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THE IMPACT OF TAX REFORM ON THE REVENUE PRODUCTIVITY OF THE ETHIOPIAN TAX SYSTEM

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STATEMENTS OF DECLARATION

I, Sibhat Mamo, declare that this thesis entitled of ―The Impacts of Tax Reform on the Revenue Productivity of the Ethiopian Tax System" submitted in partial fulfillment of the degree of Masters of Science in Accounting and Finance is my original work and has not been presented in any other university/institution for consideration of any certification. This study has been complemented by referenced source duly acknowledge. Where data, pictures or table have been borrowed from other sources, including the internet, these are specifically accelerated and references cited using current APA system and in accordance with anti-plagiarism regulations.

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Abstract

Ethiopia faces difficulty in raising tax revenue to the level required for the promotion of economic growth and development. To address these fiscal challenges, the government of Ethiopia has initiated a sequence of tax reforms. The evaluation was made in to two different categories. The first category dealt with the whole period (1974/75 – 2013/14) to evaluate the impact of tax reform on revenue productivity of Ethiopian's overall tax system and major tax categories on the basis of tax buoyancies and elasticity which particularly emphasized on the 1975, 1992, and 2002 tax reform. The second category was compared with total tax revenue buoyancy of the Derg regime period (1974/75-1991/92) and the Ethiopian People's Revolutionary Front (EPRDF) period (1992/93-2013/14).The two step Engel- Granger method of measuring revenue impacts of discretionary tax measures by means of single equation econometric model is adopted and Ordinary List Square (OLS) estimation techniques is used. Evidence suggested that the overall tax system in Ethiopia during the period under study was income inelastic and this means that the attained growth in national income spurred a less than proportionate automatic increase in national tax revenue and this inelasticity of the overall tax system is found to be mainly due to low tax- to- base elasticity of individual tax. Relatively low tax-to-base elasticity may be explained by inefficient and poor tax administration and the existence of high exemption. Moreover, the regression results revealed that the estimate of buoyancy of the indirect tax in general and foreign trade tax in particular is higher during EPRDF period compared to Derg period. Eventually, the finding suggests that tax reforms had an overall positive impacts on tax responsiveness through more effectively increased elasticity of the base-to- income component and less effectively through the lower elasticity of the tax-to-base component. Despite this positive impact, tax reforms failed to make the tax system responsive to income change. Hence the study make recommendation on the direction of improved response of tax-to-base, establishment of a strong tax administration to increase tax collection, reducing exemption, broadening the tax base and bringing new tax payers in to tax net.

Key words: tax reform, tax productivity, tax base, buoyancy, elasticity, structural measures.

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ACRONYMS AND ABBREVATIONS

DTMs– Discretionary Tax Measures

DVA– Dummy Variable Approach

ECA– Ethiopian Customs Authority

EPRDF-The Ethiopian Peoples‟ Revolutionary Democratic Front

ERP– Economic Reform Program

ERCA- Ethiopian Revenue and Customs Authority

FIR– Federal Inland Revenue

IFIs– International Financial Institutions

IMF– International Monitory Fund

GDP– Gross Domestic Product

GTP– Growth and Transformation Plane

HTSTD– Historical Time Series Tax Data

LICs– Lower Income Countries

LM- Linear Model

LMICs- Lower Middle Income Countries

LDCs- Lower Developed Countries

LTO– Large Tax Office

MOFED- Ministry of Finance and Economic Development

NLA– National Lottery Administration

NGOs– Non-Governmental Organization

OECD– Organizational for Economic cooperation and Development

OLS- Ordinary Least Square

OT– Optimal Taxation

PA– Proportional Adjustment

SAP– Structural Adjustment Program

SSA– Sub-Saharan African

ToT- Turn over Tax

TIN– Taxpayer Identification Number

VAT- Value Added Tax

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CHAPTER 1: INTRODUCTION

1.1. Background of the Study

Taxation is a veritable and sustainable source of government revenue by which individuals and cooperate bodies are mandatorily required to pay certain proportion of their earnings to the government for the course of development and to promote social equity through the redistribution of income effect of taxation. In line with this frame of thought, every government requires funds for the performance of its various functions. The main sources of financing government expenditure are taxations. Especially developing countries use to raise revenue collection from tax for their economic development. UNCTAD (2005) discusses that poverty reduction or elimination needs sustainable economic growth per annum for a considerably long period. The high rate of sustainable economic growth in turn needs huge investments on physical infrastructures and other social goods and services.

The economy of Ethiopia is very agrarian, focusing mainly on the production and export of commodities such as coffee, flower, half processed leather and others. Consequently, the country is particularly vulnerable to drought and the adverse effects of fluctuations in commodity prices. Since 1992/93 in the country tax reforms have been carried out, focused on economic performance in general and more specifically to enhance competitiveness in the global market. During this time the Economic Reform Program (ERP) has been implemented, as part of this reform program, the government has undertaken different tax policy and tax administration measures.

When the tax reform began in 1999 the tax policy has played imperative role to raise government revenue so as to finance its expenditure; to redistribute income; to encourage the production and distribution of socially desirable goods and services and discourage those which are undesirable like cigarette, alcohol drinks etc. It also helped to maintain macroeconomic stability and encourage saving and investment.

Beside, on the tax administration, one of the changes was made during that time to scale up the _revenue board‘ to ministerial level to become the Ministry of Revenue. This ministry controls the three revenue collection institutions: Federal Inland Revenue (FIR), Ethiopian Custom

Authority (ECA) and the National Lottery Administration (NLA) and assists to optimize the State‘s tax potentials by achieving a very substantial coverage of its taxpayer base. Demirew (2005).

After the tax reform the government revenue has kept raising and the public expenditure of the country continued to focus on the pro-poor spending that improved the infrastructure and social development in the country but the overall budget deficit was gradually increased. The government mobilized 158 billion Birr in revenue and grants in 2013/14, which is a 15.2 % increase from the previous year. The Government initiated and implemented a vigorous tax policy reforms and administration that helped to strengthen tax collection and administration as mentioned above. Consequently, the overall budget deficit, including grants, was 27.3 billion Birr or 2.7 % of GDP. The primary deficit, excluding grants, was 39.2 billion Birr or 3.7 % of GDP According to National Bank of Ethiopia Annual Report (NBE, 2013).

1.2. Statements of Problem

Among the multiple objectives of tax reforms, the current study main focus of tax reform should be to raise adequate revenues to finance public expenditures on social goods and services. Any government incurs expenditure to maintain infrastructure, social security, education, health, property rights and the environment as well as to alleviate emergencies such as drought, floods or defense requirements etc. To finance these different expenditures resources should be mobilized from internal sources as well as external sources. The source of internal resources are taxation which is appropriate way of financing (Burgress and Stern, 1993), domestic borrowing which may crowd out private investment (Chu and Hemmiy, 1991) and printing money which likely imposes inflationary pressure (Tanzi, 1991a, Teshome, 1992). However, if the domestic revenue is not sufficient to finance the expenditure the country would turn its face to foreign borrowing that may cause debt crisis (Sachs, 1989).

Developing countries in general and African countries in particular lag behind in domestic revenue mobilization from their taxes and forced to look for external resource. Among the Sub Saharan African countries Gedaand Shimeles(2005) identified that Ethiopia is the most dependent nation for financing government expenditure in general, and capital expenditure in particular than other developing nations. However, foreign funds are mostly tied with a number

of conditionality that might not align with the country‘s economic and social priorities, which resulted in unsuccessful implementation of national plans due to financial constraints.

(MoFED, 2014) report indicates that the share of tax revenue as a ratio of GDP is about 12.6% in 2013/14which is lower than the Sub-Saharan African average of 15% to 16%. This low tax revenues performance resulted in large and persistence fiscal deficit over long years. Budget deficit for a country is not a good outcome particularly if it is found to be growing over time. This is because it can cause economic instability which in turn may retard investment, lead to inflation and increase balance of payments (BOP) deficit, depending on the way the deficits are financed (Bird and Zolt, 2003). This concern, thus, brings to the fore the question of what to do in order to abolish or reduce the fiscal deficit. One possible response to this question will be enhancement of the capacity to generate revenue from domestic sources. The existing literature suggests three approaches to budget deficit: raising revenue, reducing expenditure and/or both.

Cognizant of this fact, the Second Five Years Plan- Growth and Transformation Plan (GTP) has given due emphasis to the role of domestic resources in financing the country‘s economic and social programs. Thereby, the recent development in the Ethiopian public finance has heightened the need to boost the capacity of domestic resource mobilization which GTP document clearly articulates as ―major fiscal policy to strengthen domestic revenues generation capacity, finance major investment projects with own revenues,” (GTP)(2010: 321)Despite the high interest of the Government to mobilize domestic resources in general and tax revenues in particular, the existing tax system consistently exhibited poor performance of tax revenues. The consistent decline in the ratio of tax revenue to total expenditure over the years leads to high budget deficiency in the country and this explained by the relatively higher growth of expenditures than revenues(MoFED, 2013).

The nature, structure of taxes and their respective elasticity and revenue effectiveness constitute important examinations of tax property. Whether or not budgetary deficit can be bridged by tax reform gives the answer to the question of viability or feasibility of tax financing of government expenditures. In this respect, the increasing Ethiopian budgetary deficit and solutions to tackle the growing deficit is of an academic interest.

1.3. Research Question

The study attempted to answer the following research questions.

- Has the Ethiopia‘s comprehensive tax reform improved the tax systems to raising the tax revenue productivity?
- Which categories of the tax structures have been the most responsive to the generation of the tax revenues and logging behind factors the drop in tax revenue?
- Has the Ethiopia‘s tax reform efforts enhanced the efficiency of the tax administrations and improved equity in the tax system?
- What was the buoyancy of the system relative to its elasticity?

1.4. Objectives of the Study

Revenue from taxes has often- increased over time in absolute magnitude. High revenue productivity is considered as one of the criteria of a good tax system in developing countries. In the face of widening or large budget deficits and the increasing need for development finance in Ethiopia, there is a need to devise a more efficient tax system that will be in line with expenditure.

In general, the objective of this study is to make use of tax revenue data over the period 1975-2014 to evaluate the productivity of tax system in Ethiopia. Thus, this study attempts to estimate the buoyancy and elasticity of the tax system over the period indicated above.

Specific Objectives

The specific objectives of the studies as follows:

- To analyze and review the structure of tax system and its evolution over time;
- To estimate the built-in elasticity (elasticity) of individual tax and the overall tax system;
- To investigate the mode of financing budget deficit;
- To make appropriate recommendation based on the above study.

1.5. Scope of the Study

The study is attempted to cover from 1975-2014 on the performance of tax revenues to finance the ever raising government expenditures. Additionally the study was undertaken by analyzing the secondary data which was found in MOFED and review tax policy document of ERCA.

1.6. Significance of the Study

In previous experience, interestingly most of the literature has been more descriptive than analytical. The techniques applied to evaluating success or failures of tax reforms are not well documented. Normally the analysis of tax reform has tended to focus on evaluating the objectives of those reforms: revenue adequacy, Administrative efficiency, equity and simplicity of the tax system. In addition to bridging gaps in literature, this study will also enable us to better understand the impact of tax reform in terms of tax revenue performance. Also in view of the budget deficiency, it will insight us more on the tax policy reform and the tax administration reform role played to mobilize revenue in the economy, it is imperative that the tax instruments are attractive enough to investors and at the same time generate a flow of revenue for the government particularly because it is necessary that domestic resource mobilization is enhanced as a strategy for sustained growth and development. Finally making recommendations that would help improve the tax system so that it may contribute to the reductions of budget deficiency, and for the enhancement of growth and development of the country economy.

1.7. Limitations of the study

It is obvious that adequate and reliable information is important to undertake any kind of data applied for the study. The scope and depth of this study suffers from lack of appropriate data. For example, in the estimation of tax-to-base and base-to-income elasticity, base-to-income elasticity cannot be decomposed into the two elasticity components. That is tax-to-income elasticity can be measured as a product of tax-to-base and base-to-income elasticities. But the tax-to-income elasticity cannot be decomposed into its two components due to the data lacuna regarding tax base. However, the limitation of this study didn‘t affect the findings of the research. The researcher to overcome the above problem and limitation, has used the proxy bases of each individual tax to measure a product of tax-to-base and base-to-income elasticities and examined

the theoretical and empirical literature to identify both lessons from the experiences of other cross- countries and good practices which could be applicable to Ethiopia. Moreover, document review was made to acquire tax proclamations issued over time with emphasis on tax proclamations, regulations and directives; and identify the weaknesses and discrepancies therein.

1.8. Organization of the Study

The study is divided into six interconnected sections. This paper begins by giving an overview pictures of the government unstable budget deficiencies suffering, in the next section by reviewing the evolution of tax reform, revenue and structures of taxation in Ethiopia; the third section the study examines the literature review of tax reform and revenue productivity; the forth section contains the materials and methods used in the study by asking which factors could explain the significant drop in tax revenues experienced after the implementation of reform proposals in fiscal year (FY) 2002/03. The fifth section examines the results and discussions. At last, the final section examines the concluding remarks and recommendations.

CHAPTER 2: REVIEW OF RELATED LITERATURE

This chapter gives an overview of the theoretical and empirical literature related to the development of taxation as well as productivity of tax system. Productivity, in the sense used here, related to tax yield. Specifically, on empirical literature, basic concepts relating to tax productivity and different approaches that have been used to estimate the impacts of tax reform on revenue productivity are introduced.

2.1. Conceptual framework of Tax Reform

In Ethiopia, the history pointed out that there was no authentic or reliable data as to how and when taxation started in Ethiopia. However, some authors believed that there was some form of taxation during the 12^{th} and 14^{th} centuries in the form of giving some amount of one's produce (like agricultural crops), cattle and direct labor contribution in serving the local chiefs. Elements of modern taxation were introduced around 1941 during the reign of Emperor Haile Selassie. All taxation in kind was abolished and the monetary form was introduced. Historically, the first and the earliest tax reform occurred in Ethiopian during 1942-1963, which includes land taxation, customs tariffs, personal and business income taxes, education and health taxation and transaction taxes. The Money and Banking proclamation was also introduced during this period, for the purpose of balancing government revenues and expenditures through short term government borrowing (Teshome, 1992).

