	442.6931	325348.7
1997	368783	554762	4708627	459549	255.5158	509.676	695.9247	367831.6
1998	409908	707076	6283970	423424	451.8183	625.2156	878.1617	408578
1999	415932	789471	7222561	455657	436.5391	534.2285	911.6193	414583.8
2000	438413	828265	8152789	587403	566.7449	171.449	2292.215	435554
2001	461693	928948	9100274	746742	703	182.0055	2549	458441
2002	715958	1073938	10444507	948603	863.1017	198.3426	3274.849	711820
2003	896163	1343118	12107060	1270085	1344.413	218.3352	3933.151	890885.4
2004	736828	2157454	13971591	1606630	1555.672	240.5668	4455.231	730817.1
2005	1071161	2704884	15965293	1900603	1865.52	261.7185	5721.965	1063574
2006	1211392	3161410	17941268	2404572	2795.568	2193.812	5116.546	1203480
2007	1337211	4371063	20948403	2762367	2669.783	1819.414	3946.884	1330594
2008	1810972	5278644	24728005	4280582	24145.34	24865.63	34231.7	1752595
2009	2052619	6312281	28058587	4348959	2840.389	2468.566	3129.253	2046649
2010	2611306	7639049	32293479	6092544	3484.176	3311.972	3835.454	2603986

Source: BOT, National Bureau of statistics-various reports, Ministry of Finance

(MOF)

CHAPTER THREE

3.0 LITERATURE REVIEW

3.1 Introduction

This chapter reviews relevant theoretical and empirical literature on government expenditure and economic growth. Reasons for public sector growth, theoretical and empirical relationship between government expenditure and economic growth will be examined. Lastly, the chapter presents the summary and emerging gap of the study.

3.2 Public Expenditure Growth Literature

Public expenditure is the cost of carrying out public sector policies. It is important to review the determinant of public sector growth in line with understanding the effect and relationship between government expenditure and economic growth. Detailed explained of the growth in the government expenditure is naturally to be found ultimately in the historical and political development of a particular countries. It is possible, however, to identify at a broad level of generality some economic factors which have contributed to public sector growth .These can be put into four categories; demand, supply, cost accounting and development theory.

The most influential of the demand explanation is the Wagner's law of increasing state activity. Wagner argued that the demand for increases in the scope of public sector activity would be a natural consequence of the higher standard which accompanies economic industrialization. Increased complexity of industrialization necessitates high state expenditure on law and order, transport and communication

and regulatory activity (Wagner, 1890) as indicated by Saunders and Klau 1985. Researchers have also noticed that ideology is linked to the demand side argument. Immediately after independence in many countries ideology became the driving force behind government expenditure. This was because the nature of independence struggle meant provide basic requirements as a reward to the people. Despite the fact that there is tolerable level of expenditure, the tendency has always been that of maintaining it at high levels.

From the supply side point of the view, factors behind public expenditure growth were highlighted in a study of long term trends in public sector expenditure in the United Kingdom by argument is based on the tolerable burden of taxation where an upheaval causes voters to reassess their conception of tolerable tax. Normally after a disturbance government expenditure will drop but not to its original level. Driven by availability of revenue and funds. This may be due to increase in foreign aid, grants and loans. Such a wind fall may lead to unplanned spending to please the general public. The cost accounting approach has been widely used in explaining the growth in government expenditure in developing countries. Saunders and Klau (1995) used the approach to analyze the growth in government spending in OECD countries. The authors attributed the growth in pension expenditure to an expanding system of entitlement due to demographic changes and broadened coverage.

The theory of economic development is probably the main factor behind government expenditure in developing countries. Models of development in the late 1940s up to early 1970s stressed the extent to market failure in developing countries. Models such as the critical minimum effort, big push, balanced growth, redistribution with growth

and provision of basic needs suggest more government participation. Though there has been a shift towards market driven economy, the old legacy still lingers and it has been difficult for countries to reduce government expenditure. It is further observed that the roles of multilateral and bilateral agencies and their preference for the public sector rather than the private sector explains and supports the growth of government in developing countries. Likewise practice advice from experts in developed countries and multinational agencies have also encouraged the growth of public sector's share of national output.

Although the reasons for the growth of public expenditure vary from country to country, it can be concluded that public expenditure growth in many countries has been due to: demographic changes, unit cost of providing services, ideology, models of development, foreign advice, and availability of funds, debt repayment, narrow tax base and bureaucratic controls, among other factors (Ndung'u, 1995) when analyzing government deficit and inflation and Ekpo (1995) government expenditure and economic growth.

The reviewed theories, however, are not rules of thumb, encompassing all the reasons for public expenditure growth. As Ekpo (1994) has shown, other reasons may include bureaucratic monopolies, fiscal illusion, debt repayment, demographic changes, electoral timing, interest groups, internationalization of economies demand side arguments for public good provision, displacement effect, inequalities and information and technological development. These factors may vary between countries or among groups of countries.

3.3 Theoretical Framework

This part examines theoretical framework on the linkage between government expenditure and economic growth. The question of what size the government has traditionally been divided in two extremes. One extreme advances a view that a large government is typically detrimental to efficiency, productivity and growth. This view is based on the premise that the public sector is not responsive to market signals in those regulatory processes though fiscal and monetary policies could cause market distortions and lead to higher production cost. Moreover, centralized decision-making and lack of profit motive make government production less efficient than the private sector's. On the other extreme, a large government is viewed as a vehicle for provision of certain essential goods and services to place the economy on a predetermined growth path that would otherwise not be provided by the private sector. Other benefits of government expenditure in support of a large government include the correction of market failure and the preservation of property rights through legislation and the provision of security services (Seymour and oral, 1997).

It is widely accepted that government activity may increase total output indirectly through its interaction with the private sector. At the basic level, government provides legal and social frameworks on which the private sector is based. In the traditional Keynesian macroeconomics, growth theory maintains that many categories of public expenditures, particularly of the recurrent nature, contribute positively to economic growth. High level of government consumption is likely to increase employment, profitability and investment through multiplier effect on aggregate demand. Studies based on endogenous growth models distinguish between productive

and unproductive expenditures. Expenditures are categorized as productive if they are included as arguments in private production function and unproductive if they are not (Barro and Sala-i-Martin, 1992). This categorization implies that productive expenditures have a direct effect upon the rate of economic growth but unproductive expenditures have an indirect or no effect. Expenditure items should be categorized as productive or unproductive is a subject of debate as they may be difficult to define a priori.

