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## **THE IMPACT OF EXTERNAL DEBT ON ECONOMIC GROWTH OF ETHIOPIA**

Project work submitted to the Indira Gandhi National Open University in partial fulfillment of the requirements for the award of Degree- Master of Arts (Economics). I hereby declare that this work has been done by me and has not been submitted elsewhere

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**INDIRA GANDHI NATIONAL OPEN UNIVERSITY  
SCHOOL OF SOCIAL SCIENCES  
SCHOOL OF GRADUATE STUDIES**

**THE IMPACT OF EXTERNAL DEBT ON ECONOMIC  
GROWTH OF ETHIOPIA**

**PROJECT WORK**

**BY**

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## ABBREVIATION

ADF	African Development Fund
DSP	Debt service payment
EDS	External Debt Stock
ERP	Economic Reform Program
EPRDF	Ethiopia People's Revolutionary Democratic Front
ER	External Reserve
GDCF	Gross Domestic Capital Formation
GDP	Gross Domestic Product
GDS	Gross Domestic Saving
GNP	Gross National Product
HICs	Heavily Indebted Countries
HIPCs	Heavily Indebted Poor Countries
IMF	International Monetary Fund
IDA	International Development Association
LDCs	Less Developed Countries
MEDaC	Ministry of Economic Development and Co-operation
MoFED	Ministry of Finance and Economic Development
NBE	National Bank of Ethiopia
NI	National Income
OECD	Organization for Economic Cooperation and Development
OPEC	Organization of Petroleum Exporting Countries
OLS	Ordinary Least Square
TDS	Total Debt Services
SSA	Sub-Saharan Africa
XGS	Export of goods and non factor services
WB	World Bank

## **ABSTRACT**

This study investigates the impact of external debt on economic growth in Ethiopia using a macro econometric model estimated for 2000 -2010. The empirical findings reveal that external debt does not affect economic growth. The results indicated that debt service payment has positive relation with gross domestic product as well the foreign exchange reserve has positive relation with GDP indicating that external debt in Ethiopian has positive impact on economic growth rather than depress it. Furthermore, the result also confirms that there is no sign of debt overhang which negatively affects economic growth.

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# CHAPTER ONE

## 1. Introduction

### 1.1. Background of the Study

The main focus of this study is to investigate the impact of external debt burden on economic growth of Ethiopia using time series data from the year 2001 to 2010. This study used debt service payment and external reserves as main variables to scrutinize the impact of external debt on economic growth of Ethiopia which is represented by gross domestic product.

According to many researchers' survey reports; accumulated external debt has been one of the most important constraints for economic growth of many Least Developed Countries. For instance, Elbadawi et al (1996: 69) made a research on 99 developing countries covering Sub-Saharan African countries, Latin America, Asia and Middle East using cross-section regression analysis; and concluded that accumulated external debt has a deterring effect on economic growth of Least Developed Countries. Patillio et al (2004: 5-13) also examined the impact of external debt on economic growth by taking 61 developing countries from 1969 to 1998. They found out that, at low level of national debt, external debt will have positive impact on economic growth. However, beyond certain threshold, an accumulated debt impacts negatively on the economic growth of a country. This threshold is a point where an accumulated debt surpasses the country's debt repayment ability. In such case, the debt is said to be overhang having adverse implications on economic growth. Others surveyed external debt impact on economic growth in terms of its liquidity constraint effect, which is caused by channeling of limited export earning/fund to service external debt instead of using the fund for additional investments. This effect has been captured as crowding out effect of external debt on the economic growth. In this regard, writers like Iyoha M. (1999: 9) investigated the impact of

external debt on the economic growth of Sub-Saharan African countries for the period 1970-1994 using simulation approach. According to his finding, a rising external debt depresses investment through both a disincentive effect and a crowding out effect on investment.

If external debts from donors improve the productive capacity of the recipient nations, then the loans are considered as being beneficial to the recipients. In such case, the economy of the borrowing country becomes self-sustaining, and further borrowing turns out to be unnecessary (Krugman, 1988). One of the essential conditions for external loans to have a positive growth impact on the economy of a recipient country is to ensure that the marginal productivity of each foreign loan is, at least, greater than the cost of the principal and interest repayment (Cline, 1995). This condition necessitates that foreign loan should be used in productive sectors and for basic infrastructures development that facilitate the productivity of other sectors of a recipient's country so that external debt servicing will not constrain the debtor's economic performance.

An accumulation of arrears is a result of not servicing maturing foreign debt obligations timely which damages a creditworthiness stance of a recipient country. When a country becomes less creditworthy, further lending becomes risky and creditor nations and institutions tend to reduce, if not totally freeze, external loans to debtor's nation. This action harms the economic performance of the debtor nation, as its economic growth is dependent, among other factors, on the availability of foreign loans (Mjema, 1996).

Pattillo C. et al (2004: 5-13) suggested that reasonable levels of borrowing by a developing countries are likely to enhance their economic growth. They noted that countries at their early stages of development have small stocks of capital; and are likely to have investment

opportunities with higher rates of return. Domestic saving of developing countries are very low compared to the investment activities they expect to perform for rapid economic growth, thus their domestic saving should be supplemented by foreign resources. They, further, elaborated that as long as these countries use the borrowed funds for productive investments, and do not succumb to macroeconomic instability and policies that distort economic incentives (i.e. unless it creates sizeable adverse economic shocks), growth will increase and allow timely debt repayments. However, if external debt is utilized for unproductive investments, the expected benefit from external debt will be much lesser than the cost of borrowing of the country. In such situation, the countries may default, and the accumulated stock of debt would hinder their economic growth.

According to the findings of Eurodad (1995: 14-23) and Befakadu (2000: 281-285), accumulated external debt discourages both domestic private and foreign direct investments; and ultimately retards the growth rate of the economy. Some of the major implications of burden of external debt on the country's economy as observed by the same writers are summarized below:

- When a country is burdened by high external debt, government will raise taxation and cut spending to ease the fiscal burden of external debt. Servicing debt places enormous fiscal pressure that has adverse effects on public investment and on physical and social infrastructures. This, in turn, limits the growth of domestic demand; and makes investment less viable.
- Repayment of external debt erodes the meager foreign exchange available for import; and creates import compression problem, which negatively affects both public and private investment that depend on imported inputs. Moreover, the allocation of

additional foreign exchange earning to debt servicing represents a very high marginal tax on such earning. Hence, the export promotion incentive to domestic economy will be limited. It is also believed that depreciation of exchange rate is a successful drive for enhancing export. However, depreciation causes substantial capital loss on external debt and reduces national wealth. This situation increases uncertainty about exchange rate; and hence, raises incentive for foreign financial investment over domestic productive investment.

- Accumulated debt reduces access to additional external lending; shifting the financing of the budget deficit towards domestic sources; and this is likely to increase inflation and/or domestic interest rates. The insolvency constraint imposed by lack of new loan due to the above mentioned reason reduces resource availability for new investment.
- In addition to constraining effects that an external debt imposes on economic activities, it negatively affects the freedom and independence of a sovereign state. It has often been used to force countries to accept conditions which are harmful to their benefits; and are inconsistent with their vested interest of improving the standard of living of their people.

According to IMF (2000: 46), the worldwide debt crises of the 1970s and 1980s occurred mainly due to the oil price shocks, high interest rates and recessions in the developed countries. While weak primary commodities prices are referred as the major contributors to debt explosion in the developing countries. Since then, retarding effect of external debt on economic growth has been an increasing concern of many less developed countries (LDCs). A study by the World Bank (1999: 31) argues that a large debt servicing made by highly indebted LDCs have been retarding their economic growth. Sub-Saharan African countries, as part of

LDCs, servicing of accumulated external debt has been impeding their economic development (Eurodad, 1995). As cited by Getahun (1994: 4), Ethiopian debt crisis is not different from the rest of less developed countries. Ethiopia had very low level of debt before the year 1970. The poor performance of the Ethiopian economy since 1974 has made external assistance a prominent feature of the country's economic structure. Thereafter, Ethiopia has become more and more dependent on external assistance and has reached a stage where it cannot function without it (Befekadu, 2000). The external debt level of the country has been piling up rapidly. Ethiopia has been facing chronic deficits both internally and externally throughout the 1970's to 1980's that call for further external borrowing to cover the gap. This makes Ethiopia one of the Sub-Saharan African countries which has a total debt that exceeds its GNP, having a debt to GNP and debt to export ratios of 108.2 percent and 642.4 percent in 1980s and 150 and 980 percent in 1990s, respectively (Alemayehu G., 1997). Ethiopia is categorized as one of the Heavily Indebted Poor Countries (HIPCs) which has been suffering with high debt burden (WB Global Development Finance, 2000).

## **1.2. Statement of the Problem**

One of the greatest problems facing many Sub-Saharan African countries, in general and Ethiopia in particular is the highly indebtedness of these countries beyond their repayment capacities. The external debt problem is becoming more acute for a number of reasons as cited by Ajayi S. (1991: 1). First, the size of the debt relative to the size of the economy is enormous; and can lead not only to capital flight, but also may discourage private investment. Secondly, debt servicing payments take a significant proportion of the annual export earnings. Meeting debt servicing obligations ruin the resources of the country significantly, which otherwise would be used for financing other basic services and improve the welfare of the citizens,

having high macroeconomic implications. This leads to raise a question whether a country's economy can grow fast enough so that it will duly service its debt obligations, simultaneously carrying out its domestic investments smoothly. Thirdly, the burden of debt for a large number of Sub-Saharan African countries threatens not only the execution, but also the prospects of success of adjustment programs being embarked upon. Fourth, the current system of debt management has a dire macroeconomic impact on an economy's output.

Foreign borrowing is beneficial for low saving countries in order to induce substantial investment, and for their rapid economic growth. However, if the countries cannot service their debt obligation as scheduled, attaining a sustainable growth would be difficult. As cited in Pattillo C. et al (2004: 5), if the stock of external debt grows recurrently, future increases in output will be drained away in the form of higher debt repayments. Repaying of external debt erodes the available resources for economic growth of a country. In a country like Ethiopia, the source of foreign exchange reserve is limited, as its export is confined only to primary commodities whose prices are highly volatile with changes in global prices. Furthermore, the trends of volumes of primary commodities' export have been stagnant. This means the country's foreign reserve has been insufficient both for servicing of external debt and to finance its import needs. Ethiopia has been benefiting very little from marginal rate of return generated from additional investments using new external loans due to huge debt service obligations. Debt servicing has rather been ruining foreign currency reserves of the country that is necessitating for importing of capital goods and machinery for further investment and for economic growth at large. This study has focused on answering question

- Is external debt of Ethiopia affects economic growth? Is the debt service more than the country's capacity of servicing, its foreign exchange reserve and export earning?



### 1.3. Significance of the Study

The study results attempts to show the impact of external debt on the economic growth, with particular focus on Ethiopia. The study contributed in providing an econometric basis through examining the effect of external debt on Ethiopia's economic growth. Besides, based on the study's findings, practical policy conclusion is drawn which will be useful for policy makers, planners and researchers.

### 1.4. Objective of the Study

The main objective of this study is to analyze the impact of external debt on Ethiopia's economic growth using the time series data from the year 2001 to 2010. This includes the following specific objectives:

- Highlight the origin and evolution of debt crisis in Ethiopia;
- Highlight Ethiopia's export performance and external debt servicing capacity;
- Examine the link between external debt and economic growth of Ethiopia using econometric model; and
- Suggest some Draw policy recommendations based on the findings.

### 1.5. Hypothesis of the Study

**Null Hypothesis:** External debt has a positive effect on the economic growth of Ethiopia.

**Null Hypothesis:** Debt service payment and external reserve have no significant effect on Ethiopia's economic growth.

**Alternative Hypothesis:** External debt has a negative effect on the economic growth of Ethiopia.

### 1.6. Scope and Limitation of the Study

The main focus of this study is examining the effects of external debt on economic growth of Ethiopia using the time series data from the year 2001 to 2010. There are two major perspectives on the impact of external debt on economic growth of a country, including:

(a) the debt overhang effect: where an accumulated debt exceeds the country's repayment ability, and over hanged debt drags down economic growth of a country; and (b) crowding out effect of external debt, where debt servicing obligation crowds out a fund available for investment and growth. This study attempts to address both the debt overhang and crowding out effect of accumulated external debt on Ethiopia's economy. The variables to be used in this analysis are debt services payment and external reserves while dependent variable GDP as proxy of economic growth.

Limitation of the study has aroused from the problem of inconsistency of data prepared by different institutions. Even data from the same institution has showed different figures for the same year. Generally, this study faced with the problem of inadequate materials for assessment and difficulty to access to relevant data for thorough analysis, limited time, inconsistent data and some weaknesses of the model.

### **1.7. Outcome of the Research**

The findings of the study, based on the empirical data of external debt's impact on economic growth of Ethiopia, used to help in formulation of policy for the Ethiopian Economy

### **1.8. Organization of the Study**

This study has five chapters. The first chapter contains the introductory part including statement of the problem, objective, scope and limitation and the expected result. The second chapter presents both theoretical and empirical literature review. The third chapter discusses about the external debt of Ethiopia and the macroeconomic performance of Ethiopian economy. The fourth chapter presents methodology and econometric analysis including model specification, estimation techniques, empirical results and economic interpretations. Finally, chapter five gave conclusion and policy recommendation.

# CHAPTER TWO

## 2. Literature Review

### 2.1. Theoretical Literature Review

Low level of domestic income and saving are prominent feature of the Least Developed Countries, which in turn, resulted in a scarcity of capital (Barro et al, 1995). On the other hand, external debt has been one of the crucial sources for bridging the gap of the imbalance between domestic savings and investment, fiscal deficit and the current account deficit of these countries (Todaro,M. and Smith,S. 2009).

Reasonable level of external borrowing facilitates economic growth through capital accumulation and enhancement of productivity. However, if a country is heavily indebted, it cannot fully meet its foreign debt obligation with existing resources. Debt repayments are linked to the economic performance of the country and part of investments return would be devoted for debt serving which creates a disincentive to invest, decrease output growth and diminish economic growth from the borrower county's point of view (Fosu, 1996).

The impact of external debt on economic growth has been analyzed in two basic terms: including (a) debt overhang effect and (b) crowding out effect. These terms are related to the two most important indicators of debt burden, a ratio of total debt to GDP which measures debt overhang effect and the other one is a debt service ratio (ratio of debt service to exports of goods and non-factor services) which captures the “crowding out” effect of external debt. The higher these ratios, the greater will be debt overhang and crowding out effects.

### **2.1.1. Debt Overhang Effect**

According to Krugman (1988: 13), a country's debt is said to be over hanged when a stock of external debt exceeds a country's capacity of repayment and resulted in debt arrears. This higher debt serving obligation enforces the government to impose higher taxes on the private sector to supplement the shortfall of repayment per contractual agreement. Higher taxes, in turn, reduce the incentive to save, invest, and engage in productive efforts. Therefore, resources that might have funded for investments are consumed by debt servicing (Claessens et al, 1990).

Debt servicing is an increasing function of the country's output level. Since, parts of the returns from investing in the domestic economy are effectively 'taxed' away by the foreign creditors with the increasing of the indebtedness. When the external debt grows large, investors lower their expectations of returns; in anticipation that the more they produce the higher will be the tax imposed on their return to repay debt. Hence, investors will be less willing to incur investment costs today for the sake of increasing output in the future, which in turn, slows capital-stock accumulation and resulted in squeezes of investments. Potential investors will also be threatened by the highly taxed return. Eventually, investments by domestic as well as foreign investors will be discouraged. So, in this case, debt overhang act as tax on future output which discourages investment, impair economic growth and makes impossible for highly indebted countries to escape from poverty (Clements et al, 2005).

According to Sachs (2002: 12), debt overhang exists when the country's debt service burden is so heavy that a large portion of the current output accrues to foreign lenders which consequently creates disincentive to invest as a result of tax disincentive and macroeconomic instability. Tax disincentive means that a large debt stock discourages investments, because investors assume that there would be taxes on future income in order to make debt repayments.

The macroeconomic instability relates to increases in fiscal deficit, uncertainty due to exceptional financing, exchange rate depreciation, possible monetary expansion, and anticipated inflation.

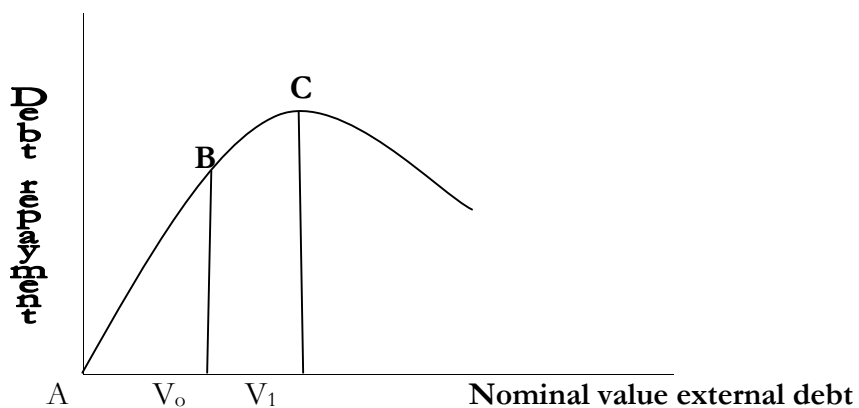
Borensztein E. (1990: 47-49) described foreign debt impacts on investment through two channels including: the "debt overhang" channel and the "credit rationing" channel. A debt overhang is defined as a situation in which the debtor country benefits very little from the return of any additional investment because of the debt service obligations. It has a constraining effect on economic growth of a country, since debt servicing absorbs profits that otherwise could have been reinvested in capital formation. As the debt overhang increases, if it is not replaced by increased domestic saving, the source of foreign saving will dry up and interest rate on domestic loan will rise. The credit rationing channel refers to the situation where debtor country cannot obtain new loans, since it would not be able to service its debts. It arises from the higher domestic interest rates that prevail in a debtor economy as a consequence of its unfavorable standing in the international financial markets; the domestic interest rates exceed the international rate, because of constraints faced by debtor in international financial markets.

The channel for the debt overhang's effect on growth may not only be through affecting the volume of investment, but also be through lowering of a productivity growth. On this regard, Bangura S. (2004: 4) indicates that a high debt level constrains growth by lowering total factor productivity growth. For example, governments may be less willing to undertake difficult and costly policy reforms if it is perceived that the future benefit in terms of higher output will accrue partly to foreign creditors. The poorer policy environment, in turn, is likely to affect the efficiency of investment and productivity. In addition, high levels of uncertainties and instabilities related to the debt overhang are likely to hinder incentives to improve technology or to use resources efficiently. In such a highly uncertainty environment, investment may be

misallocated to activities with quick returns, rather than long-term, higher-risk irreversible investment which would be more conducive to long-run productivity growth. Misallocated resources and less efficient investment projects could thus contribute to slower productivity growth. Hence, debt overhang worsen economic performance by changing the quality of investment.

