ADDIS ABABA UNIVERSITY

COLLEGE OF BUSISNESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

FACTORS AFFACTING TAX REVENUE IN ETHIOPIA

By: Minyichel Baye

Advisor: Degefe Duressa (PhD)

A thesis submitted to Addis Ababa University College of Business and Economics Department of Accounting and Finance for Partial Fulfillment of the Requirements for the Degree of Masters of Science (MSC) in Accounting and Finance

June 2017

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Statement of Declaration

I, Minyichel Baye, have carried out a research work on the factors affecting tax collection in Ethiopia independently in partial fulfillment of the requirement of the Masters of Science (MSC) Degree in Accounting and Finance with the guidance and support of the research advisor, Dr. Degefe Duressa.

I, also declare that this thesis is my original work and that all sources of materials used for the thesis have been duly acknowledged.

Declared by:

Name _____

Signature _____

Date _____

Approved by the Board of Examiners:

Advisor: Degefe Duressa (PhD) Signature: _____ Date: _____

Examiner: _____ Signature: _____ Date: _____

Examiner: _____ Signature: _____ Date: _____

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Acronyms and Abbreviations

CSA	Central Statistical Agency
C.I.F	Cost, Insurance and Freight
EPRDF	Ethiopian People‟s Revolutionary Democratic Front
ERCA	Ethiopia Revenue and Custom authority
EIA	Ethiopia Investment Agency
EU	European Union
GDP	Gross Domestic Product
GTP	Growth & Transformation Plan
ICTD	International Centre for Tax and Development
MOFED	Ministry of Finance and Economic Development of Ethiopia
NBE	National Bank of Ethiopia
NLA	National Lottery Administration
OECD	Organization for Economic Co-Operation and Development
Pc	Percent
SPSS	Statistics Package for Social Science
TI	Transparency International
VAT	Value Added Tax

Abstract

The purpose of this paper is to analyze the factors that affect revenues from taxes by the revenue government. The main objective of this study is to explore the factors affecting tax revenue in Ethiopia by using a secondary data and multiple variables regression model. Tax revenue may be affected by various factors such as inflation, unemployment, tax rates, level of actual income exchange rate and foreign direct investment. A number of studies have been done in Ethiopia as far as tax revenue is concerned but still not effective to test all factors thus the study was meant to identify factors affect tax revenue in Ethiopia. The research approaches adopted in this thesis include collections of series data set that consists of seventeen years. The time period covered was 1999/00 to 2015/16. Secondary data were collected, coded and entered into Statistical Package for Social Sciences (SPSS, Version 20.0) for regression analysis. The findings from this research provide evidence that, inflation rate regression result shows negative significant, foreign direct investment in billions of birr shows negative significant, disposal income in billions of birr positive and significant, exchange rate has negative significant, unemployment rate have negative insignificant impact on tax revenue. The main conclusions drawn from this study are inflation rate, foreign direct investment; disposal income and exchange rate have significant impact on tax collection. Unemployment rate is insignificant variables affecting tax revenue. The study also provides recommendations that the policy makers come with policies to control the inflation rate in Ethiopia as it negatively affects tax revenue, the government to take care should be taken when attracting FDI to Ethiopia and it should be directed to more manufacture sectors of the economy; lobby for higher employee salaries since this will further contribute to higher tax revenue and Policies makers should undertake reduce unemployment by improved geographical mobility, stricter benefit requirements, Improve labor and Employment subsidies.

Key words: The amount Tax collection, factor affecting tax collection, time series

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Tax is the charge levied by the government of a country upon its habitants for its support or for the purpose of facilitating the service delivery in a country (Aamir, Qayyum, Nasir, Hussain, Khan and Butt, 2011). It is an enforced payment to the government. Though the major aim of revenue collection for most governments is to motivate and guide the economic and social development of the country, there are several determinants for an effective realization of the exercise. The obvious challenges facing revenue collection can be generalized for most countries (Garner, 1999).

Tax is a compulsory contribution imposed by public authority irrespective of the exact amount of service rendered to the tax payer in return (Saleemi, 2008). Direct tax is when the impact and incidence of the tax is on the same person whereas indirect tax is one in which the impact of the tax is on one person whereas incidence is on the other person. Taxation is meant to meet two major objectives: first to raise revenue that is sufficient for public spending without the government having to borrow heavily in order to finance its activities and secondly to mobilize revenue in equitable manner that is able to minimize its disincentive effects on economic activities (Moyi and Ronge, 2006).

For most developing countries, taxation goes hand-in-hand with economic growth and taxes are lifeblood for governments to deliver essential services and to make long-term investments in public goods (Organization for Economic Co-Operation and Development (OECD, 2008).

Major types of taxes existing in Ethiopia are review; those are divided in to two: namely direct and indirect types of taxes practices in Ethiopia. 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, 2014).

Indirect tax revenue in Ethiopia consists of Turn Over Tax, Excise Tax, Value Added Tax and Customs Duties (Tilahun, 2014).

The Ethiopian Revenues and Customs Authority (ERCA) was established by the proclamation No. 587/2008 on 14 July 2008, by the merger of the Ministry of Revenue, Ethiopian Customs Authority and the Federal Inland Revenue Authority for the purpose of enhancing the mobilization of government revenues, while providing effective tax and Customs administration and sustainability in revenue collection. Generally the main objective of the establishment of ERCA was to make more efficient the public revenue generation function by bringing the relevant agencies under the umbrella of the central revenue collector body.

The Ethiopian Revenues and Customs Authority (ERCA) is the body responsible for collecting revenue from customs duties and domestic taxes. In addition to raising revenue, it is responsible to protect the society from adverse effects of smuggling and contraband. It seizes and takes legal action on the people and vehicles involved in the act of smuggling, any tax evasion and avoidance while it facilitates the legitimate movement of goods and people across the border.

The administration had inefficient system to collect the potential of tax revenue collection who fail due to different factors. The factors have it may be controllable or incontrollable as a result the federal government's revenue also affected. The former administration was also far behind in protecting investors from adverse effects of contraband and illegal practices. The study team believed that it would be better if the all administrations to know the factors which influence in tax collection, forming a committed and powerful organization to increase modern and equitable tax and customs administration system, effective resource utilization and quick service delivery. Presently, the Authority is exercising the powers and duties that were granted to the Ministry of Revenue, the Federal Inland Revenue Authority and the Customs Authority by existing laws. The Addis Ababa City Tax Administration and ERCA have signed a memorandum of understanding in January 2011 to gain support from ERCA. The main objective of the agreement is to enhance the capacity of tax administration of the city to collect its revenue effectively and efficiently.

Objective of the authority:

ERCA has the following objectives:

- ✓ Establish modern revenue assessment and collection system; and render fair, efficient and quality service;
- ✓ Assess, collect and account for all revenues in accordance with tax and customs laws set out in legislation;
- ✓ Equitably enforce the tax and customs laws by preventing and controlling contraband as well as tax fraud and evasion;
- ✓ Collect timely and effectively all the federal and Addis Ababa tax revenues generated by economy and;
- ✓ Provide the necessary support to the regional states with the objective of harmonizing federal and regional tax administration systems.

Tax collection is the process by which government raise revenue from its people. Tax revenue is the income earned by the government through taxation. Tax can be collected by the central government or the government can give license to an agent who can collect on its behalf (Haughton and Desmeules, 2001).

In Ethiopia, tax is administered at federal or central and regional levels. The constitution of Federal Democratic Republic of Ethiopia (FRDE) has separated the tax revenue to be collected by federal government, state or regional government and jointly by the federal and state government.[1] The regional governments of Ethiopia collect taxes and revenue by bureaus of Regional Inland Revenue Authorities from privately own enterprises and organs of regional governments.[2] The central government revenue collection organs are responsible to collect revenues of federal and joint revenues owned by both the central government and regional governments from different organizations including those owned by federal government.[3] The sharing of revenue between the federal government and regional governments take

1 Proclamation No33/1992

2 FDRE Constitution, Article 97

3 FDRE Constitution, Article 96

considerations like; ownership of source of revenue, the regional character of the sources of the revenue, convenience of levying and collection of the tax or duty, population, distribution of wealth, standard of development of each region; and other factors that are basis for integrated and balanced economy.[4]

In its nine month report for the current fiscal year, ERCA reports resounding success with Addis Ababa falling short by over 26pc. ERCA released a near perfect nine month report for 2014/15 fiscal year, in which it bagged in 96pc of the targeted 98.4 billion Br. The ERCA, however, had a less than optimistic report for Addis Ababa, where it had planned to collect 16.7 billion Br, but managed to collect only 12.2 billion Br. However, this lower performance was still 3.09 billion Br better than revenue collected during the same period in the last fiscal year. In its report for the first half year, the ERCA had reported collecting 64.6 billion Br, which was 97.8pc of its planned revenue. In the same period of the last fiscal year, 2013/14, ERCA reported 53.3 billion Br from its projected 60.6 billion Br and 43.7 billion Br during the first half of the 2012/13 fiscal year. The report for Addis Ababa had shown a 25pc shortfall from the target in the first six months and that has now expanded to 26.9pc. "Addis Ababa"s revenue achieved below target results because of the problems in using cash register machines, especially in the services sector," said Fasika Belay, Communication & Promotion deputy director at ERCA. Major contributors to the revenue the Authority collected are inland tax and Customs tariffs while the revenue from the sale of lottery tickets is insignificant, contributing less than one percent. Contribution of inland tax for the nine month"s performance stood at 53.1 billion Br out of the planned 53.4 billion Br. This figure, compared to the last fiscal year, shows a 20.4pc growth, which amounts to nine billion Br. Revenue from the import and export trade, including Customs duties and other taxes has shown a growth of 6.4 billion Br. compared to the same period last year, totaling 41.2 billion Br. against the planned for 44.5 billion Br.

In general most developing countries like Ethiopia; the revenue generated by the government is relatively less than the expenditures spent (NBE,2009). This low revenue yield of taxation can affect by different factors. In tax revenue practice there are internal and external factors which affect the tax revenue amount in Ethiopia.

4 FDRE Constitution, Article 98

Researcher declares that, factors affect in the tax revenue systems from those; this paper focused on: rate of inflation, foreign direct investment, disposal income, exchange rate and unemployment.

1.2 Statement of Research Problem

Revenue collection is very important for every government in the world as it enables the government to acquire assets which are not liable to debt and which the government uses to develop its economy. Tax administration therefore, should aim at improving on laws regarding the registration, assessment, collection revenue, and exploiting fully taxation potential of a country (World Bank, 1991).

The tax system in developing countries imposes high expenses on the society. Low efficiency, high collection charges, waste of time for taxpayers and the staff, and the low amounts of received taxes and the deviation of optimum allocation of resources are some of the features of such systems (Farzbod, 2000).

Taxation in developing countries is a challenging topic and has attracted increasing attention in the last two decades. During this period, many problems observed like poor administration, failing to collect sufficient tax revenues, lack of government and economic stability (Vadde & Gundarapu, 2012). As stated by Vadde and Gundarapu, any developing countries, like Ethiopia, has faced 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 sufficiently long period of time.

The average 2010/11 to 2015/16 Ethiopian Tax Revenue Ratio to GDP is about 12.08. Although tax revenue to GDP showed a slight improvement in 2013/14 that is 12.7 compared to 12.4 in 2012/2013, it still remains low compared to the tax revenue generating capacity of the economy and the financing requirements of the development programs as GTP one target of tax to GDP was 15-17%. Similarly, it is well below the average performances of sub Saharan African countries of about 20% (Kenya 23%, Mauritius 19% and Tanzania 17%), (African Economic Outlook, 2015).

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, economical factors, 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).

Along with the growth in the overall Ethiopian economy, it has been observed that there has been an increased government spending and deficit financing. In principle, government could use both domestic and external sources of finance that a country can tap to finance the deficit. The government collected significant amount of revenue including grants, which could not fully finance the total expenditure. Without grants, the deficit could have been also about significant. This makes the borrowing and grant element of government‟s total expenditure counts too much. Of the external grant that constitute part of government revenue, almost half comes in the form of grants in kind (or earmarked) and the remaining comes in the form of untied cash (IMF, 2006).

Currently the government of Ethiopia is not collecting enough taxes (African Economic Outlook, 2015). The issue is to identify the root problem. Tax revenue and micro economic factors relationship is not well understood due to lack of research in this area, so there is a gap which the researcher is trying to work on by formulating this study. Many studies were conducted in Ethiopia on tax revenue but in all different macroeconomic, social factors are not addressed. Let as show some topic on related to tax in Ethiopia: Tesfaye (2015) determinants of tax revenue in Ethiopia details discussion in empirical study: Asamnew (2013) tax assessment and collection problems of category “A” taxpayers; the information gathered witnessed that there exist inefficiency and insufficient number of tax assessment and collection officers in the Yeka sub city Finance and Economic Development Bureau. Moreover, most taxpayers lack sufficient knowledge of tax assessment and collection procedures. Thus, most of taxpayers do not know why they are paying taxes; what types of taxes are expected from them; and the applicable rules and regulations. Due to this and other factors mentioned in the analysis of this study, negligence, delay in tax payment and evasion are taken by taxpayers as solution to escape from payment of taxes. Belay (2015) on the research title determinants of tax revenue performance, details

discussion in empirical study: Temtime (2014) business Taxpayers‟ Satisfaction with the Tax System in Addis Ababa, Ethiopia. Desta (2010) Assessment of taxpayers‟ voluntary compliance with taxation: Delessa (2014) on the research title tax reforms and tax revenues performance in Ethiopia. Tilahun (2014) “tax compliance behavior in Ethiopia”. Since revenue collection in Ethiopia has not always been as effective as it should be despite a number of studies related to tax issue.

Therefore, it is very important to study factors that affect tax revenue of the country in order to increase government revenue and guarantee economic stability. This study is undertaken to discover factors influence of tax revenue; which is independent variables namely: rate of inflation, foreign direct investment, disposal income, exchange rate and unemployment. On dependent variable which is tax revenue measured by its billions of birr of tax collection. 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 related study in case of developing countries.

1.3 Objective of the study

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 this study is to explore the factors affecting tax revenue in Ethiopia.

1.3.2 Specific objectives

The specific objectives of this study are;

1. To identify the impact of inflation on tax revenue.
2. To measure the effect of foreign direct investment (FDI) on tax revenue.
3. To determine whether level of disposable income/ level of actual income significantly affect the amount of tax collection.
4. To determine the impacts of exchange rates on tax revenue.
5. To check effect of unemployment on tax revenue.