The years 1964-1975 covering its second stage, it is the period in which major tax changes and new laws were introduced and a revision of former laws were made to improve the performance of the tax system to meet the increasing need for government finance. During the mid-sixties, a broad-based transaction tax on goods and services were started following the development of industrial sector and subsequent expansion of trade. This post 1964 was the period in which major fiscal reform practiced in Ethiopia. Because there were great expansions of infrastructure, commercialization of agricultures, large-scale manufacturing and expansion of banking, school and health sector which demands high financial resource. Due to these facts the tax bases were diversified to finance these bulk expenditures and this brings the Ethiopian tax system into international standard to generate high revenue from the tax sources. In the post 1974 to 1991 major changes in all types of taxation were made in terms of rate and structure. This includes:

widening land tax base, introductions of capital and surplus transfer from nationalized firms, as well as certain different arrangements on other types of taxation were done (Wogene, 1994).These changes in tax rates are shown in detail Annex IV.

Since 1992 different reform actions are under taken with the aim of Stabilizing the economy (i.e. worsening of balance of payment, mounting debt, declining economic growth) and Economic Reform Program (ERP). The program was supported by World Bank, International Monetary Fund, foreign governments and other multilateral institutions. As part of this reform program, the government has undertaken different tax policy and tax administration measures. The other measurements were taken by the country to meet the standard of loan and aid of the requirement of International Financial Institutions (IFIs). These changes in tax rates are shown in detail Annex V.

A good tax system is expected to fulfill the two central principles of taxation related to the impact of tax on efficiency (concerned with the allocation of resources/minimizing distortions in household and business decisions in response to tax rules) and equity (concerned with the distribution of the burden of the income tax fairly). As the major principles of taxation in any system, it is worth taking an in-depth look at ―efficiency" and ―equity (fairness)".

A good tax system should be efficient in that it should be able to waste as little money and resources as possible. Efficiency can be measured against three standpoints: administrative costs, compliance costs and excess costs. These three are related to the cost of operation of the tax system, to its flexibility and certainty. Administrative costs are the costs to the government (and ultimately to the taxpayer) of collecting tax revenue. In order to collect taxes, the government must hire collectors to collect the revenue; data entry clerks to process the tax returns; auditors to inspect questionable returns; lawyers to deal with disputes; and accountants to track the flow of money. All these costs are those that are incurred by the government to administer the tax system. Compliance costs, on the other hand, are the costs (other than the taxes themselves) of making tax payments to the government. In order to comply with their obligation and to pay taxes, citizens are bound to incur certain costs. These compliance costs include not only the money that people spend on accountants, tax preparers and/or tax lawyers, but also the time spent in filing tax returns and keeping records. The third aspect of efficiency, excess burden,

relates to tax-induced change in behavior displayed by tax payers. Many of the exemptions, deductions and credit on income tax and designed specifically to encourage certain actions. When the government levies taxes on goods, it distorts consumer behavior as people are bound to buy less of taxed goods and more of other goods. Thus the intrinsic value of goods is shadowed by the taxes which are imposed on the goods. In general the larger any of these costs get, the worse it is for efficiency.

The other major principle of taxation is that the burden of tax should be distributed fairly. According to Trotman-Dickenson, equity or fairness is further highlighted by two principles: the ability-to-pay principle and the benefits principle. Benefit Theory of taxation is based on the assumption that all should contribute to the cost of the state in relation to the benefits they derive from that state. Taxes have therefore regarded based on this theory, as payment for value received and as a reflection of the demand for the public services. The Ability to pay theory of taxation is based on proposition that, on grounds of equity and expenditure, people should contribute to the finance of the state according to their means. According to the ability to pay principle, where citizens with greater ability to earn income, should be taxed more heavily than those with less capacity to earn should.

A theory states an increase in the excess burden caused by a rise in tax could result in a decrease in consumer surplus. Therefore, a good tax system is expected to fulfill minimization of excess burden, i.e. efficiency consideration. Similarly, to demonstrate the incidence of tax (who bears the cost of tax) economists usually use partial equilibrium analysis in the literature.

A theory of partial equilibrium analysis of both efficiency and equity consideration of tax perhaps does not show the overall effect of particular tax such as selected excise tax or income tax up on the economy. So, economists use the general equilibrium analysis to analyze the impact of tax reform and evaluate both its administrative costs and its effect on social welfare. The trade-off between equity and efficiency loss is as the heart of the quest for what has become known as ―optimal taxation"

Optimal tax theory still has a significant influence on academic research in tax reform. This approach is used by Newberry and Stern (1987) who apply a normative framework to analyze the tax reform process. This framework has been criticized for its inability to identify the real

practical needs of tax reform in developing countries. Its first major shortcoming is that it requires substantial data which are scarce or non-existent in many developing countries. Second, optimal taxation has assumed the existence of perfect administration. However, the recent reform experiences have revealed a serious lack of administration capacity in virtually all developing countries, showing the need for simpler administrative structures. The impact of optimal taxation on tax reform in developing countries has been small and indirect (Gillis, 1989, p. 515) because of this deficiency. In addition, under the optimal taxation approach the analysis of revenue productivity of a tax would be of less significance.

2.2. Tax Productivity in Developing Countries

Literature related to developing countries, the tax systems were used to serve multiple objectives. These included, in addition to mobilization of resources to finance government expenditure, promoting savings and investment, inducing savings in particular forms to facilitate the process of channeling savings into investment, directing investment into desirable activities, bringing about greater equity in the distribution of income and correcting externalities.

However, in practice, the establishment of effective and efficient tax systems, in developing countries, faces some formidable challenges. The first of these challenges is the structure of the economy that makes it difficult to impose and collect certain taxes. The second is the limited capacity of the tax administration. The third is the paucity, or the poor quality, of basic data. Finally, in many developing countries the political set up is less willing to rational tax policy than in advanced countries.

Because of the structure of the economy, and as the result of low literacy and low human capital, it is difficult to combine all the ingredients for a good tax administration. When the staffs of the tax administration is not well educated and well trained, when resources pay good wages and buy necessary equipment are not there, when the taxpayers have limited ability to keep accounts, when the use of telephones is limited and the mail is not reliable, it is difficult to create an efficient tax administration. Consequently, countries often develop tax systems that allow them to exploit whatever options they have rather than develop. Hence, in developing countries, tax policy is often the art of the possible rather than the pursuit of the optimal. It is therefore not

surprising that economic theory and especially optimal taxation literature have had relatively little impact on the design of tax systems in developing countries (Tanzi and Zee, 2000).

According to IMF et al (2013) report, Ethiopia comparing to others SSA countries after the comprehensive tax reforms, tax revenue-to-GDP ratio performance in different categories of revenue remained far below and this implies that the countries have potential to raise the revenue of the country with different alternative ways to reach the middle income countries level of 15-20 percent tax revenue per GDP. Thus, the country's growth and transformation plan II (GTP II, 2015-20) also target to reach the tax revenue 17.0 percent per GDP.

Cross-country (i.e. East Africa and SSA countries) studies generally find some margins for tax-to-GDP improvements in Ethiopia seem to be prevalent. Ethiopia's tax-to-GDP ratio averages two percentage points behind East African peers, and 5-6 percentage points behind Kenya and Malawi. On tax structure, Ethiopia fares differently in a number of areas. The proportion of direct taxes is well below the peer countries, except for Uganda, while on indirect taxes (except trade taxes), the proportion from these tax sources is by far the lowest in Ethiopia. It is worth noting that the revenue profile in Kenya and Malawi—the countries with the highest tax-to-GDP ratio—is even across direct and indirect taxes, while indirect taxes take a higher share of overall tax revenues in Rwanda, Uganda and Tanzania. Ethiopia is the only country where the proportion of trade taxes is higher than that of direct or indirect taxes. (See Table 2.1 for details).

Table 2.1. Tax revenue for select SSA Countries

	Rwanda	Ethiopia	Kenya	Malawi	Tanzania	Uganda	Simple Average
(in percent of GDP)							
Tax Revenue	13.5	12.6	20.1	18.8	15.0	12.0	15.7
Direct Tax	5.5	4.2	9.3	8.5	6.4	4.2	6.5
Indirect Tax	8.0	8.4	10.8	10.3	8.6	7.8	9.2
(In percent of Tax Revenue)							
Direct Tax	41.0	33.7	46.2	45.2	42.7	35.3	40.6
VAT & other indirect Tax	50.7	27.2	45.1	45.1	48.5	56.3	44.4
Trade Tax	8.2	39.2	8.7	9.7	8.9	8.4	15.0

Source: IMF: Ethiopia, Rwanda, and Uganda 2013 Article IV; Kenya and Malawi 2012 Article IV; and Tanzania 2011 Article IV.

2.3. Literature on Tax Productivity

One of the techniques that in developing countries measured the tax productivity drives from tax reform was the ability to raise the tax revenue through taxation to finance the government expenditures. In Ethiopia tax reform during the Dergue regime in which it destroyed some of tax bases and the revenue generated from tax source declined, because of following nationalization and restriction on private property ownership development, and most imports are carried out by government department, which are not subjected to tax. Additionally, the remarkable growth in government expenditure particularly after 1975 and the swelling of the government activity in the political, social and economic spheres and a massive transfer of resources to the state sector made adverse effect in revenue source. Though the government tried to solve this problem by supporting state farm in the form of aid and borrowing from abroad, these sources were mainly consumed by Ministry of Defense and the gap remains steady. Therefore, the erratic behavior of revenue and regular form of expenditure in Ethiopia during Dergue regime was the main challenge and government deficit persists for long period time.

Since 1992 different reform actions are undertaken with the objectives of: a shift from reliance on high taxes rate to broaden tax bases, a shift from the taxations of productions to taxations of consumptions, a shift from the taxations of international trade to taxations of domestic transactions, a shift in the burden of taxations from the poor to the rich, to restructuring of investment objectives, and to conduct rigorous tax administrations reform. Due to those reforms a significant growth in the revenue were registered, on average 25.6% between 2001/02 to 2011/12 (MoFED, 2014).

Align with the government revenue has kept rising, Ethiopia‘s public expenditure continued to focus on the pro-poor spending that improved the infrastructure and social development in the country. This results, the government overall budget deficit was gradually increased from 1.2% of GDP in 2011/12 to 2.7% of GDP in 2013/14. The government mobilized 158.1 billion Birr in revenue and grants in 2013/14, which is a 15.2 % increase from the previous year. This was attributed to 17.8 % increase in domestic revenue collections that reached 146.2 billion Birr, and constituted 92.5 % of the total. On the other side In 2013/14 government expenditures reached 185.5 billion Birr, a 20.5% increase compared to the previous year, as a capital and recurrent

expenditure increased by 17.8 and 24.4%, respectively. Thus, the overall budget deficit, including grants, was 27.3 billion Birr or 2.7 % of GDP. The primary deficit, excluding grants, was 39.2 billion Birr or 3.7 % of GDP. (See Table 2.2 for details below).

Table 2.2. Ethiopian Budgetary Revenue, Expenditures and deficit (2005/06 – 2014/15)

Particulars	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
In Percentage of GDP										
Expenditures	**22.4**	**20.8**	**19.1**	**17.6**	**18.6**	**18.5**	**16.9**	**18.1**	**17.7**	**18.64**
Revenues	**17.8**	**17.2**	**16.2**	**16.6**	**17.3**	**16.9**	**15.7**	**16.1**	**15.0**	**16.14**
Deficit Including grant	**4.6**	**3.6**	**2.9**	**1.0**	**1.3**	**1.6**	**1.2**	**2.0**	**2.7**	**2.50**
Deficit Excluding grant	**7.3**	**7.9**	**6.9**	**5.4**	**4.9**	**4.9**	**2.9**	**3.5**	**3.7**	**3.55**

Source: MOFED

The Ethiopia Government to finance this budget deficit using the external and domestic source. In Ethiopia a large part of fiscal deficit has been financed by external grants, which averaged around 3.4 percent of GDP in the last decade, and the rest of the fiscal deficit is financed from three broad sources: external loans (61 percent), bank borrowing (35 percent), and nonbank sources like Treasury Bills to corporations, proceeds from privatization (26 percent), and cash balance and residuals (-22 percent, on average).

The possibility of developing country like Ethiopia to financing their budget deficit externally without causing too much distortion in macroeconomic environment is very low. The other way in which countries make additional revenue is by making discretionary tax changes. Every country must decide how best to increase its internal tax revenue. The best outcome from such changes is that the tax system will automatically yield corresponding tax revenue as income or GDP grows on sustainable basis. The response of tax revenue to the change in GDP is measured by tax elasticity and tax buoyancy. These concepts help to analyze the overall tax structure and serve as valuable analytical tools for designing tax policy (Daniel et. al, 2008).

Of course the purpose of taxation is go beyond expenditure financing and it used for production efficiency, discourage or encouraging consumption of commodities yielding negative or positive

externalities, to stabilize national income, and to redistribute income and wealth in the economy. To achieve those objectives the tax system of any country should be productive which measured in terms of tax buoyancy and elasticity.

Tax buoyancy is useful to measure the performance of both tax policy and tax administration overtime. It measures the total response of tax revenue to total national income. Total response takes into account both increase in income and discretionary changes made by the tax authorities in the tax system. These discretionary changes may be on the tax rate or tax base. Thus, tax buoyancy measures the soundness of the tax base and the effectiveness of the tax rate change in terms of revenue generation (Tanz, 1988).

On the other hand, tax elasticity, measures the pure response of tax revenue to the change in the national income. It reflects only the extent in responsiveness of the tax revenue to changes in the national income. Tax elasticity calculation excludes the impact of change in tax rates and tax bases. It considers only the effects due to changes in income. The tax elasticity coefficient gives an indication to policy makers whether tax revenue will rise at the same rate as the national income rise or not. It is the ratio of the percentage change in the tax revenue to the percentage change in GDP assuming no discretionary changes has been made in the tax base or tax rate(Cashin, 1995). This therefore means that historical tax revenue series have to be refined by adjusting them to exclude revenue changes attributable to discretionary measures.

Choudhry (1979) complements the work of Mansfield (1972) by suggesting that the size of buoyancy and elasticity is influenced by many factors. Firstly, the progressive elements in the tax system also influence the size of the elasticity. When per capita income rises the whole population moves up in the income scale, those who were paying taxes either directly or indirectly will pay larger taxes and some of those who were below the exemption level of income will start paying. The progressive element in the tax system also gives it some degree of built-in protection against inflation. When prices rise, money incomes increases and the tax system cause the government revenue to increase at least with national income and very rapidly if the system is sufficiently progressive.

