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**ADDIS ABABA UNIVERSITY
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**THE IMPACT OF GOVERNMENT SPENDING
ON ECONOMIC GROWTH: THE CASE OF ETHIOPIA**

BY

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ABSTRACT

The objective of this paper is to analyze the impact of government spending on economic growth in Ethiopia. Since the link between government spending and economic growth is complex, both analytical (qualitative) explanations and econometric analysis are used in the study. The descriptive and qualitative analysis of the study investigates that the limited revenue buoyancy, unreliable source of financing, imprudent fiscal policy (particularly in the derg regime) and capacity deficiency have limited the role of government expenditure, as fiscal instrument, in stimulating economic growth.

Although the rate of growth of expenditure as a ratio of GDP has been increasing consistently over time, its absolute per capita magnitude is too low, even compared to Sub-Saharan African countries. Thus, there is a need to increase government expenditure and to effectively and efficiently utilizing it in a way it induce faster economic growth. The need for increasing government expenditure is also evident in an effort towards achieving the Millennium Development Goals (MDGs). This calls for, in general, non distortionary and reliable source of revenue, capacity building, and restraining expenditure that can be efficiently provided by private sector.

In the econometric analysis effort has been made to see the impact of various components of government spending (investment, consumption and human capital expenditures) on the growth of real GDP for the period 1960/61-2003/04 using Johanson Maximum Likelihood Estimation procedure. It is found that only expenditure on human capital have long-run significant positive impact. Investment (productive) government spending displays a negative but insignificant impact on growth of real GDP, which again reveals the inefficiency and poor quality nature of public investment. In the short run, all components of government expenditure do not have significant meaning in explaining economic growth.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The vision of ensuring sustainable development and reduction of mass poverty at a meaningful magnitude is enshrined, in one way or another, in the governments' development strategy document of virtually all developing countries. In this respect, Economic growth, which is usually measured as the annual rate of increase in a nation's real GDP, is taken as a main objective for overcoming persistent poverty and offering a hope for the possible improvement of society. The abandonment of growth as an important objective would be a tragic mistake that might condemn a large proportion of the population of the developing countries to a life of misery even if that were accompanied by full employment, stable prices and income, and an even income distribution. Only growth can create, if not the certainty, at least the option of a more comfortable life for the masses (Meier, 1971; Tanzi, 1994).

In less developed countries, such as Ethiopia, the role of government is considerable in both scope and significance for accelerated economic growth. Notwithstanding the importance of monetary policies, government fiscal policies (which include taxation, expenditure, correcting market failure and providing a wide array of public goods) have become strong and essential instruments of economic growth in these countries. This is due to the fact that, on one hand, the financial dualism and the predominantly non-monetized nature of the economy makes monetary instruments inactive relative to fiscal instruments and on the other hand very low level of social services and meager infrastructural facilities limit to a great extent the role of private sector in the development endeavors. Thus, there is a need for a government to generate the means to

create the social and economic infrastructures thereby stimulating private investment and ensuring better use of scarce entrepreneurial ability (Tanzi, 1994).

Furthermore, the long-term effects of tax, expenditure, and other modes of government intervention are deemed to be very important for developing countries in an effort towards achieving the Millennium Development Goals (MDGs). The increased focus of international community on helping countries achieve these Goals (MDGs) has further sharpened interest in what governments should (and should not) do with fiscal instruments to foster economic growth. Thus, the role of fiscal policy in catalyzing economic growth and development continues to attract the attention of policy makers and academicians alike (Gubta et al, 2004).

Among fiscal instruments, this study focuses on government expenditures, which are crucial instruments for economic growth at the disposal of policy makers in less developed countries. However, there is neither general consensus nor consistent evidence regarding the significant relationship between government expenditures and economic growth exists.

Some economists have argued that increase in government spending can be an effective tool to stimulate aggregate demand for a stagnant economy and to bring about crowd-in effects on private sector. According to Keynesian view, government could reverse economic downturns by borrowing money from the private sector and then returning the money to the private sector through various spending programs. High levels of government consumption are likely to increase employment, profitability and investment via multiplier effects on aggregate demand. Thus, government expenditure, even a recurrent nature, can contribute positively to economic growth.

On the other hand, endogenous growth models such as Barro (1990), predict that only those productive government expenditures will positively affect the long run growth rate.

In the neoclassical growth model of Solow (1956), productive government expenditure may affect the incentive to invest in human or physical capital, but in the long-run this affects only the equilibrium factor ratios, not the growth rate, although in general there will be transitional growth effects. Others have argued that increase in government expenditures may not have its intended salutary effect in developing countries, given their high and often unstable levels of public debt. The government consumption crowds-out private investment, dampens economic stimulus in short run and reduces capital accumulation in the long run. Vedder and Gallaway (1998) argued that as government expenditures grow incessantly, the law of diminishing returns begins operating and beyond some point further increase in government expenditures contributes to economic stagnation and decline.

Various empirical studies on the relationship between government spending and economic growth also arrived at different and even conflicting results (Fan and Rao, 2003; Kweka and Morrissey, 1999). In Ethiopia, merely few empirical studies have focussed on the impact of government spending on economic growth though it is very important for policy decision makers in choosing about the proper type, size and composition of government expenditures.

1.2 STATEMENT OF THE PROBLEM

Economists identify several factors that contribute to economic growth, such as growth in the number of workers, the number of plants and equipment, and economic productivity. To ensure well-functioning markets and stimulate economic growth, government must expend resources to enforce contract, maintain national security, protect against criminals and provide valuable “public goods”. Some argue that increased government expenditure beyond these has a diminishing effect on the growth of the economy (Mitchell, 2005). Of course, if the government is to be helpful in bringing about a faster rate of growth, it has to do this by discouraging the allocation of resources to non-productive uses. And

perhaps more importantly, the government must always be on guard not to be, itself, a major source of misallocation (Tanzi, 1994).

In the Ethiopia, the post-war (post-1941) imperial era witnessed three distinctive periods associated with the government budget structure in general and government expenditure in particular. The period 1942-1955 was characterized by lack of experience and meager capacity in managing government budget. During this period, emphasis was given to such activities as establishing modern administration, organizing police and military forces, development of social and economic infrastructure, and development of transport and communication facilities. Due to lack of absorptive capacity and hence lesser government expenditure, budgetary surplus was recorded during this period.

Economic circumstances led to the start of five-year development plan. In The first five year plan (1957/58-1961/62) the focus was on the development of infrastructure and training of technical personnel which were considered as prerequisites for accelerated economic growth. Building of small scale manufacturing and activities that could articulate the economy were also taken place. During this period, balanced budget was maintained (IEG, 1962: Teshome, 1993).

The third distinct period within the imperial era was a period of big reforms where the second and third five years development plans (1962/63-1966/67 and 1968/69-1972/73 respectively) were implemented. These plans emphasized the development of directly productive sectors of the economy (agriculture and industry) for sustained and rapid growth and development of the economy which would be achieved by enlarging the educational base of the population (IEG, 1968). In these periods many governmental institutions were established, various infrastructures were built, many development projects were executed and relatively better capacity was built. Due to this development manageable deficit were recorded. The practice of 'fiscal conservatism' also kept the deficits small (Teshome, 1993).

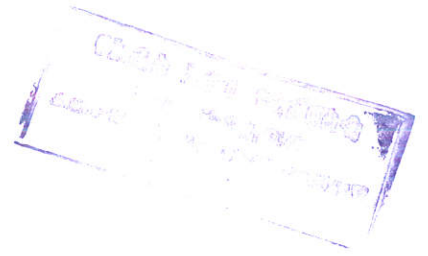
The shift in government budget structure (a shift from surplus budget to mediocre government deficit) in pre-1974 period attributed mainly to increase in government expenditure. Total expenditures, measured in real terms, had a growth rate of about 9 percent per annum during the period 1950-1960, and during the period 1961-1974 the average growth rate increased to about 10 percent per annum (Teshome, 1993). Government expenditure was about 8.5 percent of GDP in 1961 and rose to 16.8 percent in 1967 (Wogene, 1994).

Pursuant to the development strategy of 'self-sufficiency', the expanded role of government in the economy during the military Derg regime (1975-1991) marked a phenomenal development of the public sector relative to others. The ratio of government expenditure to GDP started with the minimum of 18.6 percent and rose to 38 percent in 1988. As a result of these developments, the central government, which had been one of the smallest in the world in early seventies (as measured by the ratio of government expenditure to GDP) became one of the largest after 1983 (Wogene, 1994). An important outcome of such developments was the formidable pressure on government budget which led to persistent and widening fiscal deficit and other macroeconomic imbalances.

The Transitional Government of Ethiopia, which was established after the downfall of the military regime in May 1991, initiated a new market-driven economic policy followed by a comprehensive structural and economic reform program. One of the major objectives of the reform program was to rectify the fiscal ills & attain a consolidated government budget. This objective called for rationalizing the state's role in the economy, implying reorientation of government expenditure, and at the same time enhancing revenue performance with the support of International Monetary Fund and the World Bank as well as other multilateral and bilateral donors.

On the expenditure side, fiscal policies aimed at reducing growth in expenditure and thereby curtailing deficit on the one hand and rationalizing (switching) expenditure to areas





which enhance economic growth. Moreover, government expenditure particularly during the transitional period was made to focus on hitherto neglected regions and war devastated infrastructure (MEDaC, 1999).

The post-reform period has witnessed reduction of government spending on such productive sectors as industry, transport, trade and tourism, and agriculture due to relatively wider involvement of the private sector in these sectors. The achievement of peace and stability immediately after the establishment of the Transitional Government of Ethiopia had also enabled government effect substantial reduction of outlays on defense reliving huge resources for spending on physical infrastructure and social sector development.

Notwithstanding the developments stated above, total expenditure during the fiscal years 1991/92 to 1997/98 increased at an annual average rate of 16.7 percent per annum. Though both recurrent & capital expenditure have been rising, capital spending accounted for a larger part of the increase in total spending. Similarly recurrent expenditure as a ratio to GDP has declined during the post-reform period while that of capital expenditure increased from their pre-reform levels. Much of the increased in capital expenditure was accounted for by spending on roads, energy, education and health sectors. On the recurrent side, wages and operating expenses and debt servicing took the lion's share during the period under review (MEDaC, 1999). Recent developments also indicate a trend of increasing government expenditure, especially expenditure on priority sectors of education, health and roads. Total government expenditure as share of GDP has increased to 33.5 percent annual average in 2001/02-2004/05 from 28.8 percent during 1991/92-1995/96 periods.

Owing mainly to increase in public investment under the sectoral investment programs (SIPs), the fiscal deficit has been rising. The government remains committed to avoiding domestic bank borrowing for the financing of budgetary deficits in order to minimize

inflationary pressures. Thus, unlike the 'self-sufficiency' strategy in the derg regime, more reliance has been made on external concessional sources for the bulk of financing which is bounded by stringent conditionalities¹.

There are various questions that come out of the above facts. Does increase in government spending and change in its composition help or hinder economic growth? Is an increase in spending on education, health and physical infrastructures effective in improving human development outcomes and complementing private sector investment thereby boosting long-term growth given the weakness in public budget administrations that plague the country? What will be the probable prospects of government's policy on public expenditure considering the global conditions and the current circumstances where the Government of Ethiopia faces a ban of direct budget support (economic aid) after May, 2004 election?

Moreover, nowadays the long term effects of government spending are of keen interest to policy makers of developing countries such as Ethiopia as they design strategies to help achieve the Millennium Development Goals (MDGs) (See Appendix-1). The Ethiopian MDGs report of 2004 by MOFED emphasizes the role of private sector and the concomitant need towards enhancing the role of government expenditure to economic growth which is conspicuous from the following excerpt.

"A dynamic, vibrant private sector, with increased value added is crucial for socio-economic transformation of Ethiopia. A private sector that thrives on distressed market and unfair manipulation of government regulations could be a danger to the development of the country.....Based on assumed relationships between GDP growth and investment, the overall investment needed to achieve the required growth rate in per capita GDP so as to reduce poverty by half by 2015 comes to around 17 percent of GDP, which is mainly due to responsiveness of poverty to economic growth" (MOFED, 2004).

¹ Nowadays the World Bank and other multilateral and bilateral donors tied economic aid more directly to a nation's quality of governance and respect for democracy and human rights.

Economic theory does not automatically generate strong conclusion about the impact of government spending on economic performances. Indeed, there are circumstances in which lower level of government spending would enhance economic growth and other circumstances in which higher levels of government spending would be desirable.

Though theory offers little guidance, the general view is that public expenditure, notably on physical infrastructure and human capital, can be growth-enhancing in less developed countries through effective public budget administration. Higher growth in turn generates greater fiscal resources to finance spending on human capital, further bolstering the dynamism of the economy. But the financing and management of such expenditures can be growth-retarding. Thus, the overall impact depends on the aggregate effect of many factors such as the management and productivity of public expenditures, effects of taxes, the extent of fiscal deficit and the way it is financed-which basically deserve empirical analysis.

1.3 OBJECTIVES OF THE STUDY

Without prejudicing the importance attached to the mobilization of resources, current circumstances obliged the proper allocation and efficient utilization of government expenditure as the reward is greater. Likewise, the penalty for bad policy in this respect is greater than ever before in the realm of globalization. In a nutshell, government expenditure could adversely affect economic growth if its allocation and utilization is not properly addressed.

Broadly speaking, the objective of this study is to analyze the impact of varied categories of government spending on economic growth in Ethiopia. More specifically, the study has the following objectives.



1. To review and analyze the trend, structure and magnitudes of public expenditure as well as its linkage with other fiscal instruments under the three regimes so as to draw implications for economic growth,
2. To develop analytical framework for determining the differential impacts of various government expenditure on economic growth,
3. To examine whether the various components of government spending stimulating or adversely affecting economic growth using econometric model.

1.4 METHODOLOGY AND DATA SOURCES

A substantial volume of empirical research has been directed towards identifying the elements of public expenditure (at its aggregate and disaggregate levels) that bear significant association with economic growth. These empirical literatures vary in terms of data sets, econometric techniques, and often produce conflicting results. The fact that there are wide range of factors that explain government expenditure and the large number of possible causal indicators, all of which appear highly correlated, attributed to lack of consensus in the results.

Especially for developing countries such as Ethiopia, the impact of government spending on economic growth can be explained by many factors such as the productivity and composition of public expenditure, the political platform and the way expenditures are financed. Therefore, I realize that in such research area presenting the results using a single model might be inadequate. Hence, both qualitative and quantitative analysis will be employed to address the issue of the impact of government spending on economic growth. Analytical explanations (mathematical derivations and economic explanations)

are employed in the study since such methodology is expected to be capable of revealing the most salient issues better in some instances.

Econometric analysis is applied to estimate how the compositions of government spending affect economic growth. Considering its relevance to Ethiopia and the data availability, the model adopted for econometric analysis in this study is Kweka and Morrissey's (1999) model specification. The theoretical foundation of the study is based on Barro's (1990) model, in which government expenditures are categorized into productive (growth promoting) and unproductive (growth-retarding) expenditures, and Lai's (1994) model in which total expenditure is disaggregated into expenditure on physical investment, consumption and human capital investment.

Real GDP in log form is used as dependent variable in the regression model. Productive and unproductive components of government expenditure are incorporated in the equations as explanatory variables. Besides, other relevant conditioning variables are included as explanatory variables.

In practice most econometric time series data are non stationary and thus estimating them using the usual OLS method may lead to spurious and inconsistent regression. In order to avoid spurious regression problem, first, Augmented Dickey-Fuller (ADF) unit root tests are utilized to test for stationarity. After testing for order of integration of the individual series, cointegration test will be made to see whether the non-stationary series have stable long run linear relationship. Johansen Maximum Likelihood Estimation Procedure is followed to conduct cointegration analysis. The long-run model equation is estimated using OLS and the short run dynamic model that identifies adjustment to long run equilibrium is formulated through Vector Error Correction Mechanism (VECM) and estimated by two stage least square method with the restriction that the model passes the stationarity, cointegration and all the diagnostic tests.

The data sources for this study include secondary data from the Ministry of Finance and Economic Development (MoFED), National Bank of Ethiopia and Central Statistics Office. The sample period for the econometric analysis covers from 1960/61 to 2003/04, the years for which the data are available. For the purpose of this study, government expenditure denotes country wide budgetary expenditure, including the federal government, national states and local governments.

1.5 SIGNIFICANCE OF THE STUDY

Albeit its significance for policy measures, so far no recent research has been done on the impact of government spending on economic growth. To the best of my knowledge, the only econometric study on the impact of government expenditure on economic growth is a study by Endrias (1996) where the study covers the period 1960/61-1990/91. The elasticity estimates of the translog production function show government expenditure on human resource development and capital expenditure have the greatest effect on economic growth. In the study, human resource development is captured by recurrent expenditure on education and training and public health. The then available data also show the presence of instantaneous bidirectional causal relation between growth of real percapita income and government expenditure. However, it is very difficult to rely on these conclusions given the methodology employed and the non-inclusion of recent data.

The other studies on government expenditures, study by Ghirmai (1990), Teshome (1993), Eshetu (1994) and Wogene (1994) merely analyzed the trend and structure of government expenditure without explicitly dealing with the impact of government expenditure on economic growth using econometric model.

One of the major advantages of this study is that it incorporates the most recent data and employs both qualitative analysis and a more advanced econometric technique (Johansen approach to cointegration) to study the impact of government spending on economic

growth. Thus, the immediate outcome of this study will be to provide pertinent result and policy implication to policy makers by bridging the aforementioned gap. Besides, I believe that the study will provoke and pave a way for further study in the area as it reveals the difficulty in resolving the empirical question of the impact of government spending on growth.

1.6 LIMITATIONS OF THE STUDY

One limitation of this study arises from lack of clear agreement on the causes of economic growth (or how to measure its constituents). Economists are not yet certain about the relative importance of elements which clearly, or perhaps not so clearly, influence (or constitute) economic growth. With out such knowledge the area of disturbing doubt is uncomfortably large. Besides, the definition of particular expenditure as productive or unproductive is open to debate.

The other limitation of the study is that it does not explicitly consider the quality of government spending, which is probably the most important factor. The caliber of the civil service and the military and the conditions in which they function have impact on creative and efficient use of public expenditures. Unproductive public spending can take various forms, including spending on wages and salaries of unproductive or ghost workers. Public spending is also unproductive when government expenditures do not reach designated spending objectives. This happens, for example, when government officials are corrupt and seek bribes for preferentially selecting beneficiaries of government programs, for authorizing private investment projects, for allowing participation of government enterprises in joint ventures with private investors, or for allowing access to inputs provided through state enterprises.

Apart from these, the econometric model does not consider the incidence of revenue structure and financing issues. It is believed that when government expenditure is not



covered by own revenue, the nature of expenditure financing has a bearing on economic growth. Moreover, the nature of own revenue itself (whether it is distortionary or not) has a role in explaining the impact of government expenditure on economic growth.

The econometric result of this study is also limited by the quality of the data. This limitation arises from the problem of inconsistency of data as reported by different institutions and even by different departments in the same institution as well as poor record keeping, especially by regional states.

1.7 ORGANIZATION OF THE PAPER

The remaining part of the paper is organized in four chapters. Chapter two is devoted to a brief review of relevant theoretical and empirical literature. Chapter three provides description and analysis of government spending and economic growth in Ethiopia under different regimes. In this chapter other fiscal elements that govern the relationship between public expenditure and economic growth are also examined. This is followed by a chapter for econometric analysis of the impact of government spending on economic growth in which Johanson Maximum Likelihood Estimation Procedure is employed. Finally, conclusions and policy implications are presented in chapter five.



CHAPTER TWO

LITERATURE REVIEW

2.1 THEORETICAL LITERATURE

2.1.1 INTRODUCTION

Economic growth represents the expansion of the country's potential GDP, although the measure is sensitive to the way in which national product has been measured. Without some kind of economic growth, developing countries cannot extricate themselves from the quagmire of primordial poverty. Thus, these countries usually pursue fiscal policy to achieve accelerated economic growth.

The term fiscal policy normally applies to the use of fiscal instruments (taxation and spending) to influence the working of the economic system in order to maximize economic welfare (Tanzi, 1994). The overriding objective of fiscal policy in less developed countries should then be promoting long-term growth of the economy². This is because focusing only on stabilization of the economy in less developed countries would mean the perpetuation of the stationary condition of under-developed equilibrium and would be quite incompatible with the requirements of economic dynamism.

As stated previously, among fiscal instruments, the focus of this study is on government spending. Indeed, if appropriately managed and utilized, government spending has significant positive impact on economic growth, especially in developing countries where there exist meager infrastructural facilities and where private sector is not mature enough to play the expected role in the economy. In this connection, empirical study of the

² The developed countries do not have to concern excessively with growth. To them stabilization and equity may be more worthwhile pursuits. For developing countries, however, where per capita incomes are generally very low, growth must be the overwhelming objective.

impact of government spending on economic growth has paramount importance to take prudent policy measures. But, reviewing relevant theoretical and empirical literature helps in building pragmatic framework for empirical analysis. Pending the review of empirical literature for section 3-2 of this chapter, I first review the theory of economic growth briefly commencing from early growth theories. Then, the nature and constituents of public expenditure and theories of public expenditure growth will be presented consecutively in order to have better insights about the rationale and dynamics of public expenditure. The theoretical literature section will be concluded by presenting various theoretical discussions about the impact of government expenditure on economic growth.

2.1.2 A GLIMPS AT THEORIES OF ECONOMIC GROWTH

The theory of economic growth generally deals with the Economy's long-run trend, or potential growth path (Branson, 2002). It studies the factors that lead to economic growth over time and analyze the forces that allow some nations to grow rapidly, some slowly and others not at all.