Mosely (1992: 9) has also indicated a wider scope of debt overhang effects. He concluded that external debt does not only affect investment in physical capital but any activity that involves incurring costs up-front for the sake of increased output in the future. Such activities include investment in human capital (in terms of education and health) and in technology acquisition whose effects on growth may be even stronger over time.

According to Cohen (1993: 37), foreign borrowing up to a certain threshold level stimulates investment and growth. But beyond the threshold, it impacts becomes negative, since a significant amount of country's fund will be utilized as repayment instead of expanding investment. The relationship between the size of debt and debt repayment is represented by "debt Laffer curve". According to Claessens et al, (1990: 17) a debt Laffer curve is a backward bending growth curve, which symbolize that stock of external debt up to certain threshold level stimulates growth. But, when outstanding of external debt surpasses the debt servicing capacity of a country, it will negatively impact the economic growth. The core point of this curve is a turning point representing a debt overhang that delineates positive and negative effect of external debt on economic growth (Elbadawi et al. 1996). A debt-laffer curve is presented next:



**Figure 2.1: Debt Laffer curve**

The horizontal axis of the above figure represents a nominal value of debt and the vertical axis shows the expected repayment of the debt. As the nominal value of the external debt increases the creditors expect debt repayment to fall. The segment 'AB' showing higher debt is associated with equal increases in expected repayments when the debt is relatively small. Both stocks of debt and debt repayment rise in the same proportion, so it represent the upward-sloping or “good” section of the curve( Claessens et al, 1990).

A debt levels above  $V_0$ , there is a positive probability that the country will not be able to completely repay its debts. The segment 'BC', then, shows how the expected debt payments behave in response to indebtedness, the more the external debt the lesser will be the repayment of the loan. Beyond  $V_1$ , increased indebtedness reduces the expected repayments on the overall debt. It is a downward-sloping portion of the curve or “bad” section of the curve. Debt overhang occurs at the peak of the debt Laffer curve, a point where a debt becomes so big that economic growth in the country is hampered (Claessens et al, 1990).

In general, a debt overhang occurs when countries have higher external debt to GDP ratio, and when they have relatively less funds available to provide conducive environment for business and promote investment, which further deteriorate the current level of economic growth. A debt overhang discourages domestic investment, and can delay private capital flows required to

generate sustainable growth (Bangura, 2004). Debt overhang also results in disincentive investments in human capital and new technologies, and the government's willingness to adopt structural reforms and fiscal adjustments, leading to poverty trap (Sachs J., 2002).

### **2.1.2. Crowding Out Effect**

Liquidity and solvency of countries' are important indices in dealing with external debt impacts on economic growth (Ajayi, 1991). A liquidity constraint refers to the inability of a country to service its debts now in the amount initially contracted, due to lack of enough cash on hand to repay current obligations. While, the solvency refers to whether the value of a country's liabilities exceeds the ability to pay at any time; it also includes of incapability of country servicing its debt in the long run (Ajayi, 1991). If a country debt-service ratio and the debt-GDP ratio are high, the country will be illiquid and its ability to remain solvent will also be impaired. Therefore, the county needs to pursue accelerated growth in order to reduce its debt problems, and more importantly, to break out of its low income status.

A liquidity constraint represents a 'crowding out' effect of external debt. An increase in external debt servicing reduces funds available (export earning) and leaves less avenues for expansion of investments. It indirectly also affects a country's ability to borrow further from external resources, thereby, put pressure on domestic borrowing and leading to crowding out (Taylor, L. 1994). This liquidity constraint negatively affects a private investment as well a public and publicly guaranteed investments. The damaging impact of debt servicing on growth is attributable to the reduction of government expenditure, resulting from debt-induced liquidity constraints.



According to Fosu (1996: 19) a liquidity constraint which arises from the increase in debt-servicing requirements may shift the budget away from the social sector or public investment to meet debt obligation. He underlined that public expenditure is a major determinant of the economic activities in many functional sectors. He also argued that debt can additionally influence economic growth via its effect on the productivity of investment and decrease output growth by diminishing productivity and as a result of the adverse changes in investment mix. Thus, crowding out effect discourages capital formation and encouraging capital flight due to tax increase expectation (Cohen, 1993).

According to Claessens and his collaborators (1990: 108), the debt burden affects the current flows of resources available to the country. That is, resources used to service debt may crowd out public investment and hence discourage private investment, because of the complementarities between private and public investment. As debt servicing demands higher resources, so the share of public investment will shrink as most governments cannot lower consumption. When there is less public spending on basic infrastructure, private investment will also be discouraged. The stiff demand of high debt service payments on the budget results in forced reduction in public investment mainly reduced spending on education and health and private investments are also discouraged. This concept is related with the crowding-out effect which is common in most of highly indebted poor countries.

In order to repay external debt, countries are needed to convert the domestic resources into foreign exchange in which debt must be repaid. So the desperate demand for foreign exchange to service debt often results in foreign aid resources and other foreign exchange resources being routinely and frequently diverted to finance debt service payments.

## **2.2. Empirical Literature Review**

The external debt of developing countries prior to the early 1970's was relatively small and primarily was official phenomenon. The majority of creditors were foreign governments and international financial institutions such as IMF, WB and regional development banks. Most of these loans were on low-interest and granted for the purpose of implementing developmental projects and expanding imports of capital goods (Iyoha, M., 1999).

However, the trend of external debt changed significantly in the subsequent decades. During 1970s and early 1980s, commercial banks began to play a large role in the international lending by recycling surplus of OPEC (Oil and Petroleum Exporting Countries) petrodollars and issuing general purpose loans to Least Developed Countries to provide balance of payments support and expansion of export sectors. This led to increase in the interest rates and the volume of developing countries debt beyond their repayment capacity, and eventually to the debt crisis. Debt crisis refers to a situation where a debtor country announces that it could not meet its forthcoming debt repayments to international creditors. That means announcing that it would be unable to continue servicing or paying interest and amortization payment on its debts. For instance, in 12<sup>th</sup> of August 1982, the Mexican government announced that it could not meet its forthcoming debt repayment on its USD80 billion of outstanding debt to international banks. This was the first sign of the international debt crisis of the world. Soon after the Mexican government's announcement, a number of other Less Developed Countries also announced their inability in meeting forthcoming repayments. Therefore, throughout 1980s and 1990s, the problem faced by Least developed countries servicing their debt has become one of the major international policy issues (Keith Pilbeam, 1998).

Several studies are made to empirically assess the impacts of external debt on the economic growth. Most of the empirical evidences witnessed that high debt burden, particularly in Less Developed countries, have been adversely affect the rate of investment and on economic growth. For instance, Elbadawi and his collaborators (1996: 69-82) have identified specific debt to GDP ratios at which the marginal impact of external debt on growth becomes negative, by making a research on 99 developing countries covering Sub-Saharan African countries, Latin America, Asia and Middle East using cross-section regression analysis. They recognized three direct channels in which indebtedness in less developed countries works against growth: current debt inflows as a ratio of GDP, past debt accumulation (capturing debt overhang) and debt service to GDP ratio. The maximum of a ratio of the current stock of debt to GDP corresponded to 97% in those 99 surveyed developing countries. They have further explained that if ratios are going beyond identified level, the debtor country will share only partially in any increase in output and exports, because a fraction of that increase will be used to service the external debt. They also showed the effect of the higher debt burden indicators on growth through their impact on public sector expenditures. If the country is heavily indebted, its economic condition will be worsened and government find themselves with fewer resources. So, it will cut most its public expenditure, and only small part of expenditure destined for social programs and activities for the very poor. In this regard, they concluded that the heavy debt burden led to fiscal distress as manifested by compressing of budgets of many of Least Developed Countries. They also identified that heavy burden of external debt deters economic growth of the surveyed countries.

Patillio et al (2004: 5-13) examined relationship between the total external debt and the GDP growth rate of 61 developing countries for the period between 1969 and 1998. They set up curve which reflects the relationship of external debts and debt servicing of these countries, and identified a critical threshold beyond which debt negatively impacts growth and investment. This backward bending curve designates at a low level of national debt, a debt and growth have positive relationship but beyond certain threshold they will have negative relationship. They concluded that the effect of debt-overhang is likely to occur only at and after a certain threshold, where the stock of external debt exceeds a country's repayment capacity. Beyond this threshold, external debt burden negatively impacts on economic growth and development in the long run.

Cohen (1993: 37) showed a correlation between Least Developed countries debt and investment in the 1980s, he concluded that the level of stock of debt did not have much power to explain the slowdown of investment in developing countries before 1970s, but in 1970s and 1980s the servicing of debt crowded out investment. According to Fosu (1996: 1), the Sub-Saharan African countries are susceptible to large foreign loans not only for the savings-investment gap, but also for the foreign exchange gap which has been widened because of the decline in export. These countries have adopted development strategies which rely heavily on foreign financing, from both official and private sources, thus, massive growths of external debt in Sub-Saharan African countries have given rise to deleterious effects of the debt on investment and growth.

Iyoha (1999: 9) used a simultaneous equation and simulation method on sub-Saharan African countries for the period 1970-1994 using simulation approach to assess the impact of external debt on economic growth. In Sub-Saharan African countries, the debt overhang variable ( $\text{Debt}/\text{GDP}$ ) and crowding out effect variable ( $\text{Debt service}/\text{export of good and non factor}$

services) are very significant, which clearly evidenced the existence of debt overhang and crowding out in Sub-Saharan African countries. So, he concluded that heavy debt burden depresses the level of investment and lowers the rate of economic growth through both the debt overhang and crowding out effect in Sub-Saharan African countries. But this may not be true for all individual countries. Because there is high diversity even among these countries, and it depends on country's individual circumstance that reflected by their macroeconomic performance such as savings and investment as a percentage of growth domestic product, terms of trade, export growth, inflation and growth in growth domestic product and others political and social factors.

Mosely P. (1992: 10-11) using an error correction formulation showed a debt overhang problem in sub-Saharan countries both on the growth and investment equation. The estimation result showed that not only does past debt accumulation but also current debt flow deter growth in the short run. The error correction term also showed that high external debt has negative implications on growth. Sachs (2002: 17) argued that the external debt overhang is a major cause of stunted economic growth in heavily indebted countries. Hence, there is an urgent need for debt reduction and international debt relief facilities. This is because of the required debt service payments for some countries are very large that the prospects for a return to growth path are dim and existence of debt-overhang inhibits private investment programs.

### **2.3. Unit Summary**

This chapter reviewed different literatures on the impact of external debt on the economic growth of a country, mainly in two basic terms: debt overhang effect and crowding out effect. The debt is said to be overhanged when the country's external debt exceeds its capacity of repayment and it is measured by ratio of debt to GDP. Higher debt burden enforces the

government to impose higher tax for repayment of the loan. This higher tax, in turn, discourages investment, since both the existing and potential investors daunted by the taxing away of their return. So, debt overhang causes squeezing of investment, instability of macroeconomic performance, impairing of economic growth and makes difficult for the country to escape from poverty. The debt overhang effect is not limited only to constraining effect on investment, but also diminishes factor productivity growth. Due to the later effect, the government will be less willing to undertake difficult and costly investment. As a result investment may be misallocated from a long term and high risk irreversible investments, which are more conducive to long run productivity, to investment with quick return. Besides, investment on human capital and technology, which have long term effect on economic development, will also be weakened. In nut shell, debt overhang worsen economic performance by changing both the quality and level of investments and in turn adversely affects economic growth of the country.

The relationship between the size of debt and debt repayment is represented by “debt Laffer curve”. It is a backward bending growth curve, which symbolizes the external debt up to certain threshold level stimulates growth, however, when the debt level surpasses the debt servicing capacity of the country, it will negatively affects the economic growth. The threshold represents a debt overhang that delineates the positive and negative effect of external debt.

Literatures on crowding out effect of external debt on economic growth are also reviewed in this unit; the crowding out effect is captured by the ratio of debt service to exports of goods and non factor service. As external debt of a country increases, it will reduce fund (export earning) available for the expansion of investment, since the fund will be utilized for the repayment of loans. This effect discourages capital formation and encourages capital flight. It has also

determinant effect on government expenditure. The government will be forced to shift resource from social and economic infrastructure development to servicing of debt, which diminishes productivity as well deteriorate the quality of investment mix. Since, the government spending has complimentary with private investment; lesser investment on infrastructure negatively affects private investment. The country's foreign reserve will also frequently divert for loan repayment, even the foreign aid sometimes used for the repayment of the loan.

Empirical studies on the impact of external debt on economic growth have also reviewed in this unit, Elbadawi and his collaborators (1996: 69-82) concluded that high debt burden deters economic growth based on a survey made on 99 developing countries. Patillo and others (2004: 5-13) also made a survey on 61 developing countries and identified a threshold level beyond which external debt will have negative effect of these countries. Fosu (1996) and Iyoha(1999), on their independent surveys of external debt effect on economic growth on Sub-Saharan African countries found out that massive growth of external debt have given rise to deleterious effect on investment and growth of sub-Saharan African countries, both through the debt overhang and crowding out effect. Mosely P. (1992: 10-11) showed a debt overhang problem in sub-Saharan countries both on the growth and investment equation. His result showed that high external debt has negative implications on growth. Sachs (2002: 17) also concluded that high external debt burden stunted economic growth of the heavily indebted countries.

# CHAPTER THREE

## 3.1. External Debt of Ethiopia

### 3.1.1. Trend of External Debt of Ethiopia

Ethiopia is one of the heavily indebted poor countries. Notwithstanding this fact; the country had very low level of debt before 1970s', since borrowing for the purpose of financing balance of payment, fiscal and saving-investment deficits were not prominent feature of the country. Besides, the then-government, the Imperial government, had cautious policy in borrowing from external sources and the rate of economic growth was ahead of the cost of borrowing. So, debt service obligations were honored without causing any strain on the economy or foreign exchange reserve of the country. For instance, the debt burden indicators, debt to GDP and debt to export of goods and non factor services, were 12% and 72%, respectively, in 1974, at the end of the regime period [Getahun, 1994: 4].

The Military Government was established in September 1974, and its history with external debt started in 1975. Unlike the Imperial regime, at this regime the debt stock was grown twenty time faster than the growth rate of the economy, and resulted in heavy borrowing for purpose of implementing comprehensive development initiatives that could not fully operational with domestic saving. The size of debt outstanding was increased by more than tenfold while comparing debt position when the military government established to the end of its regime, i.e. from USD63million in 1975 to USD9.11 billion in 1991 [see annexed table 3.1]. The debt stock was growing at 20% rate per annum while nominal GDP was grown at 1.9% and the export earnings by a rate of 7.6% per annum [NBE annual report 1992]. The volume of debt to GDP was upsurge from 11.3% to 37% and debt to XGS from 135.5% to 2,225.7% comparing the



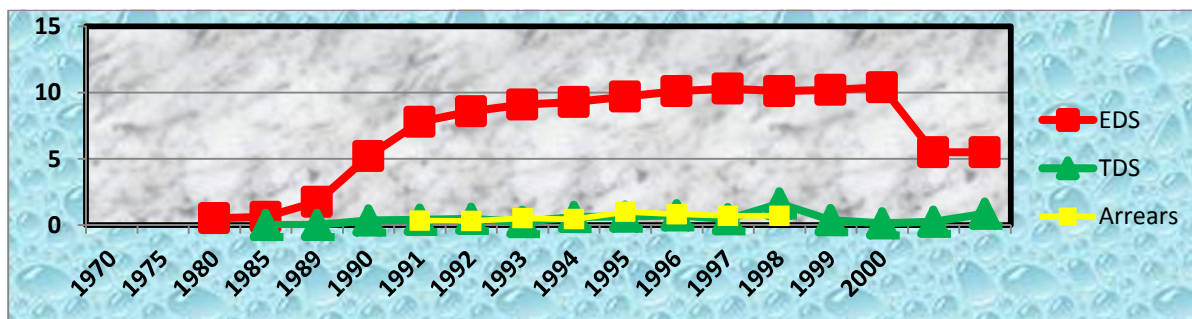
year 1975 to 1991 [see annexed table 3.1]. This phenomenal increase was due to a number of factors. The major ones were the following:

- The selections of projects for which heavy capital allotted were without proper appraisal, followed by delay in implementation and lack proper follow up.
- The government was channeled much of the external debt to inefficient public undertakings which had very low rates of return.
- The misguided economic policy had been restricting the performance of exports, the major source of foreign exchange earnings, and led the country to be dependent on the external source of finance for most of its current transactions.

Regarding the debt services, in 1970s the total debt service, the ratio of total principal and interest payments, to XGS had showed an increasing trend and servicing debt was not out of hand, even the performance of export was poor. The TDS was USD 0.014 billion in 1975 and increased to USD0.35 billion in 1985[see annexed table 3.1]. The debt service ratio, TDS to XGS, escalated from 0.14% in 1975 to 28% in 1985[see annexed table 3.1].

The Military government had been honoring its obligations of external debt until 1989, when the first arrears appeared, and for the first time in history of the country failed to meet its obligation on debt. And Ethiopia became one of the sub-Saharan African countries that have total debt exceeding their GDP. Thereafter, arrears became a common and increasing feature of the country's debt servicing. The accumulation of arrears, in turn, aggravated the difficulty of servicing debt as there was limited resource for debt service payment. This situation signaled the beginning of debt crisis in Ethiopia, however, the Military government did not give prudent attention for debt management (Berhanu N. 1999). Debt to GDP and debt to export ratios were continued to show a marked increment in 1990s. The debt to GDP and XGS were stood at 172% and 1666%, respectively, in 1991. The total debt was well above of the nation's GDP and

a total export level of the country. And the total arrear was reached USD0.52billion, which accounted 20.6% of GDP and 199% of total export of goods and services in 1991 [see annexed table 3.1], which implies the debt burden was becoming too heavy to service by country's capacity and difficult to resolve by itself. Hence, the government sturdily demanded the lender for relief and rescheduling.