Although it seems difficult to categorize government expenditure items, policy makers are increasingly interested in the composition of public spending. This interest partly stems from the recognition that expenditure allocation in favour of education and health can boost economic growth (Barro, 1997, Tanzi and Chu, 1998). Gupta, et al. (1999) and Gupta and Verhoeven (2001) suggest that both the size and the efficiency of public education expenditure are important in improving socio-economic performance. Thus, it is common for various international financial institutions, donors, NGOs, among others to call for increased government spending in education and health sectors. The particular emphasis on increasing public spending on primary health care is generally justified that such spending reduces the impact of diseases on the productive life years of the population, which may promote economic growth in long run. Filmer, Hammer and Pritchett (1998) attempt to address the issue of allocation within the health sector in their cross sector analysis. The following section provides the empirical studies done by other scholars.

3.4 Empirical Studies

In empirical studies, the findings on the impacts of size of government on growth have not been consistent. This may partly be explained by the fact that economic

theory does not provide a well-developed methodology for the incorporation of government expenditures in standard growth models.

Landau (1983) examined the effect of government (consumption) expenditure on economic growth for a sample of 96 countries. The study used time series data and discovered a negative effect of government expenditure on growth of real output. Also, Ram (1986) examines the linkage between government expenditure and economic growth for a group of 115 countries during the period 1950-1980. The study uses both cross section and time series data during analysis. The study confirms a positive influence of government expenditure on economic growth.

Donald and Shuanglin (1993) examine the differential effects of various forms of expenditures on economic growth for a sample of 58 countries. Their result shows that government expenditures on education and defense have positive influence on economic growth, while expenditure on welfare has insignificant negative impact on economic growth.

Devaranjan and Swaroop (1993) investigate the relationship between the composition of government expenditure and economic growth for a group of developing countries. The regression results illustrates that capital expenditure has a significant negative association with growth of real GDP per capita. However, the result shows that recurrent expenditure is positively related to real GDP per capita.

The study by Ogiogio (1995) reveals a long-term relationship between government expenditure and economic growth. Moreover, the author's finding shows that recurrent expenditure exerts more influence than capital expenditure on growth.

Elkin (1998) examines the relationship between government expenditure and economic growth, by proposing a new framework for New Zealand. The empirical result shows that higher government expenditure does not hurt consumption, but instead raises private investment that in turn accelerates economic growth.

Fajingbesi (1999) examines the relationship between government expenditure and economic growth. The econometric result indicates that real government capital expenditure has a significant positive influence on real output. However, the result shows that real government recurrent expenditure affects growth only by little.

Abdullah (2000) analyzes the relationship between government expenditure and economic growth. The author reported that the size of government is very important in the performance of economy. The author suggests that the government should increase its spending on infrastructure, social and economic activities. Also, the government should encourage and support the private sector to accelerate economic growth.

Al-Yousif (2000) indicated that government spending has a positive relationship with economic growth. Folster and Henrekson (2001) examine the relationship between government expenditure and economic growth for a sample of wealthy countries for 1970-95 using various econometric approaches. The authors observe that more meaningful (robust) results are generated, as econometric problems are addressed.

Peter (2003) examines the effects of government expenditure on economic growth during 1960-2001 periods and emphasizes that if the government spends too much it might slowdown economic growth.

Niloy, Emanuel and Osborn (2003) uses a disaggregated approach to investigate the impact of public expenditure on economic growth for 30 developing countries in 1970s and 1980s and confirms that government capital expenditure in GDP has a significant positive association with economic growth, but the share of government current expenditure in GDP was shown to be insignificant in explaining economic growth. At the sectoral level, government investment and expenditure on education are the only variables that had significant effect on economic growth, especially when budget constraint and omitted variables are included.

Abu-Bader and Abu-Qarn (2003) employed multivariate co-integration and variance decomposition approach to examine the causal relationship between government expenditures and economic growth for Egypt, Israel, and Syria. In the bivariate framework, the authors observed a bi-directional (feedback) and long run negative relationships between government spending and economic growth. Moreover, the causality test within the trivariate framework (that include share of government civilian expenditures in GDP, military burden, and economic growth) illustrates that military burden has a negative impact on economic growth in all the countries. Furthermore, civilian government expenditures have positive effect on economic growth for both Israel and Egypt.

Vamvoukas (2005) employed the trivariate causality test to examine the relationship between government expenditure and economic growth for Greece, United Kingdom and Ireland. The study finds that government size granger causes economic growth in all the countries they studied. The finding was true for Ireland and the United Kingdom both in the long run and short run. The result also indicates that economic

growth granger causes public expenditure for Greece and United Kingdom, when inflation is included.

Mitchell (2005) argues that the American government expenditure has grown too much in the last couple of years and has contributed to the negative growth and suggested that government should cut its spending, particularly on projects/ programmes that generate least benefits or impose highest costs.

Akpan (2005) uses a disaggregated approach to determine the components (that include capital, recurrent, administrative, economic service, social and community service, and transfers) of government expenditure that enhances growth, and those that do not found that there was no significant association between most components of government expenditure and economic growth.

Komain and Brahasrene (2007) examine the relationship between government expenditures and economic growth in Thailand, through employing the Granger causality test. The result reveals that government expenditures and economic growth are not co-integrated. Moreover, the results indicated a unidirectional causality running from government expenditures to economic growth. In addition, the result illustrates a significant positive effect of government spending on economic growth.

Olugbenga and Oweye (2007) examine the relationships between government expenditure and economic growth for a group of 30 OECD countries during the period 1970-2005. The regression results showed the existence of a long-run relationship between government expenditure and economic growth. In addition, the

authors observe a unidirectional causality running from government expenditure to economic growth for 16 countries, thus supporting the Keynesian hypothesis. However, causality runs from economic growth to government expenditure in 10 countries, confirming the Wagner's law. Additionally, the authors find the existence of feedback relationship between government expenditure and economic growth for a group of four countries.

Loizides and Gregoriu and Ghosh (2007) use the heterogeneous panel to investigate the impact of government expenditure on economic growth by employing the GMM technique. The study discovers that countries with large government expenditure tend to experience higher growth, but the effect varies from one country to another.

Another study, done by Ranjan and Sharma (2008) in India, during the period 1950-2007 find a significant positive impact of government expenditure on economic growth. They also reported the existence of cointegration among the variables.

Liu, Hsu and Younis (2008) examine the causal relationship between GDP and public expenditure for the USA during the period 1947-2002. The causality test result reveals that total government expenditure causes growth of GDP. This means growth of GDP does not cause expansion of government expenditure. Moreover, the estimation results indicated that public expenditure raises the USA economic growth.

Cooray (2009) used an econometric model that takes into consideration government expenditure and quality by governance in a cross-sectional study of 71 countries. The results revealed that both the size and quality of the government are associated with economic growth.