Secondly, the composition of bases influences the size of elasticity and buoyancy of a tax system. Some components of the tax base may be primarily responsible for lowering or raising the overall buoyancy and the elasticity of tax revenue. Thirdly, better tax administration and prevention of evasion and avoidance as well as elements of tax policy such as using ad-valorem rates to increase revenue as the value of the base rises, influences the size of elasticity and buoyancy.

Then, the growth of tax revenue comes through high buoyancy rather than through elasticity. The coefficient of elasticity depends on the level of tax base to changes in income. This makes it possible to break up the value of elasticity into two components: the response of the tax base to a change in income, and the response of tax yield to a change in the tax base of individual taxes through decomposition of elasticity (Musgrave, 1969). The value of base-to-income elasticity does not depend on the progressivity of tax rates; it simply relates the responsiveness of the tax-base to a change in income. The growth of the base depends on the way the structure of the economy changes with economic growth. The tax-to-base elasticity depends on the tax rate; if the rate structure is progressive or if there is an improvement in tax administration; the tax-to-base elasticity will be raised by preventing evasion. The decomposition of elasticity in this manner permits us to identify the source of growth of tax revenues.

2.3.1. The Adjustment Procedure

Tax revenue usually changes due to discretionary measures, for example, changes in tax rates, tax net expansion and so on. Therefore, a need to separate the changes in revenue emanating through the discretionary measures from that due to automatic measures arises to estimate the elasticity. This is the way to distinguish tax elasticity from tax buoyancy. Tax revenue series can be adjusted in three ways: constant rate procedure, the proportional adjustment procedure and the dummy variable procedure. The selection of the appropriate adjustment method depends upon the availability of the data on tax changes and the type and frequency of such changes. The constant rate structure method requires disaggregated data on tax rates and tax bases, which is not easily available in Ethiopia since the proportional adjustment procedure, requires the use of budget estimates of tax yields resulting from discretionary changes. In PA approach, not only the data difficult to obtain but also their reliability is questionable as the actual discretionary

outcomes may differ significantly from the changes proposed in the budge. So the tax revenues change was not frequently in the past and the method does not require the use of disaggregated data on taxes through the discretionary changes, the dummy variable procedure is applied in the study to adjust the historical tax revenue data. In this method, to remove the estimated revenue impact through discretionary measures, introducing a dummy variable for each exogenous variable is significant in influencing revenue generation.

2.4. Empirical Literature Review

In developing countries, it is indicated that tax reform is an essential component of any comprehensive strategy for structural adjustment and resumption of growth. As Musgrave (1988) has pointed out, however, tax reform in developing countries involves broad issues of economic policy as well as specific problems of tax structure design and administration. First, there are central problems of revenue requirements and how to fit the revenue structure into development policy. This area of concern includes the impact of alternative taxes on saving and investment and their implications for the macro balance (domestic and foreign) of the economy. Second, there is the important goal of securing a fair distribution of the tax burden. Among the more specific tax issues, attention needs to be given to the composition of the tax structure as well as to the design of its major components. The problem throughout is not simply to determine what would be desirable but also to assess what is administratively practicable within the ballpark of political feasibility

Generally speaking, Different empirical studies have found significant results for the effects of different tax policy on growth and tax revenue. Burgess and Stern (1993) argue that the structure of taxation in developing countries differs from that of developed. For developing countries, we have roughly two-thirds of tax revenue coming from indirect taxes, while for developed countries two-thirds comes from direct taxes. Similarly, non-distortionary taxation and productive expenditure enhances growth. Ifurueze and Odesa (2014) find evidence that greater reliance on indirect taxation, as opposed to direct taxation, has significant positive effects on economic growth. Kneller, Bleaney, and Gemmell (1999) suggest that in OECD countries, while income taxes reduce growth, consumption taxes do not. For the same group of countries, Wilford (1978) find similar evidence for personal income taxation, especially with higher progressivity, measured in

terms of the long-run income elasticity of tax revenues. Wilford suggests that personal income tax progressivity affects growth not so much through accumulation of physical capital as through accumulation of human capital.

Gachanja (2012), in his research on The effect of tax reforms and economic factors on tax revenues in Kenya observed that Kenya introduced the tax modernization program in 1986 with the hope that this would, among other things, enhance revenue collection. The objective of this study was to establish the effect of tax reforms and economic factors on tax revenues in Kenya. The study concludes that tax reforms have negatively contributed to tax revenues in Kenya while economic conditions (GDP) have positively impacted on revenues. The effect of tax reforms is therefore counter-intuitive.

Okech and Mburu (2011), in their research _Analysis of responsiveness of tax revenue to changes in national income in Kenya 1986-2009', observed over the years, the Kenyan government had continued to experience budget deficit. This had been partly attributed to the inability of the tax system to generate sufficient revenue to finance public expenditure. Inadequacy of tax revenue to finance public expenditure had largely been attributed to lack of responsiveness of tax revenue to changes in national income. Similarly, Feldstein (1980) their studies find a negative relationship between fiscal deficit financing and economic growth. The differences in opinion on the effect of fiscal deficit financing on the Nigeria economy arise from the mode of financing, Nature, scope and objective.

2.5. Literature Review Specific to Ethiopia

The empirical studies pointed out that the taxes reforms in Ethiopia have been reached similar results of the developing countries. Geda and Shimeles (2005) explore the contribution of taxes and tax reform in Ethiopia for the period 1990–2003. The change in its structure and institutional reform are raising revenue in the context of the tax reforms. As results showed that there had been a considerable improvement of the tax revenue productivity and that the reforms made in this period had significant effect on the responsiveness of the tax system. Additionally, the analysis of the distributional impact of tax reform pointed to some interesting facts about tax incidence in Ethiopia. Most commodities that are subject to some kind of tax, whether excise or

import duty or sales tax, turned out to be progressive. But commodities such as salt, sugar and kerosene tend to be regressive, suggesting that reduction of taxes on these commodities compensated by taxes on, say, tobacco, alcohol or butane, or even electricity for that matter, could enhance overall social welfare. Finally, the distributional impacts of the benefits of freely provided services such as education were examined and the results indicate that primary level education is more or less uniformly distributed as compared to secondary level education.

Belew (2002) evaluated and review the existing system of taxation and the reform measure in Ethiopia using total GDP estimated the tax revenue. The Ethiopia's tax revenues compare to Sub – Saharan Africa countries remained low. Such low level of tax revenue mobilization the matter of policy or administration however, this indicates that the existing of a modest tax burden and the room to raise more revenue. As a result the study suggested a number of alternatives as to how to build a more sound tax system in Ethiopia.

Demirew (2005) assessed the major elements of the changes in the tax system; the progress achieved to date and assessed the impacts of tax reforms in Ethiopia. The result of the study showed that the trend is positive predominantly in the foreign trade nevertheless the reform has not yet brought about a significant change in the domestic revenue, which is largely explained by the weakness of the tax administration.

Abdella and Clifford (2010) analyzed the impact of tax reform on private sector development in Ethiopia focusing on pre- and- post period revenue performance of the tax structure. In the study, they assessed overall of the economic sectors of the country (Agricultures and non-agriculture) and this showed the government to compensate downward pressure on customs tariffs, (tariff revenue losses) the tax system shifting toward domestic sources of revenue. Their findings suggested that tax reforms had a positive impact on the overall tax structure for revenue generation in the short term; it may have less desirable long term effects.

Munoz and Sang-Wook Cho (2003) the paper provides an assessment of the poverty and social impact of replacing Ethiopia's sales tax with a value-added tax (VAT). The results indicate that this reform has not had a major adverse effect on the poorest 40 percent of the population. The VAT is progressive in its incidence, and the higher revenues brought about by the VAT can

provide additional funds for poverty-reducing spending, including primary education. At the same time, there is significant scope for making education spending more pro-poor by increasing the access of low-income households to schools.

2.6. Contribution for Future Research

Unlike this study, past studies on tax and tax reform in Ethiopia were made from1990 – 2003. Their analyses were based on the distributional impact of tax incidence using the concept of concentration curve, on the bases of 1999/2000 central statistical authority‘s household income and consumption surveyed. Whereas, this study more concerned with the impact of DTMs on the productivity of tax revenue. Specifically, they derived elasticity and buoyancy indexes of the tax system and computed the difference. Besides, the current study went further to compute the buoyancy and elasticity indexes for both the Dergu and EPRDF reform periods as well as the combined period, which will provide important information on efficiency of different tax policies. Hence, assessment of the productivity of the tax system for the period 1975-2014 helps to devise a reasonably accurate estimation of Ethiopia‘s sustainable revenue profile. It also assists in the design of an appropriate expenditure profile as a means of averting the aggravating fiscal deficit in the country. Eventually, this study helps as a springboard to conduct other related studies regarding the impact of exemptions, tax incentives, and exclusion of the country tax system including the impacts of current tax reform (2015/16).

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

This chapter discusses the estimation parameters model of Ordinary Least Square (OLS), linearization of the equation variables of the model, and the application of the Econometrics (dummy Variable) method (DV) which is used to adjust the effects of discretionary changes in tax system. Moreover, the chapter looks and describes time serious data of major components tax revenue with their relative proxies.

3.1. Methodology

In measuring the productivity of tax system, (income) elasticity and buoyancy are normally considered as an indicative variable. The elasticity measure the change in tax revenue attributable to change in income. Buoyance measures the total response of tax revenue to changes not only income but also other discretionary changes in tax policies over time (Osoro, 1995b). The Changes in any individual tax revenue result from discretionary changes in the legal rates and rules governing the tax, and/or endogenous changes in the base on which the tax is imposed. The base is affected by, among others, variations in GDP. Therefore growth in tax revenue in response to GDP growth can be decomposed into two components: the ―automatic" growth, and the growth resulting from ―discretionary" changes in the tax rates and rules. The combined effect is known as the ―buoyancy" of the tax. Buoyancy is a measure of both the soundness of the tax base and the effectiveness of tax changes in terms of revenue collection.

As Osoro, (1995) indicated, the elasticity of the tax to the base, and the elasticity of the base to income can be measured by the following equations.

Elasticity of total tax revenue to income: $ET_{ty} = \frac{\Delta Tt}{\Delta Y} X \frac{Y}{Tt}$

Elasticity of K^{th} individual tax to income: $ET_{ky} = \frac{\Delta Tk}{\Delta Y} X \frac{Y}{T_k}$

Elasticity of the K^{th} individual tax to base: $ET_kB_k = \frac{\Delta T_k}{\Delta B_k} X \frac{B_k}{T_k}$

Elasticity of K^{th} individual base to income :$EB_{ky} = \frac{\Delta Bk}{\Delta Y} X \frac{Y}{B_k}$

Where, T_t = Total tax revenue

Y = Income measured by Gross Domestic Product

B_k =Base of K^{th} tax

T_k is revenue from K^{th} tax.

Usually, the elasticity of total tax revenue in relation to income has been presented in aggregate form as a single number. However, more realistic to visualize the overall tax elasticity as a weighted average of the sum of the elasticity of individual taxes that respond in various ways to changes in income. This implies that an evaluation of the Elasticity of total tax revenue to income elasticity must commence with the weighted sum of the individual tax elasticity (where the weight are the fractional distribution to total tax by each individual tax). Mansfield (1972) has defined this elasticity as follows:

$$ET_{ty} = \frac{T_k}{T_t}\sum_{t=1}^{n}\frac{\Delta T_t}{\Delta Y}\text{x}\frac{y}{Tt} = \frac{T_1}{T_t}\left(\frac{\Delta T_1}{\Delta Y}\text{x}\frac{y}{T1}\right) + \frac{T_2}{T_t}\left(\frac{\Delta T_2}{\Delta Y}\text{x}\frac{y}{T2}\right) + \ldots\frac{T_n}{T_t}\left(\frac{\Delta T_n}{\Delta Y}\text{ x }\frac{y}{Tn}\right) \quad ...(1)$$

Where subscripts 1, 2 and n refer to the different individual taxes which are expressed as a ratio of total tax revenue indicated by the subscript t to give the individual tax weight.

The elasticity of any individual tax with respect to income is decomposed into the product of the elasticity of the tax-to-base and the elasticity of the base-to-income to measure the growth resulting from discretionary changes made in tax system.

Mathematically,

$$ET_{ky} = \frac{\Delta T_k}{\Delta_t}\text{ x }\frac{y}{Tk} = \left(\frac{\Delta T_k}{\Delta B_k}\text{x }\frac{B_k}{Tk}\right)\left(\frac{\Delta Bk}{\Delta Y}\text{x }\frac{Y}{B_k}\right) \qquad \ldots\ldots\ldots\ldots\ldots\ldots..(2)$$

Weighting each individual tax for its share in total tax and summing for all the individual taxes, we obtain

$$ET_{ty} = \frac{\Delta T_t}{\Delta Y}\text{ x }\frac{y}{Tt} = \sum_{t=1}^{n} \quad \frac{T_i}{Tt}\left[\left(\frac{\Delta T_t}{\Delta B_i}\text{ x }\frac{B_i}{T_i}\right)\left(\frac{\Delta B_i}{\Delta Y}\text{ x }\frac{Y}{B_i}\right)\right] \quad \ldots\ldots\ldots..\ldots\ldots..(3)$$

This equation implies that the elasticity of total revenue to income in a system of *n* taxes partly depends on the product of the elasticity of tax to base and base to income for each individual tax, weighted by the importance of each tax in the overall tax system (Osoro, 1995).

3.2. Techniques for Estimating Tax Elasticity

To estimates elasticity (tax-to-base and base-to-income) for each tax and for the overall tax system. Generally, the elasticity concept assumes the following functional relationship (in the Cobb-Douglas function of the form):

$$TR = \alpha Y^{\beta}$$

Taking logs, we obtain a log-linear specification form of (Osoro, 1995) tax as a function of income:

$$\text{Log } TR = \log \alpha + \beta \log Y + \in_k \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

OLS is the simplest form of estimating the unknown parameters in a linear regression model, with the goal of minimizing the differences between the observed responses in some arbitrary dataset and the responses predicted by the linear approximation of the data. Most paper applied OLS to estimate the parameters of α and β, where the coefficient β is an estimate of tax buoyancy and ∈ is the stochastic term. From the above relationship, elasticity estimates are obtained by replacing historical tax revenue series by tax revenue series at a constant tax structure.