Source: World Bank, debt statistics of the year 1999

**Figure 3.1: Trends of external debt [1970-2000]**

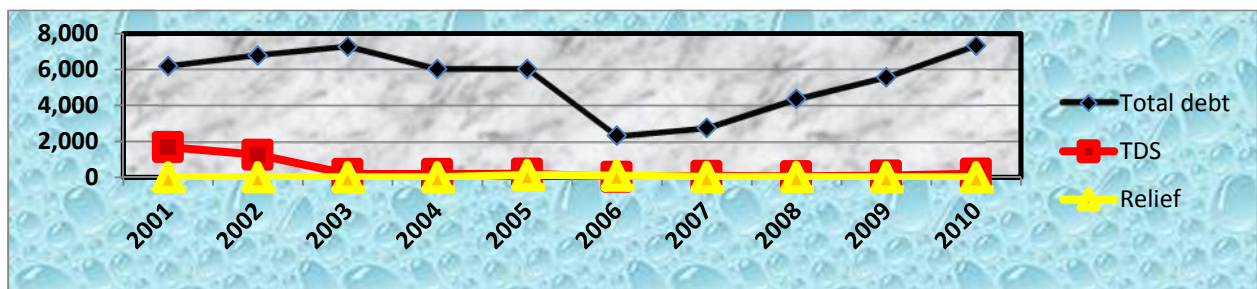
The current government, Ethiopian People Revolutionary Democratic Front [EPRDF], inherited a large debt stock from Military government. Even at this regime, the country's debt burden has continued to increase at an increasing rate. The external debt stock jumped from USD9.2billion in 1992 to USD10.4billion in the 1998 growing at 13% per annum which is more than the growth rate of GDP [see annexed table 3.1]. The most significant factors of the time for the phenomenal growth of external debt were the following:

1. The devaluation of currency in October 1992, which inflated the Ethiopia currency denominated external debt by 185%. The Military government had pegged its exchange rate during its regime; i.e. one USD was exchanged for Birr2.07. However, the current government has devaluated Ethiopian currency for the first time by 141% in 1992, i.e. one USD to be exchanged for Birr5. Therefore, the US dollar denominated debt increased from USD4.3billion to USD4.7billion between 1992 and 1993 fiscal year, much more than USD300billion increment as new debt; whereas the nearly threefold increase in Birr(local currency) denominated debt stock from Birr6.6billion to Birr18.8

billion(Berhanu N. 1999). The government has been making frequent devaluation though not to the extent of the initial one, currently one USD is exchanged for Birr19.2959.

2. The government also borrowed new loans, particularly to support the completion of the Structural Adjustment Program in the country. This newly contracted debt has also great contribution for increment the debt stock of the country.
3. Capitalization of arrears, the arrears arose due to failure of repaying were capitalized and rescheduled, which further increased debt stock of the country.

But, Ethiopia’s stock of external debt showed a marked declined to USD 5.5billion in 1999. The decline was largely due to a rise in exports earning which capacitated the country its debt timely and debt cancellation. A debt stock of the country had even lowered to a balance of USD2.7 billion in 2007 reflecting the impact of HIPC relief assistance, the ratios of external debt to GDP and to exports of goods and services were also lowered to 12% and 0.9%, respectively [See annexed table 3.2]. And the ratios of arrears to GDP and XGS were 11% and 74%, respectively. But, the debt stock of the country again increased to USD 7.3billion at end 2010, depicting 166% increment over the 2007. In 2010, the ratio of debt to GDP ratio and XGS rose from 12% and 0.9% to 26.3% and 1.4%, respectively, compared to 2007 position. [See annexed table 3.2].



Source: MOFED and MEDaC various years report (2001-2010)

**Figure 3.2: Trend of External debt of Ethiopia from 2001 to 2010**

In early 1990s, the debt service obligation was beyond the country's capacity of managing. For instance in 1995, debt to GDP and debt to export ratios were 180% and 1,276%, respectively. And the total arrears accounted 71.1% of GDP and 503% of XGS in 1995 and further raised to 89.6% of GDP and 546% of XGS in 1998 [see annexed table 3.1]. After the year 2000, the country serviced its debt timely and no record of arrears is reported [see annexed table 3.2].

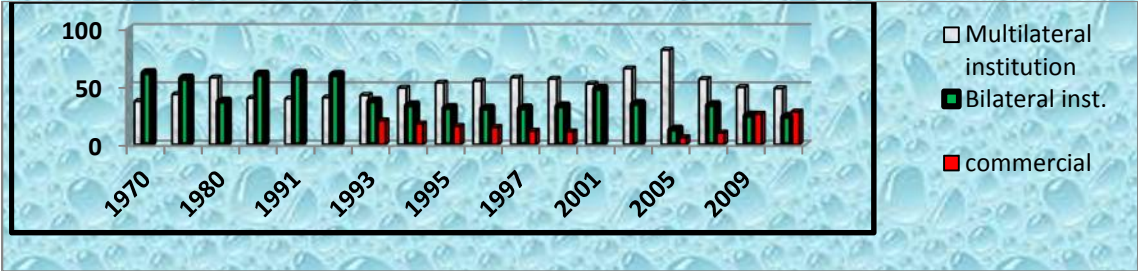
### **3.1.2. Composition of External Debt of Ethiopia by Type**

The country has been borrowing from three dominant sources; these are the Multilateral, Bilateral and Commercial lending institutions. The major creditors of long-term debt to the country are official sources made up of government and multilateral institution. During the Imperial regime, more than half of the debt of the country was owed to bilateral institutions. For instance, between 1967 and 1975, credits from bilateral sources increased at an average rate of 20% while those from multilateral sources at 12% per annum (World Bank, Global development finance 1999).

After the Military government took power, although the bilateral institution continued to be the dominant source of credit of the country, there was a slight shift from Bilateral to Multilateral institutions. There was also shift in alignment made by the government which changed its ideological stance from the capitalist to the socialist ideology. As a result of which, the most important source of credit, the US government, cut off all its credit to the country. At the same time, and for the same reason, the multilateral sources, and particularly the WBG, tied their credit to compensating the foreign owners of the industries and other interests nationalized by the government. The Bilateral had on average 55% share of debt stock while the multilateral institutions held 45%. Out of the bilateral debt, about 53% was owed to Organization for Economic Cooperation and Development [OECD] and 7.9% to socialist countries and 39.1%

to others. The Bilateral supply was dominated by the US during the Imperial regime and supplanted by the USSR after 1975. Out of the multilateral sources, the most important are the World Bank Group [WBG], with an outstanding balance of 77% of the multilateral, 33% of the official source of debt, and 27% of the total long-term credit of the country. Of the WBG sources, IDA credit accounted for 93%, and that of IBRD for only 7 % of their total and other multilateral suppliers of long-term credit (World Bank, Global Development Finance 1999).

In the late 1970s, the government inclined to official source of finance and maintained the policy of minimizing credit from the private sectors. At the time, there was a tight monetary and fiscal policy in the major OECD member countries in order to stabilize their own economies due to the credit crunch by the Western bilateral source governments. In the 1980s, the major providers of credit of the country were continued to be official sources whose share of the total debt accounted 90%. And 10% of the total debt stock was supplied by private creditors, of which the financial markets share amounted to 6%, and suppliers' credit to 4% of the total debt of the country. Despite the deterioration of the foreign currency reserve of the country, the country was still not inclined to credit from the private source to supplement its reserve need. Since, private credit sources are more prominent in the short rather than long term and with high interest rate.



Source: world Bank, Global Development Finance 1999

**Figure 3.3: Composition of External Debt of Ethiopia by Sources**

After 1991, the external debt source composition has shifted to the multilateral lending which offers concessional loans. The multilateral share increased from 40.2% in 1992 to 56% in 1998 of the total external debt of the country. This sharp increase in the proportion of multilateral debts is associated with loans obtained mainly from the World Bank, the IMF and the ADF in relation with the structural adjustment program [See annexed table 3.3]. On the other hand, the average share of bilateral lenders share has declined from 59.8% in 1992 to 33% in 1998. It was due to the debt relief obtained from the Paris Club creditor countries. Out of bilateral lending institutions quarter of the debt was owed to Non-Paris Club and the rest to Paris Club [See annexed table 3.3].

The commercial source of credit had an average share of 15% of external debt, but it had a declining trend in 1990s as a result of the commercial debt buy-back operation. Same pattern is observed after the millennium, the debt from multilateral Credit has kept the dominant source of credit accounting 52% of the total debt in 2001, 81% in 2005 and 48% in 2010. While debt owed to bilateral had a declining trend owing to debt cancellation while commercial creditors share increased from 5.9% in 2005 to 28% in 2010 [see annexed table 3.3].

### **3.1.3. Structure of External Debt of Ethiopia**

#### **3.1.3.1. Terms and Condition of External Debt**

The terms and condition of debt give insight about the form with which debt is serviced. The terms and conditions are different from lender to lender; the forms of lending of official creditors are softer than the private creditors, mainly in terms of interest rate charge, maturity and grace period. The private lenders credits are more stringent with high market interest rate.

The country has been mobilized most of its credit from official sources in order to confer the advantages of contracting the loans on soft terms. Concessional loans are granted by the multilateral and bilateral institutions. And Among the multilateral, the IDA credits are with the softest term. Relatively, the bilateral loans are with harder terms than multilateral creditors. On contrary Private/Commercial debts are provided at market interest rates and for short term.

Most of the country's loans are contracted on concessional basis, which have been lent with higher grant element, longer maturity, longer grace period and lesser interest rate than market offers. During the Imperial regime, more than 80% of the official source debts are concessional and about 95% are of long term nature 67% of the loans were contracted on concessional terms [Befekadu D., 2000]. After 1974, during the military regime, a proportion of concessional loans were increased to 82%, because the world was willing to make credit available under soft terms in sympathy of the victims of the drought. The share of loans contracted on the basis of variable terms [i.e. market rate] declined during the 1974- 1981[See table 3.4].

**Table 3.4: Terms and structure of Ethiopia's external debt**

Years	1970	1980	1989	1990	1991	1992	1993	1994	1995	1996
<b>All creditors</b>										
interest %	4.4	3.5	3.2	6.6	4.7	1	1.7	1.1	1	1.6
maturity [years]	31.5	19.2	21.6	21.8	20.3	40.1	40.7	40.4	36.3	35.4
Grace period[yr]	6.6	3.8	5.9	2.9	5	9.8	9.2	9.3	9.3	8.9
Grant element in av. %	43.3	39.5	42.7	23.7	35	73.7	72.5	76.1	76.1	76.1
Years	1998	1999	2000	2001	2003	2004	2005	2006	2007	2009
interest %	0.6	0.6	0.8	0.8	0.87	0.83	1.77	0.81	0.98	0.89
maturity [years]	40.6	40	38.8	40.9	39.5	34.35	23.44	40.91	35.5	40
Grace period[years]	10.1	8.7	10.1	11.7	9.02	8.64	6.29	9.88	9.03	10.5
Grant element on av. %	83	70.4	79.5	80.8	59.68	56.8	60.92	60.96	56.52	63.4

Source: World Bank Development finance 1999

The terms and conditions of Ethiopia's external loans were relatively unfavorable before 1991 compared to after 1991. The average interest rate declined from 4.4% in 1970 to 1% in 1991 with some fluctuation in mean time [see table 3.4]. After 1992, the interest rate was even below

1% because of good relationship between the government and the lenders. The extent of grant element, on average, accounted less than 40% until 1990. But after 1992, the proportion of grant element became more than 50%, which even extend its proportion to 83% in 1998. The average maturity period was 31.8 years in 1970 appeared to be 20.3 years in 1991. It further extended to 40.1 years in 1992, and then on, the maturity period ranged between 30years to 40 years [see table 3.4].

#### **3.1.4. External Debt and Economic Growth of Ethiopia**

As cited by Getahun (1994: 4), Ethiopian debt crisis is not different from the rest other Least Developed countries. According to (Berhanu Nega, 1999: 387), external debt used to create a relatively good macroeconomic environment and stable political condition, which in turn used as leverage for crowding in investment.

Ethiopia's external debt and economic growth showed positive correlation for period between the years 1960 to 1974, but negative correlation between 1975 and 1988 (Alemayehu G., 1999). The different outcome was explained by the different policy regimes pursued by the two governments, that is, external capital contributed positively to growth in Ethiopia during the Imperial era(1960-1974), but negatively during the Military Government regime(1975-1988). The negative contribution was a result of the policies pursued by the Military government, which diverted resources away from agriculture to other sectors. As a result the major source of export earnings declined steadily. So the country could not service the debt as contracted. The poor performance of the Ethiopian economy and chronic deficits both internally and externally throughout the 1970's to 1980's called for further external borrowing to cover the gap. So, the country became more and more dependent on external assistance and reached a stage where it cannot function without it (Befekadu D, 2000).



Befekadu (2000: 24) used a method of eye-balling to test the debt-overhang effect on investment. He argued that the debt-overhang hypothesis did not seem to hold in Ethiopian case. Using similar methodology, Sesay (1998: 47) concluded that the effect of long-term foreign borrowing on growth had mixed results. These mixed results attributed to a number of factors.

- First, it is not the volume of external capital that affects the economic growth but how it was used. He made an assessment on the impact of external debt on economic growth for the ranges of years between 1964 and 1977 and between 1993 and 1995, during these period external capitals contributed positively to the growth of Ethiopian economy, while between 1978 and 1992 the contribution was negative. These results were justified in such a way that during the Imperial era(1964-1974) and the Transitional Government of Ethiopia (1993-1995), external capital was used for the development of infrastructure. However, during the Military Government Regime (1978-1992), the government used a large proportion of foreign capital for defense. Thus, he concluded that the debt crisis is more of a policy problem. Similarly, Teshome (1993: 47) argued that during the Military Government the increasing level of government expenditure was made in defense with noticeable neglect of the social and economic sector development, so the external debt not utilized for developmental aspects and had negative impact on economic growth.
- The second aspect of debt relates to the growth in terms of interest rate relative to the growth rate of GDP. During the Imperial era, world interest rate on debt grew on annual average of -3.6 percent while GDP grew at an annual average of 6.2 percent. The opposite was observed during the Military Government era. Then world interest rate on debt grew at a higher rate (more than 4%) relative to that of GDP growth of 1.9%. This situation was reversed under the current government. During this period GDP recorded

a higher growth over that of interest rate on debt as the result of the ongoing Economic Reform Program dedicates the impact of the external debt on growth.

Eshetu and Mekonnen (1992: 24) estimated the determinate of private investment in Ethiopia using the Hendry (1983) approach of Error Correction Model based on general to specific approach and conclude that public investment, import and previous level of investment are the most significant factors in explaining private investment in Ethiopia. Hence They rejected the debt overhang hypothesis in the short-run with the possibility of its impact in the long- run. Dawit W. and Yemisirach A. (2001: 7) using Engel-Granger ECM regression based on the cause and effect relationship between output equation, investment equation and import demand equation concluded that there is no evidence of debt overhang and a crowding out effect of debt on investment in Ethiopia.

Jonse G. (2002: 98-103) using structure of the Chowdhury Model analyzed the impact of external debt on economic growth of Ethiopia. He found out that the growth of total external debt of Ethiopia has positive effect on growth of output, and debt overhang effect is not hold in Ethiopian situation. Growth rate of total debt service ratio is statistically insignificant, which suggested that there is also no evidence of the crowding out effect of debt service payment on investment in the Ethiopian economy.

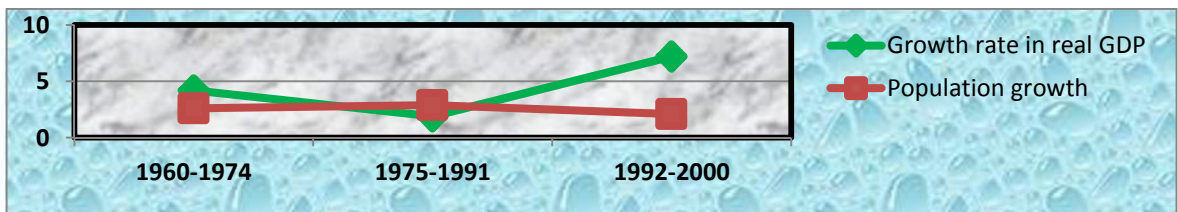
## **3.2. Macroeconomic Performance of Ethiopia**

### **3.2.1. Trend in Economic Growth of Ethiopia**

The economic performance of Ethiopia, as measured by GDP growth, was very dismal during the Imperial and Military regime. During the Imperial era, the economy had grown at a rate of 4.2% per annum with average population growth of 2.1%. While during the Military government

regime, the average GDP growth rate was 1.9% per year and annual population growth rate of 2.8 % per annum, which led to a decline in per capita income [see annexed table 3.5].

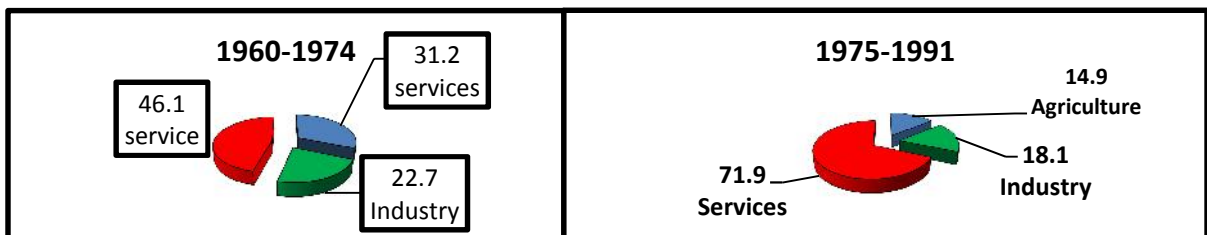
The current government, EPRDF, has made a marked departure from the ‘Socialist’ system of command economy that repressed a private sector to private sector oriented capitalist system. It has also adopted structural adjustment program with the support of the Bretton Wood institutions. During the first decade this regime, 1992 to 2000, the average growth rate of GDP was 7.2% with the population growth rate of 2.1% per annum, if there had not been frequent drought and the Eritrean invasion in 1998, the growth rate of GDP would have been expected to be higher [see annexed table 3.5]. The economic growth was owing to relatively good economic performance and conducive environment availed to the private sector.



Source: Ministry of Economic and Development cooperation 1999

**Figure 3.4: Trend of Economic growth of Ethiopia 1960-2000**

A basic feature of Ethiopian economy is the dominance of agriculture sector in terms employment, value added generation and export earnings. The fluctuation of the overall growth of the economy is also to a great extent attributable to the performance of the agriculture sector.

