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Full Length Research Paper

Official development assistance (ODA), public spending and economic growth in Ethiopia

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The objective of this research was to analyse the role of Ethiopia's government expenditure in economic growth and the importance that ODA has played in financing government spending. The study employed both descriptive and econometric analyses. In the econometric analysis, Ram's (1986) model is adopted to scrutinize the impact of different composition of public spending on economic growth. The study revealed that public spending on physical investment and human capital development have positive contributions on economic growth while spending on consumption affects growth negatively. Besides, as opposed to those who argue that ODA is detrimental to the growth of the recipient country, the study found a positive contribution in Ethiopia's growth, particularly during the last eight years when the country achieved high growth rate. However, the country is highly dependent on aid and loan, which made it susceptible to changes in the flow of aid. There was also a prevalence of the problem of over-indebtedness as the export performance and the foreign exchange earning capacity of the country remained low.

Key words: Public spending, official development assistance (ODA), debt, economic growth, Ethiopia.

INTRODUCTION

"While humanity shares one planet, it is a planet on which there are two worlds, the world of the rich and the world of the poor" (Raanan, 1986). Ethiopia is among the bottom of the underdeveloped group. Poverty in the country is widespread and deep-rooted. According to the human development report (2010) of the United Nations Development Programme (UNDP), the human development index for Ethiopia was 0.328, which is even lower than that of Sub-Saharan Africa (SSA), 0.389, and the per capita income (2008 PPP USD) was $991. All these facts display one urgent issue which needs to be addressed by the government, economic development. It is at the forefront of the strategy of every developing country's government for the sake of reducing poverty and improving the living standard of the society. To achieve this, economic growth is taken as the main objective, though it is not the only solution to overcome persistent poverty. To realise this, governments use a mix of policies and make interventions in the market (Teshome, 2006).

The role of government in less developed countries (LDCs) like Ethiopia is quite substantial to bring at least short-term growth. Government fiscal policies, which include taxation, expenditure, correcting market failure and providing public goods, have become crucial instruments of economic growth in these countries while the effectiveness of monetary policy is not that significant as these economies have financial dualism[1] and primarily non-monetised nature. Besides, there are very limited social services and infrastructure that hindered the development of private enterprises and the smooth functioning of the economy. This implies that there is a need for governments to create the social and economic infrastructures that can help stimulate private investment (Tanzi, 1994). The international development partners designed the "Millennium Development Goals (MDGs)" as the yardstick for monitoring poverty reduction by half

[1] It is a typical behaviour of developing counties' financial system where both formal and informal financial sectors co-exist.

by 2015 in LDCs. To achieve these goals, the developed world has committed itself to raise the amount of aid provision to LDCs to 0.7% of their gross domestic product (GDP). Furthermore, government intervention through their fiscal instruments is deemed important in an effort towards achieving these goals (Gubta et al., 2004). That is why the international community has been helping developing countries in terms of advising them with the design and implementation of fiscal instruments to achieve the goals.

Poor countries' governments have a problem of shortage of capital to finance projects that are intended to bring about development. In Ethiopia, the potential sources of tax revenue are minimal due to lower participation of the private sector in the economy and the tax collection system by itself is also ineffective which resulted in lower government revenue and, hence, poor government involvement in infrastructure development. To this end, the importance of foreign sources of finances such as aid and loan are indispensable.

Chenery and Strout (1966) argued that developing countries are too poor to save sufficiently for investment. They are characterised by subsistence agricultural economy where production is directly used for consumption and nothing is left for saving and investment. Thus, they need foreign finance in the form of aid and concessional loan in order to make investment and achieve the required growth. Besides, the Two-Gap Model, which was an extension of the Harrod-Domar growth model, states that the development of LDCs is constrained by two gaps: saving-investment gap and the import-export gap. This made them to have chronic demand for foreign finances.

The issue of government intervention in the market through its spending policy has been the most debatable one in academia. The Solow growth model (1956), also termed as neo-classical growth theory, predicts that economic growth occurs as a result of exogenous technological change and population growth, and that income per capita of countries will converge in the long-run. This implies that government policy cannot affect growth rates, except temporarily during the transition of economies to their steady state.

On the other hand, the endogenous growth theory developed by Romer (1996), Lucas (1988) and Barro (1990) state that the causes of short-run and long-run growths are endogenous. As a result, there is room for government policy to influence growth both in the short-run as well as long-run, unlike the neo-classical growth theory. For instance, Barro (1990) states that productive public spending which includes spending on property rights enforcements as well as spending on activities that enhance the production capacity of the country can have a positive growth effect. Besides, the long-term growth rates can differ across nations, and there is no necessity that convergence in income per capita should occur as the scope of their policies differ.

According to the Keynesian view, government can stimulate aggregate demand through its spending program during times when the economy experiences recession. Governments can increase investment, reduce unemployment and reverse economic down-turn via their spending programs. Neo-classicals would not deny this, but doubt whether this increases the long-run growth rate (Daniel and Mitchell, 2005).

There have been several empirical works on the determinants of economic growth, particularly on the role of public spending in economic growth. These works have conflicting results. The studies by Barro (1990), Engen and Skinner (1992) and Hansson and Henrekson (1994) have found a strong negative relationship between a large government size and economic growth. However, government spending on areas like road, tele-communication, education, health, etc. can play a significant role in stimulating growth as it help the private sector to function smoothly – crowds-in the private sector. For instance, the study by Niloy et al. (2003) found a positive and significant relationship between government capital expenditure and GDP growth in a panel of 30 developing countries during 1970s and 1980s.

The studies conducted for the case of Ethiopia are on the role of fiscal policy in economic growth that involves all fiscal instruments. One such study by Wondaferahu (2003) made an econometric analysis about the impact of capital and current government spending on economic growth for the period 1960/1961 to 2002/2003 by using Johanson Maximum Likelihood estimation technique. The result states that capital expenditure has a positive and significant effect on economic growth while current spending deteriorates growth in the short-run.

Teshome (2006), on the other hand, found that only public spending on human capital has a positively significant growth effect during the period 196019/61 to 2003/2004. The current study is expected to contribute to the literature and bridge the existing gap on the area as the study period encompasses the recent growth miracles in the country and also investigates the importance of ODA in supplementing government spending.

In Ethiopia, there have been different scenarios in public spending and the subsequent public budget pertaining to different economic policies that the governments have been practicing. In 1975, the military Derg came into power with a command economic policy that led to an expansion of the size of government in the economy. Furthermore, public spending and the subsequent government budget deficit had been increasing significantly, which caused other macroeconomic imbalances (Mulat, 1993).

In May 1991, the Ethiopian peoples' revolutionary democratic front (EPRDF) was established after the downfall of Colonel Mengistu's Derg government. This new government designed a market driven economic policy followed by a comprehensive structural and

economic reform program with the support of the International Monetary Fund and World Bank. Even though the state had planned to reduce budget deficit through reorientation of public spending and improving revenue performance, total government expenditure as a share of GDP and the subsequent fiscal deficit has been rising.

This is mainly because of the huge investment that the state has been making to provide basic infrastructure and public goods that would otherwise not have been available. Actually, the state's involvement in making investment in areas of production of private goods has been reduced as compared to the situation during the earlier regime (Teshome, 2006).

With regard to economic performance, Ethiopia experienced a volatile growth under these regimes, mainly because of changes in their economic policies and ideologies. The country has achieved high growth rate continuously only in the recent periods[2]. Owing to these facts about Ethiopia, the study raises the following research questions:

1) What is the growth effect of increased public spending?
2) How did the composition of public spending affect growth?
3) What role did ODA played in bridging the gap between increased public spending and limited revenues?

Thus, this study mainly analysed the role of government expenditure in economic growth and the importance that ODA has played in financing public spending during 1975 to 2010 for the case of Ethiopia.

MATERIALS AND METHODS

Empirical researches on the nexus of public spending and economic growth in developing countries have found conflicting results, some supporting a positive contribution of public spending to economic growth while others finding a negative growth impact of public spending. This might be because they have used different methodologies, especially econometric models. Besides, majority of the studies focused on the impact of aggregate public spending and did not consider the means of financing. However, for developing countries like Ethiopia, the role of public expenditure on growth can be elucidated by different factors like the composition of public spending, the sources of finance and the institutional efficiency. Therefore, both descriptive and econometric analyses are employed in this study to be able to handle these issues. First, a descriptive analysis about the impact of public spending on economic growth and the means of financing, with particular emphasis on the role of ODA, is made. Then econometric analysis is applied to estimate the effects of various compositions of public spending on economic growth by using time series data for the period 1975 to 2010.

Conducting an econometric analysis for issues like this one is helpful in supplementing the descriptive analysis result. However, it requires proper specification of the model and appropriate data. Model misspecification, omitting important variables and using inappropriate data might lead to a misleading result and, hence, recommendation. To avoid this, I adopted a model developed by Ram (1986), which forms a basis for empirical analysis of government spending and growth. In the model, total government expenditure is disaggregated into investment (physical) spending, consumption spending and human capital spending.

Ram (1986) considered a two sector economy, private (D) and public sector (G), with two factors of production capital (K) and labour (L) allocated between the two sectors such that $K = K_D + K_G$ and $L = L_D + L_G$. Thus, the production functions are:

$$D = D(K_D, L_D, G)^3 \quad (1)$$

$$G = G(K_G, L_G) \quad (2)$$

Assuming a constant productivity differential between labour in both sectors:

$$\frac{G_L}{D_L} = 1 + \delta \quad (3)$$

Where $\delta < 0$ implies higher productivity in the private sector and vice versa.