Thus, tax elasticity can be decomposed in to two

$$Tax - to - basecomponent: logTR_k = \alpha_0 + \alpha_k \log B_k + v \quad \ldots\ldots\ldots\ldots \quad (5)$$

$$Base - to - Incomecomponent: logB_k = \delta_0 + \delta_k \log Y + u \quad \ldots\ldots\ldots\ldots \quad (6)$$

Where TR_k is the unadjusted historical time-series tax data(UHTSTD) of the K^{th} tax, B_k is tax base for the k^{th} tax, Y is income measured by GDP which is the overall base, α_k is elasticity of the K^{th} tax to its base, δ_k is the elasticity of K^{th} tax base to income, α_0 and δ_0 are constants and v and u are stochastic error terms.

In estimating the built-in elasticity (flexibility) of a tax, therefore, either the time series data on tax revenues need to be adjusted to eliminate the effects of discretionary tax measures, or a suitable estimation methodology has to be adopted, or a combination of the two. The most appropriate method would clearly depend upon the availability, nature and reliability of information on tax revenues, discretionary changes in the tax structure and tax bases. Thus, to evaluate the elasticity of the tax system the studies has taken dummy variable method due to its non- intensive data requirement and the non- requirements of disaggregated data. Moreover the method was superiority over other available methods, which explains its prevalence in earlier studies of cross countries. The dummy variable (econometric) method involves introducing a dummy variable for each exogenous tax policy changes.

This study adopts the unadjusted historical time-series tax data (UHTSTD) with dummy variables incorporated as proxies for discretionary tax measures (DTMs) as in Singer (1965).

With the help of the two kinds of elasticity we obtain the elasticity of the K^{th} tax to income (GDP) as the product of α_k and δ_k To capture the effects of the reforms in the short run, a dummy variable D is introduced into the decomposed elasticity equations here.

$$\log TR_k = \alpha_0 + \alpha_k \log B_k + \Sigma_{i=1}^{n} \alpha_{2i} + D_i + v_k \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (7)$$

$$\log B_k^t = \delta_0 + \delta_k \log Y + \Sigma_{i=1}^{k} \delta_{2i} + D_i + u_k \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (8)$$

Where $\alpha 2i$ and $\delta 2_i$ are the dummy coefficients and summation sign represents the total DTMs over the period under study.

$$\log TR_{t=}^{k} \log \alpha + \beta_1 \log Y_t + \beta_2 \log Y_{t-1} + \Sigma_{i=1}^{k} \beta_{3i} D_i + \in_k \ldots\ldots\ldots\ldots\ldots\ldots\ldots (9)$$

Where TR_t^k denotes tax revenue for K^{th} tax, β is the elasticity and D is the dummy variable, which takes a value on one for discretionary tax measures and zero otherwise. The summation accounts for the multiple discretionary tax changes over the sample period.

3.3. Model Specification

The approach of analyzing the revenue production of tax reform in terms of buoyancy and elasticity of this study begins with a look at the aggregate tax revenue function and the individual taxes that form the total tax. These are Personal Income Tax (PT), Business Income Tax (BT), Agricultural Income Tax and Rural, Urban Land Use fee (AT), Domestic Indirect Tax (DT) and Foreign Trade Tax (FT).

3.3.1. Individual Tax Revenue Equation

Each tax revenue component is taken to be a function of its base including dummies to control DTMs (Discretionary Tax Measures) i.e. the equation for each component will be:

$$\log TR_k = \alpha_0 + \alpha_k \log B_k + \Sigma_{i=1}^{n} \alpha_{2i} + D_i + v_k \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (10)$$

Where log TR_k

K = PT, refers to personal income tax

= BT, refers to business income tax

= AT, refers to agricultural income tax

= DT, refers to domestic indirect tax

=FT, refers to foreign trade tax

B_k= tax base of the k^{th} tax

Di= dummy for the i^{th} tax discretionary tax measures.

3.3.2. Individual Tax Base Equation

It has been stated that tax elasticity is the product of tax to its base elasticity and base-to-income elasticity. Thus, there will be a need to have equations that relate the base of an individual tax-to-income (GDP).

a. Personal Income Tax Base Function (PT)

Here, the wage bill is taken as the proxy base of personal income tax. The tax collected from the non-public sector was not taken in to account due to the unavailability of organized data. Therefore, the base is taken to be a function of GDP and the effect of DTMs to be captured by a dummy.

$$\log B_p^t = \delta_0 + \delta_p \log GDP + \sum_i^k =_1 \delta_{2i} + D_i + u_p \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (11)$$

Where,
δ_p= elasticity of the wage bile with respect to GDP
δ_{2i}= coefficient of the DTMs dummy.
u_p= the error term assumed to be normal.

B_p^t=the proxy base of personal income tax.

b. Business Income Tax Base Function (BT)

$$\log B_b^t = \delta_0 + \delta_b \log GDP + \sum_i^k =_1 \delta_{2i} + D_i + u_b \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (12)$$

Where,
δ_b= elasticity of business income represented as the share of industry with respect to GDP
δ_{2i}= coefficient of the DTMs dummy.
u_b= the error term assumed to be normal.
B_b^t=the proxy base of business income tax.

c. Agricultural Income Tax Base Function (AT)

$$\log B_a^t = \delta_0 + \delta_a \log GDP + \sum_i^k =_1 \delta_{2i} + D_i + u_a \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (13)$$

Where,
δ_a= elasticity of the share of agriculture with respect to GDP
δ_{2i}= coefficient of the DTMs dummy.
u_a= the error term assumed to be normal.
B_a^t=the proxy base of agricultural income tax.

d. Domestic Indirect Tax Base Function (DT)

Its proxy base is private consumption.

$$\log B_d^t = \delta_0 + \delta_d \log GDP + \sum_i^k =_1 \delta_{2i} + D_i + u_d \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (14)$$

Where,
δ_d= elasticity of domestic private function with respect to GDP
δ_{2i}= coefficient of the DTMs dummy.
u_d= the error term assumed to be normal.
B_d^t=the proxy base of domestic income tax.

e. Import Tax Base Function (MT)

$$\log B_I^t = \delta_0 + \delta_I \log GDP + \sum_i^k =_1 \delta_{2i} + D_i + u_I \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (15)$$

Where,
δ_I= elasticity of total imports with respect to GDP
δ_{2i}= coefficient of the DTMs dummy.
u_I= the error term assumed to be normal.
B_I^t=the proxy base of implore income tax.

Where $\alpha 2i$ and $\delta 2_i$ are the dummy coefficients and summation sign represents the total DTMs (Discretionary Tax Measures) over the period under study.

3.4. Data Analysis Techniques

Stationary Testing

This study used time series data and it was important to establish the stationarity of the data or what order they are integrated. Non-stationary variables which are not co integrated lead to nonsensical result with no meaningful economic interpretation, this is called spurious regression Granger (1990) and this means not all variables share trend can be explained meaningfully in terms of economics. In order to avoid such spurious regression, the unit root test most widely used to tests for the stationarity of the data and this begins by specifying a Dickey Fuller (DF) test and the Augmented Dickey Fuller (ADF) test. These tests are used to test the null hypothesis that the time series contains a unit root i.e. non-stationary against the alternative hypothesis of stationary. Most of the empirical work based on time series data assumes the underling time

series are stationary, if its mean values and its variance don‘t vary systematically over time. However, most macro variables are non-stationary. The appropriate test with respect to the data characteristics is said to be stationary, the null hypothesis of a unit root is rejected if calculated test statistic (t-ratio coefficient) with negative sign is less than ADF critical value. And then will proceed to linear combinations of the variables. Typically, this linear combination of I(1) variables will itself be I(1), but it would obviously be desirable to obtain residuals that are I(0).

Co-integration Testing

Most econometrians attempt to test whether the variables are co-integrated and in order to avoid spurious regression used the Pedroni (Engel-Granger based), 2004 technique. The existence of a co-integrating relationship implies that the regression of the non-stationarity series in their level yields meaningful and not spurious results. However for co-integration to exist, the non-stationarity series must be integrated of the same order. The Engle-Granger two-step co-integration procedure is adopted to test for co-integration in this study. This method involves an adjustment process that prevents errors from becoming indefinitely in the long run relationship between the dependent variables (tax variables) and the independent variable (tax bases). In other words, when non-stationarity variables move together, in the long run there exists a stationary linear combination of these variables. The first step in this test is to estimate co-integrating static (long run) models using the OLS method. The second step involves generation of residuals from the static models which are then individually evaluated in terms of their order of integration using the DF or ADF unit root test. It should be noted however that the usual ADF critical values are inappropriate (Gujarati, 2003), so Engel and Granger (1990) came up with the appropriate critical values against the ADF t-statistic can be resolved (Charemza and Deadman, 1997).

Eventually, the study carries out the following tests Heteroscedasticity test, Normality test (Jarque-Bera Test) and Breusch-Godfrey Serial Correlation LM test to detecting the presence of Heteroscedasticity, non-normality and serial correlation (autocorrelation) in the data set respectively.

3.5. Major Tax components

This section presented below a brief definition of constituent tax units:

1. Personal Income Tax (PT)

Personal income tax is the most important components of direct tax and every person deriving income from employment is liable to pay tax on that income at the rate specified in Schedule ‗A'. Employment income shall include any payments or gains in cash or in kind received from employment by an individual. Employers have an obligation to withhold the tax from each payment to an employee, and pay the Tax Authority the amount withheld during each calendar month. The share of personal income tax category from the total tax revenue during 2013/14 was found out to be 10.36 percent. However, in this tax category some of income like casual employees, pension contribution, compensation in relation to personal injuries, refund of the actual cost of medical treatments of employees, Hardship allowance, reimbursement of traveling expenses to employee and others shall be exempted from payment of personal income tax.

2. Business Income Tax (BT)

Business profit tax is the most important components of direct tax. This is the tax imposed on the taxable business income / net profit realized from entrepreneurial activity. Taxable business income would be determined per tax period on the basis of the profit and loss account or income statement, which shall be drawn in compliance with the generally accepted accounting standards. Corporate businesses are required to pay 30% flat rate of business income tax. For unincorporated or individual businesses the business income tax ranges from 10% - 35%. Unincorporated or individual businesses are taxed in accordance with the schedule ‗C'. The share of this tax category from the total tax revenue is found out to be 20.22 percent during 2013/14. In the determination of business income subject to tax in Ethiopia, deductions would be allowed for expenses incurred for the purpose of earning, securing, and maintaining that business income to the extent that the expenses can be proven by the taxpayer.

3. Agricultural Income Tax and Rural, Urban Land Use Fee (AT)

Ethiopia is an agrarian country, i.e. more than 80 percent of the total population engaged in this sector. The tax revenue generated from this sector is relatively small, contributing only

1.52percent under review on the average. In line with the economic policy and structural set up of the Federal Democratic Republic of Ethiopia, the former tax i.e. Proclamation No. 152 of 1978 on income from agricultural activities and the land use rent was revised in 1995. Since income tax from this source is allocated to Regional States in consonance with the provisions of the new constitution of 1994, each Regional State is entitled to issue a Proclamation providing for such a tax and rent.

Accordingly, the Oromia Regional State has promulgated Proclamation No. 8/1995 that revised agricultural income tax rates schedule and rural land use fee. As for the payment of income tax from agricultural activities, except state farms shall pay 40% of the taxable income it realizes from its agricultural activities but the other taxpayers shall pay per agriculture income tax proclamation No. 8/1995,oromiarate. Income from agricultural activities is said to be determined by estimating the price, in the area, of the crop before harvest. If the crop is sold, the price declared shall be the basis for the assessment of income.

Regarding the land use tax, presently regional states have their own land use rent systems. For instance, according to the proclamation No. 8/1995 of Oromiya, rural land held for agricultural activities is subject to land use rent payment on annual basis. The annual land use rent payable by a farmer shall be Birr 10 for the first hectare and Birr 7.50 for each extra hectare of land. Meanwhile state farming enterprises shall pay Birr 15 for each hectare of their land holdings.

4. Domestic Indirect Tax (DT)

This includes all taxes related to domestic transactions, mainly those levied on locally produced manufacture goods and service. This category of tax represents about 30.42 percent of total tax revenue over the period under review. Turnover Tax is one of the components of domestic indirect tax and this tax would be payable on goods sold and services rendered by persons not registered for Value Added Tax. The rate of turnover tax is 2% on goods sold locally and for services rendered locally is2% on contractors, grain mills, tractors and combine-harvesters as well as 10% on others. The base of computation of the Turnover Tax is the gross receipts in respect of goods supplied or services rendered. A person who sells goods and services has the obligation to collect the Turnover Tax from the buyer and transfer it to the Tax Authority. Hence, the seller is principally accountable for the payment of the tax. Following this, in this tax

category some of activities like sale of dwelling, rendering financial services, supplies of national/foreign currency, rendering religious related service, provision of transport, permits and license fee and supplies of electricity, kerosene and water and supplies of books and others shall be exempted from payment of turnover tax.

Excise tax is one of the components of domestic indirect tax; this tax would be imposed on luxury goods and basic goods, which are demands inelastic. It is also believed that imposing the tax on goods that are hazardous to health and which causes social problems will reduce the consumption thereof. The base of computation of Excise Tax is the cost of production for goods produced locally; whereas for goods imported the base of computation would be the cost of production, insurance and freight costs and for each type of product i.e. produced locally or imported the rate of excise tax would be scheduled.

The other major components of domestic indirect tax is Value Added Tax (VAT), VAT is a tax on consumer expenditure. It is collected on business transactions and imports. A taxable person can be an individual, firm, company, as long as such a person is required to be registered for VAT. Most business transactions involve supplies of goods or services, VAT is payable if they are: made in Ethiopia; made by a taxable person; Made in the course or furtherance of a business; and are not specifically exempted or zero-rated. The Value Added Tax would be levied at the rate of 15% of the value of: Every taxable transaction by a registered person; every import of goods, other than an exempt import; and Import of services. A person who carries on taxable activity and is not registered is required to file an application for VAT registration with the Authority if: At the end of any period of 12 calendar months the person made, during that period, taxable transactions the total value of which exceeded 500,000 Birr; or At the beginning of any period of 12 calendar months there are reasonable grounds to expect that the total value of taxable transactions to be made by the person during that period will exceed 500,000 Birr.

