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**SCHOOL OF GRADUATE STUDIES, INSTITUTE OF AGRICULTURE
AND DEVELOPMENT STUDIES**

**THE CONTRIBUTION OF INDIRECT TAX REVENUE TO
ECONOMIC GROWTH OF ETHIOPIA**

BY

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**THE CONTRIBUTION OF INDIRECT TAX REVENUE TO ECONOMIC
GROWTH OF ETHIOPIA**

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Partial Fulfillments of Requirement for the Degree of Masters in
Development Economics**

BY

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Addis Ababa, Ethiopia

DECLARATION

I, the undersigned hereby declare that this thesis titled The Contribution of Indirect Tax for Economic Growth of Ethiopia is my original work and has not been presented for a degree in any other university, and that all sources of materials used and borrowed ideas for the thesis have been duly acknowledged in the list of references provided.

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ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

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As a member of the board of examiners of the master thesis open defence examination, we testify that we have read and evaluated thesis prepared by Solomon Gebreyesus and examind the candidate. We recommended that this thesis be accepted as fulfilling the thesis requirments for the degree of master of art in development economics.

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ABBREVIATION AND ACRONYMS

AIC	Akaike Information Criteria
ADF	Augmented Dickey-Fuller
CED	Customs and Excise Duties
CIF	Cost, Insurance and Freight
DF	Dickey-Fuller
ECM	Error Correction Model
ERCA	Ethiopian Revenues and Custom Authority
FDRE	Federal Democratic Republic of Ethiopia
GDP	Gross Domestic Product
HQC	Hanan Quinn Criteria
INF	Inflation
ITR	Indirect Tax Revenue
MoFED	Ministry of Finance and Economic Development
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary least Square
SBC	Schwarz Bayesian Criteria
TGR	Total Government Revenue
TOT	Turnover tax
TTR	Total Tax Revenue
VAT	Value Added Tax
VECM	Vector Error Correction Model

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Abstract

Today the role of economic growth for its effect on social welfare is undeniable. For this reason, the factors influencing the economic growth are taken into account by policy makers and researchers. Indirect taxes, as sources of nation's revenue, have been considered by most countries for its numerous advantages and benefits. This study investigated the relationship between indirect tax and economic growth in Ethiopia for the period 1990 to 2016. Time series secondary data on GDP, indirect tax revenue, total tax revenue excluding indirect tax revenue and inflation for the period 1990 – 2016 from Ministry of Finance and Economic Development of Ethiopia (MoFED), Ethiopian Revenues and Custom Authority (ERCA) and World bank (world development indicators) were analyzed using descriptive statistics and Johansen co-integration approach and vector error correction model. The finding of the study revealed that indirect tax revenue boosts economic growth in general. However, there is poor administration and unsystematic exemptions resulting in regressive outcomes. For the period under review the average ratio of indirect tax revenue to GDP becomes 6.4% and the growth rate of indirect tax revenue was 17.35%. The result from Johansen co integration revealed that 65.85% of the disequilibrium errors for the co-integrating variables are corrected in a time period. The result from vector error correction model also showed that, indirect tax revenue, total tax revenue excluding indirect tax revenue has a positive and significant effect on economic growth while inflation affected GDP negatively at 5% level of significance. Therefore, to be effective, it requires strong tax administration, cooperation of the tax payers with taxing authority and the government in general. In the study the literature claims that indirect taxes are one of the reasons for the gap between poor and rich classes of people that can be minimized by decreasing the dependency on indirect taxes and increasing the collection of direct taxes.

CHAPTER ONE: INTRODUCTION

1.1 Background

Governments in both developed and developing countries collect taxes to finance public services. According to Anyanwu (1997) tax is as a compulsory levy by the government on individuals, companies, goods and services to raise revenue for its operations and to promote social equity through the redistribution of income effect of taxation. Barnett and Grown (2004) argue that taxation is the only known practical manner for collecting resources in order to finance public expenditure for goods and services consumed by any citizenry.

Kaldor (2004) pointed out the importance of government revenue in accelerating economic development. Whatever the prevailing ideology or political situation of a particular country, it must steadily expand a host of non-revenue yielding services such as education, health, infrastructure, and social security. He asserted that the link between taxation and economic development is a link between a universal desire and a form of government action that is believed to be a means to that end. To this end, one of the most important policy upon which most economists agree is that emerging nations must increasingly mobilize their own internal resources to provide economic growth. The most important instrument by which resources are mobilised is through the implementation of an effective tax policy.

Most countries impose taxes on both income and consumption. While income taxes are levied on net income over an annual tax period, consumption taxes operate as a levy on expenditure relating to the consumption of goods and services, imposed at the time of the transaction. There are a variety of forms of income and consumption taxes. Income tax is generally due on the net income realized by the taxpayer over an income period. In contrast, consumption taxes find their taxable event in a transaction, the exchange of goods and services for consideration either at the last point of sale to the final end user, or on intermediate transactions between businesses, or through levies on particular goods or services such as excise taxes, customs and import

duties. Income taxes are levied at the place of source of income while consumption taxes are levied at the place of destination (OECD, 2014).

Since 1992/93, the Government of Ethiopia has made a major economic policy shift from Central Planning to market oriented economic system. In line with this change, a series of tariff and tax reform measures have been taken. The reasons to these were: outdated tariff and tax laws; weak customs and tax administration; failure of the tariff and tax regime to attract investment, to facilitate trade and to generate adequate revenue to cover current and capital expenditure, and hence finance development and poverty reducing projects.

Hence, coupled by a series of reduction in the import tariff, excise tax and income tax and widening of the budgetary deficit, introducing a neutral and efficient tax, i.e. the VAT with broad tax base was considered. Value Added Tax (VAT) has become a major tax instrument worldwide. The global trend to introduce VAT in most countries is still continuing. VAT has also become an indispensable component of tax reforms in developing countries. Ethiopia's tax reform program has introduced VAT since January, 2003.

According to the VAT proclamation no.285/202, Federal Negarit gazetta, (2002) supply of goods and rendition of services are subject to standard 15% tax rate except those exempted and zero rated by the tax law and 10% equalization for services and 2% for goods or Turn Over Tax (TOT) have to be studied in the medium term whether or not they could broaden the tax base and register high revenue performance.

1.2 Statement of the Problem

Today the role of economic growth for its effect on social welfare is undeniable. For this reason, the factors influencing the economic growth are taken into account by policy makers and researchers. On the other hand, the indirect taxes have been considered by most of the countries due to its numerous advantages and benefits. Hence, investigating how these types of tax contribute to the economic growth seems to be indispensable, particularly in developing countries like Ethiopia.

Ethiopia aspires to be a middle income country by 2025. To meet such aspiration, sufficient amount of revenue is required for the purpose of social, economic and political aspects. That is why Ethiopia reforms her taxing system in 2002 and the outcome of which makes the introduction of VAT, grouped imports into 97 categories based on the Harmonized System of Tariffs Classification Code. An ad valorem rate ranging from 0 to 35 per cent was introduced. The same rates were applied for import excise and sales taxes as those established for goods and services, an important development in the export sector was the abolition of all export taxes, with the exception of coffee. Similarly, to encourage exports, schemes for duty drawback and duty free imports were implemented. By such land mark of tax reform, Ethiopia adopted VAT as her consumption taxing system by January, 2003 issuing proclamation No 285/2002.

There are inconsistencies as to the relationship between indirect taxation and economic growth in the developed countries; the same cannot be said for Ethiopia. Opponents of indirect tax believe that it increases income inequality since both the rich and the poor pay same amount of taxes on the same commodity. This will further widen the income gap in the society. In addition, indirect taxes are considered to be inflationary in nature since the tax charged on goods and services consumed increases the unit price of the product. Against the above background, some researchers are of the view that indirect tax has negative effect on economic growth. Musanga(2007),Greenidge and Drakes (2009).

The proponents of indirect tax as a growth driver advanced the buoyancy and flexibility argument. That is indirect tax has the ability to generate higher tax revenue with changes in the rate and base of the tax (buoyancy). While flexibility connotes the ability of the tax system to generate higher tax revenue with changes in tax base. Kneller et. al (1999),Arisoy and Unlukaplan (2010), Jalata (2014), Islam (2016) etc shows as there is a positive nexus between indirect taxes revenue and economic growth. Thus, this paper has been studied the indirect tax and economic growth nexus in Ethiopia for the study period 1990 to 2016.

Globally, several studies have been undertaken to demonstrate the contribution of indirect taxes for economic growth, for instance, Islam (2016) on Contribution of Indirect Taxes on GDP of Banglادish found almost perfect positive correlation between indirect taxes and GDP during the

period covering 2001-02 to 2013-14. Adereti et al. (2011) analyzed time series data on the Gross Domestic Product (GDP), VAT Revenue, Total Tax Revenue and Total (Federal Government) Revenue of Nigeria from 1994 to 2008 using both simple regression analysis and descriptive statistical method. Findings showed that the ratio of VAT Revenue to GDP averaged 1.3% though a positive and significant correlation exists between VAT Revenue and GDP. Smith et al. (2011) attempt to analysis the contribution and performance of VAT in Bangladesh compared to other developing countries. The result shows that the performance of VAT was quite satisfactory in the initial years; afterwards, VAT collection remained stagnant at a certain level. The study finds that the stagnation happened as a result of relatively small number of VAT tax-payers, a general lack of awareness, and a weak monitoring system. Zaman et al. (2012) examined the impact of value added tax in Pakistan's economy. Using household survey data to grasp the effect of value added tax on, social and economic life of the populace. Results show that VAT would disturb economic order of the society. Babatunde et.al (2016) examined taxation revenue and economic growth of Africa by using tax revenue, foreign direct investment and inflation as independent and GDP as dependent variables and results of the Ordinary Least Square (OLS) estimation reveals that tax revenue and foreign direct investment have significant and positive influence on the GDP. Inflation rate however is both insignificant and negative in influencing GDP.

In Ethiopia some studies have been undertaken, for instance, Jalata (2014) investigated the relationships between VAT and economic growth in Ethiopia from 2003 to 2012 and that scholarly contributions reveals as there was a positive correlation between VAT and economic growth and every 1% increase in VAT revenue causes about 13.55% increase in GDP keeping total tax revenue with the exceptions of VAT, non-tax revenue and foreign revenue constant during the study periods. Alemu (2011) investigated the contribution of VAT for economic development and social spending in Ethiopia for the study period (2003/04 – 2009/10) by using micro economic sectors and disaggregate the economy in to five strategic economic sectors in the development process. VAT revenue contributed positively for the development of the respective sectors. Lemma (2014) assess the contribution and trends of tariff revenue in the Ethiopian tax structure for the period (1959/60 – 2012/13) and he found even if the share of tariff revenue in the government budget is significant but, the effective tariff rate is much lower

than the average tariff rate. Its contributions to both the total tax revenue and total government revenue have also decline over time.