From 3 we get:

$$G_L = (1 + \delta)D_L \quad (4)$$

Totally differentiating Equations 1 and 2 given that national income $Y = D + G$ gives

$$dY = D_K dK_D + G_K dK_G + D_L dL_D + G_L dL_G + D_G dG \text{ ----} \quad (5)$$

Where D_K, G_K, D_L and G_L are the marginal products of the respective factors in the respective sectors.

Substituting Equation 4 into 5 and rearranging, we get:

$$dY = D_K dK_D + G_K dK_G + D_L(dL_D + dL_G) + \delta D_L dL_G + D_G dG \quad (6)$$

Totally differentiating Equation 2, we get:

$$dG = G_K dK_G + G_L dL_G$$

Substituting Equation 4 into the dG equation above and rearranging, we get:

$$dG = G_K dK_G + (1 + \delta)D_L dL_G$$

$$D_L dL_G = \frac{dG}{1+\delta} - \frac{G_K}{1+\delta} dK_G \quad (7)$$

Substituting Equation 7 into 6 and collecting like terms, we get:

$$dY = D_K dK_D + \left(1 - \frac{\delta}{1+\delta}\right) G_K dK_G + D_L dL + \left[D_G + \frac{\delta}{1+\delta}\right] dG \quad (8)$$

We assume a linear relationship between the marginal product of labour and the average output of labour in the economy, that is,

[2] The country has achieved an average real GDP growth rate of more than 10% since 2004.

[3] G enters the private sector production function to capture the externality effect of government production like infrastructures.

Table 1. Summary of the description of variables and their corresponding unit and sources.

Variable	Description	Unit	Source
RGDP (RY)	Real gross domestic product	Millions of Birr	WB and IMF
RIpY	Ratio of real private investment (net) to RGDP	„	WB
RIgY	Ratio of real government investment expenditure (total capital expenditure less capital expenditure on health and education) to RGDP	„	WB, IMF, NBE and MoFED
RCgY	Ratio of real government consumption expenditure (total current expenditure less current expenditure on health and education) to RGDP	„	WB, IMF, NBE and MoFED
RHgY	Ratio of real government human capital expenditure (sum of capital and current expenditure on health and education) to RGDP	„	WB, IMF and MoFED
RODAY	Ratio of real ODA to RGDP	„	WB, IMF and MoFED

$D_L = \beta \left(\frac{Y}{L}\right)$. Letting $dK_D = I_P$ (private sector investment), and $dK_G = I_G$ (public sector investment), we can substitute into Equation 8 and dividing through by Y:

$$\frac{dY}{Y} = \alpha\frac{I_P}{Y} + \mu\frac{I_G}{Y} + \beta\frac{dL}{L} + \left[D_G + \frac{\delta}{1+\delta}\right]\left(dG/_G\right)\left(G/_Y\right) \quad (9)$$

We can now denote $\left(\frac{dL}{L}\right) = H_g$ (government human capital spending) as it can capture the change in the quality of labour force and $G = C_g$ (government consumption spending). The final equation will then be:

$$y = Bo + B1\left(\frac{Ip}{Y}\right) + B2\left(\frac{Ig}{Y}\right) + B3\left(\frac{Hg}{Y}\right) + B4\left(\frac{Cg}{Y}\right) + B5\left(\frac{ODA}{Y}\right) + e \quad (10)$$

Equation 10 includes the ratio of ODA to RGDP as additional explanatory variable in addition to those which are in the original model (that is, I_p, I_g, H_g and C_g) in order to measure its effect on growth.

Recent developments in econometric analysis have shown that there are problems associated with time series data analysis due to the non-stationary nature of the series. Using ordinary least square (OLS) method in estimating the relation between non-stationary time series can lead to a spurious regression[4]. Hence, one should first test for the stationarity of the series and apply appropriate techniques of correction, either differencing or using a cointegration analysis. In this study, an Augmented Dickey-Fuller (ADF) test is used to check for the stationarity of the series and a cointegration analysis is applied by using the Johanson (1988) maximum likelihood estimation procedure.

This technique is superior to the Eangle-Granger Procedure as it can help to estimate and test for the presence of multiple cointegration vectors. The existence of cointegration (long-run) relationship among the variables is done by using vector error correction (VEC).

A time series data on Ethiopia for 36 years was used (1975 to 2010). The data are obtained from different sources such as International Monetary Fund (IMF), World Bank (WB), Organisation for Economic Co-operation and Development (OECD), National Bank of Ethiopia (NBE) and Ministry of Finance and Economic Development (MoFED). Table 1 summarizes the description of variables included in the model.

The other parts of the paper is organised as follows. The next topic provides the background of Ethiopia's economy. A descriptive analysis on the bonds of public spending and economic growth in Ethiopia is discussed subsequently followed by a supplementary econometric analysis. Finally, the paper concludes with some policy recommendations based on the findings.

ECONOMIC BACKGROUND

Ethiopia is one of the least developed nations in the world[5]. As per the findings of the studies which have been conducted in the country, the various civil wars that hit the country in the 1970s and 1980s, and the frequent droughts that occurred since the 1960s up to the present are believed to be the reasons behind the underdevelopment of the country (Tsegay, 2008).

[4] The estimation will look very good as implied by a very high R^2 and significant t-statistic.

[5] Ethiopia is ranked 157th out of 169 countries with low human development (HDR, 2010).

Table 2. Average growth rate of real GDP, GDP per capita and Population, 1975 to 2010.

Variable	Period				
	1975 to 1980	1981 to 1990	1991 to 2000	2001 to 2010	1975 to 2010
Real GDP	1.3	2.2	3.2	8.4	3.8
GDP per capita	-0.5	-1.4	1.6	5.8	1.4
Population	1.8	3.6	1.6	2.6	2.4

Source: Own calculation based on IMF, world economic outlook database, 2011.

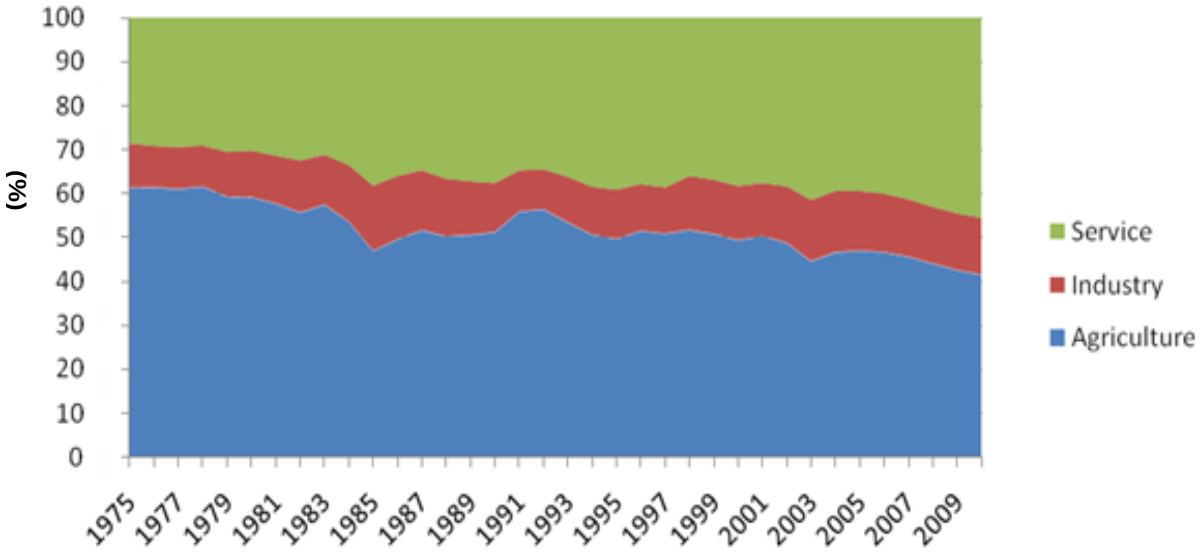

Figure 1. Structure of the Ethiopian economy (% of GDP), 1975 to 2010. Source: Own calculation based on unpublished material obtained from MoFED, 2010.

Ethiopia had two different regimes with different policies and ideologies since 1975: the Derg regime (1975 to 1990) and the Ethiopian peoples' Revolutionary Front (EPRDF) since 1991. The first regime followed command economic system while the later initiated economic reforms to address the long-term structural problems of under-development and followed a market oriented economic policy whereby the role of the private sector has been given priority. Pursuant to this fact, its economic performance has been different and fluctuating. Table 2 summarizes the average growth rate of real GDP, GDP per capita and population for the period ranging from 1975 to 2010.

During the entire period under study, the Ethiopian economy had an annual average real GDP growth rate of 3.8, while population and per capita GDP grew by 2.4 and 1.4% respectively. Due to civil war, recurrent drought, high population growth and inappropriate economic policy and management, the performance of the Ethiopian economy was not satisfactory during the Derg regime. Average real GDP and per capita GDP growth rate were 2.2 and -1.4% per annum for the period 1981 to 1990, respectively. This is the period when Colonel Mengistu, the then government of Ethiopia, was following a socialist ideology. Following the end of the civil war on May 1991, the EPRDF came into power with market oriented policy that brought about improvement in the economic performance of the country.