3.5 Summary and Research Gap

The literature review shows that there is a relationship between government spending and economic growth. This study extends the literature on relationship between economic growth and government expenditure in Tanzania. Previous studies which have been done in Tanzania are Osoro, 1993; Kweka, 1995; and Yabu (2003). They used secondary time series data to analyses the relationship between government expenditure and economic growth. This study extends the existed literature by adding sample period (1970-2010).

CHAPTER FOUR

4.0 METHODOLOGY

4.1 Introduction

This section presents the theoretical and empirical methodology which is employed to provide a clue to objectives stated in this study. The chapter discuss/derive the model that will be used to explain government expenditure and economic growth in Tanzania. It is broaden to capture conceptual framework and also provide insight on where the data obtained and techniques that employed in analyzing data.

4.2 Conceptual framework

The theoretical relationship between government expenditure and economic growth is well documented in many literatures. This study follow the framework of Cobb douglous production function which is extended to include government expenditure reaching growth function which previously utilized by Kweka (1999) on his study in Tanzania economy and then adopted by Ketema (2006) in the same study in Ethiopia. In the model, output is assumed to depend on capital (K), labour (L) and government expenditure (G)

$$Y = f(K, L, G) \tag{i}$$

But in this era of globalization, export (X) is very significant in explaining changes of output but not captured by the general model. The model can be augmented to include export value as follows;

$$Y = f(K, L, G, X) \tag{ii}$$

The increment in capital can be termed as investment which is explained as an objective of government to increase development expenditures of which part of it form investment capital. Government development expenditure can be decomposed into three components that are education expenditure (Ed), health expenditure (H) and also defense expenditure (D). Education and health expenditure also can be termed as expenditure on human capital (Labour) as it increases productivity/output through discovery of new technology, maintenance of good health of citizen increase effectiveness and efficiency in delivering services on average. Thus, the model above can be exaggerated with these variables.

$$Y = f(Q, Ed, H, D, E) \quad (iii)$$

Where by Output is the function of investment, education expenditure, health expenditure defense expenditure and value of export of a given country.

4.3 Model Specification and Variables Definition

4.3.1 Model Specification

Different authors have talked about the impact of government spending on economic growth using different variables depending on their literature reviewed, country resources and availability of data. This research incorporates some of variables used by Ketema (2006) and that of Kweka and Morrissey (1999) in Ethiopia and Tanzania, respectively the selection of this variables best suits the literature reviewed and also due to data availability. The structural equation can be presented as follows;

$$LGDP = \beta_0 + \beta_1 L_{publ} + \beta_2 L_{health} + \beta_3 L_{defense} + \beta_4 L_{export} + \beta_5 L_{educ} + \varepsilon_t \dots \dots \dots (iv)$$

Where; L denote logarithms, ε_t is the error term which follow all the assumptions of classical linear regression, LGDP is the logarithms of gross domestic products, L_{publ}

is the logarithms of government investment expenditure, L_{health} is the logarithms of health expenditure, $L_{defense}$ is the logarithms of defense expenditure L_{educ} is the logarithms of education expenditure and L_{export} also denote logarithms of export . The inclusion of logarithms on both sides of the equation helps in normalizing variables under the study. Independent variables could be expressed as a ration of GDP but this could lead to simultaneity bias and multicollineality problem.

4.3.2 Variable Definition

The following table presents the summary of the model variables in terms of name, code, sign.

Table 4.1 and the expected: Variable under Study

Name of the variable	Code	Expected sign
Gross domestic product	GDP	
Public investment	Publ	+
Health expenditure	Health	+
Defense expenditure	Defense	-
Education expenditure	Educ	+
Export to GDP	Export	+

4.4 Explanation of the Variables under the Study

Gross domestic product is the total market value of all final goods and services produced in a country for a given year equals to total consumer, investment and government spending and also income from export minus that of imports at a given year. GDP is obtained from the general identity of government spending, investment, consumption and net export.

Public investment expenditures are the expenditures used by the government to finance investment projects such as harbors, aircrafts, roads construction and also used in housing sector expecting future returns indirect/directly from the user of the services. This is proxied by taking the difference between government development expenditure less educational and health expenditures. Health expenditures are those expenditures used in health sector such as providing medication and buying of new or related equipment for better provision of good services. Also it includes on job training cost and cost on seminars that enable exchange of knowledge of providing health services. Defense expenditures include all amount of money located by the member of the government for security purposes at a given year. Includes expense on buying new military equipments, on job training and also amount of fund allocated to new trainee in the defense force, also export implies values of tradable commodities from all sectors of the economy sold outside of the country for a given year in a formal way. Education expenditures include those expenditures stated in the budget of a given year to finance education in primary school, secondary schools and at tertiary level. Expenditures on these sectors include buying books new buildings, reconstruction and maintenance of buildings and some time includes salaries. These data are obtained directly from the national bureau of statistics.

4.5 Hypotheses

- (i) Public investment has positive relation with GDP growth
- (ii) Health expenditures has positive relation with GDP growth
- (iii) Defense expenditures has negative relation with GDP growth
- (iv) Export has positive relation to GDP growth
- (v) Education expenditures has positive relation with GDP growth

4.6 Tests Performed Under Time Series Data

Estimation of regression model without taking into consideration of stationarity of the time series data result to spurious regression results that are not accurate in prediction and forecasting. The study first examines the stationarity of data, long run relationship between variables and error correction model is developed if criteria are satisfied as discussed below.

4.6.1 Unit Root Test

To test for unit root, Augmented Dick-Fuller and Philp-Peron test are employed. The test is explained as shown in the equation below.

$$Y_t = \beta_0 + \beta_1 Y_{t-1} + \beta_2 T + \sum_{i=1}^P \alpha_i \Delta Y_{t-1} + u_t \quad (v)$$

As indicated on the equation above, suppose Y_t is the variable under concern. To test for unit root we start by maximum number of lags, P, that are significant in explaining the variable with trend T and drift β_0 being included in the model. If the variables is not stationary we make an assumption that unit root might be due to the presence of trend, we eliminate trend T by setting $\beta_2 = 0$ and then if still not stationary we also remove drift $\beta_0 = 0$ using criteria (basing on sum square residual of the restricted and unrestricted model).The process continue by differencing the variable if all procedures doesn't make the variable stationary.

4.6.2 Cointegration Test

Cointegration is an econometric technique that is used to address the problem of integrating short run dynamics with long run equilibria. Time series data are usually non-stationary and as such, are differenced to arrive at a stationary time series before

an econometric test is carried out. Therefore, if the variables are non stationary and may have the same order of integration, cointegration test is carried out to examine if they have long run relationship.