Regarding early growth theories, mercantilists emphasized surplus balance of trade while the Cameralists focused on taxation and state regulation for strong economy. Later, by the end of 18th century, physiocrats emphasized agriculture as the source of all wealth of the state and of the wealth of citizens since they believed that it has the capacity to create investible surplus (Lombardini, 1996).

The classical models of Smith and Malthus describe economic growth in terms of fixed land and growing population. In the absence of technological change, increasing population ultimately exhausts the supply of free land. The resulting increase in population density triggers law of diminishing returns: fixity of land keeps output from growing proportionally to increase in labor. With less and less land to work, each new worker add less and less extra product; the decline in labor's marginal product means a

decline in the competitively earned real wage. Malthusian equilibrium comes when the wage has fallen to the subsistence level, below which the supply of labor will not produce itself. However, classical models did not consider the reality that technological change has kept economic development progressing in industrial countries by continually shifting the productivity curve of labor forward (Samuelson and Nordhaus, 1989).

Keynesian analysis leads to the conclusion that aggregate demand management policies can and should be used to improve economic performance. For Keynesians demand is a prerequisite for growth. Harrod-Dommar growth model is the prominent model in Keynesian framework which gives some insights into the dynamics of growth.

According to Harrod-domar model, to determine an equilibrium growth rate (g) in the economy, the balance between supply and demand for a nation's output should be maintained. On supply side, saving is a function of the level of GDP (Y), say $S=sY$. The level of capital K needed to produce an output Y is given by the equation $K=vY$ where v is called capital output ratio. Investment (I) represents an important component of the demand for the output of an economy as well as the increase in capital stock (Thus, $\Delta K=v\Delta Y = I$). Therefore, the equilibrium rate of growth (g) is given by $g = \Delta Y/Y = s/v$. This is a very significant result as it tells us how the economy can grow such that the growth in the capacity of the economy to produce is matched by the demand for economy's output.

The analysis presented above describes the movement of output along some warranted growth path. Once the economy reaches this path, it will continue moving along it. The discussion presumed that, as long as businessmen are satisfied with the previous period's investment, they will increase output at the same rate as it was increased in the previous period and will expand production by securing the necessary new capital equipment. According to the model, temporary divergence from the warranted growth path would not be self-correcting. Because of the lack of self-correcting forces in the Harrod-Dommar

model, the warranted growth path is said to be characterized by 'knife-edge instability'. The policy implication of this instability is that of market-regulated growth is unstable, as it seems to be in the 1930s, and then perhaps there is a need for a planned or command economy.

One of the weaknesses of the Harrod-Dommar model is the assumption of fixed coefficients production function (it does not allow for factor substitution) and the other limitation is that the saving ratio is assumed to be fixed. It is also less relevant to developing countries as it assumes full employment and easy availability of capital.

Nurske (1955) wrote about the problem of capital accumulation in a poor country. In his famous doctrine of the "vicious circle of poverty", he said that poor societies remained poor because with low per capita income they could not supply enough savings to increase their stocks of reproducible capital.

Rosenstein-Rodan (1943) analyzed the demand side of capital accumulation. According to him, the structure of these backward economies was such that there were not enough incentives for investors to choose the right pace or pattern of capital accumulation. He said that in a poor economy the size of the market for industrial products was small and people need to spend most of their incomes on necessities. Moreover, he argued that the production process in modern industries were subject to great indivisibilities and economies of scale. He particularly identified one category of physical capital for special attention: social overhead capital like transport, communication, power, urban infrastructure, and so on. These activities had to be in place before private entrepreneurs could decide to install directly productive capital (Mrinal Datta-Chaudhuri, 1990).

The Kaleckian growth theory can be treated under the Keynesian framework, but it differs in its consideration of the institutional factors constraining the agrarian sector. Kalecki (1972) assumed that consumption goods are divided into necessities and non-



essentials where necessities constitute a major part of consumption of the majority of the population while non-essentials are consumed largely by high-income group of the society. For output to grow there has to be indeed a rapid increase in investment. In order to allow this, consumption has to be restrained by taxation of non-essentials or higher income groups. On the other hand, there are functional relationship between consumption demand of necessities and output growth. For a given rate of national income g , there corresponds a given rate of increase in demand for necessities c_n . The rate of c_n can be considered as the approximate value of the rate of growth of supply of necessities. This implies that growth of output is dependent on the rate of increase of the supply of necessities.

Kalecki concluded that institutional factors (feudal land ownership, domination of peasants by merchants and money lenders) constrain the supply of necessities. Under the prevailing agrarian relations, the small farmers are unable to expand their production. The implication is that the growth rate of supply of necessities as fixed by institutional barriers in the development of agriculture hinders the growth rate of national income.

The assumption of fixed coefficient of production is relaxed by neo-classical growth model. Robert Solow and TW Swan introduced the model in 1956. Their model is also known as Solow-Swan model or simply Solow model. According to Solow model, other things being equal, saving/investment and population growth rates are important determinants of economic growth. Higher saving/investment rates lead to accumulation of more capital per worker and hence more output per worker. On the other hand, high population growth has a negative effect on economic growth simply because a higher fraction of saving in economies with high population growth has to go to keep the capital-labor ratio constant. In the absence of technological change & innovation, an increase in capital per worker would not be matched by a proportional increase in output per worker because of diminishing returns. Hence capital deepening would lower the rate of return on capital.

The principal conclusion of Solow model is that the accumulation of physical capital cannot account for either the vast growth over time in output per person or the vast geographic differences in output per person. The model predicted technological progress-typically assumed to grow at a constant 'steady state'- is what determines most output growth; but the technology parameter is determined outside the model-independent of preferences. The other prediction of the model is that economies may experience growth before steady state and as they approach the steady state, growth slows down and eventually ceases. This implies that poor countries with lower value of capital and output grow faster than rich ones and consequently the former tend to catch up with the latter³.

In the Solow neo-classical growth model, if an expansionary fiscal policy is maintained, then the long-term consequences may be a lower level of steady state GDP. This is because the government-via a budget deficit-drives a wedge between private saving and investment. The reason is that government absorbs part of private saving to finance the deficit. If this results in less saving being available for private investment, the consequence will be a lower capital stock and lower steady state GDP. However, to extent that the government runs a deficit in order to finance public investment on roads and schools etc, the negative effects on steady state income could be reduced or even eliminated (Leach, 2002).

On the other hand, even if the incentives to save or to invest in new capital are affected by fiscal policy, this alters the equilibrium capital-output ratio and therefore the level of output in the economy, but not its slope (with transitional effects on growth as the economy moves onto its new path). That is, these policies raise the growth rate

³ This is the major weakness of the model because of the fact that the long run data for many countries indicate that positive rates of per capita growth can persist over a century or more and that these growth rates have no clear tendency to decline.

temporarily as the economy grows to a higher level, but in the long run the growth rate returns to its initial level. In other words, policy changes are temporary shocks which can affect growth only temporarily just until a new steady-state level is reached. Thus, the Solow model leaves no room to the role of changing economic policies and institutions in explaining rises in long-run growth rates (Folster and Henrekson, 1999).

According to Romer (1996), the Solow model implies that the differences in real incomes among countries are far too large to be accounted for by differences in capital inputs. The model treats other potential sources of differences in real incomes as either exogenous (not explained by the model-in the case of technological progress, for example), or absent altogether (in the case of positive externalities from capital, for example). Romer concluded that to address the central questions of growth theory one must move beyond the Solow model.

The basic improvement of endogenous growth theory over the previous models is that it explicitly tries to model technology (looks into the determinants of technology) rather than assuming it to be exogenous⁴. Mostly, economic growth comes from technological progress, which is essentially the ability of an economic organization to utilize its productive resources more effectively over time. Much of this ability comes from the process of learning to operate newly created production facilities in a more productive way or more generally from learning to cope with rapid changes in the structure of production which industrial progress must imply. If productivity is to increase year after year, the economy must continuously provide the workforce with more 'tools'. By tools the theorists mean a very broad concept of reproducible capital including physical capital, human capital, and knowledge capital. Past development experiences reveal that economies differ considerably with respect to their abilities to learn how to assimilate

⁴ The independence of the rate of technical change from savings and investment activity is what is meant by the statement technology is exogenous. In contrast, endogenous model assume that technology is determined endogenously by the interaction of saving, investment, GDP growth and technical change. For example, technical change can be influenced by investment in education to improve the quality of labour or investment in R&D to improve the quality of capital.

new techniques and how to adjust quickly to new lines of production. Moreover, the natures of the industrial organizations and the policy environment in which they function have a considerable impact of the ability to acquire these learning capabilities.

The recent literature on endogenous economic growth allows for effects of fiscal policy on long-term growth. Such theory directs our attention to the only way by which government can affect long run growth, namely via its impact on investment in physical capital, human capital and technology. Public expenditures that deter such investments by creating additional marginal tax wedge over and beyond those induced by the taxes required to finance these programs, or that reduce incentives to save and accumulate capital in other ways, reduce growth as per these models (Folster and Henrekson, 1999).

Unlike neoclassical growth model, the distinguished feature of the public-policy endogenous growth models is that fiscal policy can determine both the level of the output path and the steady-state growth rate⁵. This can be seen in the following model from Bleaney et al, 2001 based on Baro and Sala-i-Martin (1992).

There are n producers, each producing output (y) according to the production function:

$$y = Ak^{1-\alpha} g^\alpha \dots\dots\dots[2-1]$$

Where k represents private capital and g is a publicly provided input. The government balances its budget in each period by raising a proportional tax on output at rate γ and lump-sum taxes of L. the government budget constraint is therefore:

$$ng + C = L + \gamma ny \dots\dots\dots[2-2]$$

⁵ Some endogenous growth models hold that the long-run growth rate depends only on exogenous rate of population growth. Thus, not all endogenous growth models predict long-run growth effects from fiscal policy.

Where C represents government-provided consumption ('non-productive') goods. Government consumption goods enter consumers' utility function but do not enter the production function in [2-1]. The lump-sum (non-distortionary) taxes do not affect the private sector's incentive to invest in the input good, whereas the taxes on output do. The long-run growth rate (ψ) in this model can be expressed as:

$$\psi = \delta (1-\gamma) (1-\alpha) A^{1/(1-\alpha)} (g/y)^{\alpha/(1-\alpha)} - \mu \dots \dots \dots [2-3]$$

where δ and μ are constants that reflect parameters in the utility function. Equation [2-3] shows that the growth rate is decreasing in the rate of distortionary taxes (γ), increasing in government productive expenditure (g), but unaffected by non-distortionary taxes (L) or non-productive expenditure (C).

To make out the implications of the government budget constraint for empirical testing, suppose that growth at time t (ψ_t) is a function of conditioning (non-fiscal) variables, Y_{it} , and the fiscal variables from [2-2], X_{jt} :

$$\psi_t = \alpha + \sum_{i=1}^k \beta_i Y_{it} + \sum_{j=1}^m \lambda_j X_{jt} + U_t \dots \dots \dots [2-4]$$

Because of the linear constraint represented by equation [2-2], one element of X , for which theory suggest $\lambda=0$ (e.g., L), must be omitted in the estimation of [2-4] in order to avoid perfect collinearity. Thus, for estimation, equation [2-4] must be rearranged to give:

$$\psi_t = \alpha + \sum_{i=1}^k \beta_i Y_{it} + \sum_{j=1}^{m-1} (\lambda_j \cdot \lambda_m) X_{jt} + U_t \dots \dots \dots [2-5]$$



This shows that the coefficients of X_{jt} should be interpreted as $(\lambda_j \cdot \lambda_m)$ rather than λ_j . In other words, the coefficient of any budget element must be interpreted as the impact of a unit increase in that element financed by a unit change in the element or elements omitted from the regression. For example, the coefficient on productive expenditure will tend to be higher if it is financed by non-distortionary taxation rather than by distortionary taxation or by some mixture of the two.

2.1.3 THE NATURE AND CONSTITUENTS OF GOVERNMENT EXPENDITURES

Government expenditures refer to the expenses that the government incurs for its own maintenance, for the society and the economy as a whole. Government spending reflects the policy choices of government. Once governments have decided upon the type and quantity of goods and services to provide, government spending represents the cost of carrying out these policies.

The basic rationale behind the need for government expenditure is associated with the existence of an externality or market failure. Without externalities or market failures there is no reason to assume that additional public sector investments would be more productive than the private sector investments.

Government spending on public services has a profound effect on people's standard of living and life chances or opportunities. Spending on public services has the objectives of giving citizens the chance to realize their full potential (through education, training and work), building an inclusive and fair society and strengthening a competitive economy. Thus, the government's objectives for public expenditure encompasses both equity and efficiency elements.

It is sometimes argued that efficiency improvements must not be achieved at the expense of equity. However, inefficiency in the provision of public services has the result that opportunities for improved equity are lost because of wasteful use of resources. This result may be exacerbated to the extent that both the provision and financing of public services crowds out the private sector and leads to reduced economic growth. Lower economic growth results in fewer resources being available to pursue social programs. Moreover, it has to be recognized that the provision and financing of public services is not simply concerned with the redistribution of income in favour of disadvantaged socioeconomic groups in society. Social justice is not only concerned with distributional issues, but also with equality of opportunity, individual responsibility for self-improvement and reward for merit and effort. In sharp contrast with the idea that the state promotes social justice, the leviathan state mode of government suggests that rather than being socially enlightened, governments are rent-seeking, self-serving distributional coalitions benefiting those with the greatest effective political power. In this scenario, improvements in efficiency and in equity are not necessarily mutually exclusive (Bailey, 2002).

Indeed, exactly what constitutes public spending is open to question and the definition of public expenditure has changed on many occasions. Such changes are normally justified on technical grounds and, generally, have attempted to separate that part of public expenditure over which central government has little or no control from that part over which it does have (or could reasonably be expected to have) control. However, such changes may also be politically expedient in allowing central government to claim success in controlling (reducing) public expenditure. For example when central government was committed to cutting public expenditure during the 1980s in Britain, privatization revenues were treated as negative public expenditure rather than as a source of public revenue (Bailey, 2002).



Government expenditures can be represented by two broad categories of government activity: exhaustive expenditures and transfer expenditure. Exhaustive public expenditures correspond to the government's purchases of current goods and services (i.e. labour, consumables etc.) and capital goods and services (i.e. public sector investment in roads, schools, hospitals etc.). These expenditures are, therefore, purchases of inputs by the public sector and are calculated by multiplying the volume of inputs by the input prices.

Exhaustive government expenditures are viewed as claims on the resources of the economy. Use of these resources by the public sector precludes use by other sectors. The absorption of resources by the public sector means that the opportunity cost of these government expenditures is the forgone output of the other sectors. It is the opportunity cost arguments of these kind that underlie the arguments of those who frown upon larger size of public sector and that also form the basis of many of the techniques used to measure public sector efficiency. These arguments underlie the crowding-out debate. An increase in government expenditure does not thus necessarily imply an increase in public output; neither does it always imply a reduction in efficiency, which makes efficiency calculations using national income data tricky (Brown & Jackson, 1996).

Transfer expenditures (i.e. public expenditures on pension, subsidies, debt interest etc.) do not represent a claim on the society's resources by the public sector as in the case of exhaustive public expenditures. Indeed, transfers are a redistribution of resources between individuals in society, with the resources flowing through the public sector as intermediary.

However, the economic categories of exhaustive and transfer expenditure do not figure explicitly in public expenditure statistical series since, whilst used for analytical purposes, they have little value for accounting or planning purposes. The published

public expenditure figures are the summation of many accounting components. This calls for understanding accounting constituents of government spending for empirical analysis.

Accounting components of government expenditure encompass current and capital (developmental) expenditures. Current expenditure includes spending on wages and salaries, supplies and services, rent and so on. These are broadly considered to be consumable items, the benefits of which are consumed or exhausted within each financial year. Capital expenditures, on the other hand, include spending on fixed assets such as land, buildings and plant and machinery, the benefits of which are more durable, lasting several years or decades. Both components involve exhaustive and transfer expenditures. For example, social security payments are categorized as current expenditures, as are the interest payments on debt used to finance capital expenditures (Bailey, 2002).

This distinction of government spending is considered useful by many economists and policy makers who believe that a large share of developmental expenditure in total public expenditure is a sign of an economic policy that contributes to growth. However, there is no standardized way of classifying expenditure as current or capital so that what is classified as current in one country may be classified as developmental in another. Furthermore, since it is easier to obtain foreign grants and concessional credit for developmental expenditure than for current expenditure, there is an incentive for countries to make developmental expenditure look larger than it might be in reality by reclassifying some current expenditure as developmental.

Besides accounting components, it is important to look at Government expenditure in terms of tiers of government. Generally speaking, expenditure by the central government includes: expenditure on social security, defense, health, trade and industry, overseas development, transport and agriculture. On the other hand the major expenditures by

local government include expenditure on education, personal social services, housing and the police, local environmental health, and leisure and recreation.

Government expenditure can also be categorized as economic and functional (sectoral). Economic categories of expenditure include wages and salaries, materials and supplies, interest, subsidies, capital outlays, etc. Economic categories of expenditure can further decomposed into current and capital expenditure. On the other hand, functional or sectoral expenditure include general public service, defense, public order and safety, education, health, social security and welfare, agriculture, manufacturing and construction, electricity and water supply, transportation and communication, environmental protection etc (IMF, 2001: Heller and Diamond, 1990). Moreover, government expenditures can be broadly broken down between civilian and defense.

Barro (1990) categorized government expenditure as productive and non productive. Productive government spending would include the resources devoted to property rights reinforcements, as well as activities that enter directly into production function. On the other hand those expenditures that could not enter into production function (e.g. government consumption services) are considered unproductive. Following Barro's approach, Bleaney et al (2001) classified general public service expenditure, defense expenditure, educational expenditure, health expenditure, housing expenditure, and transport and communication expenditure as productive expenditures. Health and Education spending is treated as investment because of the additions to human capital they might entail. They classified social security and welfare expenditure, expenditure on recreation, and expenditure on economic services as unproductive expenditure.

2.1.4 PUBLIC EXPENDITURE GROWTH

The doctrine of state non-intervention, self-correcting mechanism of an economic system that the classical economist believed is appeared to have failed as it is observed that

public expenditure have risen vastly in absolute terms. Even after making allowances for population and price changes, it is found that public expenditures (at all levels of government) rose over a long period of time (Musgrave, 1989; Bailey, 2002).

Brown and Jackson (1996) identified three macro models of public expenditure to explain how government expenditure has behaved over a long term. The first model can be conveniently labeled the development models of public expenditure growth. The second the model is based on Wagner's law of expanding state activity, and the third model is referred to as peacock and Wiseman's model of public expenditure growth.

Development models of public expenditure growth are best represented by the works of Musgrave and Rostow⁶. Their views are generalizations gleaned from examination of a large number of different case histories of developed economies. In the early stages of economic growth and development, public sector investment as a proportion of the total investment of the economy is found to be high since public capital formation is of particular importance at this stage. The public sector is therefore, seen to provide social infrastructure overheads such as roads, transportation systems, sanitation systems, law and order, health and education and other investments. This public sector investment, it is argued, is necessary to increase productivity and to gear up the economy for take-off into the middle stages of economic and social development. In the middle stage of growth, the government continues to supply investment goods but this time public investment is complementary to the growth in private investment. During all the stages of development, market failures exist which can frustrate the push towards maturity, hence the increase in government involvement in order to deal with these market failures.

Musgrave argues that over the development period, as total investment as a proportion of GNP increases, the relative share of public sector investment falls. This is because as the

⁶Professor W.W. Rostow distinguished five stages of economic growth in a society. All societies, in their economic dimensions, have been with in one of these five categories; the traditional society, the precondition for take-off, the take-off, the derive to maturity, and the age of high mass consumption.

economy develops and a larger flow of savings becomes available, the capital stock in private industry and agriculture must be built up. The basic stock of social overhead capital has now been created and additions are made at a slower rate. The structure of social overhead capital, similar to public utilities, becomes a declining share of net capital formation (Musgrave, 1969).

Rostow's claims are that once the economy reaches the maturity stages the mix of public expenditures will shift from expenditures on infrastructure to increasing expenditures on education, health and welfare services. In the mass consumption stage, income maintenance programs, and policies designed to redistribute welfare, will grow significantly relative to other items of public expenditure and also relative to GNP.

The German economist Adolf Wagner (1835-1917) advanced his 'law of rising public expenditures' by analyzing trends in the growth of public expenditure and in the size of public sector in many countries of the world. Wagner's law or the law of increasing public expenditure postulates that; (i) the extension of the functions of the states leads to an increase in public expenditure on administration and regulation of the economy; (ii) the development of modern industrial society would give rise to increasing political pressure for social progress and call for increased allowance for social consideration in the conduct of industry (iii) the rise in public expenditure will be more than proportional increase in the national income (income elastic wants) and will thus result in a relative expansion of the public sector.

Wagner's model, while containing many insights, suffered from different criticisms. These critics view Wagner's predictions as essentially teleological and argue that the relationship lacks a firm theoretical basis. Wagner assumed away the problems of public choice by employing an organic theory of the state⁷. Thus the state was assumed to

⁷ Organic theory is an authoritarian conception which is based on the assumption that decisions are made by ruling group. It opposes the individual choice theory which contends that public expenditure is an aggregate of individual preferences.

behave as if it were an individual existing and making decisions independently of the members of society (Brown and Jackson, 1996).

Musgrave (1969) points out that Wagner's prediction was based on anticipation of a major expansion of public enterprise as growth occurred; not only has this failed to materialize but it is not the kind of activity which one wishes to explain within the context of public expenditure development. The relevant expenditures are those for which no saleable product results - that is either transfer payments or expenditures for services provided without direct charge (Bruckhead and Miner, 1979).

