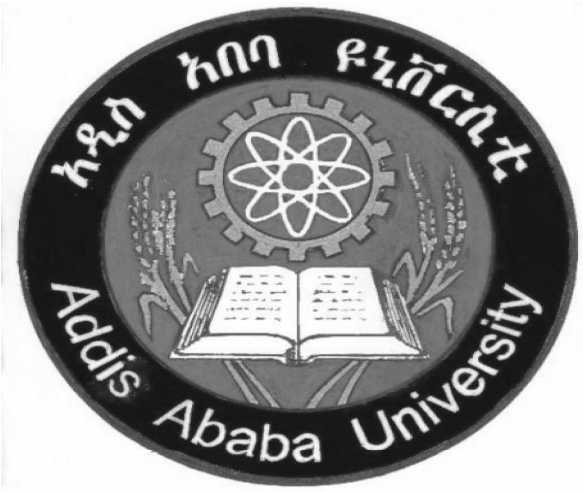

DETERMINANTS OF TAX REVENUE IN ETHIOPIA

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DETERMINANTS OF TAX REVENUE IN ETHIOPIA

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A final thesis submitted to Addis Abeba University College of Business and Economics Department of Accounting and Finance for partial fulfillment of the requirement of Masters of Science in Accounting and Finance

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MAY, 2015

Declaration

I declare that this thesis Determinant of tax revenue in Ethiopia, 2015 constitute my original work, that it had not been submitted for post graduate program in this university or other universities and that all sources of materials used for the thesis have been properly acknowledged.

Declared by

Name: Tesfaye Alemayehu Daba

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Statement certification

This is to certify that Tesfaye Alemayehu Daba has carried out his research work on the topic entitled “Determinants tax revenue in Ethiopia”. The work is original in nature and is suitable for submission for the reward of the MSc Degree in Accounting and Finance

Advisor: Laxmikantham.p (PhD) _____

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Name of external examiner	Signature and date

Table of Contents

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List of tables

List of figures

Acronyms

AGRI	Agriculture
CSA	Central Statistics Agency
ERCA	Ethiopian Revenue and Customs Authority
GDP	Gross Domestic Product
IMEXP	Import Export
IMF	International Monetary Fund
INFL	Inflation Rate
MoFED	Ministry of Finance and Economic Development
NBE	National Bank of Ethiopia
CLRM	Classical Linear Regression Model
PCI	per Capita Income
SERV	Service share to GDP
SIR	Saving Interest Rate

Abstract

The focus of paper is to identify determinants of tax revenue in Ethiopia by using a secondary data and multiple variables regression model. The objective of the study was to identify determinants of tax revenue such sectors of economy like agriculture, industry and service, FDI, inflation rate, interest rate, per capita income and trade openness. A study is important to identify significant variables affecting tax revenue. The research approach adopted in this thesis includes series data set that consists of fifteen years. The time period covered was 1999/00 to 2013/14; this is primarily due to unavailability of organized data before the indicated period. Both descriptive statistics and econometric tools were employed to analyze and present the obtained data. The findings from this research provide evidence that, foreign direct investment to GDP percentage regression result shows negative significant, Industry sector in percentage of GDP positive and significant, Inflation negative but not significant, Per capita income has the positive sign which is significant, and saving interest rate have positive insignificant impact on tax revenue. The main conclusions drawn from this study are, foreign direct investment to GDP, Industry sector in percentage of GDP and Per capita income have significant impact on tax revenue. This paper recommends that inflation rate and saving interest rate are in significant variables affecting tax revenue.

Key words*: Tax, Determinant of tax revenue, time series, Ethiopia*

definition of these two types. In simple words it can be describes as direct taxes are those the burden of which is directly born by the tax payer and contrary to this if the burden of taxes is transferred to other or public, are called indirect taxes.

Different tax components have different effect on tax revenue. Indirect taxes are seen to be regressive since every person (whether rich or poor) pay the same rate on their consumption expenditure. But since the poor pay a higher proportion of their income as tax, indirect tax tends to increase the disparity in societal wellbeing (Barnard, 2010 & Cornia, Gomez-Sabaino & Martorano, 2011). Direct taxes tend to be more equitable. This is because taxes on income rises as income increases and as such, direct taxes are said to be progressive even though some sub-components of direct taxes have been considered the most distortive form of taxation with adverse effect on entrepreneurial activities (Djankov, Ganser, Meliesh, Romalho & Shleifer, 2006), labor supply (Hausman, 1985 & Killingsworth, 1983) and investment and productivity (Mendoza, Milesi-Ferretti & Asea, 1996; Vartia, 2008; & Shwellnus, 2008). Direct taxes enhance the redistribution function of taxation as they help to reduce income inequality (Saez, 2004; Barnard, 2010; and Martinez-Vazquez, Vulovic, & Moreno-Dodson, 2012).

This paper aimed to identify the determinants of tax revenue by considering tax revenue measured by percentage of tax collected in the year to GDP ratio as dependent variable and Per Capita Gross Domestic Product has been used in the conventional tax effort literature as a proxy for the level of development of a country (Chelliah 1971, Bahl 1971), share of agricultural sector in GDP, share of manufacturing sector in GDP, share of service sector in GDP, inflation rate, foreign direct investment, interest rate and openness (trade) as independent variables by using past fifteen years data in the context of Ethiopia.

1.2 Statement of the problem

Tax is the main component of government revenue that will use to finance all the government expenditure to stabilize the economy. The expenditure here means the used of government's revenue for the development and operational expenditure that will bring an economic growth. Taxation in developing countries is a challenging topic and has attracted increasing attention in the last two decades. Many problems observed like poor administration, failing to collect sufficient tax revenues, tax structures where tax horizontal and vertical equity considerations are not integrated, lack of government and economic stability. In many developing countries it's observed that there is low capacity of tax administration to monitor compliance among rental taxpayers (Tanzi, 2000). In Ethiopia, like any other developing countries, faces difficulty in raising revenue to the level required for the promotion of economic growth. Hence, the country has been experienced a consistent surplus of expenditure over revenue for long period of time. To tackle this problem the government impose tax (direct and indirect), among others; as major and important sources of public revenue. However, this imposition of tax couldn't still bring the required result due to a number of reasons such as lack of clear understanding about the tax system by the tax payers, tax payers don't comply with their tax obligation, hostility between the tax payers and tax officials, negative attitude of tax payer towards the tax system, that is, understating their taxable income by significant amount and related. For these reasons, the actual amount of tax couldn't be collected properly (Tadele, 2010). Therefore it is very important to study factors that affect tax revenue of the country in order to increase government revenue and assure economic stability. This study is undertaken to discover factors determinant of tax revenue which are independent variables namely Per Capita Gross Domestic Product has been used in the conventional tax effort literature as a proxy for the level of development of a country (Chelliah 1971, Bahl 1971), share of agricultural sector in GDP, share of manufacturing sector in GDP, share of service sector in GDP, inflation rate, Foreign direct investment, interest rate and openness (trade) on dependent variable which is tax revenue measured by its percentage in gross domestic product. It tries to grasp those variables volatility impact on tax revenue in a given economic environment and horizon. Besides, this study was brought up date to strengthen the proof of previous similar study.

1.3 Research objectives

Research objectives have general and specific characteristics each of them are explained separately in the following paragraphs.

1.3.1 General objective

The general objective of the study is to identify the determinants of tax revenues in Ethiopia for the period 1999/00 to 2013/14.

1.3.2 Specific objectives

The specific objectives of this study are;

1. To check per capita income as a measure of economic growth impact on tax revenue
2. To test, sectors of economy like share of agricultural sector to GDP , share of manufacturing sector to GDP and share of service sector to GDP effect on tax revenue
3. To identify inflation rate impact on tax revenue
4. To prove foreign direct investment effect on tax revenue
5. To attest trade openness effect on tax revenue
6. To check interest rate effect on tax revenue

1.4 Hypothesis tested

In line with the above specific objectives the following eight hypotheses were tested:

H_1: There a significant positive relationship between tax revenue and per capita income

H_2: Tax revenue is low when the country is agrarian economy

H_3: There is a positive significant relation between manufacturing sector and tax revenue

H_4: There is a positive significant relation between service sector and tax revenue

H_5: There a significant relationship between tax revenue and trade openness

H_6: Inflation rate have a negative significant impact on tax revenue

H_7: Foreign direct investment has a positive significant relation with tax revenue

H_8: Interest rate has positive significant impact on tax revenue

1.5 Scope of the study

The study focus on identify determinants of tax revenue by taking past year data of revenue collected from different sources. It was conducted in Ethiopia by taking into account past fifteen year data of from 1999/00 to 2013/14 based on annual report budget closing year.

Eight variables are chosen these are Per Capita income, share of agricultural sector in GDP, share of manufacturing sector in GDP, share of service sector in GDP, inflation rate, foreign direct investment, saving interest rate and trade openness. In addition Software that was used as a regression analysis tool was E-view's 7.

1.6 Limitation of the study

The study is limited to determinant of tax revenue in Ethiopia by taking into account eight independent variables against tax revenue collection for the past ten years.

1. Sample period selected in the study covers only fifteen years data from 1999/00 to 2013/14 due to unavailability of well prepared report for some variables under the study is as second limitation.

1.7 Significance of the study

The study helps different stake holders for different reasons as listed below among these provide the information to the other researcher for future research that is similar or related with this study, Ethiopian government will be benefited in making policy measures under taken, Ethiopian revenue and customs authority will be benefited in increasing its performance in tax collection and future policy recommendations and the researcher will be benefited for the fulfillment of master's degree requirement.

In the above first chapter of the research an introduction about tax revenue in Ethiopia, statement of the problem for the research title determinants of tax revenue in Ethiopia, general and specific objects expected from the research conducted, scope the study for fifteen years, limitation of the study, and significance of the study was discussed on separate titles in detail.

CHAPTER TWO

REVIEW OF LITERATURE

In this chapter the theoretical part and empirical parts of past literature was discussed in detail from the introduction of taxation to research conducted on the world and in Ethiopia related to the Determinants of tax revenue and tax practices.