There are two main techniques (method) of testing cointegration which include; Johansen (1988) cointegration technique which is the approach for Multivariate Models and the Engle-Granger (1986) Approach for Univariate Models. For the case of this study Johansen cointegration approach is not used because its subjected to the following shortcomings. First, given the small size of observations, the method cannot be accepted as an appropriate one since the points of estimates obtained for cointegrating vector may not be particularly meaningful. Furthermore, some additional problems occur if we do not have a unique co-integrating vector. The problem of multiple long run relationship is presumably best as seen as an identification problem can be resolved by Granger (1986).

Therefore in this study Engle-Granger two steps procedure is used to check if the variables are cointegrated or not. The approach is selected because in practice Engle-Granger is regarded as a convincing evidence and confirmation for the existence of cointegration found in the first step. Moreover there is no danger of estimating a spurious regression because of the stationarity of the variables ensured. A combination of the two steps then provides a model incorporating both the static long run and the dynamic short run components. It is also important to know that if the variables are cointegrated, then the regression on levels of variables will be meaningfully and valuable. In this case error correction model will be used to estimate short run dynamics.

4.6.3 Error Correction Model Estimate

According to Granger (1986) any system of cointegrated variables can best be presented by an error correction mechanism in which the lagged residuals that are obtained from underlying cointegrating relationship are added to the original vector of cointegrating stationary variables. The coefficient of the lagged residuals or the error correction mechanism (ECM) represents the process by which the dependent variable adjusts its long run equilibrium position as shown in the equation below;

$$\Delta \text{GDP} = \beta_0 + \beta_1 \Delta \text{privat} + \beta_2 \Delta \text{publ} + \beta_3 \Delta \text{health} + \beta_4 \Delta \text{defence} + \beta_5 \Delta \text{export} + \beta_6 \Delta \text{educ} - \beta_7 \text{ect}_{t-1} + \varepsilon_t \dots \dots \dots \text{(vi)}$$

Where; Δ means change in, ect_{t-1} is the error correction term lagged in one period that shows the speed of the adjustment to the long-run equilibrium position. To apply Error correction model is possible only when the series are integrated of the same order (differenced once to become stationary).

4.7 Diagnostic Test

Under this test, different tests are performed to test if the regression model follows the classical linear regression model properties. The residual series is tested for heteroscedasticity using Autoregressive conditional heteroscedasticity test (ARCH test) also using white heteroscedasticity test, test for serial correlation using Q-statistic test and normality assumption using Jacque-Bera test statistic.

4.8 Data Type and Sources

The study uses secondary annual data which is time series covering the period 1970 to 2010 that was obtained from various sources. Most of the data were obtained from Central Bank of Tanzania (BOT) on various publications, Ministry of Finance,

Tanzania National accounts obtained from National Bureau of Statistics (NBS), economic journals and from Tanzania Investment Centre (TIC), International Monetary Fund (IMF) and World Bank (World Bank data by country).

4.9 Data Processing and Analysis

In data processing and analysis, Eviews, SPSS and STATA software are very essential in producing various statistics and also providing regression results as explained above. Eviews software was applied for unit root test, cointegration test, summary statistics diagnostic test results and then providing error correction mechanism for the study while STATA and SPSS are employed in drawing graphs and tables.

4.10 Summary

This chapter as shown above tried to provide methodology employed in chapter five in analyzing data in the impact of government expenditure on economic growth. Also characteristics of unit root was given out and then discussing various test before arriving on Error Correction Model. Chapter five provides empirical results and discussions.

CHAPTER FIVE

5.0 EMPIRICAL RESULTS AND DISCUSSION

5.1 Introduction

This chapter provides the empirical and discussion of the results as obtained from data analysis. Section 5.2 presents descriptive statistics, section 5.3 presents correlation test results while section 5.4 provides unit root test results. Cointegration test results is presented in chapter 5.5 while section 5.6 presents error correction model results, section 5.7 presents diagnostic test results and section 5.8 provide discussion of the error correction model.

5.2 Descriptive Statistics

Table 5.1 provides the descriptive statistics of the individual sample of the variables used in this study. The following observations can be made about the variables used in the study over the study period. The average growth of all variables included in the economic growth model has averaged from 6.80 to 13.31 percent with the highest being of GDP growth and the lowest being of growth of health expenditures. The standard deviation is highest at 3.35 compared to the rest of the variables used in this study.

Under the null hypothesis of normality, Jarque-Bera test is used to test normality of each variables used in the study. At 5% level of significance, the null hypothesis is rejected for all variables. In terms of skewness, most of the variables are not skewed close to zero except logarithms of GDP, the skewness level for normal distribution.

Logarithms of GDP, Public expenditures and exports represent platykurtosis (their value are less than 3 in magnitude) while the rest of the variables represents leptokurtosis (Kurtosis value are greater than 3 in magnitude which is kurtosis level for normal distribution).

Table 5.1: Descriptive Statistics for Economic Growth Model

	GDP	HEALTH	PUBLIC	EXPORT	EDUC	DEFENCE
Mean	13.31	6.80	10.29	11.05	7.39	7.02
Median	13.63	6.70	11.67	11.105	7.33	7.01
Maximum	17.29	10.09	14.77	15.62	10.44	10.12
Minimum	9.12	5.44	4.62	7.52	5.76	5.14
Std. Dev.	2.75	0.93	3.35	2.72	0.91	1.09
Skewness	-0.08	1.01	-0.38	0.15	0.67	0.47
Kurtosis	1.49	4.83	1.64	1.48	4.32	3.35
Jarque-Bera	3.89	4.83	4.16	4.08	2.13	1.76
Probability	0.14	0.0816	0.12	0.12	0.09	0.41
Sum	545.73	279.13	422.04	453.33	303.26	288.19
Sum Sq. Dev.	304.11	34.94	451.04	297.23	33.16	48.31
Observations	41	41	41	41	41	41

Source: Author estimates

Note: All variables are in logarithms form. Whereby, Health denote health expenditures, Public is the public investment expenditures, export is the revenue from export, educ is the education expenditures and defense is the defense expenditures.

5.3 Correlation Test

Table 5.2 below presents correlation test results for the variables under the study. Correlation test is done to see if there is multicollinearity between variables. The table shows that, Logarithms of GDP is highly correlated with logarithms of public investment expenditures, sales from export while logarithms of public investment expenditures is highly correlated to logarithms of export. Since the variables are not

severely correlated we do nothing in solving this problem to avoid model misspecification bias and omitting variables that are useful in explaining economic growth.

