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**ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
DEPARTMENT OF ACCOUNTING AND FINANCE**

The Relationship between Indirect Tax and Economic Growth in Ethiopia

A Thesis Submitted to Addis Ababa University College of Business and Economics Department of Accounting and Finance for the Partial Fulfillment of the Requirement of Masters of Science Degree in Accounting and Finance

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Statement of Declaration

I, Dawit Getachew Degu, hereby declare that this thesis entitled “The Relationship between Indirect Tax and Economic Growth in Ethiopia” submitted by me for the award of the Degree of Master of Accounting and Finance, to Addis Ababa University, Ethiopia, is my original work and it has never been presented in any university. All sources and materials used for this thesis have been duly acknowledged.

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CERTIFICATION
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This is to certify that the thesis prepared by Dawit Getachew Degu, entitled: The Relationship between Indirect Tax and Economic Growth in Ethiopia submitted in partial fulfillment of the requirements for the Degree of Masters of Science in Accounting and Finance complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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List of Acronyms

ARDL	Auto Regressive Distributed Lag
CDT	Custom duties taxes
CIF	Cost Insurance Freight
ERCA	Ethiopian revenue and Customs Authority
EXT	Excise tax
GDP	Gross Domestic Product
GNP	Growth national product
GTPI	Growth and Transformation Plan One
GTPII	Growth and Transformation Plan Two
MoFEC	Minister of Finance and Economic Commission
MoFED	Ministry of finance and Economic Development
NBE	National Bank of Ethiopia
NPC	National Planning Commission
NTR	Non-Tax Revenue
OLS	Ordinary least squares
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
RGDP	Real gross Domestic product
SDPRP	Sustainable Development and Poverty Reduction Program
TOT	Turn over tax
TTR	Total Tax Revenue
UNDP	United Nation Development Program
USD	United State Dollar
VAT	Value Added Tax

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Abstract

The main objectives of this study was to examine the relationship between Indirect tax and Economic growth in Ethiopia in order to make a one step contribution to the existing literature, especially in Ethiopia where there is no empirical study on the topic. The study used quantitative research approach. To this end, secondary data was collected from Ministry of finance and Economic Development, National Bank of Ethiopia and Ethiopian Revenue and Customs Authority for the period 2002 to 2016. The researcher also used relevant websites and annual bulletins for the study. The data was summarized and analyzed using descriptive and multiple regressions models in order to answer the objective of the study. The empirical results showed that Value added tax has a positive significant relationship with RGDP at 1% and Custom duty has a negative significant relationship with RGDP at 5% confidence interval while Excise tax and Turnover tax have no significant relationship with RGDP. From the findings the researcher recommended that Ethiopian Revenue and Custom Authority should improve its efficiency in collecting tax revenue.

Keywords: Indirect tax, Economic growth, Quantitative data and Multiple regression,

CHAPTER ONE: Introduction

1.1 Background of the Study

Tax is an involuntary levy on the citizens and a policy tool for the government that helps to mobilize revenue to provide goods and services to the public which are necessary for the society. By collecting tax the government finances its mega projects which are important to accelerate the economic while minimizing wealth distribution inequalities.

Tax policy can influence economic growth through the four determinants of economic growth called labor supply, capital investment, technological progress, and human capital, by changing their after tax return to a certain economic activities Seida (2016). In any economy where there is an optimal tax rate will ensure maximum economic growth. Economic growth is the increase in a country's productive capacity, as measured by comparing the gross national product (GNP) in a year with the GNP in the previous year.

Ethiopia has achieved a remarkable socio-economic and human development results by implementing blueprints called Sustainable Development and Poverty Reduction Program (SDPRP), Plan for Accelerated and Sustained Development to End Poverty (PASDEP) and Growth and Transformation Plan I since 2002 Mulalem (2017). Annual average income per capita increased from 377 USD in 2009/2010 to 794 USD by 2015/16 and the proportion of population living below national poverty line significantly dropped from 44.4% in 2000 to 29.6% in 2011 and estimated to further decline to 23.4 % in 2014/15 NPC(2017).

The government launched a new plan called the GTP II in 2015/16. The objective of the GTP II is to become a lower middle-income country by 2025, through average annual real growth of 11% in 2015/16–2019/20. To achieve the GTP II, the government needs a huge budget to finance its expenditure through domestic resource rather than external resources, which do not bring economic growth in the long run. From the domestic source, tax is the main source of the government to finance its expenditure.

The tax mix of Ethiopia is classified as direct tax and indirect tax. The direct tax comprises four income schedules namely personal income tax, rental income tax, business profit tax, and other

incomes tax. On the other hand the indirect tax comprises value added tax, excise tax, turnover tax and Customs duties.

Indirect taxes are imposed on prices of taxable supplies of goods and services. Since the seller can transfer the tax to the consumer, the final tax burden falls on the consumer of goods and services. (Barnard, 2010 & Cornia, Gomez-Sabaino & Martoran 2011) as cited in Tesfaye Alemayehu (2015) indirect taxes are seen to be regressive since every person (whether rich or poor) pay the same rate on their consumption expenditure. Since the poor pay a higher proportion of their income as tax, indirect tax tends to increase the disparity in societal wellbeing.

This study attempted to examine the relationship between Indirect tax and Economy growth in Ethiopia using Quantitative study, to play its own contribution to achieve the Vision set by the government. Additionally, the study will make a one contribution to the existing literature, especially in Ethiopia where there is no empirical study on the topic, to the best knowledge of the researcher.

1.2 Statement of the Problem

Ethiopia has achieved a remarkable socio-economic and human development results by implementing blueprints called Sustainable Development and Poverty Reduction Program (SDPRP), Plan for Accelerated and Sustained Development to End Poverty (PASDEP) and Growth and Transformation Plan I since 2002. The government also launched a new plan called the GTP II in 2015/16, aspiring to be a lower middle income country by 2025 Mulalem (2017).

The economic growth was sustainable and fast by any standard, i.e. average economic growth per annum was 10.6% from 2003/04–2015/16, annual average income per capita increased from 377 USD in 2009/2010 to 794 USD by 2015/16, the proportion of population living below national poverty line significantly dropped from 44.4% in 2000 to 29.6% in 2011 and estimated to further decline to 23.4 % in 2014/15 NPC (2017).

The capacity of tax collection increased from Birr 12.4 billion in 2005 to Birr 165.3 billion in 2015 which is 133.3% growth in a decade and the share of domestic revenue in the total public revenue increased from 77 % to 94 % in the same period.

Even though Ethiopia has achieved a remarkable economic growth for the past 10 years, the Tax to GDP ratio growth is very little, i.e. Ethiopia Tax to GDP ratio on 2005 was 12.5% and after 10 years its ratio is still on 13.4%. The ratio is far below the Sub Saharan Average of about 18%, emerging economies over 20% and for developed economies above 30% Haile (2016). This poses a question for the researcher, what is the relationship between Indirect tax and Economic growth? Besides to this there is no consensus result by the past researcher whether tax has positive or negative relationship with the economic growth.

for example: studies done by Onakoy et al(2017), Umoru et al (2013), Joseph(2016), Oladipupo et al (2015), Inyama et al(2016) found a positive relationship between Tax and GDP while Shahzad et al. (2016), Madugba et al (2016), Kairanya et al (2013), Otieno (2003), Anne (2014), Cyrus (2013) found negative relationship.

Best of the knowledge of the researcher, there is no research made in Ethiopia on the title “The relationship between Indirect tax and Economic growth in Ethiopia”. However, there are some related researches conducted by Dakito(2011) examined the contribution of VAT for the development of Ethiopia economy and its impact on social spending, Dasalegn(2014) analyze how VAT becomes a tool for national development in Ethiopian, Abay (2015) examines the contribution of VAT on Ethiopian economy, Biruk (2016) the relationship between government revenue growth and economic growth in Ethiopia, Firehiwot(2016) examine the nexus between tax revenue, private final consumption, inflation and economic growth in Ethiopia.

Therefore, the researcher examined the relationship between Indirect tax and Economic growth in Ethiopia which is a very debating topic by the past researcher. Besides to this, the study will make a one contribution to the existing literature on this area, especially in Ethiopia where there is no empirical study on the topic.

1.3. Research Questions

The researcher tried to address the following research question: What is the relationship between Indirect tax and Economic growth in Ethiopia?

1.4. Specific Questions

In view of the general objective this paper attempted to achieve the following specific question:

- (i) What is the relationship between Value Added Tax and Economic Growth in Ethiopia?
- (ii) What is the relationship between Excise Tax and Economic Growth in Ethiopia?
- (iii) What is the relationship between Turnover Tax and Economic Growth in Ethiopia?
- (iv) What is the relationship between Custom Duties and Economic Growth in Ethiopia?

1.5. Objective of the study

The main objective of the study was to examine the relationship between Indirect tax and Economic growth in Ethiopia. The specific objectives include;

- To identify the relationship of Value Added Tax and Economic Growth in Ethiopia.
- To determine the relationship of Excise Tax and Economic Growth in Ethiopia.
- To assess the relationship of Turnover Tax and Economic Growth in Ethiopia.
- To explore the relationship of Custom Duty and Economic Growth in Ethiopia.

1.6. Hypothesis

To examine the relationship between Indirect tax and Economic growth in Ethiopia, the following hypotheses were formulated for the study:

H1: There is a significant relationship between VAT and Economic Growth in Ethiopia.

H2: There is a significant relationship between Excise Tax and Economic Growth in Ethiopia.