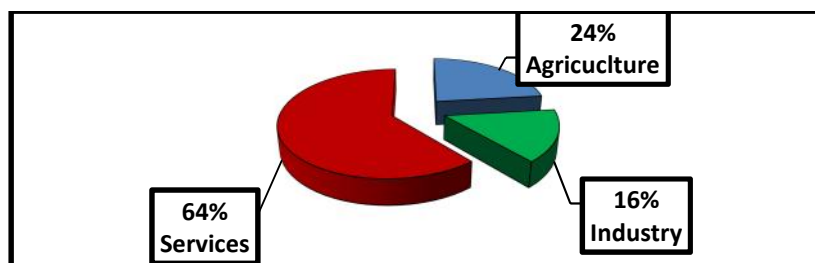


Source: Ministry of Economic Development and Cooperation (1990-2000)

**Figure 3.5: Share of sectors contribution to GDP growth 1960-1974 & 1975-1991**

In terms of sector wise contribution agriculture had a great share of contribution to GDP growth which accounted 46.1% of the growth of GDP during 1960-1974[see annexed table 3.5].The contribution of agriculture to GDP growth decreased significantly over that of the Military regime, 1975-1991 and its contribution to economic growth was replaced by services. But, its relative share to GDP growth increased to 24% in the 1990s’ [See annexed table 3.5]. Though has smallest contribution for GDP growth, manufacturing sector has been showed an improvement due to establishment of new industries, improvements of the availability of input and spare parts to incapacitated manufacturing sector for intensive recovery and rehabilitation effort.

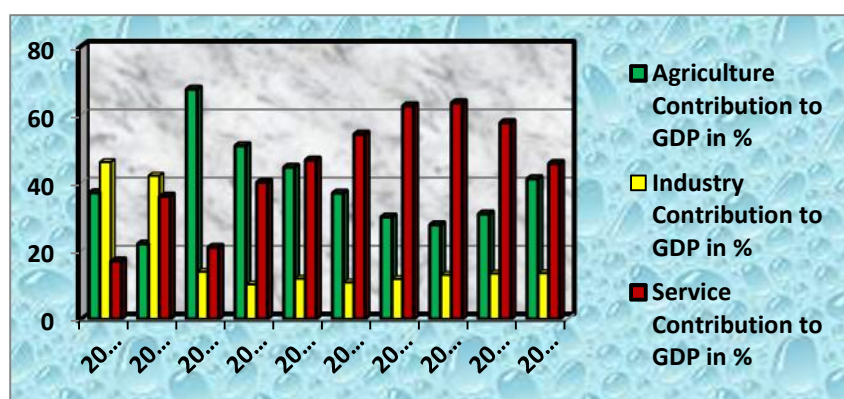
Though the current government has been pursuing policy of Agriculture Development Led Industrialization Policy [ADLI] by intensifying its effort for enhancing the growth of agriculture and shift to industrialization, however, services sector has been holding the dominant share for the growth of the economy, about 64% of the GDP growth has been contributed by the service sector. But the agriculture sector position is improved than what it was during the military regime, i.e. from 14.9% to 24% in 1990s. The industrial base of Ethiopian economy still remained weak as it accounts for around 16% of the overall GDP. The growth of the industrial sector averaged 7.3% per annum over the 1990s [see annexed table 3.5].



Source: Ministry of Finance 2001-2010

**Figure 3.6: Share of sectors contribution to GDP growth 1992-2000**

Ethiopia has maintained a double digit growth since 2003, due to full recovery of agricultural production from the drought-affected levels of 2001-2002. In addition to the most severe drought, inflation level of the country was accelerated to 15% in 2002 from -7% in 2001. The economy, however, recovered and registered 11.7% real GDP growth rate in 2003. A number of factors were contributed to the improved growth performance, the major ones are sharp expansion agricultural harvest, higher inflows of external aid to withstand shortfalls in export earnings, gaining of macroeconomic stability, narrowing the fiscal deficit and slowing of growth in monetary aggregates. Such double digit growth sustained throughout the eight consecutive years that led to a simple average real GDP growth rate of 8.84% [see annexed table 3.6].



Source: MOFED various years of report 2001-2010

**Figure3.7: Economic sectors contribution for economic growth [2001-2010]**

After the year 2003, the growth registered by Ethiopia is not only being fastest but also broad-based; in the sense that agriculture, industry and services sectors registered commensurate growth rates [6.88%, 10.11% and 11.24%, respectively]. Agriculture and allied activities accounted on average 45% of GDP, industry 13% and services 42%. Still, the share of industry sector showed no significant change, having an average 10.11% of the total value added over the decade, While, the service sector has taken over dominant share to the economy growth. The international economic crisis, though mild compared to its impact on other countries, had some

consequences on the growth registered during 2008-2009. In 2010, GDP growth was 11.5 % [see annexed table 3.6]. This robust and broad based economic growth places Ethiopia among the top performing African and other developing Asian countries.

## **3.2.2. The Structure and Trends of Public Finance**

### **3.2.2.1. The Performance of Government Revenue**

The Government of Ethiopia revenue is constituted of tax revenue and non-tax revenue, out of which the tax revenue is the largest component of the overall revenue. Tax revenue, in turn, is composed of direct tax, indirect tax and foreign trade tax. The contribution of each to the total revenue for period from 1960-1974, 1975-1991 and 1992-2000 depicted in Table 3.7.

In terms of growth rate, domestic revenue grew on average by 10.6%, 9.7 % and 17.3% during the period 1960-1974, 1975-1991 and 1992-2000, respectively. While its component, tax revenue, showed a growth rate of 11.5%, 8.7% and 15.1% respectively, in the same period. The magnitude of tax revenue as percentage of GDP, on average, accounted 7.3%, 12.8% and 10.9% during the three respective range of period. The major source of revenue was direct taxes which entail land use fee. Of the tax elements, a direct tax registered a relatively higher growth rate of 11.2% followed by indirect tax during the Military regime.

In 1992-2000, foreign trade tax has witnessed an average growth of 26.7% and followed by the direct tax. Domestic direct tax, indirect taxed and foreign trade taxes were grown on average rate of 15.1%, 13.7% and 9.2% for the three consequent spans of years. [See table 3.7]. The current government has established a new Ministry of Revenue and Custom Authority that has taken over the responsibility of the Ministry of Finance to improve tax collection and to combat fiscal fraud. The revenue collection has been carried out at federal and regional state level. The

government has also employing strategy of increase in the sales tax and the removal of the import duty surcharge in 2000s, a new legislation on presumptive taxation and a 5% withholding tax on imports became effective in February 2001. In March 2001, legislation was approved to introduce the tax-payer identification [TIN] and VAT to reinforce the collection powers of revenue agencies, and a tax reform implementation. These factors contributing highly for the growth of the revenue collection during the current government, in addition to tax collection improvement, recovery of capacity utilization and profitability of public enterprise, agricultural bumper harvest also enhances the country's revenue position.

**Table 3.7: Domestic Revenue Average Growth Rate and its Ratio to GDP**

Period	1960-1974 Imperial Regime			1975-1991 Military Government Regime			1992-2000 EPRDF Regime		
	%age of total domestic revenue	Average growth rate	Ratio to GDP	%age of total domestic revenue	Average growth rate	Ratio to GDP	%age of total domestic revenue	Average growth rate	Ratio to GDP
<b>Domestic Revenue</b>									
Domestic revenue	100	10.6	8.5	100	9.7	17.3	100	17.3	16.4
Tax revenue	85.1	11.5	7.3	77.1	8.7	12.8	67.5	15.1	10.9
direct tax	22	11	1.9	27.2	11.2	3.7	25	13.7	4.1
Indirect tax	26.2	22.5	2.3	22.3	10	4.3	25.9	9.2	2.8
Foreign trade tax	36.9	8.8	3.1	27.6	6.1	4.3	16.6	26.7	4.1
Non tax revenue	14.9	7.8	1.2	22.9	15.6	4.1	32.5	27.2	10.4
External grant	17.1	20.5	1.8	12.2	19.7	2.5	15.8	20.4	3
<b>Expenditure</b>									
Description	%age of total expenditure	Average growth rate	Ratio to GDP	%age of total expenditure	Average growth rate	Ratio to GDP	%age of total expenditure	Average growth rate	Ratio to GDP
Recurrent	79.1	10.3	8.7	73.4	12.1	18.7	66.5	16.8	16.7
capital	20.9	9.8	2.2	26.6	14.6	7.1	33.5	18.3	8.4
<b>Average annual deficit in millions of Birr</b>									
Excluding grants	115.2			1097.9			3353.7		
Including grant	47.4			773.2			2188.3		
ratio t GDP	2.3			8.5			7		
revenue/ Expenditure	78			67.2			65.5		
<b>Financing in million of Birr</b>									
External	40.3			332.8			1276.1		
Domestic	7.2			440.3			912.5		

Source: MEDaC 1999 and Ministry of finance data of various years(2001-2010)

The domestic revenue had showed a steady increment from Birr10billin in 2001 to Birr19.5billion in 2005. However, revenue as proportion of GDP was declined to 16.4% in 2000 and further lowered to 14.8% in 2005. About 76% of the total domestic revenue was generated from taxes, which surged by 79% in the same period. The observed increase in tax revenue was in turn attributed to improved tax collection both from direct taxes and indirect taxes, about three-fourth were contributed by the indirect tax [see annexed table 3.8].

Non-tax revenue constitutes mainly of charges and fees, sales of goods and services, residual surplus and investment income, sales of movable property, and repayment of loans. It registered a growth rate of 7.8% per annum during the period 1960-1974. The growth rate of non-tax revenue increased, on average, to 15.6% and 27.2% per year in the Military and EPRDF regimes, respectively. Non-tax revenue also constituted, on average, about 14.9% and 22.9% of the total domestic revenue in the period 1960-1974 and 1975-1991, respectively. Its contribution increased to 32.5% in the period 1992-2000[see annexed table 3.7]. The size of non tax revenue was also grown from 1.8% of GDP to 4.1% and 10.4% during the three ranges of period, respectively. The increment of non tax revenue was due to the following reasons:

- First, better financial performance of public enterprises and the resulting rise in residual surplus, capital charge, interest payments and state dividends to the Central Treasury[MEDaC,1999]
- Second, the large sum proceeds obtained from privatizing public enterprises although it is a one-time increase. [MEDaC,1999]

The non-tax revenue, which accounted 30% revenue, recorded had also significant increase from Birr2.4million in 2001 to Birr5.3billion in 2005 registering a 116% growth , due to higher government investment income and reimbursement and property sales, which outweighed the decline in sales of goods and services, and charges and fees [See annexed table 3.8].



From 2005 to 2010, the revenue collected was raised from Birr21.7billion to Birr69billion, registering a growth of 217%, mainly due to improvement in tax administration and economic growth. Its share to GDP was 13% percent in 2010. Of the total domestic revenue, about 85% percent was generated from taxes, and 15% was from non-taxes. The direct tax revenue rose from Birr17.3billion to Birr58billion, which largely constituted by personal income and business taxes. These taxes alone accounted 96.2% of the direct taxes. The share of rural and urban land use fee, however, was only 3.8% [NBE report 2010]. Revenue from indirect taxes was Birr 39.4 billion and its share in total tax revenue reached 67% in 2010. About 60.2% of the indirect tax revenue was generated from import duties whose share grew by about 34% points over the previous year [NBE report2010]. Non-tax revenue was stood at Birr 10.1billion which is lowered than the 2008 [Birr13billion] and 2009[Birr10.5billion] position, largely due to lower income from government investment income.

Regarding the grant, over the last four decades [1960-2000], external grants showed a fluctuating trend. It contributed on average 17.1% of the total government revenue during the Imperial regime, but its contribution declined to 12.2% and 15.8% in the period 1975-1991 and 1992-200. [See table 3.7]. The grant amount was reached Birr2.4billion in 2001. It further increased to Birr4.5 billion in 2002, but again declined to Birr 3.7 billion in 2005. During the late 2000, the grant amount had grown steadily from Birr7.5billion in 2006 to Birr16.4billion in 2010 [See annexed table 3.8].

### **3.2.2.2. The Performance of Government Expenditure**

Government expenditure is divided into capital expenditure, recurrent expenditure and special program. Capital expenditure is broadly defined as an outlay on projects that result in the

acquisition of fixed assets and the provision of development services. Recurrent expenditure is generally defined as outlays of recurring nature which include items such as wages and salaries, maintenance and operating expenses, price subsidies, public debt and pensions [MEDaC, 1999].

### **A. Recurrent Expenditure**

Recurrent expenditure of Ethiopia accounted, on average, about 79.1% and 73.4 % of the total government spending during the period 1960-1974 and 1975-1991, respectively. During the military regime, the government was made huge spending for defense, in efficient and duplicated public institution in different regions. Its proportion to total expenditure declined to 66.5 % in the period 1992-2000 [See Table 3.7]. The recurrent expenditure had growth rate of 10%, 12.1% and 16.8% for the three periods. Its proportion to GDP was 8.7% of GDP during 1960-1974, raised to 12% and 16.8 during 1975-1991 and 1991-2000, respectively.

The current government, which took power in 1991, has made economic reform and fiscal management in 1992. The government has consolidated federal and regional budgets—including all extra budgetary funds and accounts. There is also a measure undertaken after the reform: covering all the recurrent expenditure by the domestic revenue. However, progress in fiscal management is hampered by a relatively weak expenditure management system, mainly as a result of the high degree of decentralization to the regions; insufficient management capacity, particularly at the regional level. The recurrent expenditure of the country after the reform was higher than the earlier years, mainly owing to expansion of the agriculture, the extension program and poverty reduction measures.

In relative term, the recurrent expenditure was declined comparing post-reform to pre-reform period mainly due to the significant decline in government spending on defense, and the government has been privatizing of most of the inefficient public enterprise and substantially decreased the duplication of government institutions in different regions. It has also gained debt relief and cancellation that reduce debt repayment. The recurrent expenditure was about Birr10billion in 2001, accounted about 63% of the total expenditure in the year 2001. The share of the recurrent expenditure was lowered from 63% in 2001 to 52% in 2005 witnessing the shift of expenditure to economic and social investment, however, in absolute term the level of recurrent expenditure has jumped from Birr15billion to Birr40.5million.

## **B. Capital Expenditure**

As shown in Table 3.7, capital expenditure accounted on average about 20.9% of the total government spending during 1960-1974[imperial regime]. It became 26.6% and 33.5% during the period 1975-1991[military government regime] and 1992-2000[EPRDF regime], respectively. Capital spending grew on average by 9.8% per annum during the period 1960-1974 and the growth rate increased to 14.6% and 18.3% per annum during the Military and EPRDF regimes, respectively. During the military regime, the government was not only engaged in development of social and economic infrastructure development but also production and distributions of basic goods which entailed the establishment of number of institutions and public enterprises [MOFED and MEDaC different years of report, 2001-2010].

The increment of capital spending after the 1992 economic reform was due to massive spending on roads, energy, education, water supply and health sectors. Even though, the government budget expenditure on agriculture and industry was declined due to managerial autonomy and financial accountability gradually detaching from the government budget. There was also a

marked decline in spending owing to the end of the civil war. So the government has change pattern of spending and relieved huge resource for spending on social and infrastructural sector development. After the year 2000, a marked shift has been observed in capital investment, the capital expenditure was relatively low during the early 2000s, Birr6 billion and accounted 37% of the total expenditure. It raised to birr14billion registered a 129% growth in 2005 comparing 2001 position and contributing 48% of the total expenditure. Similar pattern continued in the last five years of 2000, the capital expenditure in 2010 was stood at Birr53million, grown by 280% comparing the year 2005 position [see annexed table 3.8].

### C. Government Budget Deficit and its Financing

In early 1960's up to the mid of 1970s, the overall fiscal balance of Ethiopia was mostly in surplus and very low level of deficit, as the then government was very conservative about the fiscal deficit. For instance between 1967 and 1972, the maximum deficit registered was 1.4% of GDP. Even this deficit was incurred due to a severe drought occurred at the time and government's investment on infrastructure and creation of modern institution, which increased government expenditure decreasing its revenue and resulted in deficit [Berhanu N. 1999].

**Table 3.9: Summery Fiscal Deficit and its Financing**

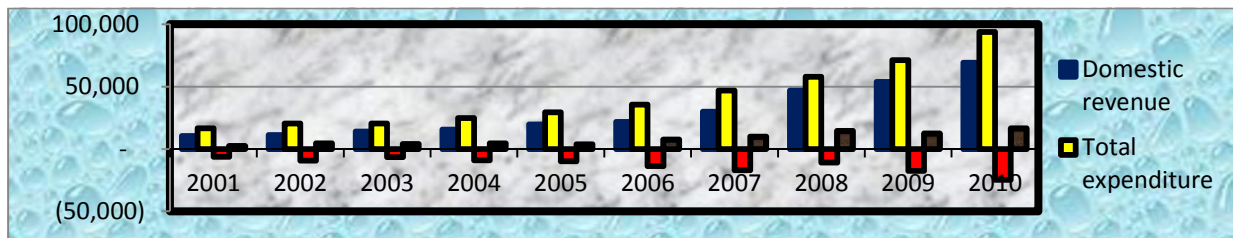
Period	1960-1974	1975-1991	1992-2000
<b>Average Annual deficit in million of birr</b>			
Excluding grants	115.2	1,097.9	3,353.7
Including grant	47.4	773.2	2,188.3
As the ratio of GDP	1	6.1	5.7
<b>Domestic revenue/total Expenditure</b>	<b>78</b>	<b>67.2</b>	<b>65.5</b>
<b>Financing in millions of Birr</b>			
External	40.3	332.8	1276.1
Domestic	7.2	440.3	912.5

Source: MEDaC 1999 and Ministry of finance data of various years (2001-2010)

The deviation in the level of fiscal deficit before grant and after grant clearly indicates the massive inflow of external assistance. At Imperial era, the average balance of deficit was only

Birr115million excluding grant and Birr47million including grant [see table 3.9]. During the Military period, 1975-1991, the average annual deficit were Birr 781million and Birr1billion with grant and without grant. The revenue on average had a capacity of financing 67% of the total expenditure, and the average deficit balance was 6% of the GDP. And the domestic source of finance covered the bulk of the country’s deficit than external borrowing.

In 1992, the current government has undertaken reform to recover the fiscal illness and to attain consolidated government budget through rationalizing the government’s role, reorient government expenditure and enhance government performance. It has redirect what used to be the expenditure for defense to target of poverty reduction. Despite these measures, during 1992-2000, the fiscal deficit increased to Birr3.3billion excluding grant and Birr2.1billion including grant. And Government budget deficit was contained to 7% of GDP.