1.4 Research Hypothesis

In line with the above specific objectives the following five hypotheses were tested in line with reviewing the theoretical and empirical support:

H1: Rate of Inflation has a negative significant impact on tax revenue

H2: Foreign direct investment has a positive significant relation with tax revenue

H3: Disposable income has a positive significant influence on the amount of tax collection

H4: Exchange rates has negative significant impact on tax revenue

H5: There is a negative significant relation between unemployment and tax revenue

1.5 Significance of the research

The purpose of this study was to investigate the factors that affect the amount of tax revenue collection. In fact, knowledge of these factors and suggested solutions from the research report will help Ethiopian revenue and costumes authority to strengthen its revenue collection as well as utilization of the revenue collected. In details, the study helps different stake holders for different reasons as listed below:

- ✓ **To the management of Ethiopia revenue and custom authority and policy makers**

This study is intended to help the Ethiopia revenue and custom authority to identify the factors affecting tax revenue. It can also update the ERCA office on the current issues that contribute to the existing gap of estimated and actual tax revenues. The findings of the study may be used by the ERCA office to serve as a benchmark in setting certain standards for improvement on the amount tax collection. The policy makers can use the findings to come up with the policies that will be helpful in revenue mobilization. It will guide on how corrective measures should be taken to improve tax revenue in the ERCA. It will assist to know its strengths, weakness, opportunities, and threats and how to re-define its policy strategy in relation to tax revenue improvement.

- ✓ **Future researchers**

The study stands to benefit future researchers, scholars and academicians who may wish to study in tax collection factors related issues.

1.6 Scope of the study

The study focuses on identifying the factors which affect tax revenue in Ethiopia by taking past seventeen years data from 1999/00-2015/ 2016 based on annual reports. A discussion of the study restricted itself to the discourse of the factors affecting tax revenue addressed in the statement of the problem; five variables were chosen these are rate of inflation, foreign direct investment, disposal income, exchange rate and unemployment. To this end, the study must be understood in its academic discourse only as an educational mouthpiece in the discipline of Accounting and finance. In addition to Software a regression analysis tool was used.

1.7 Limitations of the Study

First, no study or investigation exists without limitation. A time constraint dictated the in-depth discussion of the study. This was due to the fact that, the study was very sensitive, and thus needed much time for discussion.

Secondly, the study was also based on a test of five independent variables namely rate of inflation, foreign direct investment, disposal income, exchange rate and unemployment. There are other factors which might affect tax revenues collection which were not considered in this study. Thus not all the factors were controlled for in the model rather concern only most significant variables from different empirical evidence.

The study was derived from secondary data so unavailability of well-prepared report for some variables under the study is as third limitation. This unavailability of well-prepared report for some variables undertake were by survey different institution. Lastly, the value of R Square become inflated, to reducing the inflated value using adjusted R square after that ignores it‟s value.

1.8 Research structure

This thesis would have five major chapters: those are; The first chapter is structured into eight sections; introduction, back ground of the study, statement of the problem, objective of the study, hypothesis tested, significance of the study, scope of the study, limitation of the study and structure of the study. The second chapter is a review of theoretical literature and empirical evidences on tax revenue in case global studies and empirical evidences on tax revenue in case of Ethiopia, research gap on the literature review and conceptual frameworks the third chapter represents the data and methodology used in the study. The fourth chapter represents discussions of results and it encompasses descriptive statistics analysis, diagnostic assumption tests, multiple regressions result, and hypothesis testing. While, the fifth last chapter of this study represents conclusion and recommendations.

CHAPTER TWO

REVIEW OF LITERATURE

The purpose of this chapter is to review the literature in the area of taxation, tax revenue and factors affecting tax revenue, tax administration, research gap and conceptual framework. The review has four major sections. Section 2.1 presents a review of the theoretical aspects related to the study. This is followed by the empirical literature review in section 2.2. Section 2.3 research gap on the literature review 2.4 conceptual frameworks.

2.1 Theoretical perspectives

The theoretical part of the literature covered topics like definition of taxation, types of tax in Ethiopia, characteristic of a good revenue source and tax system, prospect of tax collection, problem of tax collection, factor affecting tax revenue collection and tax administration related topic.

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 Characteristics of a good revenue source

Characteristics of a good revenue source are very intuitive and have been known for many centuries. Adam Smith (1776), a classic economist, formulated some of these principles in his seminal the wealth of nationwide certainty, simplicity, fairness, and equity. A good revenue source should minimize the costs of compliance by taxpayers as the latter represent a pure waste

to the society being a loss of time and efforts for the taxpayer without any associated gains for the national budget.

In addition to the Smith canons, the modern public finance literature generally recognizes the following principles as commonly acknowledged characteristics of a good revenue source:

Adequate revenue yield: The revenue yielded by local taxes should be adequate. Among others, revenue adequacy should be considered relative to the funding needs of the local government level and relative to the size of the economic base of the local community.

Revenue buoyancy: Overall, revenues should change roughly in proportion to the economic base. This does not mean that Government revenue should follow short-term economic fluctuations. Rather, as the long-term economic development makes taxpayers demand a wider range and a better quality of services from the government, this trend should be matched by increasing yield of the tax system applied to the growing economy.

Equity: Good revenue sources are "'fair" or equitable. Economists consider two dimensions to fairness in a fiscal system:

1. The notion of horizontal equity suggests that taxpayers in similar circumstances should be treated similarly by the tax system. The tax should be fair not only in terms of definition but also application. Thus, for instance, tax assessments should be uniform and comprehensive. A perception of the tax as being "fair" is believed to contribute to the probability of voluntary compliance.

2. In addition to horizontal equity, the tax system should also display vertical equity, or fairness between taxpayers at different rungs on the income ladder.

The determination of what is "fair" is subjective, but at a minimum, most people believe that wealthier tax payers should pay more in taxes. As noted earlier, this principle is known as the "ability to pay" principle. The other notion of vertical equity often considered (particularly at the local level) is the benefits principles. As discussed above, the benefits principle suggests that

taxpayers should pay taxes in (approximate) proportion to the benefits received from public services.

Efficiency: An efficient revenue source minimizes administration and compliance cost, and in particular generates an amount of revenues well above these costs. Good taxes should not give taxpayers incentives to change their behaviors and discourage productive activities in the economy, good taxes should be difficult to avoid and evade.

Politically acceptable: A good revenue source is politically acceptable and sensitive to the historical and institutional framework in a country.

2.1.3 Procedures for Tax Collection

It is expected that people‟s tax payments should be in line with their income and they are required to pay a tax in proportion to their level of income. On the other part of the tax collectors, collection of tax should be time conscious and convenient and the cost of collecting the taxes should not be high to discourage business. Alternatively, this means that the ideal tax system in developing countries should raise essential revenue without excessive government borrowing and should do so without discouraging economic activity and without deviating too much from tax system in other countries (Tanzi, 2001).

Filing returns; taxpayers are required to file returns within specified months of the end of their tax accounting year. The return should be filed in quadruplicate and should contain all the particulars of the taxpayer. All documents respecting taxation should be presented to the tax authority office where the taxpayer has their file. Upon receiving a taxpayer‟s return, the tax authority officers examine the accuracy of the return by determining whether the return is properly completed, whether tax has been properly computed, and whether there are any penalty payments to be made by the taxpayer (Eissa and Jack, 2009).

Another procedure under taken by tax administration is Audit and examination. The role of tax audits and examinations is to check the accuracy of the information that taxpayers provide to tax authorities. The audits range from simple field and desk audits to comprehensive audits (Baurer, 2005). Collection and Enforcement is another procedure in the tax administration. When the

taxpayer has not made payment on the due date, and does not object to the tax assessed, tax authority can enforce payment in a number of ways. The tax administration may bring a suit against the taxpayer or request a person owing or holding money for the taxpayer to pay the money on a specified date or institute distress proceedings against the taxpayer‟s moveable property. In a wider context, the issue of enforcement includes offences committed by the taxpayer, and the penalties for these offences (Mesiku, 2011).

2.1.4 Prospects of tax collection

Adam smith (1776) identified the following prospects of tax collection:

- The administration of tax collection will be strengthened to ensure more efficient tax collection through training of staff, awareness campaigns and computerizations.
- Government should continue to ensure that tariff policy enables our local industries to competitive.
- Specifically aggressive action should be taken to block revenue leakage on light duty goods and bulk items.
- Government should ensure fair tax administration base on the principle of derivation of tax proceeds; it is recommended that the tax law should be enacted.
- VAT has become a veritable source of revenue earning for government and therefore needs to be strengthened and expanded to broaden the tax base and to bring the VAT administration closer to the tax-payers, new local VAT offices should be established all over the state.

2.1.5 Characteristic of good tax system

Jean-Jacque (1998) cited in chinyere (2000) summarized the under listed Characteristic:

- A good tax system should try to accommodate the attitudes and Problem of tax payers.
- It should run in harmony with importance of state objectives.
- A good tax should be flexible enough to move the changing requirement of the state economy.
- Tax system should recognize the basic right of the tax of the tax payer.

- It should also yield adequate revenue for the treasury.

2.1.6 Problems of tax collection

Lawal (1982) cited in Chinyere (2000) posits that the following are problems of tax collection:

- ❖ In adequate staff or manpower to carry out the assignment efficiently and thus has contributed to the low revenue generated for the state.
- ❖ Mismanagement of tax collected: taxes collected were not been utilized for the purpose for which it was collected thus makes tax payers not give out their wealth for the state.
- ❖ Bribery and corruption: in this day, tax collector personal interest has over ride their official interest in the performance of their duties consequently affects revenue generation for the state.
- ❖ Lack of voluntary compliance from tax payers these attitudes of tax payer causes tax avoidance evasion and delinquency.
- ❖ Poor accounting records, must business traders professional do not keep proper records of their income and expenditure.
- ❖ Inadequate facilities: The facilities like motor vehicle, motor cycle to carry out the assignment effectively is inadequate.

2.1.7 Effective factors in the ability of the government in 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, inflation level, compliance level, foreign direct investment, weather condition, revenue outsourcing, ineffective implementation bylaw and other. But in these literatures part considering the study concerned factors, those factors were mentioned below:

1) Enactment of appropriate tax laws;
2) The accessibility of tax bases;
3) Tax rates;
4) The number of tax sources; and
5) The executive expenditures of tax collection.

The ability of the government in tax revenue collection depends not only on structural factors, but also on official factors. In many developing countries, the low level of tax revenues is due to the fact that the tax laws are not carried out properly and perfectly, and this, in turn, results from the inefficiency of the official system and the executive methods of allocation and collection systems (Nikchehreh, 2002).

Money theories declared that inflation has a negative influence on tax revenue. Some of them are: Inflation rise was found to have a negative than positive effect on revenue collection due to decreased economic activities. Inflation increase directly influences the spending behavior of the people, affects the cost of doing business and therefore it should be monitored in order to ensure an effective revenue collection (Joyce, 2014).

Tanzi (1992) found out that inflation has a negative influence on tax revenue, the so called Olivera-Tanzi effect. Reduction in tax revenue value by inflation tends to explain this inverse relationship, since it exists for some tax categories time-lug from imposition period to the effective collection of these taxes. Therefore, by maintaining lower levels of inflation and increasing value of tax revenue theoretically, inflation targeting may reduce a state‟s tax collection.

Inflation is a steady increase in price levels of items and is measured annually (Arnold 2014). Price level is measured in form of index. Anderton (2008) asserts that the main causes of inflation are increased demand and rising costs. Excessive demand in the economy causes demand pull inflation, meaning that too much demand in the economy causes price levels to rise. Rising costs on the other hand lead to cost push inflation. Begs, Fischer and Dornbusch (2008) defines unemployment as rate as the fraction of the labor force without a job.

The study established that FDI increases the general level of productivity and profitability in all sectors of the economy. Thus, an investment environment that encourages FDI is positive since it enhances revenue collection (Joyce, 2014).

Hubbard &O‟Brien, (2008) mention that inflation disturbs the distribution of income and wealth by creating unemployment and lowering economic growth. It creates uncertainty and raises costs of production. Profitability of investment is lowered making it less attractive as a result. This will

in turn lowers tax collection since the government will lose the revenue that would have been generated if the investment were profitable.

Inflation hurts people on fixed incomes, since their purchasing power will fall (Hubbard &O"Brien, 2008). This will in turn lower the tax that will be collected. Anderton (2008) views unemployment as costly to the government because it will lose revenue that would have been collected if these workers had been employed. When employed, employers tend to spend more hence the government is able to collect more revenue from more VAT and excise duties. When citizens are unemployed, government is not able to collect tax (Begs, Fischer and Dornbusch, 2008).

When inflation rises during booms, policy makers often increase tax rates to control inflation. Periods after a fall in recession policy makers usually feel they have an opportunity to improve the economy which is very risky because raising tax rates encourage tax evasion (Lipsey and Chrystal, 2007). Since level of income varies, when level of income is higher, it means the government will collect more income tax and vice versa.

Tax evasion refers to deliberate action by tax payers to avoid tax payment by declaring false income or by claiming allowances and reliefs to which they are not entitled to. This accumulates month after month leading to increase in tax debt (Saleemi, 2008).

According to Kircheler, Kustlunger and Wahl (2008), a high tax rate when tax rates are low is perceived to be unfair to taxpayers and when tax is high, the same level of tax rate could be interpreted as a contribution to the community.

2.1.8 Ability to Pay Theory

Slade K. (1939) came up with the theory of ability to pay which considered tax liability in its true form, compulsory payment to the state without quid pro quo. It does not assume any commercial or semi-commercial relationship between the state and the citizens. According to this theory, a citizen is to pay taxes because they are able and his relative share in the total tax burden is to be determined by his relative paying capacity .This doctrine has been in trend for at least as long as the benefits theory. This theory was bound to be supported by socialist thinkers

because of its conformity with the ideas and concepts of justice and equity. However, the doctrine received an equally strong support from non-socialist thinkers also and became a part of the theory of welfare economics. The basic principle of this theory is that the burden of taxation should be shared by the members of society on the principles of justice and equity and that these principles necessitates that the tax burden is apportioned according to their relative ability to pay theory.

2.1.9 Tax administration

Tax administration refers to the identification of tax liability based on the existing tax law, the assessment of this liability, and the collection, prosecution and penalties imposed on recalcitrant taxpayers. Tax administration, therefore, covers a wide area of study, encompassing aspects such as registration of taxpayers, assessments, returns processing, collection, and audits (Kangave, 2005).

The low revenue yield of taxation can only be attributed to the fact that tax provisions are not properly enforced either on account of the inability of administration to cope with them or on account of straight forward collusion between the tax administration and taxpayers ((World Bank 1999). Since taxes are an involuntary payment for government services (Parameswaran, 2005), taxpayers have a strong inventive to minimize their tax liabilities either through avoidance (legal) or through evasion (illegal). Tax administration, therefore, has to secure compliance with the laws by applying an array of registration, assessment and collection procedures. Based on the discussions so far, the following sub section present the tax administrative issue in detail.

2.1. 10 Efficiency of Tax Administration

The key precondition for efficient tax administration is tax structure with minimizing distortions, strictly tax exemptions and elimination of the differences in tax treatment of particular parts of economy. Badly conceived or unnecessarily complicated tax structure greatly complicates the operating function of the tax administration, while simple and transparent tax structure could affect it in the opposite way. So, the increase of efficiency of the tax administration could be attributed mainly to the simplification of the tax system (Mansfield, 1990). In developing countries, tax administration can be organized respecting the functional principle (collecting,

recording, auditing, and enforcement) according to the type of taxpayers; the type of taxes; and type of enterprises in economy. Tax administration should develop around activities (such as recording or auditing) rather than according to the type of tax and taxpayers. More generally, tax payment needs to be assessed, collected and recorded more efficiently.