H3: There is a significant relationship between Turnover Tax and Economic Growth in Ethiopia.

H4: There is a significant relationship between Custom Duties and Economic Growth in Ethiopia.

1.7. Significance of the Study

The researcher believed the study revealed the relationship between Indirect taxes and Economic growth in Ethiopia by analyzing the Indirect tax revenue and RGDP data for the past 14 years from 2001/2 to 2015/16. The researcher attempted to come up with a better recommendation to improve the tax policy to the concerned stakeholders. The outcome of the research helps to

contribute a significant idea in making new policy and procedure on tax and it can be used as a reference for further study.

1.8. Scope of the Study

The scope of the study is limited to 14 years data from 2002 to 2016 because of the implementation of VAT in Ethiopia since 2002.

1.9. Structure of the Study

This study organized in five chapters. The first and the second chapters deals with Introduction of the study, Statement of the problem, Research questions, Objectives of the research, Hypothesis, Significance of the study, Scope, limitation of the study and the Theories and Empirical literature review on the relationship between Indirect Tax and Economic growth. The third chapter presents the research methodology, design and model specification of the study and the fourth chapter discusses the Finding, Data analysis and Interpretation. Finally the last chapter presents the main Conclusion and Recommendations of the study.

CHAPTER TWO: Literature Review

Introduction

This chapter is presented into three sections. The first section deals with theoretical literature review, the second section deals with empirical review and the last section gives an overview of the literature.

2.1 Theoretical Literature Review

This section will give insights about the definition and principles of tax and economic growth, Ethiopian Economy performance, Ethiopian tax system, VAT, Custom duty and Excise tax.

2.1.1. Theories of Taxation

Tax is an involuntary levy on the citizens and a policy tool for the government that helps to mobilize revenue to provide goods and services to the public which are necessary for the society. Hugh Dalton defined tax as “a compulsory contribution imposed by a public authority, irrespective of the exact amount of services rendered to the taxpayer in return, and not imposed as a penalty for any legal offence” as cited by Lauden (2015).

Since Imposition of a tax creates a tax burden on tax payers, it poses questions such as: Should taxes be levied on citizens equally, or should "ability to pay" be a major consideration? Should taxes be for revenue only, or as a means of social control, or both? W. M. Curtiss (1967). To answers such questions various theories have been developed.

Influential theories have been the ability theory presented by Arthur Cecil Pigou in 1920 and the benefit theory developed by Erik Lindahl in 1919 (Wikipedia). The two principals have been developed as a guide to equity which brings fairness in the tax system.

Individual theories advocates that tax should be levied to the citizens in proportion to the benefits they receive from the government services, it is similar with the benefit theory. While the social theory believes advocates that tax should be used to minimize inequalities between citizens, which is similar with ability to pay theory.

Adam Smith said taxation should be imposed in proportion to the benefits a taxpayer receives from the state and should be predictable, convenient, and efficient. A good tax system follows the principles of efficiency, fairness and easy to administer.

2.1.1.1 The Benefit Theory

This theory advocates the tax should be levied to the citizens in proportion to the benefits they receive from the government services. The drawback of this theory is unable to measure in monetary terms the benefit acquired from the government service such as Justice, Military and Educational system. The principle also contradicts with Justice Principle by collecting same amount from the poor and the rich in proportion to the benefit they earned Yohanes et.al (2013).

2.1.1.2 The Cost of Theory Service

Advocates of this theory says 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. This principle can be applied to some extent in those services where their cost can be easily determined like Electricity, Railway and Adama Express Roads services .However, Most of the government expenditures cannot be determined their cost in monetary value. This theory also contradicts with Justice Principle by collecting same amount from the poor and the rich in proportion to the cost they incurred (Economic concepts.com)

2.1.1.3. The Ability-to-Pay Theory

It is based on taxpayers' ability to pay; there is no *quid pro quo*. This theory holds that people with a higher income (vertical equity) should pay more tax and those who have the same income (horizontal equity) should pay the same tax. *Since it* use different tax bracket based on the income of the citizen either horizontal or vertical, *it* is a progressive taxation principle. The problem of this theory, being progressive nature, will not motivate the rich to work hard as they pay more tax to the government Misrak (2014).

2.1.2 Tax mix of Ethiopia

The tax mix of Ethiopia is classified as direct tax and indirect tax. Indirect taxes are imposed on prices of taxable supplies of goods and services where the seller can transfer the tax burden to

the consumer of goods and services. Since the poor pay a higher proportion of their income as tax, indirect tax tends to increase the disparity in societal wellbeing. There are two types of indirect tax called taxes and duties. Taxes include Goods and Services Tax such as VAT and Turnover tax. Duty is a tax imposed on goods imported from another nation and on locally manufactured goods. The tax that is levied on imported goods is Custom duty and the tax that is levied on locally produced is excise tax. The scope of tax which is wider in comparison to duty is their main difference Shibiru (2015)

2.1.2.1 Value Added Tax

AVAT is an indirect tax imposed and collected on the value added at each stage in the production and distribution of a good or service. It is a consumption tax since it is charged only for goods and services to be sold or imported not from the earned income. The seller shifts the tax burden to the buyer by adding the value of the tax to the cost of the goods/ services and pays the same amount to the government.

VAT was first introduced at a national level in France in 1954 and spread in the world. Currently Value-added taxes are utilized in approximately 156 countries worldwide, except the United States the only major developed country. After the inception of VAT starting from 1950's, the world economies were largely integrated with each other (many of the industrialized countries enacted some rule that must be fulfilled regarding to VAT to join Organization for Economic Cooperation and Development) which could be a reason for the spread of a VAT Desalegn (2014).

The adoption of VAT rate in the countries is not similar across the world. The average VAT rate in Europe is 20%, which is 5% points higher than the global average, even though Switzerland has an 8% VAT rate. African countries and Asia have an average VAT rate of about 15 and 12.3 % respectively.

VAT Process in Ethiopia

VAT has been introduced effectively in Ethiopia on January 1, 2003 by replacing sales tax (VAT Proclamation No.285/2002 and Regulation No. 79/2002). VAT was viewed as more efficient than import taxes, as it does not discriminate between domestic and imported goods Dakito

(2016). Ethiopia introduced VAT not only for revenue generating agenda but also for fulfillment of the forthcoming trade agreements with world trade organizations (WTO) and to meet the directions given by the International monetary fund (IMF) Dasalegn (2014).

There are two types of VAT registration: A compulsory registration is required, if the person or the organization have a taxable transaction more than 500,000 at the end of the physical period or can reasonably predict the amount at the beginning of the physical period and a voluntary registration can be made by those who have a taxable transaction below 500,000 birr and who are not required by law Wollela (2007).

For every taxable transaction by a registered person, the VAT rate is 15% and Zero rate of the value goods and services other than those exempted. Taxable transactions which shall be charged with zero percent are export goods or services. Financial services, educational service, healthcare and transportation services are some of the exempted sectors from the VAT rate. Humanitarian aid institutions, embassies and international organizations are exempted from VAT hence, they can request the revenue authority to write a letter addressed to the supplier expressing their exemption entitlement and they can buy without paying VAT Wolela (2007).

There two principal components of VAT are called input and output VAT. Input VAT is the VAT payable by a taxable person on goods and services supplied to him which is not a cost of purchase /import but a source document for the input VAT deduction and Output VAT is the VAT collectible by a taxable person at the time of sale of taxable goods and services.

2.1.2.2 Turnover Tax

Turnover Tax has replaced Sales Tax in Ethiopia by proclamation No.308/2002 on taxable goods supplied and taxable service rendered within the territory of Ethiopia. The government of Ethiopia imposed Turnover tax on taxable persons not registered for VAT, but supply goods and services in the country, to make complete the coverage of the tax system, to enhance fairness in commercial relations and to allow non VAT registered taxable persons Misrak (2014).

The Turnover Tax rate shall be applicable 2% for service rendered locally such as contractor, grain mills, tractors and combine-harvesters, 10% for others services and 2% for all taxable Goods. The taxable and exemption process is similar with the VAT. I.e. Goods and services

which are subject to VAT also taxable to TOT and those exempted from VAT also exempted from TOT.

The main difference between VAT and TOT is the cascading effect, where TOT is levied on the selling price of a taxable transaction unlike VAT, applicable on the newly created value at each stage.

2.1.2.3 Custom Duties

Customs duties are taxes payable on goods entering or leaving the country by all persons and entities that have no duty-free privileges. The government collects customs duty only from import items, Export tax to encourage the export sector except on certain hides and skins of animals. Taxes applicable on imported goods are: Import (Customs duty, Withholding Tax (a fixed rate of 3%), Excise Tax (if applicable), VAT (a fixed rate of 15%) and Surtax (a fixed rate of 10%) Abebe (2007).

Customs duty has 6 bands or groups of rates (0%, 5%, 10% 20%, 30% and 35%). Currently the maximum applicable customs duty rate is 35% of the CIF (Cost + Insurance + Freight) value of an imported item which was dropped from 60% to 40 and 35 % in 2000 and 2002 respectively. ERCA collects customs duty taxes by classify import goods based on their primary purpose called productive and non productive. Items to be re-exported and for public use are classified in category one and import items for all other (nonproductive) purpose are classified in category two Abebe (2007).

2.1.2.4 Excise Tax

Excise tax is a tax levied on locally produced goods and sometimes it is called Sin tax, because it is used to minimize negative externalities. Government levy excise tax on goods that have a high social cost like cigarettes and alcohol to reduce their demand or users by increasing their cost Misrak (2014).