All above mentioned studies tries to empirically evaluate the contribution of sub components of indirect tax on economic growth of Ethiopia, but the current paper try to study the contribution of total indirect tax for total tax revenue and on economic growth of Ethiopia. To the best of the researcher knowledge; this may be the first attempt to test the contribution of total indirect tax for economic growth in Ethiopia. In addition to that, this paper improves the coverage of the study to 1990 – 2016, in that way it updates the analysis and this issue needs frequent study as it is the main contributor to government revenue.

1.3 Research Objective(s)

1.3.1 General objective

The general objective of the study is to examine the contribution of indirect taxes for economic growth of Ethiopia for the period 1990 to 2016.

1.3.2 Specific objectives

1. To investigate the relationship between the changes of indirect taxes revenue and GDP
2. To describe the trend of economic growth in Ethiopia.
3. To describe the trend of indirect tax growth in Ethiopia.
4. To examine the revenue productivity of indirect taxes.

1.4 Research hypothesis

Different research findings reviewed from previous research works shows disaggregated findings regarding relationship between indirect taxes and economic growth of different countries. The following assumption which is subject to testing is made for the purpose of this research work.

H0 (Null): Indirect taxes do not contribute the Gross Domestic Products (GDP) of Ethiopia.

H1: Indirect taxes make a crucial role for Ethiopia's economic growth.

1.5 Significance of the study

Extensive studies have been done on various aspects of the operation of value added tax (VAT) in Ethiopia. But, not much study has done on the contribution of total indirect taxes to GDP. This study is thus undertaken to add to whatever scarce studies already exist in this aspect of indirect tax. It will help increase awareness of what the government can do to improve operations and utility of indirect taxes if it contributes for economic growth. The study is also being a form of update on the existing subcomponent studies. It can provide the way for other researchers who want to conduct further investigation on the area raised as a title as well as it can serve as an additional source of reference material for those who want to conduct a full time research.

1.6 Scope and limitation of the study

The study centers on achieving the broad objective which is to empirically evaluate the contribution of indirect taxes for economic growth of Ethiopian Since 1992-2016, this study uses only twenty-seven years comprehensive annual financial report (1990 - 2016) from Ministry of Finance and Economic Development of Ethiopia (MoFED), Ethiopia Revenue and Custom Authority (ERCA) and World bank data bank (world development indicators).

Basically, the study focuses on the identified variable that can help to measure the contribution of indirect taxes for economic growth of Ethiopia but there may be some other variables that could affect the dependent variable that is not captured in this study and only 27 years' time series data is to be used to analyze the contribution of indirect taxes for Ethiopian economy which may have its own limitation to show the full picture and contribution of indirect taxes for economic growth of Ethiopia. Lack of experience of the researcher is other limitation of conducting this study.

1.7 Organization of the study

This thesis attempts to assess the contribution of indirect taxes to economic growth of Ethiopia. Accordingly, the paper is organized in a way that chapter one deals with Introduction part of the

study, Chapter two presents the theoretical and empirical review of the related literatures, chapter three addresses the research methodology of the study, chapter four deals with the data presentation, analysis and discussion of findings and the last chapter presents the conclusion and recommendation parts of the study

CHAPTER TWO: LITRATURE REVIEW

2.1 Concepts and Definition

Familiarizing readers with basic terms related to taxation will have a paramount importance in understanding the subsequent literature review of indirect taxes.

2.1.1 Economic growth

An increase in the capacity of an economy to produce goods and services, compared from one period of time to another. Economic growth can be measured in nominal terms, which include inflation, or in real terms, which are adjusted for inflation. For comparing one country's economic growth to another, GDP or GNP per capita should be used as these take into account population differences between countries.

2.1.2 Gross Domestic Product (GDP)

GDP is the monetary value of all goods and services produced within a nation's geographic borders over a specified period of time.

2.1.3 TAX

It is defined as an amount of money levied by a government on its citizens and used to run the financial activities of the government. A tax is an unrequited payment by individuals or businesses to a government without Quid Pro Quo. This means tax is an involuntary payment without any expectation of direct return in benefit. In the private sector you get what you pay for. But in public sector with regard to tax you don't get what you pay for. In short there is no direct relationship between the tax payment and the benefit to be received by the taxpayers.

2.1.4 Inflation

Inflation is a sustained rise in the general price level of goods and services in an economy over a period of time. It is the proxy for macroeconomic stability of a country. The most commonly used measure of inflation is consumer price index; it reduces the purchasing power of a society and erodes the taxpaying capacity of tax payers.

2.2 Types of taxes

Basically the Ethiopian tax law provides Direct and Indirect Taxes.

2.2.1 Direct taxes

The Direct Taxes are divided into five categories:

2.2.1.1. Personal income tax,

The first schedule of our income tax law, as provided in the Income Tax Proclamation of 2002, i.e. schedule A provides for the tax rate and modality of assessment of income tax collected from employment. Articles 10-13 of the proclamation govern the modalities and rates of taxation on such income.

As can be inferred from Articles 2(12) and 12 of the Income Tax Proclamation, employment is any arrangement, whether contractual or otherwise, whereby an individual to be called the employee is engaged, whether on a permanent or on a temporary basis, to perform services under the direction and control of another person to be called the employer. Looking to the whole picture, employment income tax is tax that is imposed upon any payments or gains in cash or in kind received from employment by an individual, including income from former employment or otherwise from prospective employment.

2.2.1.2 Rental tax

The second schedule under the Ethiopian Income Tax laws, Schedule B, provides for the taxation of income earned from rental of buildings. Articles 14 -16 of the Income Tax Proclamation are devoted to the modalities and rates of taxation on income derived from the rental of buildings.

The income to be taxed under Schedule B of the Income Tax Proclamation is provided by Article 14 of the Proclamation, which states that “Income tax shall be imposed on the income from rental of buildings.” The income from the rental of buildings is to be computed based on the procedures, requirements and modalities set forth by Article 16 of the Proclamation. Accordingly, the principle that tax has to be paid on income from rental of buildings remaining

as it is, a taxpayer who leases furnished quarters is liable to pay tax on the income that he/she receives from the lease of the furniture and equipment in the leased quarters. Furthermore, if a lessee sub leases a building; he/she is liable to pay the tax on the difference between the income from the sub-leasing and the rent paid to the lessor; however, provided that the amount received from the sub-lessor is greater than the amount payable to the lessor.⁸⁷ In the event that the sub-lessor fails to pay, the owner of a building who has allowed the lessee to sub-lease is liable for the payment of the taxes for which the sub-lessor is liable.

2.2.1.3 Business profit tax and

The third schedule of the Income Tax law of Ethiopia, Schedule C, provides for the taxation of income earned from businesses, i.e. from entrepreneurial activities. Articles 17 – 30 of the Income Tax Proclamation are devoted to the modalities of assessment of taxation under Schedule C.

Business income tax or corporate tax as commonly referred to relates to direct tax levied by various jurisdictions on the profits made by companies or associations. As Schedule C applies to business income tax, it is only proper to start this discussion by defining what a business is. According to Article 2(6) of the Income Tax Proclamation, business or trade refers to “any industrial, commercial or vocational activity or any other activity recognized as trade by the Commercial Code of Ethiopia and carried on by any person for profit. The taxable income of the income earned by a person according to the above cited provision of the Commercial Code is to be taxed according to Schedule C of the Income Tax Proclamation. And according to Article 18 of the Income Tax Proclamation, taxable business income is to be determined “per tax period on the basis of the profit and loss account or income statement, which shall be drawn in compliance with the Generally Accepted Accounting Standards”, subject to the provisions of the Income Tax Proclamation and subsequent directives to be issued by the Tax Authority.

2.2.1.4 Other taxes.

Income From Rent Of Patent And Copyright, Income From Winning Lottery, Income From Share In Company...extra fall under this category

2.2.2 Indirect taxes

2.2.2.1 Value Added Tax (VAT)

Value added tax (VAT) is a tax on exchange. It is levied on the value added that result from each stage of exchange. It is an indirect tax in that the tax is collected from someone other than the person who actually bears cost of the tax. It is a consumption tax, levied at each stage of the consumption chain and borne by the final consumer of the product or service.

VAT Terminologies

According to Misrak (2008), some of the terms in the VAT literature are:

- **Input tax:-** is the VAT that a business pays over taxable supplies made and can be recovered only on so far as your business in VAT registered and make taxable output.
- **Output tax:** - the VAT that a business collects over on taxable supplies (VAT paid on sales).

VAT payable: - this is the VAT to be paid to the authority /ERCA/ by the taxable person. It is computed as:

VAT payable = Output tax - input tax

- **Zero rating:** - the supply is charged with VAT at 0% but credit can be taken for VAT paid on purchase used to make supplies.
- **Positive rate:** - the supply is charged with a rate of 15%.
- **Exemption:** - the supply is exempted from VAT. No VAT is charged on the supply and no credit can be taken on the purchase used to make supply.

2.2.2.1.1. Evolution of VAT

Value Added Tax or VAT, first introduced less than 70 years ago, and remained confined to a handful of countries until the late 1960s. Value added tax (VAT) was first started in France in 1948 G.C, where it was initially applied up to the manufactured stage and give credit for tax on

capital goods (Purhoit and Mahesh, 2000). By 1969 only eight countries adopted VAT. Out of these eight countries, Cote d'Ivoire is the first country in Africa to introduce VAT. Since 1979 the VAT spread rapidly in industrialized as well as in the developing countries. Today, most countries have a VAT, which raises, on average, about 25 percent of their tax revenue. This makes VAT is the first tax system which spread quickly within a short time after its introduction. As of 2003 from the 53 member countries of the African Union about 31 of them introduced VAT. Following this, the government of Ethiopia introduced VAT with different objectives on January 1, 2003 by replacing sales tax. The following table depicts those African countries with their rates and year of introduction.

Table2.1: African countries with VAT

Country	Date introduced	Standard rate (%)	Country	Date introduced	Standard rate (%)
Algeria	1992	21	Mauritania	1995	14
Botswana	2002	15	Mauritius	1998	10
Burkina Faso	1963	18	Morocco	1986	20
Benin	1991	18	Mozambique	1999	17
Cameroon	1999	18	Namibia	2000	15
Chad	2000	18	Niger	1986	17
Congo republic	1997	18	Nigeria	1994	5
Cote-Devoire	1960	20	Senegal	1980	20
Ethiopia	2003	15	Rwanda	2001	15
Egypt	1991	10	South Africa	1991	14
Gabon	1995	18	Sudan	2002	10
Ghana	1998	10	Tanzania	1998	20
Guinea	1996	18	Togo	1996	18
Kenya	1990	16	Tunisia	1998	18
Madagascar	1994	20	Uganda	1996	17
Malawi	1989	20	Zambia	1995	17.5

Mali	1991	15			
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Source: MisrakTesfaye , 2008, Ethiopian Tax Accounting Theory and practice (pp.310-311)

The following table again shows the VAT rates of some European and non-European countries (other than African countries).