2.1.11 Tax administration challenges

The efficiency of a tax system is not determined only by appropriate legal regulation but also by the efficiency and integrity of the tax administration. In many countries, especially in developing countries, small amounts of collected public revenue can be explained by either incapability of the tax administration in realization of its duty, or with some degree of corruption. Regardless of how carefully tax laws have been made, they could not eliminate conflict between tax administration and tax payers. Tax administration with a skilled and responsible staff is almost the most important precondition for realization of "tax potential" of the state. It is generally known that tax laws and tax policy are as good as good is the tax administration (Kaldor, 1980).

Tax administrators face a formidable number of challenges in every country. In many developing countries tax administration reforms are needed simply to achieve macroeconomic stability. In countries with economies in transition there is a need to establish a tax administration that can respond to the demands of a growing market economy and the resulting increase in the number of taxpayers.

Human resource is essential in tax administration. Trained personnel are what actually most developing countries lack and this forced them, for instance, to organize their activities under the existing tax administration structure. During the past decade, diverse developing countries have introduced radical reforms in their collection of taxes. In more than 15 countries, traditional tax departments have been granted the status of semiautonomous revenue authorities, which are designed with a number of autonomy-enhancing features, including self-financing mechanisms, boards of directors with high-ranking public and private sector representatives, and generic personnel systems (Robert, 2003).

All transition countries had a very huge fall of GDP, which, with serious limitation of tax administration, resulted in an alarming revenue gap. Moreover, in all countries, revenues from

taxes collected from big, mostly state firms, declined, and were not replaced with increased taxes collected from private, mostly small enterprise. This has created pressure to increase tax rates and introduce new, very often ad hoc taxes. These diversities, which are called "patches" in the tax system, are to a great extent a result of the inefficiency of the tax administration in collecting the existing taxes (Kornai, 1990).

This situation would lead to a permanent need for new taxes, changes in the tax system and almost never-ending tax reforms. In transition countries income tax is gaining on importance. Taxpayers are not used to this form of taxation and when they are faced with it for the first time; they will obviously regard it as a burden. As Kornai (1990) explained the citizens in these countries are not used to paying taxes at all. The tax administration and bodies which produce political decisions have to foresee the attempts to evade taxes and have to design a tax system that will not question the loyalty of its citizens. Most developing countries continue to face serious problems in developing adequate and responsive tax systems (Richard, 2008). No matter what any country may want to do with its tax system, or what anyone might think it should do from one perspective or another (ethical, political, or developmental), what it does do is always constrained by what it can do. Economic structure, administrative capacity and political institutions all limit the range of tax policy options (IMF, 2006).

Heavy tax distortions in transition economies come from various sources. First, base rates are often high. In transition economies with many fledgling small enterprises and weak tax administration, high tax rates are likely to encourage already widespread tax evasion and participation in informal economy. Second, many countries still rely heavily on payroll taxes to finance social expenditures. If payroll taxes are levied mainly on employers (as is the case in the great number of transitional economies) this can discourage entrepreneurial efforts, disincentive formal hiring and push economic activity underground. Third, and as World Bank estimations as the most important, the many exemptions and special tax rates in parts of the economy often coexist with higher tax rates on other activities, undermine revenue performance, complicate tax administration and distort revenue allocation. The key precondition for efficient tax administration is tax structure with minimizing distortions, strictly tax exemptions and elimination of the differences in tax treatment of particular parts of economy. This will mean extending the VAT to all but a few goods and services (notably export, which should be zero -

rated, and banking and insurance services, where it may be difficult to determine the amount of value added to be taxed).

2.1.12 Administration and enforcement costs

First, a pollution tax may require counting tons of emissions, whereas a design standard simply requires authorities to confirm the use of a particular kind of pollution control equipment. Second, a general principle of taxation is that a tax can readily be imposed upon any market transaction such as the sale of a final good or service, because the invoice can be verified by the other party to the transaction. Problems arise with an environmental tax because the producer enters no market transaction for deforestation, dumping, or emissions. Trees can be cut without any record that they ever existed. Illegal waste can be dumped at midnight. Emissions are self-reported. Without expensive audits, they are relatively easy to hide. Third, however, excise taxes on inputs may be an inexpensive way of regulating polluting processes which use these inputs. The excise duties levied on mineral oils are a case in point; there are a small number of petrol companies, and their activities are tightly controlled and well documented (Fullerton et al., 2007).

2.1.13 Improving Tax Administration

Reaping revenues from tax rate changes (whether up or down) requires effective tax administration. Raising revenues through base expansion requires even better administration. New taxpayers must be identified and brought into the tax net and new collection techniques developed. Such changes take time to implement. The best tax policy in the world is worth little if it cannot be implemented effectively. What can be done to a considerable extent inevitably determines what is done. One cannot assume that whatever policy designers can think up can be implemented or that any administrative problems encountered can be easily and quickly remedied. How a tax system is administered affects its yield, its incidence, and its efficiency. Administration that is unfair and capricious may bring the tax system into disrepute and weaken the legitimacy of state actions. Good tax administration is a difficult task even at the best of times and in the best of places. Conditions in few developing countries match these specifications. How revenue is raised, the effect of revenue-generation effort on social capital, equity, the political fortunes of the government, and the level of economic welfare may be more

important from many perspectives than how much revenue is raised. The private costs of tax compliance as well as the public costs of tax administration must be taken into account. Assessing the relation between administrative effort and revenue outcome is by no means simple: it is important, for example to distinguish the extent to which revenue is attributable to the active intervention of the administration rather than its relatively passive role as the recipient of revenues generated by other features of the system. Improving administrative efforts and outcomes is not impossible but it is neither easy nor quick. (Bagchi, Bird, and Das-Gupta, 1995)

Experience around the world demonstrates that the single most important ingredient required for effective tax administration is clear recognition at high political levels of the importance of the task and willingness to support good administrative practices even if political friends are hurt. Few developing countries have been able to leap this initial hurdle. (Bergman, Marcelo, 2003)

Frequently, urged by international agencies or simply desperate to get more revenues, countries have from time to time launched frantic efforts to corral defaulters or to rope in new victims without hurting politically powerful interests and also usually without providing the time, resources and consistent long-term political support needed to do the job. Such efforts are doomed to failure. Collecting taxes efficiently and effectively without fear or favor is especially difficult in countries that are politically fragile. Without such efforts, however, no viable long-term tax system can be created. If the political will exists, the techniques needed for effective tax administration are not secret: have a clear strategy; keep it simple; treat taxpayers as clients; chase down defaulters; keep a tight check on corruption; and use available technology wisely. Sound use of such IT approaches as withholding, information reporting, web-based client focused interfaces with the private sector, and value chain analysis and monitoring all activities going on all the world in both private and, increasingly public sectors can be enormously effective in reducing corruption, curbing evasion and improving revenue yields. To be effective, however, such technological approaches need to be implemented effectively: new technology to some extent may compensate for common human failings but in the end its successful implementation inevitably depends heavily on the effective utilization of human capacities. In practice, to date technological solutions for tax administration problems in developing countries remain more hopes than realities with a few notable exceptions such as Chile and Singapore.

Nonetheless, increasingly technology appears to offer potentially promising paths to at least partial solutions in many developing countries (Bird, and Zolt, 2007).

In general, the discussions so far focused on the review of the literature on the theoretical aspect of tax revenue collection factors and administration. The following section presents the empirical evidence on tax revenue collection and their problems from the perspective of developing countries, Ethiopia in particular.

2.2 Empirical evidences

2.2.1 Empirical evidences on tax revenue in case Global Studies

Ndyamuhaki (2013) carried out the study on "Factors affecting revenue collections in local government, case study: Isingiro district local government" Makerere University, Uganda. This study identified crucial factors that were; administrative inefficiencies, lack of general sensitization, political interference, corruption, tax evasion, and absence of enough relevant information about taxes, lack of auditing of tax revenue returns and drafts and lack of enough tax education. She concluded that the identified factors influence revenue collection in local government.

The study of Mercy (2013) "Factors Affecting Revenue collection in Local Authorities in Kenya" narrowed on effects of government policies and regulations, local authority information financial and operations management systems, revenue enhancement plans and employee skills on revenue collection. The study concluded that the revenue collectors appreciated the role of information technology in ensuring effective revenue collection however the availability and accessibility was a hindrance to effective LAIFOMS implementation. Among others, the study recommended that the effectiveness of the local Authority Information Financial and Operations Management Systems (LAIFOMS) can be bolstered by increasing tea availability of computers and adding more staff to ensure efficiency in revenue collection.

Fjeldstad, Katera, Msami, and Ngalewa (2010) "Local Government Finances and Financial Management in Tanzania: Empirical evidence of trends 2000-2007". REPOA Special Paper No. 10-2010. Dar es Salaam: Research on Poverty Alleviation (REPOA).This study examined the capacity of local government authorities in Tanzania with respect to financial management and

revenue enhancement, and analyzed trends in financial accountability and efficiency for the period 2000-2006/7. The study covered six councils in Tanzania: Bagamoyo District Council, Ilala Municipal Council, Iringa DC, Kilosa DC, Moshi DC, and Mwanza City Council. Data were collected using a combination of quantitative and qualitative methods, including two rounds of a survey of citizens‟ perceptions in the case councils in 2003 and 2006. The following themes were covered: (a) the degree of fiscal autonomy; (b) methods of revenue collection; (c) financial management, including budgeting, accounting and auditing; (d) transparency in fiscal and financial affairs; and (e) tax compliance and fiscal corruption. Based on evidence collected, the study concluded that the process of decentralization by devolution under the Local Government Reform Programmed has contributed to improving local government capacity for financial management. However, the reforms have reduced the fiscal autonomy of local government authorities. The central government currently contributes the bulk of local government revenues through transfers and still largely determines local budget priorities.

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 of them are mentioned below:

Anware M. (2014) and Tesfaye A. (2015) 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.

Belay Z. (2015) on the research title determinants of tax revenue performance: in case of Ethiopia federal government. This study so investigated the determinants of tax revenue performance in Ethiopia federal government by using time series data from 1992-2013. The variables used were foreign direct investment, public debt, openness, foreign aid, inflation and gross domestic product. The study has employed both descriptive and time

series regression method as well as Eviews software for analysis purpose. The trend of tax collection in Ethiopia is inconsistent, changing up ward and down ward depending up on economic conditions. However, in recent years it shows an incremental in total tax collection but performance of tax collection is decreasing from year to year. As an example, tax revenue was increased staring from 2003, because tax base was added as the form of VAT and also GDP was the main contributor since it has been rapidly increased. The study reveals that growth domestic product, public debt foreign direct investment, and openness, have significant positive relationship with tax revenue performance. But, foreign aid is negatively related to tax revenue performance. The study also provides recommendations that will be solve this problem and added tax revenue performance. Policy implication has been stated in this study for example government should adjust its fiscal policy and investment area should be selected based on their benefit for country.

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.

Tesfaye A. (2015) on the title 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. 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. 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.

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.

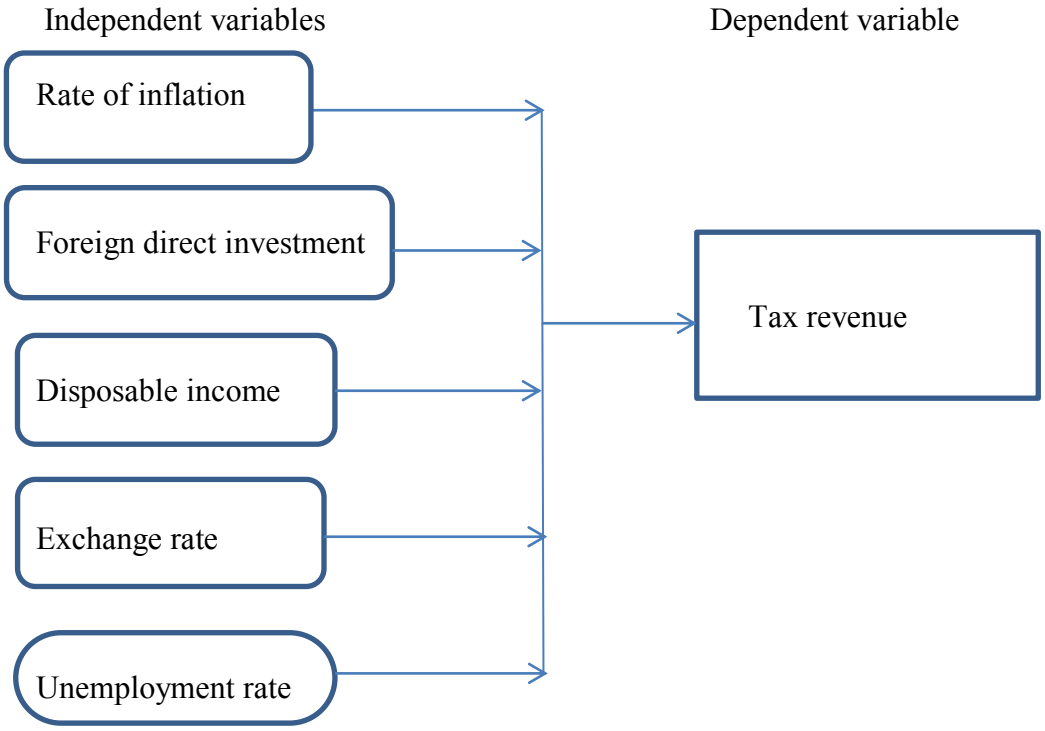
2.3. Research Gap

From the literature examined, studies show inadequacies in the way provides a theoretical analysis of the hindering factors on failure to achieve full potentiality on tax revenue in Ethiopia. The researcher believes that this study fills some gaps in the area of tax revenue factors not tested in the above study for the coming researchers and current policy recommendations in addition fill the literature and addresses the issue in depth by considering relevant to archive full potentiality on tax revenue performance and follow ups as well as conduct awareness on the alternative recommendations can be made to improve the performance of tax revenue. The researcher also feeling that no study has been carried out on the factors (unemployment rate, exchange rate and disposal income) affecting tax revenue in Ethiopia, as this may not be the only factors affecting tax revenue. Therefore a research gap exists that need to be filled by doing a thorough survey on the factors affecting tax revenue in Ethiopia.

2.4 Conceptual Framework

This section summarizes the framework or the model of the study in terms of variables relationships. The main variables of the study are; inflation level, foreign direct investment, disposal income, exchange rate and unemployment. The variables are considered in the study as independent variables which impact on the amount tax revenue in Ethiopia.

Figure 2.1 conceptual Framework



Source: Developed (constructed) by the researcher from different literature

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter involves research design, clearly explaining the data collection procedures and data analysis procedures, model specification and data analysis and interpretation.