The average growth rates of real GDP and GDP per capita have increased to 8.4 and 5.8% respectively. During this period, the importance of private sector with significant intervention of government in development has been recognised.

Structure of the Ethiopian economy

Agriculture, being the main contributor to GDP and the main source of foreign exchange earnings of the country, has been the back bone of the Ethiopian economy. However, the sector is characterized by its heavy dependence on unreliable rainfall and subsistence traditional farming system.

Figure 1 depicts the sectoral decomposition of Ethiopia's economy. It indicates that the Ethiopian economy did not exhibit significant changes in its structure in the last three and half decades as the agricultural sector continues to dominate followed by the service and industrial sectors. The share of agriculture has been declining while that of service has been increasing. The share of industry has shown a slight improvement through the periods, from 9% in 1975 to 13% in 2010. This is mainly because of the importance which has been given to the private sector and foreign direct investment.

Gross domestic savings and investment in Ethiopia

Capital formation is regarded as one of the requirements for accelerating economic growth both in academia and in policy

Table 3. Average gross capital formation and domestic saving (% of GDP), 1975 to 2010.

Variable (% of GDP)	Period			
	1975 to 1980	1981 to 1990	1991 to 2000	2001 to 2010
Gross capital formation	11.4	14.6	16.5	23.2
Gross domestic saving	7.2	7.7	8	5.8
Resource gap	-4.2	-6.9	-8.5	-17.4
FDI	0.1	0.02	1.01	2.91

Source: Own calculation based on data from UNCTADstat, world investment report, 2010 and MoFED, unpublished material, 2010.

making. It is financed by different sources with the main source being domestic savings. In case there is a saving-investment gap, external sources of finance such as loan, aid and foreign direct investment (FDI) can help to bridge the gap. Table 3 summarizes the trends of capital formation and domestic saving in Ethiopia for the period 1975 to 2010.

The figures in Table 3 show that domestic saving has been well below the required amount to finance the capital formation in the country. Because of the inappropriate economic policy that Derg had been following, the gross capital formation (GCF) was far below the level during the post-1991 period. During that period, ownership of means of production was mainly restricted to the government and the role of the private sector in the economy was deliberately reduced to the extent of setting capital ceiling law. In addition, if we look at the foreign direct investment (FDI) as a percentage of GDP, it had been very negligible due to the afore-mentioned reasons and the prevailing political turmoil. With the change in economic policy and the priority given to the private sector, GCF as a percentage of GDP has been increasing and reached the maximum level of 23.2% during 2001 to 2010. Besides, FDI has also increased the following the reform. On the contrary, domestic saving could not be raised to finance the investment. This is mainly due to subsistence nature of the Ethiopian economy where 80% of the population depend on subsistence agriculture. The poor savings habit in the formal financial institutions (people prefer informal savings like "equb" and "idir")[6] coupled with the low real interest rate paid on savings have also contributed to the poor performance of domestic saving. Provided that the FDI flow into the country has been negligible, the saving-investment gap in Ethiopia implies the importance of foreign finance, mainly aid and loan. It is worth mentioning in this regard that Ethiopia has received 13.4% net ODA as a percentage of GDP in 2009 (OECD, 2010).

Ethiopia's trade performance

In the globalized world where all economies are interlinked in production and exchange of commodities, international trade plays an important role to step forward an economy. In this regard, we can trace the case of China whose growth emanated mainly from its heavy export to the rest of the world at least in the last decade. For developing economies like Ethiopia, import also plays an important role as it supplies capital goods that could not be produced locally, and it also augments local production through delivering necessary raw materials and intermediate goods (Hailemariam, 2009). Moreover, it provides consumer goods, even food, as the countries are not self-sufficient. However, it requires enough exports to get the foreign exchange required to finance those imports. But, given the country's heavy dependence on agricultural production, mainly subsistence which is backward in nature, it was not able to export enough and has been suffering from continuous trade deficits. The main export items are coffee, cut flowers, chat, hide and skins, oil seeds and vegetables.

Figure 2 depicts the trade performance of the country for the period under review. During these periods, the country has been facing a trade deficit, which has been getting wider and wider reaching almost USD6.7 billion in 2008. As earlier mentioned, the country remained to be exporter of agricultural commodities, which has income inelastic demand and a very volatile price in the international market. On the opposite side, its imports are manufactured goods, which are highly valuable.

Regarding the financing of this deficit, official development assistance (ODA) remained to be the most important. To supplement this argument, current account balance (CAB) was drawn against ODA (Figure 3). CAB is more or less a mirror image of ODA implying that much of the deficit has been financed by ODA. The deficit has also made the country to become over-indebted as the remaining part of deficit has also been financed through foreign borrowing.

RESULTS AND DISCUSSION

The relationship between public spending and economic growth continuous to attract considerable interest from both policymakers and academics alike as the issue of the role of government expenditure and its size in economic growth is very controversial. Besides, the role of ODA in supplementing government expenditure and, hence, supporting growth in LDCs has been very controversial.

This section analyses the results and findings on the issue for the case of Ethiopia. In order to be able to look at the public spending programs and policies of the government, the links between various compositions of government expenditure and economic growth is considered. Finally, the issue of fiscal balance and its means of finance with particular emphasis on foreign sources (such as aid and loan) are analysed.

Public expenditure and growth in Ethiopia

One way of analysing the relationship between total government expenditure and real GDP is by looking at

[6] "Equb" and "Idir" are informal associations where people save their money to help each other in raising funds for business start-up and to protect against unforeseen conditions, respectively.

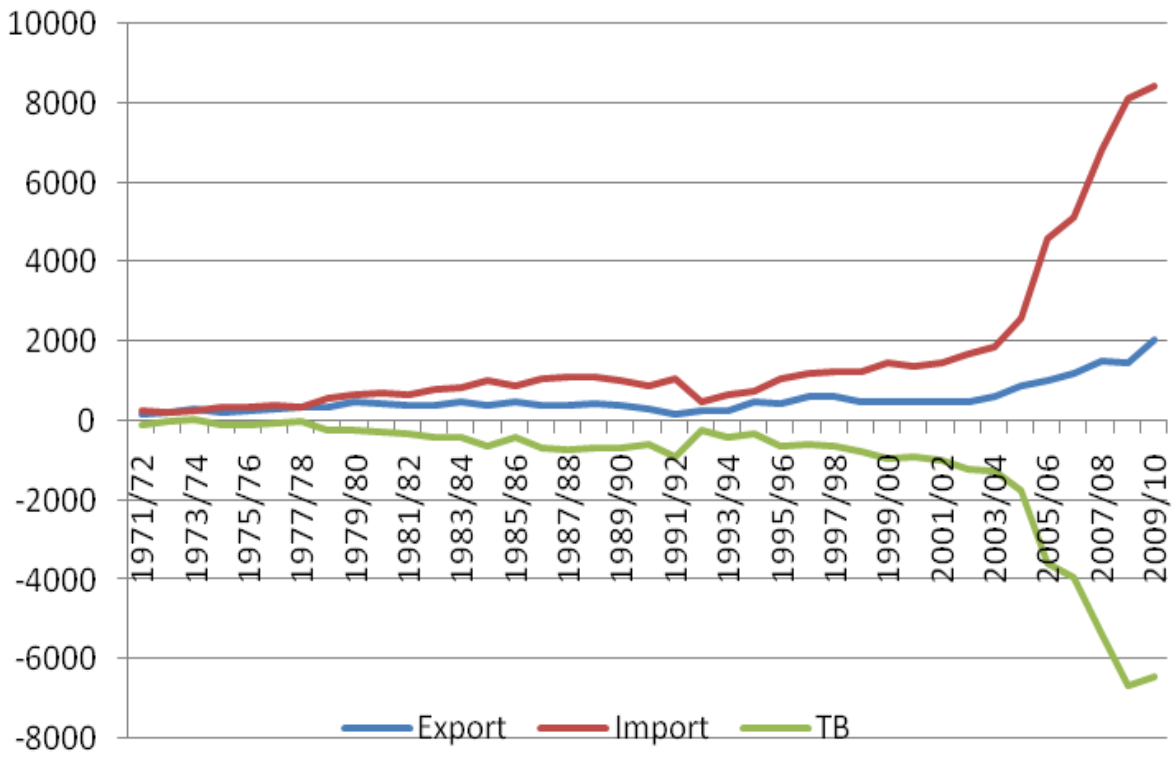

Figure 2. Export, Import and trade balance, 1971/1972-2009/2010. Source: Own calculation based on unpublished material obtained from NBE, 2010.

