

**AN EMPIRICAL ANALYSIS OF THE CONTRIBUTION OF INDIRECT
TAX ON ECONOMIC GROWTH IN KENYA**

BY

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**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN
ECONOMICS.**

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DECLARATION BY THE STUDENT

I, BENARD OMONDI OWINO, declare that, to the best of my knowledge, this Thesis is my original work and has not been submitted to or published by this University or any other Institution of Higher Learning for the award of a Degree or any other academic award.

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ACKNOWLEDGEMENT

The preparation of this thesis has been a long and arduous task that has encountered many challenges. Nonetheless, I take the pleasure to acknowledge the advice, support and encouragement extended to me at various stages. First and foremost, I would like to thank the Almighty God for enabling me to persevere through the hard times and above all, protecting me up to this time.

I extend my sincere gratitude to my supervisors, Prof. Mohammed Mukras and Dr. Gideon Momanyi (both Lecturers at Maseno University), who were the source of my endeavours. Their patience, guidance, cooperation and willingness to assist at every moment not only enabled me to complete this work but also made me gain a lot of knowledge in research. I highly recognize the contributions of all my lecturers, Dr. Alphonse Odondo, Dr. Destains Nyongesa, Dr. Nelson Obange, Dr. Elijah Siringi, Mr.Okisai, and Mr.George Muok, to my academic achievement. In fact without good knowledge in economics this research would have been very difficult for me. Colleagues Irene and Okelele; I wish I could say more than just a thank you message.

Special thanks go to the staff of Kenya National Bureau of Statistics who allowed me to access data and other information needed for this study. I further thank the staff of Postgraduate studies library for their patience and resilience.

I owe a debt to my wife Caroline for her tireless all round support, my children, Antony, Felix, Cavin and Simon for their heartfelt support and encouragement.

DEDICATION

I dedicate this thesis to my beloved wife and friend Caroline Anyango and my children Antony Otieno, Felix Okoth, Cavin Ochieng' and Simon Odhiambo for their grand show of hope and patience during the course of this thesis. May I also dedicate this work to my cousin Rose Waringa for her constant financial and emotional support throughout my academic journey. It is also in memory of my late cousin, Leonard Omondi Okoth who supported me financially through the process of learning from secondary to university.

ABSTRACT

The role of indirect tax is high in developing countries because of poor tax administration to collect direct taxes, lower per capita incomes and evasion possibilities. The level of revenue from indirect taxes in Kenya has risen steadily from an average of 6.5 percent of GDP in the period 1963-1972 to an average of 12.1 percent in the period 1973-2010. Such a significant increase in tax revenue raises pertinent questions about the effect they have had on economic growth. The motivation for this study was primarily premised on the paucity and inconsistency of empirical literature on the dynamics of indirect tax and growth. The purpose of the study was therefore to analyze the effect of indirect tax on economic growth in Kenya. The objectives of the study were to: establish the effect of custom duty on economic growth, evaluate the effect of excise duty on economic growth and to ascertain the effect of Value Added Tax on economic growth. The study adopted a correlation research design based on its ability determine the strength and direction of relationships between variables while the theoretical framework was anchored on endogenous growth model. In estimation of annual time series data, cointegration test and error correction model was adopted. The empirical results indicate that indirect taxes are positively correlated with economic growth in Kenya supporting the predictions of the endogenous growth models. Though, the effect of Value Added Tax on economic growth was statistically insignificant. Cointegration results indicate that tax revenue and GDP are integrated of order three and there exist a long-run relationship between indirect tax revenue and economic growth. The study concluded that customs and excise duty are growth enhancing while the effect of value added tax on the economy is not large enough to influence the economic growth. It therefore recommended that the government should rely more on custom and excise duty due to their growth prospect and reform VAT system to engineer a system that would have a significant impact on economic growth. The results of the study closes the knowledge gap arising from the paucity and inconsistency of empirics on the growth effects of indirect taxation .The findings of the study are also expected to be instrumental in improving taxation policy in Kenya. Further research is recommended on the model specification to increase its explanatory power.

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LIST OF ABBREVIATIONS

ADF	-	Augmented Dickey-Fuller
ARDL	-	Auto-Regressive Distributed Lags
BLUE	-	Best Linear Unbiased Estimators
CD	-	Customs Duty
CED	-	Custom and Excise Duties
ECM	-	Error Correction Model
ED	-	Excise Duty
FDI	-	Foreign Direct Investment
GCE	-	Government Capital Expenditure
GDP	-	Gross Domestic Product
GDPPC	-	Gross Domestic Product Per Capita
H_0	-	Null Hypothesis
H_1	-	Alternative Hypothesis
IT	-	Income Tax
IMF	-	International Monetary Fund
OECD	-	Organization of Economic Cooperation and Development
OLS	-	Ordinary Least Squares
SAARC	-	South Asia Association for Regional Cooperation
SURE	-	Seemingly Unrelated Regression
TFP	-	Total Factor Productivity
USA	-	United States of America
VAR	-	Vector Autoregressive
VAT	-	Value Added Tax
WTO	-	World Trade Organization

DEFINITION OF TERMS

Causality-This is the statistical determination of the cause and effect relationship when temporarily there is a lead lag relationship between the two variables.

Customs duty (tariff) - a tax payable on importation and exportation of goods and services

Cointegration-This is a method of defining the long run equilibrium relationship amongst a group of time series variables.

Economic growth - An increase in the total output of a nation over time.

Error Correction Model- This combines long and short run interaction amongst a group of variables.

Excise tax - A levy that is applied selectively on particular goods and services.

Fiscal crisis - Refers broadly to a long-term situation where government expenditures exceed government revenues.

Indirect tax (a consumption tax)-is a tax which is imposed at some other point in the system but are meant to be shifted to whoever is supposed to be the final bearer of the burden.

Optimal tax theory or optimal taxation- is the study and implementation of how best to design a tax to minimize distortion and inefficiency subject to increasing set revenues through distortionary taxation in the market.

Pareto Optimality- In an endowment economy, an allocation of goods to agents is Pareto Optimal if no other allocation of the same goods would be preferred by every agent.

Serial correlation (autocorrelation)- is the similarity between the observations as a function of the time separation between them.

Stationary-A time series is said to be stationary if its mean, variance and covariance are all invariant with respect to time.

Taxation- A compulsory transfer of money (or occasionally of goods or services) from private individuals, institutions or groups to the state.

Tax- A required payment of money made to governments by households and business firms.

Unit root-This is an alternative test of stationary condition among a time series variable.

Value Added Tax – a multi-stage consumption tax that is applied to the sale of goods and services at all stages of production and distribution chain.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Economic growth has been one of the main focuses of macroeconomic research in the last generation; the reason for this is because it affects a country's future standard of living (Raynor, 2013). Government responsibilities continue to increase over time especially in developing countries; as a result of growing population of citizens, and technological development (Ofoegbu et al, 2016). Furthermore, the new constitutional dispensation in Kenya establishes a devolved system of government with its enormous resource requirements, there is need to put measures that are geared towards enhancing the revenue base (Kago, 2014). A system of tax avails itself as a veritable tool that mobilizes a nation's internal resources and it lends itself to creating an environment that is conducive for the promotion of economic growth (Ayuba, 2014). According to Karran (1985), the state of the economy depends, to a large extent, on the tax revenue raised by the government. Therefore, the relationship between tax revenue and economic growth is an issue of great importance.

Muriithi and Moyi (2003) observe that a good tax system should be able to generate the needed revenue for government; redistribute income; and investment infrastructure that will provide the guarantee for business to thrive and economic growth. The enabling environment created by government encourages the establishment of new business; survival of existing business and the infrastructures provided is a key determinant of political, economic and social development. A well-structured tax system provides government the needed fund for capital (infrastructure) and recurrent (administrative) expenditure that would greatly lead to economic growth and development. Therefore, tax can be seen as a fiscal policy, macroeconomic and internal revenue mobilization tool for the attainment of economic growth.

In examining the effects of tax policy on economic growth, there are two lines of thinking: according to the exogenous growth models (Solow, 1956), tax policy has no impact on economic growth in the long run, assuming that key factors of production such as labour and technological progress are determined outside the model; on the contrary, endogenous growth theorists (starting with Barro, 1990; King and Rebelo, 1990; and Lucas, 1990), who believe that economic

expansion is determined within the system, argue that tax policy does have an impact on economic growth and welfare over time.

The theoretical underpinning for this study is basically the endogenous growth theory. The endogenous growth theory advocates the stimulation of level and growth rate of per capita output through the economic policies such as tax policies. Economic growth is generated by three production factors: labour, capital and technological progress, which are related to each other through a production function. Taxes could alter the economic decisions regarding these factors, and thus affect economic growth (Zipfel and Heinrichs, 2012). Barro (1990) constitutes one of the first attempts at endogenizing the relationship between growth and fiscal policies. He distinguishes four categories of public finances: productive vs. non-productive expenditures and distortionary vs. non-distortionary taxation. Taxation is non-distortionary if it does not affect the investment decision, and hence economic growth. This is, above all, the case for customs duties, excise duties and value added tax. Otherwise taxes, such as direct income and profit taxation are considered distortionary.

The choice between direct and indirect tax has elicited serious debate in terms of economic benefits and limitations that characterized each. Most studies have therefore reached substantially different conclusions on the relative impact of direct and indirect taxes on economic growth. Indeed, the results of most studies are saddled with inconsistencies. While some researchers like Kneller *et al* (1999), Wildmam (2001), Avi-Yonah and Margoloth (2006), Musaga (2007), Scarlet (2011) reported a positive relationship between indirect tax and economic growth, others such as Koch, Schoeman and Van-Tonder (2005) and Onduru (2003) indicate that indirect taxes are growth impeding, while some studies reported that indirect taxes cannot predict economic growth (Harberger 1964; Madsen and Damania, 1986). The empirical studies on the subject matter for developing countries are relatively few. A situation where results of cross country researches in developed economies are generalized to developing countries often induce knowledge gap.

Despite far reaching reforms implemented in taxation in Kenya, tax revenue collection has not yet reached a level where it can meet all the expenditure requirements of the government (Kago, 2014). The machinery and procedures for implementing a good tax system in developing

countries are inadequate; hence tax evasion and avoidance of the self-employed individuals and organizations whose data base is not captured in the relevant tax authority's data system (Fasoranti, 2013). A study by Parliament's Budget Office (2012) says that Kenya's large and rapidly expanding underground economy has expanded rapidly to become a mammoth Sh825 billion industry that is denying the government at least Sh275 billion in uncollected revenues. The need for the government to generate adequate revenue from internal sources has therefore become a matter of extreme urgency and importance (Afuberoh & Okoye, 2014).