2.1 Theoretical perspectives

The theoretical part of the literature covered topics like Definition of taxation, Principles of a Good Tax System, Direct and Indirect Taxation, Taxation Structure, Tax types in Ethiopia as direct and indirect with their detail explanations and classification based on tax laws.

2.1.1 Definition of taxation

Taxation is principal method by which a government gains revenue into its budget. That revenue goes into a vast number of items, from paying debt, deafening the potential for implementing certain policies to paying for public services and welfare benefits and the military, etc. There are many methods by which tax revenue can be gained, and different definitions and structures to taxation which are outlined below. Also, conflicts in choosing methods and forms of taxation occur, pitting priorities such as reducing iniquity of income against maximizing incentive for economic growth. Taxes can also help to structure all sort of economic transactions, in a way that the state can exert influence in all participants even over the currency used. (Wikipedia)

2.1.2 Principles of a Good Tax System

Efficient - A tax system should raise enough revenue such that government projects can be adequately sponsored, without burdening the economy too much (not particularly the tax payer), as not to become a disincentive for performance (internal and external investment, work returns and savings).

Understandable - The system should not be incomprehensible to the layperson, nor should it appear unjust or unnecessary complex. This is to minimize discontent and costs.

Equitable - Taxation should be governed by people's *ability to pay*, that is, wealthier individuals or firms with greater incomes should pay more in tax while those with lower incomes should pay comparatively less.

Benefit Principle - Those that use a publicly provided service (which is funding primarily through taxation) should pay for it! However, conflicts in principle may and often do arise between this and principle

2.1.3 Direct and Indirect Taxation

Direct taxes are paid by taxation on the income of the wage earner. This form of taxation is unavoidable, and for simplicity usually collected before the worker collect his/her wages. Indirect taxation is often avoidable and is not taken from wages. An example of indirect taxation is VAT (Value Added Tax) or sales tax placed on goods and services. This is tax, but not all people have to pay it, and can choose not to. The benefits and costs of both forms of taxation are many. Direct taxation reduces the incentive to work, as 'take home' pay is reduced as a result of an increase in income tax compared to unemployment benefits. On the other hand, indirect taxation may result in people with similar incomes and wealth paying different amounts, simply as a result of slightly different circumstance.

2.1.4 Taxation Structure

It is worth knowing some terminology to make understanding easier. The marginal rate of tax (MRT) is the percentage taken in tax of the next earned. So, if your MRT is 10%, every next part of your income you earn will be taxed at 10%. However, this doesn't make your average rate of tax (ART) 10%. Consider the following:

Say your income is $10,000. If the first half of your income is taxed at 5%, and the second half at 15%, your MRT is 15%. However, your ART is

[(0.05 x 5000) + (0.15 x 5000)]/10000 = 10%

Proportional Taxation

Proportional taxation means that MRT = ART, so if a low income earner is taxed at 20%, so is a higher income earner. The proportion of tax paid is always the same, though in absolute terms it goes up the higher your income.

Progressive Taxation

Progressive taxation means that MRT > ART (with MRT and ART > 0). For example, in the UK there are three rates of income tax - 10% 'starting tax', 22% 'standard tax', and 40% high rate of tax. For a low income earner, ART will be around 10-22%, whereas a very high income earner will pay more like 30-40% ART. Thus, higher income earners pay a greater proportion of their income in tax than low earners.

Regressive Taxation

This is very rarely done intentionally by a government, as it would be extremely unpopular and would be seen as supporting wealthy, high income individuals over more needy households. However, indirect taxation could be said to partly support this. Very high income earners may spend a lower proportion of their income on goods and services, and so pay *proportionally* a fewer taxes as a percentage of their income.

2.1.5 History of taxation in Ethiopia

An over view of the tax system and the tax reform in Ethiopia The first major change in Ethiopia's tax system was initiated in the post-Second World War period (between1942-1944) the years 1947-52 covering its second stage. These changes were generally discretionary, including amendments to property taxes (land and cattle). Broad-based taxes on goods and services were also introduced in the mid 1950s.

Later in the decade and in the early 1960s, changes were also made in the rate and structure of taxes, especially on income. In the post-revolution period (1974-91), particularly during 1976-79, significant major changes on the rate and structure of all types of taxes were made. These involved widening the land tax base, introducing capital and surplus transfers from nationalized firms, as well as certain minor arrangements on other taxes (Wogene 1994: 26-7).

Leaving aside this brief description of the evolution of the tax system before the 1991/2 reform, the subsequent taxing system in Ethiopia can be divided into three broad categories: (i) taxes on income and profits, (ii) taxes on goods and services and (iii) taxes on international trade. Most of these taxes have been reformed and amended in the last decade following the general 1992 liberalization (or reform) policy. Some institutional reforms aimed at enhancing the government's capacity to raise tax revenue have also been made.

2.1.6 Tax types in Ethiopia

I this specific title the direct and indirect types of taxes practices in Ethiopia are summarized in a paragraph shortly.

Direct taxes

Direct tax revenue in Ethiopia consists of tax on income from employment, business profit tax, rental income tax, Tax on Interest Income on Deposits, Dividend Income Tax, Tax on Income from Royalties, Tax on Income from Games of Chance, Tax on Gains of Transfer of Certain Investment Property, Rendering of Technical Services outside Ethiopia and Agricultural Income Tax are discussed in detail. Tilahun A. (2014)

Indirect Taxes

Indirect tax revenue in Ethiopia consists of turn over tax, Excise tax, value Added tax and customs duties. Tilahun A. (2014)

2.1.7 Determinants of Tax Revenue

Many literatures suggest there are various determinants of tax revenue which includes the level of economic development, Fiscal Deficits and Debt, Trade Openness, Share of Aid in GNP, Population Density, Share of Agriculture in GDP, and Share of Manufacturing in GDP, Tax Evasion, and other.

1. **Level of Economic Development**

Economic development is assumed to bring about both an increased demand for public expenditure (Tanzi, 1987) and a larger supply of taxing capacity to meet such demands (Musgrave, 1969). A higher per capita income reflecting a higher level of development is held to indicate a higher capacity to pay taxes as well as a greater capacity to levy and collect them (Chelliah, 1971). There is also the consideration that, as income grows countries generally become more urbanized. Urbanization brings about a greater demand for public services while at the same time facilitating tax collection (Tanzi, 1987)

2. **Fiscal Deficits and Debt**

The growth of public spending has generated large fiscal deficits in many countries, leading to increases in the share of public debt relative to GDP (Tanzi & Blejer 1988). With a large debt, the government needs to raise the revenues necessary to service it. When the interest on the debt exceeds net borrowing plus the possible reduction in non - interest expenditure, the level of taxation must go up unless the rate of growth of the economy is high enough to neutralize the increase. Therefore public debt plays a role in determining the extent to which countries may take advantage of their taxable capacity (Tanzi, 1987). However, a high debt burden can also create macroeconomic imbalances that may tend to reduce the tax level Servicing of the foreign debt requires a trade account surplus, which in turn may require a reduction in imports. This affects revenue given the high dependence of the tax system on the external sector (Tanzi, 1989). In general, however, on balance, a high debt burden would tend to raise the tax level, ceteris paribus (Tanzi, 1992). On the other hand, however, countries faced with an increased trade deficit may try to restrict imports as an alternative to exchange rate adjustment irrespective of the source of the trade imbalance. This will reduce revenue from import duties.

3. Share of Aid in GNP

Aid and grants have been a major source of development finance for the majority of developing countries over the past few decades. Empirical literature has tended to evaluate the impact of aid by including it as a variable in a regression for the determinants of some economic performance indicator, emanating from the general concern that it might have a negative impact on some of such indicators. For instance, there is a general concern that aid may decrease taxation revenue in recipient countries. In fact, the results in Franco- Rodriguez, Morrissey, and McGillivray (1998) study on Pakistan were in agreement with this concern.

4. Population Density

It is difficult to point out the direction of the effect, without a systematic study. However, population density is expected to have an adverse effect on the tax ratio, mainly because the higher the density of population the higher will be the use of taxable sources (i.e. rising the tax base), and the tax authorities could intensify their efforts to collect taxes at a relatively minimal cost as compared to a sparsely populated country. Conversely, in a thinly populated area, administrative costs are expected to be higher in terms of total yields and therefore, less encouraging for collection of tax revenues. In such a situation, the degree of tax evasion and tax avoidance may also be relatively higher than in the densely populated area (Ansari, 1982).

5. Share of Agriculture in GDP

Agriculture is considered to be a salient feature regarding the structure of the economy and as Tanzi (1992) asserts, a country's economic structure is one of the factors that could be expected to influence the level of taxation. For developing countries, the share of agriculture may be an important influence on the tax share, from both the demand and supply point of view (Tanzi, 1992). On the supply side, it is very difficult to tax the agricultural sector "explicitly", though it is often very heavily taxed in many implicit ways such as; import quotas, tariffs, controlled prices for output, or overvalued exchange rates (Bird, 1974; Ahmad and Stern, 1991; Tanzi, 1992). On the other hand, small farmers are notoriously difficult to tax and a large share of

agriculture is normally subsistence, which does not generate large taxable surpluses, as many countries are unwilling to tax the main foods that are used for subsistence (Stotsky & WoldeMariam, 1997). On the demand side, since many public sector activities are largely city - oriented, it may be assumed that the more agricultural is a country, the less it will have to spend for governmental activities and services.

Hence as the share of agriculture in GDP rises, the need for total public spending and so for tax revenue may fall.

6. Share of Manufacturing in GDP

Manufacturing enterprises are easier to tax than agricultural enterprises since business owners typically keep better books of accounts and records. Manufacturing can generate larger surpluses if production is efficient. Therefore the variable is positively related to the tax ratio.

7. Tax Evasion

Tax evasion is considered to be of serious concern to those dealing with taxation issues of a country because o f the detrimental effects it is assumed to have on tax revenue and the tax system as a whole. One obvious consequence of tax evasion is the loss of tax revenue for government. The fact that some income goes untaxed and also certain indirect taxes such as VAT and excise duties are evaded, leads to the conclusion that tax revenues are lower than if everyone had paid their taxes. Over the years a growing amount of attention has been focused on the conjecture that a significant and growing hidden economy exists. Most of the authors who have attempted to deal with it have reached one common conclusion that the problem of the hidden economy cannot be dismissed as quantitatively trivial, especially because some of the analytical work done on the subject has uncovered some intriguing issues.