Table 5.2: Correlation Test Results

	GDP	HEALTH	PUBLIC	EXPORT	EDUC	DEFENSE
GDP	1					
HEALTH	0.51	1				
PUBLIC	0.78	0.51	1			
EXPORT	0.78	0.52	0.75	1		
EDUC	0.58	0.72	0.55	0.58	1	
DEFENCE	-0.12	0.63	-0.07	-0.12	0.40	1

Source: Author estimates

5.4 Unit Root Test Results

The next process is to test for unit root properties of time series data used in this study. Table 5.3 summarizes the unit root for the data in levels and in first difference. All variables are integrated of order one, $I(1)$. This means that they become stationary after first differencing as indicated on column two (adj. t-statistic) with critical values in column four and five. The null of the stationary process is rejected at 1% and 5% for each of these variables, meaning that all variables are not stationary at level (without differencing). The results indicate that the variables become stationary in first difference and hence we reject null hypothesis of non stationarity in favour of the alternative hypothesis that the series are stationary. This is shown using last column that when testing the variable at its first difference, the variables become stationary without differencing.

Table 5.3: Results of Unit Root Test

Variable	Adj. t-statistic at level	t-at statistic at first difference	Critical value at 1%	Critical value at 5%	Order of integration at levels	Order of integration at first difference
Defense	-8.144662	-7.986799	-3.610453	-2.938987	I(1)	I(0)
education	-9.151202	-9.050373	-3.610453	-2.938987	I(1)	I(0)
Export	-5.228218	-5.300974	-3.610453	-2.938987	I(1)	I(0)
GDP	-3.529111	-3.529111	-3.610453	-2.938987	I(1)	I(0)
Health	-8.291601	-8.178560	-3.610453	-2.938987	I(1)	I(0)
Public	-8.416799	-8.266520	-3.610453	-2.938987	I(1)	I(0)

Source: author estimates

Given the Cointegration requires all variables to be integrated of the same order, the results in table 5.3 indicate that the variable in this study are cointegrated of the same order, I(1). The next procedure is to investigate whether the linear combination of these variables is stationary. To accomplish this task Engel Granger test for cointegration is carried out.

5.5 Cointegration Test Results

Since the data are proved to be non stationary at levels, the existence of cointegrating relationship for set of variables in the model is examined. As explained earlier the aim is to search for linear combination of individually non stationary time series that is itself stationary. Given that the variables are integrated of order one the linear combination of the variables is stationary, this justify the presence of cointegrating equations.

Table 5.4: Cointegration Test Results

Variable	Adj. t-statistic	Critical value at 5%	P-value
Residual	-4.548708	-3.529758	0.0042

Source: Author estimate

As explained earlier, using Engel-Granger to test for cointegrated series we follow two steps procedures by first run OLS equation and estimate residuals. Residual is then tested for unit root if it is stationary. As shown on the table 5.4 using Philip-Peron test for unit root of the residual series, the series is stationary at levels indicating that there is presence of cointegrating equations.

5.6 Error Correction Model Results

Using the results for cointegration, error correction models capturing both short-run and long-run relationships is estimated. The long run parameters are captured through the error correction term (ect). The inclusion of both short-run and long-run relationships is important to solve the problems related to non stationarity variables such as spurious regression results. In analyzing error correction model, we follow general to specific in modeling ECM by inclusion of maximum of four lags of each variable and start eliminating insignificant variables until the desired model is obtained. The desired model obtained is presented in table 5.5 below.

Table 5.5: Error Correction Model Results:

Variable	Coefficient	Std. error	t-statistic	P-value
Δ health	0.062332	0.090934	0.685461	0.4989
Δ public	0.070368	0.032472	2.167031	0.0392**
Δ export	-0.059659	0.083383	-0.715480	0.4805
Δ education	0.004747	0.072942	0.065083	0.9486
Δ defense	-0.016232	0.031682	-0.512353	0.6126
ECTT(-1)	-1.204466	0.474124	-2.540402	0.0171**
Δ GDP(-1)	1.608154	0.484060	3.322221	0.0026***
Δ Public(-1)	-0.089005	0.055403	-1.606501	0.1198
Δ public(-2)	0.057780	0.030497	1.894629	0.0689*
Δ education(-1)	0.056914	0.023111	2.462604	0.0205**
C	-0.125395	0.082361	-1.522507	0.1395

Dependent variable is Δ GDP_t

Note: *, ** and *** means significant at 10%, 5% and 1% level of significance.

R-squared 0.620498, Adj. R-squared 0.479941, Durbin Watson stat 1.29368, F-stat 4.414583, P-value (F-statistic)= 0.000995, Akaike info criterion -1.808895, Schwarz criterion -1.334857.

Source: Author calculation.

Also the information on the table above can be presented in the form of equation as follows;

$$\Delta \text{GDP}_t = -0.13 + 0.057\Delta \text{educ}_{t-1} + 0.089\Delta \text{publi}_{t-1} + 0.057\Delta \text{publi}_{t-2} + 1.61\Delta \text{GDP}_{t-1} - 0.016\Delta \text{difense}_t + 0.005\Delta \text{educ}_t - 0.0597\Delta \text{export}_t + 0.07\Delta \text{publi}_t + 0.06\Delta \text{health}_t - 1.204\text{ect}_{t-1} \dots\dots\dots(\text{vi})$$

The error correction model above explains short-run and long-run dynamics of the economic growth model. Short-run disequilibrium/adjustment is captured by the variables under the study while the long-run is explained by the error correction term. The coefficient of error correction term is negative and significant implies that the model in the long-run converge to the steady state equilibrium. The results reveal that change of government investment lagged in two periods and without lags are significant in explaining economic growth at 10% and 5% respectively. 1% change of growth of government investment expenditures leads to 7% increase in economic growth in two years to come with only 5% increase in the current period.

Also change of growth of GDP lagged in one period and change of growth of education expenditures of the current period are significant at 5% level of significance in explaining economic growth. 1% increase of education expenditures will accelerate 5.69% increase of economic growth of the country. Some of the variables such as Health expenditure, export education defense both in the current period also Public expenditures lagged in one period and GDP lagged in one period are not significant in explaining growth of the economy. This does not mean these key variables have no impact on growth but there is gradual/ qualitative contribution to other sectors to grow. For example Education expenditure in the current period has little contribution to the economy since its outcome/output is seen after some years of investment in education. Also export in the current period seems to be insignificant but increase in export in the economy stabilizes/ appreciates the value of domestic currencies in relation to other foreign currencies. This enables growth of other sectors especially manufacturing sectors.

5.7 Diagnostic Test

Under this section as explained in chapter four, residual series is tested if it follows the assumption of the classical linear regression model. Serial correlation test, heteroskedasticity test and normality test are performed in this section as follows.

5.7.1 Serial Correlation Test

In testing if the residual series are correlated autocorrelation and partial autocorrelation and Q-statistics is presented on table 5.6. The results indicate that value of autocorrelation and partial autocorrelation are dying to zero implies no serial correlation in residual series. Using Q-statistic by observing its probability we can observe that all P-value are greater than 5% level of significance implies no serial correlation. Also using Breusch Godfrey Serial Correlation LM Test as indicated in table 5.7 reveals no serial correlation since P-values for both F-statistic and Obs*R-squared are greater than 5% level of significance.