Table 2.2: World countries with VAT

Country	Standard rate (%)	Country	Standard rate (%)	Country	Standard rate (%)
Australia	20	Romania	19	Lebanon	10
Belgium	21	Slovakia	19	Moldova	20
Bulgaria	20	Slovenia	20	Macedonia	18
Cyprus	15	Spain	16	Malaysia	5
Czech republic	19	Sweden	25	Mexico	15
Denmark	25	United kingdom	17.5	New Zealand	12.5
Estonia	18	Argentina	21	Norway	25
Finland	22	Austria	10	Paraguay	10
France	19.6	Bosnia	17	Peru	19
Germany	19	Canada	6	Philippines	12
Greece	19	Chile	19	Russia	18
Hungary	20	China	17	Serbia	18
Ireland	21	Croatia	22	Singapore	5
Italy	20	Ecuador	12	South Korea	10
Latvia	18	El Salvador	13	Sri Lanka	15
Lithuania	18	Guyana	16	Switzerland	7.6
Luxembourg	15	Iceland	24.5	Thailand	7

Malta	18	India	12.5	Turkey	18
Netherland	19	Israel	15.5	Ukraine	20
Poland	22	Japan	5	Venezuela	8
Portugal	21	Kazakhstan	14	Colombia	45

Source: MisrakTsfaye , 2008, Ethiopian Tax Accounting Theory and practice (pp.311-312)

2.2.2.1.2 Need for VAT

The need for VAT emanates (originates) from the very weakness of the sales tax that it is intended to replace (Purhoit and Mahesh, 2000). First, sales tax has a cascading effect as a result of the fact that it is levied on the gross value without allowing any credit or set off the taxes paid on inputs. As a result, consumer’s price will increase by an amount higher than accrues to the exchequers (government department in charge of revenue) by way of revenue from it. Secondly, VAT has the advantage of reducing the cost of production of industries through its inherent refund system and the fact that it does not burden exports. Thirdly, it offers total transparency of the incidence of tax as VAT is multistage sales tax levied as proportion of the value added. A very important thing that quotes in need of VAT is less tax evasion. This happens because the tax is divided into parts and therefore the incentive to evade tax by any one firm is reduced. If any firm understates its output, it will be caught by the disclosures of the firms buying inputs from it. In general it is argued that VAT would take away all the above problems and would avoid the distorting economic effect.

2.2.2.1.3Types of VAT

In the modern world there are three types of VAT, namely, consumption, production and income

1. Consumption VAT

In this type of VAT, the firm is allowed to deduct from the gross value of its product not only the non-capital input purchased from other firms but also the capital equipment purchased.

Thus, in consumption type VAT, tax base is the difference between gross value and total value of inputs purchased (capital and non-capital).

2. Production VAT

In the production type VAT, the value of the inputs purchased by the firm from other firms is not deducted in full. Only the value of non-capital purchase is deducted. Furthermore, no depreciation is permitted on the purchase of capital goods even in subsequent years. Thus, the tax base in production type VAT is equal to gross value less value of non-capital goods purchased.

3. Income VAT

According to income type VAT, the firm is allowed to deduct the depreciation on the capital goods (during the year) apart from the full value of its non-capital purchases. Here, firms cannot deduct the entire value of the capital goods purchased during the year but they can deduct the respective amount of depreciation attributable to that year.

2.2.2.1.4 Impact of VAT on Revenue

VAT is increasingly being used throughout the world, including many African countries to raise government revenue with less administration and economic costs than other broadly based taxes.

It is believed to be a good means to raise government revenue even when relatively poorly administered. Ebrill and Keen (2001) also strengthen the above idea empirically. They found that in the countries have adopted VAT, revenue from this source accounted on average 27 percent of the total tax revenue or 5% of the GDP. And about 70% of the world's populations now live in countries with a VAT. This implies that it is a key source of government revenue in more than 126 nations.

Sales tax is collected without any threshold on the annual transaction. On the other hand VAT is collected on all sales of commodities at every stage of production and distribution with threshold on the annual turnover. Most taxable transactions will appear on two tax returns (that

is the buyer's and the seller's) so that tax authorities will have two opportunities to detect evasion. Further, because sellers provide the tax administration a record of their purchases by claiming input credits, tax administrations are more able to estimate what sales and therefore VAT due should be and thereby can detect evasion more easily in a VAT than in a retail sales tax. Under the VAT the amounts of tax liability at risk in most transactions is only a fraction of the total tax assessed on the sales of the good or service to a consumer. This is because the VAT is collected in smaller pieces at each stage of production, while the entire retail sales tax is collected on a final consumer sale. The lower effective tax rate on each transaction may reduce the intensive to evade the VAT. It is argued that VAT avoids cost-cascading effect. A conventional sales tax leads to compounding of the tax liability, while VAT does not. (Bhatia,2003).

2.2.2.1.5The VAT Regime in Ethiopia

1. Basic Notion of the Law and its interpretations

The Value Added Tax (VAT) proclamation No 285/2002 which has rescinded and replaced the sales and excise tax proclamation No. 68/1993 (as amended) and which has come into force as of January 1st, 2003 is a consumption tax which is levied and paid as value added tax at a rate of 15percent of the value of every taxable transaction by a registered persons, every import of goods, other than an exempt import and an import service rendered in Ethiopia for a person registered in Ethiopia for VAT or any resident legal person by a non-resident person who is not registered for VAT in Ethiopia. (Article 7 (1) (a)-(c) and Article 23 (1) and (2))

A taxable transaction is a supply of goods or a rendition of services in Ethiopia in the course or furtherance of a taxable activity other than an exempt supply. (Article 7(3))A taxable activity is any activity, which is carried on continuously, or regularly by any person in Ethiopia, or partly in Ethiopia, whether or not for a pecuniary profit that involves, in whole or in part, the supply of goods or services to another person for consideration. (Article 6 (1) and (2))Supply means the sale of goods or rendition of services or both and rendition of services means anything done, which is not a supply of good or money. (Article 2(17) and Art. 4(1)) For the purpose of the

VAT proclamation the following are considered as taxpayers on whom the VAT law is applicable. These are: -

(a) A person who is registered or is required to register for VAT;

(b) A person carrying out a taxable import of goods to Ethiopia;

(c) A non-resident person who without registration for VAT renders service in Ethiopia for any

Person registered in Ethiopia for VAT or any resident legal person (Article 3(1), (a)-(c) and Article 23 (1) and (2))

For the purpose of the VAT proclamation “person” means any natural person, sole proprietor, Body, joint venture, or association of persons. (Article 2(11)) Article 2 (15) of the Proclamation which deals with definition, states that “Resident person” shall have the meaning given to it under the income tax proclamation.

The new Income Tax law of Ethiopia Proclamation No 286/2002 defines and/or outlines who and what constitutes a resident in Ethiopia? Article 5 defines and outlines the principle of residence. Accordingly under Article 5 (1) (a)-(b) an individual shall be resident in Ethiopia. If he:

a. Has a domicile within Ethiopia;

b. Has a habitual abode in Ethiopia; and or

c. Is a citizen of Ethiopia and a consular, diplomatic or similar official of Ethiopia posted abroad?

Pursuant to article 5 (2) an individual, who stays in Ethiopia for more than 183 days in a period of twelve (12) calendar months, either continuously or intermittently, shall be resident for the entire tax period. With regards to a body, pursuant to Article 5 (3), a body shall be resident in Ethiopia, if it;

a. Has its principal office in Ethiopia;

- b. Has its place of effective management in Ethiopia and/or
- c. Is registered in the trade register of the Ministry of Trade and Industry

It should be noted that according to Article 5(4) “Resident person” includes a permanent establishment of a non-resident person in Ethiopia.

2.2.2.2 Custom duties

Customs duty is tax like other taxes but imposed on imported goods or exported goods. This type of tax is practiced by all countries to which Ethiopia cannot be an exception. Under the federal state of Ethiopia where state have power over taxation (concurrent power of taxation). It is clearly indicated that the Federal Democratic Republic of Ethiopia (FDRE) constitution of 1995 has given customs duty as exclusive power the federal government. To this end the federal government has come up with proclamation No 60/1997 to have proper control and follow up power is vested with Ethiopia customs authority.

There are acceptable reasons to have customs duty with in a legal system basically customs duty since imposed on goods imported or exported relatively high amount of tax is collected to strengthen government’s financial power to be devoted on poverty reduction and other programs of development Thus, customs duty raises revenue of the government.

Customs duty is the best instrument to prevent or reduce importation of goods. It serves as trade brevier whenever a state needs to ban or reduce importations to her territory, it can imposed high rate in some good (excise taxation) it might reach a rate of 100%. Thus, such importation will be discouraged. Of course this reduction measure helps to protect infant domestic factories /industries from stiff competitions with the products of competitive and subsidized foreign companies/ importers.

2.2.2.3 Excise Tax

Excise tax is one variety of indirect tax like VAT and turn over tax but unlike turn over tax and VAT, it is imposed and payable on selected goods, such as, luxury goods and basic goods which are demand inelastic. In addition, it is believed that imposing the tax on goods that are

hazardous to health and which are cause to social problems will reduce the consumption thereof. Excise tax shall be paid on goods mentioned under the schedule of 'Excise Tax Proclamation No. 307/2002' (a) when imported and (b) when produced locally at the rate prescribed in the schedule. Computation of excise tax is applied (a) in the case of goods produced locally, production cost and (b) in the case of imported goods, cost, insurance and freight /C.I.F/. Payment of excise tax for locally produced goods is by the producer and for imported goods by the importer. Time of payment of excise tax for imported goods is at the time of clearing the goods from the customs area, and for locally produced goods it is not later than 30 days from the date of production.

2.2.2.4 Turnover tax

This is an equalization tax imposed on persons not registered for value-added tax to fulfill their obligations and also to enhance fairness in commercial relations and to complete the coverage of the tax system. Administrative feasibility considerations limit the registration of persons under the value-added tax to those with annual transactions to the total value exceeding 500,000 Birr. Rate of turnover tax is 2% on goods sold locally and 10% for services except contractors, grain mills, tractors and combine-harvesters which are charged at 2%; as provided by the Turnover Tax Proclamation No. 308/2002.

2.3 Principles of Tax Systems

This section discusses three public finance concepts used in tax policy analysis: equity, efficiency, and ease of administration. To some extent, all three concepts depend on underlying assumptions and normative values and there is no unanimity regarding their practical application, but they are important terms in evaluating tax systems.

2.3.1 Equity Principle

Equity in taxation expresses the idea that taxes should be “fair,” and is a concept used in all tax policy analysis. However, it should be noted that equity or fairness is a normative, value-based concept and its interpretation differs across individuals, countries, cultures and time. Since it depends on one’s particular perspective, as well as the specific circumstances being considered,

the concept is difficult to apply in practice. Tax equity is commonly discussed according to four definitions of “fairness”. These definitions are also normative, and sometimes conflict, so they too are difficult to apply in practice. However, they are a common reference point for discussion. Horizontal equity posits that taxpayers who are equally economically situated should be treated equally for tax purposes. Vertical equity posits that taxpayers who are not identical from an economic standpoint, but are differently situated, should be treated differently for tax purposes. Horizontal equity refers to the principle that “equals should benefit from equal treatment”. Two common measures are used for evaluating equity or fairness in the tax system. One measure is the ability-to-pay principle, whereby those with more income should bear a larger share of the tax burden than those with less. An alternative measure commonly used for user charges and local taxation is that of benefits-received, according to which it is fair to assess taxpayers in proportion to the benefits they receive from public services. From this perspective, those receiving the same benefits should pay the same, and those receiving higher/lower levels of benefits should pay more/less.