The major incentive for the effort to calculate the extent of the hidden economy has been dominated by the worries of fiscal authorities concerned with the loss of tax revenue through tax evasion. Attempts to estimate the amount of the tax revenue loss have produced appalling figures of tax revenue loss. For instance, Feige (1981) estimated the tax revenue loss in the United

Kingdom to be around £9 billion. Other estimates of tax revenue losses in the United Kingdom, according t o Pyle (1989) ranged between £2 and £11 billion per year. Estimates have also shown that revenue has been lost due to evasion of indirect taxes. Pyle reported the amount to lie between £250m and £ 500m per year due to evasion of VAT. Estimates have also been done in other countries and still figures are not small

2.2 Empirical evidences

This topic of the research covers topics about the findings of different researchers about the determinants of tax revenue in different countries separately and as panel date done in sub Saharan African countries, regional wise and zonal wise, finally about tax in case of Ethiopia. Each finding by researchers was summarized separately and was used to analyze with what the researcher did.

2.2.1 Empirical evidences on determinants of tax revenue in different countries

Several empirical studies have been undertaken to assess tax performance across different countries. Most of the studies have used tax share in GNP/GDP or tax ratio as the dependent variable with different combinations of explanatory variables.

Lotz and Morss (1967) used the data of developed and developing countries to find the ratio of tax revenue to GNP. He used per capita GNP and openness for this. His results showed the positive and statistically significant effect for both per capita GNP and for openness. Tanzi (1987) found only the per capita income effect positive and significant by taking the data of only developing countries.

Chelliah et al. (1975) by taking the data of 47 countries during for period 1969- 1971 regressed the tax share in GNP on agriculture share, mining share and export share. The results showed the negative and significant effect for agriculture share, positive and significant effect for mining

share and export share. Tait et al. (1979) took the data of 47 countries for period 1972-1976 and found the same results.

Bird et al. (2008) found that Latin American countries show consistently lower tax effort compared to other developing or transition countries. Performance in African countries shows a mixed trend. Some countries collect as little as half while others collect up to 2 to 3 times what they would be expected to (OECD, 2010). The latter group include to a large degree of those countries having a high share of resource-related tax revenue. Thus, estimates of tax effort for some resource-rich countries turn out to be quite sensitive to whether resource-related tax revenues are considered or not. Using a tax effort measure that excludes resource-related tax revenues is revealing: more than half of the African countries (22 out of 42) collect more or what is expected. This suggests that in quite a number of countries domestic revenue mobilization is not constrained by the tax system but more by GDP growth and broader development.

From a policy perspective there is an important distinction between countries with a substantial share of resource-related tax revenues and those without. Resource revenue provides an opportunity for reducing distortion taxation that may have a negative impact on economic activity, but it also provides the opportunity for maintaining highly inefficient subsidy programmed (Collier et. al., 2009). Bornhorst et al. (2009) found that countries that receive large revenues from the exploitation of natural resource endowments are likely to reduce their domestic tax effort considerably. This is not necessarily worrying as reduced domestic tax burden could foster private sector activities consistent with an improvement in development prospects.

Leuhold (1991) and Stotsky and WoldeMariam (1997) examined the tax share for African countries by taking the share of agriculture in income, mining share, per capita income and export ratio as its determinants. Their results showed that agricultural share has negative; mining share has positive while the share of foreign trade and the share of foreign grants and loans have also positive and statistically significant relation.

Teera (2002) examined the tax system and tax structure of Uganda to investigate the factors effecting tax revenue in the country. He used the time series data of the period 1970 to 2000 and estimated a model. His results showed that agriculture ratio, population density and tax evasion affect all type of taxes. GDP per capita showed the surprising negative sign. Tax evasion and openness (as measured by import ratio) showed the significant negative impact. Aid variable showed positive sign since aid in Uganda always supported imports especially raw material so not surprisingly.

Bahl (2003) by using the data of OECD and less developed economies explained the determinants of tax revenue. He used the non-agricultural share of GDP, openness and the rate of population growth all of which showed the positive and statistically significant result. Simple correlation between tax effort and the size of shadow economy showed the negative but statistically significant result.

Madhavi (2008) used the advanced estimation techniques with an unbalanced panel data for 43 DCs over the period 1973-2002 including Pakistan. His results showed that aid had a negative effect, non-tax revenue had also negative effect while agriculture sector share had positive but insignificant coefficient. Trade sector share had a positive effect and economically active female variable had a net adverse but insignificant effect while the old-age portion of population showed negative association for both income and sales tax. Extent of urbanization and literacy rate both showed positive effect. Population density, monetization and inflation rate remained negatively correlated. Inverse of GDP per capita was strongly and negatively correlated with the level of taxation. Net effect of political rights and civil liberties was significant.

2.2.2 Empirical evidences on tax revenue in case of Ethiopia

In Ethiopia there are some researches done on tax issues with different titles among them some o them are mentioned below

Anware M. (2014) on the title Determinants of tax revenue performances in Ethiopia as mini research for Partial Fulfillment of the Requirements for the course Professional Training Program for Economists (a Case Study in Ethiopian Revenues and Customs Authority) the researcher used time series data set that consists of 21 years. For the time period covered 1990/91 to 2010/11 with identifying six variable industry , agriculture, inflation, GDP per capital income, export and import he concluded that structural factors such as exports of goods and services (% of GDP) and import of goods and service (% of GDP) significantly affect tax revenue performance of Ethiopia.

Tilahun A. (2014) on the title Determinants of Tax Compliance Behavior in Ethiopia: The Case of Bahir Dar City Taxpayers with the objective to identify factors that determine tax compliance behavior has been open for empirical investigation. Accordingly the researcher used one-way ANOVA, two samples and one sample T- test, the data was collected using structured questionnaire. The results revealed that perception on government spending; perception on equity and fairness of the tax system; penalties; personal financial constraint; changes on current government policies; and referral group (friends, relatives etc.) are factors that significantly affect tax compliance behavior. However, gender and probability of being audited have no significant impact on tax compliance behavior. Finally, the researcher concluded that older people will comply less if there is no equity and fairness in the tax system and any changes in government policy on fuel prices, electricity and water rates are not favorable.

Suresh V. & Srinivas G. on the title factors that influence rental tax payers' compliance with tax system: an empirical study of Mekelle city, Ethiopia with the objective of identifying factors that influence rental tax payers' and their degree or level of compliance with the tax system in Mekelle city. The researcher had drawn 140 sample sizes out of 5,480 total populations which constitute 37 rental tax payers from Hadnet, 41 from Hawelti and remaining 62 from Kedamay weyane. The primary data were collected through structured questionnaire; the data were analyzed using the descriptive statistics like mean and standard deviations the researcher concluded that there were some dishonest rental tax payers. Some rental tax payers were

intentionally understating their taxable income by substantial amounts. Even there are some individually who entirely don't report their taxable income to the concerned body. Consequently, there result in affecting the attitudes and compliance behavior of genuine rental tax payers towards the tax system. The study also disclosed that with the exception of minority of the rental tax payers who hold certificate and diploma, majority of them were with an educational background of elementary and high school completed. Hence, it can be concluded that rental tax payers lack knowledge of easily understanding the laws and regulations of the tax system and how their taxable income is computed. With respect to providing tax awareness training, it is the duty and responsibility of the tax authority to conduct a series training to the rental tax payers, especially for these whose educational background was elementary school and secondary school completed, However, the research indicated that majority of the respondents didn't attain the tax training sessions. This may be either as a result of poor control and follow up mechanism of the tax authority or due to lack of awareness of the rental tax payers. Therefore, it can be concluded that still many respondents are not attending or participating in the tax training session.

Delessa D. (2014) on the research title Tax Reforms and Tax Revenues Performance in Ethiopia the purpose of the study was to analyze and compare tax revenues performances of the two governments in power in Ethiopia during the last 39 years. Descriptive analysis is used to compare different categories of tax performance of the Derg and Ethiopian People's Revolutionary Democratic Front (EPRDF) regimes in terms of tax revenues mobilization is tax to GDP ratio. In light of this major tax categories of tax to GDP and total tax revenues ratios over the period of 1974/75 to 1912/13 (39 years) were computed and analyzed. In addition comparison has been made between pre and post tax reforms to compare tax system flexibility in terms of raising tax revenues during the EPRDF regime. The period after 2002/03 was considered as post comprehensive tax reforms years. The researcher concluded the comparison of two governments' different categories of tax ratios shows a slight increment from an average 3.77 percent to 9.95 during EPRDF period. Comparing pre and post-tax reforms during the period 1991/92 to 2012/13 the ratios of different category tax revenues show insignificant change for post comprehensive tax reform period. Comparing direct versus

indirect tax categories, direct tax shows the tendency of declining contrary to the comprehensive tax reform main objective which gave due attention to increase the share of the direct tax to total revenues. The overall analysis of researcher reveals that tax reforms failed to boost total tax revenues and to bring tax structure change from indirect tax to direct tax.

Dasalegn J. (2014) on the title The Role of Value Added Tax on Economic Growth of Ethiopia objective of the researcher was to analyze the role of VAT on economic growth of Ethiopia from 2003 to 2012 based on theoretical and empirical evidences. To meet his objective, he used time series macro-economic data on GDP, VAT, total tax revenue excluding VAT, non-tax revenue and foreign revenue. He employed Descriptive statistics and multiple regressions to analyze the data. The finding of the study reveals that as compared to sales tax, VAT boosts the general economic growth of Ethiopia but the issue of regressively resembling to sales tax still continues. During the periods under review, the growth rate of VAT was 66.27% on average. For the periods of sales tax, the average growth rates of GDP were only 2.53%. However after executions of VAT, such growth rate reached about 21.9% on average. The analysis also showed as the average ratio of VAT to GDP becomes 2.95%. The finding also reveals that, VAT, total tax revenue and non-tax revenue except foreign revenue were significant at 5% level of significance but all of them positively contributed for economic growth during the periods under review. However, to be effective, it requires strong administrations and cooperation's of the tax payers with taxing authority and the government in general.