Table 5.6: Serial Correlation Test Results

Lags	AC	PAC	Q-STAT	PROB
1	0.273	0.273	3.2007	0.074
2	0.018	-0.061	3.2149	0.200
3	0.099	0.119	3.6574	0.301
4	0.064	0.005	3.8497	0.427
5	-0.015	-0.030	3.8601	0.570
6	-0.033	-0.029	3.9154	0.688
7	-0.070	-0.068	4.1666	0.760
8	-0.085	-0.050	4.5470	0.805
9	0.143	0.203	5.6613	0.773
10	0.091	0.002	6.1236	0.805
11	0.029	0.038	6.1725	0.862
12	0.100	0.066	6.7675	0.873
13	0.041	-0.045	6.8714	0.909
14	-0.014	-0.020	6.8835	0.939
15	-0.100	-0.121	7.5492	0.941
16	-0.064	-0.001	7.8396	0.953
17	-0.010	0.056	7.8472	0.970
18	0.007	0.005	7.8505	0.981
19	-0.018	-0.004	7.8751	0.988
20	0.000	0.015	7.8751	0.993

Source: Author calculation.

Table 5.7: Breusch Godfrey Serial Correlation LM Test Results

F-statistic	1.722017	Probability	0.194854
Obs*R-squared	3.886728	Probability	0.143221

Source: Author calculation.

5.7.2 Test for Homoskedasticity

In testing for constant variance for the residual series autoregressive conditional heteroskedasticity and white heteroskedasticity test are employed. Using F-statistic and Obs*R-squared for both test as indicated on the table 5.8 and table 5.9 respectively the null hypothesis is rejected at 5% level of significance that series is not homoskedastic.

Table 5.8: ARCH Test Results

F-statistic	0.020331	Probability	0.887391
Obs*R-squared	0.021418	Probability	0.883646

Source: Author calculation

Table 5.9: White Heterpskedasticity Test Results

F-statistic	0.544605	Probability	0.843886
Obs*R-squared	6.324146	Probability	0.787334

Source: Author calculation

5.7.3 Regression Specification Error Test (RESET) Results

RESET is a general test for the specification errors such as Omitted variables, incorrect functional form and Correlation between regressors. Under such specification errors, Least Square estimators will be biased and inconsistent, and conventional inference procedures will be invalidated. As shown in table 5.10, the model is correctly specified since p-values of F-statistic and log likelihood ratio are less than 5% level of significance.

Table 5.10: Ramsey RESET Test Results

F-statistic	7.805358	Probability	0.008607
Log likelihood ratio	8.492234	Probability	0.003567

Source: Author calculation

5.8 Stability Test Results

In order to examine the impact of government expenditure on economic growth if it was the same before and after the structural adjustment programme of 1986 we use Chow breakpoint test. The idea of the breakpoint Chow test is to fit the equation separately for each subsample and to see whether there are significant differences in the estimated equations. A significant difference indicates a structural change in the relationship. As indicated on table 5.11, The value of F-statistic and log likelihood are

significant with p-values less than 5% indicating that there was a significant structural changes in relationship between economic growth and government expenditures.

Table. 5. 11: Chow Breakpoint Test Results

F-statistic	3.278890	Probability	0.014332
Log likelihood ratio	21.28671	Probability	0.001629

Note: Chow Breakpoint Test: 1986

5.9 Granger Causality Test

Granger causality test is carried out tests whether an endogenous variable can be treated as exogenous. Results from the appendices shows that, direction of causation between logarithms of health expenditure and GDP run from health expenditure to GDP. Also logarithms of government development expenditures, logarithms of exports and logarithms of education expenditures both granger cause logarithms of GDP but only logarithms of GDP granger cause logarithms of export at five and ten percent level of significance.

CHAPTER SIX

6.0 POLICY IMPLICATIONS AND RECOMMENDATIONS

6.1 Summary

The main aim of this study was to model the impacts of government spending on economic growth in Tanzania using annual data for the period 1970-2010. The hypotheses tested under this research are whether education expenditures has positive effects on economic growth, Government investment expenditure, health expenditure and revenue from export have positive relation with economic growth. Also it tested whether defense expenditures has negative impacts on economic growth.

6.2 Policy Implications

In modeling the impacts of government spending on economic growth in Tanzania in chapter five we found that, changes of growth of public investment expenditure in the current period and also lagged in two period are significant in explaining economic growth at 5% and 10% respectively. Also GDP lagged in one period and current education expenditures has an impact on economic growth at 1% and 5% level of significant respectively. These arguments imply the following; Developing countries including Tanzania, government investment expenditure are very crucial in providing good logistics in transportation of goods and services that could further increase economic growth. The emphasis/motivation of the government in increasing proportion of its annual budget on infrastructures such as roads system, harbors, aircrafts, housing sector and railway provide a better links between the dependent sectors such as agriculture and industrial sector through trade (provision of raw materials and intermediate products). Government investment expenditure provides

an immediate impact of 5% increase and 7% increase after two years of investments. This provides a good conclusion on the role of government in addressing immediately on the issues of investment that need more capital and has the element of public good.

Also education expenditures have a great contribution to the economic growth the country. 1% change of education expenditures leads to 5.6% change in economic growth of the country. The increase of spending on education has more multiplier effect on GDP growth. This implies spending on education is very important in transforming Tanzanian economy to middle income countries. Spending on short courses and training upgrade labor productivity while increasing awareness in this sophisticated world economies. Increase of education spending and well management of expenditures implies more citizen benefit from education provided by the government. Engagement of many teenagers in school help in controlling side effects such as early marriage, dependent ratio also reduce the use of indigenous technology in production and delivering of services.

The government and its stakeholder should make effort in ensuring further growth of economic activities since the growth of one period depends on the growth of the previous time. This is viewed in the theories of business cycle of pessimisms and optimistic where businessman believes that when the economy is promising, they invest more to fetch more profit because of lack of stagnation in different sectors also when the economy is operation on recession period investors withdrew from investment especially those investments which are highly liquid in nature.

6.3 Limitation of the Study

The study provides some evidence about the impacts of government expenditures on economic growth in Tanzania. Data availability was the major limitation of this study. Other variables that are crucial in explaining economic growth like consumption expenditure were omitted due to data problem in 1970s and 1980s or failing in getting a good proxy for a relevant variables. Also financial problem was another problem in this study. Some data from private sector or institution need some money to be released. To collect primary data is very expensive since it needs close supervision from the field and cost of data entry. Due to this, the researcher only incorporated secondary data.