5. Foreign Trade Tax (FT)

This tax category contributes 34.25 percent of the total tax revenue. This shows that import tax category is the most important source of the total tax revenue. Any good imported or exported would be subject to: Payment of duties and taxes according to the tariff of Harmonized Commodity Description and coding system or the preferential tariff rate where goods are

imported from the preferred country; Payment of duties and taxes at the rate in force on the day the declaration of the goods are presented to, and accepted by the customs office. The duty paying value of any import or export goods shall be the actual total costs of the goods.

3.6. Choice of Tax Bases

Estimation of tax elasticity requires a specification of the potential proxy (tax bases) and time-series data on the individual taxes and GDP. The choice of this proxy bases used here is similar to that applied to other SSA (Sub-Saharan African) countries (Ehdaie, 1990 and Osoro, 1992). The proxy bases to be used are: labor compensation or wage bill for personal income tax, the share of industry in GDP for business income tax, and the share of agriculture in GDP for agriculture income tax, private consumption for domestic indirect taxes, and total import for import tax.

3.7. The Data

This study utilized forty years‘ time serious data which is covering the period of Derg regime (1975-1989) and pre and post-tax reform of EPRDF regime (1990-2014), were the data is primarily from secondary source, used to measure the productivity of tax system in Ethiopia. The reason to rely on secondary data is that most of the information needed to make such empirical analysis is obtained from different government documents, proclamations, published statistical abstracts, regulations and government revenue and expenditures published annual report as well. The data particularly overall tax revenue with its components, GDP and potential tax base (proxy) are collected from Ministry of Finance and Economic Corporation (MOFEC) of Ethiopia Central Statistics of Ethiopia and National Bank of Ethiopia (NBE).

CHAPTER 4: PRESENTATIONS AND DISCUSSIONS OF EMPIRICAL RESULTS

In this chapter, a summary of empirical results from econometric analysis of ordinary least square (OLS) regression estimates of the tax buoyancy and income elasticity coefficients and decompositions of a letter in to tax-to-base and base-to-income elasticity requires the models of the Ethiopian tax system using time series are presented. The analysis was done using Eviews 8 econometrics software.

4.1. Results of Unit Root Test

Unit root test results for the Augmented Dickey-Fuller (ADF) in both levels and first differences of the variables are reported in Table 4.1 below and they are used to examine the stationarity of the series.

Table 4.1: Results of Augmented Dickey-Fuller (ADF) Test for Unit Root

Variables	Definitions of Variable	ADF statistics	1% Critical Value	5% Critical Value	Order of Integration
LogTT	Total Tax Revenue	6.1161	-2.6256	-1.9496	I(0)
DlogTT		-2.7443*	-2.6289	-1.95011	I(1)
LogPT	Personal Income Tax	3.8521	-2.625	-1.9496	I(0)
DlogPT		-5.1774*	-2.6272	-1.9498	I(1)
LogBT	Business Tax	2.1108	-2.6272	-1.9498	I(0)
DlogBT		-2.7721*	-2.6290	-1.9501	I(1)
LogAT	Agricultural Tax	1.9297	-26272	-1.9498	I(0)
DlogAT		-7.8580*	-2.6290	-1.9501	I(1)
LogDT	Domestic Tax	4.9847	-2.62723	-1.9198	I(0)
DlogDT		-3.7084*	-2.62896	-1.9501	I(1)
LogFT	Foreign Trade Tax	4.7818	-2.6256	-1.9496	I(0)
DlogFT		-3.8938*	-2.6289	-1.9501	I(1)
Log GDP	Gross Domestic Tax	6.47805	-2.6256	-1.94960	I(0)
DlogGDP		-2.63033*	-2.6289	-1.95011	I(1)
LogProxyPT	Proxy Wage Bill	4.32482	-2.62723	-1.94985	I(0)
DlogProxyPT		-3.4595*	-2.62896	-1.95011	I(1)
LogProxyBT	Industry Share of GDP	5.89060	-2.6272	-1.9498	I(0)
DlogProxyBT		-2.81432*	-2.6289	-1.9501	I(1)
LogProxyAT	Agriculture Share of GDP	2.08520	-2.62723	-1.94985	I(0)
DlogProxyAT		-5.56189*	-2.62896	-1.95011	I(1)

LogProxyDT	Privet Consumption of GDP	5.89060	-2.62723	-1.94985	I(0)
DlogProxyDT		-2.81432*	-2.62896	-1.95011	I(1)
LogProxyFT	Import of GDP	6.577762	-2.62723	-1.94985	I(0)
DlogProxyFT		-2.66307*	-2.62896	-1.95011	I(1)

Eview Output ** Shows 1% level of significance*

Unit root test results for the ADF in both levels and first differences of the variables in Table 5.1 above showed that Total tax revenue, Personal income tax revenue, Business tax, Agriculture tax, Domestic trade tax, Foreign trade tax, GDP, Proxy wage bill, proxy industry per share, proxy of agriculture per share, proxy private consumption and proxy import were integrated of order one I (1) implying that there was no presence of unit roots in first differenced form of the variables. This also shows that stationarity of the variables was attained in first difference at 1% level of significance.

4.2. Results of Co-integration Test

If a group of variables are individually integrated in the same order, then it must be tested whether these variables are co-integrated and if there is at least one linear combination of these variable that is stationary, then the variables are said to be co- integrated. The co-integrated variable will never move far apart, and will be attracted to their long- run relationship. Testing for co-integration implies testing for the existence of such a long term relationship between economic variable. Based on the results of tax residual share of co-integration relationship between order one I(1) series, the residuals are integrated at first difference not at level and the Engel –Granger critical values for the tax residuals were significant at 1%. This also means that there is no a long term relationship between the variables at level, but it is possible to proceed the estimation of regression equation (i.e. buoyancy and income elasticity)at first difference only. According to Clare, Maras and Thomas (1995) suggestion, the lack of long-term integration in the residuals may be due to ~~–in~~stitutional idiosyncrasies", such as taxation structure, different investment cultures and macroeconomic policies between regimes.

Beside, Diagnostic tests showed that residuals are normally distributed, Homoscedasticity and stable. Where the probability value of the Breusch- Godfrey serial correlation LM test suggests high degree of residual autocorrelation except Agricultural tax, industrial share of GDP proxy

and privet consumption of GDP proxy, the problem was corrected by the use of Generalized Least Squares (GLS) estimation procedures assuming an AR(1) process.

4.3. Analysis of Results

Under review the regression is carried out first for the whole period i.e. 1975-2014of both the buoyancy and elasticity of individual taxes and the results are also presented below.

4.3.1. Tax Buoyancy

Table 4.2 below shows the regression results of the estimated tax buoyancy of individual tax system for the period 1975 to 2014. The estimated regression models performed well in terms of goodness of fit and joint significance with Adjusted R^2 nearly more than 90% of variations in the dependent variables and F-statistic being significant at 1% respectively.

Table 4.2: Estimated Tax Buoyancy Results of individual Tax system for the period 1975 - 2014

Tax Category	Coefficient	R^2	D.W
Total Tax	0.28 (3.99)	0.99	1.410*
Personal Income Tax	0.23 (2.53)	0.97	2.265*
Business Income Tax	0.27 (3.68)	0.98	1.228*
Agricultural Income Tax	0.43 (4.42)	0.89	2.150*
Domestic Indirect Tax	0.25 (2.80)	0.98	1.802*
Foreign Trade Tax	0.48 (3.91)	0.98	1.222*

The value in the bracket indicates t-value.
**Indicates use of the Cochrane-orcutt process of adjustment for auto-correlation*

As shown in table 4.2 results all of the individual taxes are low buoyant and the total tax revenue are also less than one (0.28). The finding of all individual tax less than unit can be attributed to the low buoyancy which is a key component of the total tax system. The overall buoyancy of total tax revenue 0.28 which implies that as GDP increased by 1 present; tax revenue rise by 28%. And it could suggest that the discretion change implemented was generally during 1975-

2014 ineffective at increasing tax revenue from all of individual taxes as well as overall tax computed to proportional change in GDP.

4.3.2. Tax Elasticity

The tax elasticity of a given tax system is the product of the tax-to-base and base-to-income elasticity. The elasticity related to the base (tax-to-base) demonstrates the relationship between actual collected tax and its base which is virtually tax administration; and the elasticity of the base-to-income captures the structure of the economy how changes with economic growth. In evaluating the performance of individual taxes it should be noted that low tax-to-base elasticity could arise: poor administration i.e. existence of tax burden, high administrative and compliance cost, high tax avoidance and evasion, existence of numerous allowances and exemptions, and the use of specific instead of advalorem rates (different percentage) for some items were levied. These factors explain the degree to which the government can influence the tax-to-base elasticity. On the other hand, base-to-income elasticity is greatly influenced by the change in the structure of the economy.

This paper to estimate the overall tax (income) elasticity as well as each individual tax used the following dummy variables technique for the purpose of avoiding discretionary tax measures.

Where;

D_1= Proclamation No 286/2002 for PT and BT, 77/1976 for AT, 69/1993 MT, and 149/1999 for DT.

D_2= Proclamation No 30/1992 for PT, 62/1993 for BT and 68/1993 DT.

D_3= Proclamation No 155/1978 for PT and BT.

Tax-to-Base Elasticity including dummy

The elasticity of personal income tax, business income tax, agricultural income tax, domestic indirect taxes and foreign trade tax with respect to their bases are 0.51, 0.25, 1.13, 0.23,and 0.42 This means that a 1 percent increase in the base will lead to increase tax revenues by the percent of the magnitude of respective elasticity. Under review tax-to-base elasticity, Personal income

tax, Business income tax, domestic indirect tax and foreign trade tax to their respective bases of elasticity were less than unity. However, agricultural income tax to their respective base elasticity above unity. This reflects that ineffective tax revenue collection arising from inefficient tax administration during 1975-2014 periods.

Table 4.3 Tax-to-Base Elasticity including dummy (1975-2014)

Tax Category	Coefficient	D_1	D_2	D_3	R^2	D.W
Personal Income Tax	0.51 (2.54)	0.04 (0.17)	-0.01 (-0.03)	-0.02 (-0.06)	0.98	2.25*
Business Income Tax	0.25 (2.80)	0.02 (0.09)	0.28 (1.34)	-0.12 (-0.60)	0.98	1.05*
Agricultural Income Tax	1.13 (11.98)	-0.81 (-1.50)	-	-	0.81	1.11
Domestic Indirect Tax	0.23 (1.84)	-0.07 (-0.42)	0.34 (1.79)	-	0.99	1.55*
Foreign Trade Tax	0.42 (2.55)	0.30 (1.63)	-	-	0.98	1.31*

The value in the bracket indicates t-value.
**Indicates use of the Cochrane-orcutt process of adjustment for auto-correlation*

Base-to-income Elasticity including dummy

The probability level of elasticity of all individual tax bases to GDP are significant at 90 percent, and for the period under review the elasticity of base-to-income being 0.31, 1.00, 0.16, 1.01 and 0.51for personal income, business income, agricultural income, Domestic indirect tax, and foreign trade tax with its proxy respectively. This implies that a 1 percent increase in GDP will lead to increase with the respective tax base percentage of each individual tax.

Table 4.4 Base-to-income Elasticity including dummy (1975-2014)

Tax Category	Coefficient	D_1	D_2	D_3	R^2	D.W
Personal Income Tax	0.31 (2.71)	-0.34 (-2.95)	-0.17 (-1.61)	0.00 (0.08)	0.99	1.59*
Business Income Tax	1.00 (136.79)	-0.01 (-0.08)	0.06 (0.94)	0.02 (0.35)	0.99	1.30
Agricultural Income Tax	0.16 (1.88)	0.03 (0.14)	-	-	0.96	1.97*
Domestic Indirect Tax	1.01 (145.11)	-0.02 (-0.24)	0.11 (1.70)	-	0.99	1.32
Foreign Trade Tax	1.04 (51.09)	-0.16 (-1.06)	-	-	0.99	1.38*

The value in the bracket indicates t-value
**Indicates use of the Cochrane-orcutt process of adjustment for auto-correlation*

It can be seen that base-to-income elasticity coefficients of business income, domestic indirect and foreign trade taxes were elasticity greater than unity while that of personal income tax and agricultural income tax were inelastic, which is less than unity meaning that a percentage change in income (GDP) resulted in less than a percentage change in their respective bases. This implies that analysis of the individual tax of the overall elasticity emphasize the greater high value of base-to-income elasticity. The enhancement of the base- to-income elasticity that is the growth of tax base lies outside the control of tax policy. This indicates that the growth in tax base is mainly determined by the way the structure of the economy changes with economic growth. On the contrary base- to–income elasticity of the individual tax systems are inelastic it also justifies the concern that the country‘s tax base is not wide enough to capture tax revenue. According to Osoro (1993), similar concerns were raised the low elasticity was attributed to the tax base not been wide enough to capture many tax payers due to the presence of a significant underground economy thereby resulting in excess burden on few tax payers in the tax net.

4.4. Decomposition Analysis of Income Elasticity

The decomposition of elasticity of tax (tax-to-base elasticity and base-to-income elasticity) provides an important analytical insight in to the productivity of a tax in relation to the efficiency of tax administration and potential taxable capacity of the economy.

Table 4.5: Estimates of Tax Elasticity index

Tax Category	Tax-to-Base Elasticity	Base-to-Income Elasticity	Tax-to-income Elasticity
Personal Income Tax	0.51	0.31	0.16
Business Income Tax	0.25	1.00	0.25
Agricultural Income Tax	1.13	0.16	0.18
Domestic Indirect Tax	0.23	1.01	0.23
Foreign Trade Tax	0.42	1.04	0.44

Personal Income Tax

Over the period under review the overall elasticity of the personal income tax revenue was 0.16.But when we decompose this overall elasticity, we found out that both the tax-to-base elasticity and base-to- income elasticity of this tax is below unity 0.51 and 0.31 respectively. This implies that the base for this tax is not growing at a rate, which is far down the proportional growth in GDP (wage bill rose much lesser in proportion to income with a base-to-income elasticity of 0.31 which reflects low growth in wage bill in relation to GDP).This low over all elasticity coefficient makes the Ethiopia personal income taxes system inelastic and this may be due to the reduction of tax rates in previous year i.e. 2002/3, highest number of workers leaving their job and join NGOs and other private sector and not wide enough tax base (wage emolument) for public sector employ as well. This leads to reduce the return of education, saving and investment.