The desire of any government to maximize revenue from taxes collected from tax payers cannot be over-emphasized. This is because the importance of a tax lies in its ability to generate revenue for the government, influence the consumption trends and regulate economy through its influence on vital aggregate economic variables (Fasoranti, 2013). Tax revenue mobilization as a source of financing developmental activities in less developed economies has been a difficult issue primarily because of various forms of resistance, such as evasion, avoidance and other corrupt practices can easily be perpetuated within the direct taxes bracket (Akhor, 2016). Broad-based indirect taxes like the Value-Added Tax (VAT) and Custom and Excise Duty has the potential of diversifying the revenue portfolio for the country to promote fiscal sustainability and economic growth (Azaiki & Shagari, 2007).

Tax policy and administration in Kenya has gone through various phases of reform over the years. From independence in 1963 until the early 1980s, public spending in Kenya was financed through a somewhat uncoordinated set of taxes and fees inherited from British rule and supplemented by foreign aid inflows (Eissa et al, 2009). The oil shock in the early 1970s led to the country's first significant fiscal crisis, in an attempt to address the fiscal crisis, Kenya replaced the existing consumption taxes with a sales tax in the 1972/3 fiscal year (Kago, 2014). This was meant to raise additional revenue and place more reliance on indirect taxes as a major source of development finance (Karingi and Wanjala, 2005). The level of revenue from indirect taxes has risen steadily in the period 1973-2010. However, this was accompanied by a persistent decline in average real GDP until the year 2002 (Table 1.1). Such significant increases in indirect tax revenue raise pertinent questions about the effect they have had on economic growth.

Table 1.1. Tax structure in Kenya as a percentage of GDP and GDP growth rate from 1963-2010

Type of tax	1963/4-1972/3	1973/4-1982/3	1982/3-1992/3	1992/3-2002/3	2002/3-2010/1
Direct tax	5.6	7.2	7.9	9.9	10.9
Indirect tax	6.5	11.3	12.4	13.2	10.6
GDP growth rate (%)	6.6	5.2	4.2	2.3	4.3

Source: Karingi and Wanjala (2005), Amanja and Morrissey (2005), Economic surveys.

Indirect taxation yields very substantial revenue to government. Therefore, it has a bearing on GDP which is the standard indicator for measuring the economic growth of a nation. In Kenya the central government receives about two-thirds of their tax revenues from indirect taxes: VAT, customs duty and excise duty. (Ranguma, 2012). The choice of a tax structure to be adopted will be hinged upon a clear understanding of the effect of indirect tax revenue on economic growth. The need for a paradigm shift from direct to indirect taxation in the face of various forms of resistance perpetuated within the direct taxes bracket, the inconsistency in existing empirics and the wide knowledge gap occasioned by the paucity of empirical literature on Kenya has made this issue open for further research in the country. This fact informed the basis of this study. The study will therefore achieve the objectives by examining the effect of customs duty, excise duty and value added tax on economic growth in Kenya within the framework of endogenous growth model.

1.2 Statement of the Problem

Kenya relies heavily on tax revenue to fund government expenditure, both current and capital, the role of tax revenue in promoting economic growth may not be felt if the correct choice between different taxes is not made. This calls for proper examination of the relationship between the revenue generated from different types of taxes and economic growth. Tax revenue mobilization as a source of financing developmental activities has been a difficult issue primarily because of various forms of resistance, such as evasion, avoidance and other corrupt practices that can easily be perpetuated within the direct taxes bracket. The solution appears to be in broad-based indirect taxes like value-added tax (VAT) and custom and excise duty that has the potential of diversifying the revenue portfolio for the country to promote fiscal sustainability and economic growth.

The level of revenue from indirect taxes has risen steadily in the period 1973-2010 as a result of wide ranging reforms aimed at placing more reliance on indirect taxes. This includes an increase from an average of 6.5 per cent of GDP in the period 1963-1972 to an average of 12.1 per cent in the period 1973-2010. Despite the rise in revenue collection, there has been a persistent decline in average real GDP in the period 1973-2002. Such significant increases in indirect tax revenue raise pertinent questions about the effect they have had upon economic growth.

The empirical studies on this phenomenon in developing countries are relatively few. Studies done on the effect of indirect taxation on economic growth have reported contradictory results whereby some scholars hold that it is growth enhancing while other studies indicate that indirect taxes are growth impeding. Moreover some scholars argue that indirect taxes cannot predict economic growth. The inconsistency in existing empirics and the wide knowledge gap occasioned by the paucity of empirical literature on Kenya has made this issue open for further research in the country. This study is motivated by two developments. First, by the inconsistency in existing empirics and secondly by the wide knowledge gap occasioned by the paucity of empirical literature on Kenya. Therefore, this study attempts to reconcile the different positions and also close the knowledge gap.

1.3 Objectives of the Study

1.3.1 Overall objective

The overall objective of the study is to analyze the contribution of Indirect Tax on Economic Growth in Kenya (1973-2010).

1.3.2 Specific objectives

In order to achieve the main objective; the researcher has developed the following specific objectives

- i. To establish the effect of customs duty on economic growth in Kenya.
- ii. To evaluate the effect of excise duty on economic growth in Kenya.
- iii. To ascertain the effect of sales tax/VAT on economic growth in Kenya.

1.4 Hypotheses of the Study

The researcher would like to test the following hypotheses which would serve as a guide towards realization of aims and objectives of this study:

H_{01} : Customs duty has no significant effect on economic growth in Kenya.

H_{02} : Excise duty has no significant effect on economic growth in Kenya.

H_{03} : Value Added Tax/sales tax has no significant effect on economic growth in Kenya.

1.5 Scope of the Study

This study focused on the effect of indirect tax on economic growth of Kenya's economy. The study was limited to the period 1973 to 2010 fiscal year. This represents the period when the country relied more on indirect as opposed to direct taxation as a major source of development finance (Karingi and Wanjala, 2005).

1.6 Significance of the Study

The choice between direct and indirect tax has elicited serious debate in terms of economic benefits and limitations that characterized each. Most studies have therefore reached substantially different conclusions on the relative impact of direct and indirect taxes on economic growth with multiplicity of problems ranging from inconclusive findings and erroneous generalization of results. Some scholars say it is growth enhancing; other studies indicate that indirect taxes are growth impeding, while still some scholars argue that indirect taxes cannot predict economic growth. Therefore there should be a framework for assessing the effect indirect taxes on economic growth in Kenya. It is in light of this that the study aims to develop an analytical framework for determining impacts of indirect taxes on economic growth. This is with a view to assisting the policy makers have an empirical way of determining the effect of indirect taxes on economic growth and avoid intuition in formulating tax policies which mostly lead to disastrous economic consequences.

Secondly, the study sought to contribute to the existing body of knowledge now by providing empirical evidence specifically on the effect of indirect taxes on economic growth in Kenya and also stimulates further research in the area of indirect taxation

On the other hand, the results could be used by the government to design growth-oriented programmes and carry out tax changes that are growth enhancing. The general conclusions and findings of this study may be applicable not only to Kenya but also to other developing countries.

1.7 Organization of the study

The study comprises five chapters. Chapter one provides the introduction which includes; background to the study, statement of the problem, objectives of the study, research hypotheses, significance of the study, scope of the study, limitations to the study and organization of the study. Chapter two deals with literature review and it analyses both the theoretical and empirical literature. Chapter three outlines the estimation methodology and model to be used in the study. Chapter four presents and discusses the empirical results while chapter five concludes the study by giving a brief summary, policy recommendations and suggestions for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews related literature thematically with particular emphasis on the effect of indirect tax on economic growth. It aims at critically analyzing previous studies and surveys done and identifying gaps to be addressed. The literature embraces studies that are specific to indirect taxes and economic growth.

2.2 Taxation and economic growth

Taxation involves a transfer of economic resources from the private sector to the government to enable it to acquire the resources that it requires to provide public goods and services to its citizens (Kinyua, 2012) Tax revenues play a vital role in Kenya's economic development. This can be deduced from the attention that issues of taxation have received over the years as found in government Sessional Papers (Republic of Kenya, 1965-2007). According to Brautigam (2008), a well-designed tax system can help governments in developing countries prioritize their spending, build stable institutions, and improve democratic accountability. The main purpose of a tax is to enable public sector finance its activities so as to achieve economic growth. Therefore, taxes can be used as an instrument for achieving both micro and macroeconomic objectives especially in developing countries such as Kenya. However Musgrave and Musgrave (2004) comment that the dwindling level of tax revenue generation in the developing countries makes it difficult to use tax as an instrument of fiscal policy for the achievement of economic growth.

Tax revenue mobilization as a source of financing developmental activities in less developed economies has been a difficult issue primarily because of various forms of resistance, such as evasion, avoidance and other corrupt practices can easily be perpetuated within the direct taxes bracket (Akhor, 2016), therefore more emphasis should be on broad-based indirect taxes like the Value-Added Tax (VAT) and custom and excise duty has the potential of diversifying the revenue portfolio for the country to promote fiscal sustainability and economic growth (Azaiki & Shagari, 2007).

2.3 Kenya's tax structure

Different types, forms and classes of taxes exist, but the most common classification in Kenya is direct and indirect taxes. In Kenya, the government can emphasize on any one of the tax forms depending on the objective it wants to pursue. The direct tax is a levy on personal income, corporate profits or property. Examples are Personal income tax and company income tax. When the imposition is on the price of goods and services, then it is called an indirect tax, the different prominent components of indirect taxation in Kenya include; sales tax/value added tax, custom duty and excise duty.

VAT is a consumption tax that is relatively easy to administer and difficult to evade and it is embraced by many countries world-wide (FIRS, 1999). VAT is regulated by the Value Added Tax Act (Cap 476) Laws of Kenya. Bird (2005) defined value added tax as a multi stage tax imposed on the value added to goods and services as they proceed through various stages of production and distribution chain. VAT in Kenya is a broad-based tax levied on the consumption of, not only locally manufactured and imported goods, but also on services with a view to generating substantial revenue (Karingi and Wanjala, 2005). According to Kenya Revenue Authority, the standard rate of value added tax in Kenya is 16%. Zero rated supplies include the export of goods and services while exempt supplies include financial services by banks and most agricultural produce in its unprocessed or preserved state.