2.3.1.1 Importance of Benefit Incidence Analysis

While the tax incidence analysis compares the relative tax burden for different expenditure groups, it provides only half the information necessary to assess the equity of budget policy. Benefit incidence analysis shows the distribution of benefits provided by the government and financed at least in part from tax receipts. Even if a tax turns out to be regressive, the overall impact on the poor can be neutralized or reversed if the public expenditure financed by that tax effectively targets the poor. Likewise, even if the tax revenues are collected in a progressive manner, the overall effect on the welfare of the poor can be reversed if the benefit from public expenditure falls disproportionately on the rich. The most commonly accepted idea of fairness in taxation is that taxes should be progressive - those with lower incomes should bear a lower share of the tax burden than those with more. Progressive taxes are designed so that those with lower income pay a lower percentage of their income in taxes than those with more. Taxes that take a greater proportion of income from the poor, than from the rich, are said to be regressive. Income taxes can be made progressive by a structure of increasing marginal tax rates applied to higher brackets of income and/or through allowable credits and deductions and no-tax

thresholds, which reduce the tax burdens of the poor. Consumption taxes are generally regressive, since the poor spend more of their income on consumption than the rich. Consumption taxes can be made less regressive through targeted exemptions, or lower rates for goods purchased primarily by the poor, and/or through special taxes or higher rates on luxury consumption items primarily purchased by the rich.

2.3.2 Efficiency and Neutrality

Taxes “cost” individuals and businesses through the loss of income that is transferred to government. If the income is “recouped” by the same individual/business through public services, there is no net cost to the individual. However, orthodox public finance theory holds that all taxation, except lump-sum taxes, imposes an “efficiency cost” on society because individuals and businesses change what would otherwise have been “optimal” decisions about labor, investment and production. These non- “optimal” decisions reduce overall economic output and growth. According to the theory, when taxes reduce social welfare whether directly or indirectly - by more than the amount of revenues they produce, they are considered to be “inefficient.” Orthodox economists argue that good tax policy should aim to produce the desired revenue and/or social goals of redistribution, environmental protection, etc., while minimizing what they claim are distortions to the economic decisions of individuals and businesses, and therefore the “cost” to society. Orthodox economists contend that distortions are impossible to eliminate completely but a good tax system will seek to minimize them. Feminist economists have especially criticized the orthodox notion of efficiency. Elson Diane (1999), for instance, argues that efficiency is too often conceptualized and measured in ways that focus only on market-oriented production and ignore other important economic and social objectives. She argues for an alternative approach to the one described above, one that defines efficient not in terms of “distortions” but in terms of collectively agreed upon social and economic objectives that encompass human welfare. This broader notion of efficiency would recognize not only that taxes affect individual decisions about behavior and income but would also seek not to jeopardize broader social and economic welfare. Recognizing that taxes have an impact on individual behavior, many economists and tax lawyers often argue for tax neutrality by which they mean that the tax system should not provide incentives for one type of behavior

over any other type of behavior. Elson Diane (2005) concurs with this view for income taxes, but she also points out that some types of socially desirable behavior especially behavior that has external and public effects could be encouraged through some types of taxes. Consumption taxes for instance, could encourage health promoting behavior by taxing cigarettes and alcohol more than fresh fruits and vegetables.

2.3.3 Ease of Tax Administration

The third “E” of tax policy is that taxation should be easy and relatively inexpensive to administer. Administration of a tax system must be funded from public revenue, reducing the amount of revenue available for other public services. In developed countries, the cost of collecting taxes has been estimated at one percent of tax revenues, and in developing countries, at possibly twice this. There may also be compliance costs to taxpayers in time and effort. To reduce the overall cost, the structure of the tax system should take into account the conditions of the country and its ability to administer and enforce the tax code. For many developing countries with conditions of low literacy, poor infrastructure, and weak civil service, consideration of the ease of administration is a particularly important factor in the design of tax policy. Achieving greater administrative simplicity is a goal for many governments and external experts who advise on tax reform programs. Simple tax systems are easier to administer and may secure greater compliance from taxpayers. The rules are also likely to be more transparent. But, it also needs to be recognized that the way tax is collected, as well as the design of tax policy, will influence both perceptions of fairness and efficiency of the system.

2.4 Relevant theories about indirect taxes.

The economists have put forward many theories of taxation at different times to guide the state as to how justice or equity in taxation can be achieved.

2.4.1 The Benefit Theory

This theory holds the individuals should be taxed in proportion to the benefits they receive from the governments in public services and that taxes should be paid by those people who receive the direct benefit of the government programs and projects out of the taxes paid. It was

developed in the seventeenth century by English philosophers Thomas Hobbes (1588-1679) and John Locke (1632-1704), and Dutch jurist Hugo Grotius (1583-1645) (Saleemi, 2005).

This theory has been subjected to severe criticism on the following grounds: If the state maintains a certain connection between the benefits conferred and the benefits derived, it will be against the basic principle of the tax. A tax, as we know, is compulsory contribution made to the public authorities to meet the expenses of the government and the provisions of general benefit. There is no direct substitution in the case of a tax. Secondly, most of the expenditure incurred by the state is for the general benefit of its citizens, it is not possible to estimate the benefit enjoyed by a particular individual every year. Thirdly, if we apply this theory in practice, then the poor will have to pay the heaviest taxes, because they benefit more from the services of the state. This is against the principle of justice (Saleemi, 2005).

2.4.2 The Ability-to-Pay Theory

This theory originates from the sixteenth century. It was scientifically extended by the Swiss philosopher Jean Jacques Rousseau (1712-1778), the French political economist Jean-Baptiste Say (1767-1832) and the English economist John Stuart Mill (1806-1873). This theory holds that the taxation should be levied according to an individual's income or ability to pay and is the basis of progressive tax as the tax rate increases by the increase of the taxable amount (Jones & Rhoades, 2011).

This theory is indeed the most equitable tax system since people with greater income or wealth and can afford to pay more taxes should be taxed at a higher rate than people with less individual income tax and has been widely used in industrialized economics. However, there is no solid approach for the measurement of the equity of sacrifice in this theory, as it can be measured in absolute, proportional or marginal terms. VAT does not tie in with this theory because the amount of VAT on a particular good is the same for everyone, however much they earn. VAT is thus regressive since it represents a smaller proportion of a person's income as their income rises (Jones & Rhoades, 2011).

2.4.3 Equal Sacrifice Theory

Another suggestion to make a tax satisfy the theory of justice is that we take into consideration the sacrifice entailed by the taxpayer. The equal-distribution theory also known as Equal sacrifice or Proportionate theory holds that income, wealth, and transaction should be taxed at a fixed percentage; that is, people who earn more should pay more taxes, but will not pay a higher rate of taxes. It was suggested by J. S. Mill and some other classical economists order to satisfy the idea of justice in taxation (Musgrave & Musgrave, 1989).

These economists were of the opinion that if taxes are levied in proportion to the incomes of the individuals, it will extract equal sacrifice. Thus, equal sacrifice can be measured as (i) each taxpayer surrenders the same absolute degree of utility that s/he obtains from her/his income, or (ii) each sacrifices the same proportion of utility s/he obtains from her/his income, or (iii) each gives up the same utility for the last unit of income; respectively. The modern economists, however, differ with this view. They assert that when income increases, the marginal utility of income decreases. The equality of sacrifice can only be achieved if the persons with high incomes are taxed at higher rates and those with low income at lower rates. They favor progressive system of taxation, in all modern tax systems (Musgrave & Musgrave, 1989).

2.4.4 The Cost of Service Theory

Some economists were of the opinion that if the state charges actual cost of the service rendered from the people, it will satisfy the idea of equity or justice in taxation. The cost of service theory can no doubt be applied to some extent in those cases where the services are rendered out of prices and are a bit easy to determine, e.g., postal, railway services, supply of electricity, etc., etc. But most of the expenditure incurred by the state cannot be fixed for each individual because it cannot be exactly determined, for instance, the cost of service of the police, armed forces, judiciary, etc., to different individuals. Dalton has also rejected this theory on the ground that there is no quid pro qua in a tax (Kaplow, 2010).

2.5 Empirical literature review

While there are inconsistencies as to the relationship between indirect taxation and economic growth in the developed countries, the same cannot be said for Ethiopia. The proponents of

indirect tax as a growth driver advanced the buoyancy and flexibility argument. That is indirect tax has the ability to generate higher tax revenue with changes in the rate and base of the tax (buoyancy). While flexibility connotes the ability of the tax system to generate higher tax revenue with changes in tax base. While analyzing VAT and Economic Growth in the context of Nigeria, by using time series data from 1994 to 2008 of four macroeconomic variables of GDP, VAT, total tax revenue and total federal government revenue that create the link between VAT & GDP, Adereti et al. (2011) studied the contribution of VAT to GDP in Nigeria. Their findings show that VAT revenue to total tax revenue averaged 12.4% which they considered low compared to other African countries such as Ivory Coast, Kenya and Senegal that had 30%. The study also observed a positive and significant correlation between VAT and GDP.

Arisoy and Unlukaplan(2010), focusing on the Turkish economy, investigated the relationship between direct and indirect tax and economic growth, using data from 1968-2006. The study adopted the ordinary least square econometric technique and it was found that real output is positively related to indirect tax revenue. They concluded that indirect taxes are significantly and positively correlated with economic growth in Turkey.

Islam (2016) Contribution of Indirect Taxes on GDP of Bangladeshi and the study found almost perfect positive correlation between indirect taxes and GDP in Bangladesh during the period covering 2001/02 to 2013/14. It has also been investigated that during the study period up to 2009/10 contribution of import export level indirect taxes was more than the local indirect taxes on GDP. But after 2009/10, amount of locally collected indirect taxes exceeded the collection of import export level indirect taxes because of faster increase of local indirect tax collection.

Kneller et. al (1999) focused on 22 OECD countries for the period 1970 to 1995. They used five years average of the annual data to circumvent the business cycle effect. They employed static panel econometric technique to investigate the relationship between fiscal policy and growth. The result of the study found a significant and positive relationship between non-distortionary taxation (indirect tax) and economic growth. They concluded that indirect tax is less harmful to the economy as it does not cut down on return on investment compared to direct tax. In the same vein, Smith et al. (2011) attempt to analysis the contribution and performance

of VAT in Bangladesh compared to other developing countries. The result shows that the performance of VAT was quite satisfactory in the initial years; afterwards, VAT collection remained stagnant at a certain level. The study finds that the stagnation happened as a result of: relatively small number of VAT tax-payers, a general lack of awareness, and a weak monitoring system.