Source: NBE various years report (2001-2010)

**Figure 3.8: Trend Domestic Revenue, Expenditure and Fiscal Deficit [2001-2010]**

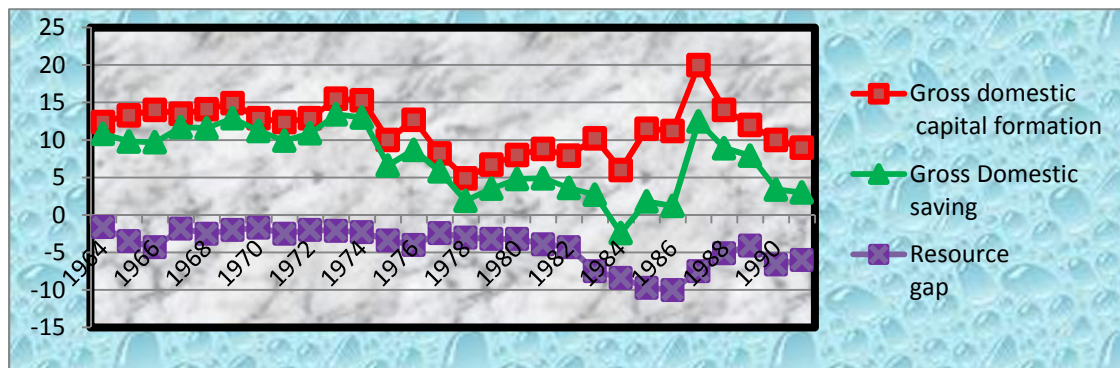
The fiscal deficit excluding of grant has been widened from Birr6.2billion in 2001 to birr24 billion in 2010. This mainly attributed to fast growing of capital expenditure of the country which outpaces the revenue collection. The deficit had been financed by domestic borrowing with an increasing trend up until 1991; but since 1992 there was a shift of financing of deficit from domestic to external sources to 2000. From 2003 to 2007, more than half of the deficit was financed from the domestic source, then on again shift to the external source [see table 3.9].

### **3.2.3. Gross Domestic Capital Formation and Gross Domestic Saving**

Gross Domestic Capital Formation [GDCF] is mainly a function of gross domestic saving [GDS] from current income, whereas the gross domestic saving [GDS] is the difference between GDP and consumption expenditure. And, the resource gap is the difference between the GDCF and GDS. GDCF and GDS of Ethiopia were in state of good shape during the Imperial regime. Since, the then government had pursued a conservative fiscal and monetary policy and kept its deficit at the minimum possible level. The government spending was less than the revenue generated, however, there was hardly any saving. The decline in government saving was more than compensated by increasing private sector saving. In 1974, the GDCF was growing at an average growth rate of 12% and the domestic saving by 14% of GDP. So, the GDS had enabled to finance more than 80% of GDCF [see annexed table 3.10].

During the Military period, the domestic saving was quite low in view of the country's investment need, due to escalation in unplanned and unproductive public expenditure and consumption, huge spending for defense and diversion of resources from public enterprises into the treasury, which made the expenditure above the domestic revenue. Therefore, there had been huge and rapidly growing fiscal deficits let alone have saving and enforced the country to rely heavily on the external source of finance for its investments need. On the other hand, the growth of GDCF was highly erratic due to misguided economic policies. There was an expressed interest of discouraging private investment both the local and foreign direct investment, in spite of the fact that the domestic savings was not enough, given Ethiopia's extremely low per capita income level to finance replacement for capital depreciation let alone to allow net investment. Hence, rate of capital formation was low and remained to be under financed with significant lost opportunities.

During the military government regime [1974-1986], the GDCF accounted 8.4% GDP while GDS accounted 3.5% as percentage of GDP. So, there was a resource gap 5.4% of GDP and only about 42% of the domestic investment was financed by domestic saving. The growth rate of investment was negative for the period between 1974 –1979 and 1987 – 1991. This implies that actual investment was less than the requirement to replace depreciation of capital. The rate of investment and productive capital accumulation did not even keep up with depreciation allowances and expansion pace of the labor force. The GDCF as the share of GDP was 10.6% at the end military regime [1991] while GDS to GDP was 3.5%, so a little more than one-third of GDCF was financed by GDS in 1991[see annexed table 3.10].

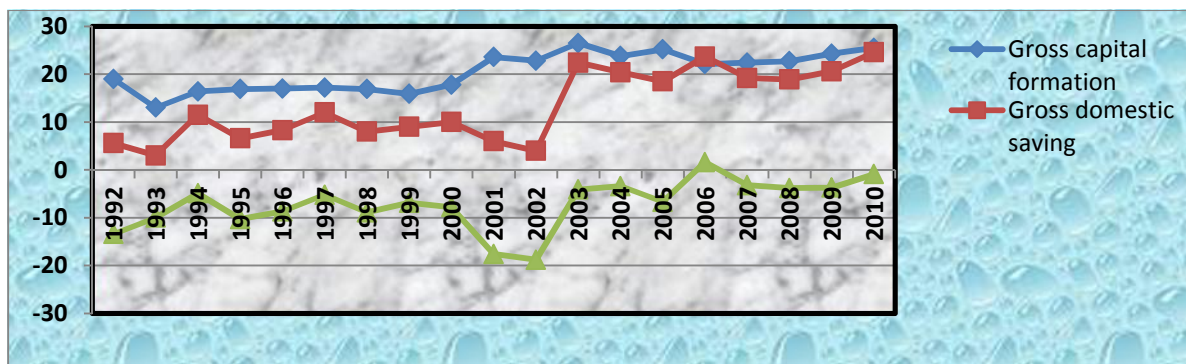


Source: MOF (2001-2010) and NBE various years of report (1990-2010)

**Figure 3.9: Trend GDCF and GDS as percentage GDP of Ethiopia 1960-1990**

After the military government overthrow, the performance of Gross Domestic Saving showed a sign of recovery. However, during the first two years of the current regime [1992 and 1993], there was no different trend on GDCG and GDS from the Military period performance. In 1993, the GDS jumped to 11.5% of GDP, thereafter, it had fluctuating trend but the GDCF ratios were higher than what it had been during the military regime. Since, the government has been taking measures to encouraged saving.

On the other hand, the country's investment was being booming after 1991 mainly due to the relatively conducive environment, except for year 1999 when there was instability caused by the country's war with Eritrea. The ratio of GDS and GDCF to GDP were 13% and 20%, respectively, during 1992 to 2000. The investment ratio of the country exceeded the saving ratio to GDP and the domestic saving could finance only about 48% of the investment, yet showed slight improvement than the Military regime, when it was 45%. The gap between domestic saving and domestic investment was, on average, about negative 8.5% of GDP.



Source: MOF (2001-2010) and NBE various years of report (1990-2010)

**Figure 3.10: Trend GDCF and GDS as percentage GDP of Ethiopia 1992-2010**

The GDCF showed a steadily increasing trend and reached a maximum of 25% of GDP in 2005. The GDS has also accounted more than 20% of the GDP; the ratio which the country has never had before. Therefore, the GDS has at least begun to go along with to the domestic capital formation of the country. During 2001-2010, the gap between domestic saving and domestic investment been relatively narrowed, it was about 6% of GDP or about 70% of the domestic capital formation financed by the domestic saving [see annexed table 3.10].

### 3.2.4. Balance of Payment of Ethiopia

The external sector of Ethiopia has been suffered from deficit in overall performance and with worsening imbalance in external payment. And a chronic trade deficit has remained been a



dominant contributing factor for the imbalance. Though, there is surplus on its services account, it is much smaller to compensate the trade deficit, so the country has, in turn, a deficit on its current account. This deficit has also not been offset by the surplus in capital account; therefore, negative balance of payment has been the main attribute to the country's economy.

#### **3.2.4.1. The Performance Current Account**

Ethiopia's export has been limited to primary commodities, composed mainly of few agricultural products which alone accounted more than 90% of export proceeds of the country, the major ones are leather and leather products, coffee, pulses and oil seeds which are susceptible to supply side as well as demand side shocks that reflect on the volume and price of export instability [MEDAC 1999]. On the other hand, underdeveloped countries like Ethiopia investments' inevitably require importing of necessary goods and services which are not available domestically. So foreign exchange is mandatory to acquire these imports. However, the country's export earning has not been adequate to raise the foreign exchange necessitates for the imports of the country.

In the 1960s, during the Imperial regime, the values of exports were growing at 8.2% per annum, while the values of imports were growing on average by 9.1%. So, export earnings had been fell short for covering imports of the country. The trade balance deficit was 12.3% of GDP. During the first years of 1970s growth rate of the export was increased by 10.5% per annum, still the trade balance deficit was raised to 15% of GDP due high growth rate of import as a percentage of GDP [Berhanu N. 1999].

During the Military government regime, the external sector of the economy was in a more unfavorable condition. The then government had highly regulated and intervene the external

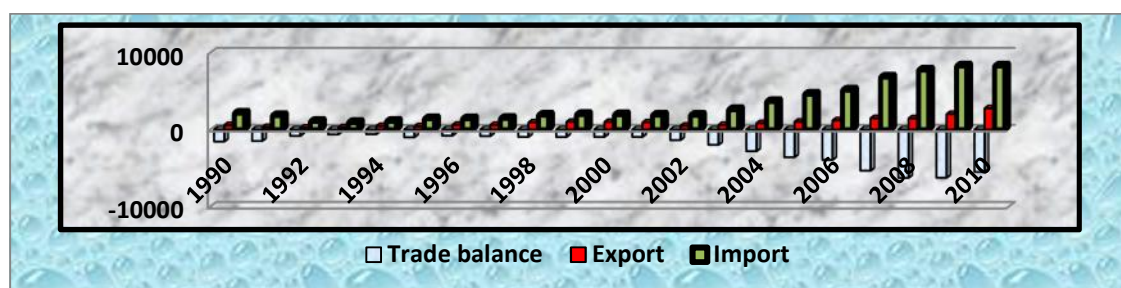
sector of the economy, partly due to its interest on revenue generation from the sector and partly to ration the foreign currency reserve. The poor performance of external trade is also contributed by local and external factors. Among the local factors, the policies adopted by the then government including regulating of prices and quantities, controlling and restricting the private sector from participating in external trade and other distorted anti-market rules were the principal ones. The public sector enterprises were intensified on the expense of marginalization of private sector. The overvalued exchange rate was also disincentive for exporters. On the other hand, the country's export market condition is determined by exogenous foreign market, which also contributed to the poor performance of export at the time. Regarding import, there had been high tariff rate on imports and restriction of imports of certain commodities that restrain the import of the country.

At first five years of 1980s, export earning accounted on averaged 6% of GDP and could finance about 45% of annual import bill. In later five years of 1980s, the export earnings fell to 5% of GDP and covered only 37% import bill. On the other hand, import grew at an average rate of 7% per annum in the first half of 1980s and its value stagnated in the later years of the decade. The share of import as percentage of GDP declined from an average 15% during the first half of the 1980s to about 12% during the second half (MEDAC 1999). This decline in export earning had been reflected in small coverage of the import, and worsening trade deficit.

The current government has undertaken economic reform program in 1992 to improve the export sector performance, when the total export of the country amounted only Birr222million, while the value import was USD1billion [see annexed table 3.11]. One of the adjustments taken at the time was the devaluation of Birr by 141.5% on assumption of positive supply response; however, it has raised the debt in real term and aggravates the debt servicing condition. After

the reform the export sector showed improvement and grew by average 127% per annum. For instance in 1998 export proceeds of the country was reached USD913million growing by 311% compare to 1992. Similarly, the import value was also grown to USD1.8billion in 1998, growing by 78% compared to 1992 position. The exports proceed could covered only 21% of the import bill in 1992, but it rose to 49% in 1998. The country had registered a trade deficit of USD1.5 billion in 1990 and export earnings could finance only 26% of import. However, the trade deficit level was lowered to USD609million in 1995. But, it peaked up again by more than 50% and accounted USD1 billion in 1996. Then on, the trade deficit again reduced markedly and the export earnings could finance on average 47% of the import [see annexed table 3.11].

After the year 2001, though the export of the country was increasing both in volume and value, yet, it could still not catch up with the level of import or registered a trade surplus. So, the country's trade deficit was not only attributed by deficit but also the deficit had been widened significantly from a minimum of USD960 million in 2001 to a maximum of USD6.2billion in 2009[see annexed table 3.12]. The export proceed could cover only one fourth of the cost of import during this period, which indicates that the domestic capacity to import has been eroded continuously and leads the country to rundown its foreign currency reserve, so the country has been dependent on foreign financial flows to meet its import requirement.



Source: MOF(2001-2010) and NBE various years of report (1990-2010)

**Figure 3.11: External trade of Ethiopia [1990-2010]**

Transfer account has been the major component of the current account of Ethiopia that most often used to register a positive balance. The transfers of funds from official donors and remittances from nationals living abroad were becoming strong part of the transfer. The net transfer had fluctuating trend in 1990s and steadily increasing trend in 2000s. It had a negative balance of USD23million in 1992, but, it turned to positive and reached USD10.9 million in 1993. Tremendous growth was achieved in net transfer during the years 1996 and 1997, when the net service peaked to USD99.6 million and 86.3million, respectively. The increase has come particularly from the decline in interest payment. The successive decline in the net interest payment, in turn, attributed for two reasons: the first is decline in interest payment on external debt, due to dominant share of external debt of the country has concessional nature, debt cancellation and rescheduling. The other is the interest income that the country received on the foreign reserve in foreign banks. So the net transfer of the country has increased from USD1billion in 2002 to USD5billion in 2010[see annexed table 3.12]. This growth of the net transfers, however, was not enough to offset large shortfalls in trade balance and debt-service payments.

Given huge trade deficit and very low level of private transfer, the country's current account balance has been experiencing deficit for the last four decades. The current account deficit was stood on 4.6% of GDP on average during the first half of the 1980s and slightly increased to 5.5% during the second half owing to the modest increase in private transfer. For the years spanning from 1990-2000, the current account deficit has showed improvement, except for the year 1995 and 1998, due to a deceleration in trade deficit combined with an improvement in net service and private transfer, during when the deficit balance had declined USD810million in

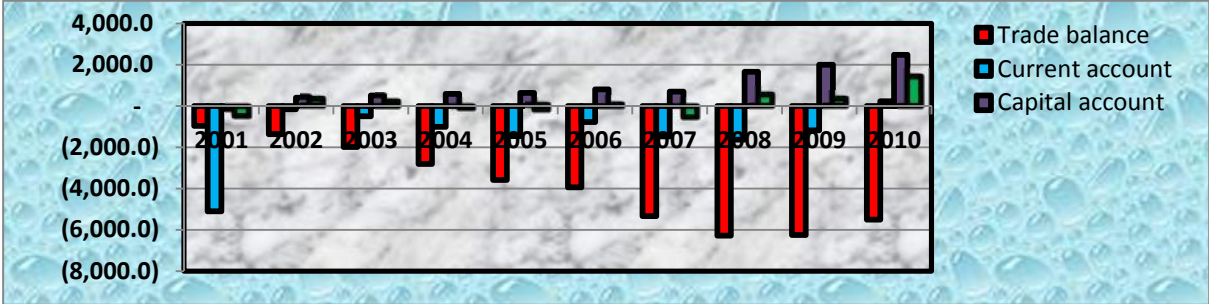
1992 to USD242million in 2000. For the years from 2000 to 2009, the current account deficit had very erratic trend from minimum of USD156million to a maximum of USD1.6billion. But exceptionally, in 2010 the current account balance was positive amounting USD234million mainly due to improvement net transfer [see table 3.12].

### **3.2.4.2 The Performance of Capital Account Balance**

The development in capital account revealed an upsurge trend, despite a slowdown in the level of disbursements foreign loans and foreign direct investment in the form of private proceeds. The capital account was in surplus during 1970-1990 period exception of the year 1977[MEDaC 1999]. Then on, it has fluctuation trend, for instance it had a deficit balance of USD238million in 1992 and surplus balance USD236million in 1994 which further increased to USD258million in 2000[ see annexed table 3.11].

The surplus in the capital account rose to USD 585 million in 2004 from USD512.4 million in 2003 which largely driven by 11.8% increase in long term loan disbursement and a significant decline 78.7% in outflows of short term capital. Compared to the level in 2003 as well, the capital account surplus has shown a substantial improvement 46.3% increase, driven by lower principal of debt repayments and short-term capital outflows. Principal repayments declined to USD 130.2 million in 2004 from USD 224.3 million in 2003, reflecting the debt relief assistance obtained by the country after reaching the HIPC completion point in April, 2004. The surplus in the capital account further increased to USD 632 million in 2005 from USD 585.million in 2004, owing to long term loan disbursements and marked decrease in principal loan repayments, largely associated with HIPC debt relief accounted 65% share [MOFED report 2010].

In 2009, the balance in capital account was a surplus of USD 2 billion, about 21.1% higher than 2008 owing to the 43% increase in official long term net capital inflows and moderate growth in foreign direct investment. In 2010, the surplus in capital account reached USD2.5 billion growing by 24% compared to the preceding fiscal year. This was ascribed to strong growth in official long term loan disbursements account 33% of the growth and estimated foreign direct investment inflows as 30%. In general, for the years 2002 to 2010, the capital account was not only in surplus but also increased steadily from USD400million to USD2.47billion. Still it was not large enough to finance all the current account deficits during the period under consideration, except for the year 2010[see annexed table 3.12].



Source: MOF(2001-2010) and NBE various years of report (1990-2010)

**Figure 3.12: Trade balance, Current and Capital Accounts and BOP of Ethiopia [1990-2010]**

When we see the overall balance of payments of the country, it dominantly is in deficit except for some few years. The deterioration in the overall balance of payments is associated mainly with the significant slowdown of the current account balance, which could not be offset by the improvement in the capital account balance and official transfers.

**3.2.4.3. The performance of Foreign Currency Reserve**

The foreign currency reserve of the country is drawn from different commercial banks and national bank of Ethiopia, the reserve data is available in weeks of import for the 1990s.

Ethiopia had sufficient foreign currency reserve which cover three to seven months import of goods and services in 1990s. For instance, the reserve position of the country was enough only for 1.3 weeks of import in 1991. A relatively better reserve position was achieved in 1992, when the reserve increased to 14.7 weeks of import. It went on increasing to 28.3 weeks in 1993 and 33 weeks of import in 1995. The recovery of reserve position of the country is mainly due to the balance of payment support provided by international financial organization and other donors along with the increase in export earnings. However, the reserve position could not sustain at increasing trend, since the major contribution factor for the foreign currency reserve of the country is largely attributed by external assistance depends on transfer from external source. So, a decline was, however, registered when the reserve position declined moderately to 22.6 weeks of import in 1996 and to 18 months of import in 1997 [see annexed table 3.11].