The Custom duty and Excise duty are regulated by the Custom and Excise Act (Cap 472) Laws of Kenya. The term 'excise' relates to a form of taxation which is applied to a narrow base of goods (and services), which primarily are seen to have a level of harm associated with their consumption (Preece, 2013). The most compelling reason for the use of excise taxes is that they can potentially raise a great deal of revenue with little distorting effect (McCarten and Stotsky, 1995). Excise duty which is an indirect tax levied on selected goods and services in Kenya is a very important source of revenue to the government while it is also used to discourage the consumption of such goods. The main products that are subject to excise duty in Kenya are cigarettes, beer, wines and spirits.

Custom duty is a tax payable on importation and exportation of goods and services (also known as tariff). The main components of customs duty are import and export duties. Customs duty is applicable when importing or exporting certain goods and services. Customs duty is not only used for generating revenue but also to facilitate trade and protect or promote domestic manufacturing industry.

In Kenya, direct taxes comprises of corporation tax and personal income tax. Corporation tax is charged on profits at the rate of 30 per cent for resident companies and 37.5 per cent for non-resident companies (GoK, 2009). Personal income taxes are charged on an individual's income using a graduated scale, with the lowest rate being 10 per cent and the highest 30 per cent. Income taxes are considered more distortionary hence less preferred to consumption taxes; replacing direct tax with an indirect tax is likely to increase savings, investment and work effort hence increasing economic growth (Engen and Skinner, 1996). For developing countries revenue from direct taxes has been increasing but at a lower rate when compared to indirect taxes and international trade taxes (Bahl and Bird, 2008). This has been attributed to inefficiencies in collection of direct taxes (Maina, 2014)

The Kenya government has been pursuing tax reforms in order to design a system that is viable and productive to finance and sustain government expenditure without recourse to deficit financing. In the last 10 years, the government of Kenya has committed itself to provision of additional public goods and services such as free primary and secondary education, free maternal health care and laptops for primary schools. Furthermore, the new constitutional dispensation in Kenya establishes a devolved system of government with its enormous resource requirements (ochieng etal 2014). This implies that the amount of public expenditure has been increasing overtime and therefore there is urgent need for the government to raise sufficient revenue to meet the expanding public sector requirements.

2.4 Theoretical Literature

The relationship between tax and economic growth has been a widely addressed subject in economic literature. Most theoretical investigation into the effect of tax and growth provide one finding that shows a negative relationship between these two variables (Marina, 1999). Researchers have used either income tax, corporate tax, tax rate, sales tax or either tax cut, tax

reform and tax policy to test for their theories and hypothesis regarding these relationships. This study discusses two main theories at the forefront of the taxation-growth debate namely: neo-classical growth theory and endogenous growth theory.

2.4.1 Neo-Classical Growth Theory

The analysis of growth has long been based on the Solow (1956) "growth accounting" approach, also termed as neo-classical growth theory, which has two important predictions about growth in the long run. These predictions are that economic growth occurs as a result of exogenous technological change, and that income per capita of countries will converge. Since it is presumed that all determinants of growth are exogenous, it means that government policy cannot affect growth rates, except temporarily during the transition of economies to their steady state. Consequently, the role of government in the economic growth process was usually not investigated in standard neo-classical growth models. Traditional Neo-classical growth models imply that taxation can affect only the output level but not the growth rate of the economy, by proposing that the output of an economy grows as a result of the increase in physical inputs such as capital and labour. In other words, tax policy; however distortionary has no impact on long term economic growth rates, even if it reduces the level of economic output in the long term.

As stated by Solow (1970), the underlying fact behind this structure is that the Neo-classical view assigned the economic growth as a result of the increase in physical capital and labour where *law of diminishing returns to scale* is on duty. The instruments of government policy and non-physical variables such as human capital have no permanent impact on the growth rate of the economy in these models. Within this approach, growth in per capita output stems from exogenous technological progress and the magnitude of the composition of tax revenue does not generate a permanent effect on output growth while generating only temporary "level" effects (Lee & Gordon, 2005). In this context, the government's tax policy has no role to promote growth in these models as active government policies, including tax policies, generate only level effects corresponding to temporary growth.

Neo-classical growth models determine the long term rate of growth of a country by the labour supply and its technical progress (Solow, 1956). This model, therefore, does not include any reference to tax on economic growth. In addition, it is still uncertain on how tax policy can

promote economic growth and stability (Herfindahl, 1957). However, tax is believed to affect a country's economic growth and should be considered in any economic growth model (Barro and Sala-I-Martin, 1992).

2.4.2. Endogenous Growth Theory

The endogenous growth theory was developed as a reaction to omissions and deficiencies in the Solow- Swan neoclassical growth model. The meaning of endogenous growth in the new literature on growth is that output grows faster than the exogenous factors alone would make it grow. The advent of the class of growth models developed by Romer (1986), Lucas (1988), Barro (1990) and Rebelo (1991), which in essence constitute a new, endogenous growth theory, has resulted in significant changes on the role of government in growth. According to this theory, both transition and steady state growth rates are endogenous, implying that long-run economic growth rates are endogenous. There are several factors that should be important for determining long term growth, although in all endogenous growth models, government can influence growth, either directly or indirectly (Brons, de Groot and Nijkamp, 1999). As a result, long-term growth rates can differ across nations, and there is no necessity that convergence in income per capita should occur.

Endogenous growth theory emphasizes the endogenous determination of economic growth, rather than exogenous technological change. Tax policy in the endogenous growth models has dual properties. Not only should it intervene to correct the Non-Pareto optimality states but it should also pursue active policies to maintain long term economic growth (Arisoy and Unlukaplan, 2010). In this model, government spending and tax policies can have a long- term or permanent growth effects. More significantly, as Dar and Amir Khalkhali (2002) report, a major implication of endogenous growth models is that government policy can have wide-ranging implications for a country's long-term growth performance. The three main fiscal instruments namely taxation, expenditure, and the aggregate budgetary balance affect long-term growth through their effects on the efficiency of resource use, the rate of factor accumulation and the pace of technological progress. The economic implication of this model is that taxes and government spending can have consistent effect on output in both the short run and the long run. Governments pursue reforms in tax and expenditure policies act as incentives to firms to venture

into research and development and to invest in capital formation which yield external effects that benefits the rest of the economy.

The role of taxation in the process of economic growth has been central in public finance especially since the appearance of the endogenous growth models. The economic implication of this model is that taxes and government spending can have consistent effect on economic growth in both the short run and the long run (Lucas, 1988). In endogenous growth models, by contrast, investment in human and physical capital does affect the steady-state growth rate, and consequently there is much more scope in these models for at least some elements of tax and government expenditure to play a role in the growth process. Since the pioneering contributions of Barro (1990), King and Rebelo (1990) and Lucas (1990), several papers have extended the analysis of taxation, public expenditure and growth, demonstrating various conditions under which fiscal variables can affect long-run growth (see, for example, Jones et al., 1993; Stokey and Rebelo, 1995; Mendoza et al., 1997).

Endogenous Growth Theory was developed in 1980s as a response to criticism of the Neo-classical Growth Model; however the theory has not been without challenges. Olso (1996) argued that neither natural resources nor technology perse explains strong economic performance. In his view, differences are due to how efficiently countries use the resources available to them, which come down to differences in economic policies. Countries sound economic policies and institutions get more out of the recipes that combine capital and labor to produce economic output provide the incentives to utilize resources and technologies to the fullest extent. In endogenous growth model, the difference between physical capital and human capital is not clear, it is assumed that human capital accumulates and when it is embodied in physical capital then it becomes a driving force but there is no clarity of what the driving force is. By using secondary school enrolment as a proxy for human capital in the model, Mankiw, Romer and Weil (1992) finds that physical and human capital accumulation cannot lead to perpetual economic growth.

The investigation of the relationship between indirect tax and economic growth in Kenya is anchored on the endogenous framework which advanced a dynamic steady growth state. Popularized by King and Robelo (1990), the endogenous growth model contends that

government policy, including taxation, can permanently increase per capital output with a high level of innovation. In endogenous growth models, not only the level of taxes but also the tax composition matters, the endogenous growth models classify taxation instruments into distortionary taxation, which discourages to invest in physical/human capital and non-distortionary taxation which does not affect the above incentives (Benos, 2009). Any tax policy that distorts the capital accumulation will permanently reduce growth rate. For instance, direct taxes like personal income taxes and corporate income taxes. On the other hand, Broad-based indirect tax like the Value-Added Tax (VAT) and Custom and Excise Duty only distort intertemporal consumption and further increases the part of the national income saved, and thereby leading to more capital formation and higher economic growth (Musgrave and Musgrave, 1989). Based on the forgoing, the relationship between indirect taxes and economic growth was therefore anchored on endogenous growth model. Building on these efforts, our study attempts to confirm the effect of indirect taxes on economic growth in Kenya for the period 1973-2010.

2.5 Empirical Literature

The empirical literature on the effect of indirect taxes on economic growth is vast. This section looks at some of the empirical studies that have been done on the area of excise, custom, value added taxes and economic growth.

2.5.1 The Effect of Custom Duties (Tariff) on Economic Growth.

Customs duty serves two purposes; they raise fiscal revenue and protect certain domestic producers from foreign competition, the tariff debate therefore concern both revenue effect of tariff and broader issue of openness and protection.

The issue of whether trade and increased openness should lead to higher rates of economic growth is an age-old question, which has sustained debate between pro-traders and protectionists over the years— from Adam Smith, John Stuart Mill and John Maynard-Keynes to Raul Prebisch and Hans Singer and to Jagdish Bhagwati and Paul Krugman. Theorists from both camps have influenced policy in many countries and at various stages of development. Traditional explanations of trade as “the engine of growth” and the impact of trade on economic

growth are rooted in the principles of comparative advantage. The theory of comparative advantage arises from nineteenth century free trade models associated with David Ricardo and John Stuart Mill. Comparative advantage provides that when nations specialize, they become more efficient in producing a product (and indeed a service), and thus if they can trade for their other needs, they and the world will benefit. Protectionist scholars contended that trade liberalization is detrimental to growth and could lead to deterioration if adopted by developing economies. They helped shape strategies that emphasize infant industry protection dependent on tariff and non-tariff barriers to trade among many others.

Several studies have linked growth performance to protectionist tariff policy (Clemens and Williamson, 2004; Vamvakidis, 2002). Starting from Bairoch's (1989) observation that the tariff hikes of the 1870s had positive growth effects for the countries that applied this policy, Rodriguez and Rodrik (2001) found that average tariff rates had a positive and significant relationship with total factor productivity (TFP) growth for the 1980–1990 periods. The limitation of their result, however, is that their sample size was small, with only 43 countries, and the time period considered was short. When they extended their sample size to 66 countries, import duties became insignificant with a positive coefficient. For 80 countries over the period of 1970–1997, Yanikkaya (2002) examined the relationship between customs duty and economic growth, their results confirm that trade barriers in the form of tariffs can actually be beneficial to economic growth. Clemens and Williamson (2001) and Irwin (2002), reported the positive correlation between customs duty and economic growth for the late 19th and the early 20th century.