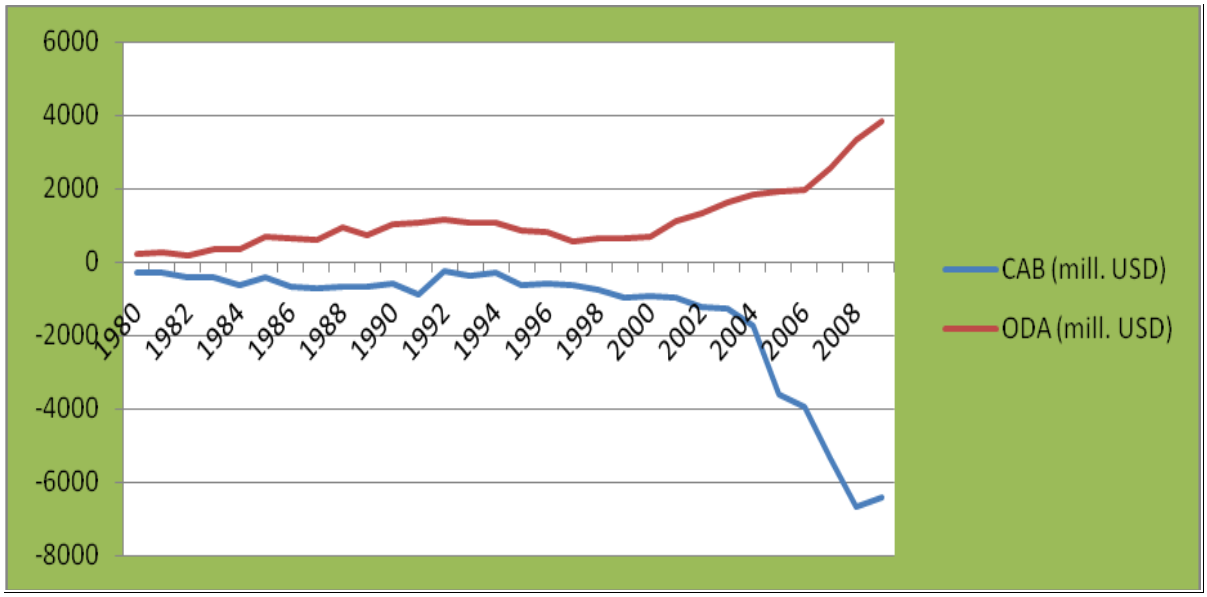

Figure 3. CAB and ODA (million USD), 1980-2009. Source: Own calculation based on WB, world development indicators, 2010 and unpublished material obtained from NBE, 2010.

the trend of the two together on the same coordinate plane. Figure 4 depicts their trend for the case of Ethiopia. As seen from the figure, there is a direct correlation between the two gross figures implying a positive relationship. This is in line with Keynesian explanation of the role of government spending in

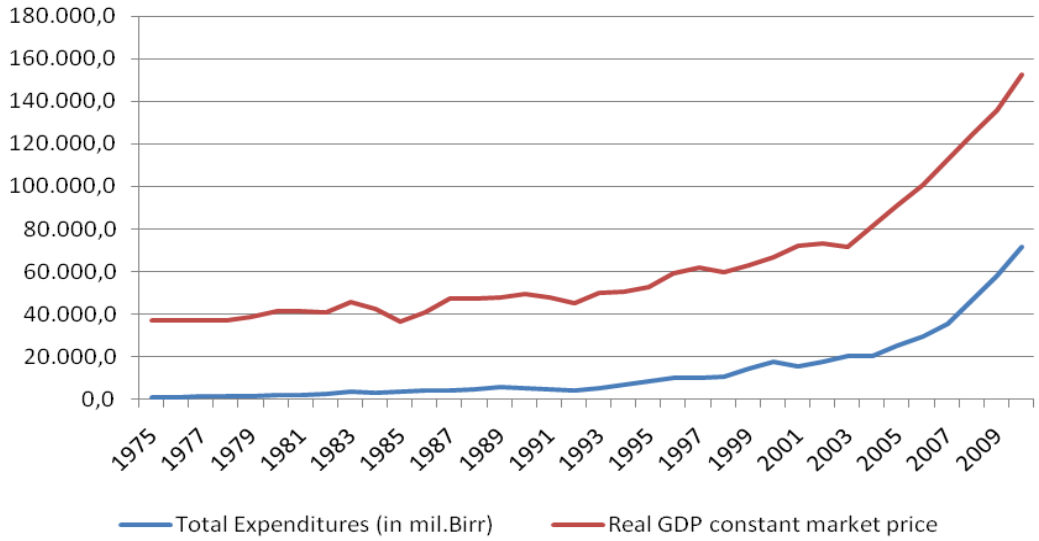

Figure 4. Total government expenditure and real GDP (millions of Birr), 1975 to 2010 Source: Own calculation based on IMF, world economic outlook database, 2011.

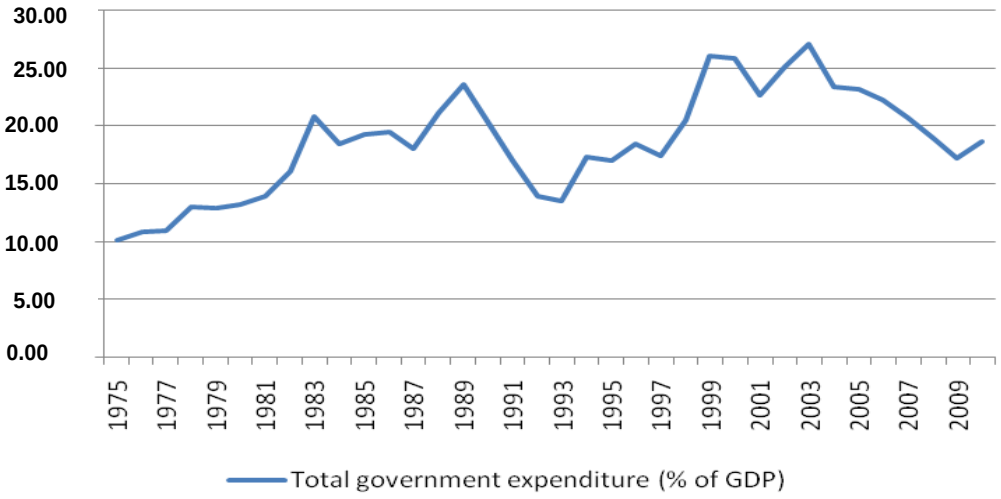

Figure 5. Total government expenditure (% of GDP), 1975 – 2010. Source: Own calculation based on IMF, world economic outlook database, 2011.

stimulating an economy which is below full employment.

During the Derg regime, public spending had a slight increase and the real GDP too. This could mainly be due to the limited revenue source of the government as the private sector involvement in the economy, the potential tax payers, was very low due to the socialist ideology of the government. Besides, the flow of ODA to the country, which is another source of revenue for the government, was very low since the then policy and ideology was not in conformity with the western states' interest. It was after the downfall of Derg that total public spending increased significantly following the reconstruction of the country. Spending on infrastructure development and provision of social services had grown tremendously during this period. As a result, the real GDP had registered a significant growth. The change in economic policy to a relatively free market economic system and the subsequent private sector involvement could also be the reason behind.

However, looking at the gross figures does not show the size of government relative to the economy. Thus, it is necessary to scrutinize the trend of government expenditure as a percentage of GDP, which can clearly depict the size of the government in the economy.

Figure 5 depicts total government expenditure as a percentage of GDP. This ratio is calculated for the range

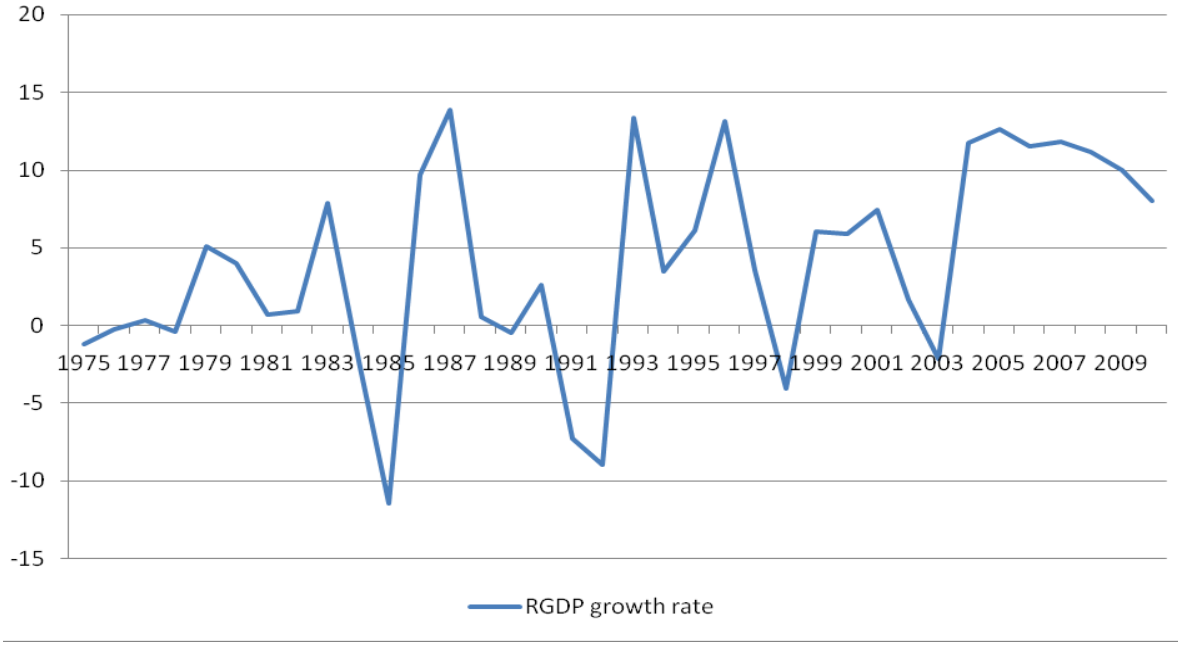

Figure 6. Real GDP growth rate, 1975 to 2010. Source: Own calculation based on IMF, world economic outlook database, 2011.

of periods during which Ethiopia had two different regimes with different economic policies and ideologies: the Derg regime and the EPRDF. During the Derg regime, which is from 1975 to 1990, the ratio of government expenditure to GDP had shown a steady growth, except a slight decline in 1984 and 1987, as a consequence of its socialist policy measures. By then the government was engaged in the production and distribution of private goods and services, which could otherwise be provided by the private sector. In early 1980s, government capital expenditure, especially those related to agriculture and land settlement and manufacturing expansion had boosted the rise. Besides, the involvement of the country in civil war and the subsequent war related expenditure during the 1980s had also contributed considerably to the growth in public spending. However, if we look at the growth rate of real GDP during this period, it was very poor (Figure 6). The country had only an average growth rate of real GDP of 1.86%. This has the implication that government expenditures, particularly government investment spending on the production of private goods and services were unproductive and inefficient and thus the role of government expenditure in economic growth was negative.