3.1 Research Design

This research was based on descriptive explanatory design methods. According to Schindler and Cooper (2003), descriptive methods attempts to define a subject or describe it by creating group problems, people or events profile. Study of descriptive design seeks to explain the factors affect tax collection in Ethiopia. According to Mugenda and Mugenda (2003) descriptive research is the process of collecting data in order to answer questions concerning the current status of the subject in the study. The main advantage of using this design is to enable the researcher to identity the factors and measure their performance. The aim was to gain knowledge on how the tax revenues would be easily collected and increased to enhancement government coffers. Research approaches. To enhance the secondary data type, quantitative research approaches was generally used associated with the positivist/ post positivist paradigm. It usually involves collecting numerical data so that statistical calculations can be made and conclusions drawn (Creswell, 2002).

3.2 Study Population

According to Ngechu (2004), a population is a well-defined or set of people, services, elements, events, group of things or households that are being investigated. The study population in this study involves total tax revenue generated from various tax variables. Tax revenue for various variables is accumulated and recorded within a financial year which makes it easier to study. The justification for considering these variables population is not scattered and can easily be accessed at a center.

3.3 Data Collection Methods

The main source of data was secondary data from different source; those are Central Statistical Agency, Ministry of Finance and Economic Development, National Bank of Ethiopia, Ethiopia investment agency and Ethiopian Revenue and Customs Authority and World Bank. In this case, yearly data from 1999/00-2015/2016 was collected. The yearly data for 17 years period is large enough to cater for the variations in yearly revenues collected over the time. The specific data collected were for the tax collected (dependent variable), rate of inflation, unemployment, tax rates, level of income and foreign direct investment and exchange rate (all independent variables). The reason of selecting secondary data is because the study is based on historical basis.

3.3.1 Data Type and Source

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. The researcher employed secondary data. On the other hand secondary data refers to documents that have been organized before. The study uses quantitative approaches where by all data were measured in a way that gives meaningful numerical results.

3.4 Description of Variables and Measurements

In the proposed study, instruments were employed to measure five continuous independent variables and one continuous dependent variable. These are outlined below:

3.4.1 Dependent Variable

The dependent Variable of this study would be amount tax revenue. Amount 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.

3.4.2 Independent Variable

To measure the predictor variables of factors which affect the tax revenue collection of the Ethiopia revenue authority, five measures were used as independent variables which would be collected from different studies. The variables namely;

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, jeweler and balances in overseas accounts) and/or postponing investment plans (Ghura, 1998).

Foreign direct investment: 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. and Chaudhary, 2013).

Exchange rate: If the exchange rates increases the effect on tax revenue collected from exports reduce because when exporting we pay high on purchase and sell them at lower prices making losses that reduces our tax level. Majority of exporters tend to reduce exports at such time until the dollar gain the value (Omolo, 2012)

Unemployment: The rate of unemployment should be reduced this will mean more people will be employed thus increase level of disposable income and at the end increase tax collection (Gladys, 2016).

Disposable income: The portion of an individual‟s income over which the recipient has complete discretion. An accurate general definition of income is not easy to provide. Income includes wages and salaries, interest and dividend payments from financial assets, and rents and

net profits from businesses. Capital gains on real or financial assets should also be counted as income in most cases, at least insofar as they increase spending power. Such gains may even be counted where the asset is not actually sold and the increase in spending power is not exercised. In addition, receipts not in the form of cash income in kind may be included.

Disposable income involves a further adjustment to exclude obligatory payments in the form of direct taxes, compulsory payments to social-insurance schemes, and the like and to include simple transfers from other persons, institutions, or the government such as social-security benefits, pensions, and alimony. Disposable income, also known as disposable personal income (DPI), is the amount of money that households have available for spending and saving after income taxes have been accounted for. Disposable personal income is often monitored as one of the many key economic indicators used to gauge the overall state of the economy (The Editors of Encyclopedia Britannica).

DPI = Personal Income - Personal Income Taxes Payments

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

Table 3.1 Variable description (independent variable)

S/N	Variable standard name	Description	Variable name in regression model	Expected effect
	ATC factors			
1	Inflation	Inflation rate affects tax revenue	IN	-
2	Foreign Direct Investment	whether foreign direct investment affects tax revenue	FDI	+
3	Disposal income	Disposal income	DI	+
4	Exchange rate	Exchange rate	EXR	-
5	Unemployment	Unemployment	UEM	-

Source: Researcher"s conceptualization (2017)

Therefore, except foreign direct investment and disposal income the other variable were expected to have negative relationship with the performance of tax collection in Ethiopia.

3.4.3 Model specification

This section covers the operational panel fixed regression model (multiple regression models) that was used in the study. The multiple regression model used for this study to determine the factors affecting the tax collection in Ethiopia is explained as follows. The model is adopted from different studies from different developing countries conducted on the related area, such as (Ngotho, 2014 and Dietrich, 2015).

The researcher used series linear regression model and ordinary least square (OLS) estimation method. The characteristics of the model and proposed variables likely not violate the classical assumption underlying the OLS model. Researcher"s rationality to use OLS is to find the line of "best fit", that is, the line that minimizes the total distance between the actual data points and the predicted line (or residuals). Time series data was used from 1999/00-2015/16. The following model has been adopted from Brooks, (2008) p.89.

$$ATC = \alpha + \beta 1IN1 + \beta 2FDI2 + \beta 3DI3 + \beta 4EXR4 + B5UEM5 + \varepsilon$$

Where;

ATC = Amount Tax Collection which was measured using yearly revenue figures for 1999/00-2015/16 available on Ministry of Finance and Economic Development and Ethiopian Revenue and Customs Authority (MOFED, ERCA)

α = Constants

$\beta 1 \ldots \beta 5$ = The slope which represents the degree with which tax collection changes as the independent variable change by one unit variables.

IR1 = Rate of inflation (independent variable) was measured using Consumer Price Index (CPI). The yearly figures for 1999/00-2015/16 are available on Central Statistical Agency (CSA).

FDI2=Foreign Direct Investment (independent variable) yearly figures for 1999/00-2015/16 were retrieved from Ethiopia investment agency (EIA).

DI3 = Level of disposable Income (independent variable) Yearly figures for 1999/00-2015/16 was retrieved from Ministry of Finance and Economic Development (MOFED).

EXR4 = Exchange rate (independent variable) yearly figures for 1999/00-2015/16 was retrieved from National Bank of Ethiopia (NBE).

UEM5 = Unemployment (independent variable) was measured using number of people who are actively looking for a job as a percentage of labor force. The yearly rates for 1999/00-2015/16 were collected from Ministry of Finance and Economic Development website (MOFED).

ε = error term

To test the model‟s strength and relation of macro-economic factors to tax collection, the researcher conducted analysis of variance where the researcher looked at the significant value. F-statistic was also be computed at 95% confidence level and 5% significant level to test whether there was any significant factors and tax revenue.

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

3.5 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 (SPSS) computer programmer software. Data collected from the field is analyzing predominantly quantitative. Interpretation of quantitative data involved organizing information into units, synthesizing, and searched for meaningful patterns and finally gained an understanding, analyze data that will collected through secondary data. 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

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^2 close 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 with R^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 H1, reject H0

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

Reject H1, accept H0

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.

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

This chapter presents analysis, findings and discussions of the study as set out in the research objective and the research methodology. The aim was to establish the factors affecting the amounts of tax revenue in Ethiopia. The data was gathered exclusively from the secondary source which is Ministry of Finance and Economic Development of Ethiopia; National Bank of Ethiopia; Central Statistical Authority and World Bank. 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 are useful for describing the basic features of data. In a research study with large data, these statistics may help us to manage the data and present it in a summary table. Descriptive statistics explains dependent variable tax revenue and five independent variables called Inflation, Foreign direct investment, exchange rate, disposal income and unemployment in terms of mean (is the average and is computed as the summation of all the observed outcomes from the sample divided by the total number of events), median (is the middle value of the total events), maximum observation(the highest value with in the observation), minimum observation (the lowest value with in the 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) and reveals descriptive view about the data set that it consists of 17 observations of each variable in the following table.

Table 4.1 Means, Minimum, Maximum, Standard Deviations and Kurtosis.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Amount of Tax Collection	17	6781.000	165312.470	43085.08765	49878.286480	1.058	1.063
Inflation	17	-10.600	36.400	12.43529	11.891696	.462	1.063
Foreign direct investment	17	10.3000	44254.0000	10210.362941	12612.2131363	1.911	1.063
Disposal income	17	71435.000	1445600.000	491920.85294	488883.874365	-.431	1.063
Exchange rate	17	8.080	21.800	13.23235	5.260258	-1.674	1.063
Unemployment	17	5.200	11.800	7.82353	1.722473	.727	1.063
Valid N (listwise)	17						

Source: Descriptive statistics result from SPSS 20 run by the researcher

From the above statistics result the average performance of tax collection in Millions of Birr from 1999/00-2015/16 period found to be 43085.087 which indicate the overall performance is positive. There were big difference between the maximum total revenue value equals 165312.470 in year 2015/16, and Minimum total revenue percentage equals 6781.000 in year 1999/00, but the standard deviation for the sample period was big enough, Std. dev. Value of 49878.286.

The inflation measured by annual average rate of 1999/00-2015/16 period found to be 12.43% 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 in the year and Minimum inflation rate equals -10.6 in years 2000/01 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 12.43. The mean rate of unemployment between 1999/00 and 2015/16 stood at7.82 % and the standard deviation at 1.72%. FDI‟s mean was $ 10210.36M whereas level of disposable income was $491929.85M. Finally the variable to discuss is Exchange rate stood at around 13.23% annual average rate. The value of the kurtosis statistic in the above tables of tax revenue, Inflation rate, foreign direct investment, disposal income, exchange rate and unemployment rate ware;1.058, 0.426, 1.911, -0.431, -1.674, 0.727 respectively and kurtosis error value of all variables ware 1.063.

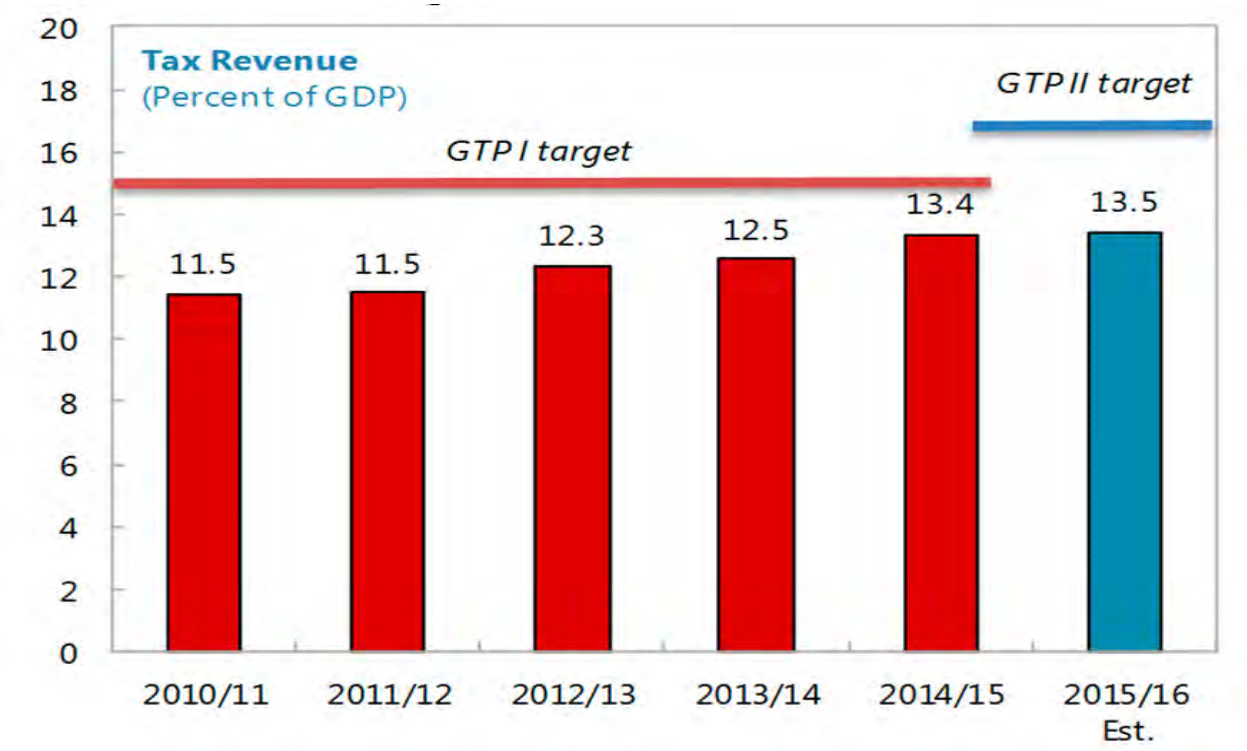
Ethiopia‟s tax revenue collection performance compared to other country tax revenue performance of some African countries is lower total tax revenue in % of GDP (13.37) which mentioned on the table below.

Table 4.2 Tax revenue collected as % of GDP by World Bank

Country	Total tax revenue, % of GDP, 2014
OECD	34.4
Morocco	28.5
South Africa	27.8
Cameroon	16.1
Ethiopia	13.37
Côte d'Ivoire	17.8

Source: world Bank economic indicator

Figure 4.1 Tax revenue collections, GTP‟s targets.



Sources: Ethiopian authorities; IMF staff estimate; World Economic Outlook; and Bloomberg.

From the above table tax revenue collection continues to remain below the ambitious GTP‟s targets.

4.2. Classical linear regression model assumption and diagnostic test

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

4.2.1 Heteroscedastic Test

When heteroscedasticity is present, the cases with larger disturbances have more “pull” than other observations. A more serious problem associated with heteroscedasticity is the fact that the standard errors are biased. Because the standard error is central to conducting significance tests and calculating confidence intervals, biased standard errors lead to incorrect conclusions about the significance of the regression coefficients. Many statistical programs provide an option of

robust standard errors to correct this bias. Weighted least squares regression also addresses this concern but requires a number of additional assumptions. Another approach for dealing with heteroscedasticity is to transform the dependent variable using one of the variance stabilizing transformations. A logarithmic transformation can be applied to highly skewed variables.

In the results p-value of the variables are all not greeter than 0.05 that it indicate that there is symptoms in the present of hetroscsdacity. Because if the value Sig.> 0.05, then there is no problem of heteroscedasticity, To decrease the problems of hetroscsdacity by using a logarithmic transformation can be applied to skewed variables. It useful to examine whether there is a difference in the residual variance of the observation period to another period of observation.