O'Rourke (2000) and Jacks (2006) tend to confirm propositions regarding the positive correlation between tariffs and growth in the late nineteenth century. Both works used a limited sample of 10 countries, mostly rich European or land-abundant countries with good institutions, and this fact has been criticized, even if they are more concerned with exploring the variation in the time series of economic growth than with analyzing cross-sectional influence. Other studies that follow a similar time-series strategy point out that the relationship between average tariffs and economic growth depends crucially on the countries included in the sample. Irwin (2002b) shows that rich land-abundant countries may be outliers in the relation between tariffs and

economic growth, because they often relied on customs duty to generate a large proportion of their government revenue therefore they tended to impose high tariffs, but without following an import substituting strategy.

Gober and Burns (1997) conducted a study about the relationship between tax structure and economic indicators for the Organization of Economic Cooperation and Development (OECD) countries. From their finding, total tax revenue has a negative relationship with two economic indicators that is saving and investment. However, according to them customs duty is highly significant, in which there is a positive relationship with economic growth (GDP). Anyanwu (1997) used the simple linear regression technique to examine the effects of taxes on Economic Growth in Nigeria. The study was conducted between 1981 and 1996. The results revealed that customs duty positively and significantly affect GDP just like companies' income tax. But petroleum profit tax negatively and significantly affects Nigeria's GDP.

Dejong and Ripoll (2005) examined the relationship between tariff revenue and growth rates in a panel that consisted of 60 countries over the period 1975-2000; paying particular attention to its potential contingency on the level of economic development. Using the OLS fixed effects panel estimation within a Generalized Method of Moment (GMM) approach, the study found that the relationship between customs revenue and economic growth is negative and significant among the world's rich countries, while it is positive and significant among the world's poor countries. Their results run contrary to the view that higher tariffs are universally detrimental to growth.

Athukorola and Chand (2005) employed the conventional growth accounting framework in investigating the tariff growth nexus in the Australian economy over the period 1871 to 2002. The model was estimated for the overall period, and four sub-periods: namely, 1870-1900; 1901-1949; 1950-2002; and, 1901-2002. The sub-periods are chosen carefully with a view to examining possible structural breaks in the tariff-growth nexus. Their results provide strong support for a negative association between tariff and economic growth. The results, however, were consistent with the consensus view in Australian policy circles that unilateral liberalization is the best policy for the nation (Garnaut, 2003).

Dritsaki and Katerina (2005) examined the relationship between tax revenues and three economic indicators namely change in gross domestic product, savings and investment in Greece during the period 1965-2002. They applied the seemingly unrelated regression (SURE) approach in order to determine the relationship between tax categories and economic indicators. Their results showed that a long run relationship exist between tax categories and economic indicators and are significant. Particularly, they found a robust negative relationship between customs duty and gross domestic product.

Further, Estevadeoral and Taylor (2008) examined the growth benefits of reduction in tariffs and other barriers and found evidence that a specific treatment, liberalizing tariffs on imported capital and intermediate goods, led to faster GDP growth. Chen Lee and Shimomura (2008) examined the long-run relationship between tariffs and economic growth in a two-country AK growth model. They found that a sufficiently high tariff can increase or decrease economic growth and depends on the levels of productivity coefficients in both countries.

Studies of the period 1870-1914 have emphasized that protectionist tariff policy was associated with higher rates of economic growth. Schularick and Solomou (2009) assembled data for a panel of 19 countries (Argentina, Australia, Brazil, Canada, Chile, Denmark, France, Germany, Japan, Italy, India, Mexico, Netherlands, Norway, Russia, Spain, Sweden, United Kingdom, USA) to reassess the empirical evidence on the relationship between tariffs and growth during the period 1870-1914. Using the OLS fixed effects panel estimation within a Generalized Method of Moment (GMM) approach. Their results suggested that the relationship between tariffs and economic growth during the period 1870-1914 was insignificant – although there is evidence of a negative relationship in some of the models estimated.

Sameti and Rafie (2010) analyzed the relationship between income distribution effects of tax and economic growth in Iran and some selected East Asian countries. They used panel data regression in the period 1990-2006. Their results denoted that the impact of customs duty on economic growth is negative and significant, but the ratios of tax on income, profits and capital gains have positive and significant effects on economic growth.

Azam (2011) examined the link between institutions, tariffs, and economic growth. Their model was an extension of the “tariffs and Schumpeterian growth” model of Dinopoulos and Syropoulos (1997). Their results revealed that the relationship between tariffs and economic growth is not as obvious. They found that if a country has a technologically dynamic export sector (characterized by large innovations), higher tariffs reduce economic growth by channeling labour away from Research and Development in the export sector. On the other hand, in a country with a technologically dynamic domestic production sector, higher tariffs may lead to higher growth. Besides the impact that tariffs have on the domestic growth rate, they found that tariffs also have an impact on the growth rate of a country’s trading partners. In particular, lower tariffs in one country lead to higher growth rates for its trading partners. This result has important implications for institutional spillovers. If the institutional quality of one country improves, it leads to lower tariffs in that country, which increases the growth rates of its trading partners. However, this result does not hold if the trading partner has a technologically dynamic domestic production sector.

Okafor (2012) explored the impact of tax revenue on the economic growth in Nigeria over the period 1981-2007. The OLS multiple regression analysis was adopted to determine the relationship between Nigeria’s economic growth and the major components of tax revenue, namely petroleum tax revenue, company tax revenue, value added tax revenue, customs and excise duties revenue. The regression result indicated a very positive and significant relationship between custom duties and GDP.

Kwon (2013) investigated the effect of tariffs on economic growth. Utilizing a panel dataset with information for 69 less developed countries, the results of their investigation showed that tariff interactions with domestic investment and labour participation, respectively, augments the growth-generating impact of these variables. In addition, the constituent terms reveal that domestic investment and labour-force participation produces robust negative associations with economic growth when removing their tariff contingent effects. Taken as a whole, the evidence illustrates the value of exploring the indirect relationship between tariffs and economic growth as well as the potential usefulness of restrictive import policies for development in the periphery.

Ehigiamusoe (2013) examined the nexus between the Tax System and economic growth in Nigeria from 1980 through 2011. Using correlation method and Granger Causality test, they discovered that customs duty has more impact on economic growth than Company Income Tax, Value Added Tax and Petroleum Profit Tax. This was due to the high rate of imports in the country because as imports increase, the duties on imports will continue to experience growth, and ultimately lead to increased output.

In relation to Kenya, Kinyua (2012) applied the concepts of elasticity and buoyancy to examine the relationship between tax revenue and economic growth in Kenya for the period 2002 to 2012. The study found a significant relationship between total tax revenue and economic growth in Kenya in the period 2002 to 2012. Import duties were not responsive to changes in national income while discretionary tax measures implemented during the period failed to increase total tax revenue. However, the estimation of buoyancy and elasticity coefficient were done in total disregard of the time series properties and the period taken was only eleven years, subjecting this alone to a regression model did not make statistical sense. Therefore, the results were not reliable for planning purposes. In the present study the long annual time series together with the developments in time series econometrics will enable us to establish a reliable relationship between indirect taxes and economic growth.

Gacanja (2013) explored the relationship between economic growth and tax revenues in Kenya for the period 1991-2011. Using co integration and Granger causality test, the results of the study revealed a positive relationship between economic growth and tax revenues; with import duties showing a positive effect on GDP. Onduru (2003) analyzed the impact of indirect taxes on economic growth in Kenya for a period of thirty-one years (1972-2002). By interacting indirect taxes with certain key macroeconomic variables namely; population size, investment, volume of trade and external debt, the study found that custom duties cause distortions in the market decisions and consequently impact negatively on economic growth. Our study improves upon Onduru (2003) in the following respect; first this study covers the period 1972-2002, we therefore update the analysis, secondly our study interacts custom duties, excise duties and VAT revenue with GDP growth to capture the link between indirect tax revenue and its impact on economic growth.

On the basis of literature reviewed, there have been numerous empirical studies focusing on customs duty and economic growth in both developed and developing countries. The empirical studies on this phenomenon in Kenya are relatively few. Studies done on the effect of custom duty on economic growth in other countries have reported contradictory results whereby some scholars hold that it is growth enhancing, other studies indicate that custom duty is growth impeding, Moreover some scholars argue that custom duty cannot predict economic growth.

2.5.2 The Effect of Excise Duties on Economic Growth

The economic analysis of excise taxation starts with Atkinson and Stiglitz (1976) proof that if the income tax schedule is chosen optimally, then under fairly reasonable conditions, social welfare cannot be improved by levying excise duties on commodities. But if the income tax is not optimal, excises have a role to play because they are relatively efficient sources of revenue for economic growth, discourage consumption of products considered harmful, and promote progressivity in taxation.

Skinner (1987) analyzed the effect of taxation in sub-Saharan Africa over the period 1965 - 1982. Using Two Stage Instrumental Variable (2SIV) technique, they found that excise taxes have no significant effect on economic growth, while taxes levied on personal and corporate incomes reduce economic growth. Similar results were found by Ehigiamusoe (2013) when they examined the nexus between the Tax System and economic growth in Nigeria from 1980 to 2011. Using correlation method, their results revealed that excise duty has no significant impact on economic growth

Anyanwu (1997) investigated the effects of taxes on Nigeria's Economic Growth during the period 1981-1996. Using simple linear regression technique; the result revealed that excise duties positively and significantly affect GDP just like companies' income tax. However, petroleum profit tax negatively and significantly affects Nigeria's GDP. Gober and Burns (1997) have done a study about the relationship between tax structure and economic indicators for the OECD countries. From their finding, excise taxes are highly significant, in which there is positive

relationship with economic growth (GDP). However, according to them total tax revenue has a negative relationship with two economic indicators namely saving and investment.