Alemu (2011).investigated the contribution of VAT for economic development and social spending in Ethiopia for the study period (2003/04 – 2009/10) by disaggregating the economy in to five strategic economic sectors in the development process infrastructural development, education sector development, agriculture and natural sector development, health sector development and other development sectors. VAT revenue contributed positively for the development of the respective sectors. However, the contributions are statistically significant only to health and agricultural and natural resource development sectors. It also found that the VAT tax revenue was unable to neutralize the regressivity of VAT tax levy in Ethiopia because its unsystematic exemptions, tax structure, and tax system.

Jalata (2014) investigated the relationships between one of indirect tax VAT and economic growth in Ethiopia from 2003 to 2012 and that scholarly contributions reveals as there was a positive correlations exist between VAT and economic growth in Ethiopia and every 1% increase in VAT revenue causes about 13.55% increase in GDP keeping Total tax revenue with the exceptions of VAT, Non-tax revenue and foreign revenue constant during the study periods.

Lemma (2014) assess the contribution and trends of the subcomponent of indirect tax revenue tariff revenue in the Ethiopian tax structure for the period (1959/60 – 2012/13) and he found even if the share of tariff revenue in the government budget is significant but, the effective tariff rate is much lower than the average tariff rate. Its contributions to both the total tax revenue and total government revenue have also decline over time.

Opponents of indirect tax believe that it increases income inequality since both the rich and the poor pay same amount of taxes on the same commodity. This will further widen the income gap in the society. In addition, indirect taxes are considered to be inflationary in nature since the tax charged on goods and services consumed increases the unit price of the product. Against the

above background, some researchers have of the view that indirect tax has negative effect on economic growth. Greenidge and Drakes (2009), focusing on the economy of Barbados and using an unrestricted error correction model examined the relationship between tax policy and macroeconomic activities. They found that total tax and indirect taxes have a contractionary effect on the economy in both the short run and long run period.

Ilaboya (2012) studied the contribution of indirect taxes for economic growth of developing countries with Nigeria as a reference point for the period 1980-2011. The study adopted a combination of co-integration and error correction mechanism and the study found a negative and an insignificant relationship between indirect tax and economic growth in Nigeria. The ratio of total indirect tax to total tax revenue reported a negative coefficient of (0.5817). The ratio of total tax to total federal revenue reported a robust t-value of (19.9276) and a positive coefficient of (2.0886) at the 1% level of significance. Against the above result, the study recommended that emphasis should be shifted from indirect tax as a growth driver in Nigeria.

Musanga (2007) investigated the relationship between indirect taxes and economic growth in Uganda using data from 1987 to 2005. The study adopted the co-integration regression technique. The result of the study revealed that a % change in indirect tax would decrease economic growth by 0.53%. The indirect tax variable had a t-value of (-2.588) which means there is a significant but negative relationship between indirect tax and economic growth in Uganda.

Having these opposite findings of the relationship between indirect taxes and economic growth of different studies, this paper studies the relationship between indirect taxes revenue and economic growth of Ethiopia.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Research Design

Chandran (2004) defines research design as an arrangement of conditions for collection and analysis of data in a way that combines their relationship with the purpose of the research to the economy of procedures. It concerns the several considerations a researcher should think about and adhere when carrying out a research project. The choice of a research design is determined by the research purpose, categories of data needed, data sources and cost factors among others. The research design adopted in this study is causal study. In causal research design, the problem under investigation is structured; the aim being to establish a "cause and effect" relationship between one or more variable with other variables, and measure the extent of relationship between the variables. It attempts to explore cause and affect relationships where causes already exist and cannot be manipulated. It uses what already exists and looks backward to explain why. If one or more independent variables change, then we should expect a change in the dependent variable. This study identifies the contribution of indirect taxes for economic growth of Ethiopia, and thus it adopts a causal research design.

3.2 Data Collection

This study used time series secondary data which consisted of indirect taxes, gross domestic product, total government revenue (TGR), total tax revenue (TTR), and Inflation (INF) which is collected from Ministry of Finance and Economic Development of Ethiopia (MoFED), Ethiopian Revenues and Custom Authority (ERCA) and world bank data bank(world development indicators) for the study's period.

3.3 Variables of the study

In order to meet what is aimed, this paper has been used data on five economic variables gross domestic product (GDP), Indirect Taxes Revenue (ITR), total tax revenue excluding indirect tax (TTR), and Inflation (INF). The data of total government revenue (TGR) for the period under review of 1990 to 2016 is taken to describe the ratio of indirect taxes to respective total government revenue (TGR), total tax revenue (TTR) and gross domestic product (GDP). In additions, the data of total tax revenue (TTR) for descriptive purpose of indicating the ratio of

indirect taxes for TTR during study period includes indirect taxes revenue unlike for the inferential purpose which excludes indirect taxes revenues for the study period.

3.4 Data Analysis method

To determine the relationship between economic growth and indirect taxes, there would need to apply a reasonable technique for empirical analysis. So the study used descriptive and econometric analysis method. In the descriptive analysis percentage, ratios and graphs are used and in the econometric analysis Johansen co integration test to identify the equilibrium in the long run and error correction model to show the short run dynamics among the variables are used. In addition, the stationarity of each variable are tested using the Augmented Dickey Fuller (ADF) tests.

3.4.1 Stationarity Check

A stationary time series is one whose statistical properties such as mean, variance, autocorrelation, etc. are all constant over time. Most statistical forecasting methods are based on the assumption that the time series can be rendered approximately stationary (i.e., "stationarized") through the use of mathematical transformations. A stationarized series is relatively easy to predict: you simply predict that its statistical properties will be the same in the future as they have been in the past.

Another reason for trying to stationarize a time series is to be able to obtain meaningful sample statistics such as means, variances, and correlations with other variables. Such statistics are useful as descriptors of future behavior only if the series is stationary. For example, if the series is consistently increasing over time, the sample mean and variance will grow with the size of the sample, and they will always underestimate the mean and variance in future periods. And if the mean and variance of a series are not well-defined, then neither are its correlations with other variables. For this reason you should be cautious about trying to extrapolate *regression* models fitted to nonstationary data.

Initially the order of integration and stationary of the variables is tautened by means of the Augmented Dickey-Fuller (ADF) test. If the variables are integrated at (0) or (1) or the

combination of both, then the Johansen co integration test can be applied to determine co-integration for analyzing the long run association among variables. If the variables show the co integration association, in the long run, then next step is to apply the error correction mechanism (ECM) for analyzing the short run dynamics of the variables.

In case the time series data is not stationary applying the OLS technique cannot be appropriate to investigate the data because it would create faults, like autocorrelation, spurious regression (Gujarati, 2005). So to apply OLS technique it is imperative, for the time series, to be stationary. Stationary series is that, whose variable has same mean and variance, across time.

Dickey and Fuller (DF) (1979, 1981) developed a practice to test for non-stationarity. The key insight of their test is that checking for non-stationarity that is equivalent to testing for the existence of a unit root. Augmented Dickey-Fuller (ADF) is an extension of Dickey-Fuller. In augmented Dickey-Fuller version, extra lagged terms of the dependent variable are included, to eliminate autocorrelation.

3.4.2 Cointegration

Many economic variables exhibit persistent upward or downward movement. This feature can be generated by stochastic trends in integrated variables. If the same stochastic trend is driving a set of integrated variables jointly, they are called cointegrated. In this case certain linear combinations of integrated variables are stationary. Such linear combinations that link the variables to a common trend path are called cointegrating relationships. They sometimes maybe interpreted as equilibrium relationships in economic models. If two integrated variables share a common stochastic trend such that a linear combination of these variables is stationary, they are called cointegrated.

Cointegration means the survival of a long run equilibrium association among time series variables. The idea of co integration was commenced by Granger (1981) and Engle and Granger (1987). The basic idea underlying the concept of co-integration is to identify the equilibrium in the long run, or a long run association among the variables.

3.4.3 Error Correction Mechanism

In a system of variables, there may be several linearly independent cointegrating vectors. In that case linear combinations of these vectors are also cointegrating vectors because linear combinations of stationary variables are stationary.

If two variables were cointegrated in the long run, then as a next step the error correction apparatus could be implemented to examine the short run dynamics among variables. Error correction model was initially employed by Sargan (1964) and after this popularized by Engle and Granger (1987). ECM reconciles the static long run balance association of cointegrated time series by its vibrant short run imbalance.

When cointegration is found and inveterate, then as a second phase, the lag order of the variables is chosen by means of Akaike information criteria or Schwarz Bayesian criteria or Hanan Quinn criteria. After the lag order is confirmed, the long run coefficients of the model would be anticipated and then the error correction model (ECM) would also be anticipated. In this study the Johansen co integration technique is used for checking the long run association of the variables and after that the error correction model (ECM) is estimated.

3.6 Model specification

Different reviewed empirical research works uses some models to study the contribution of indirect tax for economic growth of different countries. The model that is used in this paper more or less similar with that of Jalata (2014) the modified form of model specified by Adereti, *et al.*, (2011), in his study the impact of VAT on economic growth of Nigeria. From sub-macro and micro economic perspectives, the model for this work states that economic growth (GDP) depends on indirect taxes revenue, total tax revenues excluding indirect taxes and inflation.

The functional relationship and the resulting stochastic model are specified as follow.

GDP = f (indirect taxes revenue, total tax revenues excluding indirect taxes, and inflation)

From this functional relationship the following stochastic model is specified

$$GDP_t = \beta_0 + \beta_1 ITR_t + \beta_2 TTR_t + \beta_3 INF_t + \epsilon_t$$

The stochastic model can be restated in its natural logarithmic form as follows;

$$\text{Ln}(\text{GDP}_t) = \beta_0 + \beta_1 \text{Ln}(\text{ITR}_t) + \beta_2 \text{Ln}(\text{TTR}_t) + \beta_3 \text{Ln}(\text{INF}_t) + \epsilon_t$$

Where: - GDP is the dependent variable growth domestic product

ITR is for Indirect Tax Revenue

TTR is for total tax revenue excluding indirect taxes

INF is for inflation

β_0 , β_1 , β_2 and β_3 are stochastic model parameters.

ϵ = is stochastic error term and

t = is for time period

Intercept of the model is expected to be positively signed, it is to mean that economic growth is expected even when no ITR and TTR is collected.

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

Taxation and tax policy are playing important role in the economic development in the last decades. As the principal means by which governments fund their expenditures, taxes are at the foundation of public finances. Taxes have been used throughout the world in the most of their role of regulating the economic issues. A properly designed tax system implies readier taxpayer acceptance of that expenditure burden. It should promote the maintenance of a high and sustainable level of output by minimizing both distortions to market-set prices and disincentives to work, saving and investment. But optimal tax policy goes beyond mere efficiency and funding considerations to encompass inevitable normative judgments about the amount of redistribution, equity. The major aim of most governments in developing countries is to stimulate and guide their economic and social development. These governments continue to reach out for the goal of government promoted and directed development. Kaldor (1980) pointed out the importance of government tax revenue in accelerating economic development. Whatever the prevailing ideology or political situation of a particular country, it must steadily expand a host of non-revenue yielding services such as education, health, infrastructure, and social security. The most important instrument by which resources are marshaled is through the implementation of an effective tax policy and spending the money collected on the basic economic development sectors that is why taxation is an important issue of every government.