In May 1991, following the down fall of the military dictator of Derg, the transitional government of Ethiopia (that is, EPRDF) came into power. This new government designed a market oriented economic system and made reforms in its expenditure policy. The main objective was to divert spending on the production of private goods and services, leaving it for the private sector, towards the development of infrastructure and accumulation of capital. As a result, there was a sharp decline in the size of government expenditure as a percentage of GDP during the early post-1991 periods. Though there was an increase in the share of government spending starting from 1994 following infrastructure development, it remained below the level which was under the Derg regime till 1997. However, in 1998, it had increased due to the war with Eritrea and reached the maximum level of 27% of GDP in 2003 before it started falling back.

Pursuant to this change in policy and ideology, the economy had shown improvement and registered a positive average growth rate of 5.13% till 1998. At this point in time, the country entered into war with Eritrea on a border dispute case which affected the economy negatively. In 2003, the country was under fire due to the wide spread drought that led to food insecurity for over more than 14 million persons (United States Agency for International Development, 2003). As the country's economy is highly dependent on agriculture, the real GDP growth rate at that time has fallen to 2.1%. It is worth mentioning in this regard that much of the fluctuations in real GDP growth rate have been due to variation in rainfall and climatic condition that affects agricultural production as the economy is highly dependent on agriculture. From 2004 onwards, the economy has continued to grow with an average growth rate of 11%. The reorientation in government expenditure towards the provision of basic infrastructures like road, telecommunication, education and health coupled with

Table 4. Capital and current expenditure (% of total expenditure), 1975 to 2010.

Regime	Year	Average share in total expenditure (%)	
		Capital expenditure	Current expenditure
Derg	1975 – 1980	22	78
	1981 – 1985	29	71
	1986 – 1990	32	68
EPRDF	1991 – 1995	32	68
	1996 – 2000	34	64
	2001 – 2005	38	62
	2006 - 2010	52	48

Source: Own calculation based on unpublished material obtained from MoFED, 2010.

Table 5. Average share of various compositions of government expenditure in total expenditure, 1975 to 2010.

Regime	Year	Average share in total expenditure (%)					
		Investment (%)		Human capital (%)		Consumption (%)	
Derg	1975 – 1980	20	25.4	16	14	65	60.6
	1981 – 1985	27		13		60	
	1986 – 1990	30		13		57	
EPRDF	1991 – 1995	28	31	17	21.5	54	47.5
	1996 – 2000	27		18		54	
	2001 – 2005	29		22		59	
	2006 – 2010	40		28		32	

Source: Own calculation based on IMF, world economic outlook database, 2011 and unpublished material obtained from MoFED, 2010.

the improvements in the private sector involvement in the economy has contributed to the achievement of this high growth rate. Gross private investment has increase from an average of 8.6% during the Derg regime to 12.3% of GDP during the post-1991 reform period. This has something to do with the change in economic policy that has created an investment-friendly environment for private investors and the crowding-in effect of government expenditure reorientation towards infrastructures (Tables 4, 5 and 6).

Generally, the two regimes had different spending and economic policies which led to variation in the growth rates. During the Derg regime, the average government expenditure as a share of GDP was 16.35% while the average growth rate of real GDP was 1.86%. On the other hand, the average government expenditure as the share of GDP during the post-1991 reform period is 20.27% while the average real GDP growth rate is 5.77%. As opposed to those literatures that argue that large government size is detrimental to economic growth, this result reveals that a rise in public expenditure can have a positive multiplier effect on the economy if made on the right thing in a right way.

Composition of public expenditure in Ethiopia

This paper now turns to the analysis of the composition of government expenditure during the study period. To evaluate the growth effect of government expenditure, it is imperative to look at its structure and composition rather than the aggregate figures. This is because government expenditure can be more on growth enhancing sectors like infrastructure development or on transfer payments that has little to do with growth as it is payment which does not involve production.

Current and capital expenditure

Most literatures deal with government expenditure structure in terms of capital and current expenditure. Capital expenditure refers to those expenditures on fixed assets such as land, buildings, plant and machinery, which are long lasting. These are outlays on developmental projects that enhance the capacity of the economy for the production of goods and provision of economic and social services. Current expenditure, on

Table 6. Sectoral classification of government expenditure as a percentage of total expenditure, 1975 to 2010.

Expenditure	Derg			EPRDF			
	1975-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010
General service	44	38	36	28	33	29	23
Defence	30	29	28	16	21	8	5
Justice and order	9	5	4	3	4	9	8
Economic service	25	28	33	30	31	25	42
Agriculture	10	9	10	8	10	11	14
Industry	2	5	5	4	2	1	1
Construction transport and communication	10	7	6	9	12	13	21
Social service	19	17	16	22	21	24	30
Education and training	11	10	9	13	13	17	22
Public Health	4	4	3	5	5	5	6
Others	12	17	15	20	15	22	5
Debt servicing	4	5	7	9	8	6	3

Only main items under each sectoral composition are considered. Source: Own calculation based on unpublished material obtained from MoFED, 2010.

the other hand, includes expenditure on wages and salaries, supplies and services, rent and so on, which are considered as consumables and recurring in the process of delivering government services (Bailey, 2002).

Table 4 explicitly shows the expenditure policy of governments in Ethiopia. During the early periods of the Derg regime, the share of capital expenditure in total expenditure was very low (22%) as compared to current expenditure (78%). With the involvement of the government in the production of goods and provision of social services, however, it has increased to 32% of total expenditure during the late periods (1986 to 1990). Due to the reform in expenditure policy in 1991, capital expenditure kept on growing while current expenditure has been decreasing continuously. This ratio has more than doubled (52%) during 2006 to 2010 compared to the level (22%) during 1975 to 1980. It is worth mentioning in this regard that during these periods the country has registered an average growth rate of more than 10%. Thus, the result reveals that government's effort to divert its expenditures towards building the capacity of the country in the production of goods and provision of economic and social services during the post-1991 period had helped the country to grow significantly.

Government expenditure on investment, consumption and human capital

According to the model developed by Ram (1986), growth effect of government expenditure can be analysed by categorising it into three as expenditure on investment, consumption and human capital. In doing so, government total capital expenditure less capital expenditure on health and education is considered as investment expenditure. Government total current expenditure less current expenditure on health and education is considered to be expenditure on consumption. The sum of capital and current expenditure on health and education makes up for government expenditure on human capital. This is because the physical and mental healths of the citizenry are very crucial for human capital development and productivity.

Table 5 summarises the average share of different compositions of government expenditure in total expenditure for the two regimes. Due to the expansion in the development of road, energy, telecommunication and the like infrastructures, investment expenditure has increased from 25.4% during the Derg regime to 31% during the post-1991 period. The share of expenditure on human capital has also increased from 14 to 21.5%. This is mainly due to the measure that the government took to develop human capital, which is a crucial element for development of the country. The expansion in higher institutions in the country is worth mentioning in this regard. On the contrary, expenditure on consumption has decreased from 60.6 to 47.5% though it remains to have a lion share in total expenditure. With change in policy and reformation of expenditure structure, the EPRDF has been reallocating its expenditure away from consumption towards physical investment and human capital development.

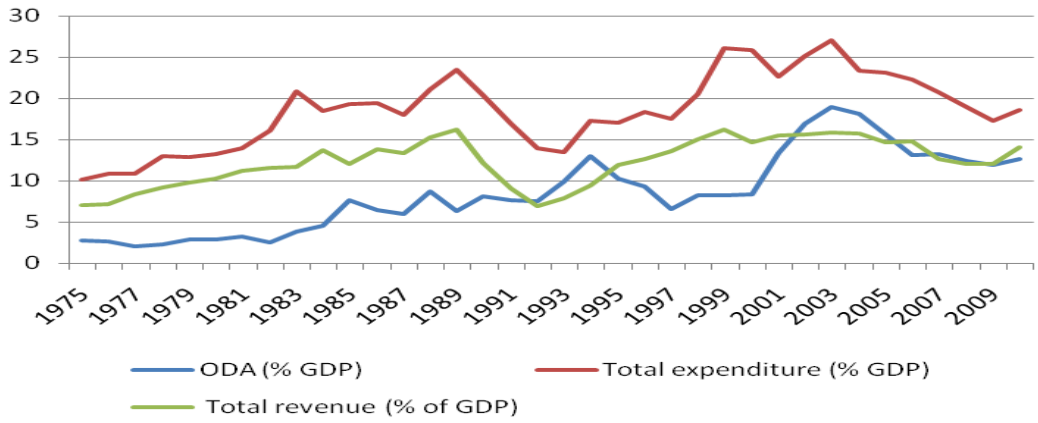

Figure 7. ODA, government revenue and expenditure, 1975 to 2010. Source: Own calculation based on IMF, world economic outlook database, 2011 and unpublished material obtained from MoFED, 2010.