Since the year 2000s, the country has made some headway in diversifying its foreign exchange sources through export earnings, foreign investment, debt cancellations, loans and assistance from development partners. As the government aims to maintain high growth rates, which are necessary to achieve poverty reduction, more capital goods and productive inputs must be imported, in addition to basic consumer goods, which continue to further threaten already critically low foreign currency levels. However, the country has been suffering from the emergence of twin macroeconomic challenges: high domestic inflation and a widened balance of payments deficit due to rising import demand and import prices [NBE report 2008/2009]. The high growth rate in recent years has continued to outstrip available foreign exchange flows. In addition to these challenges, high oil, fertilizer and fuel prices have resulted in a further increase in inflation [reaching 64% in July 2008] and contributed to a decrease in the foreign currency reserves of the country. Ethiopia has also been affected by the global financial crises which

cause a global economic slowdown, whose effect transmitted through adverse effect on the international demand and prices of export commodities. The country's export income has been reduced and the levels of donor aid have also declining following the global economic slowdown. So, the foreign currency reserves have been remained low due to decreases in remittances and foreign direct investment flows.

The foreign currency reserve of the country has been depleted; the net reserve holdings of the country depicted a reserve of USD301 million in 2001. The reserve increased to USD491million which equivalent to 9.2weeks of imports of goods and services in 2003. As a result of the deficit in the balance of payments, the net foreign assets of the banking system recorded a draw-down to USD 263.5 million in 2007 compared to USD 84.7 million in 2006[see annexed table 3.12]. Hence, at the end of the fiscal year, gross foreign reserve was adequate only to cover 1.5 months of imports of goods and non- factor services. According to the NBE annual report for the fiscal year 2010, Ethiopia's reserve position has improved, the surplus in the balance of payments has enabled for country to draw an increase in net foreign assets. At the end of the 2010 period, gross foreign reserves was USD1.3billion which could cover 3.2 months of imports of goods and non-factor services [see annexed table 3.12].

### **3.3. Unit Summary**

This unit gave highlight on the external debt of Ethiopian in terms of trend, composition, structure and its relation with economic. The external debt of the country was very low before 1970s' and it was serviced without failure. But, since the Military government took power in 1974, the debt of the country grew rapidly and reached more than what can be serviced by the country's capacity, the marked growth of external debt was mainly due to channeling of external



debt to low return projects without proper appraisal and followed and delay in implementation. The larger proportion of the loans was channeled for strengthening of defense; furthermore the then-government followed misguided economic policies which weakened the country's repayment capacity and foreign exchange earning sources. Hence, the country was failed to meet her obligation, and arrears became a common and increasing feature of the debt servicing of the country. This situation signaled debt crisis in the country at the end of 1989s'. At the beginning of the 1990s, the debt burden of the country was even exacerbated. The EPRDF took power in 1991 and made economic reform, one of which was devaluation of the currency by 141%, it had significant effect on the size of the external debt of Ethiopia. It enlarged the local currency denominated external debt by more than threefold and the US-dollar denominated debt increased from USD4.4 billion to USD4.7billion, additional USD300million due to the devaluation effect. At the moment, the country was also borrowed new loans for completion structural adjustment program. Moreover, some of the country's loans were rescheduled by capitalizing of arrears. So both the ratios of debt to GDP and debt to export of goods and non factor services growth were increased enormously. And Ethiopia became one the heavily indebted poor countries (HIPCs). However at the end of the 1990s', the stock of external debt of Ethiopia declined largely due to HIPCs relief assistance, debt cancellation and improvement in export performance which enabled to repay loans timely.

In terms of debt composition, the major lenders of the country are multilateral institutions, bilateral institutions and commercial lenders. A shift of borrowing from bilateral source of borrowing to multilateral observed during the last four decades, in order to confer a benefit of concessional nature of loans of the multilateral institution loans, and most of the external loans of the country related to the structural Adjustment Program. The terms and condition of the

country's loan were unfavorable before the year 1991. However, post 1991 the country has been mobilized most of its credit from official sources with soft terms, low interest rate, long grace period and long maturity.

This unit has also give highlight on macroeconomic performance of the country, the country's economy is dominated by agriculture sector in terms of employment, value added and export earnings. The economic growth showed tremendous improvement during the last four decades, from the low level of 1.9% in 1970's average annual growth to 11.5% in 2010, due to undertaking of major economic reform, sharp expansion of agricultural harvest, macroeconomic stability, narrowing of the fiscal deficit and slowing of growth of monetary aggregates. The government revenue has also been increased markedly owing to making reform on the tax collection; where about 85% of the source of the government revenue has been generated from taxes and the remaining from the non taxes source. The overall government expenditure was also increased, the growth in recurrent expenditure was mainly due to agricultural extension programs and poverty reduction measures, even though, the government withdrew involvement in inefficient public enterprise by privatizing, gave autonomy to profitable public enterprises, decreases the duplication of government institutions, reduce spending on defense. In terms of capital expenditure, as a result economic reform, the government has been making massive spending on economic and social infrastructure development. Therefore, there has been huge imbalance between the government's revenue and expenditure. Fiscal deficit of the country has been worsening, despite rationalizing of the government role; reorient government expenditure and selective involvement of the government in economic activity. The deficit financing shifted from the domestic source to the external source.

This unit also went through the Gross Domestic Capital Formation (GDCF) and Gross Domestic Saving (GDS) of Ethiopia. It is observed that the level of both capital formation and saving were low in 1970s, yet, 80% of GDCF was financed by the GDS. During the 1980's the GDCF covered by GDS lowered to 40%. In 1990's, both the GDCF and GDS showed recovery and improvement in level, since the government took measures for encouraging saving and promote private investments by creating conducive environment. In 2000s', the GDS has at least begun to cope up with GDCF, and about 70% of the GDCF financed by the GDS.

The balance of payment of the country has been deteriorating with worsening in imbalance in external payment. The chronic trade deficit has been a dominant factor for the deficit. Though the service account registered surplus, it has been offset by the trade deficit. So, the current account position of the country has been deficit. This deficit in the current account was also not offset by the surplus in the capital account from the 1970 to 2010, except for some few years.

Regarding the foreign country reserve of the country, Ethiopia had sufficient foreign currency reserve which cover three to seven months import of goods and services in early 1990s, which arise due to improvement in foreign exchange earnings and external assistance. Later, despite the government effort on diversifying foreign exchange source, debt cancellation and assistance from development partner, the country's foreign currency reserve depleted. The major causes of ruining of foreign currency reserve of the country were mainly due to domestic inflation and ever widening balance of payment deficit. However, in the year 2010, the reserve position showed recovery, USD1.3billion which could cover 3.2 months import of goods and non factor services.

# CHAPTER FOUR

## 4. Methodology and Regression Result

### 4.1. Methodology

#### 4.1.1. Data Types and Sources

This study relied on secondary data both from domestic and foreign sources. Time series data from the year 2001 to 2010 of external debt of Ethiopia, Debt Service Payment (DSP), External Reserves (ER), and the Ethiopian economic growth represented by Gross Domestic Product (GDP) was collected from different local sources. Documents from Ministry of Economic Development and Cooperation (MEDaC), Ministry of Finance (MoF) and National Bank of Ethiopia (NBE) were among the important domestic data sources; while the external sources involve World Debt Tables, Global Development Finance, different World Bank reports and IMF publications and other relevant source were reviewed.

#### 4.1.2. Method of Data Collection

- Reviewing the published and un-published documents, annual statistical reports, previous study reports, journals and other books from the documentation centers/archives and libraries of different relevant offices of governmental organizations.
- Collect data from the database system of different local governmental institutions.
- International publications and books were also utilized by browsing from web-sites.

#### 4.1.3. Method of Data Analysis

##### 4.1.3.1. Descriptive Analysis

The study has applied quantitative method of data analysis using time series and other related relevant data. This approach includes descriptive statistical tools such as mean scores, medians, ranges, standard deviations, correlation coefficients, percentage, proportions. Eviews and other statistical packages for social science also used to analyze the data. Hypothesis testing

was also employed to determine the likelihood of relation between the dependent variables and independent variables. Descriptive analysis is also applied for the qualitative data analysis.

#### **4.1.3.2. Econometric Analysis**

##### **4.1.3.2.1. Stationary and Non-Stationary 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. 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, but 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 serious 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. Generally, if the trend in a time series is completely predictable and not variable, it is called a deterministic trend; otherwise it is 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 de trending (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 (Gujarati, 2003).

Whether a variable is stationary or not depends on 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 series. 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 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 co integrated. By asking the question whether two or more variables are co integrated, we are asking the question whether there is any long-run relationship between the trends in these variables. The absence of co-integration 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).

#### **4.1.3.2.2. Unit Roots Test**

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 was applied.

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 regressions. The estimated equations using OLS, the resulting t-statistics was compared with the respective critical values given in Ducky Fuller tables. 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 co integration analysis (Enders 1995).

#### **4.1.3.2.3. Co-integration Tests**

One possible means of avoiding spurious regression is the application of co-integration techniques which allow the estimation of non-spurious regressions with non-stationary data. The economic interpretation of co integration 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 co integration 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 co integrated. So far there are two major procedures to test for the existence of co integration, namely, the Engle-Granger two step procedures and the Johanson Maximum Likelihood Estimation procedure.

In the Engle-Granger two-step procedure, variables entering the co integrating 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 co integrated. 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 leg 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 co integrating vectors. The method only allows for a single co integration equation.

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 co integrating vectors. Johanson procedure also allows testing restricted versions of co integrating 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.

#### 4.1.3.2.4. Model Specification and Estimation Technique

In order to analyze the impacts of external debt on economic growth of the Ethiopian economy, a simple open macroeconomic debt growth model was used.

**Key variables include:** Economic growth where GDP used as proxy of economic growth, Debt Service Payment (DSP) and External Reserve(ER),

The functional relationships between the variables are described as:

$$GDP=f(DSP, ER) \dots\dots\dots(1)$$

The model employed in the study includes the following.

$$\log Y = \beta_0 + \beta_1 \log X_1 + \beta_2 \log X_2 + U \dots\dots\dots(2)$$

$$\text{That is, } \log Y = \beta_0 + \beta_1 \log DSP + \beta_2 \log ER + U$$

*Where:* Y = Gross Domestic Product (GDP)

X<sub>1</sub> = Debt Services Payment (DSP)

X<sub>2</sub> = External Reserves (ER)

U = Stochastic error term

β<sub>1</sub>, and β<sub>2</sub>, = slope of the regression equation

The collected data were tested and analyzed by adopting the regression technique of ordinary least square method using log-log model. Thus, a simple mathematical form, the relationship between the variables under consideration becomes:

$$\text{Log GDP} = \beta_0 + \beta_1 \log DSP + \beta_2 \log ER + U$$

## 4.2. Empirical Data Analysis and Regression Result

### 4.2.1. Result of Testing for Unit Roots

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 co integration analysis .The test result of standard Dicky-Fuller(DF) and ADF statistics for the time series variable used in the estimation are presented in table 4.1 and table 4.2.

**Table 4.1: Unit root test results of variables in levels and first Difference**

Variable	ADF Statistics at levels	Critical Values	ADF Statistics at first difference	Critical Values
LY	-1.925260	-4.6405	-1.591834	-4.8875
LDSP	-1.735173	-3.3350	-1.729432	-3.4239
LER	-1.623267	-2.8169	-2.836599	-2.8640

Source: own calculation using E-view

As shown above, ADF statistics at level and at ADF statistics at first difference, all the variables are not stationery.

**Table 4.2: Unit root test results of variables in second difference.**

Variable	ADF Statistics	Critical values	Order of Integration
LY	-6.743094	-5.2459	Stationary
LDSP	-6.871350	-3.5507	Stationary
LER	-6.656071	-2.9312	Stationary

Source: own calculation using E-view

The unit root test results of the variables (table 4.2) indicate that all variables are stationary of the second difference.

### 4.2.2. Co-integration Tests

The co integration refers to a long run relationship between the non stationery and the unit root process. The researcher has used Johanson procedure test by vector auto regressive (VAR) of lag, the co-integration test result indicates there is a co-integration; there is long run relationship between variables of LY, LDSP and LER.

### 4.2.3. Regression without Auto-Correlation

**Table 4.4. Regression result**

Dependent Variable: LY

Method: Least Squares

Date: 10/10/13 Time: 08:48

Sample: 2001 2010

Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.941262	0.795302	92.985217	0.0000
LDSP	1.530220	0.068099	22.47048	0.0000
LER	0.067591	0.045765	1.476912	0.1832
R-squared	0.986615	Mean dependent var		9.737612
Adjusted R-squared	0.982791	S.D. dependent var		0.556270
S.E. of regression	0.072973	Akaike info criterion		2.154123
Sum squared resid	0.037276	Schwarz criterion		2.063348
Log likelihood	13.77062	F-statistic		92.9907
Durbin-Watson stat	1.892484	Prob(F-statistic)		0.000000

Source: own calculation using E-view

$$LY = 7.941262 + 1.530220 \cdot LDSP + 0.067591 \cdot LER$$

#### a. Summary of Results

The summary of regression results on GDP, on DSP and ER for the sample of data presented in table

**Table 4.4. Summary of results**

Dependent variable	Constant	DSP	ER	R <sup>2</sup>	(Adj) R <sup>2</sup>	RW
GDP	7.941262	1.53002	0.067591	0.986615	0.982791	1.892484

Source: own computation

#### b. Interpretation of Results

From the summary of the estimated results above the effect of external debt on Ethiopia economy within the scope of the model formulated has been adequately tested. The coefficient of the dependent variable, i.e. Gross Domestic Product (GDP) at zero level of the explanatory of all independent variable is given as 7.941262. This indicates a positive relationship between the constant parameter and GDP. A constant has no significant meaning in the model, except reflecting the value of GDP when other explanatory variables are held constant. The coefficient

of debt service payment (DSP) implies there is a positive relationship between the GDP and the debt service payment (DSP), a 1% rise in the DSP will bring about 1.53% increase in the GDP. The coefficient of external reserve also shows a positive relationship with the dependent variable GDP. A 1% rise in the ER is expected to bring about 0.06% increases in GDP.

As above shown regression result of unit root test, the  $R^2$  and the adjusted  $R^2$  values are 0.986615 and 0.982791, respectively. The coefficient of multiple determinations ( $R^2$ ) is 0.98 or 98%. This indicates that about 98% of the total systematic variations in the GDP is jointly explained by the variation in the explanatory variables DSP and ER. The remaining 2% could be attributed to the stochastic error term not included in the model. The F- test with probability of 0, which implies the variables in the model jointly explain the dependent value.

#### **4.2.4. Testing for Serial Correlation**

The Breusch–Godfrey Serial Correlation LM test indicates that the residual of the estimated correction model does not suffer from autocorrelation. The Eviews econometric soft ware is part of standard regression, as results there is no first order serial correlation.

In the DW test, if there is no serial correlation, the DW statistics will be around two. The DW statistics will fall below 2, if there is a positive serial correlation. If there is negative correlation, the statistic will lie somewhere between 2 and 4. According to the DW value test, if DW value is less than 2 and near to one, there is positive correlation, and if DW value greater than 2 value and near to 4, there is a negative correlation. In line with this regression model, DW test of the regression of the model is 1.89 which indicates there is no auto correlation. The existence of serial correlation is tested by the Breusch-Godfrey Serial Correlation LM Test, and the test did

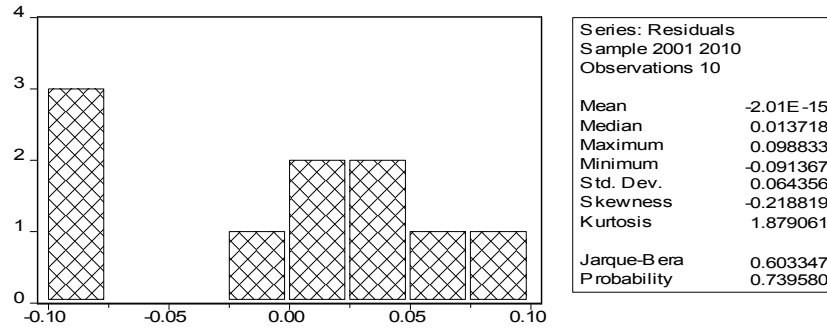
not detect any problem of serial correlation. The probability value of obs\* R<sup>2</sup> which equals 0.662573 more than 5% and indicate there is no serial correlation among the residuals.

**Table 4.6: Serial correlation**

Breusch-Godfrey Serial Correlation LM Test:				
F-statistic	0.116465	Probability	0.744534	
Obs*R-squared	0.190413	Probability	0.662573	
Test Equation:				
Dependent Variable: RESID				
Method: Least Squares				
Date: 10/19/13 Time: 08:53				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.076286	0.879682	0.086720	0.9337
LDSP	0.010687	0.079297	-0.134770	0.8972
LER	0.007942	0.054208	0.146502	0.8883
RESID(-1)	0.176941	0.518476	0.341270	0.7445
R-squared	0.019041	Mean dependent var	-2.01E-15	
Adjusted R-squared	0.471438	S.D. dependent var	0.064356	
S.E. of regression	0.078066	Akaike info criterion	-1.973348	
Sum squared resid	0.036566	Schwarz criterion	-1.852314	
Log likelihood	13.86674	F-statistic	0.038822	
Durbin-Watson stat	1.550041	Prob(F-statistic)	0.988766	

#### 4.2.5. Normality Test

For the normality test, the Jarque-Bera test statistics is considered which indicates whether the series is normally distributed or not. According to this test, the reported probability is the probability that Jarque Bera statistics exceeds the observed value under the null, in absolute value terms. The hypothesis will be rejected if the probability value is small and accepted the null hypothesis of normal distribution if the probability value is high. Appendix 4, the probability is 0.73. So, the regression model is normally distributed.



**Figure 5.1: Histogram Normality test**

Since the probability of Jacque-Bera is equal to 0.73 which is greater than 0.1, the Distribution is normal distribution.

#### 4.2.6. Findings

This analysis shows that, there exist positive relationship between the GDP and Debt Services Payment (DSP) and positive relationship between GDP and External Reserve (ER) during the period under consideration. This conforms to the aprior expectation. A unit increase in Debt services Payment will give rises to the GDP by 1.530220 while a unit increased in External reserves will give rise to the GDP by 0.067591.