Mendoza *et al* (1997) analyzed qualitative and quantitative effects of changes in tax structures on economic growth and investment in 18 OECD countries covering the period 1965-1991. Using Ordinary Least Square technique, they observed a positive correlation between consumption taxes (value added tax, customs and excise duties) and economic growth and a negative correlation between income taxes and economic growth. In relation to this, Angelopoulos (2006) examined the growth implications of the composition of government expenditure, and the various types of taxes used to finance it, in a panel of 23 OECD economies over 1970-2000. Their econometric results confirmed that a negative correlation exist between income tax and economic growth and a significant positive relationship between consumption taxes (value added tax, customs and excise duty) and economic growth

Zeng *and* Heng Du (2003) examined how consumption and income taxation affects long-term growth and how the allocation of tax revenue affects the growth effects of taxation in the Schumpeterian growth model of Howitt and Aghion (1998). They extended Howitt and Aghion's model in two important ways: First, they endogenized labour supply in order to investigate the growth effects of taxation in a more general context. Second, they considered two types of government expenditures (lump-sum transfers and public consumption goods) to see how the allocation of tax revenue influences the growth effects of taxation. They obtained the following results. First, if part or all of the tax revenue from excise duties, VAT and income tax is used for lump-sum transfers, then all the three taxes in general have negative effects on long-term growth. Second, if all the tax revenue from excise duties, VAT and income tax is used for public consumption goods, then consumption taxes have no effect on long-run growth. Third, the magnitudes of the growth effects of taxation are closely related to the allocation of tax revenue: the less the tax revenue is allocated to lump-sum transfers, the smaller the growth effects of taxation.

Tosun and Abizadeh (2005), examine the changes in the tax composition of the OECD countries with respect to economic growth for 1980-1999. Using Fixed-effects and Random effect

procedures to estimate panel data; the main finding of the study is the significant effect of the economic growth on the tax composition in the 24 OECD countries for the years 1980 - 1999: The shares of personal and property taxes respond positively while shares of the payroll and property taxes respond negatively to economic growth. By heavily focusing on how taxes affect economic growth in OECD, Åsa, Heady, Arnold and Vartia (2008) investigated the design of tax structures to promote economic growth. Their empirical evidence suggested that excise duties, value added taxes, custom duties and property taxes appears to have significantly less adverse effects on GDP than income tax. A reform towards greater use of taxes on consumption could raise GDP but it would also increase inequality, particularly at the lower end of the wage distribution as consumption taxes are less progressive than personal income taxes.

Punt *et al* (2006), in a bid to examine impact of excise duties on GDP, trade and prices, as well as the welfare of households of the Northern and Western Cape in South Africa for the years 1998-2005. The study used a static computable general equilibrium model to analyze the impact of an increase in excise duties on GDP. The results indicate that there is a negative relationship between excise duties and GDP and investment.

In assessing the impact of taxation on economic growth for Nigeria during the period 1980-2006, Okpara (2010) employed the two-stage least squares methods (2SLS) on a set of simultaneous equations. Their empirical analysis reveals that though the excise tax seems promising, the general tax system is inflexible and may not produce the desired objectives. It is also found that higher excise taxes discourage growth in capital stock which by itself is a positive function of economic growth. Excise taxes attenuate labour supply growth which exerts a positive and significant impact on economic growth. .

Musaga (2007) investigated the effects of taxation on economic growth in Uganda over the period 1987-2005 by using Ordinary Least Square (OLS) method. The results indicated that income tax, property taxes, social security contributions and payroll taxes has a significant positive effect on economic growth while excise duties, customs duties and value added tax has a significant negative effect on economic growth

Scarlet (2011) examined the impact of taxation on economic growth in Japan, using quarterly data from 1990 to 2010 in an autoregressive distributed lag framework. The results indicate that by increasing the share of tax revenue garnered from indirect taxes, in particular, value added tax, policymakers' actions would result in long run economic growth benefits. However, if policymakers are myopic or interested in the impact on economic growth in the short run, increasing the share of tax revenue from consumption taxes, in particular, excise duties would be conducive to growth. The results show that any policy action aimed at increasing the P.A.Y.E. tax would have a negative and significant impact on GDP per capita over time.

Okafor (2012) explores the impact of tax revenue on the economic growth of Nigeria as proxied by the GDP. The OLS multiple regression analysis was adopted to determine the relationship between Nigeria's economic growth and the major components of tax revenue, namely petroleum tax revenue, company tax revenue, customs and excise duties revenue, value added tax revenue over the period 1981-2007. The regression result indicated a very positive and significant relationship between excise duties and GDP.

Shinohara (2012) analyzed the effect of tax structures on economic growth. They separated and analyzed 30 countries of OECD and 21 countries of OECD. In the former group, it was found that fund procurement by annual revenue items, other than personal income has a positive effect on economic growth, Value added tax, customs and excise duties have a positive effect on economic growth.

Gustavo, Vazquez and Vulovic (2013) examined the effects of taxation policy on economic growth in a sample of 19 Latin American countries over 1990-2009. They used two empirical approaches; VAR analysis for Argentina, Brazil, Chile, and Mexico, and panel data analysis for the Latin American region alone. The regression results using the worldwide sample indicate that at higher levels of taxation, personal income tax could have significant negative effects on economic growth and greater reliance on excise duties has significant positive effects on growth in Latin America in general,

Examining the effect of customs and excise tax reforms on the economic growth of Nigeria from 1994-2009, Ogbonna and Ebimobowei (2012) used Johansen Cointegration test to explore the presence of a long run relationship amongst the series. The study found that a long run relationship exists between customs and excise duties and economic growth and the Granger causality result also shows that custom and excise tax granger cause economic growth.

Ebiringa (2012) examined the empirical forms of tax on the economic growth in Nigeria for the period 1985-2011, using the simple linear regression technique. The results of the study revealed a negative and significant relationship between custom duties, excise duties and GDP. Company income tax and value added tax had a direct and significant relationship with GDP. The Granger investigation of what form of tax system can influence growth in Nigeria, Custom and excise duties among all other forms of tax can influence GDP in the short term.

Fasoranti (2013) applied the concepts of elasticity and buoyancy to examine the relationship between tax revenue and economic growth in Nigeria over the period 1970 – 2009, using multiple regression analysis. Results showed that tax productivity was generally low as reflected in the elasticity indices of the tax revenue, custom and excise duties were elastic in an upward direction and positively related to GDP. The long run analysis showed that only customs and excise duties are sustainable sources of tax revenue. Custom and excise duties have high elasticity index and is positively related to GDP implying that the revenue from custom and excise tax have translated to meaningful growth of the economy.

Applying the concept of buoyancy and elasticity of excise duties in Kenya, Okello (2001) analyzed the structure of excise duty in Kenya from the period 1970-96. The results of the study showed that the excise tax system has been efficient over the period. This means that although the growth in excise tax can mainly be attributed to the growth of GDP, the effects of discretionary changes were also successful in generating additional revenue. In the long-run, however, the results predict that excise tax revenue will continue to grow faster than the growth in GDP, but that discretionary measures will not generate the expected additional revenue.

Bearing in mind that investment stimulates long-term economic growth by expanding the capacity for production of goods and services, Njuru, Ombuki, Wawire and Okeri (2013) investigated the impact of taxation on private investment and in turn economic growth in Kenya, using vector auto-regression technique and quantitative secondary data covering the period 1964-2010. The study found that VAT, income tax and establishment of Kenya Revenue Authority (KRA) had a negative impact on private investment hence economic growth, while excise tax, import tax and tax amnesty impacted positively on private investment and economic growth.

Gachanja (2013) explored the relationship between economic growth and tax revenues in Kenya for the period 1991-2011. Using cointegration and Granger Causality test, the results of the study revealed a positive relationship between economic growth and tax revenues; with all tax variables, income tax, import duties, excise duties and value added tax showing a positive effect on GDP, while the Granger Causality test indicated a bi-directional relationship between economic growth and excise duties. Our study improves on this work by isolating direct tax revenue from tax revenue and only concentrating on the effect of excise, custom and value added tax revenue on economic growth. Secondly, the period covered in our study is long enough to capture the effect of indirect tax to changes in GDP

On the basis of literature reviewed, there have been numerous empirical studies focusing on excise duty and economic growth in both developed and developing countries. The empirical studies on this phenomenon in Kenya are relatively few. Studies done on the effect of excise duty on economic growth in other countries have reported contradictory results whereby some scholars hold that it is growth enhancing, other studies indicate that excise duty is growth impeding, Moreover some scholars argue that excise duty cannot predict economic growth.

2.5.3. The Effect of Value Added Tax on Gross Domestic Product (GDP)

Over the last 20 years, a large number of countries have implemented major tax reforms, mainly by adopting value added tax (VAT) as a kind of indirect taxation. VAT is the major part of tax system that raises about one-fourth of the world's tax revenue (Ebrill, Keen, Bochin and Summers 2002). This has been reiterated by Bahl and Bird (2008) as they indicated there is no question that the VAT is now properly considered central to a good tax system in raising revenue

in most countries. The International Monetary Fund (IMF) underline the growing importance and expansion of value added tax as follows: The value added tax has become a key source of government revenue in over 120 countries, about 4 billion people, 70 per cent of the world population now lives in countries with VAT and it raises about 18 trillion dollars in tax revenue, roughly one – quarter of all government revenue (Ebrill *et al* 2002).

Analysis of government tax with respect to value added tax in France by Michel (2003) concludes that the introduction of VAT in the country has led to continuous increase in government total domestic revenue mobilization over the years. He said this made France's GDP to rise to \$ 1.76 trillion from \$ 1.42 trillion, while per capita income increased to \$ 29,410 in 2003 from \$29,089 in the previous year. He further observed that government revenue target has always been achieved and VAT in particular registering substantial economic growth over the period.

Skinner (1987) analyzed the effect of taxation on economic growth in 31 African countries over the period 1965 - 1982. Using Two Stage Instrumental Variable (2SIV) technique, they found that taxes levied on personal and corporate incomes reduce economic growth; while value added tax have no significant effect on economic growth. Sameti and Rafie (2010) analyzed economic growth and income distribution effects of tax and also the impact of inequality on economic growth in Iran and some selected East Asian countries. Using panel data regression in the period 1990-2006, their results denote that the impact of value added tax on inequality and economic growth is insignificant.

Miller and Russek (1997) analyzed the relationship between fiscal structure and economic growth in 39 OECD countries from 1975 to 1984, dividing them into three groups, developed countries, developing countries and all countries (developed and developing countries). They employed a pooled cross-section, time-series sample that allowed them to use a fixed-effect and random-effect model methodology. In the case of all countries, a positive correlation exists between corporate income tax revenue and economic growth. Furthermore, there was no statistically significant relationship between value added tax revenue and economic growth.

Lee and Gordon (2005) explored the relationship between taxation and economic growth using both cross-sectional and time series data for 1970-1997. The findings suggest the negative effect of corporation income tax on economic growth. Value added tax, customs and excise duties are not significantly associated with economic growth.