Table 4.3 Heteroscedastic Test logarithmic transformation can be applied

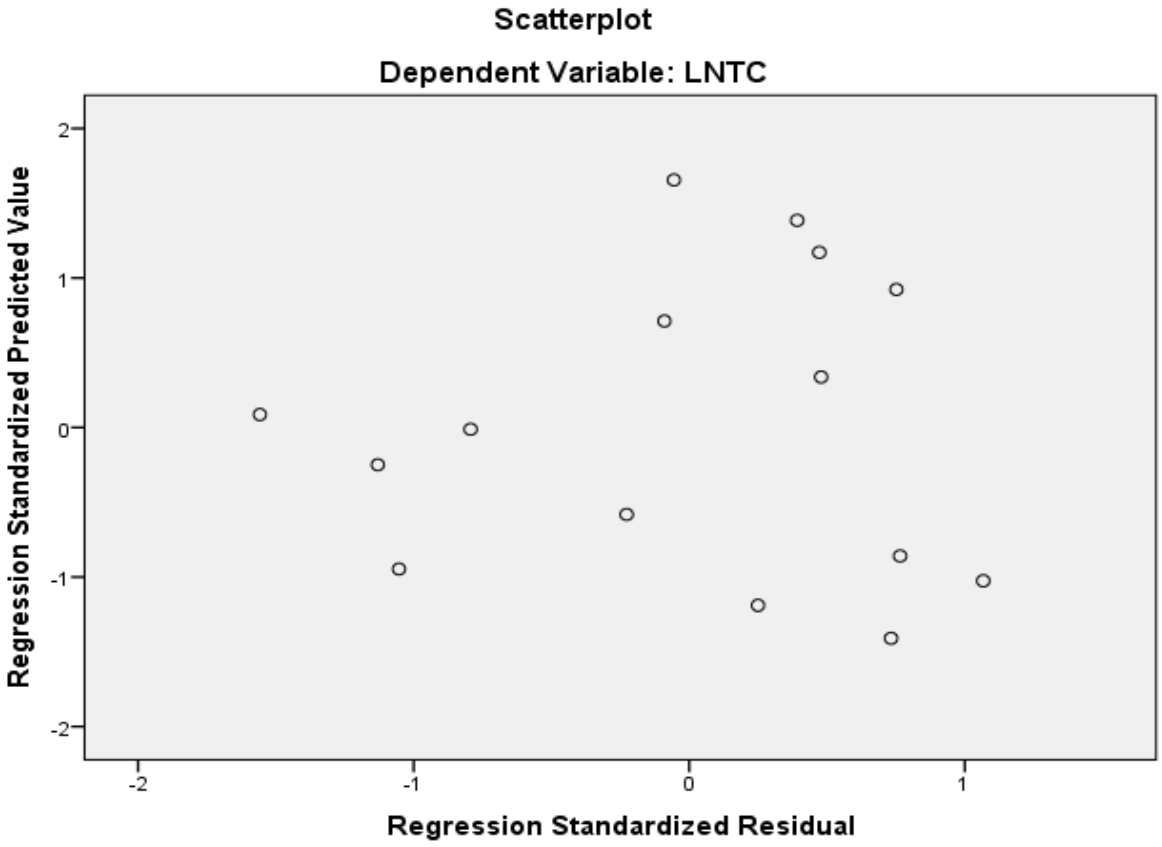
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.751	3.971		-.945	.370
	LNIN	-.017	.087	-.011	-.192	.852
	LNFDI	-.091	.032	.241	-2.818	.060
	LNEXR	-.504	.899	-.179	-.561	.588
	LNUEM	-.407	.573	-.074	-.710	.495
	LNDI	1.321	.429	1.294	3.082	.013

a. Dependent Variable: LNATC

Source: SPSS 20 in Heteroskedasticity test with table

Figure 4.2 Hetroskedasticity glejser test in ln



Source: SPSS 20 in Heteroskedasticity test with scatterplot

If the value Sig.> 0.05, then there is no problem of heteroscedasticity Based on the output coefficients the obtained p value is 0.370, 0 .852, 0.060 0.588 00.495 and 0.013 which indicates that most of p value greater than the 0.05 and in the scatterplot there is no normal distribution of the dot, it can be concluded that there is no hetroscedasticity problem.

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; cov (ui ,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 the Durbin–Watson test and detected the problem of autocorrelation. It can easily check using the Durbin-Watson statistic, which is a simple test to run using SPSS Statistics. The value of Durbin-Watson test statistic, *d*, varies between 0 and 4. Closer to 0 means positive auto-correlation while closer to 4 means a negative auto- A $d = 2$, indicates no auto-correlation. There exist a soft cushion around $d = 2$ where auto-correlation does exist but its intensity is not severe enough to call for some remedial measures. So all *d* values within 1.5 to 2.3 interval may be taken as indicator of either no or ignorable auto-correlation.

Table 4.4 Autocorrelation Test using the Durbin-Watson statistic: logarithmic transformation can be applied

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.992[a]	.984	.975	.17232	1.609

a. Predictors: (Constant), LNUEM, LNIN, LNFDI, LNEXR, LNDI

b. Dependent Variable: LNATC

Source: SPSS 20 Autocorrelation Test using the Durbin-Watson statistic: logarithmic transformation can be applied

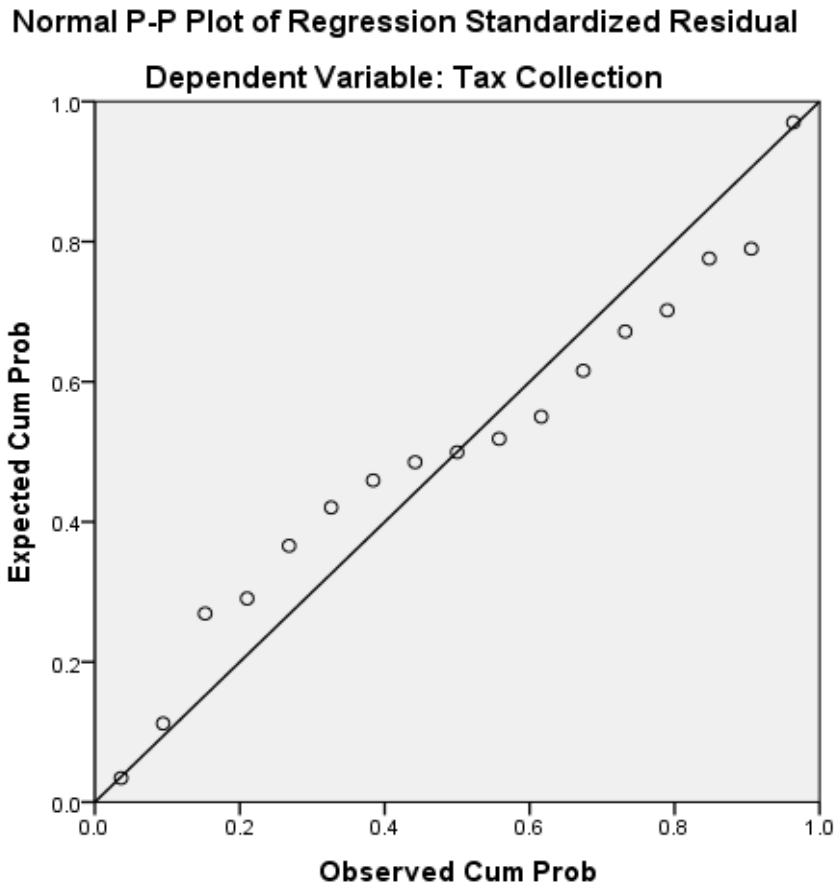
From the regression output Durbin–Watson test result shows the value of 1.609 approached to 2.0. The DW tests show that there is no autocorrelation, because its value is relative to 2.

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). The normality test are shown in the figure below. We can reject the alternative hypothesis and conclude that the data comes from a normal distribution.

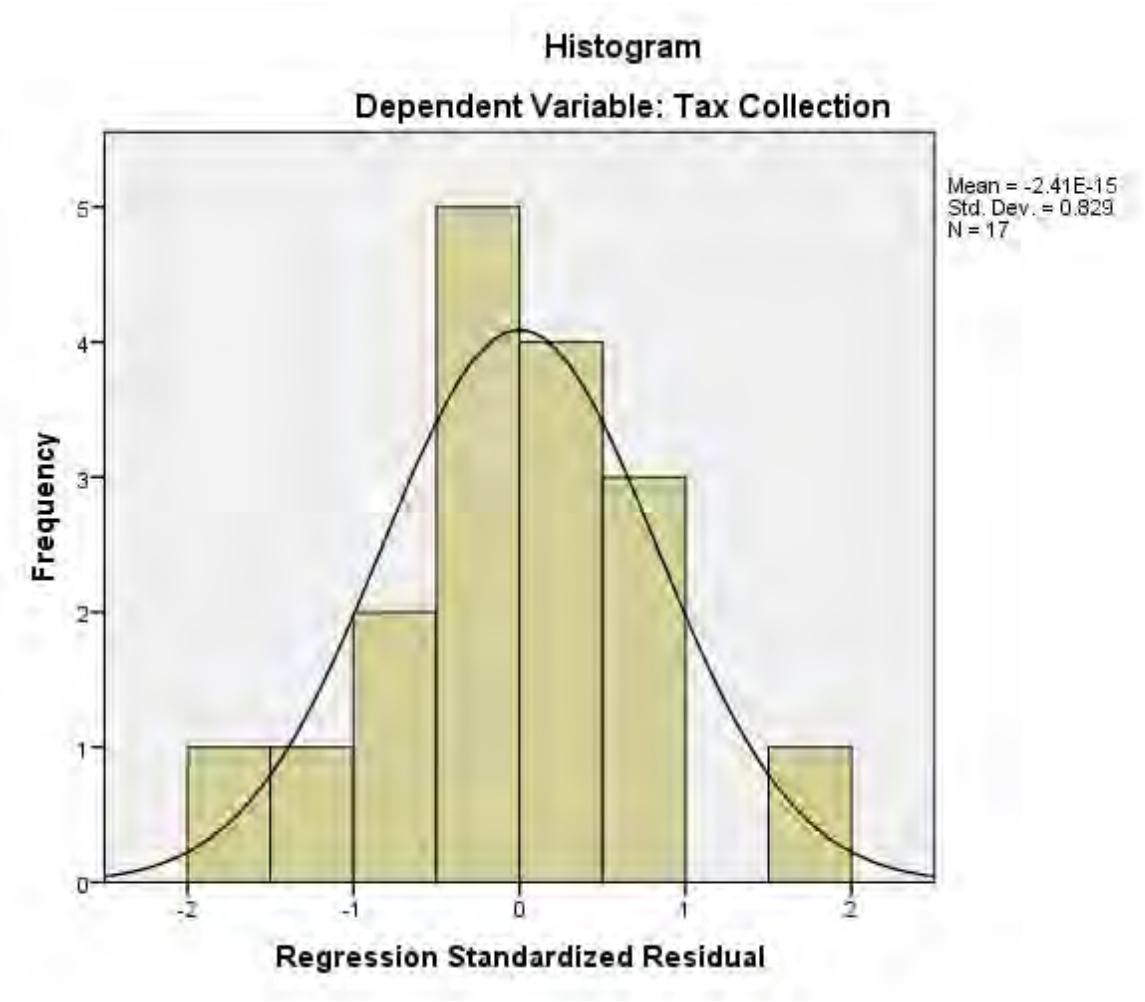
Figure 4.3 Normal P- P plot



Source: Normal P- P plot test from SPSS 20 run by the researcher.

Figure 4.4 Histogram

Histogram of approximately normally distributed data



Source: Histogram test from SPSS 20 run by the researcher.

For the above normal P- P plot and histogram diagram, there is a plot of the residuals versus predicted tax revenue. The pattern show here indicates no problems with the assumption that the residuals are normally distributed at each level of tax collection and constant in variance across levels of tax revenue. Idealized normal curve in order to meet the classical assumptions, the residuals should, roughly, follow this curves shape. Therefore, we can accept that this regression model is normally distributed.

4.2.4 Multicolinearity

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.

To Identify Multicollinearity by examining tolerance and the Variance Inflation Factor (VIF) are two collinearity diagnostic factors that can help you identify multicollinearity. The Variance Inflation Factor (VIF) measures the impact of collinearity among the variables in a regression model. The Variance Inflation Factor (VIF) is 1/Tolerance, it is always greater than or equal to 1. Tolerance is the percentage of the variance in a given predictor that cannot be explained by the other predictors. When the tolerances are close to 0, there is high multicollinearity and the standard error of the regression coefficients will be inflated.

There is no formal Variance Inflation Factor value for determining presence of multicollinearity. Menord (1995) declared that mean values of VIF that exceed 10 are often regarded as indicating multicollinearity. Multicollinearity occurs when two or more predictors in the model are correlated and provide redundant information about the response. Consequences of high multicollinearity: Increased standard error and estimates (decreased reliability) and often confusing and misleading results.

Correlation is number that explains the degree of relationship between two variables. In other explanation, Multicollinearity reveals the relation among the independent variables. As stated on correlation matrix, many of correlations that have occurred among in dependent variables are weak correlations which show nonexistence of Multicollinearity. Even though some high correlation existed between some variables, researcher ignored those near Multicollinearity problems but, not without scholar‟s reason. Cooper and Schindler (2009) and Haileretal (2006) recommended that Multicollinearity problem would be corrected when correlation level to be above 80% and 90% respectively.

Table 4.5 Correlation matrixes of five independent variables

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	25026.313	9816.329		2.549	.027		
Inflation	-259.840	88.177	-.062	-2.947	.013	.784	1.276
Foreign direct investment	-.736	.117	-.186	-6.312	.000	.399	2.509
Disposal income	.146	.007	1.426	20.048	.000	.217	14.613
Exchange rate	-3001.149	658.182	-.317	-4.560	.001	.256	13.909
Unemployment	-392.369	879.400	-.014	-.446	.664	.376	2.662

a. Dependent Variable: Amount Tax Collection

Source: Multi colinearity test from SPSS 20 run by the researcher.

The information in the table above allows us to check for multicollinearity in our multiple linear regression models. Tolerance should be > 0.1 (or VIF < 10) for all variables, which they are. The tolerance valued is the one dived by VIF and also garter than 0.2

According to table 4.5, Variance Inflation Factor (VIF) mean values 6.9938. For the rate of inflation, foreign direct investment, level of disposable income and the rate of unemployment were 1.276, 2.509, 14.613, 13.909 and 2.662 respectively which therefore mean of VIF is not Greeter than 10 which indicate that multicollinearity did not happen since the mean values for the independent variables are between 1 and 10.

4.2.5 Stationary analysis

While working with time series data, testing for stationary is needed. As it has been stated in previous paragraph, working with no stationary leads to spurious output. This means, it indicate a relationship between variable which does not existed. To have reliable result, we have to transform non-stationary to stationary by making it differencing. As the following table reveals, The acronym for an auto-regressive integrated moving average model, the three terms to be estimated in the model are auto-regressive (*p*), integrated (trend *d*), and moving average (*q*) ARIMA (p d q).