The government may charge excise tax on goods using ad valorem or specific method. Ad valorem is a Latin phrase means "according to value" i.e., the tax varies based on the value of the product or service being taxed. E.g., the government levy 10% excise tax on pack of cigarettes, if you buy a cigarette that costs Birr 60, you will pay Birr 6(10% 60) as excise tax. Specific excise

tax, as the name indicated, it is a set tax or a specific fee added to a certain product not value. e.g., For example, the government levies 2 Birr excise tax on pack of cigarettes, if you buy a cigarette that costs Birr 60, you will pay Birr as excise tax regardless of the value of the goods Abebe (2007).

Excise tax is the second of the five taxes levied on import items and it is one of the most well known forms of tax in Ethiopia. Excise tax is assessed on eighteen classes of goods, applied equally to domestically produced and imported goods, and range from 10% for textiles and electronics, to as high as 100% for alcoholic beverages.

The base of calculation for goods locally produced is the cost of production except depreciation costs of Machineries multiplied by its excise tax rate. In calculating excise tax payable on textile and textile products locally produced in a factory and vehicles assembled locally, the tax paid on import of inputs that are used to produce such goods shall be deducted. Likewise, cost + insurance + freight (CIF) + customs duty multiplied by excise tax rate is the base of computation for goods imported into the country. There are many provisions that are common to both excise and customs duty. The procedures of administration, settlement and tribunal are same in both the taxes. The principles of valuation, refund search, confiscation and appeal are almost same in the case of the two taxes.

There are many provisions that are common to both excise and customs duty. The procedures of administration, settlement and tribunal are same in both the taxes. The principles of valuation, refund search, confiscation and appeal are almost same in the case of the two taxes Abebe (2007).

2.1.3 Ethiopian Economy Performance

Ethiopia has achieved a remarkable socio-economic and human development results by implementing blueprints called Sustainable Development and Poverty Reduction Program (SDPRP), Plan for Accelerated and Sustained Development to End Poverty (PASDEP) and Growth and Transformation Plan I since 2002.

During the first three years (2005/06-2007/08) of the PASDEP period, the economy registered a high growth average rate of 11%, driven by sustained and rapid expansion of service activities.

The government implemented “Growth and Transformation Plan (GTP I)” to achieve a rapid and sustainable 11% average growth rate through creating conducive macroeconomic environment while containing the general inflation rate within the single digit range Mulalem(2017).

The economic growth registered during those periods contributed to a sustained increase in per capita income which result a decline in absolute poverty and improvements in standard of living. The growth achieved was so sustainable and fast by any standard. Annual average income per capita increased from 377 USD in 2009/2010 to 794 USD by 2015/16 and the proportion of population living below national poverty line significantly dropped from 44.2% in 2000 to 29.6% in 2011 and estimated to further decline to 23.4 % in 2014/15 *NPC (2017)*.

The Ethiopian economy has enjoyed a strong and sustained growth during 2003/04 to 2015/ 16 driven by public sector-led development strategy that focused on investing heavily in infrastructure development. The expansion in service and agricultural sectors were playing significant role while manufacturing sector was relatively modest in accelerating the economic growth over the period. Moreover, the economy has experienced noticeable structural changes during this period. The significance of agriculture in GDP declined continuously from 51.6% in 2003/04 to 36.7% in 2015/16. On the other hand, service and industry sectors, which accounted for 37.8 and 10.6% of GDP in 2003/04, constituted 47.3 and 16.7% of GDP in 2015/16 respectively, indicating the increasing role of the sectors in the national economic growth over the period Mulualem (2017).

The government launched a new plan called the GTP II in 2015/16. The objective of the GTP II is to become a lower middle-income country by 2025, through average annual real growth of 11% in 2015/16– 2019/20. The GTP II places a key emphasis on private sector development and FDI, particularly in building an export-oriented manufacturing sector and investing in energy generation, transportation, and infrastructure to boost productivity and competitiveness of the country NPC (2016).

To achieve the GTP II, the government is keen to commit a huge budget to finance its expenditure through domestic resource rather than external resources, which do not bring economic growth in the long run. That’s why the government approved Birr 320.8 billion birr for budget year 2017/18 out of this Birr 221.18 will be collected from domestic source such as tax

and non tax governmental revenues, external loans and grant. From the domestic sources Birr 196 which is 73.5% of the domestic source will be raised from tax revenue Reporter (2017).

To this end, the government finalized to amend and implement the existing Turn Over Tax (ToT), Value Added Tax (VAT) and Excise Tax, Abaynesh Abate (2017) “Fourteen years have passed since we revised TOT, VAT and excise taxes though many changes have occurred in the market, there are procedures which have a negative impact on the our revenue and some others which have a similar impact on the business people and our study will look at that,”

2.1.4. Relationship between Tax and Economy Growth

According to the Business Dictionary, economic growth is the increase in a country's productive capacity, as measured by comparing the gross national product (GNP) in a year with the GNP in the previous year. It measures a country's entire economic output for the past year which takes into account all goods and services that are produced in this country for sale, whether they are sold domestically or sold overseas (export) and imports are not counted in the calculation of GDP. Increase in the capital stock, advances in technology, and improvement in the quality and level of literacy are considered to be the principal causes of economic growth. If the economy growth, it is an indication of a country's increasing efficiency in using its scarce resources (Business dictionary).

The governments can manage economic growth by applying fiscal and monetary policy instrument to change the level of economic variables. Fiscal policy is the government spending and taxation that influences the economy. According to Keynesian economics the government changes the levels of taxation and government spending using fiscal policy to influences aggregate demand and the level of economic activity. when the economy is at recession, The government might lower tax rates and or increase its expenditure to increase the aggregate demand to fuel economic growth using expansionary fiscal policy and when the economy is at boom, using contractionary fiscal policy, the government cuts spending or raises taxes to reduce the amount of money available for businesses and consumers to spend in order to regulate the market.

In any economy where there is an optimal tax rate will ensure maximum economic growth. Optimal tax theory is the study of designing and implementing a tax that reduces inefficiency

and distortion in the market under given economic constraints. If the rate is not optimal or the tax burden exceeds that level, the economic growth will slow and the Gross Domestic Product will not expand (*Wikipedia*).

In theory, taxes are in a negative correlation with growth which means higher taxes will lower economic growth rate. This is because taxes introduce distortions to the economy. All taxes except lump sum tax (being the only neutral tax, although impossible to carry through in practice) introduce distortion in the economic system Marine (1999).

Tax policy can influence economic growth through the four determinants of economic growth called labor supply, capital investment, technological progress, and human capital, by changing their after tax return to a certain economic activities. For instance if the tax policy increases after tax income of the labor, the household will be encouraged to supply more labor and thereby increases the total output Seida (2016). If a new tax is enacted on the goods and service, Because of the increased cost, there will be a reduction in the quantity produced and consumed, which shifts the demand curve to the left.

Several studies have indicated that the sectoral composition of an economy has a significant impact on tax revenue collection. For example the agriculture sector has been difficult to tax, for many African countries, as it is dominated by a large number of subsistence small holder farmers. This implies that the longer countries stay dominated by agriculture and informal sectors, the less they are able to increase tax revenues Haile et al (2016)

2.1.4.1 Tax Stability, Elasticity and Buoyancy

Tax buoyancy, elasticity and stability are indicators used to measure the tax responsiveness. Tax stability measures taxes whose revenue is relatively stable or negatively correlated with the revenue from other taxes. Stability of revenue helps governments to have plausible spending and borrowing plans.

The buoyancy of a tax system reflects the total response of tax revenue to changes in national income as well as discretionary (policy) changes in tax over time by the authorities. Tax elasticity measures the automatic response of revenue to income changes. When we measure

elasticity, we will not consider the amount of revenue increased through discretionary changes Mulalem (2017).

High tax elasticity is said to be particularly desirable attribute, as it allows growth in expenditure, preferably related to development, to be financed by rising tax revenue without the need for politically difficult decisions to raise taxes. Usually tax elasticity is considered a better indicator to measure tax responsiveness Haile et.al (2016).

Mulualem (2017) attempted to empirically measure the revenue productivity of tax system in Ethiopia during the period 1981-2016 based on the concepts of tax buoyancy and elasticity. He found that the tax system and its elements were income inelastic; implying that the total tax revenue was increasing at slower pace than the economic growth during the period and the tax system and its components except direct taxes are found buoyant in the same period which suggests that the total tax revenue was increasing in proportion to the economic growth. He recommend that the tax reform measures undertaken towards stimulating the tax revenues should focus on strengthening the efficiency of the tax administration in tax assessment, tax laws enforcement and control of tax evasion in view of increasing the tax bases and thereby optimize the tax revenue collection relative to the economic growth of the country.

2.1.4.2 Tax to GDP Ratio

Tax-to-GDP ratio is the ratio of tax revenue collected compared to national gross domestic product which is important for policy makers and analysts to compare tax receipts from year to year with respect to GDP.