The other criticism is arising from the fact that the model is set within a specific historical context, i.e. industrialization. It was not clear that what would occur in the absence of industrialization - once the economy has matured or in a phase of stagnation. Some further questioned that even if there were continuous industrialization, does the relative size of the public sector could keep on expanding?

The fact that supply side explanations do not incorporated in Wagner's model does not help to make adequate analytical exercise. Wagner's formulation accounts for only the pressures that give rise to an expansion in the demand for public goods.

Peacock and Wiseman's analysis is probably one of the best known analyses of the time pattern of public expenditure. They founded their analysis up on a political theory of public expenditure determination, namely that governments like to spend more money, that citizens do not like to pay more taxes, and that governments need to pay some attention to the wishes of their citizens.

Analysis of the time pattern of public expenditure by Professor A.T. Peacock and J. Wiseman has established the displacement effect. They found that public expenditure increases during a war or a period of social crisis. When the war ends or the crisis is

resolved, public expenditure falls, but not to the original level at the start of the emergency, with the result that growth in public expenditure occurs in stages. In this case, the increase in war - related expenditures displaces both other public and private civilian expenditures. This means that, while total public expenditures rise dramatically, the increase is less than the increase in war related expenditure.

The critics on Peacock and Wiseman's approach are based on answer to the question: What happens to expenditure in the post war period? There is no long run displacement effect in the case where civilian public expenditures in the post war period return to their original growth path or in the case where there is only a temporary increase in post war civilian public expenditures until the old trend line is reached. There is evidence that after deferred civilian public spending has taken place following the war, public outlays return to the pre-war trend level (Bruckhead and Miner, 1979).

Apart from the above three macro models, demographic change has frequently been cited as a factor that contributes to the growth of public expenditure. Intuitively it would be expected that as population increases, then the level of activity produced by the public sector would have to expand in order to serve the larger population. But other demographic trends such as changes in the structure of the population (age and sex) and its geographical distribution also have to be taken in to account.

The nature of the relationship between population size and the public expenditure size depends upon the nature of the good or service that is being supplied. In the case of a pure public good, the marginal social cost of an additional member to the population is by definition zero. There is therefore no reason to expect, in the case of a pure public good, that an increase in population will result in an increase in expenditure. On the other hand, it could be expected a priori that if population increase, and further more if the level of output consumed by each member of the group was to remain constant, then for those goods that are 'near public goods' an increase in population would result in a less than

proportional increase in expenditure. The overall effect of the various trends on public expenditure may be such that they cancel each other out. Thus, the extent to which the growth of population has led to growth of public expenditure depends on the specific conditions in different countries. This calls for a more careful modeling of the relationship between population size and the rate of change of total public expenditure (Dickson, 1996; Brown and Jackson, 1996).

Prest (1985) underlined that a belief in the idea that there are real advantages to be won from the accumulation of human capital is the most important reason for growth in government expenditure in developing countries, particularly education expenditure. He listed greater physical and mental dexterity, better knowledge of job opportunities, greater willingness to take risks and launch out into new enterprises and new jobs and the potential effects of slowing down the growth rate of population as possible qualitative advantages. He also emphasized that it is not always proved easy to quantify the economic advantages of education expenditure in developing countries. It may well be that political and social influences are the overriding ones.

Similarly, Tanzi and Schuknecht (1997) pointed out that an expansion of the government role in education, health, provision for public pensions and public assistance to the unemployed and the needy in general pushed for more government spending. These policies contributed to the growth of public welfare in many ways, including: increasing the literacy rate and human capital in general; and reducing the trauma and despair that comes with becoming unemployed, incapacitated, or indigent. In addition to the above, Trotman-Dickenson (1996) mentioned that nationalization, new technology and science, and foreign aid as reasons for the growth of public expenditure.

Although there is a general trend of increasing government spending in developing countries, it is argued that there are limits to the level of public expenditure of a country at a given moment of time. In this respect Tanzi (1994) concludes that *ex ante*, a country

can plan to have, for a given fiscal year, any level of public expenditure in nominal value. However, ex post, the country will find that there is a concrete limit to that expenditure in real terms or as proportion of GDP depending on the sources of financing⁸. This limit is not rigid and varies among countries or, in a given country over time, but it exists all the same. An attempt on the part of a country's policy-makers to exceed that limit will often prove counter productive and frustrating.

For example, if foreign grants and concessional loans are large, and if there are no supply bottlenecks that limit imports that can be financed with them (say, limited harbour or storage facilities), then large deficits could be financed by this source. However, the leverage that the recipient country is likely to have over this variable is small. Regarding domestic sources, the sale of bonds to institutions is limited by the revenue of these institutions. Alternatively, higher levels of public sector borrowing may lead to higher interest rates and less private sector investment, or to further inflation. On the other hand, monetary expansion increases the general price level and reduces the real value of monetary unit. Thus, real revenue from inflationary finance would fall if the rate of monetary expansion is pushed beyond certain level. In sum, there are clear limits to the size of these financing sources and hence to the size of government expenditure.

2.1.5 THE IMPACT OF GOVERNMENT SPENDING ON ECONOMIC GROWTH

Some of the philosophers and classical economists of the eighteenth century subscribed the doctrine of *laissez-faire* in the workings of the economy. Adam Smith argued that governments are always and without exception the greatest spend thrifts of society as they spend other people's money. He believed that individuals acting in self-interest will promote public good under the guidance of the invisible hand. Supporters of *laissez-faire*

⁸ There are domestic and foreign sources of financing. Domestic financing can come in the form of borrowing from non-bank public and borrowing from the banking system. Foreign financing of the fiscal deficit can come from grants, concessional loans, commercial borrowing, and building up of arrears.

maintained that people should be left unhindered to pursue their best interests and in the process they would benefit the society. The implication of this is that there is a need for minimal level of government expenditure for accelerated economic growth (Dickenson, 1996).

However, unemployment, which to classical economists was a theoretical impossibility, not only proved possible, but became a major international problem as the great depression of the 1930s revealed. One book, the *General Theory of Employment, Interest and Money* (1936), by John Maynard Keynes, had a profound and pervasive influence on economists and on governments for many years. His argument that the government not only could but should use public expenditure as a tool of economic policy to manage a national economy so as to counteract unemployment, found ready acceptance in a world that had not yet recovered from great depression. This required an expansive fiscal policy, in which a government would deliberately aim at a budget deficit by spending more money (through borrowing) than it raised in taxation. The 'multiplier effect' of public expenditure would counter act unemployment. By increasing public expenditure, a government was seen to be doing something about unemployment whilst the public were getting something (additional state benefits) for nothing, as it appeared, since there was no increase in taxation. Thus, such fiscal policy was attractive to the governments since it provides a rationale for spending more money.

This 'pump priming'⁹ concept did not necessarily mean that government should be big. Instead, Keynesian theory asserted that government spending-especially deficit spending-could provide short-term stimulus to help end a recession or depression. The Keynesians even argued that policy makers should be prepared to reduce government spending once the economy recovered in order to prevent inflation, which they believed would result

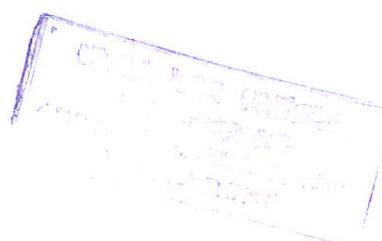
⁹ The expression 'pump priming' gained nation wide vogue during the Roosevelt New Deal 1933-9. It referred to US Government spending accompanied by deficit financing to promote economic recovery from the Great Depression, which peaked in 1933 at an unemployment rate of 24.9 percent and GNP about 30 percent below 1929 in real terms.

from too much economic growth. They even postulated that there was a tradeoff between inflation and unemployment (the Philips curve) and that government spending to steer the economy between too much of one or too much of the other (Mitchell, 2005).

Keynesian economists was very influential for several decades and dominated public policy from the 1930s – 1970s. The theory fell into disrepute once it became apparent that spending increases were associated with economic stagnation in the 1970s and that low tax rates and spending restraint triggered an economic boom in the 1980s. But it still influences policy discussions, particularly on whether or not changes in government spending have transitory economic effects. For instance, some lawmakers use Keynesian analysis to argue that higher or lower levels of government spending will stimulate or dampen economic growth.

Break (1982) strongly believes that a comprehensive measure of the economic role of government should be multidimensional. Construction and widespread use of multidimensional measures of size would emphasize two important facts of life about the economic role of governments. One is that there may be no single answer to whether that role is expanding or contracting. The other is that there may be no easy way to place effective limits on the rate of growth of that role.

It is a fact that no society throughout history has ever obtained a high level of economic affluence without a government. Where governments did not exist, anarchy reigned and little wealth was accumulated by productive economic activity as there is little incentive to save and invest because the threat of expropriation is real and constant. The rule of law and the establishment of private property rights often contributed importantly to economic development. Government is a necessary, though by no means sufficient, condition for prosperity (Vedder and Gallaway, 1998). At low level of development there is a conviction that more government intervention would facilitate economic development through providing social overhead capital or infrastructure.



On the other hand, however, government investment programs were highly inefficient and wasteful. Government controls over private sector activity were pervasive and costly; and government public sector deficits, excessive investment programs and other government expenditures led to high rates of inflation, with their attendant adverse consequences for economic growth (Krueger, 1990). In the words of Vedder and Gallaway (1998), too much government stifles the sprit of enterprise and lowers the rate of economic growth.

Krueger (1990) provides guidance for policy makers as to how government may spend in order to bring about positive impacts on the economy. First, any decision on government spending can be undertaken only when there is a specified set of procedures or criteria for deciding what fits within the scope of the enunciated policy and also an administrative apparatus for implementing the policy¹⁰. Second, even when it appears that government action would actually be effective; there is something of a presumption in favour of policies and programs requiring a minimum of administrative and bureaucratic input. These are important because policies, once in place, appear to have a life of their own and because they divert scarce administrative resources from those in which governmental comparative advantage is stronger. Third, policies directly controlling private activity are likely to be less efficacious in terms of achieving their objectives than policies that provide incentives for individuals to undertake the activities which are deemed desirable. Thus, a presumption exists in favor of choosing a mechanism which provides least scope for rent-seeking. Finally, there is a question of transparency. When the costs of a policy are obscure, special interests in the private sector and government have a great opportunity to use those policies for their own advantage without the consent of voters and other politicians. Thus, choosing the policy with lower information costs is usually preferable.

¹⁰ These considerations are due to the view that it is grossly insufficient for economists to assert that the existence of market failures implies that there is a case for government intervention.

The relationship between government spending and economic growth can be demonstrated by the famous army curve¹¹. The curve illustrates that the output enhancing features of government spending dominate when government is very small, and expansions in government spending are associated with expansions in output. At low level, the productive effects of public spending are likely to exceed the social costs of raising funds. As government grows, however, the law of diminishing returns begins operating. Beyond some point, further expansion of government no longer leads to output expansion, as the growth-reducing aspects of government grow larger, and the growth-enhancing features of government diminish. Further expansion of government contributes to economic stagnation and decline (Vedder and Gallaway, 1998). These negative effects may be more evident where financing relies heavily on more distortionary taxes (e.g. direct taxes) and where public expenditure focuses on unproductive activities.

In this respect vedder and Gallaway (1998) explained that, while the construction of roads initially assists outputs expansion, the construction of secondary roads and upgrading primary roads start to have less added positive impacts per dollar spent. Moreover, the taxes and/or borrowing levied to finance higher government expenditure impose increasing burdens, low tax rates become higher. New taxes, such as income taxes are added to low consumption levies, with increasingly adverse effect on human economic behavior. Tariffs are raised, thwarting trade. Consequently, new government spending no longer enhances economic growth.

The army curve can be expressed in a simple quadratic form, as follows:

$$RGDP = \alpha + \beta G - \delta G^2 + \gamma T$$

¹¹ Borrowing a graphical technique popularized by Arthur Laffer, Richard Army, an economist, developed what he termed army curve to show the relationship between government spending and economic growth.

The positive sign on the linear term, G (government spending), is designed to show the beneficial effects of government spending on RGDP (Real Gross Domestic Product), while the negative sign for the squared term means the variable measures any adverse effects associated with increased government size. Since the squared term increases in value faster than the linear term, the presence of negative effects from government spending eventually will outweigh the positive effect, producing downward-sloping portion of the army curve. To control for factors unrelated to government spending, vedder and Gallaway (1998) introduce the time variable T. Therefore, the faster and greater the expenditure increase, the greater the probability of diminishing returns and ineffective use (Leach, 2002).

Mitchell (2005) identifies a number of reasons for possible existence of the downward sloping portion of the army curve. Notwithstanding the requirement of calculating cost-benefit analysis, he outlined various costs attributed to larger government expenditure, the first being the extraction cost. Government spending requires costly financing choices. All of the options used to finance government spending have adverse consequences. High taxes on work, saving, and investment discourage productive behavior. Borrowing consumes capital that otherwise would be available for private instrument and may lead to higher interest rates. Inflation debases a nation's currency, causing widespread economic distortion.

Second, the rate of economic growth may be adversely affected by the transfer of resources from use in manufacturing in the private sector to the public sector for provision of social services. This is referred to as displacement cost - where government spending displaces private sector activity. This dampens growth since economic forces guide the allocation of resources in private sector, whereas political forces dominate when politicians and bureaucratise decide how money is spent. The political process is much less dynamic than the market with less incentive for increased productivity. Efficiency is rewarding in a competitive system and will also swift punishment on those



who make bad decisions. The time for weeding out of bad investments, adjustments to changing circumstances, new information and improved technologies is lengthier for governments.

Third, there is negative multiplier cost as government spending finances harmful intervention. Portions of the federal budget are used to finance activities that generate a distinctly negative effect on economic activities. For example, many regulatory agencies have comparatively small budgets, but they impose large costs on the economy's productive sector.

Fourth, behavioral subsidy cost involves as government spending encourages destructive choices. Many government programs subsidize economically undesirable decisions. Welfare programs encourage people to choose leisure over work. Unemployment insurance programs provide an incentive to remain unemployed. All these promote misallocation or underutilization of resources so that they diminish national output. Rent seeking, for example, occurs when people try to obtain income by having the government transfers to themselves rather than providing goods and services to others. They benefit the recipient but are a drain on the economy as a whole and economic growth suffers.

Fifth, economic growth is greatly enhanced by the discovery process of 'creative destruction'. Because of competition and the desire to increase income & wealth, individuals and entities in the private sector constantly search for new options and opportunities. Government programs, however, are inherently inflexible - both because of centralization and because of bureaucracy - thus commit stagnation cost.

Finally, government spending involves inefficiency cost. Government directly provides many services and activities such as education, airports, and postal operations. However, there is evidence that the private sector could provide these important services at a higher quality and lower cost. If public sector has less scope for productivity improvements than

the private sector and yet to grow at the latter's expense due to index linking of public expenditure, then the productive potential of the economy is reduced.

It is important to note that small governments that fail to provide a legal system, a stable monetary regime and other core functions effectively and efficiently will most likely not promote economic growth. Therefore, a small government does not by itself promote economic growth.

Similar theoretical suggestions were summarized by Ram (1986) concerning the impact of government size on economic performance and growth. One point of view suggests that a larger government size is likely to be detrimental to efficiency and economic growth because: government operations are often conducted inefficiently, the regulatory process imposes excessive burdens and costs on the economic system, and many of government's fiscal and monetary policies tend to distort economic incentives and lower the productivity of the system. At the other extreme, one can identify some points of view that assign to the government a critical role in the process of economic development, and could argue that a larger government size is likely to be a more powerful engine of economic development. There are several arguments on which the latter point of view is based. Among others, these include: the role of the government in harmonizing conflicts between private and social interests, prevention of exploitation of the country by foreigners, and securing an increase in productive investment and providing a socially optimal direction for growth and development.

Some what different and probably better approach in explaining and analyzing the impact of government spending on economic growth is made by disaggregating government spending into productive and unproductive. According to Barro (1990), productive government spending would include the resources devoted to property rights enforcements as well as activities that enter directly into production function. It is this productive role that creates a potentially positive linkage between government and

growth. For example, if productive government expenditure is held fixed, an increase in the average marginal tax rate or an exogenous worsening of property rights would tend to lower the growth and saving rates. On the other hand, an increase in the share of nonproductive government expenditure (e.g. government's consumption service) lowers the growth and saving rates. These effects arise because higher nonproductive government expenditure has no direct effect on private-sector productivity, but does lead to a higher income tax rate. Since individuals retain a smaller fraction of their returns from investment, they have less incentive to invest, and the economy tends to grow at a lower rate¹². Barro (1990) acknowledges that there are quite high returns to increased public spending when it is starting from a low base, without the imposition of the rule of law, or adequate health and education. However, in the advanced economies the situation is entirely different and is more likely to be characterized by diminishing marginal returns-increase in public expenditure produce a smaller rise in GDP and tend to crowd-out private expenditure.

According to the World Bank development report (1988), the expanded role of public sectors carries with its risks and opportunities. The risks arise from the ineffective use of public resources and from the overextension of government into areas that are better left to private markets. In this case much government involvement may be inappropriate because the bureaucracy is ill equipped to intervene, higher distortionary effects of revenue collection, or because private markets are operating efficiently. The opportunities arise from the government's power, in principle, to allocate resources efficiently when markets fail to do so and from its ability to provide relief to those in poverty. In the system of efficient civil service, high market failures, and lower distortionary effect of tax, greater government involvement may be appropriate. It is the task of public finance to balance the opportunities and the risks, and thus improve the quality of government. The most important aspects of public finance with in which pragmatic policies should be

¹²However, Barro (1990) himself acknowledged that the identification of productive government spending and non-productive expenditure is imperfect.

pursued are the management of public deficits, revenue mobilization, allocation of public spending, and decentralization of public functions.

2.2 EMPIRICAL LITERATURE

There have been numerous studies on the role of government spending in the long-term growth of national economies. However, there is no consistent evidence exists for a significant relationship between public spending and growth, in positive or negative direction. Results and evidence about the effect of government spending on economic growth differ by country (region), analytical method employed, and categorization of public expenditures.

There are various studies regarding the growth effects of spending based on the experiences of a set of developed countries. Alexander (1990) applied OLS method for sample of 13 Organization for Economic Cooperation and Development (OECD) countries panel (1959-84). The result shows that growth of government spending and inflation have significant negative impact on growth.

Devarajan and Vinay (1993) used panel data for 14 developed countries (1970-1990) and apply a method of OLS, 5-year moving average. They took various functional types of expenditure (health, education, transport, etc) as explanatory variables and found that health, transport and communication have significant positive effect while education and defense have a negative impact on economic growth.

Using panels of annual and period-averaged data for 22 Organizations for OECD countries during 1970-95, Bleaney et al (2001) studied the impact of government spending on economic growth. Applying OLS and GLS methods, they found that productive expenditures enhance growth, but non-productive spending does not, in accordance with the predictions of Barro's (1990) model.

Gemmell and Kneller (2001) provide empirical evidence on the impact economy of fiscal policy on long run growth for European economy. Their study required that at least two of the taxation/expenditure/deficit effects must be examined simultaneously and they employ panel and time series econometric techniques, including dealing with the endogeneity of fiscal policy. Their broad conclusions are: Some public investment spending impacts positively on growth and consumption and social security spending have zero or negative growth effects.

Mitchell (2005) evaluated the impact of government spending on economic performance in developed countries. He assessed the international evidence, reviewed the latest academic research, cited examples of countries that have significantly reduced government spending as a share of national output and analyzed the economic consequences of these reforms. Regardless of the methodology or model employed, he concluded that a large and growing government is not conducive to better economic performance¹³.

There are also studies on the basis of large samples consisting of a set of developed and developing countries. Kormendi and Meguire (1985) studied 47 countries using panel data on total government consumption expenditures and other variables from International Financial Statistics for each country averaged over 20-year in the post world war periods. They found no significant relation between average growth rates of real GDP and average growth rates or levels of the share of government consumption spending.

Ram (1986) used cross section data for a larger sample of 115 countries and time-series data (1960-1980) for 17 individual countries to see the effect of government size on

¹³ He further argued that reducing the size of government would lead to higher incomes and improve American's competitiveness.

economic growth. Estimation was done with OLS and also on the premise of a first-order auto-regressive disturbance term (AR1) for some countries from time series data. The main results are: (1) the overall impact of government size on growth is positive in almost all cases; (2) the (marginal) externality effect of government size is generally positive; (3) although the number of time series observations for each country is relatively small, there is a broad harmony between the estimates obtained from cross section and time-series data; (4) it is possible that the positive effect of government size on growth is stronger in lower income contexts.

The above empirical studies has little relevance in understanding the process by which public expenditure policies shape the prospect of economic growth for developing countries as there are not only a significant difference in the composition of public expenditure between developed and developing countries, but the difference is also profound in the role of public expenditures for growth (World Bank, 1988). Thus exclusive focus on developing countries is important.

Landu(1986), applying OLS on sample pannel of 27 LDCs, found that government consumption expenditure has a negative on economic growth.

Kweka and Morrissey (1999) investigated the impact of public expenditures on economic growth using OLS method for a sample of time series data on Tanzania (for 32 years). They found that increased productive expenditure is associated with lower growth. According to them, this negative relationship suggests the inefficiency associated with the use of public funds and public investments in Tanzania. The negative association between total government expenditure and growth also seems to indicate the unproductive effect of government investment spending. Consumption expenditure relates negatively to growth, as anticipated, but appears to be associated with increased private consumption. They also found that there is positive link between growth and expenditure on human capital.

Fan and Rao (2003) analyzed the impact of different types of government spending on overall GDP growth across 43 developing countries between 1980 and 1998 using OLS method and found mixed result. In Africa, government spending on agriculture and health was particularly strong on promoting economic growth. Among all types of government expenditures, agriculture, education, and defense contributed positively to economic growth in Asia. In Latin America, health spending had a positive growth-promoting effect. Structural adjustment programs had a positive growth-promoting effect in Asia and Latin America, but not in Africa. In fact, structural adjustment programs hurt economic development in Africa.