To summarize, internationally most of studies found the determinants of tax revenue for developed and developing countries by using panel data methodology while in Ethiopia there are some researcher regarding the title but not full fledge study it was as mini research inclusions of some variables and not as such deep analyzed. On connection to tax revenue there are a lot research providing the researcher insight view and key findings for the conclusion.

The researcher believes that this study fills some gaps in the area of tax revenue determinants for the coming researchers and current policy recommendations in addition fill the literature and addresses the issue in-depth by considering relevant control variables and time series econometric methodology.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter explained about Methodology Used, Research approach, Type of Data and collection techniques, Explanation of variables, Model used and Data analysis and interpretation.

3.1 Methodology Used

In the previous chapter, the literature review, the determinants of tax revenue, has been presented. In this chapter the detail methodology, showing the logical frame work that discusses research approaches, Research strategy, data collection and data analysis method was presented.

To achieve the stated objective of this research the appropriate method should be adopted. The objective of this research is to explore the determinants of tax revenue in Ethiopia. The main variables stated for this study includes Per Capita income, share of agricultural sector in GDP, share of manufacturing sector in GDP, share of service sector in GDP, inflation rate, foreign direct investment, interest rate and trade openness in the country that will be collected from secondary data in the country. To get valid and reliable results different methods and sources will be used, making sure they are also relevant to the research objective. In addition it is critically important that the materials and data collected are analyzed and examined to be able to make justifiable conclusions.

3.2 Research approach

The research approach in this study was chosen based on the purpose and the research questions set out to be addressed. According to Creswell (2003, p.13-15) there are three basic types of research approaches, quantitative, qualitative, and Mixed approach**.** In the quantitative method data is collected through a systematic empirical study and the results can be quantified with the help of statistics and mathematics (Kothari, 2004). In quantitative research it is possible to compare and study several determinants and analyzing and testing them empirically will prove if there are relationships to be found in order to draw conclusions on the research.

Qualitative methods have an emphasis on understanding, interpreting and observing the data in a natural setting and with a sort of insider's view (Kothari, 2004). Quantitative approach is more objective than qualitative approach which is more of the subjective method.

The mixed approach inquirers draw liberally from both quantitative and qualitative assumptions. That means it is the combination of the two methods.

This paper was interested in examining the associations between the dependent variable (that is tax revenue) and the independent variables Per Capita income, share of agricultural sector in GDP, share of manufacturing sector in GDP, share of service sector in GDP, inflation rate, foreign direct investment, interest rate and trade openness. So, quantitative approach is more appropriate to fulfill the purpose of this research, since this paper was searching for what factors were affecting tax revenue, because of the fact that those variables can be easily quantified. On the other hand the quantitative method will be used to measure how the tax revenue can grow if there is a growth. With the quantitative method it is possible to compare different numerical growth measures.

3.3 Type of Data and collection techniques

To enhance the quality of data, the researcher employed secondary data. According to Kothari, 2004 depending on the sources and techniques ones uses for gathering data it can be divided into primary and secondary data. He go by saying that primary data is data collected by using techniques like interviews, questionnaires and tests. On the other hand secondary data refers to documents that have been organized before.

The research process was started by collecting secondary data about tax revenue and economic performance situation in Ethiopia and reviewing that data. Then evaluated critically and collected from documents of the respective office. It was collected from tax revenue office, national bank and ministry of finance and economic development to check the level of tax revenue collected and the amount and percentage of independent variables in the country. As most of the data will be collected from secondary data, the recall problem related with primary data will be totally eliminated.

The secondary data came from records of those institutions to attain the research objectives. It helped the researcher to answer questions directly related to the level of tax revenue in each year and the amount of independent variables in the country. As a result of this the main sources of data will be Documentary sources like annual reports produced by Ethiopian government ministry of Finance and economic development, Ethiopian revenue and customs authority annual and interim reports, reports of national bank of Ethiopia, reports of Central statistics agency, Tax proclamations, regulations and related directives, World bank annual country reports, International monetary fund annual and interim reports and related websites from were tax related secondary sources can be found. Secondary data was used in this study to collect required data, which are also relevant in addressing the objectives of the study. Since most of the data used is secondary data, the correctness and validity of the data will be checked by referring to different sources but the main source or the base line will be countries official own produced report. In this the tax revenue of the last 15 years starting from year 1999/00 to 2013/14 was used and the reason behind that is the late introduction of value added tax which is the main component of tax revenue and availability of data.

Benefits derived by using secondary data for the researcher was the saving of time (Ghauri, 2005), Accessibility of data, saving of money (Ghauri, 2005), Feasibility of both longitudinal and international comparative studies and Generating new insights from previous analyses (Fàbregues, 2013) with some limitations.

According to Koul (2006) using appropriate data collection techniques help researchers to combine the strengths and amend some of the inadequacies of any source of data to minimize risk of irrelevant conclusion. He further argues that consistent and reliable research indicates that research conducted by using appropriate data collection techniques increase the credibility and value of the research findings. In view of this concept,

3.4 Explanation of variables

In this topic each variables are clearly explained as dependent and independent variable.

Definitions of key terms, concepts and variables

Terms to be used in the research is

Variables

In this paper there is one dependent variable called tax revenue and eight independent variables.

Dependent variable

Tax revenue is defined as the income that is gained by Ethiopian government through taxation. It is the total amount of tax collected during each year by the government only from tax sources. It's to be measured as percentage of tax revenue in respective of GDP.

Independent variables

1. **Per Capita GDP** has been used in the conventional tax effort literature as a proxy for the level of development of a country. A higher level of development go together with a higher capacity to pay and collect taxes, as well as a higher relative demand for income elastic public goods and services (Chelliah 1971, Bahl 1971). In general, a higher level of per capita income is expected to have a positive effect on the tax ratio.
2. **The agricultural sector** is expected to have a negative effect on tax ratio. Madhavi (2007) points out that some structural characteristics of developing economies pose limitations their abilities to raise revenues from certain taxes. One such characteristic is a large share of the agricultural sector. In developing countries, the sector is largely informal and as such commonly referred to as peasant agriculture. It is characterized by a large number of small producers who sell their output in informal markets, either to exchange for other goods, or for self-consumption. This coupled with poor or nonexistent book-keeping records make it notoriously difficult to tax. A further argument advanced is that the sector is not much more difficult to tax), but the larger its relative importance in a country's economy, the lower the need to spend on governmental activities and services, as many public sector activities are city based (Tanzi, 1992). Thus a higher agricultural share is expected to decrease the tax ratio, and the strongly observed negative correlation confirms this hypothesis.

3. **Manufacturing sector ratio to GDP** Manufacturing enterprises are easier to tax than agricultural enterprises since business owners typically keep better books of accounts and records. Manufacturing can generate larger surpluses if production is efficient. Therefore the variable is positively related to the tax ratio.
4. **Service sector ratio to GDP** service enterprises are easier to tax than agricultural enterprises since business owners typically keep better books of accounts and records. Service can contribute high percentage to total tax that has positive impact on revenue collected.
5. **Trade openness** a high degree of openness is expected to generate a higher tax ratio. With the movement of internationally traded goods entering into and departing from a country through a few specified points, they become relatively amenable to tax. However, when the effect of trade liberalization is taken into account, this outcome could be nullified. Tupy (2005) points out that if trade liberalization occurs primarily through reduction in tariffs then one expects losses in tariff revenue. On the other hand, Keen and Simone (2004) argue that revenue may increase provided that liberalization occurs through a reduction in protectionism.
6. **Inflation rate** negative effect on the tax ratio can occur through several channels. First, in an inflationary environment, when actual tax payments lag the transactions to be taxed, tax obligations are lower in real terms at the time of tax payments (Tanzi, 1977). Second, excise taxes on some products (e.g. tobacco, alcohol and gasoline) may be levied at specific rates that may not necessarily be adjusted in line with inflation (Tanzi, 1989). Finally, high inflation rates may shrink the tax base to the extent that households try to protect their wealth against the corrosive effect of inflation by substituting to ward s assets that are less likely to be domestically taxed, for example (livestock, jewellery and balances in overseas accounts) and/or postponing investment plans (Ghura 1998).
7. **Interest rate** is the rate at which interest is paid by borrowers (debtors) for the use of money that they borrow from lenders (creditors). Specifically, the interest rate is a percentage of principal paid a certain number of times per period for all periods during the total term of the loan or credit. Interest rates are normally expressed as a percentage of the principal for a period of one year; sometimes they are expressed for different periods like for a month or a day. So, it has positive significant impact on tax revenue since gain interest rate

is taxed as other income for depositors. On the other hand it is cost of borrowing with considered as expense for business income tax purpose.

8. **Foreign direct investment** FDI has a positive and significant impact on tax revenue, so the FDI is helpful in raising general welfare through raising the tax revenue to the government Therefore, to proxy for FDI, the percentage of annual foreign direct investment registered capital to GDP at constant market price. (Haider M. & A.R. Chaudhary 2013)

Table 1.1 Summary of variables to be tested, expected sign and explanations.

Variables	Explanation	Source of data	Expected sign
Tax revenue	To be measured by total tax to GDP ratio	MoFED, ERCA	Dependent variable
Per capita income	Proxy for economic development measure	MoFED	+
Agriculture/GDP	Agriculture sector share to total GDP	MoFED	-
Manufacturing/GDP	Manufacturing sector share to total GDP	MoFED	+
Service/GDP	service sector share to total GDP	MoFED	+
Trade openness	Export and import as percentage of GDP	NBE	+
Inflation rate	Annual inflation rate as deflator of GDP	CSA	-
Interest rate	Average saving interest rate	NBE	+
Foreign Direct Investment	Percentage of FDI to GDP	EIA	+

Source: data summarized by researcher from MoFED, ERCA, NBE, CSA and EIA.