Table 4.6 Stationary analysis

Model Description

			Model Type
Model ID	Amount Tax Collection	Model_1	ARIMA(0,0,0)

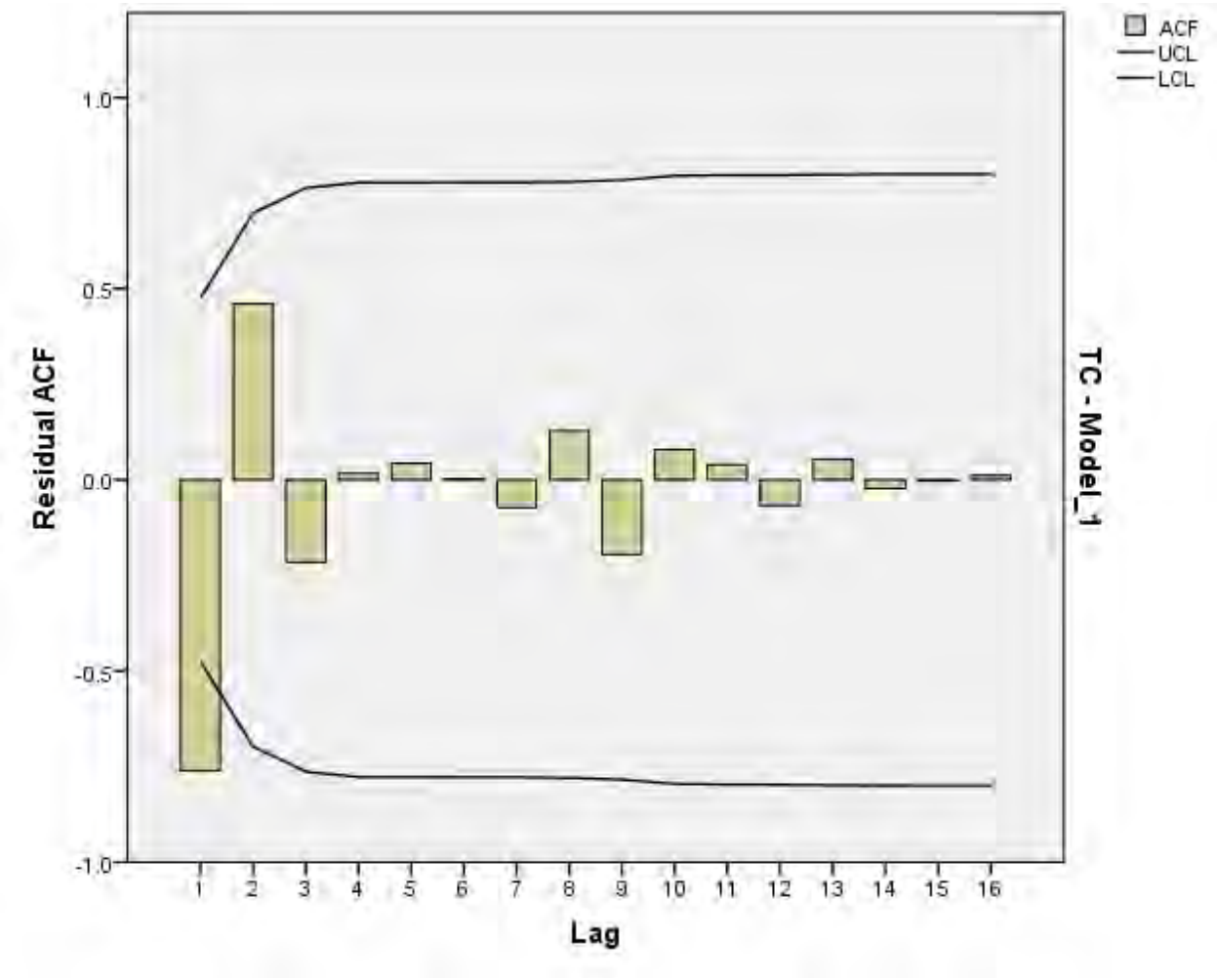
Source: SPSS 20 in Stationary analysis

Differencing the scores is the easiest way to make a non - stationary mean stationary (flat). The number of times you have to difference the scores to make the process stationary determines the value of *d.* If $d = 0$, the model is already stationary and has no trend. When the series is differenced once, $d = 1$ and linear trend is removed. When the difference is then differenced, $d = 2$ and both linear and quadratic trend are removed.

Identification of ARIMA (*p, d, q*) Models

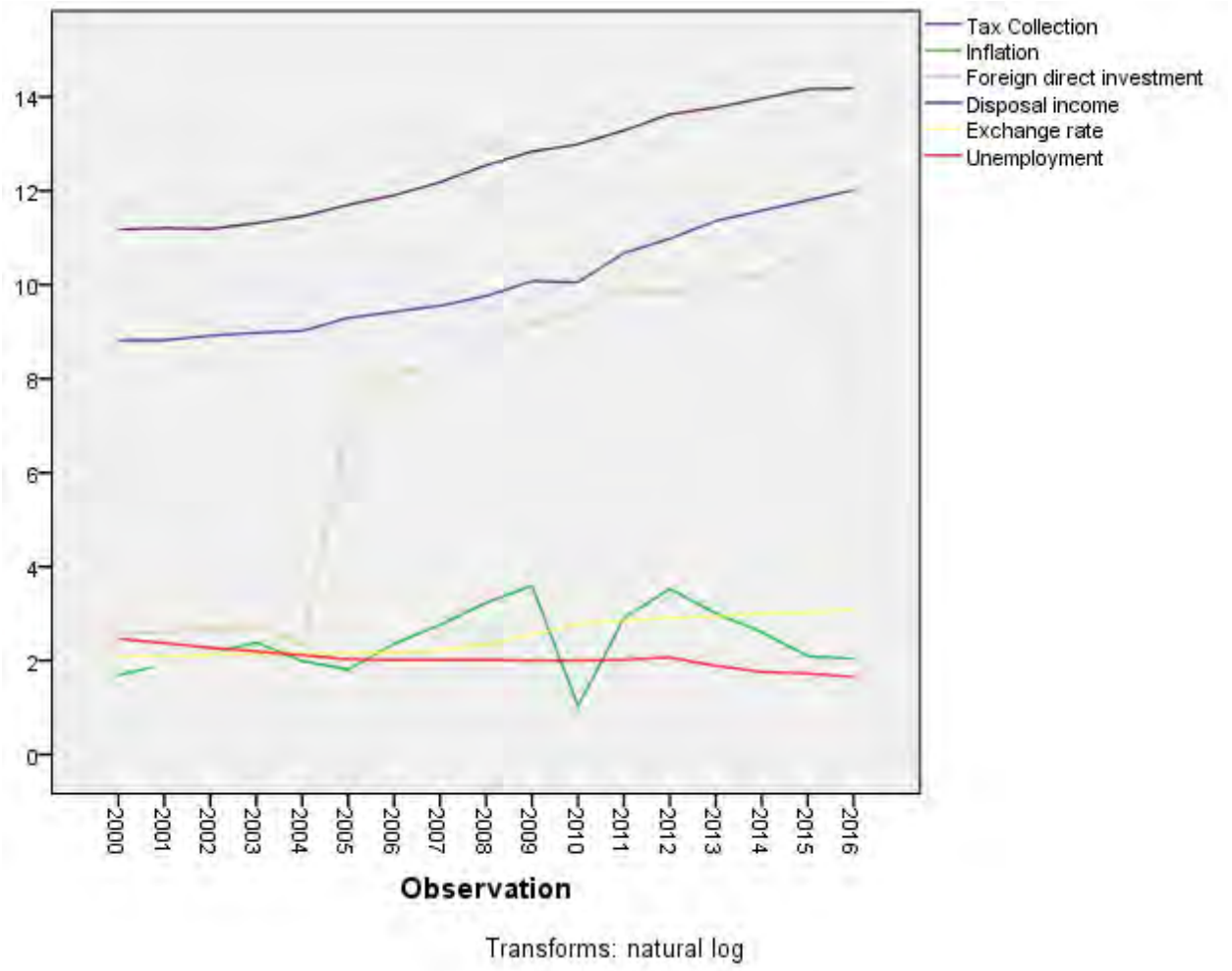
The ARIMA (auto-regressive, integrated, moving average) model of a time series is defined by three terms (*p*, *d, q*). Identification of a time series is the process of finding integer, usually very small (e.g., 0, 1, or 2), values of *p*, *d*, and *q* that model the patterns in the data.

Figure 4.5 Stationary analyses in ACF



Source: SPSS 20 in Stationary analysis with ACF

Figure 4.6 Stationary analyses



Source: SPSS 20 in Stationary analysis

As observed from the above table, the variable that was not stationary at level are stationary at difference. So, all variable became stationary and can be concluded that, there is no stationary problem in this study. Stationary series vary around a constant mean level, neither decreasing nor increasing systematically over time, with constant variance. Non stationary series have systematic trends, such as linear, quadratic, and so on.

4.3. Multiple Regression Analysis

This section presents over all the empirical results of the regressions.

Table 4.7 ANOVA

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	39653817803.251	5	7930763560.650	575.157	.000[b]
	Residual	151677591.757	11	13788871.978		
	Total	39805495395.008	16			

a. Dependent Variable: Amount of Tax Collection

b. Predictors: (Constant), Unemployment, Inflation, Foreign direct investment, Exchange rate, Disposal income

Source: Multiple Regression Analysis (ANOVA) from SPSS 20 run by the researcher.

ANOVA table the significant F value, $F(5, 11) = 575.157$, $p < .01$, indicates that there is a significant relationships between tax revenue and the five predictors.

4.8 Table: Multiple variables regression model

ATC MODEL

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	25026.313	9816.329		2.549	0.027*
	Inflation	-259.840	88.177	-.062	-2.947	0.013*
	Foreign direct investment	-.736	.117	-.186	-6.312	0.000**
	Disposal income	.146	.007	1.426	20.048	0.000**
	Exchange rate	-3001.149	658.182	-.317	-4.560	0.001**
	Unemployment	-392.369	879.400	-.014	-.446	0.664
R-squared = 0.984			Adjusted R-squared = 0.975			
S.E. of regression = 3713.337041			F-statistic = 575.157			
Prob(F-statistic) = 0.000000			DW test using ln = 1.609			

Notes: * and ** denotes significance level at 5% and 1% respectively

Source: multiple variables regression model from SPSS 20 run by the researcher.

4.3.1 Coefficient of Determination

Coefficient of determination or R^2 measures what percentage of a change in the dependent variable can be measured or explained by the change in the independent variables. It is also explains the level of the explanatory power.

If R-squared=0 (no explanatory power)

This means that none of the change in the dependent variable can be measured by the change in the independent variables. The estimated equation is useless.

If R-squared=1(full explanatory power)

This means 100% of the change in the dependent variable can be explained by the change in the independent variables. But, the adjusted R-squared is a modified version of R-squared that has

been adjusted for the number of predictors in the model. The adjusted R-squared increases only if the new term improves the model more than would be expected by chance. It decreases when a predictor improves the model by less than expected by chance.

On this study, both the R-squared and adjusted R-squared look better, Also the coefficient estimates are significant because their p-values are less than 0.05 except one. The results obtained shows that, adjusted R-squared is 0.984. This means that 98.4% change in the dependent variable can be explained by the change in independent variables which show, that there is a linear relationship between tax revenue and inflation of rate, foreign direct investment, and level of disposable income, unemployment rate and exchange rate. However, 1.6% can be explained by other variables. This means that the dependent variable is strongly explained by independent variables. Besides, it also has an accepted higher explanatory power by 98.4%. The adjusted R-squared shows 97.5% that can really explained by explanatory power, this good in time series data as explained by Brook (2008). So it is good to show the effect of independent variable on dependent variable in sample taken, but to show total significance for population, it can explained by F-statistics corresponding P-value. As the above regression table shows, p-value is less than 5% which are very significance for model and for the population inference. By and large the model of this study, looks good since it pass all regression assumption and diagnostic test.

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:

$$Y= \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5+ \varepsilon$$

Substituted Coefficients:

$$ATC = 25026.313 -259.84(IR) - 0.736(FDI) + 0.146(DI) -3001.194(EXR) - 392.369(UEM)$$

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 disposal income by 1% can increase the tax revenue in birr 0.146 billion. An increase in foreign direct investment, inflation rate, exchange rate by one unit can reduce the tax revenue in billions of birr by 0.736, 259.84, 3001.194 and 392.369 respectively. When the values of all coefficients of independent variables are zero, the tax revenue would be 25026.3 billion of birr, thesis actual does not make sense because no zero for all.

4.3.2 Result of Regression Model

From the above table inflation rate p value of 0.013 which is significant at 5%, foreign direct investment in billions of birr has the p value of 0.000 which is significant at 1%, disposal income in billions of birr has p value of 0.0000 which is significant at 1% and exchange rate has p value of 0.001 which is significant at 1% while the remaining one variables called unemployment rate is not significant variables even at 10% significant level. Further the detail analysis of each variables and hypothesis results are discussed below.

Inflation Rate

Inflation from regression result shows that has negative significant impact on tax revenue at 95% significant level the result depicts the p value of 0.013 and its coefficient result shows negative 259.84. But this relationship has raised conflict among different researchers. Example, result supports prior expected sign of the coefficient as found by Tesfaye (2015**),** Gladys (2015), Ghura (1998) and Madhavi (2008). But Belay (2015) relationship between tax revenue and inflation is positively related in Ethiopia. As a result, increasing of inflation resulted in decrease in tax revenue. The regression result revealed, holding the other factors constant, when inflation increase by 1%, tax revenue will reduce by 259.84, because the rise of price in goods and service reduce the purchasing power of each unit of currency can buy, rise inflation has an insidious. Input price are higher, consumer can purchase fewer good, the revenue and profit decline and the economy slows, negatively impacting the standard of living of individual especially those on fixed income. This is attributed to the increase in cost of living associated with the loss of purchasing power of money, which could ultimately reduce real value of tax collected.

Furthermore, tax evasion will increase and informal economy might be expanded, and consumers may switch to spend on items which are less likely to be taxed.

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, jewelry and balances in overseas accounts) and/or postponing investment plans (Ghura, 1998). So that the researcher concluded as inflation rate affects tax revenue negatively and statically it‟s significant, since the null hypothesis is failed to reject at 5% significant level.