Ehigiamusoe (2013) examined the nexus between the tax system and economic growth in Nigeria from 1980 to 2011, using correlation method and Granger Causality to establish the relationship. The paper revealed that value added tax has no significant impact on economic growth. They discovered that custom duties have more impact on economic growth than Value Added Tax. This was due to the high rate of imports in the country; as imports increases, the duties on imports will continue to experience growth, and ultimately lead to increased output. In the same country, Ajakaiye (1999) found that Value Added Tax has a negative effect on economic growth.

More recently, Acti and Abigail (2014) investigated the impact of taxation on economic growth of Nigeria using data from 1994 to 2012. The impact of total tax revenue on GDP was tested to ascertain if there is a relationship between growth in GDP and the growth in tax revenue over the years under review. Regression analysis was used with time series to ascertain the trend. The regression result shows a linear growth relationship between tax revenue and economic growth. To further test the impact of the individual independent variables on the dependent variable, a multiple regression was used. From the results there is no significant relationship between Company Income Tax, Value Added Tax and Gross Domestic Product. But there is a significant relationship between Petroleum Profit Tax, Custom, Excise Duties and Gross Domestic Product.

In his study, Enokela (2010) explored the relationship between Value Added Tax and economic growth of Nigeria, using secondary data and multiple regressions. The results revealed that Value Added Tax is positive and statistically significant to Gross Domestic Product (GDP), Government Capital Expenditure (GCE) is positive but insignificant to Value Added Tax, and Gross Domestic Product per Capita (GDPPC) is negative and statistically significant to Value Added Tax.

Bikas and Andruskaite (2013) used multiple regressions and correlation to analyze the relationship between the VAT revenue and macroeconomic indicators: gross domestic product, gross domestic product per capita, consumption expenditure, household consumption expenditure, government consumption expenditure, export, import and unemployment in Portugal over the period 2004-2011. The study found that a positive relationship exists between VAT revenue and GDP, while a negative relationship exists between unemployment and VAT revenue.

Santiago and Yoo (2012) used a Pooled Mean Group (PMG) to estimate the long run equilibrium relationship between tax composition and economic growth using a data set covering a broad cross-section of 69 countries with different income levels during the period 1970-2009. Their results showed that a reduction in income taxes while increasing VAT is associated with faster economic growth. In the disaggregation of consumption taxes, however, they also found a robust and positive association between VAT and sales taxes on economic growth. While they consistently found these results to hold in high and middle income countries, they did not find strong evidence on the significance of shifts in the tax composition and economic growth in the case of low-income countries.

Rostami, Fariba and Akbarian (2012) examined the effect of VAT on GDP as economic growth in Iran from 1979 –2009. Using time series data and autoregressive distributed Lags (ARDL), results showed that VAT has a positive and significant effect in real output for Iran and this means VAT as a fiscal tool have useful performance in this country.

Saeed, Ahmand and Zaman (2012) studies Validity of VAT in the South Asia Association for Regional Co-operation (SAARC) Region, The basic objective of the study was to quantify the revenue effect of VAT in the SAARC region and to check, in particular, whether it has proved to be an effective form of taxation in those countries. It was first shown that a tax innovation, such as the introduction of VAT can boost the revenue ratio of SAARC countries which have adopted VAT and optimizing government to increase the tax ratio. Panel data of SAARC countries from 1995 to 2010 on various macroeconomic factors are obtained to determine the effect of VAT on revenue ratio. The results indicate a prosperous set of determinants of VAT adoption as it proves

to be a vital instrument to collect tax and enhance revenue ratio. Estimates show that most of the SAARC countries have adopted VAT have gained a more effective tax instrument to upgrade their GDP to revenue ratio.

Eneje (2011), obtained data from Central Bank of Nigeria Statistical Bulletin within the period 1981 to 2009 to analyze the impact of VAT on economic growth. The findings revealed that VAT has positive and significant impact on Nigeria's economic growth. Onoh (2012) analyzed the impact of VAT on economic growth in Nigeria from 1994-2010. Data was collected from Central Bank of Nigeria (CBN) statistical bulletin, ordinary least square technique was used to estimate the model and empirical findings show that VAT has a significant positive impact on Nigeria's economic growth.

Adereti, Adesina, and Sanni (2011) empirically investigated the contribution of VAT to GDP in Nigeria from 1994 – 2008. They used time series data on GDP, VAT revenues, Total Tax Revenue and Total Federal Government Revenue for the period. Using simple regression analysis and descriptive statistical methods, their findings showed that a positive and significant correlation exists between VAT Revenue and GDP. Their study also observed that there is no causality existing between GDP and VAT revenue.

Antwi, Ebenezer and Zhao (2012) studied the impact of VAT rate changes on VAT revenue in Ghana. The research used ARDL co-integration procedures to analyze the effect of changes in VAT rates on VAT revenue in Ghana from 2003 – 2010. The study revealed that changes in VAT rates have not had any significant effect in VAT revenue. Rather, improvement in GDP had a more significant impact on the VAT revenue, even though tax buoyancy was generally low and this was attributed to a lapse in the tax system in Ghana.

Okoye and Gbegi (2013) evaluated the influence of revenue generated through VAT on wealth creation in Nigeria. Using secondary data and testing the hypotheses formulated using Product Moment Correlation Coefficient and Student t-test, the findings revealed that revenue generated through VAT has a significant influence on wealth creation in Nigeria and also that revenue generated through VAT has a significant effect on total tax revenue in Nigeria.

Umeora (2013) examined the effects of VAT on economic growth and total tax revenue in Nigeria using data covering 1994-2010. The results of the regression analysis show that VAT has a significant effect on GDP and also on total tax revenue. Closely related results were found by Bakare (2013) in a study carried out to investigate the enormity of the impact of VAT on output growth in Nigeria. Ordinary least square regression technique (OLS) was employed for the empirical study. The study found that a positive and significant relationship exists between value added tax and output growth in Nigeria. The results of the finding showed that; the past values of VAT could be used to predict the future behaviour of output growth in Nigeria.

Xuan Dao and Van Binh (2013) examined the impact of tax structure on GDP and progressivity in Vietnam. They used cross-sectional time series over the period 1997-2010 for 61 different provinces in Vietnam. They employed Fixed- Effects and Two-Stage Least Squares, together with the regression model of tax progressivity. Their findings show that Vietnam's tax policies are progressive and that their integration policy impacts on the economic growth positively. In addition, the result proved that there exists a positive and significant relationship between VAT and GDP. However, this view for a long-term is a negative impact on the economic growth, because the country can lose competitive advantage to attract foreign development investment, if it keeps high tax rates.

In Kenya, Adari (1997) study focused on the introduction of VAT in Kenya that replaced sales tax in 1990. The study analyzed the structure, administration and performance of VAT. The estimated buoyancy and elasticity coefficients are less than unit, implying a low response to VAT revenue to change in GDP. This suggested the presence of laxity and deficiency in VAT administration. However, the estimation of buoyancy and elasticity coefficient were done in total disregard of the time series properties and without taking care of unusual observations in the data. Therefore results were not reliable for planning purposes.

Wawire (2011) examined determinants of VAT revenue and assessed response of VAT revenue to changes in its tax base in Kenya. They identified the determinants of VAT to include GDP, institutional, demographic, and structural features of the economy. The study found that growth elasticity for VAT is all greater than one. The estimation result show that total GDP elasticity of

VAT revenue is less than elasticity with respect to monetary GDP. This suggests the existence of an underground economy in Kenya over the period of analysis. It found that VAT revenue responds with substantial lags to changes in determinants especially international trade. There is therefore a challenge of creating a stable VAT system so that tax revenue can increase rapidly as the economy grows.

In summary, there have been numerous empirical studies focusing on VAT and economic growth in both developed and developing countries. The empirical studies on this phenomenon in Kenya are relatively few. Studies done on the effect of value added tax on economic growth in other countries have reported contradictory results whereby some scholars hold that it is growth enhancing, other studies indicate that value added tax is growth impeding, Moreover some scholars argue that value added tax cannot predict economic growth.

2.6 Summary of the Research Gap

From the respective studies reviewed, it is evident that some research work on contribution of indirect tax on economic growth has been conducted, though empirical studies on the subject matter in Kenya are relatively few. However, previous studies done on the effect of indirect taxation on economic growth have reported contradicting results. Some say the tax is growth enhancing (Barro ,1990; Scarlet, 2011; Kneller et al, 1998) while other studies indicate that indirect taxation is growth impeding (Koch, Schoeman and Van-Tonder, 2005; Onduru, 2003), while still some studies reported that indirect taxes cannot predict economic growth (Harberger, 1964; Madsen and Damania, 1986). The inconsistency in existing empirics and the wide knowledge gap occasioned by the paucity of empirical literature on Kenya has made this issue open for further research in the country. Previous empirical studies adopted cross-country with cross section data analysis to relate measures of indirect tax revenue and economic growth undermining the fact that cross-sectional studies can only obtain pooled estimates that fail to disentangle results for any specific country and used different methodologies. The study is country specific and it utilized time series data and thereby overcomes the cross-country analysis that undermines variable differentials, productivity differentials as reflected in different production functions and above all, country differentials. This study's contribution to knowledge

will be significant in providing statistical bench mark which may lead to change of fiscal policy and regulation; its result may prompt studies of this nature in other countries.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction.

This chapter lays out the research design, study area, methods of data collection, data sources, data description and analysis and limitations of the study. The chapter specifies the model used to analyze the relationship between indirect taxes and economic growth. The study utilizes economic theory and econometric models to define this relationship.

3.2 Research Design

Burns and Grove (2003) define a research design as “a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings”. Parahoo (1997) describes a research design as “a plan that describes how, when and where data are to be collected and analyzed”. It details procedures necessary for obtaining the information to structure or solve a research problem. The Ex post facto research design was adopted for this study based on the existence of Kenya’s annual time series data for the period 1973-2010. Because of time series nature of the variables, diagnostic tests were carried out and where necessary corrective measures were undertaken. The research approach was used because the main purpose of our study was to determine the strength of relationships between indirect tax revenue and economic growth, if a relationship exists, to determine a regression equation that could be used make predictions about future. Ex post facto research is concerned with determining the strength and direction of relationships between two or more variables in the same population or between the same variables in two populations (Leedy & Ormrod 2010).

3.3 Theoretical framework

Scholars have developed models to explain causes of long run growth of an economy. In this study, a macro economic model (as developed by Engen & Skinner, 1992; Engen & Skinner, 1996; Dalibor, 2005), which permits simulation of the effect of taxation on economic growth, was used. Engen and Skinner (1996) using a model similar to that of Solow (1956) explain how taxes affect economic growth. Economic growth rate is determined by the growth of the output of the economy. Growth of output is determined by the following expression:

$$Y_i = \alpha_i K_i + \beta_i M_i + U_i \dots \dots \dots (3.1)$$

Where

Y_i = is the GDP growth rate

K_i = growth rate in capital stock

M_i = growth rate of effective labour force

U_i = economy's overall productivity growth

α_i = marginal productivity of capital.