4.2 Descriptive statistics

The researcher uses descriptive, Johansen co integration and vector error correction model to measure the contribution of indirect tax revenue for economic growth of Ethiopia. So that, the descriptive statistics and revenue productivity of indirect taxes using descriptive analysis is presented as follows.

Table 4.1: Descriptive statistics for 1990 – 2016

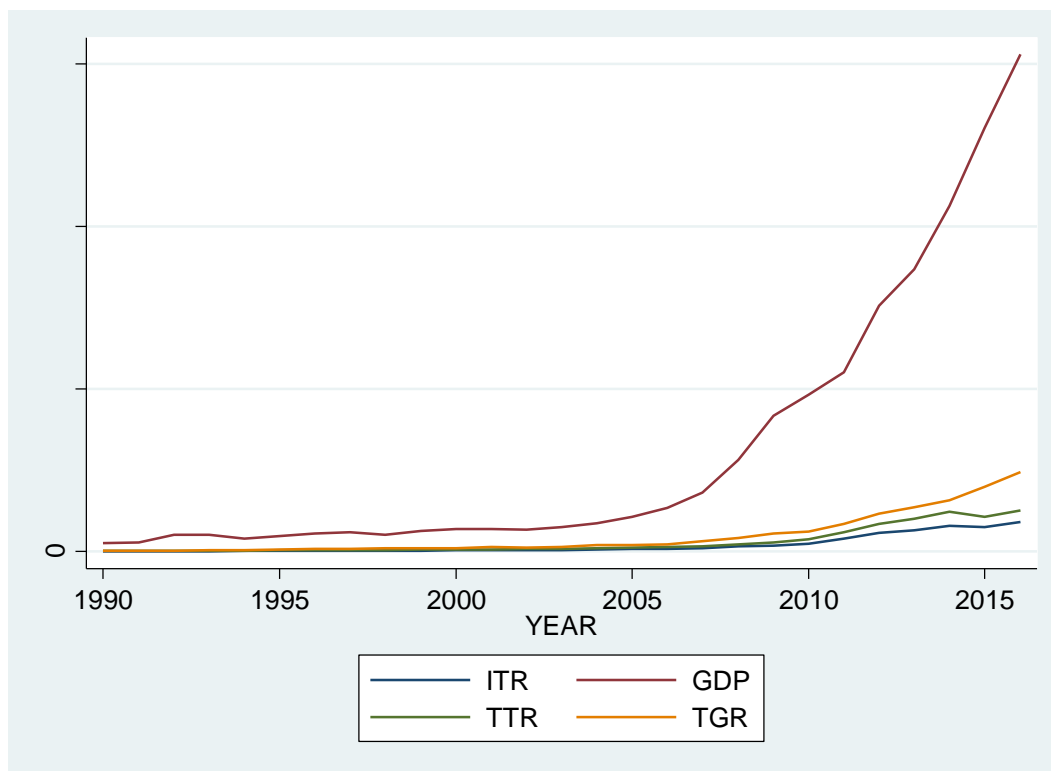
Variable	Growth rate for the study period (%)	Mean	Standard Deviation	Min	Max
GDP	15.22	315 billion	425 billion	25.2 billion	1.53 trillion
ITR	17.35	20.1 billion	27.7 billion	955 million	91 billion
TTR	16.96	30 billion	40.7 billion	1.62 billion	127 billion
TGR	16.72	30 billion	65.9 billion	2.75 billion	245 billion

Source: owner's computation base on the data from MoFED, ERCA and WB

From the table above the means and standard deviations of the variables are shown. From the results, the GDP was found to have a mean and standard deviation of br. 315 billion and br. 425 billion; indirect tax revenue had a mean of br. 201 billion and standard deviation of br.277 billion. Total tax revenue and total government revenue had averages of br.300 billion and br. 300 billion respectively and standard deviation of br. 407 billion and br. 659 billion respectively. The minimum and the maximum values of the variables are detailed in the table.

It is of interest to note that the standard deviation with regard to the GDP when compared with the mean suggests that the GDP had some sharp increases in some time during the period under consideration. The line graph in figure 4.1 below throws light on the trend behavior of all the variables.

Figure 4.1 multiple line graphs for GDP, ITR, TTR and TGR for 1990 - 2016



The above graph shows the sharp rise of the GDP in the later years under consideration. This behavior may be connected with the increase of the GDP as a result of the revision of the parameters used for the GDP. In addition to that in 2005 there was a policy change by the government of Ethiopia a shift from structural adjustment policy to developmental state this also accelerate the growth of those factor variables which indirect tax revenue is not the exception to contributes positively to GDP. Ethiopia reforms her taxing system in 2002 and the outcome of which makes replacement of the outdated sales tax that have undertaken for about four decades without meeting the required agendas for which it is invented with that of VAT. By such land mark of tax reform, Ethiopia adopted one of indirect tax VAT as her consumption taxing system by January, 2003. This also contribute for the increment of indirect tax revenue which contribute for economic growth of Ethiopia. Furthermore, a clearer trend is observed in the graphs relating to indirect tax revenue, total tax revenue and total government revenue, in later years (after 2005) indicating an upward movement with GDP.

4.2.1 Revenue productivity of indirect tax revenue

The percentage share of indirect tax revenue from total government revenue, total tax revenue and GDP is presented in the table below.

Table: 4.2 Ratio of ITR from TGR, TTR and GDP

	%age share
ITR to GDP	6.35
ITR to TTR	66.92
ITR to TGR	41.35

Source: owner's computation base on the data from MoFED, ERCA and WB

The government revenue generated from indirect tax shows a significant increase even though it shows a trend of instability during the study period (see appendix 8). The average ratios of ITR to that of TGR and TTR for the study period were on average 41.35% and 66.92% respectively. The average growth rate of ITR for the study period was 17.35% and average growth rates of TGR and TTR for the study period were 16.72% and 16.96% respectively (table 4.1). This reveals as there was a growth from 1990 to 2016 which contributed for economic growth during the period under review.

Table 4.2 above also reveals, the ratio of ITR to GDP shows slightly fluctuation during the period under review. Its average was 6.35% which realizes as ITR makes such contributions for the country's economy. This finding supports the conclusion of Islam (2016) ITR has been associated with a higher ratio of general government revenue and grants to the country's GDP.

Generally, the above findings reveals as indirect tax revenue significantly contributed for economic growth of Ethiopia. But, the main fact here is that even if indirect tax is contributing

for economic growth, still there are some defects regarding to its implementations in the Ethiopian context. Some of goods and services under the band of exemptions from indirect tax example VAT either not clear or needs some amendment and regulation. Either the proclamations or regulations do not make clear ideas on which part of these goods or services are to be exempted. For instance, even if the law puts breads, injera and milk as exempted goods, practically it is only bread at the level of bakeries, injera without sauce and milk which is not processed that can be exempted from the levy of VAT. Hence, there are still complications regarding to such issues unless otherwise supported by strong administrations in order to achieve the objectives of this type of tax to enhance economic growth in general. There is a single standard VAT rate in Ethiopia which makes this type of tax regressive. Unless it is supported by strong administration this regressive affects the poor as both riches and poor's pay the same amount for similar benefits from goods and services which have its own adverse impact on country's economic growth in general.

4.3. Econometrics Model Estimation and Results

4.3.1 Results of stationarity tests based on ADF test method

Test for stationary is a prerequisite for consistent and valid inference of time series models and co-integration analysis. To ascertain the time series property of the variables, we tested for unit root using the Augmented Dickey Fuller (ADF) tests. Stationary series is that, whose variable has same mean and variance, across time. The whole variables are not stationary at level (see appendix 7). In order to check whether the variables are stationary or not first we form a hypothesis and check this hypothesis against the guideline.

Null hypothesis H_0 = data has unit root (non-stationary)

Alternate hypothesis H_1 = the data doesn't have unit root (stationary)

Guideline (Criteria): if /test statistic/ is greater than /5% critical value/, reject the null hypothesis and data is stationary and not otherwise.

Table: 4.3 Results of stationarity tests at first difference based on ADF test method

Variable I(1)	Test statistics	5%Critical Value	Remark	Decision I(0)
GDP	-2.649	-1.950	Suppressed constant	stationary
	-4.259	-3.600	trend	stationary
	-4.094	-1.721	Drift (constant)	stationary
ITR	-2.614	-1.950	Suppressed constant	stationary
	-3.730	-3.600	trend	stationary
	-3.807	-1.721	Drift (constant)	stationary
TTR	-2.118	-1.950	Suppressed constant	stationary
	-3.649	-3.600	trend	stationary
	-3.685	-1.721	Drift (constant)	stationary
INF	-8.653	-1.950	Suppressed constant	stationary
	-8.354	-3.600	trend	stationary
	-8.474	-1.721	Drift (constant)	stationary

Source: computation using STATA version 12.

The result of the ADF unit root test is presented in table 4.3 above. The result provides empirical evidence of all variables in the study gained stationarity at first differencing. That is after first differencing, the means and variances of all the variables in the ADF test became constant over time (stationary). This leads a rejection in a null hypothesis. Therefore, Johansen maximum likelihood approach can be applied to test the presence of co-integrating relationship among variables.

4.3.2 Diagnostic Tests and Model Stability

A. Heteroscedasticity

If the error term in the regression equation does not have a constant variance we call there is a problem of Heteroscedasticity. To check the existence of this problem this study uses Breusch-Pagan / Cook-Weisberg test;

Table: 4.4 Breusch-Pagan tests for Heteroscedasticity

Test Statistics	Chi2 (1)	T-statistics
Heteroscedasticity	0.61	0.4338

Source: model output for Breusch-Pagan test

H_0 = non-constant variance and

H_1 = constant variance

Guide line – if the t-statistics is greater than the 5% critical value hence reject the null hypothesis and accept the alternative hypothesis.

From the above table the t-statistics is greater than 5% critical value hence rejects the null hypothesis and accept the alternative hypothesis. That means there is no a problem of heteroscedasticity.

B. Autocorrelation

Table: 4.5 Breusch-Godfrey LM test for autocorrelation

Lag	Chi2	Df	T-statistics
1	16.1015	16	0.44590
2	19.6394	16	0.23690
3	16.7992	16	0.39871

Source: model output for Breusch-Godfrey test

Autocorrelation is more a problem of time series data than cross-sectional data.

H_0 = no autocorrelation at lag order and

H_1 = there is autocorrelation at lag order

Guide line – if the t-statistics is greater than the 5% critical value hence accept the null hypothesis and reject the alternative hypothesis.

From the above table the t-statistics is greater than 5% critical value hence accept the null hypothesis there is no autocorrelation problem.

C. Normality

Table: 4.6 Jarque-Beratest test for normality

Equation	Chi2	df	T- statistics
D_lngdp	0.923	2	0.63037
D_lnitrr	0.775	2	0.67873
D_lnttr	1.061	2	0.58837
D_lninf	4.100	2	0.12873
ALL	6.859	8	0.55194

Source: model output for Jarque-Bera test

Ho = residuals are normally distributed and

H1 = residuals are not normally distributed

Guide line – if the t-statistics is greater than the 5% critical value hence accept the null hypothesis and reject the alternative hypothesis.