Base et al (2003) examined the growth effect of government expenditure for a panel of thirty developing countries over the decades of the 1970s and 1980s, with a particular focus on sectoral expenditures. Their methodology explicitly recognizes the role of the government budget constraint and the possible biases arising from omitted variables. Their primary results are two fold. Firstly, the share of government capital expenditure in GDP is positively and significantly correlated with economic growth, but current expenditure is insignificant. Secondly, at the sectoral level, government investment and total expenditures on education are the only outlays that are significantly associated with growth once the budget constraint and omitted variables are taken in to consideration. Other findings in their analysis include that there is strong evidence that a government budget deficit gives rise to adverse growth effect.

In Ethiopian case, there is no recent econometric study regarding the impact of government spending on economic growth. Former study that can be mentioned in this regard is a study by Endrias (1996). His analysis was carried out based on the estimation of parameters in a translog production function using data for the period 1960/61-1990/91 at macro level. He considered labour, capital, defense expenditure, government human resource expenditure, and government capital expenditure as explanatory variables. He used active labour force adjusted by the unemployment rate as a proxy for labour and

recurrent expenditure on education and training and public health as proxy for government human resource expenditure. The elasticity estimates of the translog production function show that government expenditure on human resource development and capital expenditure have the greatest effect on economic growth.

CHAPTER THREE

GOVERNMENT SPENDING AND ECONOMIC GROWTH IN ETHIOPIA

3.1 INTRODUCTION

In Ethiopia, since the post Ethio-Italian war (post-1941) period¹⁴, three distinct regimes with varying political platform and hence policy environment can be identified. The imperial regime which was in power up to 1973/74 was dominated by feudal structure, at the apex of whose power was the king. Economic activities were overwhelmingly private and public command of economic resources was relatively low. Thus, the Imperial era was characterized by smaller size of government (lower level of government spending).

Contrary to the imperial era, the derg regime (1974/75-1991/92), in line with socialist ideology, opt for establishing strong and self-sufficient state economy as the target of its policies and programs. The regime deliberately discouraged private sector so as to assure huge government involvement in the economy. As a result, the size of the government was one of the largest in the world during that time (see various IFS year book publications).

In the post-derg periods (post-1991/92), the new government adapted market economy principle as a guiding principle with the aim of encouraging private sector participation in the economy. Accordingly, the first Phase of economic reform program (1991/92-1995/96) focused on the objectives of liberalization (removal of government control mainly on prices) and stabilization (reducing inflation and domestic and external imbalances).

¹⁴ In Ethiopia the need for government revenue and expenditure was highly acknowledged after the restoration of the king to the throne in 1941 in a bid to restore and strengthened the function of the government.



Another paradigm shift after the downfall of the derg regime that has a significant bearing on expenditure management is fiscal federalism (decentralization). Fiscal federalism has originated from the 'Transition period charter of Ethiopia' and latter from 'Constitution of the Federal Democratic Republic of Ethiopia' which claim respect of the rights of nations, nationalities and peoples to administer their own affairs within their defined territory. Article 10(5) of the proclamation No.7/1992 (a proclamation which declared the establishment of regional governments) gives each national regional self government the rights to prepare, approve and implement its own budget. Article 10(3) of the same proclamation gives the right to plan, direct and supervise social and economic development programs. The constitution also gives power to regional states to formulate and execute economic, social and development policies, strategies and plans of the state and to draw up and administer state budget (Article 52 of proclamation No. 1/1995).

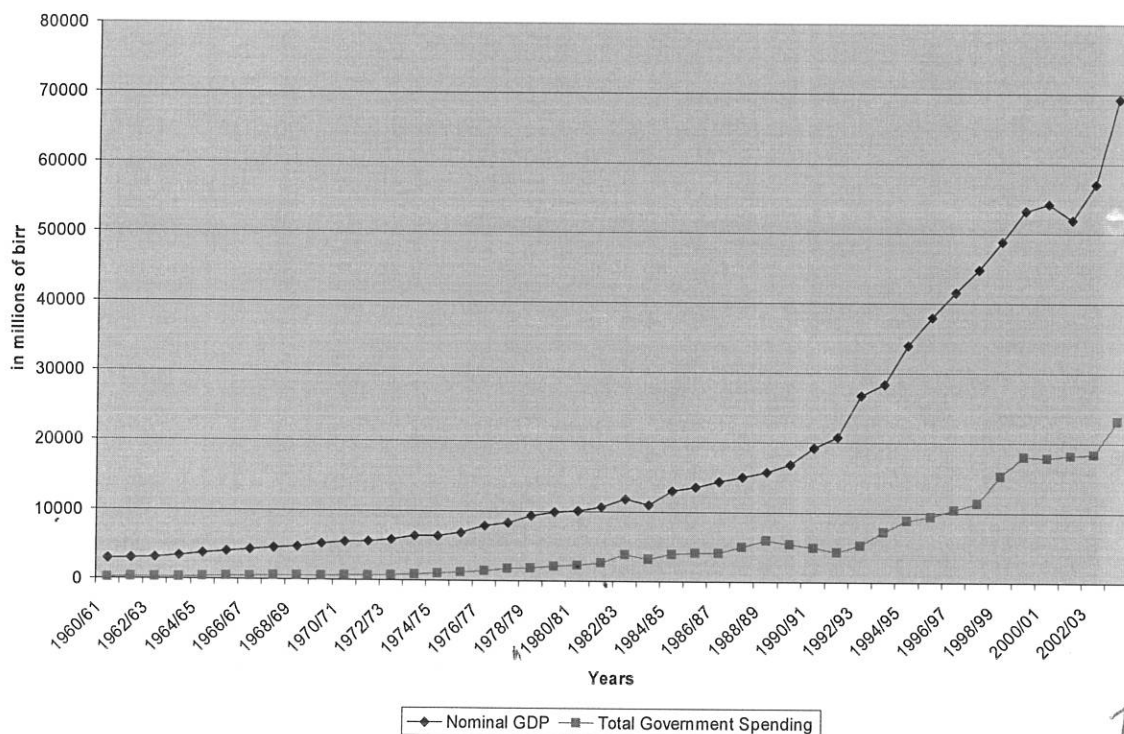
In view of the above scenarios, one can deduce that any economic outcome in Ethiopia is largely associated with the political process. Accordingly, the issue of government spending and economic growth should be addressed in relation to the above three distinct regimes. The discussions in the subsequent subsections of this chapter also follow this framework. Besides, since the way expenditures are financed have a strong bearing on the impact of government spending on economic growth, attempts have been made to link the financing issue to the gist of the study.

3.2 TRENDS IN TOTAL GOVERNMENT SPENDING AND GDP

During the last four decades, public expenditures, not surprisingly, have risen vastly in absolute terms (cash spending) and never fall from one year to the next except marginal decline in 1992 (see Figure 3-1). But this is not a meaningful way of looking at expenditure growth as it does not take inflation into consideration. It is also worth while to note that there has been increase in productivity over time. Although it is better

alternative to look at the expenditure trends in real terms than nominal, this approach has also series limitations as there is no reliable price index which can serve as deflator.

Figure 3-1 Trends in nominal GDP and Total Government Spending



Thus, in discussing the trends of government spending, choice is made to consider rising in public expenditures in terms of rising public sector share. In this case, the path of overall government expenditure is demonstrated by considering the ratio of total government expenditure to GDP¹⁵, which measures the amount of government spending relative to the size of its economy.

As shown in Table 3-1, the ratio of government expenditure to GDP rose from average of 8.6 percent in years 1960-1964 to average of 11.8 in years 1969-1974 during the imperial

¹⁵ This ratio is thought to be a more accurate representation of relative size of government expenditure than that for Gross National Product (GNP) because GNP includes earnings on overseas investment that are not part of domestic productive potential.

era. The fact that the imperial regime had adhered liberal notion of limited state involvement in the economy attributed to relatively lesser share of government expenditure in the economy. After the down fall of the imperial regime, the Ethiopian government spending has shown overwhelming expansion and reached the maximum of 38% of GDP in 1988. Government's pretentiousness to provide every infrastructural facilities and social services to the 'mass' while at the same time engaging in the production and distribution of basic goods led to the establishment of many new ministries, institutes, corporations and departments which in turn led to phenomenal expansion of the public sector in the economy relative to others. As a result of these developments, government became one of the largest in the world after 1980 periods of the derg regimes from the lowest positions in pre-1974 periods in terms of the ratio of government expenditure to GDP (Teshome, 1993; Wogene, 1991).

After the down fall of the derg regime, the new government has taken policy measures on the expenditure side which mainly focuses on controlling the growth and rationalizing its use. In controlling the growth of expenditure, the government takes measure to withdraw from direct involvement in production and service delivery while opening the door for private sector participation. Because of this, there was a sharp decline in the relative size of government during the early post-1991 periods. Up to 1998/99, the share of government expenditure in economy (as measured by % of GDP) was generally found to be lesser compared to last decade of the derg regime. However, since 1997, the share has been rising steadily in which 35% was registered in 2001/02 (see figure 3-1). On the other hand, in rationalizing expenditure, the government needs to reorient its capital and recurrent expenditure (reduce recurrent expenditure) in order to reallocate resources to basic social services (education and health) and economic infrastructure at the larger scale. It is believed that these are areas where public investment is expected to facilitate overall economic performances including private sector participation. As will be elucidated in the next section, growing capital expenditure on such sectors largely

contributed to steady growth in relative size of government in later periods of the current regime.

Table 3-1 Growth of Total Government Expenditure and GDP under the Three Regimes

Regime	Years	Average Nominal Government Expenditure (in millions of birr)*	Average GDP at Current Market Price (in millions of birr)*	Average Real GDP at constant factor cost (in millions of birr)*	Total Government Expenditure (as % of GDP)	Annual Average Growth rate of Government Expenditure (as % of GDP) **	Annual Average Growth rate of Real GDP**
Imperial	1949/50-1953/54	84.28	NA***	NA	NA	3.17	3.71
	1954/55-1959/60	155.83	NA	N.A	NA		
	1960/61-1963/64	268.10	3110.5	5430.3	8.62		
	1964/65-1968/69	487.7	4265.5	6577.0	11.43		
	1969/70-1973/74	676.4	5712.6	7776.6	11.84		
Derg	1974/75-1978/79	1427.1	7753.9	8444.9	18.40	4.46	2.02
	1979/80-1983/84	2818.0	10668.5	9581.9	26.41		
	1984/85-1990/91	4769.3	15389.5	10512.2	30.99		
Post-Derg	1991/92-1995/96	7018.0	29523.0	9581.9	23.77	4.48	4.47
	1996/97-2000/01	14580.1	48501.8	12181.6	30.06		
	2001/02-2004/05	19903.3	59402.0	17824.9	33.50		
Overall Growth 1960/61- 2004/05						3.29	2.60

Source: Ministry of Finance and Economic Development

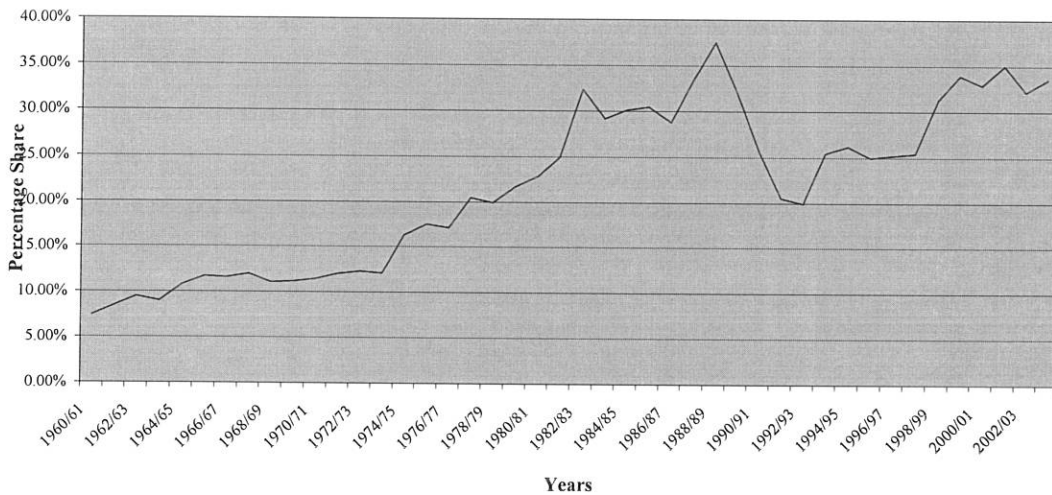
* Annual average figures are own calculations based on the above source.

** Growth rates are estimated by regressing natural logarithms of the respective variables on time using OLS.

*** NA refers to not available due to absence of GDP data prior to 1960/61 periods.



Figure 3-2 Trends in Total Government Spending as the share of GDP

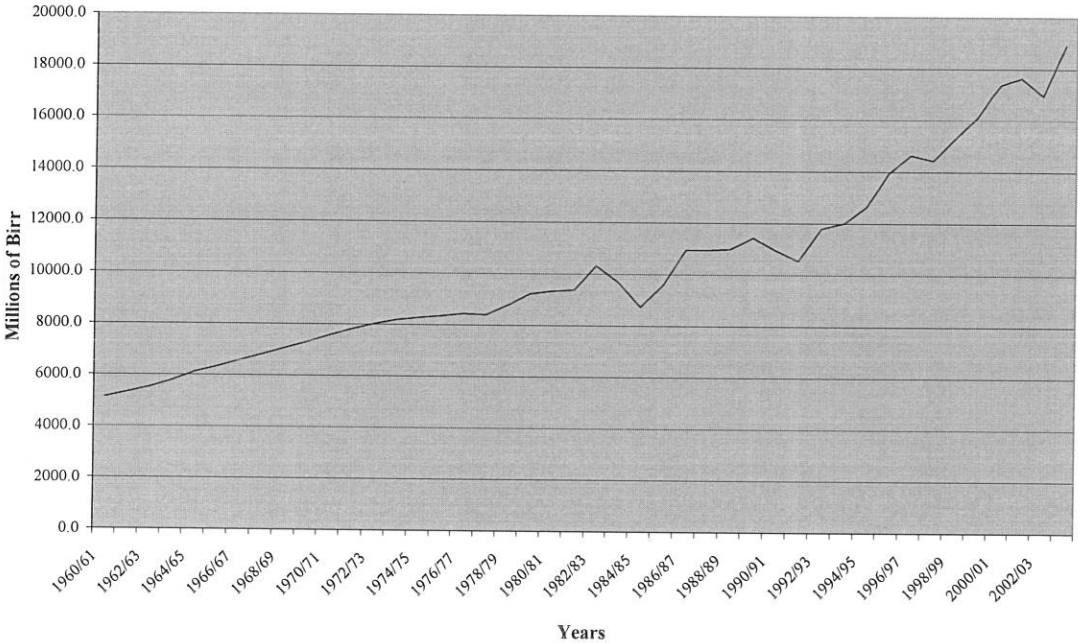


Regarding trends in the real GDP (as measured by 1980/81 constant factor cost) generally it has upward but fluctuation trend as shown in figure 3-3. The annual average growth rate of Real GDP for the whole period under consideration (1961-2004) is 2.6%. During the imperial era, the economy had been growing at the fairly steady state of 3.7 percent per annum. However the post-1973/74 periods experienced tremendous growth fluctuations.

Agricultural sector is the predominant sector in the economy and hence its performance significantly affects the growth in GDP. The performance of agricultural sector in turn is highly dependent up on the weather condition (rain fall). Thus, GDP registers the highest figure when there is timely and sufficient rainfall as well as during recovery from a very low base and the lowest when this is not the case. That is why we see erratic nature of growth.

There was a mere 2.02 percent annual average growth in GDP for the entire derg period. Under the current regime (1991/92 – 2003-2004), on the average the economy has been growing at about 4.5 percent per annum in real terms.

Figure 3-3 Trends in Real GDP



3.3 STRUCTURE OF GOVERNMENT EXPENDITURE

3.3.1 CAPITAL VERSUS RECURRENT EXPENDITURE

Despite the conspicuous pitfalls in putting clear demarcation between capital and recurrent expenditures practically, dealing with them sheds some light on implication of changes in the structure of government expenditure¹⁶.

¹⁶ Specifically there are substantial quantities of current spending reported in capital spending. In some cases also some expenditure of capital nature are treated in recurrent budget. In Ethiopian case, we observe inconsistencies in recording capital and recurrent expenditure among various institutions or departments.

In principle, capital expenditure is broadly defined as an outlay on development projects that result in the acquisition of fixed assets to enhance the capacity of the economy for the production of goods and the provision of economic and social services. Such outlays include spending on land development, construction of power plants, buildings, dams, roads and purchase of machinery and equipment.

Unlike capital expenditure, recurrent spending comprises expenditure items which are recurring in the process of delivering government economic and social services. Wages, subsidies, operation and maintenance, pension and debt servicing are among the major components of recurrent expenditure (MEDAC, 1999).

As shown in Table 3-2, the share of capital expenditure to total expenditure is generally lower in the imperial era compared to other regimes. The same share rises to 10.5 percentage point from year 1950/51 to 1957/58 due to relatively higher investment on infrastructure by virtue of the first five year plan. In the second and third five years development plan (1962/63-1966/67 and 1968/69-1972/73 respectively) greater emphasis was given to the development of directly productive sectors of the economy. Accordingly, agricultural and industrial sectors took the highest priority and capital budget allotted to these sectors was immensely increased. The share of capital expenditure to both GDP and total expenditure had reached the highest in 1962/63.

In the derg regime both capital and recurrent expenditure as a ratio to GDP had obviously increased due to larger government involvement in the economy. Capital expenditure as a ratio of total expenditure had also increased. The increase in the government shares of total investment did not by any means imply a significant increase in overall investment in the economy. The annual rate of gross capital formation estimated at 3.03 percent per annum during 1961-1974 periods had in fact decreased to the level of 2.54 per annum in the 1975-1991 periods (Teshome, 1993). Therefore, government investment had a significant crowding out effect on private sector investment in the economy. This had

Table 3-2. Government Capital and Recurrent Expenditures as Percentage of GDP and Total Government Expenditure.

Regime	Years	Capital Expenditure	Recurrent Expenditure	Total Expenditure
Imperial	1950/51	6.3	93.7	100
		NA	NA	NA
	1957/58	16.8	83.2	100
		NA	NA	NA
	1962/63	31.7	68.3	100
		3.0	6.5	9.5
	1970/71	19.7	80.3	100
Derg		2.2	9.2	11.4
	1975/76	23.6	76.4	100
		4.1	13.3	17.4
	1982/83	32.7	67.3	100
		10.6	21.8	32.4
	1988/89	32.8	67.2	100
Post- Derg		12.3	25.2	37.5
	1993/94	37.4	62.6	100
		9.5	15.9	25.4
	1996/97	40.9	59.1	100
		10.3	14.9	25.2
	1998/99	20.1	79.9	100
		6.8	27.1	33.9
2003/04	37.4	62.6	100	
	12.5	21.0	33.5	

Source: Ministry of Finance and Economic Development

Note:

- The first row of each year (the shaded row) shows capital and recurrent expenditures as percentage of total government expenditure while the second row shows expenditures as percentage of GDP.
- NA refers to not available due to absence of GDP data prior to 1960/61 periods.

resulted in adverse effect on the economic growth of the country as government sector was not effective and efficient in allocating and utilizing meager resources. Recurrent expenditure as a ratio of GDP reached a maximum of 25.2 % in 1988/89, in which a significant portion of the recurrent expenditure was allotted to defense outlays (about 40% of total recurrent expenditure).

Generally, in the post-1991 periods, capital expenditure as a ratio of total expenditure has been rising. Much of the increase in capital expenditure was accounted for by spending on roads, energy, education and health sectors. It is worth mentioning that during these periods there is significant reduction in government spending on defense. The share of defense sharply declined to 4 to 15 percent of the total recurrent expenditure between 1994/95 – 1996/97. Exception to this is that owing to the Ethio-Eritrean boarder conflict in 1998/99, the share of defense rose to 30 percent in 1998/99. In this year recurrent expenditure constituted about 80 percent of the total expenditure which is the largest of all years in post-1991 periods.

3.3.2 FUNCTIONAL (SECTORAL) CLASSIFICATION

The better way looking at change in the structure of expenditure is by classifying government expenditure by 'function' or 'sector'. The functional classification derives from what may be thought of as broad objective of the government and falls under four broad headings: general services, economic services, social services and other services which include debt services, subsidies and other miscellaneous expenses (for details see Annex-2). The expenditure structure of the three distinctive regimes differs vastly on the basis of development objectives and priorities set by respective government.

In the imperial regime, the expenditure structure is mainly explained by the priorities and objectives set in the three consecutive five year plans and the attempts that were made accordingly. The first five year plan (1957/58-1961/62) set the highest priority to the

development of infrastructure and expansion of education (particularly the training of technical personnel. Accordingly, in Table 3-3 we see the higher share of construction expenditure (especially road construction) in the total expenditure among economic services. Expenditure on social services took the second largest share in the total expenditure among the major functional categories.

The second (1962/63-1966/67) and the third (1968/69-1972/73) five year plans, on the other hand, emphasized the development of directly productive sectors of the economy (agriculture and industry) and the building of a far stronger foundation for sustained and rapid growth and development of the economy which largely achieved by enlarging the educational base of population (IEG,1968).The shift in priority in the second and third five years plan resulted in declining share of construction and increase in the share of directly productive sectors, particularly agricultural sector. Similarly, the share of expenditure on education and public health increased. The share of expenditure on general services constantly decreased against increase in the share of both economic and social service expenditures.