Sectoral composition of public expenditure in Ethiopia

The other and better way of looking at the structure and composition of government expenditure is by classifying it based on functional or sectoral spending. This is mainly based on the broad objective of the government and falls under four branches: general service, economic service, social service and other services (Heller and Diamond, 1990). Table 6 summarises government expenditure for the two regimes based on this classification.

As seen from Table 6, the expenditure structures of the two regimes differ based on the objectives and priorities they set. During the Deg regime, defence expenditure had the largest share not only in general service expenditure but also in total government expenditure mainly due to the civil war during that time. However, defence expenditure continuously decreased after the down fall of Derg in 1991 and reached the minimum level of 5% of total expenditure during 2006 to 2010, except for 1996 to 2000 when the country fought with Eritrea on border dispute.

Pursuant to the fact that Ethiopia is an agricultural based economy and the effort made to develop agricultural sector, expenditure on agriculture among economic development spending constituted the largest share during the Derg regime. It has even increased after 1996 with the establishment of an agricultural development led industrialisation (ADLI) strategy[7]. The share of government expenditure on industry has been declining since post-1991 due to the economic reform and the emphasis given to private involvement in the sector. Structural adjustment program was also designed with the help of World Bank and International Monetary Fund to bring about macroeconomic and structural reforms in the economy. However, the share of expenditure on construction, transport and communication has been increasing tremendously since 1991. Ethiopia, being a developing country, had poor infrastructure and it was believed that investment on such infrastructure is important as it can have a multiplier effect on the whole economy.

During the Derg regime, social services like education and health ware not considered much and had the lowest share in total expenditure compared to general and economic services. However, its share has been increasing, especially education's share, since post-1991 period mainly due to the emphasis given by the government to develop human capital and achieve the millennium development goals (MDGs).

Other expenditure constitutes debt services, subsidies, pension and miscellaneous expenditures. These expenditures had the lowest share compared to others during both regimes. Debt servicing had been increasing during the Derg regime as the government was borrowing mainly from the former socialist countries like the Soviet Union to finance its war spending (Befekadu, 2001). It has even increased during 1991 to 1995 period due to the relatively large share of loans obtained from bilateral and multilateral donors to reconstruct the economy.

Official development assistance (ODA) flow, government revenue and expenditure

Figure 7 depicts the relationship between ODA and government revenue and its expenditure for the period 1975 to 2010. During the Derg regime, domestic revenue grew slowly as a percentage of GDP, averaging about 11.4%. This was mainly due to the underdeveloped nature of the private sector in the economy following the socialist economic system. It had even declined during the late 1980s and early 1990s due to the state of war in

[7] With the objective of maintaining food security and sustainable growth, the government has been following ADLI strategy since 1996. The main objective was to improve agricultural production that can generate income for the development of industry.

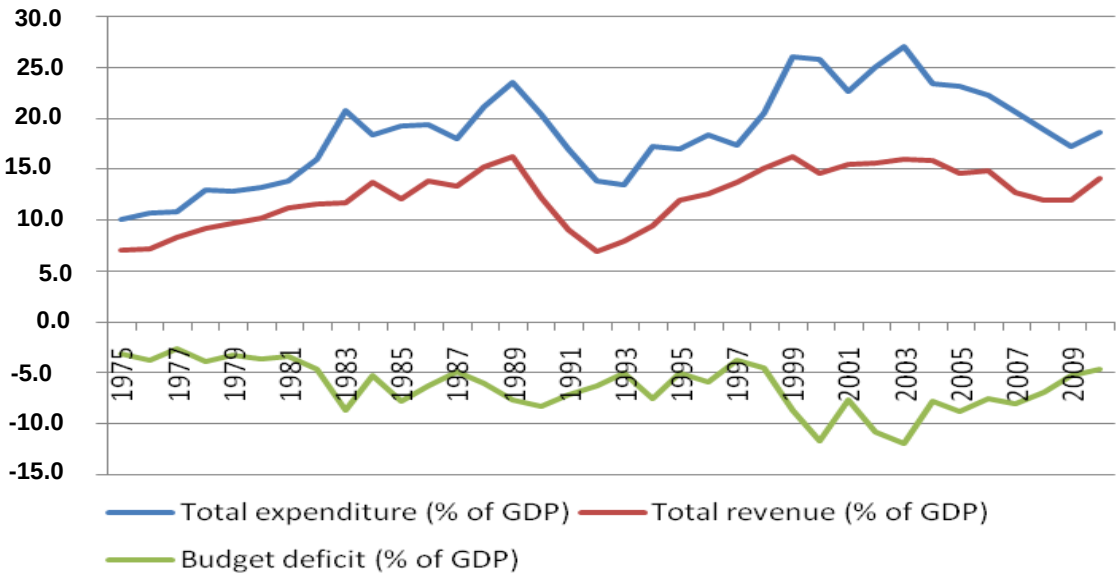

Figure 8. The budget stance (% of GDP), 1975 to 2010. Source: Own calculation based on IMF, world economic outlook database, 2011 and unpublished material obtained from MoFED, 2010.

the country, which led to security and administrative problems regarding tax collection. From 1993 onwards, however, domestic revenues managed to recover beyond their earlier levels, averaging 13.6% of GDP. Foreign financing was practically lower during the 1970s and 1980s, averaging 3.4% of GDP. The Derg government was getting loan and grant only from the socialist countries, mainly for the sake of financing war related expenditure.

However, ODA flow to the country had increased substantially during the post-1991 period, except some fluctuations owing to domestic political condition and the donor countries' economic problem. The figure portrays that total public expenditure and ODA flow had been almost moving closely together implying the importance of ODA in supplementing public expenditures, especially during the post-1991 period.

Government budget deficit and means of financing

In analysing the effect of government expenditure on economic growth, it will not be complete without considering the effect of budget deficit and its means of finance. This is because while government expenditure can have a positive effect, if made efficiently, its sources of finance can have a negative consequence. For instance, heavy taxation can discourage investors leading to lower investment, employment and production. On the other hand, financing through borrowing from domestic sources might increase the market interest rate, once again leading to a crowding-out effect on the private sector while financing through foreign borrowing can create huge burden on the budget stance as the government has to service the debt (Habib and Miller 1999). Figure 8 summarizes the trends of budget deficit in Ethiopia for the period 1975 to 2010.

During the early period of the Derg regime, government budget deficit was low (3.1% of GDP) due to a relatively smaller share of expenditure. However, with deliberate involvement of the government in the economy with a strategy of creating centrally planned economy, government expenditure has been growing substantially while its revenue was not due to lower tax revenue from the private sector and lower revenue from government owned companies as they were operating at losses. The war related expenditure constitutes the largest contributor to rising government expenditure (Mulat, 1993). This has led to a substantial increase in the budget deficit which reached 9% in 1983.

There are mainly two sources of financing budget deficit: domestic and external sources of finance. The external sources of finance (that is, grant and loan) constitute the largest share in Ethiopia. However, the external financing was lower during the Derg regime compared to the post-1991 period. This was mainly due to the economic policy that it was following which was not in line with the strategies of the western countries and donor agencies. Thus, the then government resorted to domestic sources of finance, mainly borrowing from the banking sector that led to macroeconomic instabilities like inflation.

During the post-1991 period, the budget deficit had shown only a marginal increase as the government committed itself to reduce budget deficit mainly through restructuring its expenditures and reducing involvement

Table 7. Summary of budget deficit and means of financing (% of GDP), 1975 to 2010.

Revenue	Derg regime		Post-1991 periods	
	1975-1980	1981-1990	1991-2000	2001-2010
	8.6	**13.1**	**11.7**	**14.3**
Tax-revenue	7	9.2	7.9	10.8
Non-tax revenue	1.6	3.9	3.8	3.5
Expenditure	11.8	19.1	18.7	21.9
Deficit	-3.2	-6	-7	-7.6
External Finance	2.2	3.9	5.8	6.8
Grant	0.9	2	3.2	4
Loan	1.3	1.9	2.6	2.8
Domestic finance	1	2.1	1.2	0.8

Source: Own calculation based on IMF, world economic outlook database, 2011 and unpublished material obtained from MoFED, 2010.