Table 2.1 Tax to GDP ratio in Millions

year	INDT	TTX	GDP	INDT/TTX	TTX/GDP
2002/03	5232	8244	72702.72	46.93%	11.34%
2003/04	7476	10906	85800.03	53.72%	12.71%
2004/05	8468	12398	105415	54.34%	11.76%
2005/06	9698	14159	130333.7	49.66%	10.86%
2006/07	12186	17354	170280.4	55.91%	10.19%
2007/08	16785	23801	245836.3	56.34%	9.68%
2008/09	19139	29007	332060.1	47.63%	8.74%
2009/10	28412	43318	379134.8	52.75%	11.43%
2010/11	39431	58981	515078.5	57.05%	11.45%
2011/12	56882	85740	747326.5	55.30%	11.47%
2012/13	70618	107010	866921.1	56.91%	12.34%
2013/14	86098	133118	1060825	58.90%	12.55%
2014/15	105129	165277	1297962	56.34%	12.73%
2015/16	118676	190519.7	1528044	51.20%	12.47%

Source: Author's computation

As can be seen clearly from the table the total tax revenue has been alarmingly increased from 2002/03 to 2015/16 while the Tax to GDP ratio grow very little and it is below the sub-Saharan countries, which is 18%.

According to Fisseha-Tsion Menghistu (2016), there are a number of issues that require a serious and independent research by a highly qualified experts and institutions for the following issues: why are the tax to GDP ratio of Ethiopia far below the Sub-Saharan average despite many tax reforms since 2002? What are the underlying causes of such low tax to GDP ratio of Ethiopia and what are the determinants of direct and indirect tax revenues? What are the determinants of the contribution of customs tariff to the government budget in Ethiopia?

Besly et al (2014) in their article Why Do Developing Countries Tax So Little? States that political factors such as weak institutions, fragmented polities, and a lack of transparency due to weak news media and social and cultural factors such as a weak sense of national identity and a poor norm for compliance may stifle the collection of tax revenue. They also suggested that the need for a dynamic approach that encompasses the two-way interactions between these political, social, and cultural factors and the economy.

The slow growth in the tax to GDP ratio suggests the growth in tax collection is not commensurate with the economic growth perhaps indicating a huge untaxed potential due to reasons related to the structure of the economy and administrative inefficiencies. This indicates there is a room to increase tax revenue by improving the tax administrations and enhancing the structural transformation towards industry sector Haile et al (2016)

2.2 Empirical Literature Review

This topic of the research covers topics about the findings of different researchers about the impacts of tax revenue on economic growth in different countries and in Ethiopia.

2.2.1 Empirical Evidences on Determinants of Tax Revenue in Different Countries

MURA(2015) investigate the impact of tax composition on economic growth, based on a panel-model approach for six East-European countries covering the period 1995-2012.His output suggests that direct taxes are significant and negatively correlated with economic growth, while indirect taxes exert a positive influence on the dependent variable, though insignificant.

Shahzad et al. (2016) empirically investigates the relationship between total tax revenues and economic growth in Pakistan to find long run and short run relationship in between total tax revenues and economic growth using Auto Regressive Distributed Lag (ARDL) bounds testing approach from 1974 to 2010. They found that Total tax revenues have negative and significant effect, on economic growth, in long run. Due to one percent increase in total taxes, economic growth would decreased by -1.25 percent.

Onakoy et al (2017) carry out an empirical analysis on the relationship between taxation and economic growth from the periods 2004 to 2013 for 16 selected African countries. This research model was underpinned by the Ibn Khaldun" s theory of taxation and its modern equivalent – “the Laffer curve theory of taxation” which seeks to achieve the optimal tax rate. They confirmed that the significant positive influence of tax revenue on Gross Domestic Product. This is in congruence with the position of Ibn Khaldun" s theory on taxation which postulates that lower tax rate have positive impact on output and economic performance.

Ugwunta et al (2015) tried to determine the effect of distortionary and non-distortionary taxes on the economic growth of sub-Saharan African countries for the periods from 1990 to 2012 using the ex-post facto research design. Their findings revealed that distortionary tax has a negative

and insignificant effect while non-distortionary tax has a positive and insignificant effect on the economic growth of sub-Saharan African countries.

André (2017) empirically test the impact of taxation on the long-term growth of a sample of 32 countries in sub-Saharan Africa from 1980 to 2010 using the DCCE estimator by taking into account the recent econometric advances. The results indicate a zero effect of taxation on long term growth. Moreover, the results suggest a significant negative effect of indirect taxes and taxes on individuals in short term.

Madugba et al (2016) examined the relationship between Value added tax and Economic development in Nigeria for the period between 1994 and 2012 and used Multiple regression to analyses the data. Their result showed a negative significant relationship between value added tax revenue and Gross domestic product and a positive significant relationship between Gross domestic product and Total consolidated revenue. They recommend that the government should educate the general public more on the essential of VAT payments.

Okfar(2012) explored the impact of tax revenue on the economic growth of Nigeria as proxied by the gross domestic product (GDP) using the ordinary least square (OLS) regression analysis to explore the relationship between the GDP (the dependent variable) and a set of federal government income tax revenue heads over the period 1981-2007. He found that a positive and significant relation between the GDP and the tax explanatory variables, which indicates that policy measures to expand tax revenue through more effective tax administration will impact positively in growing the economy.

Umoru et al (2013) examine the effect of tax structure on economic growth in Nigeria from 1975-2011. They employed co-integration and error correction methods of empirical estimation with an empirical strategy of disaggregation. They found out that direct taxation is significantly and positively correlated with economic growth while indirect taxation has insignificant negative impact on economic growth.

Akhor et al (2016) examine the impact of indirect tax revenue on economic growth in Nigeria using error correction model regression from 1993 to 2013. They revealed that value added tax had a negative and significant impact on real gross domestic product (RGDP) at 1% level of

significance. In addition, past custom and excise duty had a negative and weakly significant impact on real gross domestic product (RGDP) at even more than 10% level of significance.

Joseph(2016)The study examines the causal relationship between economic growth and indirect taxes in Nigeria using Ex-post facto research design for the period 1994 to 2014. The result revealed that VAT has a positive significance effect on GDP. He conclude that VAT and CED as indirect taxes contributes to economic growth in Nigeria and recommended, government should intensify effort to ensure immediate response of payment by the general public as flow of fund will encourage faster economic growth.

Oladipupo et al (2015) examines the impact of indirect taxes on economic growth of Nigeria, utilizing time series data from 1981 to 2014 using the Error Correction .They found that VAT and PPT exert a positive and significant relationship on the RGDP and also they revealed that CED of two period lags has a positive relationship with RGDP and VAT of two-period lags showing a negative but significant relationship with RGDP.

Jones et al (2016) studied an empirical assessment of the impact of tax reforms on the economic growth of Nigeria from the period 1985-2011 using The ordinary least squares based multiple regression .He found that Customs and excise duties, value added tax, personal income tax and education tax have no statistical significant impact on economic growth at 5% level of significance. However, Petroleum profit tax and company income tax each has positive significant impact on economic growth at 0.35% and 2.87% level of significance respectively.

Onakoya(2016) investigated the co integration relationship between tax revenue and Economic growth in Nigeria from 1980 to 2013 using Augmented Dickey Fuller (ADF) test and the Engle-Granger Co integration test. He found that a long run (but no short run) relationship existed between taxation and economic growth in Nigeria and also a significant positive relationship at 5% level of significance between Petroleum profit tax, Company Income tax and economic growth, but a negative relationship between economic growth and customs and Excise Duties.

Inyiama et al (2016) examined the effect of Value Added Tax and Customs and Excise Duties on Nigeria Economic Growth using correlation analysis from 1985-2011. The outcome revealed that all the non-oil tax revenue affects Nigeria Gross Domestic Product and also Value Added Tax

has a positive and significant effect on Gross Domestic Product in Nigeria Customs and Excise Duties exert a positive and significant effect on Gross Domestic Product in Nigeria.

Kairanya et al. (2013) analyzed the impact of taxation as a whole as well as the impact of indirect and direct taxes on economic growth using a simple endogenous growth model using the Ordinary Least Square (OLS) method for the period (1975-2014). They revealed that the overall significance of the explanatory variables in explaining GDP and the coefficient of indirect taxes was negative and individually significant in influencing the economic growth in Kenya in the short run.

Lawrence (2015) the study's objective was to determine the effect of value added tax on economic growth in Kenya from 1990 to 2014 using causal study. This study used secondary data which consisted of VAT rates, gross domestic product growth rates, consumer price indices and unemployment rates. He found that a percent change in the incident rate of GDP is an increase of 7% for every unit decrease in VAT.

Gachanja (2009) did a study on economic growth and taxes in Kenya, using time series data for the period 1971-2010. The study reveals a positive relationship between the economic growth and taxes. All the taxes (income tax, import duty, excise duty, sales tax and VAT) show a positive correlation to GDP, with income tax having the highest effect.

Otieno (2003) analyzes the impact of indirect taxes on economic growth in Kenya using a simplified endogenous growth model for the period 1970 – 2012 and found that indirect taxes cause distortion in market decisions and consequently impact negatively on the economy.

Anne (2014) employed an endogenous growth model to study the relationship between income tax and economic performance in Kenya for the period 1970 to 2012. He found a negative insignificant relationship between income tax and economic performance and Consumption tax, foreign trade, and population growth rate do not significantly influence the economic performance.

Cyrus (2013) determined the relationship between Government revenue and economic growth using descriptive research design for the period 1992 to 2011 in Kenya. He found that there is an inverse relationship between economic growth and Import duty and an increase in VAT leads to positive effects on the rate of economic growth

2.2.2 Empirical Evidences on tax Revenue in case of Ethiopia

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

Firehiwot (2016) studied the nexus between tax revenue, private final consumption, inflation and economic growth in Ethiopia using co-integrated VAR approach for the period 1970–2015. She found that Real GDP exert negative and significant effect on real tax revenue in the long run while the impact of the real private final consumption is positive and insignificant in the long run and there is evidence of bi-directional causality between real tax revenue, inflation, real private final consumption and real GDP.