However, the rate of increase in economic service expenditures outweighs the social service expenditures, which again was the result of a shift in emphasis in reallocating government expenditure in favor of productive sectors (see Table 3-3).

During the derg regime, expenditure on defense not only constituted the largest share in the total general service expenditures but also registered the highest share in total expenditure compared to the other regimes. Among the economic service expenditures, the share of expenditures on agriculture and industry was greater, in which the rate of increase in the share of industrial expenditure was enormous. However, the share of expenditure on human capital was the lowest compared to other regimes.

Table 3-3. Summary of Functional Structure of Government Expenditure as Percentage of Total Expenditure

Expenditure	Imperial Era				Derg Regime		Post-Derg periods		
	1949/50- 1954/55	1955/56- 1959/60	1960/61- 1964/65	1965/66- 1973/74	1974/75- 1984/84	1985/86- 1990/91	1991/92- 1995/96	1996/97- 2000/01	2001/02- 2003/04
General Service	59.6	51.8	47.9	37.2	39.8	36.1	25.8	35.6	27.8
Defense	23.9	22.0	20.6	15.8	29.4	28.9	10.3	20.4	12.8
Justice	17.9	15.5	16.8	13.8	6.0	3.2	0.7	2.6	2.9
Economic Service	14.7	13.5	9.3	23.7	27.6	30.8	33.0	25.3	27.3
Agriculture	0.7	1.0	1.5	5.6	10.3	9.3	12.9	9.8	7.2
Industry	0.5	0.3	0.2	2.3	2.6	4.4	3.3	0.9	1.0
Construction	11.0	7.1	4.9	8.7	6.2	3.0	8.0	6.9	11.6
Social Service	15.4	16.6	17.4	21.3	16.7	15.0	22.6	20.2	24.6
Education & Public Health	14.6	13.5	15.3	19.7	13.7	12.3	18.3	15.7	21.7
Other services									
Debt Servicing	3.4	2.0	3.9	5.2	4.4	7.1	13.1	11.2	5.6

Source: - Ministry of Finance and Economic Development

After the downfall of the military regime in May 1991, the new government committed itself to pursue market-based economic policy. To this end, the transitional government began the implementation of a comprehensive macro-economic and structural reform with the support of the International Monetary Fund and the World Bank as well as other multilateral and bilateral donors.

The first structural and economic reform program was undertaken during 1992/93-1994/95 with the aim of progressively liberalizing the economy and reducing the role of the public sector. During this period government expenditure as a ratio of GDP was

reduced owing to a significant reduction in general service expenditure, particularly defense expenditure. On the other hand, expenditure on economic and social services showed an increasing trend where increase in the later expenditure was greater than that of the former. Another new development in this period was the increase in the share of debt servicing as a result of relatively larger loan secured from bilateral and multilateral donors (see Table 3-3).

During the period 1994/95-1996/97 the government gave priority to labour intensive development. Moreover, emphasis was given to private sector development. The long term development strategy of Agricultural Development Led Industrialization (ADLI) was designed so as to prepare fertile ground to accomplish the above priorities. In order to rehabilitate and reconstruct economic and social infrastructure, mobilizing external resource was taken as a prime means. The share of agricultural and infrastructural expenditure increased while the share of expenditure on industry declined as a result of this development.

In 1996, although Ethiopia entered a three year ESAF (Enhanced Structural Adjustment Facility) with IMF in which the government committed itself to reducing poverty by achieving broad based economic growth in a stable macro-economic environment, the program could not be implemented due to lack of consensus on policy package between Ethiopian government and IMF. However, in early 1998, government reached agreement with IMF to resume the program under the ESAF arrangement to be implemented in the context of a medium-term strategy for the period 1998/99-2000/01. In this program high priority is accorded to capacity building in public and private sectors.

According to the policy framework paper of economic reforms for 1998/99 – 2000/01, the overriding objective of the government was to attain relatively fast, broad based, and more equitable economic growth with macroeconomic stabilities. The government remains committed to avoiding domestic bank borrowing for the financing of budgetary

deficit in order to minimize inflationary pressures. Thus, the bulk of financing was expected to emerge from external concessional sources. Owing to the needs in the priority sectors of roads, education and health that are addressed under Sectoral Investment Programs (SIP), public sector capital outlays in such sectors were expected to increase as percentage of GDP.

Nevertheless, the reality on ground displayed different phenomena. As shown in Table 3-3, expenditure share on education and public health as well as expenditure on economic services showed a decline in 1996/97-2000/01 periods compared with the period 1991/92-1995/96 which in fact was contrary to the expectations as per the policy framework paper. Despite these, the overall government expenditure increased substantially in the year 1996/97-2000/01 which was driven primarily by increase in military spending during Ethio-Eritrean war (1998-2000). The increase in total spending was financed by increased domestic borrowing in this period, against what had been planned, as donors' inflows were suspended.

In the periods 2001/02-2003/04, expenditure on general services (mainly defense spending) declined, but spending in social and economic sectors has been increased leaving total spending as percentage of GDP higher (as high as 35%). The implementation of consecutive five year education and health sector development program has made expenditure on these sectors to rise faster than others. The increase in expenditure in these years was financed by external sources.

In general, compared with the past regimes, the post-1991 periods have witnessed a reduction of public spending on such productive sectors as trade, industry and transport and a larger growth in human capital expenditure and construction.

At 35% of GDP, in relative terms public spending is high by sub-Saharan Africa standards; however because the denominator is so low, in absolute terms public spending

at only \$35 equivalent per capita is among the lowest in the world. Hence both government spending and GDP need to grow significantly to achieve Millennium Development Goals (MDGs) (See MDGs in Appendix-1).

The sustainable Development and Poverty Reduction Program (SDPRP) represented a strong start in moving towards the MDGs especially in areas of education and health. Currently, the Ethiopian's guiding strategic framework for the five year period 2005-2010 is PASDEP (A Plan for Accelerated and Sustained Development to End Poverty). PASDEP is a logical continuation of SDPRP in which core initiatives under SDPRP (expansion of education, health improvement and HIV/AIDS prevention, capacity building and decentralization, food security program, ADLI strategy) will be pursued. Capturing the private initiatives of farmers and support the shifts to diversification and commercialization of agriculture will be important enhancements under PASDEP (PASDEP, 2005).

3.3.3 CIVILIAN VERSUS DEFENSE EXPENDITURES

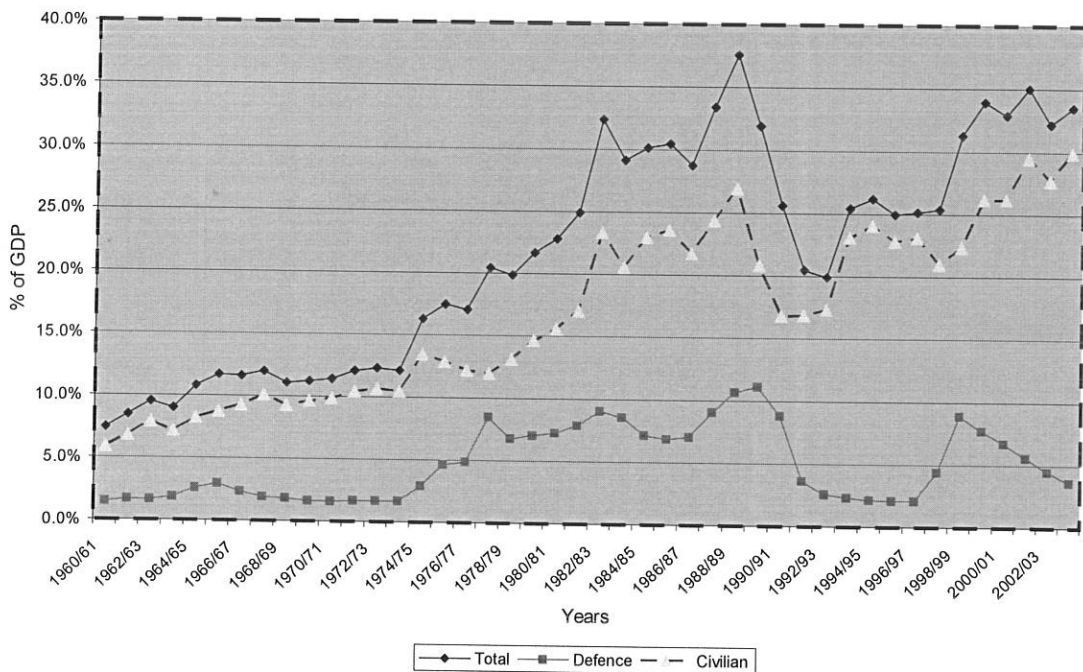
It is also worthwhile to analyze the trends of government expenditures on the basis of defense and civilian category. This helps to have some insights as to whether total government spending growth has been driven by rising expenditures for defense or by civilian expenditure. Besides, it helps to assess whether Peacock and Wiseman Hypothesis of displacement effect works in the Ethiopian case.

From Table 3-2 and Table 3-3, we can observe that compared with the pre-1974 periods, the average share of both civilian and defense expenditures in GDP rose during the derg regime. However, the percentage rise in the share of defense expenditure is higher than civilian expenditure. Generally, the share of defense expenditure in total expenditure has been substantially decreased during the post-1991 periods owing to the relative peace and stability with the exception of Ethio-Eritrean conflict years (1998/99-2000/01).

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Total, defense and civilian expenditures as % of GDP are plotted in Figure 3-4. As the figure clearly discloses, there is rhythmic co-movement between total and civilian expenditures and the rise in civilian expenditure explains virtually the entire increase in total government spending. In other words, expenditure growth has not been primarily a matter of rising defense expenditure. In fact, in war periods (1977/78 and 1988/89 of the derg periods and 1998/99 of post derg period) the increase in defense expenditure scaled up total government spending. Defense expenditure, thus, created short-term effect (shock) on total expenditure.

Figure 3-4 Civilian and Defence Expenditure as percentage of GDP



However, such increase in defense expenditure did not displace civilian expenditure in a meaningful magnitude. In other words, after the war period, civilian expenditure fell almost equivalent to that of defense expenditure. Thus, Peacock and Wiseman hypothesis is weak in explaining the long-run trends in government expenditure in Ethiopia.

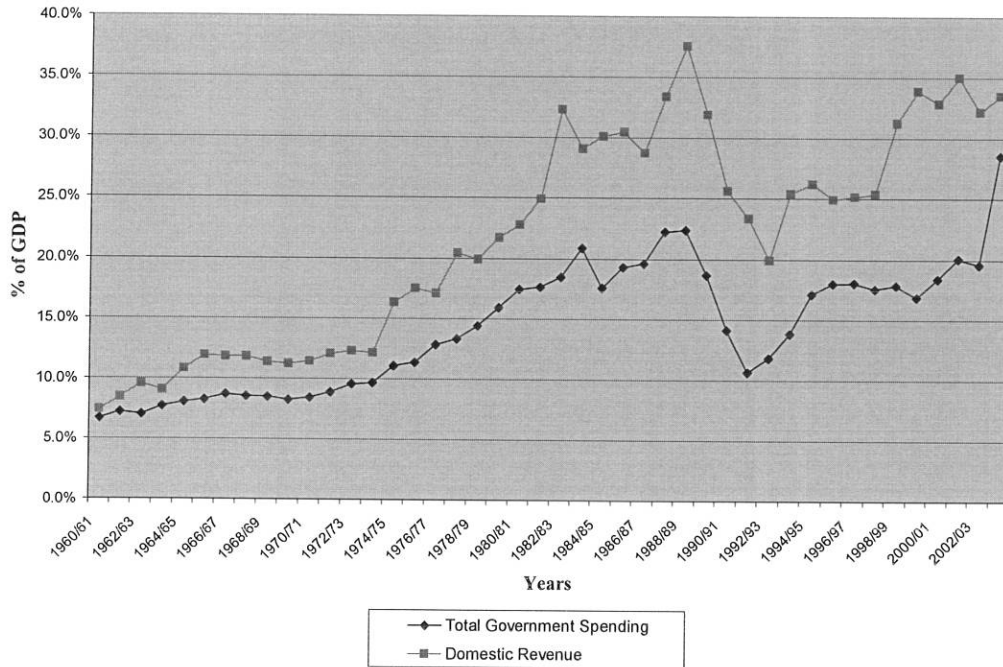
3.4 FINANCING OF GOVERNMENT EXPENDITURES

Without looking into the issues of financing, analyzing the impact of government spending will not be complete. There is a very real treat that tax and spending may deliver negative macroeconomic consequences with little or no microeconomic improvement in public services. On the other hand, in developing countries such as Ethiopia government spending is an inevitable means for accelerated economic growth if it results in a crowd-in effect. Therefore, there are inherent costs and benefits associated with government spending, which usually assessed by means of financing. This section is meant to address these issues.

Since the year 1961/62, the fiscal balance of the Ethiopian government has been always negative. As can be shown in Table 3-4 and Figure 3-5, the budgetary deficit as a ratio of GDP has been increasing from time to time, reaching its maximum level of 13.5 percent of GDP in 1983/84.

During early post war (post-1941) period of the imperial era, the needs for government revenue and expenditure were acknowledged in order to restore and strengthened the function of the government. However, it was found difficult to draw up a proper budget since there were largely capacity deficiency and lack of experience (Perham, 1969). These factors partly contributed for lesser government expenditure. Generally, the period 1942-1955 was characterized by meager absorptive capacity. It was within this period that budgetary surplus were recorded (IEG, 1962: Teshome, 1993).

Figure 3-5 Government Budget Deficit



During the First Five Year Development Plan (1957/58-1961/62) balanced budget were maintained. In the years 1962/63-1974 (the period in which the second and the third five year development plans were launched), as a result of big reforms (such as export diversification and tax reforms, establishment of Central Personnel Agency, strengthening legal system, promulgation of commercial code of Ethiopia and labour law, hydroelectric power generation) and the associated enhancement in internal capacity, government expenditures were systematized and increased regularly. However, domestic revenues were not systematized and regularized as that of expenditures. Thus, the then money and banking proclamation (proclamation No. 206/1963) was meant to synchronize revenue and expenditure through various means. In the proclamation, three instruments, namely, direct advance, treasury bills, and bonds were devised. Particularly for direct advances, strong rules such as ceiling, high interest rate, and short repayment period were incorporated so as to give strong fiscal discipline to the borrowing. Because of such conservative fiscal practice, manageable deficits were registered. About 80 percent of

these deficits were financed by borrowing from external sources and an extensive use of domestic bank borrowing was not made due to relatively lower deficit.

In the derg regime, however, large budgetary deficits were sustained due to excessive growth in government spending relative to its revenue. The relative share of foreign trade taxes, which contributed the major share in the total domestic revenue, felled due to protective policy and import substitution strategy pursued. In general, regular government revenues failed to cover even recurrent expenditure, let alone pay for economic expansion and new investment. Deficit as a ratio of GDP reached 12 percent from 5 percent of the early periods of the regime. Such growing deficit, as shown in Table 3-4, was financed by and large through borrowing from the central bank and external loan which had nearly equal share in deficit financing. Loans were flowing from Eastern Europe, the country's main trading partners.

Compared to other regimes, government borrowing from the domestic banking system constitutes the most important means to finance government deficit in the derg regime. Government was hard pressed for cash to cover its ever growing levels of deficits and resorted to an extensive use of the borrowing provisions of the banking laws (i.e. simply applying money and banking proclamation without considering its rationale) .This was because sources of revenue from taxes levied on private sectors and foreign trade were intentionally abridged. Besides, the revenue from state enterprises was not satisfactory as most of them were operating under loss. In sum, such persistent and widening fiscal deficit had led to macroeconomic instability. The mode of expenditure finance pursued by the government also resulted in a further monetization of these deficits and accentuation of the inflationary state of the economy (Teshome, 1993).

Soon after the downfall of the derg regime in 1991, the new government has committed itself to subsequently reduce fiscal deficit as percentage of GDP. Regarding the financing of deficit, government's policy has been aimed at a gradual elimination of inflationary

financing through borrowing from the banking system. More reliance was therefore made on external finances for deficits. The intent of such policy measures was to maintain macroeconomic stability on the one hand, and foster private sectors access to financial resources, on other.

Table 3-4 Summary of Government Fiscal Deficits and Its Financing (percent of GDP)

	Imperial Era		Derg Regime		Post-Derg period		
	1960/61- 1964/65	1965/66- 1973/74	1974/75- 1984/85	1985/86- 1990/91	1991/92- 1995/96	1996/97- 2000/01	2001/02- 2003/04
Revenue	7.3	8.7	15.5	19.4	14.3	17.7	22.7
Expenditure	9.0	11.8	22.9	31.3	24.0	29.7	33.6
Deficit	-1.7	-3.1	-7.4	11.9	-9.7	-12.0	-10.9
External financing							
Grants	1.4	1.2	2.0	3.4	2.8	3.3	5.2
Borrowing	0.2	0.8	2.3	3.4	3.5	2.2	5.7
Total External finance	1.6	2.0	4.3	6.8	6.3	5.5	10.9

Source: Ministry of Finance and Economic Development and Central Statistics Office

In general, the post-reform period of 1991/92 to 1997/98 witnessed marginal expansion of deficit in absolute terms showing 4.2 percent annual average growth. As a result of this, the ratio of deficit to nominal GDP, excluding grants dropped from 10 percent in 1991/92 to 5 percent in 1996/97 which however rose moderately to 6.8 percent in 1997/98 fiscal year. Compared to the derg regime, the reduction in total government spending (particularly reduction in expenditures of defense and some productive sectors)

and increase in domestic revenue, especially from import taxation as a result of trade liberalization¹⁷, are the main reasons for reduction in fiscal deficit. The annual average deficit during 1996/97-2000/01, excluding grants was 12% of the GDP which decreased to 10.9% in 2001/02-2003/04 periods.

Unlike the derg regime, the major sources of economic aid are western donors and UN system and the bulk of investment finance is expected from the World Bank and the International Monetary Fund (IMF). In earlier years, negotiations with these institutions were based structural adjustment program (SAP) which embraced various conditionalities such as retrenchment, privatization and liberalizing financial institutions. However, the early monetary disbursements within the framework of 'Economic Restructuring and Reconstruction Program (ERRP)' do not have a sizable investment component (Teshome, 1993).

In 1990/91, about 25 percent of the deficit (including grants) was financed from external borrowing (net) and the proportion of deficits financed by external borrowing rose to as high as 79 and 94 percent in 1993/94 and 1994/95. In 1995/96 and 1997/98, however, net inflow of external borrowing covered 65 and 44 percent of the deficit including grants respectively. Again, after Ethio-Eritrean war periods (in 2001/2-2003/4), foreign inflows resumed and the overall deficit was financed by these resources. Deficit financed through domestic sources sharply declined from 75 percent in 1991/92 to 6 percent in 1994/95 and then increased to average of 54 percent during 1996/97-2000/01 and again dropped as a means of financing deficit in later periods. Grants constituted 8% of GDP in 2002/03, which contributed the higher share for unprecedented increase in foreign resource inflow in the years 2001/02-2003/04.

¹⁷ See detailed exposition of this issue in "The Effect of Trade Liberalization Program on Government Budget in Africa", by Prof. Teshome Mulat (2003), a paper prepared for presentation at the United Nations Economic Commission for Africa (UN-ECA).

The overall development of fiscal deficit and its mode of financing reveal that both external assistance and loan had significant role in reducing and financing the deficit during the post-derg periods. The role of external sources in the economy will remain significant in the future too. To achieve MDGs through PASDEP¹⁸, the needs assessment synthesis Report of MOFED also underlined the decisive role of external resources.

“... partnership with all development stakeholders is vital to ensure success, as the challenges faced in this endeavor are significant and compounded by an overall context characterized by low income levels, high population growth, low productivity growth, a declining resource based and continuing food security pressures, and a volatile external and regional environment. Also the scale of resources called upon to achieve the MDG is significant, and it would not be possible for Ethiopia to implement this comprehensive plan without external support in the scale and time required.” (MOFED, 2005).

Although Foreign aids and loans has helped government to embark on huge development projects and reduce/avoid inflationary financing of the deficit (particularly by borrowing from the banking system), its impact on debt accumulation, reliability and the associated conditionalitis need to be closely monitored. The gain from avoiding financing is in fact marginal and could not be long lasting as long as there is high dependency on foreign sources. But, the variability and unpredictability of external resources in the end may lead to domestic sources of financing resulting in microeconomic instability and inconsistency.

In Ethiopia, external assistance and loans form a rather unstable financial base for government expenditure programs. International politics and donors' interest determine the flow of these sources (specifically economic aid and loan) rather than the actual economic needs of the country. The sanction of economic aid due to the may, 1998

¹⁸ With the aim of reaching MDGs and avoiding poverty, Sustainable Development and Poverty Reduction Program (SDPRP) has currently updated by a five year plan: A plan for accelerated and sustained development to end poverty (PASDEP).

Ethio-Eritrean conflict and decision on halting direct budget support due to disorder after May, 2005 election can be cited as recent instances that amplify the unreliability nature of foreign sources. Hence, the fact that Ethiopia still depends on foreign source for deficit financing has created its own adverse influence in an effort to achieve sustainable economic growth.

3.5 ISSUES OF FEDERAL DECENTRALIZATION

The Transitional Charter of Ethiopia (1991) and later the Constitution (1995) are the basis for federal decentralization in post-1991 periods. As per these documents, regional governments enjoy complete and unrestricted local autonomy in their respective sovereign state. Accordingly, they have embarked upon the complex task of socio-economic development by organizing their regional institutions.

This paradigm shift in political set up is accompanied by fiscal decentralization. The regional governments are expected to administer their own budget and thus they are expected to finance their expenditure, in fact with the support of the central government where this is deemed necessary.