Foreign Direct investment

Foreign direct investment in billions of birr regression result shows negative significant effect on Tax revenue since the result depicts the p value of 0.000 and it‟s coefficient result shows negative 0.736. From the result researcher concluded that previous researcher support in Ethiopian context foreign direct investment to billions of birr has negative significant effect on tax revenue at 99% confidence interval. This relationship has also raised conflict among different researchers. Example, Tesfaye (2015**),** foreign direct investment to GDP percentage regression result shows negative significant effect on Tax revenue, but Belay (2015) shows the relationship between tax revenue and foreign direct investment is positively related and statically significant. From the results gotten, it shows that, holding other factors constant, when FDI increase by 1%, tax revenue will reduce by 0.736. 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. This hypothesis is failed to reject by the study at 1% significance level

Disposable income

The result above revealed that tax revenue and disposal income (Level of actual income) has positive relationship. This also indicted under the study of Gladys (2016). From a result obtained, it disclosed that holding other factors constant, when level of actual income increase by 1%, tax revenue will increase by 0.146 and statistical significant at 1%. From the result researcher concluded that even if previous researcher didn‟t done in Ethiopian context disposal income in billions of birr has positive significant effect on tax revenue at 99% confidence interval. As per researcher point of view the ability to pay theory states that the more you earn the more you are taxed and the reverse is true. According to researcher point of view and reviewed documents the outcome: Ethiopian theory of taxation argues that high level progressive taxation is necessary and that low actual level of income lead to reduced state revenues and as a result contributes to economic instability. Therefore, the null hypothesis is failed to reject at 1% significant level. Our findings support this theory in the sense that the relationship between tax revenue and the level of disposable income is positive, which means people who earn more contributes more to taxation as opposed to those who earn less

The exchange Rates

Exchange rates measure the growth of the economy. Most countries including Ethiopia use the US dollar as the main standard converter of wealth of a given country. Whenever there is increase in the dollar, the shilling loses its value resulting to depreciation of a shilling. The country whose currency is losing its value against a dollar stands a chance of losing tax revenue collected. As current study shows the relationship between tax revenue and exchange rate is negatively related and statically significant. This also indicated by Omolo (2012), Who examined the effect of exchange rate on tax revenue collection; if the exchange rates increases the effect on

tax revenue collected from exports reduce because when exporting we pay high on purchase and sell them at lower prices making losses that reduces our tax level. Majority of exporters tend to reduce exports at such time until the dollar gain the value. The regression result revealed that holding other factors constant, when inflation increase by 1%, tax revenue will decrease by 3001.194. Considering the analysis this variable is reliable for the growth of tax revenue and growth of economy at large. Morley (1992) analyzed the effect of real exchange rates on output for twenty-eight devaluation experiences in developing countries using a regression framework. After the introduction of controls for factors that could simultaneously induce devaluation and reduce output including terms of trade, import growth, the money supply, and the fiscal balance, he observed that depreciation of the level of the real exchange rate reduced the output. In the study of London (1989) to examined money supply and exchange rate, in the inflationary process of twenty three Africa countries. The application of pure monetarist model on supply, expected inflation and real income were significant determinants of inflation for the period between 1974 and 1985. Exchange rate was later included as one of the explanatory variables in pure monetarist model. The result shows that exchange rate movement had remarkable influence on the tax revenue collection. The study failed to reject this hypothesis at 1% significant level.

Unemployment rate

Unemployment rate 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 392.369. This result supports prior expected sign of the coefficient as found by Gladys (2016)**.** The consequence of unemployment loss of tax revenue, A fall in income results in a fall in both direct and indirect taxes , why direct tax come from the wages, while indirect tax come from product those wages would have been spent on. As result government must either raise level of tax existing wage earners, or reduce government spending (or borrow, which is unpopular but not necessarily always a bad idea). From the result, researcher concluded that even if previous researcher didn‟t done in Ethiopian context disposal income in billions of birr has negative insignificant effect on tax revenue. As they are not able to spend as much money on goods and service and inequality in wealth income and increase negative social effects. So that the researcher concluded as unemployment rate affects tax revenue negatively and statically it‟s insignificant, since the null hypothesis is to reject at 10% significant level.

4.4. Summary of Findings

From the above discussion, the author as stated the following summarized finding: those are as the above finding revealed, tax revenue and inflation has negative relationship in Ethiopian. This is because the rise in price of goods and service reduce the purchasing power of each unit of currency can buy, rise inflation has an insidious. Input price are higher, consumer can purchase fewer good, the revenue and profit decline and the economy slows, negatively impacting the standard of living of individual especially those on fixed income. This is attributed to the increase in cost of living associated with the loss of purchasing power of money, which could ultimately reduce real value of tax collected. As a result, tax revenue collection decrease as inflation increased in Ethiopia.

Foreign direct investment has negative relationship with tax revenue in Ethiopia as the study explained. With this, tax revenue collection increased as foreign direct investment decrease in Ethiopia. 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.

Disposal income (actual personal income) has highly positive relationship with tax collection in Ethiopia and this lead to increment of tax revenue collection for the country. It has been supported by different scholars as it has such relationship.

The finding also explained that exchange rate has negative relationship with tax revenue in Ethiopia, but this has many conflicting result among scholars, many said positive relationship and other negative relationship.

The finally finding of this study has been ended with explanation of inflation effect on tax revenue in Ethiopia. The study also revealed unemployment has negative relationship with tax revenue. So, as unemployment increase tax revenue collection reduce for country.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

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

5.1. Conclusions

The objective of this study is to investigate factors affecting tax revenue in Ethiopia. In this study quantitative research method has been used and Time series regression analysis is has been used.

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

All variables considered as dependent variable called tax revenue in billions of birr and independent variables like rate of inflation, foreign direct investment, exchange rate, disposal income and unemployment rate 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.

Test results for OLS assumptions are Heteroscedastic by Gleiser test. Interpretation of test result output Glejser based on the output coefficients the obtained ln value of Sig (p-value). From the result researcher concluded that, 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 from the regression. Autocorrelation test using the Durbin-Watson statistic: logarithmic transformation can be applied the result is 1.609**.** The conclusion from the test shows there is the 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 normal P-P plot distribution generally normal and the dot following the diagonal line. Fourth test which is conducted in this study is the multicolinearity test, this help to determine whether there is similarity between independent variable and to avoid double effect of independents variable from the model. Test of multicollinearty as a basis on VIF value of

multicollinearity test result using SPSS. As indicated on the correlation matrix output collinearly mean value of VIF obtained between1 to 10, it can be conclude that there is no multicollinearty symptom. The last important diagnostic test performed in this research was the Stationary series. All variable became stationary and can be concluded that, there is no stationary problem in this study. Stationary series vary around a constant mean level, neither decreasing nor increasing systematically over time, with constant variance. Non stationary series have systematic trends, such as linear, quadratic, and so on.

According to the analysis conducted to the conclusion that the increasing revenue of tax in Ethiopia is directly related to the rate of inflation, foreign direct investment, disposal income, exchange rate and with the unemployment rate. The results of the regressions considering tax revenue as dependent variable and considering five independent variables called rate of inflation, FDI, rate of unemployment, exchange rate and level of disposable income. The explanatory power of the tax revenue in terms of 0.975 which shows, that there is a linear relationship between tax revenue and inflation of rate, foreign direct investment, level of disposable income, unemployment rate and exchange rate with all these factors affect for 97.5% differences in total tax revenue per year. The remaining 2.5 % could be due to other factors not included in this study. The standard error of estimation 3713.337 is a bit high which can be due to multiple data sources

As expected, the researcher observes differences in the coefficients and the significance of the variables affecting tax revenue. From the output inflation rate p or Sig value of 0.013 with negative sign of the coefficient, foreign direct investment p value of 0.000 with negative sign of the coefficient, disposal income p value of 0.0000 with positive sign of the coefficient exchange rate 0.001 with negative sign of the coefficient and unemployment rate p value of 0.664 with negative sign of the coefficient. This is shown in the regression equation below.

ATC = 25026.313 -259.84(IR) - 0.736(FDI) + 0.146(DI) -3001.194(EXR) -392.369(UEM)

Inflation from regression result shows that negative impact on tax revenue and significant at 95% confidence interval, foreign direct investment in billions of birr regression result shows negative significant effect on tax revenue at 99% confidence interval, disposal income in billions

of birr regression equation is positive and significant in affecting tax revenue at 99% confidence interval, from the regression result indicating that tax revenue increase with the increase of income, exchange rate result shows that negative impact on tax revenue and significant at 95% confidence interval. Finally unemployment rate from regression has the negative sign since its coefficient is statistically insignificant so it is not related to increase the tax revenue collection in Ethiopia. However from the findings, there is linear increase of tax revenue and rate of unemployment over the years which can be attributed over the years to increasing number of unutilized labor force.

5.2 Recommendations

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

- The study recommends that the policy makers come with policies to control the inflation rate in Ethiopia as it negatively affects tax revenue by Ethiopia revenue and custom authority. One popular method of controlling inflation is through contractionary monetary policy. There are three main ways to carry out a contractionary policy.
  A. The first is to increase interest rates through the Federal Reserve.
  B. The second method is to increase reserve requirements on the amount of money banks are legally required to keep on hand covering withdrawals. Higher income tax and/or lower government spending will reduce aggregate demand, leading to lower growth and less demand pull inflation.
  C. The third method is to directly or indirectly reduce the money supply by enacting policies that encourage reduction of the money supply. This aim to increase long-term competitiveness, e.g. privatization and deregulation may help reduce costs of business, leading to lower inflation.

- Government (ERCA) and policy makers should work to evaluate tax incentives for FDI as well as domestic investment attraction are a more than they did before. But care should be taken when attracting FDI to Ethiopia and it should be directed to more manufacture sectors of the economy. Predominantly, this investment should be able to create jobs

opportunity, develop local skilled labor and encourage and transfer new technology. If those are applied, the government can generate high amount of tax revenue from the activities of the foreign investors.

- Disposal 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 actual income will leads to an increment of tax revenue, and so, it‟s recommended that Ethiopian government perform well in economic development continuously that improve disposal income or actual income and life of a citizen lead to better collection of tax revenue that bring better financing government activities.
- The government responsible for tax collection in Ethiopia should come up with tax controlling systems to ensure a fixed exchange rate to prevent depreciation of the domestic currency against other major currencies. Such measures would also help control inflation levels.
- The rate of unemployment should be reduced this will mean more people will be employed thus increase level of disposable income and at the end increase the amount of tax revenue. The government should lobby for higher employee salaries since this will further contribute to higher tax revenue collection. Policies makers should undertake reduce unemployment by using the following activity; improved geographical mobility, stricter benefit requirements, improves labor and employment subsidies.

5.3 Suggestions for Further Research

The author suggest that for future research on this work, other researchers can expand the study period and include other macroeconomic as well as social variables such as corruption, public awareness, corruption expenditure, administrative issues and so on should be seen by some one that were not considered in this model. Among others since the ones mentioned in the study are not the only factors affecting tax collection. Also key to note is that, the study has focused on overall tax revenue therefore leaving gap for future research by focusing on specific type of taxes like VAT, income tax and excise duty among others. This can help improve tax revenue generation for national development.

Future studies should widen the research period in order to have a longer time series data which can give more reliable results than the seventy year period used in this study. This can be done by focusing on a period from independence 1999/00 to a 2015/16.

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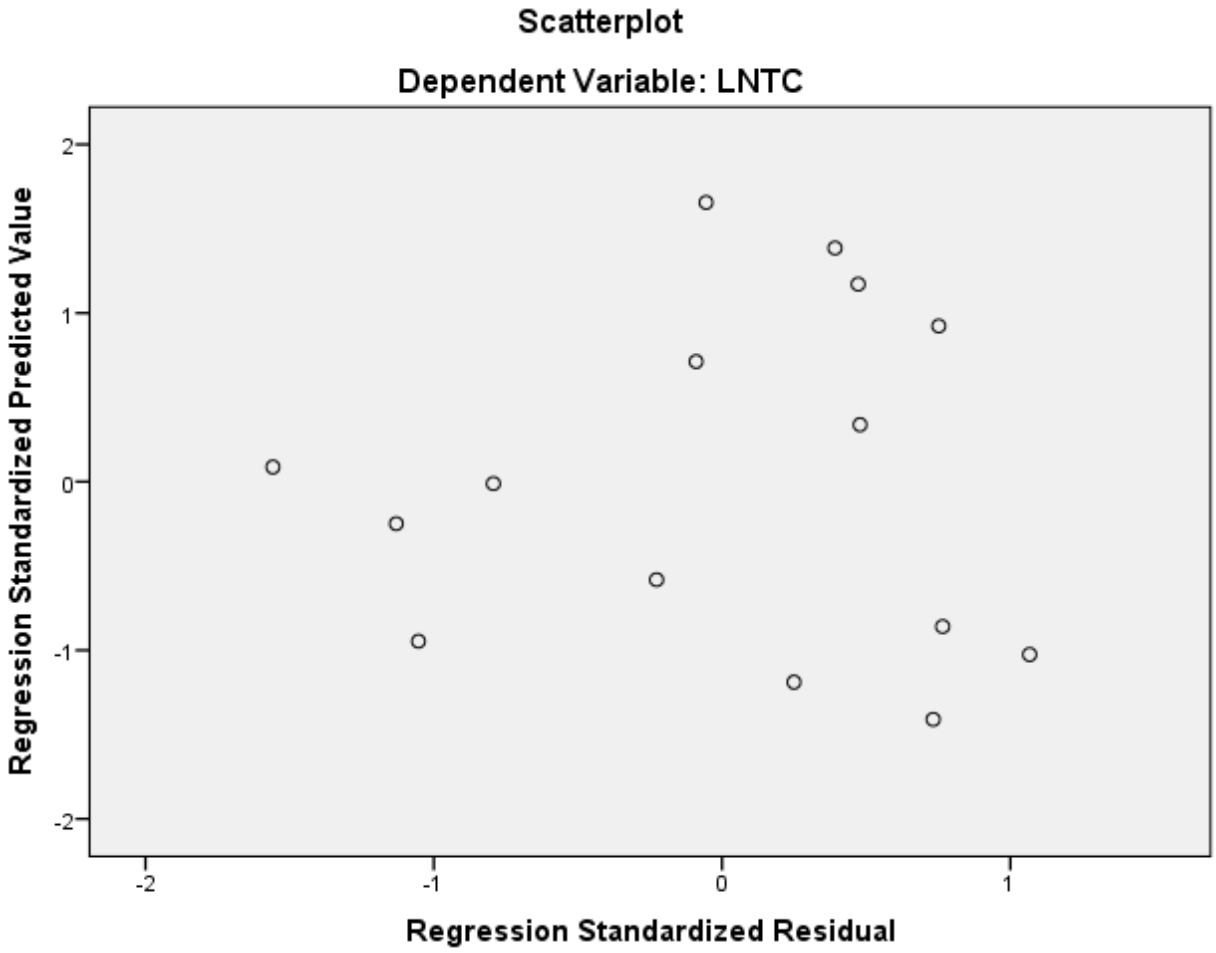
APPENDIXCES: Diagnostic Test Results

Heteroscedastic Test logarithmic transformation can be applied

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.751	3.971		-.945	.370
	LNIN	-.017	.087	-.011	-.192	.852
	LNFDI	-.091	.032	.241	-2.818	.060
	LNEXR	-.504	.899	-.179	-.561	.588
	LNUEM	-.407	.573	-.074	-.710	.495
	LNDI	1.321	.429	1.294	3.082	.013

a. Dependent Variable: LNTC



Source: Heteroscedastic Test

Autocorrelation Test using the Durbin-Watson statistic: logarithmic transformation can be applied