Biruk (2016) investigated the relationship between government revenue growth and economic growth in Ethiopia during the period 1974/75-2013/14 by analyzing the long run and short run relationship of the variables using Johansen's cointegration test, VAR, granger causality test, and VECM. He found that the Government revenue growth in general and with its component though affect economic growth have no causal relationship with economic growth in the long run, it implies there is fiscal independence between tax revenue and economic growth. In the short run he found that there is independence relationship and the speed of adjustment is slow; only 27% and 7% for the components and total revenue growth with economic growth models, respectively. Based on the findings the government to increase its revenue either by increasing tax base or tax rate and mobilize the resources to growth enhancing sectors in order to generate the revenue the economy requires.

Dasalegn (2014) uses multiple regressions method to analyze how VAT becomes a tool for national development in Ethiopian context from the period 2003 to 2012. His finding reveals that, VAT, total tax revenue and non-tax revenue has positive and significant effect on Ethiopian economic growth during the periods under review. He also found that taxes collected from VAT boosts the general economic growth more than the sales tax in Ethiopia and it plays an energetic role for the national development of Ethiopia and it also enables to succeed the current growth and transformation plan (GTP) of the country.

Dakito(2011) examine the contribution of VAT for the development of Ethiopia economy and its impact on social spending, equity. He used multiple regression models and descriptive statistics for the study period from 2003/04 to 2009/10 G.C. The analysis showed that 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. He concluded the VAT tax revenue was unable to neutralize the regressively of VAT tax levy in Ethiopia because its unsystematic exemptions, tax structure, and tax system.

Seid (2016) used the econometric analysis called Co-integrated Vector Error Correction approach to identification which components of government expenditure and tax compositions have significant effect on the Ethiopian economy from the sample period of 1980/81 to 2013/14. He found that in the long run current expenditure and direct taxes have negative and significant effect on the real GDP. However capital expenditure and indirect taxes have positive and significant effect on the real GDP. In the short run, government current expenditure, government capital expenditure and direct taxes do not have any significant meaning in explaining economic growth, whereas indirect taxes have positive and significant effect on the short run real GDP of the Ethiopian economy.

Tadele (2015) attempted to estimate the buoyancies of direct, domestic indirect, foreign trade and gross tax revenues in Ethiopia using annual data from 1974 to 2010 and used double arithmetic functions relating tax receipts to GDP. He revealed that the share of service sector value added, import and over all government budget deficits to GDP affects positively while it was statistically found insignificant, whereas the share of official development assistance to GDP affects it negatively.

Abay (2015) attempts to see the contribution of VAT on Ethiopian economy in general and emphasizes whether VAT tax has significant economic contribution than other taxes in particular. The study used twelve (12) years of data of major taxes from 2002/03 to 2013/14. The study analyzed the collected data using descriptive statistics. The finding of the study reveals that as compared with other taxes, Value added tax (VAT) has great contribution to the Total tax revenue and enhanced Ethiopian economy. His analysis showed the average ratio of VAT to Total Tax Revenue and GDP was 30.45% and 2.95% respectively.

Dasalegn (2014) investigated empirical evidence on contributions of tax revenue for economic growth of Ethiopia using time series data from 1993 to 2012. He used both descriptive and inferential in nature. It uses data on gross domestic product (GDP), total tax revenue (TTR), non-tax revenue (NTR) and foreign revenue. The data was analyzed using both descriptive statistical

tools and simple regression methods. He revealed that the ratio of TTR to GDP was 8.1% on average however; TTR explains about 91.84% significant variations of GDP during the periods under review. He found a positive and significant correlation between TTR and GDP and both of them fluctuated greatly during the period though TTR was more stable than both FR (Foreign aid) and NTR (Non total revenue). He recommended to depend sufficiently on TTR and to some extent NTR than waiting the support of FR.

Table 2.2 Main Summary of empirical studies

Author years	Studied	Findings
Onakoy et al (2017)	the relationship between taxation and economic in African countries	significant positive influence of tax revenue on Gross Domestic Product.
André (2017)	the impact of taxation on the long-term growth in sub-Saharan Africa	a zero effect of taxation on long term growth
Madugba et al (2016)	the relationship between VAT and Economic development in Nigeria	a negative significant relationship between VAT and GDP
Akhor et al (2016)	the impact of indirect tax revenue on economic growth	VAT had a negative and significant impact on (RGDP) and past custom and excise duty had a negative and weakly significant impact
Joseph(2016)	the causal relationship between economic growth and indirect taxes in Nigeria	VAT has a positive significance effect on GDP
Oladipupo et al (2015)	the impact of indirect taxes on economic growth of Nigeria	VAT and PPT exert a positive and significant relationship on the RGDP
Jones et al(2016)	assessment of the impact of tax reforms on the economic growth of Nigeria	Customs and excise duties and VAT have no statistical significant impact on economic growth at 5% level of significance.
Dr. Inyama et al	the effect of Value Added Tax and Customs and Excise Duties on Nigeria Economic Growth	Value Added and Customs and Excise Duties exert a positive and significant effect on Gross Domestic Product in Nigeria
Onakoya(2016)	the co integration relationship between tax revenue and Economic growth in Nigeria	a negative relationship between economic growth and customs and Excise Duties.
Lawrence (2015)	the effect of value added tax on economic growth in Kenya	Negative relationship between VAT and GDP
Cyrus (2013)	the relationship between Government revenue and economic growth	Negative relationship between economic growth and Import duty and an increase in VAT leads to positive effects on the rate of economic growth
Firehiwot(2016)	the nexus between tax revenue, private final consumption, inflation and economic growth in Ethiopia	that Real GDP exert negative and significant effect on real tax revenue in the long run while the impact of the real private final consumption is positive and insignificant in the long run
Biruk (2016)	the relationship between government revenue growth and economic growth in Ethiopia	The Government revenue growth in general have no causal relationship with economic growth in the long run
Dasalegn (2014)	to analyze how VAT becomes a tool for national development in Ethiopian	VAT, total tax revenue and non-tax revenue has positive and significant effect on Ethiopian economic growth
Dakito(2011)	the contribution of VAT for the development of Ethiopia economy and its impact on social spending, equity	VAT tax revenue was unable to neutralize the regressivity of VAT tax levy in Ethiopia because its unsystematic exemptions, tax structure, and tax system.
Abay(2015)	the contribution of VAT on Ethiopian economy	(VAT) has great contribution to the Total tax revenue and enhanced Ethiopian economy
Dasalegn(2014)	investigated empirical evidence on contributions of tax revenue for economic growth of Ethiopia	positive and significant correlation between TTR and GDP

Source: Author's computation

2.3. Summery and knowledge Gap

Tax is an involuntary levy on the citizens and a policy tool for the government that helps to mobilize revenue to provide goods and services to the public which are necessary for the society. The tax mix of Ethiopia is classified as direct tax and indirect tax. Indirect taxes imposed on prices of taxable supplies of goods and services where the seller can transfer the tax burden to the consumer of goods and services. The main types of Indirect taxes applicable in Ethiopia are Value added tax, Turnover tax, Custom Duty and Excise tax.

The Ethiopian economy has enjoyed a strong and sustainable growth during for the past ten years driven by public sector-led development strategy that focused on investing heavily in infrastructure development. However, the Tax to GDP ratio grows very little. , i.e. Ethiopia Tax to GDP ratio on 2005 was 12.5% and after 10 years economic growth, its ratio is still on 13.4%. The ratio is far below the Sub Saharan Average of about 18%. This poses a question what is the relationship between Indirect tax and Economic growth?

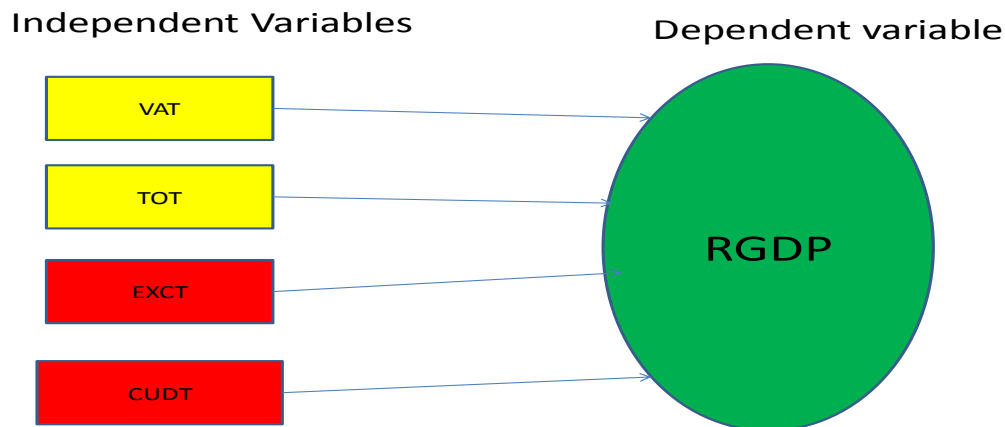
In Ethiopia, there is no research made on the relationship between Indirect tax and Economic growth in Ethiopia, best of the knowledge of the researcher. However, there are some related researches conducted by Dakito (2011) examined the contribution of VAT for the development of Ethiopia economy and its impact on social spending, Dasalegn (2014) analyze how VAT becomes a tool for national development in Ethiopian and revealed that positive and significant correlation between TTR and GDP, Abay (2015) studied the contribution of VAT on Ethiopian economy and revealed that VAT has great contribution to the Total tax revenue and enhanced Ethiopian economy, Biruk (2016) the relationship between government revenue growth and economic growth in Ethiopia revealed that he Government revenue growth in general have no causal relationship with economic growth in the long run, Firehiwot (2016) examine the nexus between tax revenue, private final consumption, inflation and economic growth in Ethiopia and found that Real GDP exert negative and significant effect on real tax revenue in the long run while the impact of the real private final consumption is positive and insignificant in the long run.