In principle, fiscal self-sufficiency has potential advantage with respect to improving efficiency in resource use, promoting transparency and accountability where all these lead to better quality of governance. However, in Ethiopia the practical situation is quite different. Regions' revenue base is too narrow to finance the overreaching expenditures. More importantly, regions are highly suffered from capacity constraint. There is severe shortage of skilled and experienced manpower in enhancing the revenue base, in prioritizing expenditure and implementing them. We often observe prototype institutions which are not tailored to specific needs of the respective regions. All these have created adverse effects in the proper utilization of resources in the regions.

Annual Reports (various years) of the Office for Federal Auditor General has also confirmed that there is mishandling of transfers earmarked to each region and inappropriate record keeping which would otherwise serve for planning and proper allocation of resources. The office has repeatedly reported the fact that the whole subsidies and special supports transferred to the regions are simply recorded in national accounts as if they were fully applied for intended purposes without ensuring or securing information about how these transfers are utilized. This would most probably lead to over statement of public expenditure at national level.



CHAPTER FOUR ECONOMETRIC ANALYSIS

4.1 THE MODEL

There are no generally accepted models of the growth process and hence no standard analytical frameworks that are appropriate for studies such as this one (Abramovitz, 1983). Not only that theory offers little guidance, there is also no consistent evidence as to the relationship between government spending and growth. Besides, economic growth may depend on factors that change over time. On the top of these, simultaneity, multicollinearity, and crude proxies are important practical problems. Such constraints make the empirical study on the impact of government spending very challenging. The empirical approach to regression in this study will be then not simply to maximize the goodness of fit of the model but to include only those variables inherently plausible in the context of this study. On account of these facts and data availability as well as in view of its relevance to Ethiopia, in this study, a model developed by Kweka and Morrissey (1999) is adapted for the econometric analysis.

In the model, output (Y) is assumed to be a function of two factors of production, capital (K) and labour (L) and government expenditure (G). In the context of developing countries, export (X) is a potential determinant of growth which is not accounted for by other independent variables, and can be included.

$$Y = f(K, L, G, X) \dots \dots \dots [4-1]$$

Furthermore, we can express change in capital (ΔK) as investment (I). It is assumed that government services affect the efficiency of productive units of capital and labour, which could be in a positive or a negative manner. Government expenditure can be thus

decomposed into productive (I_g) and unproductive (C_g) components, and we have total investment ($I=I_g+I_p$), where I_p is private investment. Private investment (I_p) is proxied by private capital formation, while Government investment spending (I_g) is proxied by government total capital/development expenditure less capital spending on health and education. It is assumed that labour inputs (L) can be proxied by public expenditure on Human capital (H_g). Government consumption expenditure (C_g) is measured by government recurrent expenditure less recurrent expenditure on health and education. Expenditure on human capital (H_g) is thus measured by the total health and education spending (current and capital). Both current and capital expenditure are considered here because recurrent expenditure for these two sub-sectors of social sector play very significant role in improving the quality of the labour force and of course there is no definite line dividing the recurrent and capital government expenditure in these sub sectors.

The justification for using total expenditure on health and education as a proxy to expenditure on human capital (labour) is evident in the context of developing countries. Physical and mental healths are not only the utmost importance in our preferences of what we really want, but they are also major determinants of human accomplishment. Although dispute may range about forms and amounts, the case for increase governments spending to raise health levels is found to be overwhelming to improve economic productivity as well as for humanitarian reasons. Better health contributes materially to achievement on the job, especially over the life time.

On the other hand, education stands out as a strategic factor for aiding economic accomplishment and also for enlarging the potential for richer human experience- perhaps the main objective of economic growth. Spending on education multiplies values many folds in developing human capacity (Harris, 1956).

Building on Lai (1994), a simple growth accounting model in which total expenditure is disaggregated into expenditure on investment, consumption and human capital expenditure is formulated. Therefore, the regression equation is specified as:

$$RGDP = f(Cp, Ip, Cg, Ig, Hg, Ex) \dots \dots \dots [4-2]$$

Where: RGDP = Real Gross Domestic Product

Cp = Private consumption

Ip = private Investment

Cg = Government consumption Expenditure

Ig = Government Investment

Hg = Government expenditure on human capital

Ex = Export of goods and services

The explanatory variables in the above function are in fact components of GDP. This can be addressed by measuring the explanatory variables as shares of GDP. Expressing the dependent variable in natural logarithm form, an attempt has been made to examine the impact of each explanatory variable on growth of real GDP. Thus, the model to be estimated is specified as:

$$LRGDP = \beta_0 + \beta_1 CpY + \beta_2 IpY + \beta_3 CgY + \beta_4 IgY + \beta_5 HgY + \beta_6 ExY + \varepsilon \dots \dots \dots [4-3]$$

Where: LRGDP = The natural logarithm of Real Gross Domestic Product

CpY = The share of private consumption to GDP

IpY = The share of private Investment to GDP

CgY = The share of government consumption Expenditure to GDP

IgY = The share of government Investment to GDP

HgY = The share of government expenditure on human capital to GDP

ExY = The share of Export of goods and services to GDP

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ and β_6 are coefficients of semi-elasticities and ε is stochastic disturbance term with standard properties. The sign of each coefficient is dependent upon the relative contributions of the corresponding explanatory variables which in turn depend on the functioning of the economic system under consideration.

4.2 ECONOMETRIC PROCEDURE

4.2.1 STATIONARITY AND NON STATIONARITY SERIES

Empirical work based on time series data assumes that the underlying time series is stationary. Stationary implies that the distribution of a process remains unchanged when shifted in time by an arbitrary value. More formally, a stochastic process is said to be weakly stationary if its mean and variance are constant over time and the value of the covariance between the two time periods depends only on the distance or gap between the two time periods and not the actual time at which the covariance is computed. A time series is strictly stationary if all the moments of its probability distribution are invariant over time. However, the normal stochastic process is fully specified by its two moments, the mean and the variance (Gujarati, 2003).

A stationary time series exhibits mean reversion in that it fluctuates around a constant long-run mean, has a finite variance that is time invariant and has a theoretical correlogram that diminishes as lag length increases. Shocks to a stationary time series are necessarily temporary; overtime, the effects of the shock will dissipate and the series will converge to the unconditional mean of the series (Enders, 1995).

However, in time series data, the assumption that the error terms from successive observations are uncorrelated is frequently invalid. In practice most econometric time series are non stationary in the sense that the mean and variance depend on time and thus there are no tendencies for them to hold back to a given value. Non-stationarity is a very

series matter in that regression of one non-stationary variable on another is very likely to yield impressive-seeming regression results which are wholly spurious. In a spurious regression, the results suggest that there are statistically significant long-run relationships between the variables in the regression model (very high R^2 value and significant t-ratios) when in fact all that is being obtained is evidence of contemporaneous correlations rather than meaningful causal relations.

We have encountered two different types of stationary time series models based on whether the trend is deterministic or stochastic. Generally, if the trend in a time series is completely predictable and not variable, we call it a deterministic trend; otherwise we call it stochastic trend. A non-stationary variable of stochastic trend can be transformed into a stationary model by differencing and a non stationary variable of deterministic trend may be eliminated by detrending (regressing it on time) to make it stationary. A series problem is encountered when inappropriate method is used to eliminate trend. It is important to note that most macroeconomic time series are difference stationary process than trend stationary process (Thomas, 1997; Gujarati, 2003).

Whether a variable is stationary depends on whether it has a unit root. If a variable contains a unit root then it is non stationary. Thus, regression involving unit root series can falsely imply the existence of a meaningful economic relationship. The first task in analyzing econometric time series data should be then testing for the presence of unit roots. In this case, it is important to test the order of integration of each variable to know how many times the variable needs to be differenced to result in a stationary series¹⁹.

However, estimating non-stationary models by eliminating trends in variables or by transforming the data so as to make them stationary through the process of differencing cannot be a solution since this procedure throws away potential valuable information

¹⁹ A series Y_t said to be integrated of order d , that is $Y_t \sim I(d)$, if it becomes stationary after differencing d times, so Y_t contains d unit root. A series that is $I(0)$ is stationary.

about long-run relationship about which economic theories have a lot to say. This poses the question of when it is possible to infer a causal long-run relationship between non-stationary time series. The answer is when the variables are cointegrated. By asking the question whether two or more variables are cointegrated, we are asking the question whether there is any long-run relationship between the trends in these variables. The absence of cointegration leads back to the problem of spurious regression. Hence, the concept of integration mimics the existence of a long-run equilibrium to which an economic system converges over time (Harris, 1995: Enders, 1995).

4.2.2 TESTING FOR UNIT ROOTS

Unit root test has become a widely popular approach to test for stationary. A commonly applied formal test for existence of a unit root in the data is the Dickey-Fuller (DF) test- its simple extension being the Augmented Dickey Fuller (ADF) test. The augmentation is adding lagged values (p) of first differences of the dependent variable as additional regressors which are required to account for possible occurrence of autocorrelation.

In this study the Augmented Dickey fuller test is applied which involves estimating the following regressions.

$$\Delta Y_t = \delta Y_{t-1} + \sum_{i=2}^p \psi_i \Delta Y_{t-i+1} + \varepsilon_t \dots \dots \dots [4-4]$$

$$\Delta Y_t = a_0 + \delta Y_{t-1} + \sum_{i=2}^p \psi_i \Delta Y_{t-i+1} + \varepsilon_t \dots \dots \dots [4-5]$$

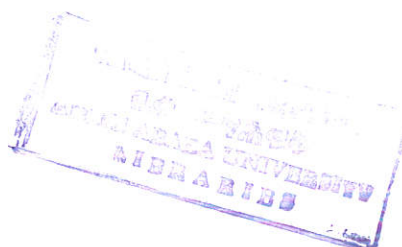
$$\Delta Y_t = a_0 + \delta Y_{t-1} + \sum_{i=2}^p \psi_i \Delta Y_{t-i+1} + a_2 t + \varepsilon_t \dots \dots \dots [4-6]$$

Testing for unit roots using equation [4-4] assumes that the underlying data generating process has no intercept term and time trend. To account for the existence of an intercept term, equation [4-5] is used. Equation [4-6] suggests using intercept and deterministic term to test for the unit root. In all of the above three equations, if $\delta=0$, then Y_t series contains a unit root.

After estimating the equations, the appropriate critical values to be used to test for the presence of a unit root is provided by Dickey Fuller in which the critical values are different for three regressions. After estimating the equations using OLS, the resulting t-statistics is compared with the respective critical values given in Ducky Fuller tables. However, MacKinnon (1991) has implemented a much larger set of simulations than those tabulated by Dickey and Fuller. In addition, MacKinnon estimates the response surface using the simulation results, permitting the calculation of Dickey-Fuller critical values for any sample size and for any number of right-hand variables. Therefore, In this study, MacKinnon critical values are used for unit root test. If the t- calculated is less than the MacKinnon critical value, then the null hypothesis of presence of unit root will not be rejected.

4.2.3 COINTEGRATION TESTS

One possible means of avoiding spurious regression is the application of cointegration techniques which allow the estimation of non spurious regressions with non-stationary data. The economic interpretation of cointegration is that if two (or more) series are linked to form an equilibrium relationship spanning the long-run, then even though the series themselves may contain stochastic trends (i.e., non-stationary) they will nevertheless move closely together overtime and the difference between them will be stable (i.e. stationary) (Enders,1995). Therefore, it is important to view cointegration as a technique to estimate the equilibrium or long-run parameters in a relationship with unit root variables.



In order to determine whether or not a long-run equilibrium relationship exists among the unit root variables in a given model, we need to test empirically that the series in the model are cointegrated. So far there are two major procedures to test for the existence of cointegration, namely, the Engle-Granger two step procedure and the Johanson Maximum Likelihood Estimation procedure.

In the Engle-Granger two-step procedure, variables entering the cointegrating vector are tested for integration of the same order; in fact order of one- $I(1)$. The first step is to estimate the long-run static model of the $I(1)$ variables and obtain residual. If this residual, which is the linear combination of the variables or the disequilibrium, is stationary, then the variables are said to be cointegrated.

The second step in this procedure is to estimate the error correction model (ECM) in which the first difference of the dependent variable is regressed on the first difference of explanatory variables with their appropriate lags, and the first lag of the residual obtained in the first step.

Although the Engle and Granger (1987) procedure is easily implemented, it has several important defects. In the first place, the method has no systematic procedure for the separate estimation of multiple cointegrating vectors. The method only allows for a single cointegration equation. In fact, if there are n variables in a model there may be n or less cointegrating vectors. Another serious defect of the Engle-Granger procedure emanates from the fact that it relies on a two step estimator. The first step is to generate the error series and the second step uses these generated errors for estimation. Hence, any error introduced by the researcher in the first step is carried into the second step. Besides, the estimation of the long-run equilibrium regression requires that the researcher place one variable on the left-hand side (as endogenous) and use the others as regressors (exogenous). However, the test for cointegration should be invariant to the choices of the

variable selected for normalization. In other words, there is a possibility that more than one equation may depict the long-run relationships among the various variables.

The Johanson (1988) Maximum Likelihood Estimation procedure avoids the use of two-step Engle-Granger procedure and can estimate and test for the presence of multiple cointegrating vectors. Johanson procedure also allows testing restricted versions of cointegrating vector(s) and speed of adjustment parameters for the purpose of testing a theory by drawing statistical inferences concerning the magnitudes of the estimated coefficients. In this procedure, the existence of co-integration relationship is tested using vector error correction mechanism (VECM) and arbitrary selection of endogenous and exogenous variables is avoided. Owing to its apparent superiority to that of the Engle-Granger methodology, in this study the Johanson Maximum Likelihood Procedure is applied for empirical analysis.

4.2.4 SHORT RUN MODEL

Obtaining long-run estimates of cointegration relationships is only a first step to estimating the complete model. The short-run structure of the model is also important in terms of the information it conveys on the short run adjustment behavior of economic variables. The analysis of short-run dynamics is often done by first eliminating trends in the variables, usually by differencing. This procedure, however, throws away potential valuable information about long-run relationships about which economic theories have a lot to say.

The more appropriate approach is to convert the dynamic model into an error-correction model (ECM). EMC contains information on both the short-run and long-run properties of the model, with disequilibrium as a process of adjustment to the long run model.



4.3 EMPIRICAL RESULTS AND INTERPRETATION

4.3.1 RESULTS FOR UNIT-ROOT TESTS

As discussed earlier, the unit-root test helps to detect whether a variable is stationary or not. The test also helps to detect the order of integration at which the variables can be stationary. Hence, tests for the unit roots are the primary task before conducting cointegration analysis. The augmented Dickey-Fuller unit root test results of the variables used in the analysis are presented below in Table 4-1 and Table 4-2.

Table 4-1. Unit Root Test Results of Variables in Levels

Variables in levels		Without Drift and trend with lag of		With Drift with lag of		With Drift and trend with lag of	
		1	2	1	2	1	2
LRGDP		3.567**	5.054**	-0.122	0.281	-2.409	-1.77
CpY		-0.388	-0.286	-2.681	-3.758**	-2.647	-3.719*
IpY		-0.991	-0.908	-1.593	-1.500	-1.188	-1.103
CgY		-0.121	0.078	-2.047	-1.902	-2.800	-2.520
IgY		0.092	0.378	-1.313	-0.942	-2.555	-2.187
HgY		1.659	1.574	0.042	0.117	-2.450	-3.357
ExY		0.616	0.628	-1.011	-0.894	-1.836	-1.773
Critical values ²⁰	1%	-2.618	-2.620	-3.593	-3.597	-4.190	-4.196
	5%	-1.949	-1.949	-2.932	-2.934	-3.519	-3.522

* Denote rejection of the null at 5% significance level

** Denote rejection of the null at 1% significance level

²⁰ Mackinnon critical values for rejection of hypothesis of a unit root

Table 4-2. Unit Root Test Results of Variables in First Difference

Variables in first difference		Without Drift and trend with lag of		With Drift with lag of		With Drift and trend with lag of	
		1	2	1	2	1	2
Δ LRGDP		-4.153**	-1.872	-7.309**	-3.641**	-7.237**	-3.625*
Δ CpY		-4.010**	-4.240**	-3.963**	-4.184**	-3.929*	-4.149*
Δ lpY		-5.621**	-4.824**	-5.567**	-4.813**	-5.652**	-5.043**
Δ CgY		-4.586**	-4.422**	-4.623**	-4.525**	-4.609**	-4.507**
Δ lgY		-5.711**	-3.970**	-5.786**	-4.105**	-5.715**	-4.047*
Δ HgY		-3.291**	-3.812**	-3.737**	-4.505**	-3.854*	-4.617**
Δ ExY		-4.597**	-3.718**	-4.668**	-3.813**	-4.721**	-3.894*
Critical values ²¹	1%	-2.620	-2.621	-3.597	-3.602	-4.196	-4.202
	5%	-1.949	-1.949	-2.934	-2.936	-3.522	-3.525

* Denote rejection of the null at 5% significance level

**Denote rejection of the null at 1% significance level

Table 4-1 depicts unit root test results of all variables in equation [4-3] in levels. The augmented Dickey Fuller test for the unit root indicate that the dependent variable is stationary at levels if no drift and trend are included. However, if drift and trend are included in the test, all variables become non-stationary except the variable CpY which becomes stationary with lag two. On the other hand, unit root test results of the variables in first difference (Table 4-2) indicate that all variables are stationary at first difference.

Since unit root tests often suffer from poor size and power property, (i.e., the tendency to over-reject the null hypothesis of non stationary when it is true and under reject the null when it is false, respectively) it is quite common to proceed to tests for cointegration even

²¹ Mackinnon critical values for rejection of hypothesis of a unit root

when the unit root tests suggest that the variables are unbalanced. In other words, it is possible that cointegration is present even when there is a mix of I(0), I(1) and I(2) variables in the model (Harris, 1995). Hence, the above unit root tests result do not prohibit one to employ the Johanson Maximum Likelihood Procedure to test for the existence of cointegration.

4.3.2 COINTEGRATION ANALYSIS

The implication that non-stationary variables can lead to spurious regressions unless there is at least one cointegration vector is that some form of testing for cointegration is almost mandatory. In this paper VAR-based cointegration tests using the methodology developed by Johanson is adopted. According to Johanson procedure, the variables of the specified model are represented by defining a vector of potentially endogenous variables Y_t which is modeled as an unrestricted vector autoregressive (VAR) of order p .

$$Y_t = A_1 Y_{t-1} + A_2 Y_{t-2} + \dots + A_p Y_{t-p} + B X_t + \varepsilon_t \dots \dots \dots [4-7]$$

Where Y_t is an (nx1) vector of non stationary I(1) variables, A_i and B are matrices of parameters, X_t is a vector of deterministic exogenous variables, and ε_t is a vector of innovations which is normally and independently distributed with mean of null vector and vector of variance.

The vector error correction model (VECM) counterpart of the VAR model in [4-7] can be formulated as:

$$\Delta Y_t = \sum_{i=1}^{p-1} \Gamma_i \Delta Y_{t-i} + \pi Y_{t-1} + B X_t + \varepsilon_t \dots \dots \dots [4-8]$$

Where $\Gamma_i = - \sum_{j=i+1}^p A_j$, containing information of short-run adjustments to changes in Y_t

$$\pi = \sum_{i=1}^p A_i - I, \text{ containing long-run adjustments to change in } Y_t$$

π can be represented by equation $\pi = \alpha\beta'$, where α , an $n \times r$ matrix, represents the speed of adjustment to disequilibrium, while β is an $n \times r$ matrix of long run coefficients in the case of reduced rank ($0 < r < n$)²². r is the rank of a matrix that is going to be determined and n is the number of variables entering the cointegration space. This implies that, the term $\beta'Y_{t-1}$, which is included in [4-8] represents up to $(n-1)$ cointegration relationships (linear combinations) that ensure the convergence of vector Y_t to their long-run steady-state path. Thus, Johanson's method is to estimate the π matrix in an unrestricted form, then test whether we can reject the restrictions implied by the reduced rank of π .

To determine the number of cointegrating vector (rank of a matrix), the null hypothesis of no cointegration between variables is tested against the alternative hypothesis that there is at least one cointegration vector between variables. The number of distinct cointegrating vectors can be obtained by checking the significance of the characteristic roots of $\pi = \alpha\beta'$. The number of distinct cointegrating vector (rank of a matrix) is equal to the number of the characteristic roots that differ from zero (Enders, 1995). Thus, testing that there is $n-1$ cointegrating vectors is equivalent to testing that the first $r (=n-1)$ eigenvalues are non-zero while the remaining $n-r$ eigenvalues are zero. This is the same as testing that the last $(n-r)$ columns of the α -matrix are effectively zero (Harris, 1995).

If there is one cointegrating equation in the system, then a single linear combination of the levels of the endogenous series $\beta'Y_{t-1}$, should be added to each equation in the VAR.

²² if there is full rank ($r=n$), all variables in Y_t are in fact stationary, which implies that there is no problem of spurious regression and the appropriate modeling strategy is to estimate the standard Sims-type VAR in levels (i.e. equation 4-7). On the other extreme if $r=0$ (but this contradicts the fact that the variables are $I(1)$), then the matrix is null and the model is the usual VAR in first differences as there is no long run relationships among variables

When multiplied by a coefficient for an equation, the resulting term $\alpha \beta' Y_{t-1}$, is referred to as an error correction term. If there are additional cointegrating equations, each will contribute an additional error correction term involving a different linear combination of the levels of the series.

In Johanson procedure, the likelihood ratio (LR) test is used to test the significance of estimates of λ_i eigenvalues. λ_{trace} and λ_{max} statistics²³ are used to test the number of characteristic roots that are insignificantly different from unity. The trace statistics tests whether there is at most one cointegrating relationship while the maximal statistics used to test the null hypothesis that there are r- cointegrating vectors as against the alternative hypothesis of $r < 1$. To determine the number of cointegrating relations r, we can proceed sequentially from $r = 0$ to $r = n-1$ until we fail to reject the hypothesis.