In order to determine the goodness of the model and the coefficient do determination ( $R^2$ ) is considered. The  $R^2$  is 0.986615 suggesting that about 98% variation in GDP is explained by Debt Service Payment (DSP) and External Reserves (ER), while 2% of variation is be accounted by unenclosed variable in the model. The empirical investigation shows that explanatory variables, i.e Debt Service Payment (DSP) and External Reserve(ER) are statistically significant. Conclusively, the f-statistics further confirm that all the variable in this model sufficiently explain the effect of external debt on economic growth of Ethiopia.

The explanatory of the analysis highly regarded the value of the coefficient of determination of external debt is 98% and this is that high enough to explain the variation in GDP. Therefore, from an overall view the implication of these finding is the external debt is an integral part/determinant of the effect on the Ethiopian economic growth. Since, the explanatory variables (DSP and ER) have positive relation with GDP and explained 98% of the variation of GDP; therefore, for the period reviewed the external debt had positive impact on the economic growth.

### 4.3. Unit Summary

This chapter developed a methodology to analyze the impact of external debt on the economic growth of Ethiopia. To this effect, it used time series analysis based on the Ordinary Least Square Method (OLS). The key variables considered are GDP as proxy of economic growth, debt service payment and external reserve, using time series data from 2001 to 2010 which collected from different local and external sources. Using these variables, the necessary econometric test to run time series data were made before doing the regression.

As we can see from the regression output of this research paper, the regression model has R-squared values of 0.986615. This implies that control variables in the model explained 98.66% of the Ethiopian GDP growth. Therefore, these two variables explained 98 % of GDP growth in Ethiopia. On the other hand, 2% of GDP per capita growth is explained by the other factors which are not included in this model. All the variables data in the regression go through various tests. In line with the principle of ADF test for stationerity, the research conducted stationery test, and the test result verified debt service payment and exchange reserve are become stationary at their second differences. DW statistics in the Eviews econometric software is a test for first order serial correlation or Autocorrelation. Empirical evidence verified that DW test of regression of the model is 1.98, which means there is no Autocorrelation.

Moreover, co-integration tests for conducted for most important variables by using Johansone co-integration test. And the result of this test clarified that there is co-integration between this variables. Finally, the regression result reveal that debt service payment and exchange reserve have significant relationship with GDP of Ethiopian.

## CHAPTER FIVE

### 5.1. Conclusion and Policy Recommendations

#### 5.1.1. Conclusion

Ethiopia has been faced with a severe shortage of capital and to undertake development program, the country relies on external finance. However, deficit financing through external borrowing resulted in debt burden problem which also resulted in debt crisis. This debt burden has been a great concern of a country, because it imposes negative impact on economic growth. Hence, this study has focused on the examination of the impact of external debt on economic growth of Ethiopia by using annual data covering the period from 2001 to 2010.

The study used explanatory variables of debt service payment and foreign exchange reserve to investigate the impact of external debt on economic growth of Ethiopia. And the regression result reveals that there is positive relation between both GDP and debt service payment and GDP and between GDP and foreign exchange reserve. The coefficients 1.530220 and 0.067591 of the explanatory variables indicates by how much the growth rate of GDP increased per unit increase in debt service payment and foreign exchange reserve, respectively.

External debt has direct impact on growth of GDP through the investment channel. Since, high debt repayment erodes resources which would have been used to stimulate investment and economic growth. So, the resource of the country is diverted to debt repayment instead of acceleration of investment and lowers the foreign exchange reserve of the country. The debt service payment is usually effected in foreign currency; hence, it lowers the foreign exchange reserve of the country. In Ethiopia case, due to debt relief, debt forgiveness and debt



rescheduling, debt servicing has reduced significantly and its negative effect on investment is not appeared for the considered years. There is positive relation between debt servicing and growth.

Based on the finding of the study, the external debt has positive impact on growth of the economy. It is at the upward or the good section of the debt-laffer curve. Besides, there is no sign of debt overhang and crowding out effect which affect economic growth negatively. The external debt does not create disincentive effect on investment through the expectation of higher tax because of high indebtedness. The external loan, still, has important role on bridging of resource and facilitation of economic growth. Yet, the external debt should have to be maintained within the country's capacity of repayment, and the debt service obligation should not be allowed to rise than foreign exchange earnings. Furthermore, the contracted loan should be invested in profitable investment, which will generate a reasonable amount of return for debt repayment. This analysis is also in line with the Dual-gap analysis proposition which argued that economic growth is a function of investment which requires domestic saving. But if it is not sufficient, it must be supplemented by foreign resources to bridge the gap (Ajayi 2012).

### **5.1.2. Policy Recommendation**

From the forgoing analysis it is possible to recommend that the government continue to properly utilize external loan by investing on selective and productive investment, including basic infrastructural developments that facilitate the productivity of different sectors of the economy. As it has been observed, there is nothing wrong with borrowing rather what a matter is how the borrowed fund is used. This also does not mean that the government should continue depending on foreign resources, because it has a serious implication that dependency on foreign resource especially for non development purposes. But currently, as far as there is

high resource gap between domestic saving and domestic investment, to achieve the targeted growth, the government may be forced to finance the gap by available options at hand among which foreign resource, particularly debt, is one. Based on this fact, the following policy recommendations are suggested:

- A. External loan should be used wisely and effectively in consideration of the country's short-run and long-run macroeconomic implications. Furthermore, public and private borrowing from external source also need to be subject to strict analysis in terms of its use, within the context of growth-oriented debt sustainability target, with comprehensive debt monitoring and follow-up procedures.
- B. Structural problems inherent to the Ethiopian economy have been one of the relevant factors contributing to the debt problem in the country. So, the government is advised to make structural change and appropriate reform for stimulating economic growth.
- C. The government should ensure efficiency in delivery of services and increased productivity of public and private investments to achieve higher, and sustainable economic growth path. In the long run, foreign savings should supplement but not replace domestic savings.
- D. Diversifying export sector by an export-led growth strategy is one of the solutions to reduce the debt problem. Proper macroeconomic management of the economy as a whole is also important, since it has effect on the volume and servicing of external debt,
- E. The country should introduce effective debt management policy which concern to achieve the benefits of external finance without creating difficult problems on macro-economy and balance of payment stability.

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## Annexes

**Table 3.1: External debt, debt burden indicators and debt arrears from 1970-2000**

(In millions of USD)

Year	EDS	EDS/ GDP	EDT/ XGS	TDS	Principal	Interest	TDS/XGS	Arrears	Arrears /GDP	Arrears /XGS	Interest Arrears/ total arrears	Principal Arrears/ total arrears
1970	0.52	11	185									
1975	0.63	11.3	134	0.014			0.14					
1980	1.77	17.5	192	0.024			0.24					
1985	5.2	78.9	932	0.35	0.257	0.089	28.4		0.02	0.3	21.4	78.6
1989	7.8	99.2	1034.8	0.41	0.3	0.1	40.1	0.34	0.9	9.1	23	77
1990	8.6	127.1	1,275.7	0.47	0.336	0.13	34.9	0.32	4.1	41.2	15.3	84.7
1991	9.1	172.7	1,666.7	0.23	0.142	0.092	25.2	0.52	20.6	199.3	15.2	84.8
1992	9.3	169.2	2,036.9	0.62	0.435	0.191	23.9	0.45	32.2	388.1	14.5	85.5
1993	9.7	157.7	1,889.3	0.64	0.379	0.263	18.5	1.01	39.7	475.5	13.8	86.2
1994	10.1	208.6	1,787.4	0.74	0.389	0.355	19.8	0.82	66.4	568.8	12.3	87.7
1995	10.3	180.2	1,276.3	0.46	0.462	0.413	19.1	0.7	71.1	503.4	10.7	89.3
1996	10.1	168.9	1,222.0	1.65	1.65	0.321	42.1	0.7	80.2	580	10	90
1997	10.2	160.3	968.6	0.38	0.97	0.4	9.6		84.3	509.4	10.2	89.8
1998	10.4	159.9	973.8	0.14	0.79	0.3	11.2		89.6	546.3	10.4	89.6
1999	5.5	86.9	586.9	0.27	1.78	0.4	16.4		11	74.2	8.5	91.5
2000	5.5	87.6	545.5	0.86	1.16	0.5	13.8		11.4	71.7	9	91

Source: world Bank, debt statistics 1999

**EDS**-External debt stock

**XGS**-export of goods and services

**TDS**-total debt service

**Table 3.2: External debt, debt burden indicators and debt arrears from 2001-2010 (in millions of USD)**

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Multilateral</b>	3,624	4,273.90	4,679.9	4,880.8	4,876.3	1,193.1	1,531.2	2,032.3	2,729.1	3,480.9
<b>Bilateral</b>	2,472	2,431	2,520.4	787.6	797.7	806.9	946.7	1,204.3	1,389.7	1,724.5
<b>Commercial</b>	90.4	76.8	72.6	352.6	355.1	314.6	275.8	1,128.2	1,451.0	2,113.4
<b>Total debt</b>	6,186	6,782	7,272.9	6,021.0	6,029.1	2,314.6	2,753.7	4,364.8	5,569.8	7,318.8
<b>Debt service</b>										
<b>Principal</b>	1163	781	122.3	130.2	147.4	17.8	46.8	42.1	64.7	143.7
<b>Interest</b>	517	469	61.5	51.3	61.7	12.0	30.0	25.5	30.0	52.3
<b>Debt/GDP</b>	31.5	90	74.0	53.9	46.6	11.8	12.3	13.5	18.7	26.3
<b>Debt/XGS</b>			4.8	3.2	2.9	0.9	0.9	1.0	1.4	1.4
<b>Debt service Ratio</b>	82.5	56.9	12.3	9.8	9.9	1.2	2.5	2.0	2.3	3.7
<b>Arrears</b>										
<b>Principal</b>			-	-	-	-	-	-	-	-
<b>Interest</b>			-	-	-	-	-	-	-	-
<b>Relief</b>										
<b>Principal</b>	-	-	-	-	96.0	72.0	24.1	16.9	9.8	7.8
<b>Interest</b>	-	-	-	-	37.0	30.0	4.1	1.8	2.2	0.6

Source: National Bank of Ethiopia (1990-2010) and MOFED various year of report (2001-2010)

**Table 3.3: Composition of external debt by source from 1970-2010**

Period	1970	1974	1980	1989	1991	1992
Multilateral institution	37	42.9	57.2	39.8	39.2	40.2
Bilateral inst.	61.5	56.8	37.1	60.2	60.8	59.8
O/W OECD	53.6	50.6	30.6	36.8	41.9	45.2
Socialist Country	7.9	6.2	6.5	45.6	41.9	40
Others	1.5	0.3	5.7	17.6	16.2	14.7
	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>
Multilateral institution	42.2	48.4	52.8	54.3	57.3	56.1
Bilateral inst.	37.3	33.9	31.6	31	31.2	33
O/W Paris Club	75.1	75.2	75.5	75.1	74.4	76.3
Non-Paris Club	24.9	24.8	24.5	24.9	25.6	23.7
Commercial inst.	20.4	17.7	15.6	14.7	11.5	10.9
	<b>2001</b>	<b>2003</b>	<b>2005</b>	<b>2007</b>	<b>2009</b>	<b>2010</b>
Multilateral institution	52	65	81	56	49	48
Bilateral institution	48	35	13	34	25	24
Commercial			5.9	10	26.1	28

Source: world Bank, Global Development Finance 1999

**Table 3.4: Terms and structure of Ethiopia's external debt**

<b>Years</b>	<b>1970</b>	<b>1980</b>	<b>1989</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>
All creditors										
interest %	4.4	3.5	3.2	6.6	4.7	1	1.7	1.1	1	1.6
maturity [years]	31.5	19.2	21.6	21.8	20.3	40.1	40.7	40.4	36.3	35.4
Grace period[yrs]	6.6	3.8	5.9	2.9	5	9.8	9.2	9.3	9.3	8.9
Grant element in av. %	43.3	39.5	42.7	23.7	35	73.7	72.5	76.1	76.1	76.1
<b>Years</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2009</b>
All creditors										
interest %	0.6	0.6	0.8	0.8	0.87	0.83	1.77	0.81	0.98	0.89
maturity [years]	40.6	40	38.8	40.9	39.5	34.35	23.44	40.91	35.5	40
Grace period[yrs]	10.1	8.7	10.1	11.7	9.02	8.64	6.29	9.88	9.03	10.5
Grant element on av. %	83	70.4	79.5	80.8	59.68	56.8	60.92	60.96	56.52	63.4

Source: World Bank Development finance 1999

**Table 3.5: Trend of Economic growth of Ethiopia and sectors contributions from 1960-2000**

<b>Period</b>	<b>1960-1974</b>	<b>1975-1991</b>	<b>1992-2000</b>	<b>1960-2000</b>
Growth rate in real GDP	4.2	1.9	7.2	3.9
Population growth	2.6	2.9	2.1	2.5
Growth rate PC GDP	1.6	-1	5.1	1.4
<b>Agriculture</b>				
Share of Agriculture to growth of GDP in %	31.2	14.9	24.3	25.4
Share of Agriculture in %	60.8	52.4	46.3	53.2
<b>Industry</b>				
Share of Industry to growth of GDP in %	22.7	18.1	16.3	14.7
Share of Industry in %	13.3	13	13.1	13.13
<b>Distributive service &amp; other services</b>				
Share of services to growth of GDP in %	46.1	71.9	64.3	65.2
Share of Services in %	25.9	34.6	41.3	33.93

Source: National Bank of Ethiopia (1990-2010) and MOFED various year of report (2001-2010)



**Table 3.6: Economic growth of Ethiopia from 2001 to 2010**

In millions of Birr

Period	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
<b>GDP in millions of Birr</b>	68,012	66,587	74,397	83,804	94,327	105,213	117,514	129,333	142,807	159,244	
<b>GDP Growth rate</b>	-0.3	-3.3	11.7	12.6	12.6	11.5	11.7	10	10.4	11.5	8.84
<b>Population growth</b>	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
<b>Per capita income</b>	-2.9	-5.9	9.1	10	10	8.9	9.1	7.4	7.8	8.9	6.24
<b>Agriculture</b>											
Absolute growth	<b>-1.9</b>	<b>-10.5</b>	<b>16.9</b>	<b>13.5</b>	<b>10.9</b>	<b>9.4</b>	<b>7.5</b>	<b>6.4</b>	<b>7.6</b>	<b>9</b>	6.88
Contribution to GDP in %	49	44.6	47	47.1	47.1	46.1	44.6	43.2	42	41.1	45.18
<b>Industry</b>											
Absolute growth	<b>8.3</b>	<b>6.5</b>	<b>11.7</b>	<b>9.4</b>	<b>10.2</b>	<b>9.5</b>	<b>10</b>	<b>9.9</b>	<b>10.6</b>	<b>15</b>	10.11
Contribution to GDP in %	13	13.9	14	13.4	13.6	13.2	13	13	13	13.4	13.35
<b>Service</b>											
Absolute growth	<b>3.3</b>	<b>6</b>	<b>6.2</b>	<b>12.8</b>	<b>13.3</b>	<b>15.3</b>	<b>16</b>	<b>14</b>	<b>13</b>	<b>12.5</b>	11.24
Contribution to GDP in %	39	41.5	39	40.4	40.4	41.7	43.5	41.7	46	46	41.92

Source: National Bank of Ethiopia (1990-2010) and MOFED various year of report (2001-2010)

**Table 3.7: Trend of Domestic revenue and Expenditure 1960-2000**

Period	1960-1974 Imperial Regime			1975-1991 Military Government Regime			1992-2000 EPRDF Regime		
	%age of total domestic revenue	Average growth rate	Ratio to GDP	%age of total domestic revenue	Average growth rate	Ratio to GDP	%age of total domestic revenue	Average growth rate	Ratio to GDP
<b>Domestic Revenue</b>									
Domestic revenue	100	10.6	8.5	100	9.7	17.3	100	17.3	16.4
Tax revenue	85.1	11.5	7.3	77.1	8.7	12.8	67.5	15.1	10.9
direct tax	22	11	1.9	27.2	11.2	3.7	25	13.7	4.1
Indirect tax	26.2	22.5	2.3	22.3	10	4.3	25.9	9.2	2.8
Foreign trade tax	36.9	8.8	3.1	27.6	6.1	4.3	16.6	26.7	4.1
Non tax revenue	14.9	7.8	1.2	22.9	15.6	4.1	32.5	27.2	10.4
External grant	17.1	20.5	1.8	12.2	19.7	2.5	15.8	20.4	3
<b>Expenditure</b>									
Description	%age of total expenditure	Average growth rate	Ratio to GDP	%age of total expenditure	Average growth rate	Ratio to GDP	%age of total expenditure	Average growth rate	Ratio to GDP
Recurrent	79.1	10.3	8.7	73.4	12.1	18.7	66.5	16.8	16.7
capital	20.9	9.8	2.2	26.6	14.6	7.1	33.5	18.3	8.4
<b>Average annual deficit in millions of Birr</b>									
Excluding grants	115.2			1097.9			3353.7		
Including grant	47.4			773.2			2188.3		
ratio t GDP	2.3			8.5			7		
revenue/ Expenditure	78			67.2			65.5		
<b>Financing in million of Birr</b>									
External	40.3			332.8			1276.1		
Domestic	7.2			440.3			912.5		

Source: MEDaC 1999 and Ministry of finance data of various years (2001-2010)