Therefore, the study examined the relationship between Indirect tax and Economy growth in Ethiopia in order to contribute a new knowledge to the existing literature where there is no empirical study on the topic.

2.4. Conceptual Framework

Based on the literature review, Domestic resources especially tax plays a great role to achieve the GTP II plan set by the government. More than 50% of the tax revenue comes from indirect tax mainly from Value Added tax, Turnover tax, Excise tax and Custom duty. To this end, the researcher constructed the following conceptual framework.

Figure 2.1: Conceptual framework



Source: Authors' computation

Definition and nature of the variables

Real Gross Domestic Product (RGDP) = It is the rate at which a nation's Gross Domestic product (GDP) changes/grows from one year to another and adjusted to the effects of inflation. This study uses real RGDP growth rate as a proxy of economic growth using 2010/11 as base year to eliminate the effects of inflation. It is dependent variable.

Vat (VAT) = is an indirect tax imposed and collected on the value added at each stage in the production and distribution of a good or service. It is independent variable.

Excise tax (EXT) = Excise tax, sometimes called sin tax, is an indirect tax imposed on certain goods and services often added to items that are viewed as unnecessary or extra. It is independent variable.

Turnover tax (TOT) = Turnover Tax is a type of tax, which is calculated against the turnover of a business. It is independent variable.

Custom duties taxes (CUDT) = are taxes payable on goods entering or leaving the country by all persons and entities that have no duty-free privileges. . It is independent variable.

CHAPTER THREE: Methodology

3.1. Introduction

This chapter discusses the methodology followed in testing the hypothesis to answer the research objective. It presents Research design, the Nature and source of Data, Model specification and estimation in brief.

3.2. Research Design

This research is an explanatory research that adapts an explanatory research design to examine the relationship between Indirect tax and Economic growth for the period covering from 2002 to 2016 using secondary data.

3.3. Nature and source of Data

The study collected secondary data, that have been already collected by and readily available from other sources, from the Ministry of finance and Economic Development (MoFED), Ethiopian revenue and Customs Authority (ERCA), National Bank of Ethiopia from 2002 to 2016. The researcher used growth rate of RGDP as a proxy of economic growth using 2010/11 as base year, to eliminate the effects of inflation, and growth rate of the independent variables to estimate the model. The study also used relevant data collected from annual report, bulletins and websites of the above organization.

3.4. Descriptive Analysis

The study used descriptive analysis tools to obtain information about the relationship between Indirect tax and Economic growth such as mean, median, mode, deviance from the mean, variation, percentage, and correlation between variables.

3.5. Econometric Analysis

In order to determine the relationship between Indirect tax and Economic growth, the researcher used multiple regressions to analyze the data using STATA Version 12 statistical package. It is an econometric model which seeks to explain the variation in the values of the dependent

variable on the basis of changes in the independent variables. The assumption is that, the dependent variable is a linear function of the independent variables.

The simple regression equation: $Y = b_0 + b_1X + \mu$

Where Y = the variable we are trying to predict; b_0 = the intercept; b_1 = the slope; X = the variable we are using to predict Y ; and μ = the error term

The intercept is the value of the dependent variable when the independent variable is equal to zero and the slope of the regression line represents the rate of change in Y as X changes.

3.6. Model Specifications

The objective of this study is to examine the relationship between Indirect tax and Economic growth in Ethiopia, the researcher adopted the following general form of OLS regression model similar to **Okfar** (2012)

$$(\mathbf{RGDP})_t = \beta_0 + \beta_1 (\mathbf{VAT})_t + \beta_2 (\mathbf{EXCT})_t + \beta_3 (\mathbf{TOT}) + \beta_4 (\mathbf{CUDT})_t + \mu$$

Where:

t = defines the time period

RGDP = Real Gross Domestic Product

β_0 = the intercept

β_1 = (Beta Coefficient) the slope

VAT = Value added tax revenue

EXCT = Excise Tax

TOT = Turnover Taxes

CUDT = Custom duties Tax

μ = Error Term

3.7. Expected Outcome

The Ethiopian economy has enjoyed a strong and sustained growth for the past ten years driven by public sector-led development strategy that focused on investing heavily in infrastructure development evidence. Annual average income per capita increased from 377 USD in 2009/2010 to 794 USD by 2015/16 and the proportion of population living below national poverty line

significantly dropped from 44.4% in 2000 to 29.6% in 2011 and estimated to further decline to 23.4 % in 2014/15 NPC(2017). Since tax revenue is the main source and the backbone of the government to finance its mega project expenditures, it played a great role for Ethiopian economic growth performance registered.

Therefore, the research expected a positive relationship between the dependent variable, Economic growth, and the independent variables, Value added tax, Excise tax, Turnover Taxes and Custom duties.

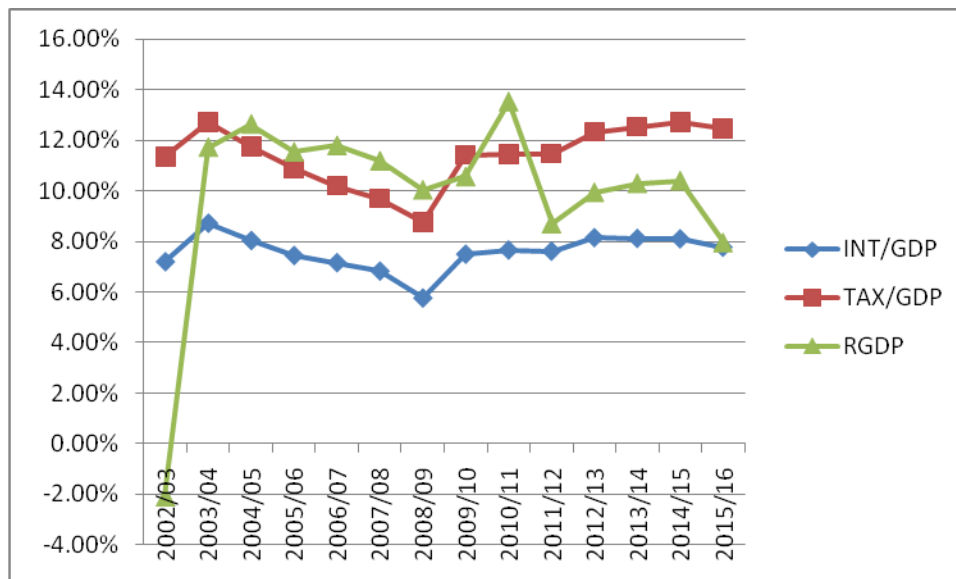
CHAPTER FOUR: Data Analysis, Findings and Discussion

Introduction

This chapter presents the data analysis, discussion and findings of the study to answer the objective of the research using descriptive and econometrics analysis.

4.1. Descriptive Statistics

Figure 4.1 Tax to GDP and RGDP Growth rate



Source: Author's computation

As can be seen clearly from the graph the minimum Tax to GDP and Indirect tax to GDP ratio were 8.74% and 5.76 respectively registered in the same year, 2008/09 and the maximum ratio for Tax to GDP was 12.73% in 2014/15 and 8.71% for Indirect tax to GDP ratio in 2008/09, when the second highest Tax to GDP ratio registered, 12.71%. The average growth rate were 11.41% and 7.57% for Tax to GDP and Indirect tax to GDP ratio respectively. Therefore, this graph shows the growth trend of Indirect tax to GDP ratio and Tax to GDP ratio is in similar directions.

The Indirect tax to GDP ratio was 7.2% in 2002/03, where the economy contracted by 2.2% and its ratio is still on 7.77% in 2015/16, despite the economic growth registered in the country for the past 10 years. Therefore, the Indirect tax to GDP ratio did not grow with the growth of the economy, which indicates that the existence of a huge untaxed potential due to reasons related to the inefficiencies of the administrative organ, existence of weak institutions and weak sense of national identity and a poor norm for compliance.

Figure 4.2 Summery of Stastistical report

`. summarize`

Variable	Obs	Mean	Std. Dev.	Min	Max
vat	13	.3009283	.1880137	.1394867	.6673735
exct	13	.2458802	.1201236	-.0227309	.4187925
tot	13	.2124048	.5816671	-.5966375	1.81432
cudt	13	.2242806	.1475611	.0366889	.4801306
rgdp	13	.1078956	.0174806	.0756177	.1357236

Source: Stata Version 12 output

As presented in the above table, the first column next to the observation is the mean, which tells the average value of the variable. For example the mean of VAT and RGDP have average growth rate from 2003/04 up to 2015/16 is 30.09283% and 10.78956% respectively.

Next to mean is the standard deviation, which measures the spread of the values from the mean. A low standard deviation indicates that the data points tend to be close to the mean and a high standard deviation indicates the data points are spread out over a wider range of values. Accordingly, TOT has the largest spread as compared to other variables and the smallest is the RGDP with value 58.16671% and 1.74806% respectively.

The last two columns are the minimum and the maximum which tells us the smallest and the largest amount of the variables recorded from the collected data. For example, TOT and EXCT have registered the minimum growth rate -5966375 and -227309 respectively. This is because the smallest growth rate were registered in the year 2003/04 and 2005/6 respectively.