Table 4-3. Tests for the number of cointegrating vectors

Ho:rank = r	Eigenvalues(λ_i)	-Tln(1- λ_{r+1})	λ_{max} (95%)	-T \sum ln(1- λ_i)	λ_{trace} (95%)
r = 0	0.704653	51.22 **	45.3	139.7**	124.2
r ≤ 1	0.525811	31.34	39.4	88.48	94.2
r ≤ 2	0.446259	24.82	33.5	57.15	68.5
r ≤ 3	0.326986	16.63	27.1	32.32	47.2
r ≤ 4	0.228981	10.92	21.0	15.69	29.7
r ≤ 5	0.0894382	3.94	12.1	4.77	15.4
r ≤ 6	0.0196391	0.83	3.8	0.83	3.8

** denotes rejection of the null at 1 % significance

²³The λ_{trace} and λ_{max} statistics are given by the formula $\lambda_{\text{trace}} = -T \sum_{i=r+1}^n \ln(1-\hat{\lambda}_i)$ & $\lambda_{\text{max}} = -T \ln(1-\hat{\lambda}_{r+1})$ respectively, where $\hat{\lambda}_i$ is the i-th largest eigenvalues and T=number of variables.

Number of lags used in analysis = 2
Variables entered unrestricted = constant
Vector AR-2 F (98, 53) = 1.3800 [0.0996]
Vector normality χ^2 (14) = 21.979 [0.0791]
Vector hetero χ^2 (784) = 813.57 [0.2253]

The diagnostic tests show that the model has passed all tests. The result presented in Table 4-1 implies that the null of no cointegration is rejected at 1% level of significance while the alternative hypothesis that at least one cointegrating vector is not rejected by both λ_{\max} and λ_{trace} statistics. This suggests that there exist precisely one cointegrating vector in the estimated model. Hence, we can conclude that there is long-run relationship between the variables which is explained by a linear combination of I(1) variables. Results of the Johanson's cointegration analysis are presented in Table 4-4.

Once the existence of only a unique cointegrating vector is statistically supported, what is relevant for our analysis is the first column of the α -matrix (the matrix of speed of adjustment coefficients) and the first row of the β matrix (long-run coefficients of the variables) in Table 4-4.

There is a need to impose zero-restriction on α -coefficients to test which entries of α in the relevant vector are statistically zero. This is essentially a test for weak exogeneity which helps to identify endogenous and exogenous variables in the model. Rejection of weak exogeneity implies that the variables under investigation are endogenous. The result of tests for weak exogeneity is presented in Table 4-5.

Table 4-4. PC Fiml Output of standardized beta eigenvectors and standardized alpha coefficients

Standardized\ beta eigenvectors							
<u>LRGDP</u>	<u>CpY</u>	<u>IpY</u>	<u>CgY</u>	<u>IgY</u>	<u>HgY</u>	<u>Exy</u>	
1.0000	-12.485	-3.9153	-4.9429	4.0343	-38.323	7.447	
-1.9820	1.0000	-1.7078	3.854	-1.007	24.347	6.402	
-0.206	1.013	1.0000	3.563	-2.870	1.364	0.558	
-0.069	1.934	3.579	1.0000	4.346	-4.122	0.565	
-0.092	-0.728	0.776	0.681	1.000	4.534	-4.034	
-0.029	-0.037	0.043	0.034	-0.218	1.0000	-0.046	
0.086	0.639	-0.732	0.050	1.166	-12.145	1.000	
Standardized\ alpha coefficients							
LRGDP	-0.09803	0.01181	0.03329	0.19409	-0.0772	1.1932	-0.04117
CpY	0.0387	-0.0115	0.0552	-0.1319	0.0346	0.266	-0.0176
IpY	-0.02385	0.0456	-0.0295	0.0252	-0.0146	-0.8140	-0.00975
CgY	0.00384	0.00805	-0.1327	-0.0159	-0.0642	0.3425	0.01702
IgY	-0.0207	-0.0182	0.0685	-0.00555	-0.0240	0.3281	0.0139
HgY	0.000912	-0.0067	0.0252	0.00871	-0.00932	-0.1032	-0.000627
ExY	-0.0302	-0.0357	-0.0190	0.0107	0.01434	-0.1326	0.000492

It is evident from table 4-5 that we may reject the weak exogeneity hypothesis for LRGDP, CpY, CgY and ExY. This implies that it is possible to normalize LRGDP, CpY, CgY and ExY conditional on the remaining variables in order to explain their long-run behaviour.

Table 4-5. Tests for zero restrictions on α -coefficients

Variables	α -coefficients	LR test,chi 2(1)	P-values
LRGDP	-0.0983	11.363	0.0007**
CpY	0.0387	7.335	0.0068**
IpY	-0.2385	2.9084	0.0881
CgY	0.00384	0.0727	0.7874
IgY	-0.0207	4.7763	0.0289*
HgY	0.000912	0.1013	0.7503
ExY	-0.0302	9.1402	0.0025**

In our case, since LRGDP is the most important variable as endogenous variable, we normalize it by conditioning on the remaining variables. Thus, the relevant single equation model with the estimates of the long-run coefficients can be constructed as:

$$\text{LRGDP} = 12.485 \text{ CpY} + 3.9153 \text{ IpY} + 4.9429 \text{ CgY} - 4.0343 \text{ IgY} + 38.323 \text{ HgY} - 7.447 \text{ ExY} \dots\dots\dots [4-9]$$

Given this cointegrating vector, the error correction term ($\alpha_{11} = -0.0983$) measures adjustment towards the long-run steady state path. It is statistically significant and its sign (negative) implies convergence. However, since the magnitude of the error correction term is very low, the adjustment towards the long-term steady state path is too weak.

To determine which variables are uniquely constituting the cointegrating vector [4-9] the significance of the long-run coefficients of the respective variables should be tested. Thus, a zero-restriction is imposed on each coefficient. Accordingly, the likelihood ratio tests result is presented in table 4-6.

Table 4-6. Tests for zero restrictions on β -coefficients

	CpY	IpY	CgY	IgY	HgY	ExY
β coefficients	-12.485	-3.9153	-4.9429	4.0343	-38.323	7.447
LR-test: $\chi^2(1)$	19.318	2.6567	3.0939	1.3484	8.683	6.7157
p- value	[0.0000]**	[0.1031]	[0.0786]	[0.2456]	[0.0032]**	[0.0096]**

** denotes rejection of the null of zero coefficient at 1% significance level

Table 4-6 indicates that IpY, CgY and IgY are not statistically significant in explaining the real GDP in the long-run. CpY, HgY and ExY, on the other hand, are significant in explaining the variation in LRGDP.

Among government expenditure components, only expenditure on human capital (HgY) underscores strongest positive impact on growth. Government expenditure on human capital (HgY) has possibly improved human development outcomes thereby boosting

long-run growth. The narrow base of education and health sectors and the highest priority given to primary education and basic preventive health care by government could probably explain the effect.

Government capital (investment) spending shows a negative but insignificant influence on economic growth. This may not be surprising given the structure of Ethiopian Economy. The result obtained is consistent with the work of Kweka and Morrissey (1999).

It is possible to argue that government investment as a share of GDP has less to explain GDP growth in Ethiopia probably because the economy is highly dependent on labour intensive agricultural sector which in turn depend on vagaries of nature (availability of rain fall). Besides, government capital spending might create distortionary financing there by reducing incentive to save and accumulation of capital. Hence, the provision and financing of public spending possibly crowded-out private sector which leads to reduced economic growth.

Lack of complementary policy development (e.g. land policy, efficient administration, political stability) could also be cited as possible reason for poor performance of government investment in Ethiopia (Teshome, 1994). Moreover capacity deficiency, unmotivated civil servant, poor administration may result in poor quality of public investment.

Private consumption has positive and significant impact on growth. This may imply that high private consumption in Ethiopia has strong effect on human economic behavior in that it is likely to trigger employment, profitability and investment.

On the other hand, In Ethiopia, about 85% of the total population resides in rural area whose livelihoods depend on agriculture. This implies that the country's overall growth



performance basically depends on the status of this massive rural population. However, Most of the rural residents run subsistence life in that they produce mainly for consumption. Even when their production increases because of good harvest, additional income goes to more consumption rather than saving or investing. It is this growing private consumption that significantly explains economic growth in Ethiopia. This reflects the prevalence of structural problems which have persisted over many years.

Private investment appears to have positive coefficient but insignificant possibly because the private sector is very small and underdeveloped in Ethiopia.

Another result of the estimation of the long-run model is the negative (and significant) impact of export on growth of real GDP. This implies that export in Ethiopia remains unproductive. The country continues to export the same primary commodities as it did for many years while world price is on declining trend. Therefore, the main reason that constrained export from playing its role in promoting growth probably lies on failure of the country in bringing about a structural transformation that would have broaden the export base.

4.3.3 ESTIMATION OF THE SHORT- RUN MODEL

The zero restriction tests on α -coefficients indicated that there are four endogenous variables in our model. In this case, OLS method will result in simultaneous equation bias in estimating the short-run model. Therefore, we have to resort to simultaneous equation system of two stage least square (2-SLS) estimation method to estimate LRGDP, CpY, IgY and ExY. The general unrestricted error correction specification of the 2 SLS for LRGDP, which is our interest, is presented in equation [4-10]. The analogous specifications for CpY, IgY and ExY are reported in Appendix-5.

$$\begin{aligned}
\text{DLRGDP} = & -0.168 + 0.047\text{DLRGDP} - 1.666\text{DCpY}_1 - 1.482\text{DIgY}_1 - 0.461\text{DExY}_1 - 0.107\text{DIpY} \\
& (-2.75) \quad (0.220) \quad (-2.59) \quad (-1.74) \quad (-0.704) \quad (-0.276) \\
& - 1.643\text{DIpY}_1 + 0.283\text{DCgY} - 0.411\text{DCgY}_1 + 1.459\text{DHgY} - 1.524\text{DHgY}_1 \\
& (-2.50) \quad (0.75) \quad (-0.841) \quad (0.742) \quad (-0.834) \\
& - 0.025 \text{VECM}_1 \dots \dots \dots [4-10] \\
& (-3.34)
\end{aligned}$$

The values in parenthesis are t-values

Diagnostic Tests

AR 1-2 = 1.388 [0.2663]	Vector Normality Chi ² (8) = 11.32 [0.1842]
ARCH 1-1 = F(1,28) = 0.460 [0.4557]	Vector Hetro = 0.08895 [1.0000]
Hetro F (1,28) = 1.1175 [0.4726]	

In the estimated model, D is the difference operator indicating the first difference of variables. VECM_1 represents the first lag of cointegrating vector for LRGDP specification, and other variables are as defined earlier. The diagnostic tests AR 1-2 (the error autocorrelation test), ARCH (a test for autoregressive conditional heteroscedasticity), vector heteroscedasticity and vector normality do not detect statistical problems. Since all variables included in the short-run model [4-9] are stationary, the standard t-values and the diagnostic tests are valid.

The coefficient of the vector error correction term has the expected sign and it is significant. The coefficient indicates a speed of adjustment of 2.5% from actual growth in the previous year to equilibrium rate of economic growth. This is a lower speed of adjustment implying that it takes many years for all errors /deviations to be corrected. The negative sign of vector error correction term implies that any shock in the system will return back to its long run path.

All components of government expenditure fail in explaining short-run fluctuations. Only private consumption and private investment are significant at 5% level, which demonstrate negative short-run effect on economic growth.

CHAPTER FIVE

CONCLUSIONS AND POLICY IMPLICATIONS

5-1. CONCLUSIONS

Economic growth which can be defined as sustainable growth in real GDP is the overriding objective of developing countries in their effort to abolish poverty and achieve sustainable development. Towards this end, nowadays these countries designed Millennium Development Goals (MDGs) to be implemented with the help of multilateral and bilateral donors. These countries need to spend much of their resources in an effort to achieve these broad goals so as to extricate themselves from the trap of low equilibrium position. In this case the role of government, through its policy instruments, is indispensable because not only private sector is not yet flourished but also there exist very low level of infrastructural facility and social capital.

Fiscal instruments deemed to be essential to create opportunity for widening the base at which developing countries could grow with a sense of urgency. Among fiscal instruments, government spending (which is the focus of this study) is very important at the disposal of these countries. It follows that to achieve accelerated economic growth and sustainable development, government spending should be such that it create conducive environment for the private sector development and rectify market failures. In this case studying empirically the impact of government spending on economic growth has paramount importance to draw important policy implications. The theme of this study is to address such issues.

As to the impact of government spending on economic growth, there is no consistent theory developed to rely up on. Classical economists recommend little government spending thus lower government spending. Keynesian economist on the other hand emphasized government spending as a stimulus to a stagnant economy. Others, such as

Baro (1990) explain the role of government spending by disaggregating it in which productive government spending enhances economic growth while unproductive government spending retard it. However, there is no consensus about the classification of productive and non productive government spending. Others, such as Vedder and Gallaway emphasized the evolutionary role of government. At low level of economic development, the role of government spending is very high and as economy develops, the law of diminishing returns begin to operate and consequently after some point the adverse role of government spending outweighs.

Likewise various empirical studies reached at different and often conflicting conclusions. These differences emanate from the methodology adopted, the way government spending is disaggregated and the countries and time considered in the study. Thus neither the theoretical set up nor the empirical studies give a clear guide concerning the impact of government spending on economic growth. In fact there is a widely acceptable notion of the fact that there are circumstances in which lower level of government spending would enhance economic growth and other circumstances in which higher levels of government spending would be desirable. In this case, Break (1982) underlined that the comprehensive measure of the economic role of government should be multi-dimensional.

In this study both qualitative approach and econometric analysis are employed to study the impact of government spending on economic growth for the case of Ethiopia. In analyzing the trend and structure of government spending, it is found that government spending has been growing consistently in real terms. The study tries to analyze the impact of government spending along the three distinct regimes (imperial, derg and post-1991) because spending policies and performances are largely correlated with distinct nature of these regimes. During the imperial era (1942-1974) the economy is largely dominated by private ownership and the magnitude and the rate of growth of public expenditure is the least compared to the other two regimes. In this period, much emphasis

was given to productive sector of the economy and accordingly public expenditure on agriculture and industry sectors are relatively larger. The magnitude of fiscal deficit, which is basically a result of faster growth of expenditure relative to revenue, was very low and manageable and much of the deficit was financed from external sources. Domestic borrowing was received a strong fiscal discipline and as a result there was no much inflationary pressure. We see more or less steady economic growth in this era as short-run shocks were minimal compared to other regimes.

The derg regime (1974/75-1990/91) manifested a phenomenon growth in public expenditure consistent with the ideology it pursued. Private sectors were deliberately discouraged to ever enhance the involvement of government in the economy. Moreover, the persistent civil war and foreign aggression escalated current expenditure which otherwise could be applied to development endeavors. There was also lesser growth of foreign trade tax (which contributed the largest share in domestic revenue) resulted from stringent foreign trade policy. These realities contributed fiscal deficits to grow steadily. The regime used every opportunity to finance the deficit from domestic borrowing which brought about inflationary pressure and macro economic imbalances. In this period the annual average growth rate of real GDP was only 2.02% with much fluctuation.

In the post-1991 period, average annual real GDP growth rate of 4.47% was registered owing to better policy environment and relative peace achieved compared to the prior regime. However, considering the lowest growth base of the country, the rate of growth of population and compared to other least developed countries, this growth rate cannot be taken as satisfactory. Like the derg regime, in the current regime too, the registered economic growths are not sustainable. It is much dependent upon the performance of agriculture which in turn depends on availability of adequate rainfall.

The economic policy pursued in post-derg period refers market oriented economy as a guiding principle. On the expenditure side, effort has been made to restructure it with the

aim of encouraging private sector participation in economy and building basic social and physical infrastructure. In this period, government expenditure as a ratio of GDP is growing largely because of huge investment on Sector Development Programs (Education, health, roads) which are significantly financed by foreign aid and loan. However, the flow of foreign sources is very much volatile which is largely determined by donors' stringent conditionalities. These have retarded the performance of Public Investment Programs. However, it is enshrined in the current five-year development strategy of the government (PASDEP) that the role of foreign resources remains decisive in achieving MDGs and ultimately in eradicating poverty.

Since the share of Regional States' expenditure to overall (country wide) expenditure is significant, regions' role is important in discussing about the impact of government spending on economic growth. To this effect, regions' capacity to administer and utilize public expenditure is minimal largely due to shortage of skilled manpower.

The econometric analysis of this study adopts Johanson Maximum Likelihood Estimation procedure. Natural logarithm of real GDP is taken as regressand while the share of private consumption, private investment, government capital (investment) spending, government consumption expenditure, government human capital expenditure and export to GDP are taken as explanatory variables. In the cointegration analysis it is found that there is single cointegrating vector and this implies that there is long-run relationships among the variables. The long run result shows that expenditure on human capital has a very significant positive impact on growth of real GDP. Besides, private consumption has significant positive impact on economic growth. Government investment expenditure is not significant and the sign of its coefficient is also negative, which probably reflects the inefficient and poor quality nature of public investment.

Regarding the short run model, the two stage least square estimation of error correction formulation reveals that there is convergence towards equilibrium in the long run

although the adjustment is weak (2.5% per annum). On the other hand, only private investment and private consumption expenditures have short term effect (negative) in explaining the growth of real GDP.

5-2. POLICY IMPLICATIONS

Growth in Ethiopia underscores volatility. In view of its lowest economic position, compared even with Sub-Saharan Africa, and considering the higher rate of population growth, the rate of economic growth so far registered is very low and does not signal sustainability. Government expenditure, as a means of fiscal instrument, could not play its expected role to reverse the situation. In this regard it is interesting to draw some policy implication from the findings of this study.

First, the guiding principle for public investment should be complimentary rather than compete with private investment. It is believed that the direct contribution of most public investment to economic growth is not so high. This is because in public investment political forces dominate when politician and bureaucrats decide how money is spent with less incentive for increased productivity. However in private investment economic forces guide the allocation of resources where there is swift punishment on those who make bad decisions. It is generally its effect on the productivity of private investment that makes public investment worthwhile. Therefore, the role of government should be extended to ensure the magnitude and the quality of private investment as high as possible. In one way or another government should not involve in areas where private sector could perform efficiently (in such areas as trade, industry and transport).

Second, prudent fiscal policy should be pursued to widen and strengthen the revenue base in order to avoid costly or distortionary financing of the ever increasing government expenditure. For example, much dependence upon foreign resources in financing major capital expenditure did not create favorable condition to run long-run government

investment programs as demanded. We see massive inflow of foreign resources in one time and complete disruption in other time based on donors' conditionality .Depending on such unreliable means of financing will consequently lead to instability and disruption.

Third, for government investment to be productive, qualified civil servants should be attracted and motivated. However, the salary structure of civil servants is by far lower compared to other private company and NGOs. There is always high turn over among civil servants. Government sector being employer of the last resort could not sustain the desired qualified workers which in fact contribute to low quality of government investment.

Fourth, besides prioritization of public expenditures, government spending should be judged not only by virtue of its economic returns, but also the technical, administrative and financial feasibility should be considered. Proper measure of cost and benefits of various government spending is essential in this respect. A clear set of specified criteria for deciding the allocation of resources avoid arbitrary allocations and rent seeking by promoting transparency and accountability.

Fifth, in an effort to achieve MDGs and accomplish the huge tasks enshrined in PASDEP, Ethiopia faces heavy and increasing pressures to spend on education, health and other physical infrastructures whilst at the same time its prospects are such that revenue buoyancy is likely to be very limited over the next few years. Hence, it is important to think of ways of reducing or restricting the growth rate of the element of public supply in respect capital investments that private sector can effectively handle. This naturally leads to some reduction of expenditure where such possibilities are likely to exist.

Finally, government has a bigger responsibility in creating stable and conducive economic and political environment, building general consensus and mobilizing its people in development endeavor if the country has to direct itself into long-run growth path.

BIBLIOGRAPHY

- Abramovitz, Moses (1983), "Review of Towards an Explanation of Economic Growth", *Journal of Economic Literature*, pp: 783-82.
- Bailey, Stephen J. (2002), "Public Sector Economics: Theory, Policy and Practice", 2nd ed., Great Britain.
- Barro, Robert J. (1990), "Government Spending in a Simple Model of Endogenous Growth", *The Journal of Political Economy*, Vol. 98, No. 5, S103-S125.
- Befekadu Degefe (1994), "The Legal Framework for Fiscal Decentralization in Ethiopia During the Transition Period", in Eshetu Chole (eds.), *Fiscal Decentralization in Ethiopia*, Addis Ababa.
- Bleaney, Michael; Gemmell, Norman; Kneller, Richard (2001) "Testing the Endogenous Growth Model: Public Expenditure, Taxation, and Growth over the long runvcz", *The Canadian Journal of Economics*, Vol. 34, No. 1, 36-57.
- Bose, Niloy; Haque, M Emranul; Osborn, Denise R (2003), "Public Expenditure and Economic Growth: A Disaggregated Analysis for Developing Countries", University of Manchester, UK; University of Wisconsin, USA.
- Branson, William H. (2002), "Macroeconomic Theory and Policy", 2nd ed., Nice Printing Press, Delhi.
- Break, George F. (1982), "Issues in Measuring the Level of Government Economic Activity", *The American Economic Review*, Vol. 72, No. 2, 288-295.
- Brown, C.V. and Jackson, P.M. (1996), "Public Sector Economics", 4th ed., Blackwell Publishers Ltd, UK.
- Brukhead, Jesse and Miner, Jerry (1979), "Public Expenditure", Aldine Publishing Co., USA.