Business Income Tax

The overall elasticity of this tax category is found out to be 0.25, which is less than unity and makes this tax category not elastic. This indicates that an increase in the GDP by 1 percent will lead to 0.25 percent increase in the revenue from business tax. The decomposition of this coefficient of elasticity shows that the tax to base elasticity is low (0.25) while the base to income elasticity found to be high (1.00). The high base to income elasticity implies that growth in the industrial sector, which is used as a proxy base for this tax. This low over all elasticity may be due to the reduction of rate of this tax in previous year i.e. 2002/3 and basically high tax exemptions, avoidance.

Agricultural Income Tax

The elasticity of agricultural income tax is below unity i.e. 0.18. This is due to a very low base-to-income elasticity 0.16, which is the reflection of poor performance of agricultural sector to GDP. This weak performance could be explained by the inadequacy of tax law, inefficiency in administration and collection. Besides, the base of income tax of the workers (labor) is hard to calculate.

Domestic Indirect Tax

Its product of tax-to-base and base-to-income elasticity that produces the domestic indirect tax which is an inelastic i.e. 0.23, which implies a 1 percent increase in income as economy grows will lead to 0.23 percent increase in revenue from this source. The decomposition of domestic indirect tax structures of tax-to-base elasticity coefficient is 0.23.This low tax-to-base elasticity suggests that there is a weak administration of domestic indirect taxation even if the government tries to reestablish different institution such as Federal Inland Revenue Authority, Customs Authority, VAT department and other institutions which accepted to generate high tax revenue from the same source. And base-to-income elasticity coefficient is 1.01, which shows that as the income grows by 1 percent the base of private consumption grows by 1.01. Base-to-income elasticity results show that the tax base of domestic private consumption grows more proportionality with that of GDP.

Foreign trade Tax

The elasticity of import taxes for the period under review was 0.44, which is inelastic. And this inelasticity of foreign trade tax supports the view that heavy dependence on the international trade taxes would be gradually decrease. The decompositions of foreign trade tax structures of tax-to-base elasticity coefficient was less than unity i.e. 0.42 and this low tax-to-base elasticity means that as the base grows, the tax from this source grows by less than the growth in the base. This low elasticity is due to the rate structure of import tariffs, the exemptions of some importable products from paying tax and the policy of import substitution. In principle import tax should be levied on all imports. However, in practice exemptions generally granted to imports of some capital goods, raw materials and even consumer goods. For example, according to proclamation No 69/1993 organizations and persons wholly engaged in supplying their products to foreign market goods are exempted from tax. On the other hand base-to-income elasticity is 1.04 suggesting that the tax base of import grows more proportionally with that of GDP.

Generally, the above discussions show that many tax categories have an inelastic tax-to-base coefficient except agricultural income tax. On the other hand, base-to-income elasticity is found to be greater than unity except that of personal income taxes, agricultural income tax. This will

affect the productivity of overall tax system and it is true for the reason that enhancing the productive tax system these tax-to-base elasticity found to be inelastic depending on the factor that are under the government control. This mean the ailing part of the tax system (the tax-to-base elasticity) is mainly linked to the administrative and policy issues rather than the structure of the economy.

4.5. Estimation of Tax Buoyancy and Elasticity

The estimated coefficient elasticity and buoyancy for the major taxes and the overall tax system for the 1975 - 2014 periods are presented in table as follows.

Table 4.6: Estimates of Tax Buoyancy and Elasticity

Tax Category	Buoyancy Coefficient	Elasticity Coefficient	Difference
Total Tax	0.276	0.254	0.022
Personal Income Tax	0.235	0.167	0.068
Business Income Tax	0.273	0.250	0.023
Agricultural Income Tax	0.426	0.183	0.243
Domestic Indirect Tax	0.259	0.231	0.028
Foreign Trade Tax	0.481	0.441	0.040

Table 5.6 above shows the estimated values of buoyancy and elasticity over the study period. ―Difference" was measured as the buoyancy estimates minus elasticity estimates. The difference was positive for the overall tax system and individual tax categories. This implies that the various discretionary measures undertaken in the study period have improved tax yield in these taxes. For example, for a one percent increase in GDP, the discretionary tax measures mobilized an additional 0.022 percentage points of revenue from the overall tax system. For the other taxes, discretionary tax policies yielded 0.068%, 0.023%, 0.243%, 0.028% and 0.040% in Personal Tax, Business Tax, Agricultural Tax, Domestic Tax and Foreign Tax respectively for every growth in GDP.

4.6. Estimated Tax Buoyancy and Elasticity during Two Regimes.

The estimated coefficient elasticity and buoyancy for the two regimes (i.e. Dergue, and EPRDF Tax Reform) are as follows.

Table 4. 7. Estimated Tax Buoyancy and Elasticity

Tax Category	1975-1991		1992-2014	
	Buoyancy Coefficient	Elasticity Coefficient	Buoyancy Coefficient	Elasticity Coefficient
Total Tax	1.28	1.10	1.10	1.08
Personal Income Tax	1.42	1.16	1.13	1.11
Business Income Tax	2.39	2.26	1.05	1.04
Agricultural Income Tax	1.14	0.11	0.90	0.71
Domestic Indirect Tax	0.73	0.70	1.15	1.13
Foreign Trade Tax	0.29	0.30	1.12	1.08

Total Tax Revenue

The estimated total tax buoyancy and elasticity are above unity during 1975-1991 and 1992-20014 period sand which is less buoyant and elastic during 1992-2014.In general, the analysis of the overall tax elasticity emphasizes low value of elasticity relative to buoyancy during the two periods. Moreover, during the 1992-2014 tax reform period the tax buoyancy and elasticity decreased by 14.1 and 1.8percent respectively than the earlier period. This is due to mainly relatively low tax-to-base elasticity of individual tax components as the result of inefficient tax administration and low taxing capacity.

Personal Income tax

The estimated personal income tax buoyancy was 1.42and 1.13 and its elasticity was 1.16 and 1.11 for the period 1975-1491 and 1992-2014 respectively. When we compare the estimated coefficients of the personal income tax buoyancy for the period under review, it decreased by

20.4percent during 1992-2014.This poor performance of revenue from personal income is may be the reflection of the reduction in number of income brackets from 16 to 6 and significant reduction of marginal tax rate from 85- 35 percent during 1992-2014.Though which was not easy and manageable for tax administrators, lack of understanding and absence of appropriate implementation of this tax law was perhaps the main factor for its low performance. Moreover, subsequent transfer and displacement of civil servants, civil servants leaving their jobs and joining to NGOs and private sector are some of the impacts on the low performance of the personal income tax collections.

Business Income Tax

The coefficient of estimated business income tax buoyancy and elasticity were 2.38 and 2.26 for the period 1975-1991 and 1.05 and 1.04 for the period 1992-2014. This shows that a deterioration in the productivity of business income tax revenue. During 1992-2014 tax reform period, buoyancy and elasticity of business income tax has declined by 55.9 and 54 percent respectively. This is may be due to in the reduction of income bracket of business profit tax from 13 to 6 and the reduction of highest marginal tax rate from 89 percent to 35 percent.

Agricultural Income Tax

The estimated agricultural income tax buoyancy for the period 1975-1991 and 1992-2014 were 1.14 and 0.90 and its elasticity was 0.11 and 0.71 respectively. This shows agricultural income tax has elasticity below unity during the two periods. And this low elasticity is due to poor performance of this sector. When we compare the estimated coefficients of the agricultural income tax buoyancy for the period under review, it declined by 21.1 percent during the period of 1992-2014.This indicates that the agricultural sector in which nearly 80 percent of the total population live in rural areas, and 85 percent of the labor force was engaged in agriculture which contributed very low revenue as compared to other source.

Domestic Indirect Tax

The estimated domestic indirect tax buoyancy and elasticity are above unity during 1992-2014. However, it was below unity during 1975-1991periods. The coefficient of estimated domestic indirect tax elasticity showed low value of elasticity relative to buoyancy during 1992-2014. Moreover, during in the 1992-2014 tax reform period the tax buoyancy and elasticity increased

by 15 and 13 percent respectively than the earlier period. This is because of high revenue mobilization in general which drive from the ideological and economic policy of the regime.

Foreign Trade Tax

The estimated foreign trade tax buoyancy is 0.29 and 1.12 and its elasticity is 0.30 and 1.08 for the period 1975-1991 and 1992-2014 respectively. Import tax buoyance and elasticity estimate is below unity during 1975-1991. However, during 1992-2014 periods it was above unity. The poor performance during 1975-1991 periods could be justified by the nationalization of private enterprise; most of imports are carried out by government and its effect.

Generally, the comprehensive tax reforms which have been taking place after 2002/03 focused on improving government revenue through reduction of tax rate, expanding tax base and improving tax administration efficiency. Turning to the regression coefficients, the finding argued that the reforms had an overall positive impact on tax responsiveness. This result worked more effectively through increased flexibility of the base-to-income component and less effectively through the elasticity of the tax-to-base component. The implication is that total tax is elastic with respect to economic growth and an increasing proportion of incremental automatic economic growth was transferred to the government in terms of total tax revenue. The tax system is more proportional responsive with a given change in automatic economic growth in Ethiopia and is generating enough revenue through growth in automatic economic activity rather than the discretionary tax policy changes. Besides, there are also variations between Derg and EPRDF reform base-to-income elasticity and tax to base elasticity. For indirect taxes and foreign trade tax, the base-to-income elasticity for the EPRDF comprehensive tax reform period is higher than the corresponding Derge reform elasticity.

Eventually, most of the major tax category is elastic and buoyant; the personal income tax and business income tax which shows the propensity to tax during the EPRDF period was not significantly different from the Derg period. From this ,it is possible to comprehend there were no structural shift in raising tax revenues through there were a series of tax reforms carried out with a view to mobilizing tax revenues to finance developmental projects with own resources.

CHAPTER 5: CONCLUSION AND RECOMMENDATION

Introduction

This chapter focuses on the conclusions and recommendation of the study. The study implications and suggested recommendations out of the findings for future fiscal regimes and revenue productivity drives that will improve the buoyancy and elasticity of the Ethiopian tax system are also presented in this chapter.

5.1. Conclusions

The fiscal deficit is the core issues of the Ethiopian government mainly due to the low performance of domestic resource mobilization particularly tax revenue. The country has been introducing different policy measures to boost the low level of domestic resources mobilization through implementing various saving scheme such as pension schemes, expanding bank branch to create access to unbanked group of the society, micro financing institution to reach out the majority of the rural areas, Diaspora boned and house saving. Beside the above mentioned policy, the main strategy to address this budget deficit is arguably enhancing the capacity of the economy to generate more revenue through increasing in tax efforts. Since, the Government of Ethiopia undertook a fundamental reform, aimed at improving revenue generation and maximizing the efficiency of collection. Tax reform has thus been used as an instrument for raising the revenue productivity of the tax system. However, the rapid expansion of government expenditures amid low revenue growth led to fiscal imbalance and instability in the economy.

One of the most significant findings to emerge from this study is that the Domestic Resource Mobilization effort of the country over 40 years of the study period is greatly volatile in both tax and non-tax revenues which evince that the dependence on domestic revenues for financing the development program is not sustainable.

The descriptive analysis of tax revenues composition reveals that the structure of direct tax is dominated by business profit tax, which contributes 57.23 percent of the total direct tax revenue. The share of this tax category (Direct tax) in total tax revenue has been increasing during 1975-

1991 then declining after 1990s and increasing at decreasing order after comprehensive tax reform (2002). However, the domestic tax which is 35 percent of the total tax revenue higher than the domestic indirect tax i.e. 30 percent. On the other hand, over the period under review the share of indirect tax in total tax revenue was 65 percent out of which 47 percent and 53 percent were derived from domestic indirect and foreign trade revenues respectively.

The Ethiopian tax structure was dominated by indirect taxation. Dependency on foreign trade taxes would put revenue challenges to domestic resource mobilization in the long term perspective because the expansion of globalization in the form of regional integration and joining multilateral organizations entails more openness of the external sector. Hence due efforts should be exerted to raise tax revenues from direct taxes and domestic indirect taxes to have fiscal sustainability in a long run perspective.

The investigation of empirical data based on stationary time series macro annual data for the period from 1974/75-2014/15, revealed that the Ethiopia tax system is found to be inelastic tax structure. This indicates that an increase in national income or GDP has not been translated to an increase in the tax revenue (in other words, tax revenue doesn‘t respond both to change in tax measures and to growth in GDP). All the major tax components in this study are also found to be inelastic which less than unity. Thus, elasticity coefficients of major tax categories have not been satisfactory. Additionally, all individual taxes have buoyancies do not exceed unity. This low tax elasticity and buoyancy of the individual tax categories is attributed mainly to relatively low tax to-base elasticity.

This low tax- to- base elasticity observed in the Ethiopia‘s tax system may be explained through factors such as administrative difficulties, numerous exemptions to newly established companies, low compliance, tax incentives andvibrant sectors of the economy which are not subject to taxation. Therefore, the automatic responsiveness of taxes to income is seen to be low.

In general, there is a down ward tendency in revenue performance attributed primarily to poor tax administration and the productivity of the Ethiopian tax system is found to be unproductive due to the overall coefficient of elasticity reported as inelastic, and the tax bases could not expand as GDP grows resulting to low elasticity.

5.2. Specific Recommendations

It is desirable to have a built-in flexibility in the tax structure that will enable revenue to increase by a greater proportion relative to an increase in income. The suggestions below would help achieve the objective and improve the yield of the tax system in Ethiopia.

- The overall tax elasticity for the period under review was found to be inelastic due to low tax to base elasticity relative to base to income elasticity. As pointed earlier, low tax-to-base elasticity has been due to poor tax administration leading to low compliance and tax evasion. Therefore, the authority should play role in improving tax administration to minimize evasion and improve voluntary compliance.
- Personal income tax is found to have an inelastic coefficient both base-to-income and tax-to-base coefficient. Thus, attempts to improve the productivity of this tax system should aim at improving base to income and tax to base elasticity. Improving tax administration and wage emolument, introducing either new rate or new tax bracket could attain this.
- Business income tax has shown a commendable base-to-income elasticity while its tax-to-base elasticity is found to be inelastic. This shows that the change in income from this sector may be accounted for when national income is changing but the tax revenue change in income not yet collected. Thus, attempts should focus at lowering of high tax exemptions and avoidance.
- Agricultural income tax is characterized by tax elasticity of less than unity as the result of very low base-to-income elasticity. This inelastic base-to-income is due to the fact that the base of this tax grew at a rate, which is less than national income. Therefore, the improvement of the income elasticity of agricultural tax can be achieved by solving the deficiencies in land use tax and agricultural income tax. So, agricultural income tax should reflect the fertility, size and use of land with careful examination. Since agricultural tax is generally argued that heavily taxing agriculture is not desirable in LDCs, where the sector is less developed, the majority of the peasant lives at subsistence levels and small or no surplus is generated from the sector. However, attempts should

focus to incorporate informal sectors that are not accounted for tax purposes into the tax net for this tax category.