4.2 Regression Analysis

Ordinary least squares (OLS) is a method for estimating the unknown parameters in a linear regression model. It estimates the relationship by minimizing the sum of the squares in the difference between the observed and predicted values of the dependent variable configured as a straight line. As noted in Brooks (2008) there are basic assumptions required to show that the estimation technique had a number of desirable properties. If the assumptions hold, the estimators determined by OLS are known as Best Linear Unbiased Estimators.

The following sections discuss results and findings of the diagnostic tests for Heteroscedasticity, Autocorrelation, Multicollinearity, Normality and model specification to make sure the data fits the basic assumptions of classical linear regression model.

Test for normality

As noted in Brooks (2008) a normal distribution is not skewed and is defined to have a coefficient of kurtosis of three. Kurtosis measures how fat the tails of the distribution and Skewness refers to how symmetric the residuals are around zero. The researcher used the Skewness and Kurtosis test and swilk residual test for normality probability statistics where P-value is expected not to be significant even at 10% significant level.

The hypothesis for the normality test was formulated as follow:

H0: Error term is normally distributed

$\alpha = 0.05$ Decision Rule: Reject H0 if p-value less than significance level. Otherwise, do not reject H0.

Figure 4.3 Skewness/Kurtosis test report

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. sktest residual
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Skewness/Kurtosis tests for Normality					
Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2 (2)	joint Prob>chi2
residual	13	0.6263	0.7082	0.38	0.8266

Source: Stata Version 12 output

Figure 4.4 Swilk residual test report

```
swilk residual
```

Shapiro-Wilk W test for normal data					
Variable	Obs	W	V	z	Prob>z
residual	13	0.97518	0.437	-1.621	0.94753

Source: Stata Version 12 output

P-value= 94.75% which is greater than α (0.05). **Therefore we do not reject H_0 , it means error terms are normally distributed.**

Test for Heteroscedasticity

According to Brooks (2008), Heteroscedasticity means that error terms do not have a constant variance. If heteroscedasticity occur the estimators of the ordinary least square method are inefficient and testing the hypothesis is not valid. To test for the presence of heteroscedasticity the researcher used the popular Breusch-Pagan test and the result is presented below.

H_0 : There is no Heteroscedasticity problem in the model.

$\alpha = 0.05$ Decision Rule: Reject H_0 if p-value is less than significance level. Otherwise, do not reject H_0 .

Figure 4.5 Hettes test report

```
. hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of rgdp

      chi2(1)      =      0.11
      Prob > chi2   =      0.7453
```

Source: Stata Version 12 output

P-value= 74.53% which is greater than α (0.05). Therefore we do not reject H_0 , it means there is no Heteroscedasticity problem in the model.

Multicollinearity Test

According to Brooks (2008) multicollinearity occurs if some or all of the independent variables are highly correlated with one another. If the independent variables are correlated, the regression model will have a difficulty in explaining which independent variables are affecting the dependent variable.

To test the existence of multicollinearity problem, the researcher used Variance Inflation Factors (VIF) test and the results presented below:

Figure 4.6 VIF test report

```
. vif
```

Variable	VIF	1/VIF
vat	9.49	0.105365
cudt	6.31	0.158424
exct	2.37	0.422495
tot	1.47	0.681086
Mean VIF	4.91	

Source: Stata Version 12 output

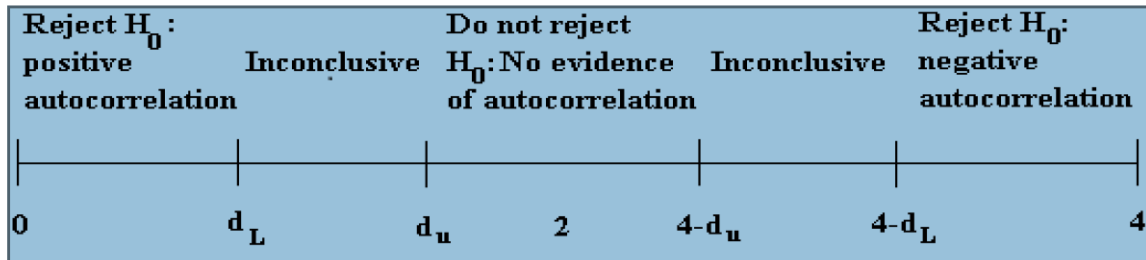
Multicollinearity is expected to be present for VIF values greater than 10 Nachtsheim (2004). According to Nachtsheim, there is no multicollinearity problem in the model, since all the independent variables are below 10 VIF.

Autocorrelation Test

According to Brooks (2008), when the error term for any observation is related to the error term of other observation, it indicates that autocorrelation problem exist in this model. If there is autocorrelation problem, the result of T-test, F-test or the confidence interval will become inefficient which biases the results.

According to Brooks (2008), DW has 2 critical values: an upper critical value (dU) and a lower critical value (dL), and there is also an inconclusive region where the null hypothesis can neither be rejected nor failed to rejected.

Figure 4.7 Rejection and non-rejection regions for DW test



Source: (Brooks 2008)

The researcher used the popular Durbin and Watson test to check whether the model has autocorrelation problem or not and the result presented below.

Figure 4.8 dwstat test report

```
. dwstat

Durbin-Watson d-statistic( 5, 13) = 2.238262
```

Source: Stata Version 12 output

The null hypothesis for the DW test is no autocorrelation between the error term and its lag.

The hypothesis for the autocorrelation test was formulated as follow:

H_0 : There is no autocorrelation problem in the model

$\alpha = 0.05$ Decision Rule: Reject H_0 if p-value less than significance level. Otherwise, do not reject H_0 .

From the table at 5% significance level the lower limit is =0.294 and the upper limit is 2.150 and $4 - d_u = 1.85$ $4 - d_L = 3.706$. Accordingly the above result, 2.238262 lay between $4 - d_u(1.85)$ $4 - d_L(3.706)$ which is inconclusive.

4.5. Results and Discussion of Regression Analysis

To examine the relationship between Indirect tax and Economic growth in Ethiopian, the following linear regression model was developed.

$$(RGDP)_t = \beta_0 + \beta_1(VAT)_t + \beta_2(CUEX)_t + \beta_3(TOT)_t + \beta_4(CUDT)_t + \mu$$

The model was tested using Ordinary Least Square (OLS) and the regression result presented below.

Figure 4.9 Regression out put

. regress rgdp vat exct tot cudt

Source	SS	df	MS	Number of obs =	13
Model	.002619939	4	.000654985	F(4, 8) =	5.00
Residual	.001046934	8	.000130867	Prob > F =	0.0256
Total	.003666873	12	.000305573	R-squared =	0.7145
				Adj R-squared =	0.5717
				Root MSE =	.01144

Source: Stata Version 12 output

From the table above, the (R) which describes the strength of the relationship between the independent variable, Value Added Tax (VAT), Excise Tax (EXCT), Custom Duty(CUD) Turnover Tax(TOT) and the dependent variable, Real Gross Domestic Product (RGDP) is 71.45%. The result of the R-squared indicates that 71.45% changes in the Real Gross Domestic Product is explained by the independent variable, while the remaining 28.55% change in the dependent variables is explained by other variables not included in the model. The coefficient of determination (R²) showed a value of 57.17% which means 57.17% of the variations in Real Gross Domestic Product are explained by the explanatory variables in the model while the other proportion (42.83%) is explained by other factors not considered by this study.

Therefore, the model proved that the relationship between Indirect tax and Economic growth is strong.

Test of Hypothesis

Figure 4.10 Coefficient of Variables output

rgdp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
vat	.1884902	.0541111	3.48	0.008	.0637098 .3132707
exct	-.032431	.0422946	-0.77	0.465	-.1299626 .0651005
tot	.0008163	.0068794	0.12	0.908	-.0150476 .0166801
cudt	-.1672133	.0562265	-2.97	0.018	-.2968719 -.0375548
_cons	.096477	.0078078	12.36	0.000	.0784722 .1144818

Source: Stata Version 12 output

Test of Hypothesis One:

Hypothesis one states that there is a significant relationship between VAT and Economic Growth in Ethiopia.

From Coefficients in the table above, we failed to reject the null hypothesis that there is a significant relationship between VAT and Economic Growth in Ethiopia. This is because the probability value for VAT is 0.08% which is significant at 1%.

Test of Hypothesis Two:

Hypothesis Two states there is a significant relationship between Excise Taxes and Economic Growth in Ethiopia.

We reject the null hypothesis that there is a significant relationship between Excise Taxes and Economic Growth in Ethiopia. This is because the probability value for EXCT is 46.6% which is not significant at 5%.

Test of Hypothesis Three:

Hypothesis Three states that there is a significant relationship between Turnover Tax and Economic Growth in Ethiopia.

We reject the null hypothesis that there is a significant relationship between Turnover Tax and Economic Growth in Ethiopia. This is because the probability value for TOT is 90.8% which is not significant at 5%.

Test of Hypothesis Four:

Hypothesis Four states that there is a significant relationship between Custom Duties and Economic Growth in Ethiopia

We failed to reject the null hypothesis that there is a significant relationship between Custom Duties and Economic Growth in Ethiopia. This is because the probability value for CUDT is 1.8% which is significant at 5%.