β_i = output elasticity of labour

This means a 1 percent increase in growth rate of capital with elasticity α will lead to economic growth rate of α percent and a 1 percent increase in growth rate of labour force with elasticity of β will lead to economic growth rate of β percent. Taxation affect values of α and β , which will tend to influence economic growth, therefore an increase in capital stock and labor force will increase economic growth.

Having established a significant relationship between taxation and economic growth, the choice of the optimal tax structure has been very problematic. According to Martinez-Vacquez, Vulovic and Lui (2009).

With the coexistence of direct and indirect forms of taxation explained in the theoretical optimal tax literature, the big question that has remained largely unanswered is that of the economic consequences of the different mixes of direct and indirect taxes.

According to Atkinson and Stiglitz (1976) theorem, an economy where productivity and endowment of individuals differ greatly, indirect tax becomes more appropriate. According to Cremer, Pestieau and Rochet (2001), since individuals differ in their qualitative characteristics, a general income tax will not suffice. Instead, differential indirect taxes should form the basis of optimal tax policy.

Leaning on the endogenous growth framework, Barro (1990) constitutes one of the first attempts at endogenizing the relationship between growth and fiscal policies. He distinguishes four categories of public finances: productive vs. non-productive expenditures and distortionary vs.

non-distortionary taxation. Taxation is non-distortionary if it does not affect the investment decision, and hence economic growth. This is, above all, the case for customs duties, excise duties and value added tax. Otherwise taxes, such as direct income and profit taxation are considered distortionary.

3.4 Model specification

The model which is in line with the work of Akhor (2016), in their analysis of the impact of indirect tax revenue on economic growth of Nigeria was found relevant to lead this study. The assumption is that, the dependent variable is a linear function of the independent variables. The conceptual framework of the model is as follows:

$$GDP = f(IT, CED, VAT) \dots\dots\dots (3.2)$$

Where:

- GDP = gross domestic product
- IT = income tax
- CED = custom and excise duties
- VAT = value added tax.

From the above functional relationship, the stochastic model is specified below:

$$GDP = a_0 + a_1 IT + a_2 CED + a_3 VAT + \mu \dots\dots\dots (3.3)$$

$$a_1 a_2 a_3 > 0$$

Where:

- a_0 = intercept
- a_1 = the coefficient of income tax (IT)
- a_2 = co-efficient of custom and excise duty (CED)
- a_3 = co-efficient of value added tax (VAT)
- μ = the error term

The model was modified to fit custom and excise duty separately to enable assessment of their impact separately. If we substitute these variables into Akhor’s model

$$GDP = F(CD, ED, IT, VAT) \dots \dots \dots (3.4)$$

The model in its econometric format becomes:

$$GDP = a_0 + a_1 CD_t + a_2 ED_t + a_3 IT_t + a_4 VAT_t + \mu_t \dots \dots \dots (3.5)$$

Where:

GDP = gross domestic product

IT = income tax

VAT = value added tax.

CD=customs duty

ED=excise duty

where; μ_i is the Error term or other variables that could have lent further explanation to the explained variables but are not included in the model and is assumed to be normally distributed in zero and constant variance.

3.5 Definition of variables and expected signs

The study is based on the Kenyan economy with emphasis on the effect of indirect taxes on economic growth. Variable selection is based on theoretical proposition in the literature; the Real Gross Domestic Product (RGDP) is adopted as the proxy for economic growth. The independent variables for this study include: Value Added Tax, Customs Duties and Excise Duties from 1973 to 2010. These independent variables were chosen because of their potency and capacity to generate maximum revenue for the government when fully harnessed (Ibadin and Adesina, 2015). The other variable for control included was income tax. Gross Domestic Product (GDP) is expressed as a function of Income Tax (IT), Custom Duty (CD) and Excise Duty (ED) and Value Added Tax (VAT). Gross Domestic Product (GDP) serves as the dependent variable while the entire tax bases are independent variables.

In consonance with economic theory, it is expected that the level of value added tax, customs duty, income tax and excise duty to a large extent, determine the level of economic growth of a country. All things being equal, *a priori* intercept and the slope of the coefficients are expected to have positive signs. Thus, the *a priori* expectation may be denoted mathematically as: $a_0 a_1 a_2$

$a_3 a_4 > 0$. The numerical values of the parameters were estimated by the use of ordinary least square techniques based on econometric computation. To determine the relevant hypothesis, estimates were evaluated for statistical significance based on the relevant statistics of regression output. The explanatory power of the model as a measure of goodness of fit is then decided.

3.6 Study Area.

The area of study was Kenya, Kenya is a politically sovereign state situated in the Eastern Africa region between Latitudes $5^0\text{N} - 5^0\text{S}$ and Longitudes $34^0\text{E} - 42^0\text{E}$, bordering the Indian ocean between Somalia and Tanzania. It also borders Ethiopia to the North, South Sudan to the North West, and Uganda to the West. The study covers 38 years from 1973- 2010. This period was chosen because of its uniqueness as a period during which the country relied more on indirect tax revenue as a major source of development finance as opposed to direct tax revenue.

3.7 Population and Sample

The population of the study covered the period of 1963 to 2014, a population of 47 years. The focus of the study, however, was on time series data from 1973-2010, a sample size of 38 years, which was purposively selected. This was above the statistically recommended sample size of 30 which guaranteed a normal distribution and a reliable inferential statistics for the study. This period was adopted because it is the period when the country place more reliance on indirect taxes as a major source of development finance.

3.8 Data Collection

Burns and Grove (2001), define data collection as “the precise systematic gathering of information relevant to specific research objectives or questions”. According to Burns and Grove (2001), data can be collected in several ways depending on the study and can include a variety of methods. However, the research objectives must be accomplished through the instrument used. The study was based on quantitative secondary data obtained from government publications such as statistical abstracts, economic surveys prepared by the Kenya National Bureau of Statistics, and revenue data provided by the Ministry of National Treasury and Kenya Revenue Authority. Data was also obtained from internet and library sources, World Bank and International Monetary Fund’s publications and reports.

3.9 Data Sources.

The data was obtained from relevant government departments, Kenya Revenue Authority (KRA), Kenya National Bureau of Statistics (KNBS), Ministry of National Treasury, official published documents of the government of Kenya; such as statistical abstract and Economics surveys. Other sources include the World Bank and International Monetary Fund publications and reports. Data was also obtained from internet and library sources.

3.10 Data Description

Annual quantitative time series secondary data from 1973-2010 was used for the analysis. The data on five economic variables was used namely the gross domestic product, income tax revenue, value added tax revenue, customs duty revenue and excise duty revenue.

3.11 Data Analysis.

In the estimation of collected data an econometric technique known as the Error-correction models and co-integration test were adopted for this study. The choice of this econometric technique was based on its ability to combine both long-run and short-run information in the same model and overcame the problems of losing information that might occur from attempts to address non-stationary series through differencing. An Error Correction Method is used to tie the short run behaviour to its long run value (Gujarati & Porter, 2009). The descriptive and inferential statistics was used in addition in order to build strong conclusions about the impact of indirect tax revenue on economic growth.

3.12 Diagnostic Tests

Time series diagnostic tests were carried out to ensure that the model satisfies the classical linear regression model assumptions. The data was subjected to diagnostic tests notably normality of the disturbance term and functional form misspecification, Stationarity, serial correlation, multicollinearity and heteroscedasticity. These tests are meant to verify whether the data are normally distributed, stationarity and have no mutual correlation among the independent variables and thereafter used it in regressions without fear of getting spurious results. During the

analysis, the time series data for each variable was converted to their natural logs to normalize the data.

3.13 Cointegration and error correction model

The study adopted a combination of Johansen cointegration tests and error correction mechanism after series of diagnostic tests which helped to check the adequacy of the specified model. The concept of integration allows estimation and testing of long run theoretical relationship between economic variables which are integrated time series, thus intuitively cointegration among a set of variables implies that there exist fundamental economic forces which make the variables move stochastically together over time.

3.14 Limitations of the study

There were data inconsistencies as the study relied on data from different secondary sources. However great care was exercised to ensure the data was reliable in estimating the model. This was done by ensuring that data to measure one variable was obtained from one single source for the entire period under study. In addition, though the researcher tried to be as accurate as possible, the proxies used for the taxes bases may not be accurate and that might have affected the results.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This paper intended to empirically analyze the effect of indirect tax on economic growth in Kenya using annual time series data between 1973 and 2010. First, the descriptive statistics, diagnostic tests including unit root tests through ADF test are presented, followed by presentations and discussion of the empirical results from the model.

4.2. Descriptive statistics

Table 4.1. Descriptive statistics of Gross Domestic Product, Custom Duty, Excise Duty, income tax and Value Added Tax.

Var	Max	Min	Med.	Mean	Std.dev	Jarque -Bera	Prob	Skew	Kurt.
GDP	2551160	17566	244351	622784	719337	9.710	0.008	1.22	3.47
CD	46072	796	80999.5	15164	13356	3.369	0.186	0.54	2.02
ED	80567	463	7655	21005	24770	6.907	0.032	1.04	2.81
IT	272264	1176	18499.5	50551	66173	30.99	0	1.78	5.62
VAT	145707	694	23594	39179	40980	5.908	0.052	0.964	2.87

Source: Authors computation.

The table 4.1 above shows that on the average real gross domestic product (RGDP) value is ksh.622 783.6 million, minimum value is ksh.17566 million, maximum value of ksh.2551160 million and standard deviation value of ksh.719336.6 million. Value added tax (VAT) is ksh.39178.82 million; minimum value of ksh.694 million, maximum value of ksh.145707 million and a standard deviation value of ksh.40980.4 million. Also, custom duty has an average value of ksh.15164.32 million, minimum value of ksh.796 million, maximum value of ksh.46072 million and a standard deviation value of ksh.13356.24 million and excise duty has an average value of ksh.21004.61 million, minimum value of ksh.463 million, maximum value of ksh.80567 million and a standard deviation value of ksh.24770.66 million. It is of interest to note that the standard deviation with regard to the GDP when compared with the mean suggests that the indirect tax revenue had some sharp increases in some time during the period under consideration.