3.5 Model used

Different researchers from past to recent have done a lot on title related with determinants of tax revenue in different context on different sample from across different countries. These research papers are Lotz and Moss (1967 & 1970), Chilliah, et.al (1971 and 1975), Tait, et.al (1979), Lim (1988), Tanzi (1981,1987, 1992), Leuthold (1989,1991), Stotsky and WoldeMariam (1997), Ghura (1988; 1997), Piancastelli (2001), Eltony 2002, Teera (2003), Bird et.al.(2004, 2008), Mertens (2003), Gupta (2007), Madhavi (2008), Davoodi and Grigorian (2007). From these past

papers researcher selected model developed by Madhavi (2008), with some modification and minimization of independent variables for those data can be assessed easily and other researchers used exhaustively.

$$Y = \sum_{i=1}^{8} \beta_0 + \beta_i X_i + \varepsilon_i \quad \text{..... (1)}$$

OR

$$Y = \beta o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \varepsilon \quad \text{---------- (1)}$$

Where Y= Total Revenue ratio to GDP

βo = Y intercept

β_1= Slope of Per capita income as a proxy of measuring economic development

X_1 = Per capita income

β_2 = Slope of Agriculture sector share to total GDP

X_2 = Agriculture sector share to total GDP

β_3 = Slope of Manufacturing sector share to total GDP

X_3 = Manufacturing sector share to total GDP

β_4 = Slope of service sector share to total GDP

X_4 = service sector share to total GDP

β_5 = slope of Export and import as percentage of GDP

X_5 = Export and import as percentage of GDP

β_6 = Slope of Annual inflation rate as deflator of GDP

X_6 = Annual inflation rate as deflator of GDP

β_7 = Slope of Average annual saving interest rate

X_7 = annual saving interest rate

β_8 = Slope of Percentage of FDI to GDP

X_8 = Percentage of FDI to GDP

ε = Error variable

3.6 Data analysis and interpretation

In order to analyze the research data, ordinary list squire (OLS) with multiple variables was used to check the relation between dependent and independent variables by using software. In the section of data analysis and interpretation, each variable was presented and discussed by using descriptive statistics results related with the variables under study followed by analysis of P-value to check the significance the explanatory variable on the dependent variable selected for the study. In addition the following statistical values were seen and the conclusion has made.

T-Statistic

Identify significant relationship of each independent variable with the dependent variable

F-Statistic

Testing the significance of the overall independent variables with the dependent variable

Standard Error of Estimation

The objective is to identify whether a particular variable is significant at a certain level of confidence.

Beta Analysis (Coefficient)

Beta analysis is a measurement used in order to find out the relationship between independent variables and dependent variable does exist or not. Therefore, if the result is positive that means the independent variables can explain the changes in the dependent variable.

Coefficient of Determination (R^2)

The coefficient of determination is a statistic that will give information the goodness of fit of model. It is a statistical measure of how well the regression line approximates the real data points. Is a descriptive measure between zero and one, a value of R^2close to 1 indicates that the model explains nearly all of the variability of the dependent variable about its mean value, while a value close to zero indicates that the model fits the data poorly. Problems withR^2 as a goodness of fit measure: if a model is re parameterized (rearranged) and the dependent variable changes, R^2 will change, R^2 never falls if more repressors are added to the regression and R^2 can take values of 0.9 or higher for time series regressions. So it's better to see at adjusted R^2 to minimize the second problem of R^2.

T-Statistic

T-statistic is used to determine whether the significance between the dependent variable and the independent variables exists or not. If the computed T-stat is greater than book T-value, the independent variable is statistically significant or vice-versa. In order to get book T-value, the degree of freedom should be calculated at certain confidence interval.

The degree of freedom can be calculated as follow:

Degree of freedom = n – k – 1

Where: k = Number of Independent Variable

n = Number of Observation

The results for T-statistic:

Accept H_1, reject H_0

If the computed t-statistic value is greater than the book T-value at certain significant level,

Reject H_1, accept H_0

If the computed t-statistic is lower than the book T-value at certain significant level.

F-Statistic

F-test is an overall test of the null hypothesis that group means on the dependent variable do not differ. It is used when comparing statistical models that have been fit to a data set, in order to identify the model that best fit the population from which the data were sampled. F-test mainly arises when the models have been fit to the data using least square. In order to get book F-value, it should be calculated at certain significant level.

Formula for book F-value is as follow:

Book F-value = $F\alpha\ (k - 1, n - k)$

Where:

α = Significant level

k = Number of Independent Variable

n = Number of Observation

k – 1 = Numerator

n – k = Denominator

The result for F-Statistics:

Accept H1, reject H0

If the computed F-Statistic is greater than the book F-value at certain significant level,

Reject H1, accept H0If the computed F-Statistic is lower than the book F-value at certain significant level.

Standard Error of Estimation

It is a measure of the dispersion of the data points from the regression line. Its objective is to identify whether a particular variable is significant at a certain level of confidence. Standard error can be measured in two ways: Using T-stat and Degree of freedom. It is also useful in determining the range in which the dependent variable will point to a specified probability.

CHAPTER FOUR

DATA PRESENTATION AND DISCUSSIONS

In this chapter data discussed through descriptive statistics, the result of OLS was tested, data was analyzed through multiple regression analysis and finally hypothesis result was presented.

4.1 Descriptive statistics

Descriptive statistics explains dependent variable tax revenue and eight independent variables called agricultural share to GDP, Foreign direct investment, trade openness, share of industry to GDP, inflation rate, per capita income, service share to GDP and saving interest rate in terms of mean (is the average and is computed as the sum of all the observed outcomes from the sample divided by the total number of events), median (is the middle score), maximum observation, minimum observation, standard deviation (is calculated by square rooting the variance of the data it gives a more accurate account of the dispersion of values in a dataset) and sum squared deviations (calculating the sum of squares) in the following table.

Table 1.2 Descriptive statistics result

	TR	AGRI	FDI	IMEXP	INDU	INFL	PCI	SERV	SIR
Mean	8.233333	48.87333	27.35333	22.08667	10.84000	12.23333	3297.133	40.32667	4.143333
Median	5.170000	49.70000	21.18000	16.60000	10.50000	10.60000	2302.000	39.90000	4.080000
Maximum	21.24000	56.10000	89.65000	46.10000	14.20000	36.40000	7200.000	45.90000	6.000000
Minimum	3.010000	39.90000	4.110000	7.500000	9.500000	-10.60000	959.0000	34.40000	3.075000
Std. Dev.	6.000565	5.005064	24.32135	13.68815	1.234504	12.47647	2351.799	4.143578	1.126280
Sum Sq. Dev.	504.0949	350.7093	8281.392	2623.117	21.33600	2179.273	77433430	240.3693	17.75908
Observations	15	15	15	15	15	15	15	15	15

Source: Descriptive statistics result from E-view 7 run by the researcher

From the above statistics result the average performance of tax revenue collection in percentage of GDP at constant market price, of 1999/00-2013/14 period found to be 8.23% which indicate the overall performance is positive. There were big difference between the maximum total

revenue percentage equals 21.24 in year 2013/14, and Minimum total revenue percentage equals 3.01 in year 1999/00, but the standard deviation for the sample period was big enough, Std.dev. Value of 6.00

This result reveals that Ethiopia's tax revenue collection performance is measured by ratio to GDP is the lowest compared to an average tax collection performance of sub Saharan African countries, world and euro zone area as revealed on the table below.

Table 1.3 Tax revenue collected by Central Governments as % of GDP by World Bank

Description	**2005**	**2012**
Ethiopia	8.7	9.2
World	14.4	14.3
Low income	10.4	11.5
Sub Saharan Africa	18.1	13.8
Euro zone	17.4	17.1

Source: World Development Indicators: Tax policies, summarized by researcher from 2015 report.

In case of agricultural share in percentage of GDP at constant market price, of 1999/00-2013/14 period found to be 48.87% which indicate the overall high share of the economy. There were no big difference between the maximum share of agriculture to GDP 56.1 in year 200/01, and Minimum total share of agriculture to GDP percentage equals 39.9 in year 2013/14 this shows the countries plan to transform to industry is promising and on the good truck but not as planned by government, but the standard deviation for the sample period was big enough, Std.dev. Value of 5.00

In case of industry share in percentage of GDP at constant market price, of 1999/00-2013/14 period found to be 10.84% which indicate the overall low share of the economy. There were no big difference between the maximum share of industry to GDP 14.2% in year 2013/14, and Minimum total share of industry to GDP percentage equals 9.5% in year 2000/01 this shows the countries plan to transform to industry is promising and on the good truck but not as planned by government, but the standard deviation for the sample period was small, Std.dev. Value of 1.23

In case of service share in percentage of GDP at constant market price, of 1999/00-2013/14 period found to be 40.32% which indicate the overall low share of the economy. There were no big difference between the maximum share of service to GDP 45.9% in year 2013/14, and Minimum total share of service to GDP percentage equals 34.4% in year 2000/01 this shows service sector stands at the second largest share of the economy but the standard deviation for the sample period was high, Std.dev. Value of 4.14

In case of foreign direct investment in percentage of GDP at constant market price, of 1999/00-2013/14 period found to be 27.35% which indicate the overall low share in the economy. There were big difference between the maximum foreign direct investment in percentage of GDP 89.65% in year 2013/14, and Minimum foreign direct investment in percentage of GDP equals 4.11% in year 2000/01 when there was no law and incentives to attract investors. This shows countries performance in attracting investors going well but compared to global performance its below low income countries and Sub Saharan Africa's based on world bank computation as shown on the table below. the standard deviation for the sample period was high, Std.dev. Value of 24.3

Table 1.4 Foreign Direct Investment, net as % of GDP by World Bank

Description	**2013**
Ethiopia	2.00
World	2.3
Low income	3.8
Sub Saharan Africa	2.3
Euro zone	1.9

Source: World Development Indicators: Tax policies, summarized by researcher from 2015 report.

In case of trade openness measured by import plus export in percentage of GDP at constant market price, of 1999/00-2013/14 period found to be 22.087% on average which indicate the overall low performance in the economy and showing trade deficit. There were big difference between the maximum trade openness in percentage of GDP 46.1% in year 2013/14, and Minimum trade openness in percentage of GDP equals 7.5% in year 2000/01 when the economy

performs less. This shows countries performance in international trade was not good and in all sample period it shows trade deficit and percentage is fluctuating at high amount explained by the standard deviation for the sample period was Value of 13.6

In case of inflation measured by annual average rate of 1999/00-2013/14 period found to be 12.23% on average which indicate the overall good acceptable rate in the economy. There were big difference between the maximum inflation rate 36.4 in year 2008/09 due to highly increase of food price in the year, and Minimum inflation rate equals -10.6 in year 2001/0 when the economy performs less. This shows countries inflation rate varies at high amount showing the economy was not stable explained by the standard deviation for the sample period was Value of 12.4.