- Domestic indirect taxes have shown that the overall productivity is less than unity. Therefore, great efforts should aim at tax-to-base elasticity by improving tax administration to minimize evasion, improve voluntary compliance institutionalization of IT based business process.
- Import taxes have shown quite encouraging overall elasticity. It is the result of low base to income and high-to-income elasticity. Therefore, this low-tax-to-base tax administration related to import should be improved by encouraging foreign exchange.

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Annex I Government Tax Revenue (in Millions of Birr)

Fiscal Year	Total Tax Revenue	Direct Tax	Personal income	Business Profit	Agriculture Income	Other Tax	Indirect Tax	Domestic Indirect Tax	Foreign Trade Tax	Import Tax	Export Tax	Non-tax Tax	GDP @ Current Market Price
1975	613.3	174.3	75.1	76.5	22.7	0	439	174	265	178.8	86.2	167.7	6,315.6
1976	855.9	209	74.6	98.3	36.1	0	646.9	181.4	465.5	246.6	218.8	155.4	6,764.7
1977	938.8	225.8	84.2	104.1	37.5	1.5	713.1	186.8	526.2	244.4	281.7	248.4	7,747.2
1978	1146.5	315.6	102.3	117.4	95.9	2.2	831.3	268.9	562	333.6	229	235.2	8,174.2
1979	1298.2	380.3	119	161.5	99.6	3.5	917.9	373.6	544.3	247.2	297.1	256.8	9,137.7
1980	1361.8	489.5	128.3	256.8	103.8	3.8	872.3	387.3	485	296.7	188.2	399.9	9,713.5
1981	1436.4	565.1	136.7	326.2	100.1	4.3	871.3	396.2	475.1	284.7	190.4	440.3	9,915.2
1982	1558	604.3	153.5	344.7	103.9	5.5	953.8	443.1	510.6	306.8	203.8	616.4	10,462.1
1983	1731.5	656.9	171.4	384.5	96.7	4.3	1074.5	495.5	579.1	321.2	257.9	562.3	11,580.8
1984	1677.5	688	186.1	416.5	83.3	2.1	989.5	523.7	465.8	293	172.8	645.8	10,802.0
1985	1876.3	766	203.4	467.9	90.9	3.8	1110.1	554.2	556.1	293.3	263	929.9	12,800.1
1986	2092.4	906.3	226.5	582.1	95.8	1.9	1185.9	623.9	562.2	409.2	153.7	833.7	13,341.1
1987	2317.8	1012.4	244.3	662.1	104.4	1.6	1305	720.4	585	437.8	147.2	1151	14,135.0
1988	2371.1	1062	270.3	683.9	106.7	1.1	1309	784.5	524.6	360	164	1528	14,693.6
1989	2158.9	924.5	280.9	553.4	88.8	1.4	1234.7	759.3	475.1	418	57	983	15,442.8
1990	2,053.0	831.4	268.0	474.0	89.0	1.5	1,222.0	758.0	464.0	443.0	21.0	653.0	16,518.2
1991	1,618.0	663.7	269.0	387.0	8.0	0.7	954.6	535.0	420.0	411.0	9.0	590.0	18,846.3
1992	2,206.0	737.7	277.0	367.0	93.0	1.3	1,468.1	746.0	722.0	704.5	19.0	985.0	34,152.5
1993	3,077.0	945.2	284.0	558.0	100.0	4.6	2,131.3	834.0	1,297.0	1,251.0	47.0	862.0	43,940.1
1994	3,879.0	1,311.3	308.0	851.0	149.0	26.0	2,567.0	946.0	1,622.0	1,420.0	201.0	2,034.0	46,417.0
1995	4,723.0	1,754.0	337.0	1,222.0	188.0	34.5	2,969.5	1,156.0	1,814.0	1,694.0	120.0	2,243.0	55,612.8
1996	5,358.0	1,905.0	366.0	1,265.0	262.0	71.0	3,455.1	1,290.0	2,164.0	2,025.0	139.0	2,519.0	62,342.7
1997	5,261.0	1,863.0	429.0	1,089.0	314.0	108.3	3,422.8	1,181.0	2,219.0	2,037.0	181.0	3,139.0	64,652.9
1998	5,592.0	2,009.0	505.0	1,175.0	288.0	126.2	3,510.5	1,204.0	2,379.0	2,223.0	155.0	3,862.0	62,167.3
1999	6,483.0	2,367.0	594.0	1,358.0	316.0	185.5	4,705.0	1,440.0	2,676.0	2,528.0	148.0	3,665.0	65,986.0
2000	7,440.0	2,735.7	686.0	1,457.0	361.0	306.7	4,844.3	1,382.0	3,323.0	3,230.0	9,303.0	3,137.0	67,351.0
2001	7,928.0	3,121.0	760.0	1,679.0	271.0	456.8	4,807.0	1,499.0	3,308.0	3,280.0	28.0	2,550.0	65,895.0
2002	8,243.0	3,010.0	833.0	1,639.0	204.0	379.0	5,233.0	1,668.0	3,565.0	3,564.0	1.0	2,907.0	72,703.0

2003	10,520.0	3,132.0	948.0	1,303.0	438.0	928.0	7,388.0	2,112.0	5,276.0	5,267.0	0.0	2,666.0	85,800.0
2004	12,398.0	3,930.0	1,132.0	1,714.0	511.0	794.0	8,468.0	2,721.0	5,747.0	5,746.0	0.0	3,194.0	105,415.0
2005	14,122.0	4,424.0	1,414.0	1,741.0	723.0	514.0	9,638.09	3,111.0	6,587.0	6,587.0	0.0	5,371.0	130,334.0
2006	17,354.0	5,168.0	1,828.0	2,305.0	398.0	110.0	12,186.0	3,997.0	8,189.0	8,189.0	0.0	4,444.0	170,281.0
2007	23,801.0	7,016.0	2,667.0	3,040.0	524.0	148.0	16,785.0	5,092.0	11,693.0	11,693.0	0.0	5,993.0	245,836.0
2008	28,998.0	9,858.0	3,530.0	4,327.0	816.0	248.0	19,139.0	7,325.0	11,814.0	11,814.0	0.0	11,176.0	332,060.0
2009	43,315.0	14,903.0	4,391.0	7,391.0	1,213.0	339.0	28,412.0	10,727.0	17,685.0	17,685.0	0.0	10,546.0	379,135.0
2010	58,981.0	19,550.0	5,733.0	10,055.0	1,194.0	483.0	39,431.0	15,705.0	23,726.0	23,726.0	0.0	10,139.0	515,079.0
2011	85,739.9	20,254.0	8,900.2	15,540.0	1,302.0	2,254.0	48,568.2	23,326.1	33,556.2	20,742.0	0.0	12,576.3	747,326.5
2012	107,010.00	36,392.64	11,567.05	19,437.13	1,437.86	4,350.59	70,617.67	32,440.34	38,177.32	38,177.32	0.00	17,067.12	866,921.10
2013	133,118.26	47,020.68	13,796.25	26,909.94	1,618.30	5,002.52	86,097.58	40,498.88	45,598.70	45,598.70	0.00	13,054.51	1,060,814.40
2014	165,312.50	60,154.40	20,432.80	30,444.10	2,263.80	7,411.20	105,158.00	52,367.90	52,790.10	52,790.10	0.00	21,306.20	1,236,677.90

Source: Ministry of Finance and Economic corporation

Annex II Major Categories of Tax (In millions of Birr)

Fiscal Year	Tax Revenue	Personal income	Business Profit	Rural, Urban Land Fee & Agriculture Income	Domestic Indirect Tax	Foreign Trade Tax	GDP @ Current Market Price
1975	613.3	75.1	76.5	22.7	174	265	6,315.6
1976	855.9	74.6	98.3	36.1	181.4	465.5	6,764.7
1977	938.8	84.2	104.1	37.5	186.8	526.2	7,747.2
1978	1146.5	102.3	117.4	95.9	268.9	562	8,174.2
1979	1298.2	119	161.5	99.6	373.6	544.3	9,137.7
1980	1361.8	128.3	256.8	103.8	387.3	485	9,713.5
1981	1436.4	136.7	326.2	100.1	396.2	475.1	9,915.2
1982	1558	153.5	344.7	103.9	443.1	510.6	10,462.1
1983	1731.5	171.4	384.5	96.7	495.5	579.1	11,580.8
1984	1677.5	186.1	416.5	83.3	523.7	465.8	10,802.0
1985	1876.3	203.4	467.9	90.9	554.2	556.1	12,800.1
1986	2092.4	226.5	582.1	95.8	623.9	562.2	13,341.1
1987	2317.8	244.3	662.1	104.4	720.4	585	14,135.0
1988	2371.1	270.3	683.9	106.7	784.5	524.6	14,693.6
1989	2158.9	280.9	553.4	88.8	759.3	475.1	15,442.8
1990	2,053.0	268.0	474.0	89.0	758.0	464.0	16,518.2
1991	1,618.0	269.0	387.0	8.0	535.0	420.0	18,846.3
1992	2,206.0	277.0	367.0	93.0	746.0	722.0	34,152.5
1993	3,077.0	284.0	558.0	100.0	834.0	1,297.0	43,940.1
1994	3,879.0	308.0	851.0	149.0	946.0	1,622.0	46,417.0
1995	4,723.0	337.0	1,222.0	188.0	1,156.0	1,814.0	55,612.8
1996	5,358.0	366.0	1,265.0	262.0	1,290.0	2,164.0	62,342.7
1997	5,261.0	429.0	1,089.0	314.0	1,181.0	2,219.0	64,652.9
1998	5,592.0	505.0	1,175.0	288.0	1,204.0	2,379.0	62,167.3
1999	6,483.0	594.0	1,358.0	316.0	1,440.0	2,676.0	65,986.0
2000	7,440.0	686.0	1,457.0	361.0	1,382.0	3,323.0	67,351.0
2001	7,928.0	760.0	1,679.0	271.0	1,499.0	3,308.0	65,895.0
2002	8,243.0	833.0	1,639.0	204.0	1,668.0	3,565.0	72,703.0
2003	10,520.0	948.0	1,303.0	438.0	2,112.0	5,276.0	85,800.0
2004	12,398.0	1,132.0	1,714.0	511.0	2,721.0	5,747.0	105,415.0
2005	14,122.0	1,414.0	1,741.0	723.0	3,111.0	6,587.0	130,334.0
2006	17,354.0	1,828.0	2,305.0	398.0	3,997.0	8,189.0	170,281.0
2007	23,801.0	2,667.0	3,040.0	524.0	5,092.0	11,693.0	245,836.0
2008	28,998.0	3,530.0	4,327.0	816.0	7,325.0	11,814.0	332,060.0
2009	43,315.0	4,391.0	7,391.0	1,213.0	10,727.0	17,685.0	379,135.0
2010	58,981.0	5,733.0	10,055.0	1,194.0	15,705.0	23,726.0	515,079.0
2011	85,739.9	8,900.2	15,540.0	1,302.0	23,326.1	33,556.2	747,326.5
2012	107,010.00	11,567.05	19,437.13	1,437.86	32,440.34	38,177.32	866,921.10
2013	133,118.26	13,796.25	26,909.94	1,618.30	40,498.88	45,598.70	1,060,814.40
2014	165,312.50	20,432.80	30,444.10	2,263.80	52,367.90	52,790.10	1,236,677.90

Source: Ministry of Finance and Economic Corporation

Annex III Data on Proxy Bases

Fiscal Year	Wage Bill	Share of industry in GDP	Share of Agriculture in GDP	Private Consumption	Total Import
1975	1,945.0	3,866.6	22,671.4	4,674.5	709.2
1976	1,987.0	3,551.4	22,760.1	5,014.0	684.8
1977	2,088.4	3,665.7	22,838.6	5,865.2	884.1
1978	2,234.1	3,553.0	23,042.1	6,236.7	1,063.6
1979	2,297.7	4,013.0	24,106.1	6,886.4	1,144.9
1980	2,361.8	4,422.1	23,820.3	7,270.7	1,464.3
1981	2,540.4	4,550.5	22,955.8	7,278.6	1,374.7
1982	2,550.2	4,967.9	26,078.8	7,708.4	1,504.1
1983	2,754.3	5,278.9	22,804.6	8,502.6	1,522.7
1984	3,303.2	5,615.2	18,038.7	7,582.5	1,743.5
1985	3,654.5	6,021.9	20,930.1	9,793.7	1,708.9
1986	3,796.0	6,329.7	24,859.7	9,475.3	1,908.7
1987	3,820.9	6,790.5	24,171.3	10,173.8	1,918.6
1988	3,295.2	6,442.6	24,419.9	9,710.1	1,967.8
1989	3,164.6	5,944.8	25,717.1	10,662.8	1,880.7
1990	3,379.0	5,580.0	27,047.0	11,605.0	1,690.4
1991	4,113.0	4,777.5	26,305.9	14,225.7	1,967.7
1992	4,516.0	4,431.8	27,902.2	28,500.9	2,515.3
1993	4,726.0	5,565.2	26,883.1	35,090.2	5,114.0
1994	5,076.0	5,918.3	27,794.2	37,151.2	6,890.1
1995	5,301.0	6,377.6	31,880.3	43,076.4	8,993.7
1996	5,426.9	6,675.6	32,684.5	48,635.6	9,866.5
1997	5,892.0	6,936.8	33,509.8	49,128.2	11,974.4
1998	6,337.0	7,294.1	29,961.6	46,035.1	12,830.2
1999	7,025.0	17,719.0	101,681.0	45,611.0	15,952.8
2000	7,124.5	18,634.0	111,740.0	47,981.0	16,108.4
2001	7,174.4	20,159.0	109,646.0	49,319.0	17,706.8
2002	7,224.6	21,376.0	98,109.0	56,765.0	20,131.3
2003	7,275.0	23,676.0	114,884.0	60,866.0	27,366.8
2004	7,276.1	25,880.0	130,614.0	81,445.0	37,776.3
2005	7,359.0	28,430.0	145,042.0	102,537.0	48,092.4
2006	7,539.0	30,645.0	158,646.0	130,118.0	55,087.8
2007	8,001.0	33,915.0	170,428.0	197,461.0	76,564.3
2008	7,576.0	37,251.0	181,074.0	268,002.0	96,285.3
2009	8,250.0	41,988.0	194,869.0	309,132.0	111,343.5
2010	8,956.0	49,781.0	212,252.7	373,089.0	162,547.9
2011	9,057.0	59,556.0	222,664.5	541,536.3	236,383.9
2012	9,999.0	73,911.0	238,438.0	636,901.3	251,300.6
2013	10,576.0	89,587.0	251,341.0	744,851.6	308,691.3
2014	13,850.0	105,241.2	267,312.0	856,137.1	338,180.8