6.4 Area of further Research

This research incorporates time series data from the period of 1970-2010 to examine the impacts of government expenditure on economic growth. The results obtained are presented in chapter five. The results could sound more if it also incorporates opinion or qualitative data in explaining economic growth. Other research also can be done at micro level basin on household budget survey data.

REFERENCES

- Abdullah HA, (2000), “The Relationship between Government Expenditure and Economic Growth in Saudi Arabia”. *Journal of Administrative Science*.
- Abu-Bader S, Abu-Qarn AS, (2003), “Government Expenditures, Military Spending and Economic Growth”: Causality Evidence from Egypt, Israel, and Syria. *Journal of Policy Modeling*, 25(6-7): 567-583
- Agell, J. (1999), On the Benefits from Rigid labour Markets: Norms, Market Failures, and Social Insurance, *The Economic Journal*, 109 (February), F143-F164
- Akpan NI, (2005), “Government Expenditure and Economic Growth in Nigeria”: A Disaggregated Approach. *CBN Economic and Financial Review*, 43(1)
- Al-Yousif Y, (2000), “Does Government Expenditure Inhibit or Promote Economic Growth”: Some Empirical Evidence from Saudi Arabia. *Indian Economic Journal*, 48(2)
- Amani, H. K. R., S. M. Wangwe, D. C. Rweyemamu, R. Aiko and G. G. Wanga (2006), “Understanding Economic and Political Reforms in Tanzania.” In Mensah, J. (ed) *Understanding Economic Reforms in Africa: A Tale of Seven Nations*.” Palgrave MacMillan. pp. 205-233
- Aschauer, D.A. (1989), “Is Public expenditure Productive?” *Journal of Monetary Economics* 23, 177–200
- Bank of Tanzania (2011), A Review of the Role and Functions of the Bank of Tanzania

- Barro R, (1990). "Government Spending in a Simple Model of Endogenous Growth".
Journal of Political Economy, 98(5): 103-125
- Barro R, (1991). "Economic Growth in Cross-Section of Countries". *Quarterly Journal of Economics*, 106(2): 407-443
- Barro R, and Sala-i-Martin X, (1992). "Public Finance in Models of Economic Growth". *Review of Economic Studies*, 59: 645-661
- Brons M, de Groot HLF, Nijkamp P, (1999). "Growth Effects of Fiscal Policies".
Tinbergen Discussion Paper, Amsterdam: Vrije Universiteit
- Cooray A, (2009). *Government Expenditure, Governance and Economic Growth*. *Comparative Economic Studies*, 51(3): 401-418
- Dar Atul A, AmirKhalkhali S, (2002). "Government Size, Factor Accumulation and Economic Growth": Evidence from OECD Countries. *Journal of Policy Modeling*, 24(7/8): 679-690
- Devarajan S, Swaroop V, Zou H, (1996). "The Composition of Public Expenditure and Economic Growth". *Journal of Monetary Economics*, 37: 313-344.
- Easterly W, Rebelo S, (1993). "Fiscal Policy and Economic Growth: An Empirical Investigation". *Journal of Monetary Economics*, 32: 417-458.
- Ekpo, A. H. (1994) "Public Expenditure and Economic Growth in Nigeria 1960-1992". *Final Report*, AERC Nairobi Kenya.
- Engen EM, Skinner J, (1992). "Fiscal Policy and Economic Growth". *NBER Working Paper 4223*.
- Folster S, Henrekson M, (2001). "Growth Effects of Government Expenditure and Taxation in Rich Countries". *European Economic Review*, 45(8): 1501-1520.

- Gregoriou A, Ghosh S, (2007). *The Impact of Government Expenditure on Growth: Empirical Evidence from Heterogeneous Panel*.
- Grier, K. and G. Tullock (1989). "An Empirical Analysis of Cross-national Economic", *Journal of Monetary Economics*, No. 24, pp 259-276.
- Gujarati; (1988), *Econometrics*, MacGraw hill.
- Gupta, S., Verhoeven, M., and Tiongson, E. (1999). "Does Higher Government Spending Buy Better Results in Education and Health Care?" *IMF working paper*, Vol. 99/2. Washington, DC: International monetary Fund.
- Kilindo, A.A. and Moshi, H.P.B (1999). "The Impact of Government Policy on Macroeconomic variables: A Case Study of Private Investment in Tanzania", *Research paper*, African Economic Research Consortium, Nairobi.
- Komain J, Brahmasrene T, (2007). "The Relationship between Government Expenditures and Economic Growth in Thailand." *Journal of Economics and Economic Education Research*.
- Kormendi, R. and P.Meguire (1985). "Macroeconomic Determinants of Growth: Cross Country evidence", *Journal of Mental Economics*.
- Kormendi, Roger C. & Meguire, Philip G., 1985. "Macroeconomic determinants of growth: Cross-country evidence," *Journal of Monetary Economics*, Elsevier, vol. 16(2), pages 141-163, September.
- Kweka J.P and O.Morrissey,(1996). "Government Spending and Economic Growth in Tanzania,1965-96",*Credit Research paper*,No.00/6,Centre for Research in Economics Development and International Trade, University of Nottingham.

- Kweka, J.P and O. Morrissey (2000), “Government Spending and Economic Growth in Tanzania, 1965-1996”
- Kweka, J.P. and Morrissey, O. (2000), “Government Spending and Economic Growth in Tanzania, 1965-1996”, *CREDIT Research Paper* No. 00/6. University of Nottingham
- Kweka J.P (1995). *Public Spending and Economic Performance in Tanzania. An Empirical Investigation 1970-93*”, Unpublished M.A (Economics) Dissertation, University of Dar es salaam.
- Landau, D. (1983), “Government Expenditure and Economic Growth’: A Cross-Country Study’, *Southern Economic Journal*, No.3, Vol 49, pp 783-92.
- Laudau D, (1986). *Government and Economic Growth in LDCs: An Empirical Study. Economic Development and Cultural Change*, 35: 35-75.
- Lin, S. (1994). “*Government Spending and Economic Growth*” ;applied Economics
- Lindauer, O. and A. Valenchik, (1922) “*Government Spending in Developing Countries: Trends, Causes and Determinant*”, World Bank Research observer.
- Liu Chih-HL, Hsu C, Younis MZ, (2008). “The Association between Government Expenditure and Economic Growth”: The Granger Causality Test of the US Data, 1974-2002. *Journal of Public Budgeting, Accounting and Financial Management*,
- Loizides J, Vamvoukas G, (2005). “Government Expenditure and Economic Growth”: Evidence from Trivariate Causality Testing. *Journal of Applied Economics*, 8(1): 125-152.