**Table 3.8: Trend of Domestic revenue and Expenditure 2001-2010** 'in millions of Birr

Period	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Domestic revenue(A)</b>	<b>10,409</b>	<b>11,149</b>	<b>13,917</b>	<b>15,582</b>	<b>19,530</b>	<b>21,798</b>	<b>29,794</b>	<b>46,860</b>	<b>53,861</b>	<b>69,120</b>
<b>Revenue/GDP</b>	<b>16.4</b>	<b>15.2</b>	<b>16.1</b>	<b>14.6</b>	<b>14.8</b>	<b>12.7</b>	<b>12.1</b>	<b>12.2</b>	<b>14.1</b>	<b>13.5</b>
<b>growth rate of Rev</b>		<b>7%</b>	<b>25%</b>	<b>12%</b>	<b>25%</b>	<b>12%</b>	<b>37%</b>	<b>57%</b>	<b>15%</b>	<b>28%</b>
Tax revenue (B)	7,926	8,243	10,907	12,398	14,159	17,354	23,801	33,384	43,315	58,981
<b>(A/B)</b>	<b>76%</b>	<b>74%</b>	<b>78%</b>	<b>80%</b>	<b>72%</b>	<b>80%</b>	<b>80%</b>	<b>71%</b>	<b>80%</b>	<b>85%</b>
direct tax(C)			3,431	3,930	4,461	5,168	7,016	11,592	14,903	19,550
<b>(C/B)</b>					<b>32%</b>	<b>30%</b>	<b>29%</b>	<b>35%</b>	<b>34%</b>	<b>33%</b>
indirect tax(D)			7,476	8,467	9,698	12,186	16,785	21,792	28,412	39,431
<b>(D/B)</b>					<b>70%</b>	<b>71%</b>	<b>65%</b>	<b>66%</b>	<b>67%</b>	
Non tax revenue(E)	2,483	2,906	3,010	3,184	5,371	4,444	5,993	13,476	10,546	10,139
<b>(E/A)</b>	<b>24%</b>	<b>26%</b>	<b>22%</b>	<b>20%</b>	<b>28%</b>	<b>20%</b>	<b>20%</b>	<b>29%</b>	<b>20%</b>	<b>15%</b>
<b>Total expenditure(F)</b>	<b>16,680</b>	<b>20,504</b>	<b>20,508</b>	<b>24,802</b>	<b>29,326</b>	<b>35,608</b>	<b>46,915</b>	<b>57,775</b>	<b>71,334</b>	<b>93,832</b>
<b>growth rate Exp</b>		<b>23%</b>	<b>0%</b>	<b>21%</b>	<b>18%</b>	<b>21%</b>	<b>32%</b>	<b>23%</b>	<b>23%</b>	<b>32%</b>
<b>Expenditure/GDP</b>	<b>32.6</b>	<b>27.9</b>	<b>23.7</b>	<b>19.3</b>	<b>22.3</b>	<b>20.8</b>	<b>19.1</b>	<b>17.2</b>	<b>18.6</b>	<b>18.4</b>
current expenditure(G)	10,550	13,536	11,965	13,235	15,234	17,166	22,794	27,176	32,012	40,535
<b>(G/F)</b>	<b>63%</b>	<b>66%</b>	<b>58%</b>	<b>53%</b>	<b>52%</b>	<b>48%</b>	<b>49%</b>	<b>47%</b>	<b>45%</b>	<b>43%</b>
Capital expenditure(H)	6,130	6,313	8,271	11,343	14,042	18,398	24,121	30,599	39,322	53,297
<b>(H/F)</b>	<b>37%</b>	<b>31%</b>	<b>40%</b>	<b>46%</b>	<b>48%</b>	<b>52%</b>	<b>51%</b>	<b>53%</b>	<b>55%</b>	<b>57%</b>
Special program (I)	-	655	272	224	50	44				
<b>(I/F)</b>	<b>0%</b>	<b>3%</b>	<b>1%</b>	<b>1%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
Revenue/Expenditure	62%	54%	68%	63%	67%	61%	64%	81%	76%	74%
<b>EXP %age of GDP</b>	<b>10.9</b>	<b>12.8</b>	<b>7.6</b>	<b>8.7</b>	<b>7.5</b>	<b>8.0</b>	<b>6.9</b>	<b>3.6</b>	<b>4.6</b>	<b>1.6</b>
<b>fiscal deficit (excluding Grant)</b>	<b>(6,271)</b>	<b>(9,355)</b>	<b>(6,591)</b>	<b>(9,220)</b>	<b>(9,796)</b>	<b>(13,810)</b>	<b>(17,121)</b>	<b>(10,915)</b>	<b>(17,473)</b>	<b>(24,712)</b>
Grant	2,424	4,554	4,002	4,565	3,732	7,583	9,911	14,454	12,376	16,491
<b>Fiscal deficit (including Grant)</b>	<b>(3,847)</b>	<b>(4,801)</b>	<b>(2,589)</b>	<b>(4,655)</b>	<b>(6,064)</b>	<b>(6,227)</b>	<b>(7,210)</b>	<b>3,539</b>	<b>(5,097)</b>	<b>(8,221)</b>
financing										
External			2349	2384	1512	1912	2396	3176	4131	7797
Domestic			2147	3492	2735	6247	6400	-417	1758	111.2
Privatization			11	10			1008	472	697	1457

Source: Ministry of finance various years of report (2001-2010)

**Table 3.9: Summery Fiscal Deficit and its Financing**

<b>Period</b>	<b>1960-1974</b>	<b>1975-1991</b>	<b>1992-2000</b>
<b>Average Annual deficit in million of birr</b>			
Excluding grants	115.2	1,097.9	3,353.7
Including grant	47.4	773.2	2,188.3
As the ratio of GDP	1	6.1	5.7
<b>Domestic revenue/total Expenditure</b>	<b>78</b>	<b>67.2</b>	<b>65.5</b>
<b>Financing in millions of Birr</b>			
External	40.3	332.8	1276.1
Domestic	7.2	440.3	912.5

Source: MEDaC (1999) and Ministry of finance data of various years (2001-2010)

**Table 3.10: Trend of GDCF and GDS of Ethiopia from 2001 to 2010**

Year	Gross domestic capital formation as % age of GDP	Gross Domestic saving as % age of GDP	Resource gap as % age of GDP
1964	12.4	10.8	-1.6
1965	13.3	9.8	-3.5
1966	14	9.7	-4.3
1967	13.5	11.7	-1.8
1968	14.1	11.6	-2.5
1969	14.9	12.9	-2
1970	12.9	11.2	-1.7
1971	12.4	9.9	-2.5
1972	12.9	10.9	-2
1973	15.5	13.4	-2.1
1974	15.3	13	-2.3
1975	10	6.6	-3.4
1976	12.7	8.7	-4
1977	8.2	5.8	-2.4
1978	4.9	1.9	-3
1979	6.7	3.5	-3.2
1980	8	4.8	-3.2
1981	8.8	4.9	-3.9
1982	7.9	3.6	-4.3
1983	10.2	2.7	-7.5
1984	6	-2.4	-8.4
1985	11.5	1.8	-9.7
1986	11.2	1.2	-10
1987	20	12.5	-7.5

1988	14	8.9	-5.1
1989	12	7.9	-4.1
1990	10	3.4	-6.6
1991	9	3	-6
1992	19	5.6	-13.4
1993	13	3	-10
1994	16.4	11.5	-4.9
1995	16.9	6.6	-10.3
1996	17	8.3	-8.7
1997	17.2	12	-5.2
1998	16.9	8	-8.9
1999	15.9	9	-6.9
2000	17.8	10	-7.8
2001	23.6	6	-17.6
2002	22.8	4	-18.8
2003	26.5	22.4	-4.1
2004	23.8	20.4	-3.4
2005	25.2	18.5	-6.7
2006	22.1	23.7	1.6
2007	22.4	19.2	-3.2
2008	22.7	18.9	-3.8
2009	24.3	20.6	-3.7
2010	25.5	24.6	-0.9

Source: MOFED (2001-2010) and NBE various year report (1990-2010)

Table3.11: Balance of payment of Ethiopia from 1990-2000

(in millions of Birr)

Description/Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
<b>Trade balance</b>	<b>-1558</b>	<b>-1491.7</b>	<b>-829.4</b>	<b>-635</b>	<b>-609.4</b>	<b>-1002.7</b>	<b>-798.7</b>	<b>-850.5</b>	<b>-959.9</b>	<b>-975</b>	<b>-957.3</b>
Export(A)	572	319.2	222.4	279.6	453.6	410.2	604.4	600	913.9	984	979.1
Import(B)	2130	1810.9	1051.8	914.6	1063	1412.9	1403.1	1450.5	1873.8	1959	1936.4
(A/B)		18%	21%	31%	43%	29%	43%	41%	49%	50%	36%
<b>Net services</b>	<b>-62</b>	<b>27.4</b>	<b>-23.1</b>	<b>10.9</b>	<b>60.8</b>	<b>95.1</b>	<b>99.6</b>	<b>88.7</b>	<b>101.8</b>	<b>66.96</b>	48.48
Net goods& service	<b>-1620</b>	<b>-1464.3</b>	<b>-852.5</b>	<b>-624.1</b>	<b>-548.6</b>	<b>-907.6</b>	<b>-699.1</b>	<b>-761.8</b>	<b>-858.1</b>	<b>-908.04</b>	<b>-908.82</b>
Private transfer	413.9	653.7	247.9	246.9	311.2	313.4	258.1	334.1	397.02	261.144	189.072
public transfer	496.68	784.44	297.48	296.28	373.44	376.08	309.72	400.92	476.424	313.3728	226.8864
<b>Net transfer</b>	<b>910.58</b>	<b>1438.14</b>	<b>545.38</b>	<b>543.18</b>	<b>684.64</b>	<b>689.48</b>	<b>567.82</b>	<b>735.02</b>	<b>873.444</b>	<b>574.5168</b>	415.9584
Current account	<b>-709.42</b>	<b>-810.6</b>	<b>-604.6</b>	<b>-377.2</b>	<b>-237.4</b>	<b>-594.2</b>	<b>-448.7</b>	<b>-427.8</b>	<b>-509</b>	-334.8	-242.4
<b>Capital account</b>	<b>330.2</b>	<b>-238.1</b>	<b>-128</b>	<b>236.3</b>	<b>8.6</b>	<b>-11.3</b>	<b>-54.9</b>	<b>174.8</b>	<b>-144.4</b>	151.7	258.6
Net error& omission	140.6	-270.6	233.5	23.6	-37.1	124.7	-116.9	-145.9			
overall balance	<b>-238.62</b>	<b>-1319.3</b>	<b>-98.8</b>	<b>167.7</b>	<b>16.1.6</b>	<b>-89.1</b>	<b>-386.7</b>	<b>-107.5</b>	<b>-473.2</b>	<b>-393.7</b>	<b>-70.5</b>
Days coverage			14.7	28.3	30.2	33.1	22.6	18			

Source: MOFED (2001-2010) and NBE various year report (1990-2010)

**Table 3.12: Balance of payment of Ethiopia from the year 1990-2000**

(in millions of Birr)

Description	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Trade balance</b>	<b>[960.0]</b>	<b>[1,373.3]</b>	<b>[1,985.7]</b>	<b>[2,815.3]</b>	<b>[3,592.5]</b>	<b>[3,940.9]</b>	<b>[5,344.8]</b>	<b>[6,279.2]</b>	<b>[6,255.8]</b>	<b>[5,506.0]</b>
Export	913.0	482.7	600.5	817.9	1,000.3	1,185.1	1,465.7	1,447.4	2,003.1	2,747.0
Import	1,873.0	1,856.0	2,586.1	3,633.3	4,592.8	5,126.0	6,810.5	7,726.6	8,258.9	8,253.0
Net services	[959.9]	121.9	246.2	241.6	147.7	230.3	159.9	384.7	456.6	688.1
Net goods& service		<b>[1,251.4]</b>	<b>[1,739.5]</b>	<b>[2,573.8]</b>	<b>[3,444.8]</b>	<b>[3,710.6]</b>	<b>[5,184.9]</b>	<b>[5,894.5]</b>	<b>[5,799.2]</b>	<b>[4,817.9]</b>
Private transfer		494.9	671.3	811.0	1,226.4	1,728.6	2,394.1	2,706.8	2,709.7	3,161.5
public transfer		599.8	566.5	749.8	755.9	1,199.1	1,312.5	1,551.4	1,905.6	1,891.0
<b>Net transfer</b>		<b>1,094.7</b>	<b>1,237.9</b>	<b>1,560.7</b>	<b>1,982.3</b>	<b>2,927.7</b>	<b>3,706.6</b>	<b>4,258.2</b>	<b>4,615.3</b>	<b>5,052.5</b>
Current account	<b>[5,099.0]</b>	<b>[156.7]</b>	<b>[501.7]</b>	<b>[1,013.1]</b>	<b>[1,462.5]</b>	<b>[782.9]</b>	<b>[1,478.3]</b>	<b>[1,636.3]</b>	<b>[1,183.9]</b>	<b>234.6</b>
Capital account	[144.0]	400.0	512.4	585.1	632.5	798.5	698.1	1,647.9	1,996.6	2,473.3
Net error& omission		63.2	215.9	327.1	622.5	69.1	246.8	501.8	[458.7]	[1,340.4]
<b>overall balance</b>	<b>[473.2]</b>	<b>306.5</b>	<b>226.7</b>	<b>[100.9]</b>	<b>[207.5]</b>	<b>84.7</b>	<b>[533.4]</b>	<b>513.4</b>	<b>316.6</b>	<b>1,367.5</b>
Foreign currency Reserve in Millions of USD	301.0	376.0	491.0	668.0	811.0	244.0	263.0	515.0	316.0	1,317.0
Reserve in days			2.3		1.5		1.5	2.2	2.2	3.16

Source: MOFED (2001-2010) and NBE various year report (1990-2010)



**Table 4.3. Data for regression**

<b>Year</b>	<b>LY</b>	<b>LDSP</b>	<b>LER</b>
2001	7793	1,680	301
2002	8558	1,250	376
2003	10041	183	491
2004	12306	181	668
2005	15164	209	811
2006	19556	30	244
2007	26893	79	263
2008	32254	68	515
2009	29741	95	316
2010	30922	196	1370

Source: own calculation using E-views

**Table 4.4: Regression without Autocorrelation**

Dependent Variable: LY

Method: Least Squares

Date: 10/10/13 Time: 08:48

Sample: 2001 2010

Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.941262	0.795302	9.985217	0.0000
LDSP	-1.530220	0.068099	-22.47048	0.0000
LER	0.067591	0.045765	1.476912	0.1832
R-squared	0.986615	Mean dependent var		9.737612
Adjusted R-squared	0.982791	S.D. dependent var		0.556270
S.E. of regression	0.072973	Akaike info criterion		-2.154123
Sum squared resid	0.037276	Schwarz criterion		-2.063348
Log likelihood	13.77062	F-statistic		98.9907
Durbin-Watson stat	1.392484	Prob(F-statistic)		0.000000

Source: own calculation using E-views

**Table 4.6: Serial correlation**

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.116465	Probability	0.744534
Obs*R-squared	0.190413	Probability	0.662573

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 10/19/13 Time: 08:53

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.076286	0.879682	0.086720	0.9337
LDSP	-0.010687	0.079297	-0.134770	0.8972
LER	0.007942	0.054208	0.146502	0.8883
RESID(-1)	0.176941	0.518476	0.341270	0.7445
R-squared	0.019041	Mean dependent var		-2.01E-15
Adjusted R-squared	-0.471438	S.D. dependent var		0.064356
S.E. of regression	0.078066	Akaike info criterion		-1.973348
Sum squared resid	0.036566	Schwarz criterion		-1.852314
Log likelihood	13.86674	F-statistic		0.038822
Durbin-Watson stat	1.550041	Prob(F-statistic)		0.988766

Source: own calculation using E-views

**Table 4.7: Unit root test for variable LY**

ADF Test Statistic

Test critical values	-6.743094	1% Critical Value*	-5.2459
		5% Critical Value	-3.5507
		10% Critical Value	-2.9312

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(LY,3)

Method: Least Squares

Date: 10/11/13 Time: 08:55

Sample(adjusted): 2005 2010

Included observations: 6 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LY(-1),2)	-2.354824	0.629112	-3.743094	0.0333
D(LY(-1),3)	2.218665	0.899681	2.466057	0.0904
C	0.039866	0.054154	0.736163	0.5150
R-squared	0.833873	Mean dependent var		0.012743
Adjusted R-squared	0.723122	S.D. dependent var		0.202683
S.E. of regression	0.106650	Akaike info criterion		-1.331676
Sum squared resid	0.034123	Schwarz criterion		-1.435796
Log likelihood	6.995027	F-statistic		7.529249
Durbin-Watson stat	1.088268	Prob(F-statistic)		0.067711

Source: own calculation using E-views

**Table4.8: Unit root test for variable LDSP****ADF Test Statistic**

Test critical values	-6.871350	1% Critical Value*	-5.2459
		5% Critical Value	-3.5507
		10% Critical Value	-2.9312

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(LDSP,3)

Method: Least Squares

Date: 10/10/13 Time: 08:55

Sample(adjusted): 2005 2010

Included observations: 6 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LY(-1),2)	-1.222800	0.653432	-6.871350	0.1580
D(LY(-1),3)	0.206323	0.592468	0.348244	0.7507
C	-0.03864	0.030742	-0.125700	0.9079
R-squared	0.539428	Mean dependent var		0.004884
Adjusted R-squared	0.232380	S.D. dependent var		0.067045
S.E. of regression	0.058741	Akaike info criterion		-2.524516
Sum squared resid	0.010351	Schwarz criterion		-2.628636
Log likelihood	-10.57355	F-statistic		1.756821
Durbin-Watson stat	1.796070	Prob(F-statistic)		0.312569

Source: own calculation using E-views

**Table 4.9: Unit root test for variable LER****ADF Test Statistic**

Test critical values	-6.656071	1% Critical Value*	-5.2459
		5% Critical Value	-3.5507
		10% Critical Value	-2.9312

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(LY,3)

Method: Least Squares

Date: 10/10/13 Time: 08:55

Sample(adjusted): 2005 2010

Included observations: 6 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LY(-1),2)	-2.629216	0.989889	-6.656071	0.0766
D(LY(-1),3)	0.721075	0.648528	1.111863	0.3473
C	0.129295	0.499167	0.253012	0.8166
R-squared	0.793038	Mean dependent var		0.312468
Adjusted R-squared	0.655063	S.D. dependent var		2.060476
S.E. of regression	1.2100144	Akaike info criterion		3.526209
Sum squared resid	4.393347	Schwarz criterion		3.422089
Log likelihood	7.578627	F-statistic		5.747710
Durbin-Watson stat	1.328469	Prob(F-statistic)		0.094153

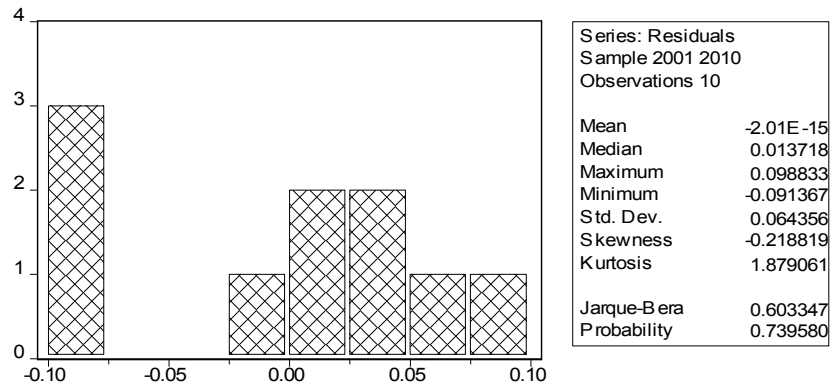


Figure 4.1: histogram normality test