In case of per capita income as a measure of economic growth of 1999/00-2013/14 period found to be 3297.13 birr on average which indicate the overall growth in economy but not as target set on GTP and compared to other countries and world standard Ethiopia is considered as poor country. There was big difference between the maximum per capita income 7,200 birr in year 2003/14 when the economy performs well, and Minimum per capita income equals 959.00 birr in year 2001/02 when the country was in war with Eritrea. This shows countries per capita income varies at high amount showing the economy was increased with standard deviation for the sample period was Value of 2351.7

Finally the variable to discuss is average saving interest rate growth of 1999/00-2013/14 period found to be 4.143% on average which indicate the low interest rate. There was no big difference between the maximum saving interest rate of 6.0% in year 1999/00 and Minimum saving interest rate equals 3.075% in year 2000/01 and 2001/02. This shows countries' saving interest rate is stable with standard deviation for the sample period of Value of 1.126.

4.2 Test results for OLS assumptions

In this topic the assumptions of ordinary least square like Heteroscedastic test, Autocorrelation test, normality test, multi co linearity test and stability tests are performed.

4.2.1 Heteroscedastic Test

Among the OLS assumptions, the first diagnostic test which is conducted in this study is Heteroscedastic test. This theoretically expressed as by Brooks (2008, p.133) "var (ut) = $\sigma 2 < \infty$; it has been assumed thus far that the variance of the errors is constant, $\sigma 2$ -this is known as the assumption of homoscedasticity. If the errors do not have a constant variance, they are said to be Heteroscedastic." White (1980) as cited by (Brooks, 2008 p. 134) is the most popular test of homoscedasticity.

Table 1.5 Heteroskedasticity test: white

F-statistic	0.553455	Prob. F(8,6)		0.7851
Obs*R-squared	6.369095	Prob. Chi-Square(8)		0.6060
Scaled explained SS	0.793852	Prob. Chi-Square(8)		0.9992
Test Equation:				
Dependent Variable: RESID^2				
Method: Least Squares				
Date: 04/16/15 Time: 13:51				
Sample: 2000 2014				
Included observations: 15				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	9.538205	6.574722	1.450739	0.1970
AGRI^2	-0.001797	0.001288	-1.395652	0.2123
PCI^2	1.03E-08	1.08E-08	0.956346	0.3758
SERV^2	-0.002522	0.001804	-1.398144	0.2116
INDU^2	-0.009061	0.005668	-1.598649	0.1610
INFL^2	-7.12E-05	0.000111	-0.641693	0.5448
IMEXP^2	-1.65E-05	0.000233	-0.071077	0.9456
SIR^2	-0.003028	0.004800	-0.630799	0.5514
FDI^2	8.63E-06	2.19E-05	0.393847	0.7073
R-squared	0.424606	Mean dependent var		0.072394
Adjusted R-squared	-0.342585	S.D. dependent var		0.093534
S.E. of regression	0.108378	Akaike info criterion		-1.322674
Sum squared resid	0.070475	Schwarz criterion		-0.897844
Log likelihood	18.92005	Hannan-Quinn criter.		-1.327199
F-statistic	0.553455	Durbin-Watson stat		2.855556
Prob(F-statistic)	0.785068			

Source: Heteroskedasticity test: white from E-view 7 run by researcher.

From the above table we can observe that, both the F- and $\chi 2$ ('LM') versions of the test statistic give the same conclusion that there is no evidence for the presence of Heteroskedasticity, since the p-values are considerably in excess of 0.05 at 95% confidence interval.

4.2.2 Autocorrelation Test

The second important diagnostic test which is performed in this research is the autocorrelation test. This assumption of OLS theoretically expressed by the numbers of scholars among that Brooks (2008) and Verbeek (2004) founded.

They expressed as; $\text{cov}(u_i, u_j) = 0$, this is another assumption that is made of the CLRM's disturbance terms is that the covariance between the error terms over time is zero. In other words, it is assumed that the errors are uncorrelated with one another. If the errors are not uncorrelated with one another, it would be stated that they are 'auto correlated' or that they are 'serially correlated'. The most common test of this assumption is by using the Durbin–Watson test and the Breusch-Godfrey test (Brooks, 2008, p. 144). As far as concerning this paper the researcher used both the Durbin–Watson test and the Breusch-Godfrey test to detected the problem of autocorrelation.

From the regression output Durbin–Watson test result shows the value of 1.895 approached to 2.0 with zero lagged value and by second option the probability result shows p value of 0.7342 in which null hypothesis was not rejected and the table presented below depicts the fact.

Table 1.6 Serial auto correlation test by Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.123664	Prob. F(1,8)		0.7342
Obs*R-squared	0.228341	Prob. Chi-Square(1)		0.6328
Test Equation:				
Dependent Variable: RESID				
Method: Least Squares				
Date: 06/17/15 Time: 13:59				
Sample: 2000 2014				
Included observations: 15				
Presample missing value lagged residuals set to zero.				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.0256	2.849806	0.008983	0.9931
FDI	-0.000184	0.013662	-0.013501	0.9896
INDU	-0.004265	0.258291	-0.016513	0.9872
INFL	0.002463	0.023463	0.104979	0.919
PCI	-5.39E-07	0.000206	-0.002612	0.998
SIR	-1.78E-05	0.291731	-6.11E-05	1
RESID(-1)	0.132761	0.377527	0.351659	0.7342
R-squared	0.015223	Mean dependent var		-3.98E-15
Adjusted R-squared	-0.72336	S.D. dependent var		0.628851
S.E. of regression	0.825536	Akaike info criterion		2.759157
Sum squared resid	5.45208	Schwarz criterion		3.089581
Log likelihood	-13.69368	Hannan-Quinn criter.		2.755638
F-statistic	0.020611	Durbin-Watson stat		1.895666
Prob(F-statistic)	0.999932			

Source: Serial auto correlation test by Breusch-Godfrey and Serial Correlation LM Test run by the researcher from E-view.

From the first table of output, E-Views offers two versions of the test – an F-version and a $\chi 2$ version, while the second table presents the estimates from the auxiliary regression. The conclusion from both versions of the test in this case is that the null hypothesis of no

autocorrelation should not be rejected since the value of p is greater than 0.05 under two cases at 95% confidence interval.

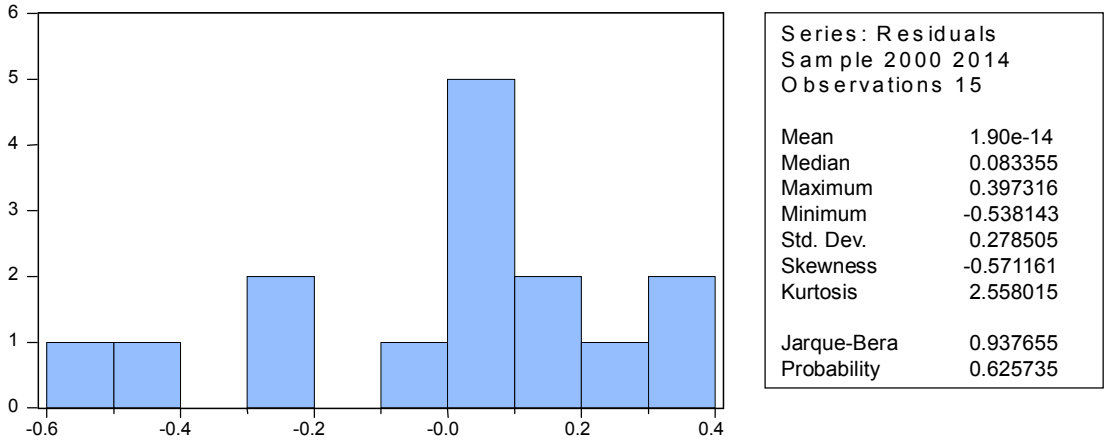
4.2.3 The Normality (Bera-Jarque) Test

Another third important diagnostic test conducted in this paper is the normality assumption (i.e. normally distributed errors). Brooks (2008) stated that the normality assumption '(ut ~ N (0, σ2))' is required in order to conduct single or joint hypothesis tests about the model parameters. One of the most commonly applied tests for normality is the Bera-Jarque (BJ) test. BJ uses the property of a normally distributed random variable that the entire distribution is characterized by the first two moments - the mean and the variance (Brooks, 2008, p.161). In case of this study, the researcher used BJ normality test to test the null hypothesis of normally distributed errors assumptions.

Since, the histogram is bell-shaped and the Bera-Jarque statistic is not significant.

This means that the p-value given at the bottom of the normality test screen should be bigger than 0.05 to fail to reject the null of normality at the 95% significant level So, the residuals are normally distributed but it's not bell shaped negatively skewed and the kurtosis value is 2.55 can be approached to3 in this study, the researcher concluded that there is a no problem of normality.

Figure 1.1 Normality test by Jarque-Bera



Source: Normality test by Jarque-Bera from E-view 7 run by the researcher.

4.2.4 Multi co linearity

The fourth test which is conducted in this study is the multi co linearity test, this help to identify the correlation between explanatory variables and to avoid double effect of independent variable from the model. The next table, described correlation among explanatory variables.
A correlation is a single number that describes the degree of relationship between two variables. In other words, multi co linearity describes the relationship among explanatory variables.

Table 1.7 Correlation matrixes of eight independent variables

	AGRI	FDI	IMEXP	INDU	INFL	PCI	SERV	SIR
AGRI	1.000							
FDI	(0.691)	1.000						
IMEXP	(0.962)	0.673	1.000					
INDU	(0.756)	0.518	0.713	1.000				
INFL	(0.498)	0.490	0.480	0.087	1.000			
PCI	(0.957)	0.710	0.981	0.646	0.480	1.000		
SERV	(0.981)	0.671	0.940	0.617	0.575	0.953	1.000	
SIR	(0.622)	0.447	0.682	0.362	0.363	0.724	0.633	1.000

Source: Multi co linearity test from E-view 7 run by the researcher.