- Mbelle, A et al. (2003). *School Enrolment, Performance and Access to Education in Tanzania*, REPOA, Dar salaam.
- Mitchell J.D., (2005). *The Impact of Government Spending on Economic Growth*. Backgrounder, 1831.
- Mulamba, k.c (2009). Long-run Relationship between Government Expenditure and Economic Growth: *Evidence from SADC countries*, University of Johannesburg, Johannesburg.
- Ndung'u N. (1995). Government budget deficits and deflation in Kenya: An empirical investigation. *African Journal of Economic Policy*, Vol. 2, No. 2.
- Niloy B, Emranul HM, Osborn DR,(2003). *Public Expenditure and Economic Growth: A Disaggregated Analysis for Developing Countries*.
- Ogiogio GO, (1995). "Government Expenditure and Economic Growth in Nigeria". *Journal of Economic Management*,
- Olugbenga AO, Owoye O, (2007). *Public Expenditure and Economic Growth: New Evidence from OECD Countries*
- Osoro, N. E (1995), "Tax reforms in Tanzania: Motivations, directions and implication" *research Paper 38*, African economic research consortium, Nairobi.
- Osoro, N.E. (1993), "Revenue Productivity Implications of Tax Reform in Tanzania", *Research Paper 20*, African Economic Research Consortium, Nairobi Kenya.
- Oyinlola O, (1993) "Nigeria's National Defence and Economic Development: An Impact Analysis. Scandinavian" *Journal of Development Alternatives*

- Peter S, (2003). "Government Expenditures Effect on Economic Growth: The Case of Sweden, 1960-2001". *A Bachelor Thesis Submitted to the Department of Business Administration and Social Sciences, Lulea University of Technology, Sweden.*
- Ram R, (1986). "Government Size and Economic Growth: A New Framework and Some Evidence from Cross-Section and Time-Series Data". *American Economic Review*, 76: 191-203.
- Ram, R (1986), "Government size and Economic Growth: A New Framework and Some Empirical Evidence from Cross-section and Time series data" *American Economic Review*, N 76, pp 191-200
- Ranjan KD, Sharma C, (2008). "Government Expenditure and Economic Growth": Evidence from India. *The ICAI University Journal of Public Finance*, 6(3): 60-69.
- Robinson, D et al. (2011), "Tanzania Growth Acceleration and Increased Public Spending with Macroeconomic Stability" *Yes Africa Can: Success Stories from a dynamic Continent*, World Bank, Washington DC.
- Saunders, P. and Klau, F.1985. The role of the public sector: *causes and consequences of the growth of government*. OCDE Economic studies, 4 (special addition):11-239
- Seymour, D. and W.Oral, (1997). "The impact of Government Expenditure on Economic Growth in OECS: A disaggregated Approach" *Journal of Economic and Literature*, Vol. pp. 39,
- Stiglitz, J. 1988 '*Economics of the Public Sector*' by J.E. Stiglitz ISBN 0-393-96651-8, WW Norton, New York

Wagner, A. (1883, 1890) “*Finanzwissenschaft*” (2nd and 3rd editions). Leipzig.
(Partly reprinted in *Classics in the Theory of Public Finance* (Eds)
R.A. Musgrave and A.T. Peacock, MacMillan, London,1958.)

Yabu, N (2003) “*Government Expenditure and Economic Growth in Tanzania 1965-2001*” M.A (Economics) Dissertation, University of Dar es salaam.

Yabu, N (2005). *Government Expenditure and Economic Growth in Tanzania 1965-2001*, University of Dar es salaam, Tanzania.

APPENDICES

GRANGER CAUSALITY TEST

Null Hypothesis:	Obs	F-Statistic	Probability
LOG(HEALTH) does not Granger Cause LOG(GDP)	39	2.72670	0.07975
LOG(GDP) does not Granger Cause LOG(HEALTH)		0.40728	0.66866
LOG(PUBLIC) does not Granger Cause LOG(GDP)	39	3.45506	0.04305
LOG(GDP) does not Granger Cause LOG(PUBLIC)		1.34429	0.27423
LOG(EXPORT) does not Granger Cause LOG(GDP)	39	11.2433	0.00018
LOG(GDP) does not Granger Cause LOG(EXPORT)		4.83008	0.01425
LOG(EDUCATION) does not Granger Cause LOG(GDP)	39	2.90591	0.06838
LOG(GDP) does not Granger Cause LOG(EDUCATION)		0.63554	0.53583
LOG(DEFFENCE) does not Granger Cause LOG(GDP)	39	2.45863	0.10063
LOG(GDP) does not Granger Cause LOG(DEFFENCE)		0.10495	0.90066
LOG(PUBLIC) does not Granger Cause LOG(HEALTH)	39	0.62880	0.53932
LOG(HEALTH) does not Granger Cause LOG(PUBLIC)		1.04853	0.36151
LOG(EXPORT) does not Granger Cause LOG(HEALTH)	39	0.88473	0.42212
LOG(HEALTH) does not Granger Cause LOG(EXPORT)		0.83267	0.44356
LOG(EDUCATION) does not Granger Cause LOG(HEALTH)	39	2.49291	0.09766
LOG(HEALTH) does not Granger Cause LOG(EDUCATION)		1.77448	0.18492
LOG(DEFFENCE) does not Granger Cause LOG(HEALTH)	39	0.65628	0.52522
LOG(HEALTH) does not Granger Cause LOG(DEFFENCE)		0.16795	0.84609
LOG(EXPORT) does not Granger Cause LOG(PUBLIC)	39	2.08889	0.13943
LOG(PUBLIC) does not Granger Cause LOG(EXPORT)		3.16405	0.05493
LOG(EDUCATION) does not Granger Cause LOG(PUBLIC)	39	1.17195	0.32196

LOG(PUBLIC) does not Granger Cause			
LOG(EDUCATION)	0.40327	0.67129	
LOG(DEFFENCE) does not Granger Cause			
LOG(PUBLIC)	39	1.35080	0.27258
LOG(PUBLIC) does not Granger Cause			
LOG(DEFFENCE)	0.15157	0.85993	
LOG(EDUCATION) does not Granger Cause			
LOG(EXPORT)	39	1.00007	0.37842
LOG(EXPORT) does not Granger Cause			
LOG(EDUCATION)	0.98878	0.38247	
LOG(DEFFENCE) does not Granger Cause			
LOG(EXPORT)	39	1.25652	0.29753
LOG(EXPORT) does not Granger Cause			
LOG(DEFFENCE)	0.81373	0.45165	
LOG(DEFFENCE) does not Granger Cause			
LOG(EDUCATION)	39	1.26126	0.29622
LOG(EDUCATION) does not Granger Cause			
LOG(DEFFENCE)	0.75327	0.47852	