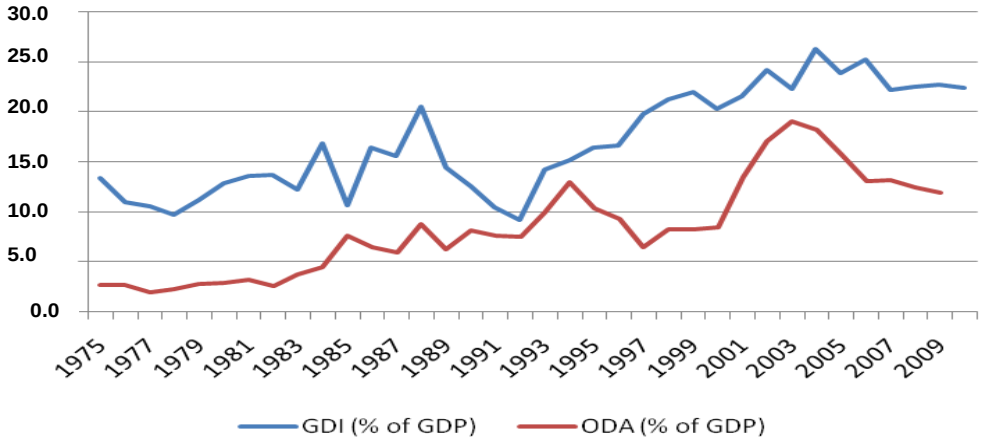

Figure 9. Net ODA and gross domestic investment (% of GDP), 1975 to 2010. Source: Own calculation based on WB, world development indicators 2010 and unpublished material obtained from NBE, 2010.

in production of private goods. Huge budget deficit is registered only during the Ethio-Eritrean war period and the harsh drought of the 2003. Regarding its sources of finance, attempt has been made to reduce inflationary financing through borrowing from the banking sector. As a result more reliance on external sources, from multilateral and bilateral organisation, was made. More specifically, the country was able to secure more grants and loans from the World Bank and International Monetary Fund under the structural adjustment program (1993) and enhanced structural adjustment facility (1996). As seen from Table 7, the ratio of external finance to GDP has sharply increased and even tripled (6.8%) during 2001 to 2010 periods compared to the level (2.2%) during late 1970s.

The afore-mentioned analysis reveals that both external grants and loans had significant role in financing the deficit during the post-Derg period and will remain significant in the future too. The government had designed a five year “Growth and Transformation Plan” for the period 2011 to 2015. It is pointed out on this plan that the objective is to sustain high growth rate that the country has achieved to transform the base of the economy from agriculture to industry. In addition to domestic sources of finance through improved government revenue and domestic savings, the government called on international development partners to support the plan (http://www.newsdire.com, accessed on 31 May 2011).

From the analysis so far about external sources of finance, it is necessary to highlight its importance to the Ethiopian economy. Among other uses, ODA has been quite important in financing budget deficit, current account deficit (Figure 3), and expanding the level of investment beyond domestic capacity (Figure 9). The ODA flows to the country and the gross domestic

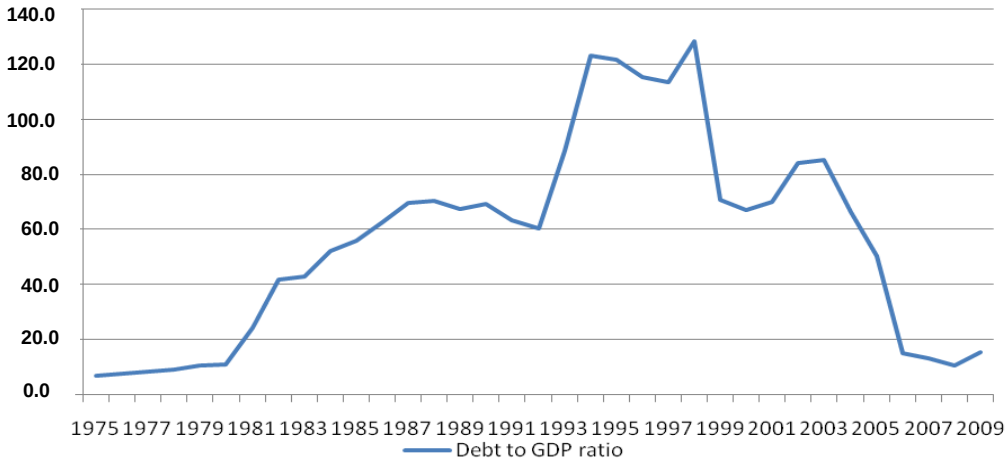

Figure 10. Debt to GDP ratio, 1975 to 2009. Source: Own calculation based on WB, world development indicators, 2010.

investment have been moving closely together implying the importance of ODA in stimulating domestic investment.

Though external source of finance is vital, there is a need to reduce dependence since it can lead to debt accumulation and is unreliable source that has different conditionalities based on international politics and donors' interest. In Ethiopia, the sanctions on aid inflows due to the 1998 Ethio-Eritrean war, the abandonment of direct budget support following 2005 election disorder and the reduction in ODA due to the 2008 financial crisis of donor countries are worth mentioning in this regard.

The sustainability of Ethiopia's debt

Though there are disagreements over the importance of foreign finance to the domestic economy both in academia and policy making, it should not be underestimated as it has been able to save a lot of lives, educate young children, and above all helped to develop decisive infrastructure (Befekadu, 2001). However, if a country highly depends on foreign finance, mainly short-term commercial and long-term concessional loans, it could be detrimental to its long-term growth as it will lead to a problem of over-indebtedness, which has several negative consequences such as huge debt service burden and uncertainties of the private investors and, hence, disincentive for investment[8]. Thus, there is a need for government to efficiently utilize external loans and manage its debt position.

The debt to GDP ratio indicates that the debt burden of Ethiopia had been increasing dramatically during the Derg regime, 1975 to 1990 (Figure 10). This was mainly due to the debt incurred for procurement of weapons and war related finance during the civil war of the 1980s. Even after the fall of the military Derg on May 1991, the debt to GDP ratio continued to grow as the government borrowed substantial amount of loan from the WB and IMF for the reconstruction of the country. As a result, the country became over-indebted and its debt was unsustainable, like the other poor countries. This has forced the international community to consider a debt relief through the Heavily Indebted Poor Countries (HIPC) initiative in 1996 and the enhanced HIPC initiative in 1999. The World Bank and IMF also established the Multilateral Debt Relief (MDR) initiative in 2005. Ethiopia benefited substantially from these initiatives with a total debt of $11.2 billion being cancelled since then (WB, global development finance, 2010).

According to Priewe and Herr (2005), a sustainable debt requires the change in debt, which is similar to current account deficit (CAD), to GDP ratio (d) to be less than or equal to the nominal growth rate of GDP (n) times the stock of debt to GDP ratio (b), that is, $d \leq n.b$, assuming a constant exchange rate (e) and a constant interest rate (r) on external debt. If the local currency depreciates, then it should be taken into account as it reduces the dollar value of GDP and raises the burden of external debt in local currency. Based on this criterion, Ethiopia's debt is not sustainable though the debt to GDP ratio is lower due to the debt cancellation as the CAD of the country is very large. For instance, in 2009, the nominal GDP growth of 35.2% with the debt to GDP ratio of 15.6% required a CAD to GDP ratio of 5.5%. However, the CAD of the country was far greater than this limit (20.7%) implying the unsustainabilty of the country's debt (Table 8).

There is a general consensus that a country's GDP and foreign exchange earnings have to grow faster than the

[8] If a country is over-indebted, the demand for investment will be lower as the domestic interest rate rises and due to expectation of high taxation to repay the debt.

Table 8. Ethiopia's debt unsustainably indicator, 2005 to 2009.

Period	Nominal GDP growth rate (n)	Debt to GDP ratio (b)	n*b	Change in debt (CAD) to GDP ratio (d)
2005	22.9	50.4	11.5	14.1
2006	23.6	15.0	3.5	23.7
2007	30.6	13.4	4.1	20.2
2008	44.5	10.7	4.8	19.9
2009	35.2	15.6	5.5	20.7

Source: Own calculation based on WB, world development indicators, 2010.

Table 9. ADF test for unit root (non-stationary).

Variable	ADF t-statistic in level	ADF t-statistic in first difference
Log(RY)	0.877053	-6.353057***
Log(RIpY)	-1.555247	-11.13784***
Log(RIgY)	-2.207871	-5.839276***
Log(RHgY)	-2.859297	-6.445896***
Log(RCgY)	-2.160405	-3.955548***
Log(RODAY)	-1.333345	-6.255731***

		With constant, no trend		With constant and trend
MacKinnon (1996) critical values	1%	-3.646342	1%	-4.273277
	5%	-2.954021	5%	-3.557759
	10%	-2.615817	10%	-3.212361

Log (RY) and Log (RHgY) are tested with constant and trend since they have trends. *** implies significant (that is, stationary) at 1% significance level.

rate at which its debt grows if the country is to be protected from falling into a debt trap[9]. This requires structural transformation (industrialization) and improvements in the export performance. However, these requirements were not met as Ethiopia remained heavily dependent on agriculture and the current account position of the country continued to deteriorate. This has the implication that there is a tendency for the country to become over-indebted again, which requires another debt cancellation.

Econometric analysis

As earlier discussed, stationarity test on the variables in the model has to be made first before estimating the coefficients. Accordingly, an Augmented-Dickey Fuller test is conducted and the result is reported in Table 9. The result reveals that all the variables are non-stationary at level and become stationary when they are differenced ones implying that the variables are integrated of order one, I(1).

The unit root test result reveals that the variables have a long-run relationship as they all are found to be I (1). To determine the number of cointegrating vector (rank), the null hypothesis of no cointegration between variables is tested against the alternative hypothesis that there is at least one cointegration vector between variables. This could be done with either the trace statistics or the maximum eigenvalues (Table 10). Both tests indicate the existence of one cointegration equations.

While applying the Johanson estimation technique, it is quite important to set appropriate lag length for the VAR model in order to ensure that the error terms in the vector-error correction model (VECM) do not suffer from autocorrelation and non-normality problems (Table 11). This can be done based on the Hannan-Quinn information criterion (HQ), Akaike information criteria (AIC) or Schwarz-Bayesian criteria (SBC). The HQ and SBC tests revealed lag length one as appropriate lag for the VAR model while the AIC chooses lag two. I used lag length one following the first two test results.