As indicated on the correlation matrix four variable are strongly correlated positively and negatively to each other that is share of agriculture to GDP and trade openness correlated at negative 96.2%, share of agriculture to GDP and per capita income correlated at negative 95.7%, share of agriculture to GDP and share of service to GDP correlated at negative 98.1%, trade openness and per capita income correlated at 98.1%, trade openness and share of service to GDP correlated at 94%, simply from the first column of the result which indicate the presence near multi co linearity problems.

> *"Near multi co linearity is much more likely to occur in practice, and would arise when there was a non-negligible, but not perfect, relationship between two or more of the explanatory variables.*

Problems if near multi co linearity is present but ignored

First, R^2 will be high but the individual coefficients will have high standard errors, so that the regressions 'looks good' as a whole, but the individual variables are not significant. Second, the regression becomes very sensitive to small changes in the specification, so that adding or removing an explanatory variable leads to large changes in the coefficient values or significances of the other variables. Finally, near multi co linearity will thus make confidence intervals for the parameters very wide, and significance tests might therefore give inappropriate conclusions, and so make it difficult to draw sharp inferences." Brooks, 2008, p.*170-172*

Even if, there is relatively high positive and negative correlation existed between the above listed independent variables the there are methods for dealing with the possible existence of near multi co linearity includes Ignore it, if the model is otherwise adequate, i.e. statistically and in terms of each coefficient being of a plausible magnitude and having an appropriate sign, Drop one of the collinear variables , transform the highly correlated variables into a ratio and include only the ratio and not the individual variables in the regression and finally if the problem didn't solved collect more additional data as explained by Brooks, 2008 based on the above theoretical foundation the researcher has taken the following steps.

Step 1 dropped variable called share of service in GDP percentage since it have the highest p value of 0.1159 which is insignificant variable even at 10% significant level from the regression model including all eight variables. Then the correlation matrix explains the existence of correlation among other variables.

Step 2 dropped variable called trade openness measured as import plus export in percentage of GDP since it have the highest p value of 0.2460 which is insignificant variable from the regression model including seven variables. Then the correlation matrix explains the existence of correlation among other variables.

Step 3 dropped variable called share of agriculture in percentage of GDP since there is high correlation with per capita income at 95.6% the p value of agriculture in percentage of GDP is higher than that of per capita with the value of 0.0066.

Finally after these three variables share of service in GDP, trade openness and agriculture in percentage of GDP are dropped the multi co linearity problem avoided totally since there correlation value is below 72.3% as depicted on the table below. Based on the idea of Cooper

and Schindler (2009) and Hailer et al (2006) suggested that multi co linearity problem should be corrected when the correlation extent to be above 0.8 and 0.9 respectively.

Table 1.8 Correlation matrixes of five independent variables

	FDI	INDU	INFL	PCI	SIR
FDI	1.000				
INDU	0.518	1.000			
INFL	0.490	0.087	1.000		
PCI	0.710	0.646	0.480	1.000	
SIR	0.447	0.362	0.363	0.724	1.000

Source: Multi co linearity test from E-view 7 run by the researcher

4.3 Multiple Regression Analysis

This section presents over all the empirical results of the regressions. Table 4.6 shows the results of the regressions considering tax revenue as dependent variable and considering five independent variables based on test of multi co linearity result called, share of Industry in GDP, foreign direct investment, inflation rate, saving interest rate and per capita income.

Table 1.9 multiple variables regression model

TR Model

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	-20.40678	2.706626	-7.539561	0.0000
FDI	-0.02996	0.01297	-2.309922	0.0462**
INDU	2.053667	0.245123	8.378107	0.0000***
INFL	-0.0177	0.021275	-0.831971	0.4269
PCI	0.001848	0.000196	9.430207	0.0000***
SIR	0.31927	0.277164	1.151917	0.279
R-squared = 0.989017		Adjusted R-squared = 0.982916		
S.E. of regression = 0.784316		F-statistic = 162.0931		
Prob(F-statistic) = 0.000000		DW test = 1.754516		

Notes:*,** and *** denotes significance level at 10%, 5% and 1% respectively
Source: multiple variables regression model from E-view 7 run by the researcher.

As shown on table 1.11 the explanatory power of the tax revenue determinants in terms of R^2 is 98.9% this good in time series data as explained by Brook. (2008). as expected, the researcher observes differences in the coefficients and the significance of the variables affecting tax revenue. And therefore, based on the above estimation result, the following estimated regression function is obtained.

Estimated Equation:

TR = C (1) + C (2)*FDI + C (3)*INDU + C (4)*INFL + C (5)*PCI + C (6)*SIR

Substituted Coefficients:

TR = -20.410 - 0.0299*FDI + 2.054*INDU - 0.017*INFL + 0.0012*PCI + 0.319*SIR--------- (2)

Thus, this regression equation can be used to predict the value of the dependent variable based on a set of values for the independent variables. For instance, if all variables are held stationary, on average, an increase in foreign direct investment by registered capital and inflation rate by 1% can reduce the tax revenue to GDP ratio by 2.99% and 1.7% respectively. Similarly, an increase in share of industry to GDP, per capita income and saving interest rate by 1% can increase tax revenue to GDP ratio by 205.24%, 0.12% and 31.9% respectively.

From the above table foreign direct investment has the p value of 0.0462 which is significant at 5%, share of industry in GDP has p value of 0.0000 which is significant at 1% and per capita income is significant has p value of 0.0000 which is significant at 1% while the remaining two variables called inflation rate and saving interest rate are not significant variables even at 10% significant level. Further the detail analysis of each variables and hypothesis results are discussed below.

Foreign Direct investment

As a first variable foreign direct investment to GDP percentage regression result shows negative significant effect on Tax revenue since the result depicts the p value of 0.046 and it's coefficient result shows negative 0.029, the result in case of Ethiopia is not as expected and prior researches like Haider M & A.R Chaudhary (2013) found that foreign direct investment and gross domestic product per person employed have positive and significant effect for on tax revenue. From the result researcher concluded that even if previous researcher didn't support in Ethiopian context foreign direct investment to GDP percentage has negative significant effect on tax revenue at 95% confidence interval. As per researcher point of view investment measured in terms of capital registered in Ethiopia shows an increment in the period covered in the research this result come from incentives given by government like duty free import of raw materials and machineries, low price of lease land, tax holly day from minimum two years to maximum of six years as investment well explained on investment proclamation number 280/2002, investment

regulation number 84/2003 and 270/2012 and related directives issued by Ethiopian investment Agency and Ethiopian Revenue and Customs authority. According to researcher point of view and reviewed documents the outcome of investment impact on tax revenue is not immediate and these tax holly day and duty free incentives affect collection of tax revenue negatively. So that FDI in Ethiopia has negative significant impact on tax revenue in Ethiopia in the period covered under the research. Therefore the null hypothesis will be rejected.

Share industry sector to GDP

As a second variable Industry sector in percentage of GDP in the regression equation has positive and significant in affecting tax revenue at 99% confidence interval, the result depicts the p value of 0.000 and it's coefficient result shows positive 2.05366 as predicted in theory that manufacturing enterprises are typically easier to tax than agriculture since business owners typically keep better books and records. Prior research like Ahmad (2010), Kadir K.(2013), also found the same result as industry share in the GDP has positive impact on tax revenue. Therefore the null hypothesis will be rejected.

Inflation Rate

Inflation from regression result shows that has negative insignificant impact on tax revenue at 90% significant level the result depicts the p value of 0.4269 and its coefficient result shows negative 0.0177. This result supports prior expected sign of the coefficient as found by Ghura (1998) and Madhavi (2008), even if fluctuation in inflation rate was high from its STD the tax revenue performs well. So that the researcher concluded as inflation rate affects tax revenue negatively but statically it's insignificant. Therefore the null hypothesis will be not rejected.

Per capita income

Per capita income has the positive sign which is significant at 99% significant level the result depicts the p value of 0.0000 and its coefficient result shows positive value of 0.001848, the regression result indicating that tax to GDP ratio increase with the increase of per capita income as a measure of economic growth. Normally it is expected to be positive impact of per capita income as economic development, government's ability to collect taxes and citizen's ability to pay will

increase. Ethiopia's tax system is progressive as clearly stated on tax proclamation number 286/2002 means a person who get high income will pay high tax under different tax schedules like personal income tax, rental income tax, business income tax and other incomes so theoretically an increase in per capita income will leads to high tax revenue. This finding supports prior study done by Tanzi (1987) found only the per capita income effect positive and significant by taking the data of only developing countries, Ahsan and Wu (2005) examined the tax share in countries for 1979-2002 and found GDP for developed and GDP per capita has positive and significant relation with tax revenue and in opposite Madhavi (2008) found Inverse of GDP per capita was strongly and negatively correlated with the level of taxation so, the researcher concluded that in Ethiopia case per capita income has positive and significant impact on tax revenue. Therefore the null hypothesis will be rejected.

Saving Interest rate

Saving interest rate from regression result depicts the p value of 0.2790 and its coefficient result shows positive value of 0.319270 which is common in literature because increase in saving interest rate leads to high cost of capital and high companies account payables which brought low direct tax payable to government while its impact on indirect tax may not feasible. Since its coefficient is statistically insignificant, it is not related to tax revenue collection in Ethiopia. Therefore, the null hypothesis will be not rejected.

Based on the above analysis of the variable tested their hypothesis result presented as follow Foreign direct investment has a positive significant relation with tax revenue, There is a significant positive relation between manufacturing sector and tax revenue and there a significant positive relationship between tax revenue and per capita income hypothesis are accepted while the remaining two variables**,** Inflation rate have a negative significant impact on tax revenue and Interest rate has positive significant impact on tax revenue hypothesis are rejected since their p values is above 0.1 at 10% significant level.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

The final chapter of the paper discusses topics about the conclusion driven from the analysis of the study and possible policy recommendations are made.