From the table above all t-statistics are greater than 5% critical values hence we cannot reject the null hypothesis. That means residuals are normally distributed.

Therefore all the above test of the model shows no problem and it shows green light to go forward to estimation.

The result from the above tests confirmed the model is free of the problem of serial correlation, homoscedastic and residuals are normally distributed. Hence, the model is adequate.

4.3.3 Optimal Lag Selection Results

The need for optimal lag is aroused because of the sensitivity of Johansen co-integration analysis to the number of lags included in the model. It appears that, in general, too few lags in the model results in rejection of the null hypotheses too easily, while too many lags in the

model decrease the power of the test (Verbeek, 2004). This indicates that there is some optimal lag length. Therefore, selection of optimal lag length helps to avoid loss of initial values.

Table: 4.7 Lag order selection

Sample: 1994-2016

Number of observation 23

Lag	LogL	LR	FPE	AIC	HQC	SBC
0	-11.0941		.000684	1.22558	1.26283	1.37369
1	59.31	140.81	3.3e-06	-4.11392	-3.96492	-3.52148*
2	69.8636	21.107	3.0e-06	-4.24901	-3.98827	-3.21225
3	83.5987	27.47*	2.3e-06*	-4.660076*	-4.28827*	-3.17968
4	87.2724	7.3473	4.7e-06	-4.1976	-3.71337	-2.2722

Source: Computation using STATA version 12.

As shown in the table 4.7 above the selected optimal lag length is three. This is because much of lag selection criteria's (i.e., LR, FPE, AIC, and HQ) suggest an optimal lag of three at 5% level of significance.

4.3.4 Johansen Co-Integration Analysis

The Johansen method is used for the test of co-integration as it is superior over the Engle-Granger method in allowing for the test of more than one co-integrating vectors (Verbeek, 2004). The trace test tests the null hypothesis of r co-integrating vectors against the alternative hypothesis of k co-integrating vectors, where k is the number of endogenous variables, for $r=0,1,2,\dots,k-1$.

To check whether the variables have co-integration equation or not we have to put first the hypothesis and check with the guideline. 0 maximum rank means there is no co-integration between the variables so that, H_0 = there is no co-integration among variables and H_1 = there is

co-integration among variables. This hypothesis is checked by the guideline if trace statistics is greater than 5% critical value then reject the null hypothesis and accept the alternative hypothesis. As indicated in table 4.8 below with 0 maximum rank trace statistics is 140.8216 which is greater than 5% critical value 47.21. So that, we reject the null hypothesis and accept the alternate hypothesis there is co-integration among the variables. By now we checked as there is a co-integration among the variables the next step will be to get the number of co-integrating equations. In the same vein we put hypothesis for maximum rank 1. H_0 = there is one co-integration equation among variables and H_1 = there are more than one co-integration equations among variables. The trace statistics 60.2765 is greater than the amount of 5% critical value 29.68. Therefore we reject the null hypothesis and accept the alternate hypothesis there are more than one co-integration equations among variables. In the same manner we continue until the trace statistics will be less than 5% critical value. As we can see from table 4.8 below for this study at maximum rank 3 the trace statistics is less than 5% critical value. That means there are three co-integration equations in the system which is an indication of a long run equilibrium relationship among the variables.

Table: 4.8 Johansen co-integration test result

Sample: 1994-2016

Number of observation 23

Maximum rank	LL	Eigen value	Trace statistics	5% critical value
0	57.293834	-	140.8216	47.21
1	97.566391	0.96986	60.2765	29.68
2	115.70652	0.79349	23.9962	15.41
3	127.55463	0.64309	0.3000*	3.76
4	127.70462			

Source: Computation using STATA version 12.

Long run causality

Once co-integrating equation is justified based on Johansen co-integrating coefficients, hence coefficients of co- integration equation are important. When the variables are out of long-run equilibrium, there are economic forces, captured by the adjustment coefficients that push the model back to long-run equilibrium. The speed of adjustment toward equilibrium is determined by the magnitude of coefficients of co-integrating equation. While the negative coefficients show convergence, a positive coefficient implies deviation from long run equilibrium. In this model the co-integration equation coefficients -0.6585029 with p-value of 0.019 which is significant at 5% critical value, which indicates the speed of adjustment towards their long run equilibrium (see appendix 9). This implies that 65.85% of the disequilibrium errors for the above variables are corrected in a time period. Therefore we can say that there is long-run causality running from the independent variables (i.e., indirect tax revenue, total tax revenue excluding indirect tax revenue and Inflation) to dependent variable (GDP).

4.3.5 Vector Error Correction Model (VECM)

Short-run Causality

The short-run causality also shows whether each independent variable with different time lag can jointly affect the dependent variable or not.

Hypothesis

H_0 = the coefficient is zero (there is no causal relation between the selected independent variable and the dependent variable) and

H_1 = the coefficient is not zero (there is causal relation between the selected independent variable and the dependent variable).

Guide line – if the t-statistics is less than the 5% critical value hence reject the null hypothesis and accept the alternative hypothesis.

Here the short run causality of independent variable indirect tax revenue is presented.

Table: 4.9 Short-run causality test

Chi2 (2)	5.7
T- statistics	0.047

Source: model output

From the table above the t-statistics is less than 5% critical value. So that, reject the null hypothesis and accept the alternative hypothesis there is short run causality goes running from indirect tax revenue to GDP. Therefore we can conclude that as there is a long-run and a short-run causality running from all independent variables to the dependent variable.

The short run dynamics of the long run model is estimated using vector error correction model. Variables entering in the short run model are in difference and the coefficient of differenced variables presented in table 4.10, represent short run dynamics. The vector error correction term has important implications in linking the short-run periods to the long run period. It represents a deviation from the long run equilibrium which is corrected gradually through a series of short run partial adjustments.

Table: 4.10 Results of error correction model

Sample 1990 – 2016

Observation 24

Variables	Coefficient	Std. error	t-statistic	Prob
C	0.0793742	0.0256779	3.09	0.003
ITR	0.1511679	0.0693501	2.18	0.011
TTR	0.1124083	0.0472175	2.38	0.008
INF	-0.0886215	0.0436321	-2.03	0.019

Source: computation using STATA version 12.

$$\text{LNGDP} = 0.079 + 0.15\text{ITR} + 0.112\text{TTR} - 0.088\text{INF}$$

(0.025) (0.069) (0.047) (0.043)

Above mentioned anticipated results of the table 4.10 depicts, that all variables are statistically significant at 5% critical value. Furthermore, an examination of the explanatory variables reveal that indirect tax of one period lag exerts a significant and positive relationship on the gross domestic product (economic growth) on average a 1% increase in indirect tax revenue leads to 0.15% increase in GDP of Ethiopia keep tax revenue excluding indirect tax revenue and inflation constant. This finding is consistent with Kneller et. al (1999), Arisoy and Unlukaplan (2010), Jalata (2014), Islam (2016) who all held that indirect taxes had a positive and significant relationship with economic growth.

Total tax revenue excluding indirect tax revenue also exhibited a positive relationship with economic growth. It was also observed that total tax revenue (excluding indirect tax revenue) of a year ago has an impact on economic growth on average a 1% increase in total tax revenue leads to 0.11% increase in GDP of Ethiopia keep indirect tax revenue and inflation constant. It was however found to be statistically significant at 5%, implying that revenue generated from total tax revenue (excluding indirect tax revenue) accounts for the level of growth in the GDP of the economy.

It shows that on average 1% increase in inflation results in a 0.09% reduction in GDP, which implies that increasing inflationary pressure discourage tax revenue that will aggravate budget deficit as low level of tax revenue is associated with low level of government revenue and then reduce economic growth keep other factors constant.

Generally, the above findings reveals as indirect tax revenue significantly contributed for economic growth of Ethiopia. The researcher therefore concludes that the null hypothesis which states that indirect tax revenue has no significant contributions to economic growth of Ethiopia from 1990 to 2016 is hereby rejected and the alternative hypothesis of indirect tax revenue makes significant contributions to the country's economic growth for the study period is accepted.

But, in developing countries direct tax ratios are lower than indirect taxes and there exists sizable tax evasion (Chaudhry and Munir, 2010).

Moreover, in the short run weak institutional capacity, rent seeking, and corruption might be higher. According to Tanzi and Davoodi (2000) institutional quality and governance, are important factors for poor tax collection in developing countries in which Ethiopia is not the exception. This is through its contribution to tax evasion, improper tax exemptions and weak administration. Corrupt tax and custom officials allocate a proportion of their working hours to collect bribes in exchange for alleviating tax burdens of taxpayers offering these bribes; and complicating procedures for taxpayers who refuse to participate in the bribery scheme, thus forcing them out of business or into the informal sector. These activities lower indirect tax revenue for the public treasury and then its contribution to economic growth.

CHAPTER FIVE: CONCLUSION AND RECOMENDATION

5.1 Conclusion

This study investigated the relationship between indirect tax and economic growth in Ethiopia. The motivation for this study was primarily premised on the paucity of empirical literature on the indirect tax – growth dynamics in developing economies which Ethiopia is not an exceptional and the inconsistency of empirics on the issue in the developed economies. The study uses secondary data of GDP, indirect tax revenue, total tax revenue excluding indirect tax revenue and inflation for the period 1990 – 2016 sourced from Ministry of Finance and Economic Development of Ethiopia (MoFED), Ethiopian Revenues and Custom Authority (ERCA) and world bank data bank (world development indicators). The study applied descriptive analysis and Johansen co-integration approach and vector error correction model.

The descriptive statistics of the study had shown the standard deviation with regard to the GDP when compared with the mean suggests that the GDP had some sharp increases in some time during the period under consideration may be resulted from the revision of the parameters used for the GDP, policy shift from structural adjustment policy to developmental state and reforms in a taxing system in 2002. In addition to that as the ratio of indirect tax revenue to GDP in average was 6.35% and the finding also revealed that the growth rate of indirect tax revenue for the study period was 17.35 % in average. Likewise, the average growth rates of the government revenue and GDP were 16.72% and 15.2% respectively. This reveals that, during the periods under review (1990 to 2016), the revenue generated from indirect tax revenue contributed for the country's economic growth in general.

The stationary behavior of variables included in the model is tested using ADF test, and the test result showed all variables were stationary at first difference. The long run and short run relationship established between GDP and indirect tax revenue, total tax revenue excluding indirect tax revenue and inflation implied various empirical findings. Indirect tax revenue, total tax revenue excluding indirect tax revenue has a positive and significant effect on economic growth while inflation affects GDP negatively. Therefore, to be effective, it requires strong tax

administration, cooperation of the tax payers with taxing authority and the government in general.

This study among other contributions has helped to close the knowledge gap arising from the paucity of empirics in the area. To the best of the researcher knowledge, this may be the first attempt to test the contribution of total indirect tax to total tax revenue and on economic growth of Ethiopia. While some existing studies have focused on the impact of the subcomponents of indirect tax on economic growth, to our knowledge, no study has taken a wholistic view of the relationship between indirect tax revenue and economic growth.