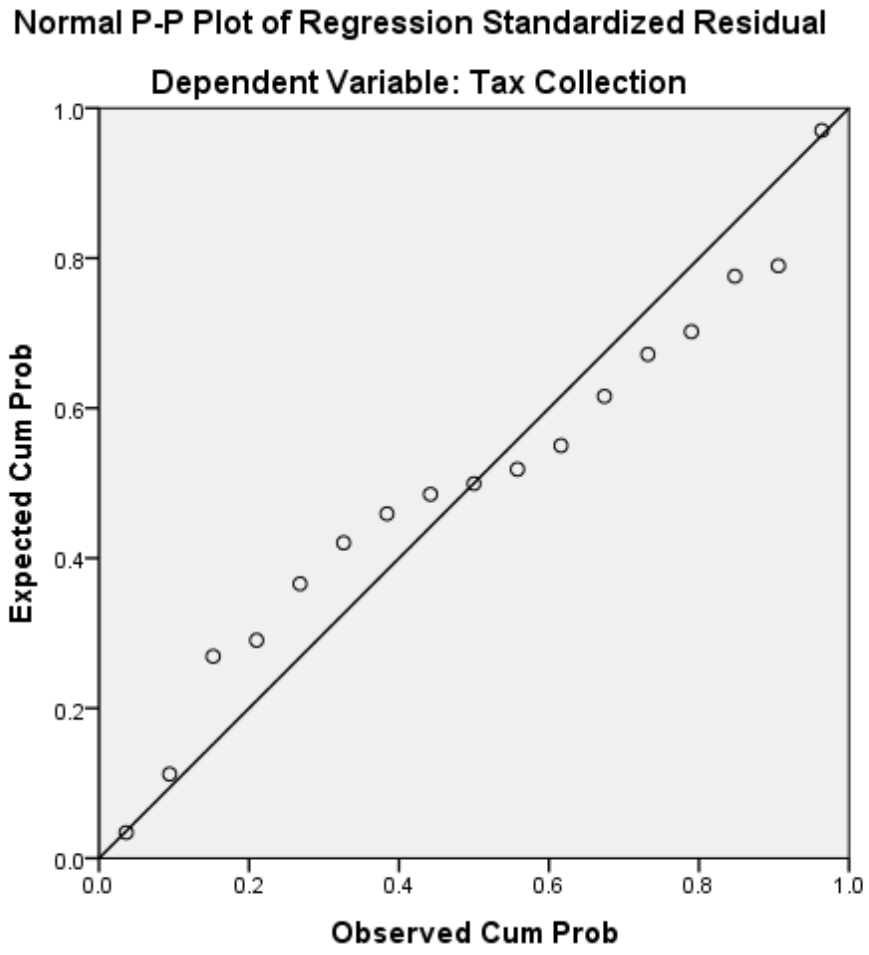
Model Summary[b]

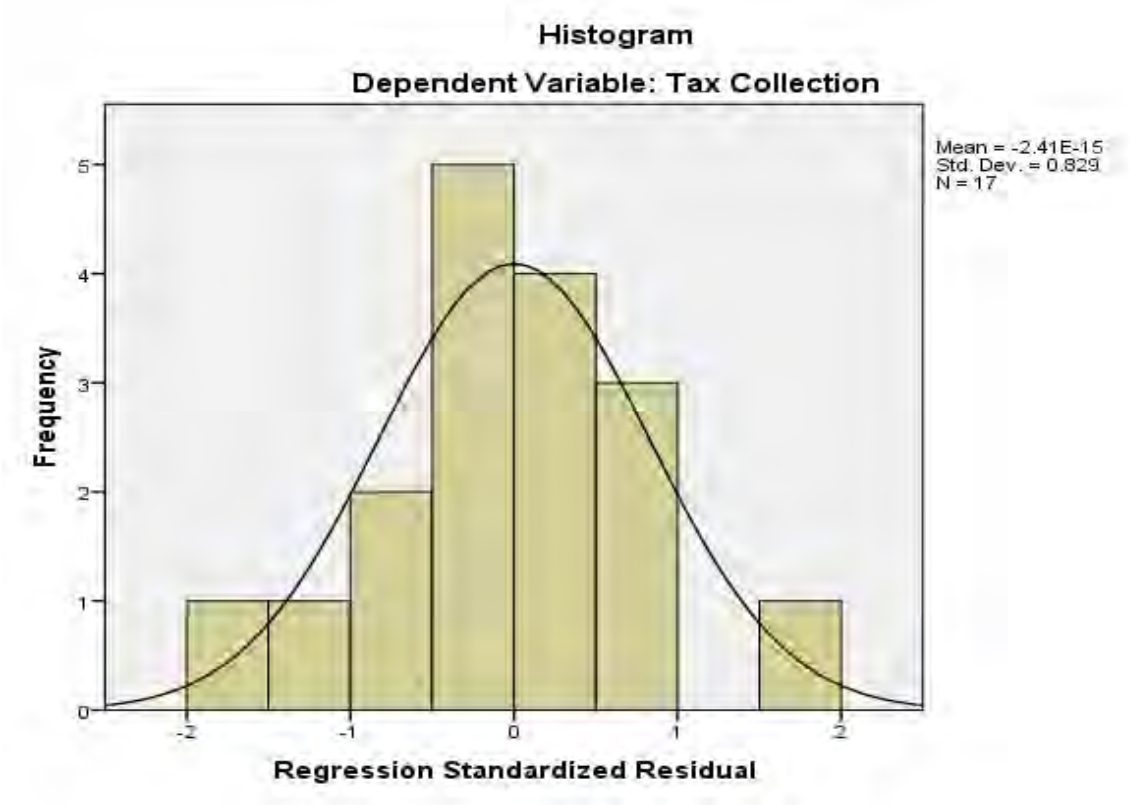
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.992[a]	.984	.975	.17232	1.609

a. Predictors: (Constant), LNUEM, LNIN, LNFDI, LNEXR, LNDI

b. Dependent Variable: LNATC

Normality


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Tax Collection
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0



Source: SPSS 20 normality Test

Multicollinearity

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	25026.313	9816.329		2.549	.027		
	Inflation	-259.840	88.177	-.062	-2.947	.013	.784	1.276
	Foreign direct investment	-.736	.117	-.186	-6.312	.000	.399	2.509
	Disposal income	.146	.007	1.426	20.048	.000	.217	14.613
	Exchange rate	-3001.149	658.182	-.317	-4.560	.001	.256	13.909
	Unemployment	-392.369	879.400	-.014	-.446	.664	.376	2.662

a. Dependent Variable: Tax Collection

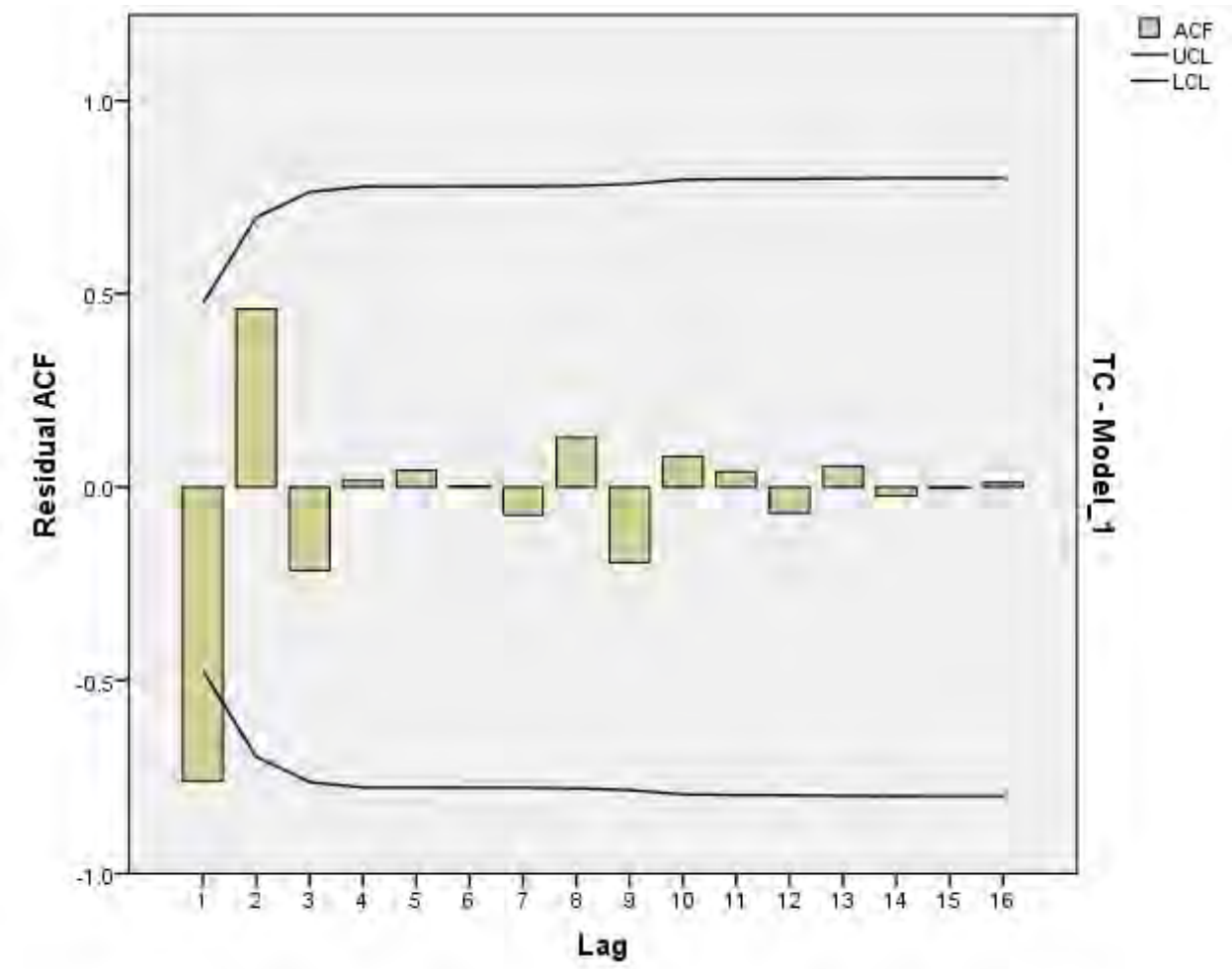
Source: Multi co linearity test from SPSS 20 run by the researcher.

Model Description

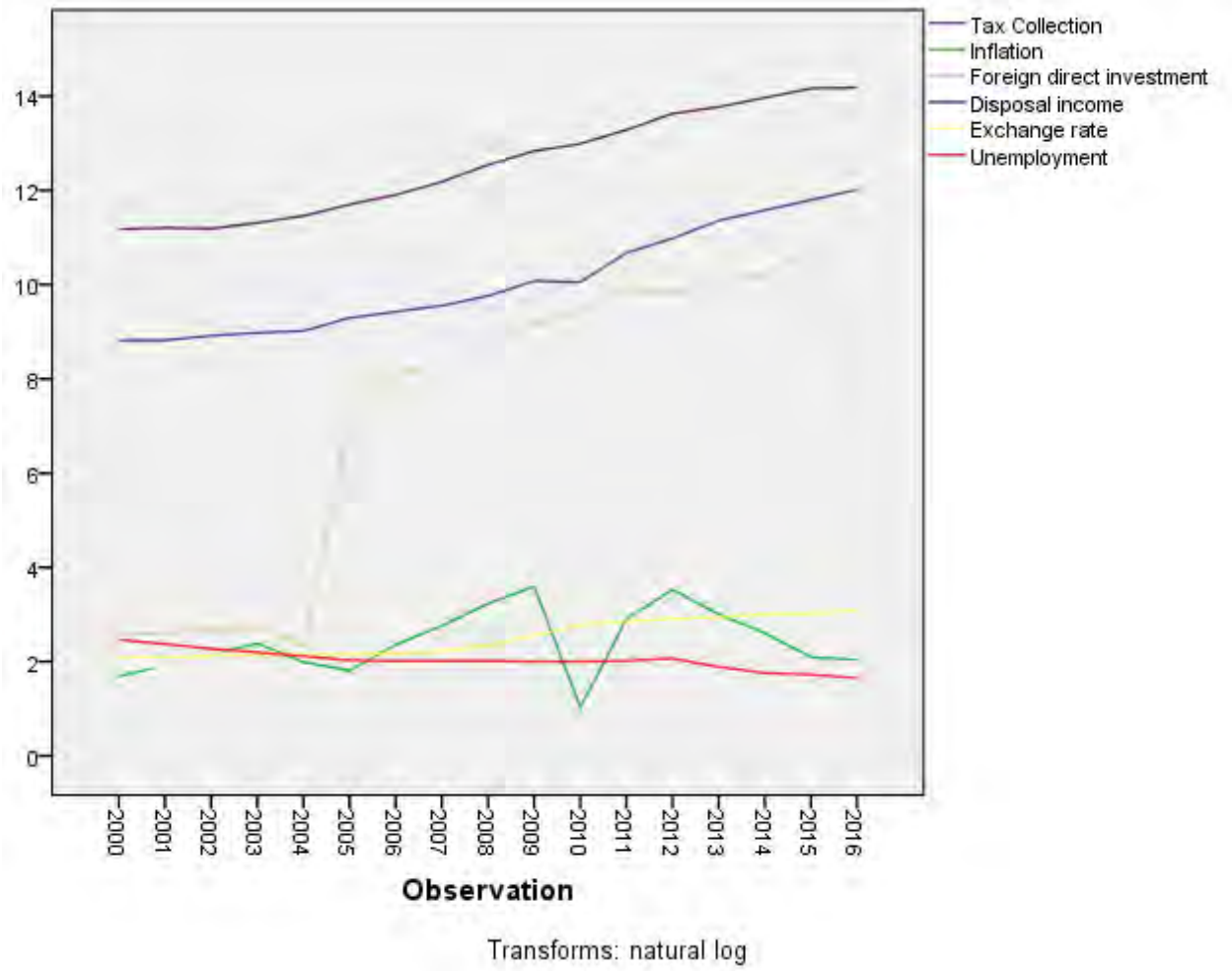
		Model Type
Model ID	Amount Tax Collection Model_1	ARIMA(0,0,0)

Source: SPSS 20 in Stationary analysis in ARIMA.

Stationary analysis



Source: SPSS 20 in Stationary analysis in ACF.



Source: SPSS 20 in Stationary analysis

Table5. Original data used for analysis

Years	LATC	LIR	LFDI	LDI	LER	LUEM
1999/00	6781.000	5.400	13.2100	71435.000	8.080	11.800
2000/01	6782.000	-.300	13.6200	73504.000	8.140	10.700
2001/02	7440.000	-10.600	14.2900	72322.000	8.330	9.700
2002/03	7926.000	10.900	14.9500	81860.000	8.540	9.000
2003/04	8243.000	7.300	10.3000	94901.000	8.630	8.300
2004/05	10906.000	6.100	1294.8000	120857.000	8.680	7.600
2005/06	12398.000	10.600	3169.4000	148487.000	8.790	7.500

2006/07	14122.000	15.800	4583.6000	195989.000	9.240	7.500
2007/08	17354.000	25.300	7330.2000	280346.000	10.420	7.500
2008/09	23801.000	36.400	9311.8000	375922.000	12.890	7.400
2009/10	23216.200	2.800	12328.9000	437907.000	16.100	7.400
2010/11	43315.400	18.100	20026.4000	588219.500	17.300	7.500
2011/12	58981.000	34.100	18497.6000	832516.600	18.280	7.900
2012/13	85739.860	20.200	22409.0000	958333.400	19.070	6.600
2013/14	107010.300	13.500	27982.1000	1164268.000	20.100	5.800
2014/15	133118.260	8.100	44254.0000	1420187.000	20.560	5.600
2015/16	165312.470	7.700	2322.0000	1445600.000	21.800	5.200

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