Having confirmed the existence of a unique cointegrating vector among the variables, it is important to conduct weak exogeneity test on the variables to identify the exogenous variables. To do this, a likelihood ratio test (LR – test) is employed by imposing zero restriction on the alpha-coefficients (adjustment coefficients). If the LR test rejects the null hypothesis of

[9] It is a situation in which a country fails to pay back its debt and hence takes another loan to make the payment.

Table 10. Test for cointegration rank.

Hypothesized no. of CE(s)	Eigenvalue	Trace statistic	Critical Value (0.05)	Max-eigen statistic	Critical value (0.05)
None *	0.785192	119.4756	95.75366	52.29230	40.07757
At most 1	0.560508	67.18335	69.81889	27.95260	33.87687
At most 2	0.498083	39.23074	47.85613	23.43690	27.58434
At most 3	0.251994	15.79384	29.79707	9.871691	21.13162
At most 4	0.155131	5.922152	15.49471	5.731496	14.26460
At most 5	0.005592	0.190656	3.841466	0.190656	3.841466

* denotes rejection of the null hypothesis at the 0.05 level.

Table 11. VAR lag order selection.

Lag	HQ	AIC	SBC
0	1.042539	0.950680	1.220038
1	-4.912557*	-5.555568	-3.670064*
2	-4.912255	-6.106418*	-2.604768

Table 12. Weak exogeneity test.

Variable	LR test, chi 2(1)	Probability
LNRY	8.520388	0.014120
LNRIPY	2.728377	0.098579
LNRIGY	8.827350	0.002967
LNRHGY	0.725699	0.394281
LNRCGY	9.373210	0.002202
LNRODAY	0.551372	0.457758

weak exogeneity, then the variable under investigation is endogenous.

The test result as reported on Table 12 indicates that the logarithm of real private investment, government human capital expenditure and official development assistance, all to the ratio of income are exogenous while logarithm of real income, government investment and government consumption to the ratio of income are endogenous. This implies that our variable of interest, LNRY, is explained by the other variables and at the same time it explains the other two endogenous variables. Thus, the coefficients of the single long-run relationship among the variables with their respective standard errors in parenthesis can be represented by the following function:

LNRY = 3.035653LNRIPY + 0.927001LNRIGY + 1.934161LNRHGY
[-9.10173] [-4.01195] [-4.87528]
- 1.243227LNRCGY + 0.107168LNODAY
[7.62627] [-0.85850]

All the variables have the expected signs and they are significant except ODA which has a positive but insignificant effect on real income. Government expenditures on human capital and physical capital have positive and significant effect. This implies the importance of improvements in education and health service provision and infrastructure in the recent substantial growth that the country achieved. However, the effect of government consumption expenditure on growth is significantly negative. This is in line with Teshome (2006) implying the unproductive and inefficiency of spending on wages and salaries, rent, debt servicing and transfer payments in Ethiopia.

Private investment has positive and significant effect on growth. Though there had been a deliberate suppression of the private investment during the 1970s and 1980s following the planned economic system exercised by the then government, the reformation during the post-1991 has brought about a significant improvement in private sector participation which spurred to growth. Another interesting finding is the effect of ODA on growth of Ethiopia. As opposed to the opponents of ODA such as Easterly (2006), the finding indicates that it has a positive impact on growth of the country though it is insignificant.

The insignificancy necessitates the need for improving the appropriate usage of foreign aid and loans.

The short-run dynamics (Error Correction Model (ECM)

In Johanson estimation technique, the short-run dynamics of the variables is obtained by estimating the vector error correction (VEC) model once the long-run relationship is obtained. In VEC, while the first lag of the error term, which is saved from the long-run function, shows the speed of adjustment towards the long-run equilibrium, the lagged differences of the explanatory variables capture the short-run dynamics. The following equation is the short-run dynamics of the variable of our interest, LNRY.

$$
\begin{aligned}
D(LNRY) = {} & 0.036188 + 0.218828\,DLNRY\_1 - 0.013447\,DLNRIPY\_1 - 0.032555\,DLNRIGY\_1 \\
& \quad [0.35967] \quad [0.96929] \quad [-0.17942] \quad [-0.45382] \\
& + 0.061660\,DLNRHGY\_1 + 0.011635\,DLNRCGY\_1 - 0.070490\,DLNRODAY\_1 \\
& \quad [0.55096] \quad [0.12791] \quad [-1.13802] \\
& - 0.194132\,ECM\_1 \\
& \quad [-2.54202]
\end{aligned}
$$

The sign of the adjustment term is negative and significant. It implies that 19.4% of deviations from long-run equilibrium are eliminated within one period. This speed of adjustment is very low and it takes many years for the long-run equilibrium to restore. All the variables failed to explain short-run growth as indicated by the t-statistics in bracket under the coefficients.

Conclusion

Developing countries like Ethiopia need to pursue economic development if they are to reduce mass poverty and suffering. To achieve this, economic growth is mainly targeted in the development strategy of every government. This is because the income of individuals and the country at large has to grow if the other components of development are to be achieved. The government has a big role to play in realising this objective through its policies and strategies. However, there is no consistent theory that supports the role of government in stimulating economic growth. Likewise several empirical studies found conflicting results for different case studies further intensifying the complexity and debate on the role of government in economic growth.

Ethiopia, being one of the LDCs in the world, has lots of economic and social problems. The human development index (HDI) index of the United Nations (UN) reflects this fact. The country has poor infrastructure and social services which need to be developed if the country is to get rid of abject poverty and realize the hope of its society. The role of the government in this regard is indispensable. Thus, the study has analysed the role of government intervention via its spending policy in economic growth of the country since 1975 by using both descriptive and econometric techniques.

The study period encompasses two different regimes with different economic policy and ideology. The period from 1975 to 1991 was the period when the country had a command economic system adopted by the Derg government. During these periods, there was an increase in the size of the government as it was involved in the provision of social and economic services and production of private goods and service though it was lower than the level during the post-1991 period. The role of private sector in the economy was suppressed intentionally. The country had a civil war in the 1980s which also contributed to huge defence spending in particular and total government spending in general. Public spending on capital assets (investment) was lower compared to current (consumption) spending. With regard to growth during the Derg regime, the country had an average annual growth of 1.86%, which was quite unsatisfactory. This reflects the ineffectiveness of government spending policy during the Derg government.

Following the downfall of Derg on May 1991, the country's economic policy was changed towards more free and market oriented system with a substantial involvement of the private sector in the economy. Though total government spending to GDP ratio had shown a slight decrease during the early 1990s due to the reformations made, it had started increasing continuously in the late 1990s as the government targeted to develop infrastructure. The Ethio-Eritrean war during 1998 to 2000 and the subsequent war related expenditure had also contributed to the rise. As a result of the reformation in its spending policy and restructuring of government expenditure, spending on physical capital, human capital and construction of infrastructure has been increasing while spending on defence, consumption and industry has been decreasing since post-1991 period. This has helped the growth of the country to improve substantially (average growth rate of 5.77%) compared to the Derg regime.

Ram's (1986) model is adopted to analyse the impact of different composition of public expenditure on economic growth under the econometric analysis part.

The result more or less supports the findings under the descriptive analysis. A significant positive sign was found for spending on human capital and physical capital. However, public consumption expenditure has a significantly negative impact on real GDP growth implying the unproductive nature of the spending as stated by Barro (1990). Besides, private investment was found to contribute positively to growth.

The issue of the importance of ODA in economic growth has been quite debatable in academia. As opposed to those who argue that aid has negative impact on the growth of the recipient countries, it has been quite important in the growth of Ethiopia, especially in the recent growth miracle as it helped to finance the budget deficit, current account deficit and above all bridged the saving-investment gap. However, the country is heavily dependent on aid (for example, ODA was 13.4% of GDP in 2009), which is a very unreliable source of finance. Besides, the country had been over-indebted until at least the HIPC initiative and the subsequent debt relief. Though the debt to GDP ratio is currently very low, I have the fear that there will be a tendency for the country to become over-indebted again that requires another debt cancellation as the country is still unable to increase export and reduce the current account deficit.

POLICY RECOMMENDATION

Based on the finding of the study, the following recommendations for policy makers and other concerned bodies were forwarded to the government:

1) The role of the government in the economy should be improved further in terms of developing infrastructure. Particularly, more effort is needed to develop the human capital of the country.
2) The government has to keep on restructuring its spending away from consumption.
3) Government investment should be complimentary than competing as it can crowd-out the private sector. In Ethiopia, the government monopolises sectors like telecommunication and energy. It also invests on building factories such as sugar and cement factories side by side with the private investors.
4) The government has to create a more investment-friendly environment both for domestic and foreign investors so that the capital stock and, hence, the production capacity of the country will improve. This could also improve the efficiency of the country as a whole as private investments are more efficient than public investments due to competition driven by profit motive.
5) The government should enhance the tax revenue collection system to finance its growing spending in order to reduce deficit and dependence on external sources of finance. Besides, domestic savings needs to be improved, which requires improvements in real interest rate and the development of formal financial system mainly in small cities and remote areas of the country where the majority lives.
6) The country's economic strategy should be more on structural transformation (industrialisation) than heavy dependence on agriculture. There are few countries in the world which have developed based on agriculture. Industrialisation is quite important to also improve its export performance and, hence, reduce dependence on aid and loan that created the problem of dependence and over-indebtedness. In this regard, more effort has to be made to materialize the objective of the current five year "growth and transformation plan."

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