5.1 Conclusion

Based on the discussion and analysis made in chapter four the researcher concluded its findings as follow.

1. All variables considered as dependent variable called Tax revenue in percentage of GDP and independent variables like share of agriculture in GDP, share of Industry in GDP, share of service in GDP, foreign direct investment, inflation rate, saving interest rate, per capita income and trade openness are explained through descriptive statistics by mean (average value of observations), median, maximum value of observation, minimum value of observation and their respective standard deviations for all variables.

2. Test results for OLS assumptions are Heteroscedastic by white test. From the result researcher concluded that, both the F- and $\chi 2$ ('LM') versions of the test statistic give the same conclusion that there was no evidence for the presence of Heteroskedasticity, since the p-values are considerably in excess of 0.05 at 95% confidence interval. The second important diagnostic test which was performed in this research was the autocorrelation test by using the Durbin–Watson test and the Breusch-Godfrey test from the regression output Durbin–Watson test result shows the value of 1.895 approached to 2.0 with zero lagged value and by second option the result presents the estimates from the auxiliary regression. The conclusion from both versions of the test shows no problem of auto correlation. Another third important diagnostic test that was conducted in this paper was the normality assumption by Bera—Jarque (BJ) test. The result depicts the histogram is bell-shaped and the Bera--Jarque statistic is not significant. So, researcher concluded that residuals are normally distributed but it's not bell shaped negatively skewed and the kurtosis value is 2.55 can be approached to 3 in this study. The fourth test which is

conducted in this study is the multi co linearity test, this help to identify the correlation between explanatory variables and to avoid double effect of independents variable from the model. As indicated on the correlation matrix four variables are strongly correlated positively and negatively to each other those share of agriculture to GDP, trade openness, per capita income and share of service to GDP. Even if, there is relatively high positive and negative correlation existed between the above listed independent variables the researcher ignored this multi co linearity problem by dropped three variable service share to GDP, trade openness and agricultural sector to GDP then the problem was totally avoided since the largest correlation result left was 72.5 which acceptable according to some research papers.

3. The results of the regressions considering tax revenue as dependent variable and considering five independent variables called share of Industry in GDP, foreign direct investment, inflation rate, saving interest rate and per capita income the explanatory power of the tax revenue determinants in terms of ^{R2} is 98.9%. As expected, the researcher observes differences in the coefficients and the significance of the variables affecting tax revenue. From the output foreign direct investment p value of 0.0462 with negative sign of the coefficient, share of industry to GDP p value of 0.0000 with positive sign of the coefficient and per capita income p value variable of 0.000 with positive sign of the coefficient are statically significant at 95%, 99% and 99% confidence interval respectively. While other two variables called inflation rate and saving interest rate are insignificant since their p values are above 0.05.

4. Foreign direct investment to GDP percentage regression result shows negative significant effect on Tax revenue at 95% confidence interval, Industry sector in percentage of GDP in regression equation is positive and significant in affecting tax revenue at 99% confidence interval, as predicted in theory that manufacturing enterprises are typically easier to tax than agriculture since business owners typically keep better books and records, Inflation from regression result shows that negative impact on tax revenue but it's not significant even at 90% confidence interval, Per capita income has the positive sign which is significant at 99% confidence interval, from the regression result indicating

that tax to GDP ratio increase with the increase of income. Finally saving interest rate from regression has the positive sign since its coefficient is statistically insignificant so it is not related to increase the tax revenue collection in Ethiopia.

5. Based on the above analysis of the variable tested their hypothesis result shows Foreign direct investment has a positive significant relation with tax revenue, There is a significant positive relation between manufacturing sector and tax revenue and there a significant positive relationship between tax revenue and per capita income hypothesis are accepted while the remaining two variables**,** Inflation rate have a negative significant impact on tax revenue and Interest rate has positive significant impact on tax revenue hypothesis are rejected since their p values are above 0.1 at 10% significant level.

5.2 Recommendation

Based on the findings of the study, the following recommendations and further research areas are identified:

1. Industry sector in percentage of GDP have positive and significant in affecting tax revenue due to manufacturing enterprises are typically easier to tax than agriculture since business owners typically keep better books of accounts and records, so government plan to register industry growth at fast rate than agriculture should be improved in performing well to higher the percentage share rate that have positive on tax revenue collection.

2. Per capita income has the positive coefficient sign and it significantly affect tax revenue collection, Since Ethiopia's tax system is progressive in nature an increase in per capita will leads to an increment of tax revenue, and so, it's recommended that Ethiopian government perform well in registering high economic development continuously that improve per capita income and life of a citizen lead to better collection of tax revenue that bring better financing government activities.

3. Foreign direct investment has negative impact on tax revenue collection but it significantly affect tax revenue collection this finding didn't support previous studies about impact of FDI on tax since it have positive impact. So, it's recommended for the government if impact of FDI on tax revenue collection researched in further. Sometimes foreign investors exercise activities like transfer pricing, loss declaring and closing the business before tax holly day period elapsed which affect tax revenue collection negatively.

Future research direction

The time period covered under this study is only fifteen years ranging from 1999/00 to 2013/14, due to unavailability of organized data for long period of time. Thus, future researchers could extend this period of time in examining the determinants of tax revenue in Ethiopia over long period of time and considering other independent variables like population characteristics, socio economic characteristics and geographical location if possible regional wise as panel data. The Researcher believes that the research area is uncovered and not sufficiently done in Ethiopia by using model to his knowledge before this paper as a thesis.

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Annex 1: Summary of dependent and independent variable computation result

Year	Tax Revenue/GDP %	Per capita income birr	Agriculture / GDP %	Industry/GDP %	Service / GDP%	(Import & Export) /GDP%	Inflation rate%	Saving Interest rate (average)	Foreign Direct investment/ GDP%
2000	3.01	1,052.00	55	9.7	35.3	7.7	5.4	6	0.071
2001	3.39	1,043.00	56.1	9.5	34.4	7.5	-0.3	3.075	0.041
2002	3.58	959.00	54.4	10.2	35.4	8.4	-10.6	3.075	0.042
2003	3.83	1,068.00	49.7	11	39.3	9.5	10.9	3.08	0.063
2004	4.43	1,228.00	52	11	37	11.3	7.3	3.08	0.087
2005	4.56	1,475.00	52.4	10.7	36.9	14.3	6.1	3.08	0.134
2006	4.7	1,783.00	52	10.5	37.5	16.1	10.6	3.08	0.266
2007	5.17	2,302.00	50	10.5	39.5	16.6	15.8	3.08	0.279
2008	6.4	3,282.00	49.1	10.2	40.7	20.7	25.3	4.08	0.458
2009	7.17	4,318.00	47.3	10.1	42.6	24.7	36.4	4.5	0.592
2010	9.52	4,803.00	46.1	10.2	43.7	29.7	2.8	4.5	0.212
2011	11.65	6,244.00	44.4	10.4	45.2	33.8	18.1	5.38	0.493
2012	15.62	6,100.00	42.9	11.5	45.6	44	34.1	5.38	0.266
2013	19.23	6,600.00	41.8	12.9	45.3	40.9	13.5	5.38	0.201
2014	21.24	7,200.00	39.9	14.2	45.9	46.1	8.1	5.38	0.899

Source: computation made by the researcher based on NBE report, MoFED report and CSA

Annex 2: Summary of tax collected from year 1999/00 to 2013/14

Year	Tax Revenue collection in million birr				
	Total Tax Revenue	Direct Tax revenue'000	Indirect Tax revenue'000		
			Domestic	Foreign	Total
1999/00	5,983.00	2,360.45	1,442.26	2,180.33	3,622.60
2000/01	7,299.70	2,688.02	1,381.07	3,230.64	4,611.71
2001/02	7,831.10	3,013.61	1,539.38	3,278.11	4,817.49
2002/03	8,193.10	2,873.21	1,687.20	3,632.70	5,319.90
2003/04	10,771.00	3,681.30	1,831.20	5,258.50	7,089.70
2004/05	12,398.00	3,930.00	2,721.00	5,746.00	8,467.00
2005/06	14,159.00	4,461.00	3,111.00	6,587.00	9,698.00
2006/07	17,353.09	5,167.93	3,996.50	8,188.66	12,185.16
2007/08	23,802.00	7,016.00	5,093.00	11,693.00	16,786.00
2008/09	28,998.00	9,859.00	7,325.00	11,814.00	19,139.00
2009/10	43,315.00	14,903.00	10,727.00	17,685.00	28,412.00
2010/11	58,980.80	19,549.70	15,705.31	23,725.77	39,431.08
2011/12	85,739.86	28,857.57	23,326.05	33,556.24	56,882.29
2012/13	107,010.31	36,392.64	32,440.34	38,177.32	70,617.66
2013/14	133,118.26	47,020.68	40,498.88	45,598.70	86,097.58

Source: Ethiopian Revenue and Customs Authority

Annex 3: Summary of Import, Export, Foreign Direct Investment (registered capital) and GDP at Constant market price

Year	Import	Export	Foreign Direct Investment	GDP at constant market price
1999/00	11,439	3,958	14,127.00	198,708.00
2000/01	12,314	3,867	8,856.00	215,354.00
2001/02	14,485	3,864	9,190.20	218,594.00
2002/03	16,067	4,142	13,437.90	213,859.00
2003/04	22,296	5,177	21,220.00	243,221.00
2004/05	31,434	7,331	36,463.30	271,799.00
2005/06	39,873	8,685	80,036.30	301,085.00
2006/07	45,126	10,458	93,579.00	335,490.00
2007/08	63,147	13,649	170,378.50	371,571.00
2008/09	84,677	15,218	239,524.80	403,883.00
2009/10	108,956	26,115	96,415.40	455,269.00
2010/11	129,693	44,526	249,469.00	515,079.00
2011/12	191,587	54,495	146,168.00	559,622.00
2012/13	196,871	56,014	112,072.00	618,324.00
2013/14	251,048	62,243	563,600.00	679,766.00

Source: Ethiopian Investment Agency, National Bank of Ethiopia and Ministry of Finance and Economic Development.

Note 1: Value of Aggregate Output, Consumption, Investment and Net Exports at CONSTANT prices (Millions Birr) 2003 EFY base year series.