Source: Ministry of Finance and Economic corporation

Annex IV Ethiopian Tax Legislation for the Period 1975-1991				
S. No.	**Types of Legislation**	**Pro/Legal notice No.**	**Taxes on**	**Rates and objectives**
1	Proclamation	23/1975	Transaction tax amendment	The law provides 2% turnover tax in any gross income
2	Proclamation	77/1976	Rural land use fee and agricultural activities income tax	The objective of this proclamation was to improve the farmer‘s techniques to provide road, and other communication facilities enabling peasants to have access to market to obtain equitable price and to bring rural development. The rate was Birr 3 for a member of agricultural commune and Birr 4 who are not and also it was Birr 2 per hectare for government agricultural organization. For annual income less than Birr600, 600-900 and 900-1200 the rates were Birr 3, 4.5 and 6 respectively. It also imposes 10-60% tax on annual income of Birr 1200-3000 to 27,000-33,000 and 70% on annual income greater than Birr 33,000.This replaced education tax proclamation 94/1974 and health tax decree 37/1959.
3	Proclamation	80/1976	Urban land rent and house tax	The rate was based on urban land used for dwelling, business hours and urban house and payment was based on three classes.
4	Proclamation	152/1978	Rural land use fee and agricultural income tax	According to the law every farmer who is a member of an agricultural producers' cooperative and not member pay Birr 5 and 10 respectively. But annual income less than Birr 600 pay Birr 10 and annual income ranging Birr 600-1200 to 33,000-36,000 pay 10-82% and annual income greater than 36,000 pay a tax rate of 89%.
5	Proclamation	153/1978	Excise tax amendment	The law changed the rate on sugar and foot wear like Birr 0.02-0.25 per bottle of soft drink including mineral water, Birr 21 on 100 kg of sugar, Birr 2.82 per kg on yarn, nylon and natural silk.
6	Proclamation	154/4978	Tobacco regie amendment	Birr 0.4 and 0.6 on match containing sticks of 50 and 50-100 sticks respectively. There were also 25% tax rate on dividend shareholder, 10% no chance wining and 40% on royalty and 10% on income derived from service rendered.
7	Proclamation	155/1978	Income tax amendment	Monthly income less than Birr 50 free from tax, however, 10-79% on income from 50-200 to 3500-3750and 85% on monthly income greater than 3750 under schedule A. The rate of Birr 10, 18, 24, 40 and 70 on annual income less than Birr 300, 300-500, 500-700, 700-900 and 900-1200 respectively and also 11-82%on annual income 1200-1800 to 33,000-36,000 and 59% tax on annual income greater than 36,000 under schedule B were imposed.

8	Legal notice	67/1979	Petroleum product and lubricant excise tax amendment	The rates were 50% on cereal grouts and cereal meal and 75% on others, 75% on flour of the dried leguminous vegetables, 50% on spermaceti crude, prepared or refined, 80% on sugar in solid form, 100%on roasted chicory and other roasted coffee substitutes, 5-25% on chemical elements, 10-25% on inorganic acids and oxygen compounds of non-metals, 25% on halogenSulphur compound of non-metal, 10-25%on inorganic bases and metal oxides, hydroxides and peroxides, 25% on metallic salts, 10-60% on different organic chemicals.
9	Proclamation	159/1979	Transaction amendment	The rate was 18% on all imported goods, 7% on goods manufactured locally and gross revenue from sales made. Similarly, the rate was 15% on imported and 5% on exported pharmaceutical items or related materials thereof but other additional taxes were exempted according to this proclamation.
10	Proclamation	160/1979	Alcohol excise tax amendment	According to the law Birr 0.60-3.50 on alcohols per liter was imposed, 75% on locally produced tobacco leaf and cigarette and imported tobacco leaf and cigarette.
11	Proclamation	165/1979	Transaction tax amendment	This proclamation changed schedule 1 and 2 of the former proclamation.
12	Proclamation	170/1979	Transaction tax amendment	The rates were 15% on imported pharmaceutical items or related materials, 18% on other goods and 2% on goods exported. According to the law, tax on goods imported or exported charged, levied and collected at the point of entry or exit.
13	Proclamation	196/1980	Income tax amendment	The proclamation focuses on administration area and has minor change on the rate.
14	Proclamation	309/1987	Chat Proclamatio n	2 Birr per kg on all sales of chat irrespective of its destination and 5 Birr per kg on the sales of chat destined for export.
15	Proclamation	331/1987	Excise tax amendment	Insignificant change on soft drink including mineral water and any beverage made from sugar which not contains more than 3 degree of alcohol.
16	Proclamation	334/1987	Stamp duty	According to the proclamation, instrument chargeable with stamp duty, mode of valuation, time and manner of payment.
17	Legal notice	100/1987	Regulation to amend the issuance of travel documents and VISA	The law provides Issuance of Diplomat and Special Passport. For example, the rate on Passport was Birr40 and 10 on non-student and student respectively. Accordingly Birr 20 and 6 on renewal of passport. Threats were Birr 30 and 10 on emergency traveler document and Birr 16 and 4 refuge travelerdocument. Visa in the absence of reciprocity fees are Birr 30, 20, 10, 10, 10, 30 and 20 on entry tourist, exit, tourist, extension of tourist,

				transit extension of re-entry and business Visa respectively.
18	Legal notice	101/1987	To amend Visa and residence permit fees & port of entry	The law provides residence permit registration of foreigners and issuance of residence Birr 120 and its renewal Birr 80 and 75 Birr for its replacement. The rate of exit and re-entry Visa were 30, 60 and 120 Birron issuance of single journey, exit and re-entry for 3, 6 months and 1 year.
19	Council of State special decree	16/1990	Sales tax Council of State special decree	This law provides form 5% - 559% general sales tax on locally produced goods according to schedule A,on imported goods according to schedule B and service tax according to schedule C. This law repealed204/1963 excise tax, 217/1965 alcohol excise tax and 249/1967 petroleum products, lubricants excise tax and 146/1955 salt tax proclamation.
20	Council of State special decree	18/1990	Council of State special decree to amend income tax 173/1961	The law provides exemption on income less than Birr 300 and impose tax rate of 3-55% on annual income Birr 300-400 to 2100-24000 and 59% on income exceeding Birr 24000 according to schedule C.

Annex V Ethiopian Tax Legislation for the Period 1992 -2014				
S. No.	**Types of Legislation**	**Pro/Legal notice No.**	**Taxes on**	**Rates and objectives**
1	Proclamation	30/1992	To amend Income tax pro. 173/1961	The law provide exemption for monthly income less than Birr 105 and impose tax rate of 10-45% on monthly income Birr 106-400 to 2201-2500 and 50% on monthly income above Birr 2500 according to schedule A.
2	Proclamation	53/1993	Mining income tax	The rate was 35% on Small scale mining and 45% on large scale mining.
3	Proclamation	62/1993	Income tax amendment	Less than annual income Birr 1200 was exempted but 10-36% rate was levied on annual income Birr 1201-6000 to 33501-50000 and 45% on annual income exceeding Birr 50000 according to schedule B
4	Proclamation	68/1993	Sales excise Tax	The rate was 5% and 12% on goods sold locally and imported under schedule A and B respectively. It also imposes 5% on contractors and whose daily sales income was Birr 25-50 but 10% on others under scheduleC. Under schedule D, goods liable to excise tax either produced locally or imported. On vehicle up to 1300cc, 1300-1800 cc and above 1800 cc the rate was 20%, 50% and 100% respectively. The rate on all typesof pure alcohol, soft drink and mineral water were 200%, 80% and 50% respectively. This proclamation provides exemption to public bodies and economic agents on goods either produced locally or imported under schedule B. Which include food (bread, injera), fertilizer, petroleum and its product (aviation fuel, oils and lubricants), air craft and parts of thereof, machinery, equipment for railway and tramway transport, equipment requisites for marine transport and national defense and public security.

5	Proclamation	107/1997	Income tax	Provide exemption for monthly income less than Birr 120, however, 10%-30% tax rate on Birr 120-600 to 2000-3000 and 40% on monthly income above Birr 3000 according to schedule A. Free for annual income less than Birr 1200 but 10%-30% on Birr 1200-6000 to 30000-50000 and 40% on annual income above Birr 50000 according to schedule C.
6	Proclamation	108/1994	Capital gain tax	The objective of this law was to bring economic development and equitability in the tax system by revitalization of the private sector. According to the law, 30% tax levied on gains realized from the increase in the value of capital asset.
7	Proclamation	23/1996	Mining	Its objective was to improve economic development and imposed a rate of 35% on large and small scale mining.
8	Proclamation	36/1996	Income tax amendment	According to the law, any organization shall pay 35% of income tax on its taxable income. However, tax on income from mining by organization is based on mining proclamation.
8	Proclamation	61/1997	Federal Inland Revenue Authority establishment	To collection legally specified federal tax revenues, which originate and are dispersed in all the regions, has to be properly executed; and it is deemed necessary to establish a Federal Inland Revenue Authority as an autonomous public office with the requisite powers and duties as well as an efficient working system.
9	Proclamation	77/1997	Sales and excise tax amendment	The rate of 35% on any type of sugar, 40% on mineral water, 150% on all type pure alcohol, 75% on cigarette tobacco, 30% on salt, 40% on Landover, four wheels were imposed. When the production has increased by 70% or new factories established 40% on all products of soft drink and 50% on all type of beer and stout will be imposed.
10	Proclamation	99/1998	On coffee Export	The rate was 6.5% of the FOB price.

11	Proclamation	110/1998	Stamp duty	This proclamation is aimed to amend the stamp duty levied on documents in a manner which would contribute to the development of art, the activities of financial institutions and the transfer of capital assets. It imposes tax on memorandum and articles of association of any business organization, cooperative or any other form of association, award, bonds, warehouse bond, contract and agreements and memoranda thereof, security deeds; collective agreement, contract of employment, lease, including sub-lease and transfer of similar rights, notaries acts, power of attorney, documents of title to property and the rate was Birr 5-300 and 0.5-2% within any organization or business organization.
12	Proclamation	149/1999	Sales and excise tax amendment	This law imposes 5% on contractor and 12% on others services rendered locally. It also imposes 80% on all type of soft drink imported and 40% on mineral water, 150% on imported alcoholic drinks, 75% on tobacco and its products, 100% on perfume and 20-110% on different vehicles etc.
13	Proclamation	227/2001	Income tax	According to the proclamation, payment of business income tax has to be collected at the time of import of goods for commercial use, and the collected amount be treated as tax withheld that is creditable against the taxpayer's income tax liability for the year and 5% imposed on the sum of cost, insurance, and freight (CIFvalue).
14	Proclamation	228/2001	Sale and Excise Tax amendment	The rate was 5% on goods sold locally and goods imported mentioned under schedule A. It also imposes 15% on goods sold locally and goods imported and services rendered locally. 5% on contractors and financial services and 15% on others.

15	Proclamation	285/2002	VAT	To collect tax on the value added wherever a sales transaction is conducted, and the value added tax minimizes the damage that may be caused by attempts to avoid and evade the tax and helps to ascertain the profit obtained by the taxpayers. The tax enhances saving and investment as it is a consumption tax and does not tax capital. Replacement of the current sales tax by value added tax enhances economic growth and improves the ratio relationship between Gross Domestic Product and Government Revenue. It imposed 15% rate whose capital exceeding Birr 500,000.
16	Proclamation	286/2002	Income tax	Exempted monthly income less than Birr 150, however, 10-30% rate on 151-650 to 3551-5000 and 35% on monthly income above 5000 according to schedule A. Free for annual income less than Birr 1800, but 10-30% on 1801-7800 to 42601-60000 and 35% on exceeding Birr 60000 according to schedule B and similar rate was imposed to schedule C. According to schedule D, 5% on royalties, 10% on rendering of technical support, 15% on chance winning, 15% on income from rental of property, 5% on interest from deposit, 15% on gain on transfer on certain investment property and 30 on shares of company was imposed.

17	Proclamation	307/2002	Excise Tax	To improve government revenue by imposing excise tax on selected goods and on luxury goods and basic goods which are demand inelastic and on goods that are hazardous to health and which reduce can social problems. The rates were 33% on any type of sugar (in solid form) excluding molasses, 30-40% on all types of soft drinks, 50-100% on alcoholic drinks, 75% on all types of pure alcohol, 20%-70% on tobacco and tobacco products, 30% on salt , 30% on fuel-super benzene, regular benzene, petrol, gasoline and other motor spirits, 100% on perfumes and toilet waters and 10% on textile and textile products, 20% on personal adornment made of gold, silver or other materials, 80% on disk washing machines of a kind for domestic use, 30% on washing machines of a kind for domestic purposes, 40% on video decks, 40% on television and video cameras, 10% on television broadcast receivers whether or not combined with gramophone, radio, or sound receivers and reproducers. 30% on carpets, 20% on asbestos and asbestos products, 20% on clocks and watches and 20% on dolls and toys was imposed as well as 30%, 60% and100% up to 1300 cc, from 1301 cc up to 1800 cc and above 1800 cc on different vehicle types respectively.

18	Proclamation	308/2002	Turnover Tax	To enhance saving and investment, minimize the damage that may be caused by attempts to avoid or evade taxes, stimulate economic growth, and improve the relationship between Gross Domestic Product and government revenue. Administrative feasibility considerations limit the registration of persons under the value-added tax to those with annual taxable transactions the total value of which exceeds 500,000 Birr and an equalization turnover tax imposed on persons not registered for value-added tax allows them to fulfill their obligations and also enhances fairness in commercial relations and makes complete the coverage of the tax system. The rate was 2% on goods sold locally and 2% on contractors, grain mills, tractors and combine-harvesters and 10% on others (for services rendered locally).