Interpretation of the coefficient of the variables

$$\text{RGDP} = 0.096477 + 0.1884902(\text{VAT}) - 0.032431(\text{EXCT}) + 0.0008163(\text{TOT}) - 0.1672133(\text{CUDT})$$

- The coefficient of regression (B) for VAT has a value of 0.1884902 which imply that for every unit increase in VAT, the RGDP is predicted to **increase** by 0. 1884902 and vice versa.
- The co-efficient of regression (B) for CUDT gave a value of -0.1672133 which imply that for every unit increase in CUDT, the RGDP is predicted to decrease by -0.1672133 and vice versa.
- The co-efficient of regression (B) for EXCT has a value of -0.032431 which imply that for every unit increase in EXCT, the RGDP is predicted to **decrease** by 0. 032431 and vice versa.
- The co-efficient of regression (B) for TOT has a value of 0.0008163 which imply that for every unit increase in TOT, RGDP is predicted to increase by 0.0008163 and vice versa.

Relationship between the independent variables and RGDP

Based on the regression result, the relationship between the independent and dependent variables explained below:

1. The coefficient of regression (B) for Value added tax is positive and significant at 1% confidence interval. This means, there is a direct relationship between VAT and RGDP. In other words, the increase of the independent variables will lead to a significant increase in the RGDP and vice versa. The test proves that VAT has positive and significant relationship with the RGDP, which is similar with the expected result. This result is also similar with Joseph (2016), Oladipupo et al (2015), Lawrence (2015) Cyrus (2013) and Dasalegn (2014) and in contrary with the outcome of Madugba et al (2016), Akhor et al (2016).
2. The coefficient of regression (B) for Custom duty is negative and significant at 5% confidence interval. This means, there is a significant indirect relationship between CUDT and RGDP. In other words, the increase of the independent variables will lead to a significant decrease in the RGDP and vice versa. The result of the test shows that Cutom duty has significant and negative relationship with the RGDP which is not similar with the expected result. However, this result is similar with Akhor et al (2016), Cyrus (2013), Onakoya(2016), and in contrary with the outcome of Inyiama et al(2016).

3. The coefficient of regression (B) for Excise tax is negative but insignificant at 5% confidence interval. This means, there is no significant indirect relationship between EXCT and RGDP. In other words, the increase of the independent variables will not significantly decrease the RGDP and vice versa. The result of the test shows that Excise tax has no significant relationship with the RGDP which is not similar with the expected result. This result is similar with Jones et al (2016), Onakoya (2016) and in contrary with the outcome of Inyama et al (2016).
4. The coefficient of regression (B) for Turnover tax is positive but insignificant at 5% confidence interval. This means there is no significant direct relationship between TOT and RGDP. In other words, the increase of the independent variables will not significantly decrease the RGDP and vice versa. The result showed that Turnover tax has no significant relationship with the RGDP, which is not similar with the expected result. However, it supports the decision of the Ministry of Finance and Economic Cooperation to amend the Turnover Tax, Value Added Tax and Excise Tax in order to minimize procedures which have negative impact on the economy.

CHAPTER FIVE: Summary of Major Findings, Conclusion and Recommendations

The main objective of this chapter is to present the conclusion and recommendation of the research result. To answer the objective of the research question, the paper used quantitative research design using Secondary data collected from Ministry of finance and Economic Development (MoFED), Ethiopian revenue and Customs Authority (ERCA), National Bank of Ethiopia for the period 2002 to 2016. The data was analyzed using descriptive and econometric method in order to examine the relationship between Indirect tax and Economic growth in Ethiopia.

5.1. Conclusions

Based on the research findings, the researcher concludes the following points:

1. Despite the economic growth registered, the Indirect tax to GDP ratio did not grow.
2. The strength of the relationship between the independent variable, Value Added Tax, Excise Tax, Turnover Tax, Custom Duty and the dependent variable, Real Gross Domestic Product over all is strong.
3. The coefficient of regression (B) for Value added tax is positive and significant with RGDP at 1% confidence interval.
4. The coefficient of regression (B) for Custom duty is negative and significant related with RGDP at 5% confidence interval.
5. The coefficient of regression (B) for Excise tax is negatively and insignificant related with RGDP at 5% confidence interval,
6. The coefficient of regression (B) for Turnover tax is positively and insignificant related with RGDP at 5% confidence interval

5.2. Recommendation

Based on the research findings, the researcher recommends the following points:

1. Ethiopian Revenue and Custom Authority should increase the tax payer awareness by giving trainings to the tax payers in order to comply with the tax policy.
2. To minimize the effect of Custom and Excise tax on the economy, ERCA should strictly control the incoming Goods via Airport and Border to minimize the revenue leakage.
3. This paper examined only the relationship between Indirect taxes and Economic growth in Ethiopia. Therefore, a further study should be done to examine the impact of the Indirect tax on Economic growth.

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Appendices

Appendix –I: Raw Data

year	VAT	EXCT	TOT	CUDT	RGDP
2002/03	2067.8	710.1	719.7	1695	214166.1
2003/04	3425.3	974.5	290.3	2425.8	243233.5
2004/05	3938.9	1245	385.58	2514.8	271980.9
2005/06	4713.6	1216.7	235.75	2959.5	301449.1
2006/07	5968.7	1489.3	164.8	3350.4	335983.1
2007/08	7168.3	1910.6	463.8	3795.7	372230.8
2008/09	8205.6	2485.9	535.1	3950.8	404996.4
2009/10	13681.8	3379	659.6	5847.7	455825.6
2010/11	19842.7	4794.1	715.1	7721.5	515078.5
2011/12	28247.4	6374	1161	11075.5	559621.6
2012/13	35086.4	7177.8	1426.7	12762.8	618842.2
2013/14	42585.7	8516.5	1746.4	15364	682358.5
2014/15	48525.84	9903.2	1940.27	17608.6	753229.7
2015/16	56310.17	11667.6	2419.26	21622.2	810187.2

Source: MoFED

Appendix –II: Raw data converted to Growth rate

year	VAT	EXCT	TOT	CUDT	RGDP
2002/03					
2003/04	0.656495	0.372342	-0.59664	0.43115	0.135724
2004/05	0.149943	0.277578	0.328212	0.036689	0.118188
2005/06	0.196679	-0.02273	-0.38858	0.176833	0.108346
2006/07	0.266272	0.224049	-0.30095	0.132083	0.11456
2007/08	0.200982	0.282885	1.81432	0.13291	0.107886
2008/09	0.144707	0.30111	0.15373	0.040862	0.088025
2009/10	0.667374	0.359266	0.232667	0.480131	0.125505
2010/11	0.450299	0.418793	0.084142	0.320434	0.12999
2011/12	0.423566	0.329551	0.623549	0.434372	0.086478
2012/13	0.242111	0.126106	0.228854	0.152345	0.105823
2013/14	0.213738	0.186506	0.224084	0.203811	0.102637
2014/15	0.139487	0.162825	0.111011	0.146095	0.103862
2015/16	0.160416	0.178165	0.246868	0.227934	0.075618

Source: Authors' computation

Appendix III– GDP (In millions of Birr)		
Year	GDP at Current Market Prices	GDP at Constant Market Prices
2001/02	65,895.5	218,896.7
2002/03	72,702.7	214,166.1
2003/04	85,800.0	243,233.5
2004/05	105,415.0	271,980.9
2005/06	130,333.7	301,449.1
2006/07	170,280.4	335,983.1
2007/08	245,836.3	372,230.8
2008/09	332,060.1	404,996.4
2009/10	379,134.8	455,825.6
2010/11	515,078.5	515,078.5
2011/12	747,326.5	559,621.6
2012/13	866,921.1	618,842.2
2013/14	1,060,825.0	682,358.5
2014/15	1,297,962.0	753,229.7
2015/16	1,528,044.0	810,187.2

Source: NBE

Appendix –IV:Tax to GDP

year	INDIRECT TAX	TOTAL TAX	GDP	INT/GDP	TAX/GDP
2001/02	5038	7926	65895.45	7.65%	12.03%
2002/03	5232	8244	72702.72	7.20%	11.34%
2003/04	7476	10906	85800.03	8.71%	12.71%
2004/05	8468	12398	105415	8.03%	11.76%
2005/06	9698	14159	130333.7	7.44%	10.86%
2006/07	12186	17354	170280.4	7.16%	10.19%
2007/08	16785	23801	245836.3	6.83%	9.68%
2008/09	19139	29007	332060.1	5.76%	8.74%
2009/10	28412	43318	379134.8	7.49%	11.43%
2010/11	39431	58981	515078.5	7.66%	11.45%
2011/12	56882	85740	747326.5	7.61%	11.47%
2012/13	70618	107010	866921.1	8.15%	12.34%
2013/14	86098	133118	1060825	8.12%	12.55%
2014/15	105129	165277	1297962	8.10%	12.73%

Source: Authors' computation

Appendix –V: Regression Result

regress rgdp vat exct tot cudt

Source	SS	df	MS	Number of obs = 13		
Model	.002619939	4	.000654985	F(4, 8) = 5.00		
Residual	.001046934	8	.000130867	Prob > F = 0.0256		
Total	.003666873	12	.000305573	R-squared = 0.7145		
				Adj R-squared = 0.5717		
				Root MSE = .01144		

rgdp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
vat	.1884902	.0541111	3.48	0.008	.0637098	.3132707
exct	-.032431	.0422946	-0.77	0.465	-.1299626	.0651005
tot	.0008163	.0068794	0.12	0.908	-.0150476	.0166801
cudt	-.1672133	.0562265	-2.97	0.018	-.2968719	-.0375548
_cons	.096477	.0078078	12.36	0.000	.0784722	.1144818

Source: Stata Version 12 output