5.2 Recommendation

The finding on indirect tax revenue suggests some caution on the part of the government to identify all administrative loopholes for linkages to plug and to continue to maximize the contribution of indirect tax revenue to economic growth. In addition, and to achieve an optimum policy thrust, there must be commitment and honesty on the part of the agents of indirect tax revenues and total tax revenues with the exception of indirect tax revenues with respect to the collection and payment; special remuneration, training and retraining of these agents, all in an attempt to enhance impact of these taxes on the economic growth.

Caution and watch 'is' advised on any policy direction on the collection of taxes on imports and exports in order to avoid using the policy as a counter-incentive to the economy. This can occur when a particular policy direction is targeted at maximum collection of customs and excise duties (CED) at the expense of the economy.

Since consumption has been found to be determined habit, locality, personal interest and obligation than price, indirect tax can not to be taken for the purpose of allocation and distribution of resources fully. So, government ultimately needs to gradually shift collecting the lion share of tax revenue from direct tax in the coming years.

Regressive nature of indirect taxes should be corrected by providing systematic and clearly specified exemptions over the item consumed by the poor class. Besides, the government should launch rigorously pro-poor social development programs along with income generating activities so that they will be able in future to pay tax.

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APPENDIX

APPENDIX: 1 Growth rate of GDP

. regress lngdp year

Source	SS	df	MS			
Model	37.9823847	1	37.9823847	Number of obs =	27	
Residual	3.77854092	25	.151141637	F(1, 25) =	251.30	
Total	41.7609256	26	1.60618945	Prob > F =	0.0000	
				R-squared =	0.9095	
				Adj R-squared =	0.9059	
				Root MSE =	.38877	

lngdp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
year	.1522769	.0096058	15.85	0.000	.1324934	.1720605
_cons	-279.3429	19.24063	-14.52	0.000	-318.9697	-239.716

APPENDIX: 2 Growth rate of ITR

. regress lnitr year

Source	SS	df	MS			
Model	49.350091	1	49.350091	Number of obs =	27	
Residual	1.89074842	25	.075629937	F(1, 25) =	652.52	
Total	51.2408394	26	1.97080152	Prob > F =	0.0000	
				R-squared =	0.9631	
				Adj R-squared =	0.9616	
				Root MSE =	.27501	

lnitr	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
year	.1735749	.006795	25.54	0.000	.1595804	.1875695
_cons	-324.8719	13.6105	-23.87	0.000	-352.9032	-296.8405

APPENDIX: 3 Growth rate of TTR

. regress lntrtr year

Source	SS	df	MS			
Model	47.1445684	1	47.1445684	Number of obs =	27	
Residual	1.9962726	25	.079850904	F(1, 25) =	590.41	
Total	49.140841	26	1.89003235	Prob > F =	0.0000	
				R-squared =	0.9594	
				Adj R-squared =	0.9578	
				Root MSE =	.28258	

lntrtr	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
year	.169652	.0069821	24.30	0.000	.1552722	.1840318
_cons	-316.5826	13.98515	-22.64	0.000	-345.3856	-287.7796

APPENDIX: 4 Growth rate of TGR

. regress lntgr year

Source	SS	df	MS			
Model	45.8248078	1	45.8248078	Number of obs =	27	
Residual	1.41764309	25	.056705724	F(1, 25) =	808.12	
Total	47.2424509	26	1.81701734	Prob > F =	0.0000	
				R-squared =	0.9700	
				Adj R-squared =	0.9688	
				Root MSE =	.23813	

lntgr	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
year	.1672605	.0058838	28.43	0.000	.1551426	.1793784
_cons	-311.2667	11.7853	-26.41	0.000	-335.5389	-286.9944

APPENDIX: 5 Ratios of ITR/GDP, ITR/TTR, ITR/TGR

Notes:

```

1. (/v# option or -set maxvar-) 5000 maximum variables

. *(5 variables, 27 observations pasted into data editor)

. ratio (itr/gdp) (itr/ttr) (itr/tgr)

Ratio estimation                Number of obs    =        27

    _ratio_1: itr/gdp
    _ratio_2: itr/ttr
    _ratio_3: itr/tgr

```

	Linearized		
	Ratio	Std. Err.	[95% Conf. Interval]
_ratio_1	.0635914	.002742	.057955 .0692277
_ratio_2	.6692109	.0115852	.6453972 .6930246
_ratio_3	.4135304	.0176791	.3771904 .4498704

APPENDIX: 6 Mean and standard deviation of GDP, ITR, TTR and TGR

```
. summarize gdp itr ttr tgr
```

Variable	Obs	Mean	Std. Dev.	Min	Max
gdp	27	3.15e+11	4.25e+11	2.52e+10	1.53e+12
itr	27	2.01e+10	2.77e+10	9.55e+08	9.10e+10
ttr	27	3.00e+10	4.07e+10	1.62e+09	1.27e+11
tgr	27	4.85e+10	6.59e+10	2.75e+09	2.45e+11

```
. twoway (line itr year)
```

APPENDIX: 7 Stationarity test at level or I (0)

Variable I(0)	Test statistics	5% Critical Value	Remark	Decision I(0)
GDP	4.666	-1.950	Suppressed constant	stationary
	-0.916	-3.600	trend	Not stationary
	0.992	-1.721	Drift (constant)	Not stationary
ITR	5.361	-1.950	Suppressed constant	stationary

	-1.800	-3.600	trend	Not stationary
	0.885	-1.721	Drift (constant)	Not stationary
TTR	3.857	-1.950	Suppressed constant	stationary
	-2.282	-3.600	trend	Not stationary
	0.563	-1.721	Drift (constant)	Not stationary
INF	-1.472	-1.950	Suppressed constant	Not stationary
	-3.482	-3.600	trend	Not stationary
	-3.310	-1.721	Drift (constant)	Not stationary

APPENDIX: 8 Trend of ITR, TTR and ratio of ITR/GDP, ITR/TTR, ITR/TGR

year	Indirect taxes revenue	Total government revenue	Indirect taxes revenue as % of GDP	Indirect taxes revenue as % of TGR	Indirect taxes revenue as % of TTR
1990	1,234,700,000.00	3,544,000,000.00	4.899099	34.83916	57.18322
1991	1,222,000,000.00	3,169,600,000.00	4.38461	38.55376	59.51105
1992	954,600,000.00	2,750,900,000.00	1.815868	34.70137	58.99147
1993	1,468,092,000.00	3,657,328,000.00	2.881255	40.14111	66.55726
1994	2,131,300,000.00	4,926,100,000.00	5.231937	43.26546	69.27678
1995	2,567,000,000.00	7,044,456,688.00	5.299735	36.44	66.18382
1996	2,969,465,000.00	8,062,955,000.00	5.344455	36.8285	62.86837
1997	3,455,057,995.00	9,378,427,995.00	5.846738	36.84048	64.47281
1998	3,422,824,000.00	9,566,574,000.00	6.653505	35.77899	64.67635
1999	3,510,520,000.00	11,195,260,000.00	5.600274	31.3572	63.49412
2000	3,770,117,216.00	11,300,609,945.00	5.491065	33.36207	61.497

2001	4,705,040,000.00	13,735,700,000.00	6.693228	34.2541	63.64129
2002	4,844,332,323.00	11,754,306,323.00	7.191711	41.21326	61.64888
2003	5,321,091,000.00	13,890,856,000.00	7.149846	38.30643	64.93647
2004	7,089,690,000.00	19,521,860,000.00	8.088359	36.31667	65.82208
2005	8,226,062,165.34	20,967,059,583.26	7.641184	39.23327	68.33987
2006	9,403,137,468.70	22,866,533,624.70	6.99719	41.12183	67.59091
2007	11,365,016,562.49	32,204,717,797.49	6.238373	35.28991	69.76783
2008	15,433,171,409.00	41,501,579,920.00	5.472191	37.18695	68.14045
2009	18,474,643,732.00	56,036,400,996.10	4.418524	32.969	65.76442
2010	23,912,000,000.00	61,741,000,000.00	4.956195	38.72953	61.60029
2011	39,431,000,000.00	85,612,000,000.00	7.152365	46.0578	66.85487
2012	56,883,000,000.00	115,658,000,000.00	7.526475	49.18207	66.34437
2013	64,710,724,878.01	137,191,866,917.29	7.457627	47.16805	64.74957
2014	78,324,268,387.52	158,077,698,753.97	7.371777	49.54796	63.58555
2015	75,765,443,911.00	199,605,775,011.00	5.817693	37.95754	70.96281
2016	91,040,043,756.00	244,819,471,603.00	5.957946	37.1866	71.84533
Average	20,060,531,177.93	48,510,408,820.66	6.359137	41.35	66.9211

APPENDIX: 9 Co-integration equation and Vector Error Corrections (VEC)

Vector error-correction model

Sample: 1993 - 2016 No. of obs = 24
 Log likelihood = 76.84988 AIC = -2.154156
 Det(Sigma_ml) = 1.94e-08 HQIC = -1.490013
 SBIC = .3492079

Equation	Parms	RMSE	R-sq	chi2	P>chi2
D_gdp	12	.102031	0.8756	84.46456	0.0000
D_itr	12	.097297	0.9120	124.3374	0.0000
D_ttr	12	.139666	0.8244	56.32277	0.0000
D_lninf	12	1.08826	0.6244	19.94894	0.0681

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
D_gdp						
_ce1						
L1.	-.1357715	.0612702	-2.22	0.027	-.2558589	-.015684
_ce2						
L1.	.8092677	.2781742	2.91	0.004	.2640562	1.354479
_ce3						
L1.	-.6585029	.2810312	-2.34	0.019	-1.209314	-.1076919
gdp						
LD.	-.1961196	.25245	-0.78	0.437	-.6909125	.2986733
L2D.	-.0560248	.2275677	-0.25	0.806	-.5020494	.3899998
itr						
LD.	.1511679	.0693501	2.18	0.011	1.356682	.0656536
L2D.	.1186463	.3065861	0.39	0.299	-.919544	.2822514
ttr						
LD.	.1124083	.0472175	2.38	0.038	.6678709	0.536946
L2D.	.1379998	.2495298	0.55	0.580	-.3510696	.6270693
lninf						
LD.	-.0886215	.0436321	-2.03	0.019	-.1039387	.0866956
L2D.	.0274926	.0291949	0.94	0.346	-.0297284	.0847137
_cons						
	.0793742	.0256779	3.09	0.003	-.0297525	.188501

APPENDIX: 10 Johansen tests for co-integration

```
. vecrank lngdp lnitr lnttr lninf, trend(constant) lags(4)
```

Johansen tests for cointegration

```
Trend: constant                      Number of obs =    23  
Sample: 1994 - 2016                  Lags =           4
```

maximum				trace	5%
rank	parms	LL	eigenvalue	statistic	critical
0	52	57.293834	.	140.8216	47.21
1	59	97.566391	0.96986	60.2765	29.68
2	64	115.70652	0.79349	23.9962	15.41
3	67	127.55463	0.64309	0.3000*	3.76
4	68	127.70462	0.01296		