BIBLIOGRAPHY

- Abramovitz, Moses (1983), "Review of Towards an Explanation of Economic Growth", *Journal of Economic Literature*, pp: 783-82.
- Bailey, Stephen J. (2002), "Public Sector Economics: Theory, Policy and Practice", 2nd ed., Great Britain.
- Barro, Robert J. (1990), "Government Spending in a Simple Model of Endogenous Growth", *The Journal of Political Economy*, Vol. 98, No. 5, S103-S125.
- Befekadu Degefe (1994), "The Legal Framework for Fiscal Decentralization in Ethiopia During the Transition Period", in Eshetu Chole (eds.), *Fiscal Decentralization in Ethiopia*, Addis Ababa.
- Bleaney, Michael; Gemmell, Norman; Kneller, Richard (2001) "Testing the Endogenous Growth Model: Public Expenditure, Taxation, and Growth over the long runvcz", *The Canadian Journal of Economics*, Vol. 34, No. 1, 36-57.
- Bose, Niloy; Haque, M Emranul; Osborn, Denise R (2003), "Public Expenditure and Economic Growth: A Disaggregated Analysis for Developing Countries", University of Manchester, UK; University of Wisconsin, USA.
- Branson, William H. (2002), "Macroeconomic Theory and Policy", 2nd ed., Nice Printing Press, Delhi.
- Break, George F. (1982), "Issues in Measuring the Level of Government Economic Activity", *The American Economic Review*, Vol. 72, No. 2, 288-295.
- Brown, C.V. and Jackson, P.M. (1996), "Public Sector Economics", 4th ed., Blackwell Publishers Ltd, UK.
- Brukhead, Jesse and Miner, Jerry (1979), "Public Expenditure", Aldine Publishing Co., USA.

- Chaudhuri, Mrinal Datta (1990), "Market Failure and Government Failure", *The Journal of Economic Perspectives*, Vol. 4, No. 3, 25-39.
- Cullis, John and Jones, Philip (1998), "Public Finance and Public Choice", 2nd ed, Oxford University Press inc., New York.
- Devereux, Michael and Love F., David R. (1995) "The Dynamic Effects of Government Spending Policies in a Two-Sector Endogenous Growth Model", *Journal of Money, Credit and Banking*, Vol. 27, No. 1, 232-256.
- Dickenson, Trotman D.I. (1996), "Economics of Public Sector", Macmillan Press LTD, Malaysia.
- Enders Walter (1995), "Applied Econometric Time Series", John Wiley & Sons, Inc., USA.
- Endrias, Bruke (1996), "Productivity of Government Spending and Test of Causality Between Government Expenditure and Economic Growth", Unpublished, M.Sc. Thesis.
- Eshetu, Chole (1984), "Towards a History of the Fiscal Policy of the Pre-Revolutionary Ethiopian State: 1941-1974", *Journal of Ethiopian Studies*, Vol. XVII, Addis Ababa.
- Fan, shenggen and Rao, Neetha (2003), "Public Spending in Developing countries: Trends, Determination, and Impact", *EPTD Discussion Paper No. 99*, USA.
- Folster, Stefen and Henrekson, Magnus (1999), "Growth and the Public Sector: A critique of critics", *European Journal of Political Economy*, Vol. 15, No. 2, 337-358.
- Gemmell N. and Kneller R. (2001), "The Impact of Fiscal Policy on Long Run Growth, European Economy", London.
- Gubta, Sanjeev; Clements, Benedict; Inchauste, Gabriela (2004), "Helping Countries Develope: The Role of Fiscal Policy", IMF, Washington, D.C.
- Gujarati, Domador N. (2003), "Basic Econometrics", 4th ed., Mc Graw Hill co., New York.

- Harris, C. Lowell (1956), "Government Spending and Long-Run Economic Growth", *The American Economic Review*, Vol. 46, No. 2, 155-170.
- Harris, R.I.D. (1995), "Using Cointegration Analysis in Econometric Modeling, Simon and Schuster International Group", England.
- Heller, Peter S. and Diamond, Jack (1990), "International Comparisons of Government Expenditure, Revisited The Developing Countries, 1975-86", *Occasional Paper 69*, IMF, Washington, D.C.
- Imperial Ethiopian Government (1962), "Second Five Year Development Plan 1955-1959 E.C., Addis Ababa, Berhanenna Selam Printing Press.
- Imperial Ethiopian Government (1968), "Third Five Year Development Plan 1961-1965 E.C., Addis Ababa, Berhanenna Selam Printing Press.
- Kalecki, Michael (1972), "Selected Essays on Economic Growth of the Socialist and the Mixed Economy", Cambridge University Press.
- Kormendi, Roger C., and Meguire, Philip G. (1985), "Macroeconomic Determinants of Growth, Cross-Country Evidence", *Journal of Monetary Economics*.
- Krueger, Anne O. (1990), "Government Failures in Development", *The Journal of Economic Perspectives*, Vol. 4, No. 3, 9-23.
- Kweka, Josaphat P. and Morrissey, Oliver (1999), "Government Spending and Economic Growth, Empirical Evidence from Tanzania (1965-1996)", CREDIT and School of Economics, University of Nottingham.
- Leach, Graeme (2002), "We are Going the Wrong Way-Tax and Spend Fiscal Policy", *IoD Policy Paper*, London
- Lin, S.A.Y. (1994), "Government Spending and Economic Growth", *Applied Economics*, Vol 26, 83-94.
- Lombardini, Siro (1996), "Growth and Economic Development", Cheltenham, UK.

- MEDaC (1999), "Survey of the Ethiopian Economy, Review of Post-Reform Developments (1992/93-1997/98)", Addis Ababa, Ethiopia.
- Meier, Gerald M. (1971), "Leading Issues in Economic Development Studies in International Poverty", 2nd ed. Oxford University Press, London.
- MOFED (2004), "Millennium Development Goals Report: Challenges and Prospects for Ethiopia", Volume 1, Addis Ababa.
- MoFED (2004), "Report: Challenges and Prospects for Ethiopia", Volume 1, Addis Ababa.
- MoFED (2005)¹, "Ethiopia: The Millennium Development Goals (MDGs) Need Assessment Synthesis Report", Development Planning and Research Department, Addis Ababa.
- MOFED (2005)², "Ethiopia: A plan for Accelerated and Sustained Development to End Poverty (PASDEP), 2005/06-2009/10, Addis Ababa.
- Mrinal Datta-Chaudhuri (1990), "Market Failure and Government Failure", *The Journal of Economic Perspectives*, Vol. 4, No. 3, 25-39.
- Musgrave, Richard A. and Musgrave, Peggy B. (1989), "Public finance in Theory and Practice", 5th ed., McGraw-Hill International Editions, Singapore.
- Musgrave, Richard A. (1969), "Fiscal Systems", Yale University Press, London.
- Musgrave, Richard A. (1997), "Reconsidering the Fiscal Role of Government", *The American Economic Review*, Vol. 87, No. 2, 156-159.
- Nurkse, Ragnar (1955), "Problems of Capital Formation in Underdeveloped Countries", Blackwell, Oxford.
- Perham, Margery (1969), "The Government of Ethiopia", Faber & Faber Ltd, London.
- Prest, A.R (1985), "Public Finance in Developing Countries", Butler and Tanner Ltd, London.

Proclamation No. 206/1963 (1963), “Money and Banking Proclamation”, Addis Ababa.

Proclamation No. 7/1992 (1992), “A Proclamation to Provide for the Establishment of National/Regional Self Governments”, *Negarit Gazeta*, 51st Year No.2, Addis Ababa.

Proclamation No. 1/1995 (1995), “A Proclamation to Pronounce the Coming into Effect of the Constitution of the Federal Democratic Republic of Ethiopia”, Addis Ababa.

Ram, Rati (1986), “Government Size and Economic Growth: A New Framework and Some Evidence from Cross-Section and Time-Series Data”, *The American Economic Review*, Vol. 76, No. 1, 191-203.

Romer, David (1996), “Advanced Macroeconomics”, The MacGrow-Hill Co. Inc., Singapore.

Samuelson, Paul A. and Nordhaus, William D. (1989), “Economics”, 13th ed., McGraw-Hill, Singapore.

Smith, Dan Throop (1956), “Government Expenditures and the Short-Run Goal of Steady Growth”, *The American Economic Review*, Vol. 46, No. 2, 171-180.

Solow, Robert M. (1956), “A contribution to the theory of Economic Growth”, *Quarterly Journal of Economics*, Vol. LXX.

Stiglitz E., Joseph (1988), “Economics of the Public Sector”, 2nd ed., WW. Norten and Company, Inc., New York.

Tanzi, Vito and Schuknecht (1997), “Reconsidering the Fiscal Role of Government: The International Perspective”, *The American Economic Review*, Vol. 87, No. 2, 164-168.

Tanzi, vito (1994), “Public Finance in Developing Countries”, Edward Elgar Publishing Ltd, England.

Teshome, Mulat (1993), “Trends in Government Finance”, *Ethiopian Journal of Economics*, Vol. II, No. 1, 73-100.

- Teshome, Mulat (1994), "Institutional Reform, Macroeconomic Policy Change and the Development of Small-Scale Industries in Ethiopia", *Stockholm School of Economics*, Working paper No. 23.
- Teshome, Mulat (2003), "The effect of the Trade Liberalization Program on Government Budget in Africa", Paper prepared for presentation at the UN-ECA ad-hoc expert group meeting on maintaining the Government Fiscal Base in the context of a Trade Liberalization Regime, 1-2 October, 2003, Addis Ababa, Ethiopia.
- Teshome, Mulat (2005), "Reforming the African Caucus", Unpublished, Addis Ababa.
- Thomas R.L. (1997), "Modern Econometrics-An Introduction", Addison Wesley Longman Limited, England.
- Transitional Government of Ethiopia (1991), *Economic Policy of Ethiopia During the Transition Period*, Addis Ababa.
- Vedder, Richard K. and Gallaway, Lowell E. (1998), "Government Size and Economic Growth", Ohio University, Washington, D.C.
- Wogene, Yirko (1994), "History of the Post-War Ethiopian Fiscal System", in Eshetu Chole (eds.), *Fiscal Decentralization in Ethiopia*, Addis Ababa.
- World Bank (1988), "World Development Report", Oxford University Press.

APPENDIX-1

MILLENNIUM DEVELOPMENT GOALS (MDGS), TARGETS AND INDICATORS

Goals and Targets	Indicators for monitoring progress
Goal 1: Eradicate extreme poverty and hunger	
Target 1: Halve between 1990 and 2015, the Proportion of people whose income is Less than one dollar a day	<ol style="list-style-type: none"> 1. Proportion of population below \$1(PPP) per day 2. Poverty gap ratio (incidence x depth of poverty) 3. Share of poorest quintile in national consumption
Target 2: Halve between 1990 and 2015, the Proportion of people who suffer from hunger	<ol style="list-style-type: none"> 4. Prevalence of underweight children under-five years ago 5. Proportion of population below minimum level of dietary energy consumption
Goal 2: Achieve universal primary education	
Target 3: Ensure that by 2015, children every where, boys and girls alike will be able to complete a full of primary schooling	<ol style="list-style-type: none"> 6. Net enrolment ratio in primary education 7. Proportion of pupils starting grade 1 who reach grade 5 8. Literacy rate of 15-24 year- olds
Goal 3: Promote gender equality and empower women	
Target 4: Eliminate gender disparity in primary and Secondary education preferably by 2005 and to all levels of education no later than 2015	<ol style="list-style-type: none"> 9. Ratio of girls to boys in primary, secondary and tertiary education 10. Ratio of literate women to men 15-24 years old 11. Share of women in wage employment in the non agricultural sector 12. Proportion of seats held by women in national parliament
Goal 4: Reduce child mortality	
Target 5: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate.	<ol style="list-style-type: none"> 13. Under-five mortality rate 14. Infant mortality rate 15. Proportion of 1 year-old children immunized against measles
Goal 5: Improve maternal health	
Target 6: Reduce by three-quarters, between 1990 and 2015 the maternal mortality rate	<ol style="list-style-type: none"> 16. Maternal mortality rate 17. Proportion of births attended by skilled health personnel
Goal 6: Combat HIV/AIDS malaria and other diseases	
Target 7: Have halted by 2015 and begun to reverse the Spread of HIV/AIDS	<ol style="list-style-type: none"> 18. HIV Prevalence among 15-24 year old pregnant women

	<p>19. Condom use rate of the contraceptive prevalence rate</p> <p>19a. Condom use at last high-rank sex</p> <p>19b. Percentage of population aged 15-24 with comprehensive connect knowledge of HIV/AIDS</p> <p>20. Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14</p>
Target 8: Have Halted by 2015 and begun to reverse the Incidence of malaria and other major diseases	<p>21. Prevalence and death rates associated with malaria</p> <p>22. Proportion of population in malaria risk areas using effective malaria prevention and treatment measures</p> <p>23. Prevalence and death rates associated with tuberculosis</p> <p>24. Proportion of tuberculosis cases detected and cured under directly observed short course (DOTS)</p>
Goal 7: Ensure environmental sustainability	
Target 9: Integrate the principles of sustainable Development into country policies and programs And reverse the loss of environmental resources	<p>25. Proportion of land area covered by forest</p> <p>26. Ratio of area protected to maintain biological diversity to surface area</p> <p>27. Energy use (kg oil equivalent) per \$1 GDP (PPP)</p> <p>28. Carbon dioxide emission (per capita) and consumption of ozone-depleting CFCs (ODP tons)</p> <p>29. Proportion of population using solid fuels</p>
Target 10: Halve, by 2015, the proportion of people Without sustainable access to safe drinking Water and basic sanitation	<p>30. Proportion of population with sustainable access to an improved water source, urban and rural</p> <p>31. Proportion of urban and rural population with access to improved sanitation</p>
Target 11: By 2020, to have achieved a significant in the Lives of at least 100 million slum dwellers	<p>32. Proportion of households with access to secure tenure</p>
Goal 8: Develop a global partnership for development	
Target 12: Develop further an open , rule-based predictable, non-discriminatory trading and financial system	<p>Some of the indicators listed below are monitored separately for the least developed countries (LDCs) Africa, landlocked countries and small island Developing states.</p>
Includes a commitment to good governance, development, And poverty reduction-both nationally and internationally	<p><u>Official development assistance</u></p> <p>33. Net ODA, total and to LDCs, as percentage of OECD/DAC donors' gross national income</p>
Target 13: Address the special needs of the least developed countries includes: tariff and quota free access for least developed countries' exports; enhanced program of debt relief for HIPC and cancellation of official bilateral debt,	<p>34. Proportion of total bilateral sector-allocable ODA of OECD/DAC donors to basic social services(basic social services(basic education, primary health care, nutrition, safe water and sanitation)</p>

And more generous ODA for countries committed to poverty	<ul style="list-style-type: none"> 35. Proportion of bilateral ODA of OECD/DAC donors that is untied 36. ODA received in landlocked countries as proportion of their GNLS 37. ODA received in small island developing states as proportion of their GNIS
Target 14: Address the special needs of landlocked Countries small island developing states (through the action for the sustainable Development special session of the General Assembly)	<p><u>Market access</u></p> <ul style="list-style-type: none"> 38. Proportion of total development country imports (by value and excluding arms) from developing countries and LDCs, admitted free of duties. 39. Average tariffs imposed by developed countries on agricultural products and textiles 40. Agricultural support estimate for OECD countries as percentage of their GDP 41. Proportion of ODA provided to help build trade capacity.
Target 15: Deal comprehensively with the debt problems of developing countries through national and International measures in order to make debt sustainable in the long term	<p><u>Debt Sustainability</u></p> <ul style="list-style-type: none"> 42. Total number of countries that have reached their HIPC decision points and number that have reached their HIPC completion points (Cumulative) 43. Debt relief committed under HIPC initiative, US\$ 44. Debt service as a percentage of exports of goods and services
Target 16: In co-operation with developing countries, develop and implement strategies for decent And productive work for youth	<ul style="list-style-type: none"> 45. Unemployment rate of 15-24 year-olds, each sex and total
Target 17 : In co-operation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries	<ul style="list-style-type: none"> 46. Proportion of population with access to affordable essential drugs on a sustainable basis
Target 18: In co-operation with the private sector make available the benefits of new technologies especially information and communications	<ul style="list-style-type: none"> 47. Telephone lines and cellular subscribers per 100 population 48. Personal computers in use per 100 population and internal users per 100 population

Source: Ethiopia: The Millennium Development Goals (MDGs) Need Assessment Synthesis Report, MoFED.

APPENDIX-2.

FUNCTIONAL (SECTORAL) CLASSIFICATION OF ETHIOPIAN GOVERNMENT EXPENDITURE

1. GENERAL SERVICES

- ORGAN OF THE STATE
- NATIONAL DEFENSE
- JUSTICE
- PUBLIC ORDER AND SECURITY
- GENERAL SERVICE

2. ECONOMIC SERVICES

- AGRICULTURE AND NATURAL RESOURCES
- TRADE AND INDUSTRY
- MINES AND ENERGY
- TOURISM
- TRANSPORT & COMMUNICATION
- CONSTRUCTION
- ECONOMIC DEVELOPMENT STUDY

3. SOCIAL SERVICES

- EDUCATION AND TRAINING
- PUBLIC HEALTH
- CULTURE AND SPORT
- LABOUR & SOCIAL AFFAIRS
- REHABILITATION

4. OTHER SERVICES

- PENSION EXPENDITURE
- PUBLIC DEBT
- INTERNAL DEBT INTEREST AND PRINCIPALE
- EXTERNAL DEBT INTEREST AND PRINCIPALE
- SUBSIDIES
- EXTERNAL ASSISTANCE
- MISCELLANEOUS

APPENDIX-3

TWO STAGE LEAST SQUARE ESTIMATION OF UNRESTRICTED ERROR CORRECTION SPESIFICATION

Equation for DCpY

	<u>Coefficient</u>	<u>Std.Error</u>	<u>t-value</u>	<u>t-prob</u>
DLrY_1	-0.0890435	0.08011	-1.11	0.275
DCpY_1	0.0540844	0.2391	0.226	0.823
DIgY_1	-0.239023	0.3172	-0.754	0.457
DExY_1	0.281813	0.2433	1.16	0.256
DIpY	-0.420084	0.1440	-2.92	0.007
DIpY_1	0.172172	0.2446	0.704	0.487
DCgY	-0.508481	0.1403	-3.63	0.001
DCgY_1	-0.373560	0.1818	-2.05	0.049
DHgY	-1.33055	0.7309	-1.82	0.079
DHgY_1	-1.03814	0.6797	-1.53	0.137
CIa_1	0.00776736	0.002792	2.78	0.009
Constant U	0.0680248	0.02257	3.01	0.005

Diagnostic Tests

AR 1-2: $F(2,28) = 0.44096$ [0.6478]	Vector Normality: $\text{Chi}^2(8) = 11.320$ [0.1842]
ARCH 1-1 test: $F(1,28) = 0.22571$ [0.6384]	Vector hetero test: $F(220,5) = 0.088950$ [0.000]
Hetero test: $F(22,7) = 0.88360$ [0.6205]	

Equation for: DIgy

	<u>Coefficient</u>	<u>Std.Error</u>	<u>t-value</u>	<u>t-prob</u>
DLry_1	0.0417042	0.04298	0.970	0.340
DCpy_1	-0.320771	0.1283	-2.50	0.018
DIgy_1	-0.536534	0.1702	-3.15	0.004
DExy_1	-0.206152	0.1305	-1.58	0.125
DIpy	-0.430750	0.07724	-5.58	0.000
DIpy_1	-0.430662	0.1312	-3.28	0.003
DCgy	0.181012	0.07525	2.41	0.023
DCgy_1	-0.0347933	0.09756	-0.357	0.724
DHgy	1.73708	0.3922	4.43	0.000
DHgy_1	-0.312054	0.3647	-0.856	0.399
CIa_1	-0.00810209	0.001498	-5.41	0.000
Constant U	-0.0654727	0.01211	-5.41	0.000

Diagnostic Tests

AR 1-2 : F(2,28) = 1.1467 [0.3321]
 ARCH 1-1 test: F(1,28) = 0.37961 [0.5428]
 hetero test: F(22,7) = 2.1235 [0.1549]

Vector Normality : Chi^2(2) = 0.88001 [0.6440]
 Vector hetero test: F(220,5) = 0.088950[.0000]

Equation for: DExy

	<u>Coefficient</u>	<u>Std.Error</u>	<u>t-value</u>	<u>t-prob</u>
Lry_1	0.129807	0.05321	2.44	0.021
Cpy_1	-0.0932716	0.1588	-0.587	0.561
Igy_1	0.00234087	0.2107	0.0111	0.991
Exy_1	-0.0744707	0.1616	-0.461	0.648
Ipy	-0.115578	0.09561	-1.21	0.236
Ipy_1	-0.174015	0.1624	-1.07	0.293
Cgy	-0.0846144	0.09315	-0.908	0.371
Cgy_1	0.0668623	0.1208	0.554	0.584
Hgy	0.400972	0.4855	0.826	0.415
Hgy_1	0.640371	0.4514	1.42	0.166
Ca_1	-0.00804000	0.001854	-4.34	0.000
Constant U	-0.0663202	0.01499	-4.42	0.000

Diagnostic Tests

AR 1-2: F(2,28) = 1.5763 [0.2245]
 ARCH 1-1 test: F(1,28) = 2.0300 [0.1653]
 hetero test: F(22,7) = 0.57469 [0.8487]

Vector Normality: Chi^2(2) = 1.6020 [0.4489]
 Vector hetero test: F(220,5) = 0.088950[.0000]

Declaration

I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in any other university, and that all source of materials used for the thesis have been duly acknowledged.

Declared by:

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