4.2.1 Test for Normality

Most economic data exhibits definite and clear lower limits but the upper limits lack definite levels due to presence of outliers. Consequently, it is critical to test for if the data exhibits normality. Skewness and kurtosis are the major tests for normality. Skewness is the tilt in distribution of a series around the average while Kurtosis measures the level of peaking of the series distribution using the Jarque - Bera test. The sign for skewness shows whether the series is negatively or positively skewed. The null hypothesis dictates if probability of Jarque-Bera statistics is greater than 0.05 data is not normally distributed. The Jarque-Bera statistics shows that GDP, excise duty and income tax are normally distributed at 5% while custom duty and value added tax are not normally distributed.

4.3. Unit Root Test (Testing for Stationary):

The meaning of stationary is that both Mean and Variance are constant for all time (t), the same holds for the $Cov(Y_t, Y_s)$, thus the correlation between any two different values depends on different time series for both values of (Y) (for $T \neq S$). Non stationary of variables is a major limitation of time series data. When time series data is non-stationary and used for analysis, it may give spurious results which cannot be used for any meaningful inferences, since estimates obtained from such data will possess non constant mean and variance (Muthui *et al* 2013). Moreover, if the data is not stationary, the value of R-squared is high and this makes it difficult to determine the relationship between the variables.

Because this study used time series data, it was important to establish the stationary of the data. The variables are therefore tested for unit root and in its presence differencing is done to alleviate the problem. However, this leads to loss of some fundamental long run information hence biased solutions and this is corrected through Augmented Dickey Fuller Test. The augmented Dickey-Fuller (ADF) unit root test was used because of its superiority over the Dickey-Fuller (DF). The ADF test decision rule is that the test statistics of a particular variable must be greater than its critical value in absolute term before one can accept that a variable is stationary

Table 4.2. Unit root test at first difference

Variable	ADF	1%	5%	Decision
CD	-5.544682	-3.626784	-2.945842	Reject H_0
ED	-5.624120	-3.626784	-2.945842	Reject H_0
GDP	-4.349471	-3.626784	-2.945842	Reject H_0
VAT	-5.627301	-3.626784	-2.945842	Reject H_0
IT	-4.96784	-4.23497	-3.54033	Reject H_0

Source: Computation using E-views econometric software, version 7.

Table 4.2 shows the unit root test for stationary using Augmented Dickey-Fuller. The result shows that all the variables (GDP, customs duty, excise duty, income tax and value added tax revenue) are stationary at first difference. Since the t-statistics are greater than the critical values at 1% and 5% level of significance in absolute term. We therefore conclude that all variables are not characterized by unit root problem and accept the hypothesis that says customs duty(CD), excise duty(ED), income tax(IT), value added tax(VAT), and gross domestic product(GDP) have no unit root problem.

4.4 Diagnostic Tests

Time series data is associated with several problems which require investigation to avoid spurious results upon application of the OLS method of estimation. Primarily, the OLS method assumes serial uncorrelation, correct model specification, homoscedastic error term and absence of correlation between the error terms and the regressors. If these assumptions are violated, the estimated parameters would not meet the statistical threshold. Tests carried out on the data included the normality test, stationarity (unit root) test, multicollinearity test, serial correlation test and heteroscedasticity test.

4.4.1. Testing for Multicollinearity

Multicollinearity among the independent variables implies that they are perfectly correlated. If the explanatory variables in the model are perfectly linearly correlated, the parameters of the model become indeterminate and the method of OLS breaks down (Mukras, 1993). This violation is not a problem of the model or the disturbance term and therefore does not affect the BLUE properties of the OLS estimates (Musaga, 2007). In any practical context, the correlation between explanatory variables will be non-zero, although this will generally be relatively benign in the sense that a small degree of association between explanatory variables will almost always occur but will not cause too much loss of precision. However, a problem occurs when the explanatory variables are very highly correlated with each other (Dakito, 2011).

Table 4.3. Variance Inflation Factors.

Variance Inflation Factors
Date: 09/25/16 Time: 22:41
Sample: 1974 2010
Included observations: 36

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	3.92E-05	1.001297	NA
D(CD)	0.000729	1.259000	1.258958
D(ED)	0.001710	1.059275	1.058904
D(IT)	0.002341	1.188650	1.188482
D(VAT)	0.002250	1.407744	1.407646
U(-1)	0.027970	1.020291	1.019554

Source: Computation using Eviews econometric software, version 7.

Where CD=Customs Duty, ED=Excise Duty, IT=Income Tax and VAT=Value Added Tax.

The table 4.3 shows multicollinearity test between independent variables. The VIF is less than 10, meaning that the variables are poorly correlated with each other. Therefore, there is no Multicollinearity among the independent variables. So it appropriate to use the independent variables (customs duty, excise duty, income tax and VAT) simultaneously in order to run the regression model since there is no multicollinearity problem.

4.4.2 Test for Serial Correlation

4.4.2 (a) Durbin Watson Test for Autocorrelation

The Durbin Watson Test was used to test for autocorrelation. The statistic ranges between 1 and 4. A value of 2 indicates that there is no autocorrelation. With Durbin-Watson statistics of 1.954836, it shows that there is no autocorrelation and therefore the model gives a good description of the variables.

4.4.2.(b) Breusch-Godfrey Test for Autocorrelation

Serial correlation is usually as a result of model mis-specification or genuine autocorrelation of the model error term. In the presence of serial correlation, ordinary least squares estimators are no longer Best Linear Unbiased Estimators (BLUE). Moreover, the R^2 may be overestimated, standard errors underestimated and t-statistics overestimated (Musaga, 2007) There was therefore further need to test for serial correlation.

Table 4.4 Serial Correlation results

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.338161	Prob. F(2,30)	0.7158
Obs*R-squared	0.815741	Prob. Chi-Square(2)	0.6651

Source: Computation using Eviews econometric software, version 7.

Table 4.4 shows the Breusch-Godfrey LM Test for autocorrelation is used to test for serial correlation among the error terms in the model, a violation of which would make emanating results have invalid statistical significance inferences. The null hypothesis states no serial correlation against the alternative hypothesis of serial correlation ($p < 0.05$). The results indicate the p-value is 0.6651 which is greater than the critical p-value (0.05) hence accept the null hypothesis of no serial correlation. This shows the nonexistence of serial correlation.

4.4.3. Heteroscedasticity test

Table 4.5 Heteroscedasticity Test

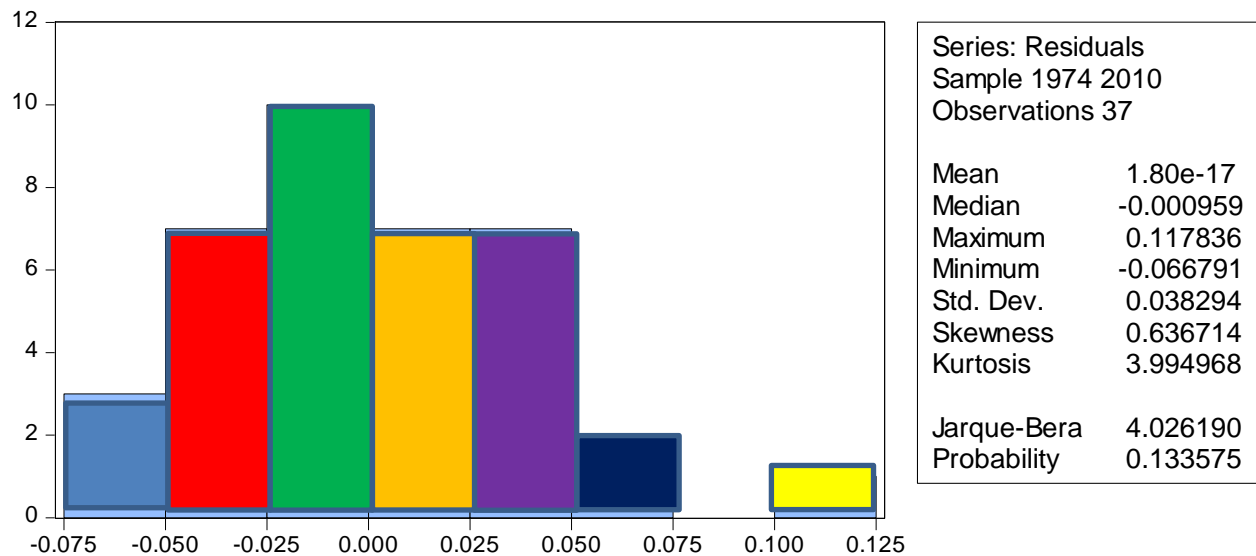
Heteroskedasticity Test: Harvey			
F-statistic	0.982374	Prob. F(4,32)	0.4310
Obs*R-squared	4.046574	Prob. Chi-Square(4)	0.3997
Scaled explained SS	5.379728	Prob. Chi-Square(4)	0.2505

Source: Computation using Eviews econometric software, version 7.

Table 4.5 shows the Harvey test of heteroskedasticity. The Probability Chi-Square value for observed R-squared is 0.3997(39.97%) which is more than 5 percent meaning that the null hypothesis that there is no heteroscedasticity in the model is accepted. This shows that there is no evidence for the presence of heteroskedasticity since the p-values are considerably in excess of 0.05.

4.4.4 Normality test

Figure 4.1 Histogram-normality test results



Source: Eviews econometric software, version 7.0.

Figure 4.1 shows a histogram-normality test (Jarque-Bera test) which is a test of the distribution of the error term and it uses the first four moments of the distribution namely mean, standard deviation, skewness and kurtosis. The results of the Jarque-Bera test had probability values

0.133575 greater than 0.05, hence the normality assumptions of the regression residuals for all the estimated equations were not rejected. The regression residuals therefore followed a normal distribution, which meant that the OLS estimates obtained were efficient and consistent.

4.5 Regression model results

The equation (3.4) was estimated using Ordinary Least Squares (OLS) method and the results are presented in Table 4.6

Table 4.6 Regression Model Results.

Dependent Variable: GDP

Method: Least Squares

Date: 05/29/14 Time: 11:06

Sample: 1974 2010

Included observations: 37

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.067919	0.014007	4.848889	0.0000
CD	0.122787	0.040333	3.044323	0.0046
ED	0.370923	0.062153	5.967917	0.0000
IT	-0.025155	0.068856	-0.365327	0.7173
VAT	0.035601	0.068842	0.517138	0.6086
R-squared	0.627002	Mean dependent var	0.134550	
Adjusted R-squared	0.580377	S.D. dependent var	0.062702	
S.E. of regression	0.040617	Akaike info criterion	-3.444173	
Sum squared resid	0.052792	Schwarz criterion	-3.226482	
Log likelihood	68.71721	Hannan-Quinn criter.	-3.367427	
F-statistic	13.44783	Durbin-Watson stat	1.954836	
Prob(F-statistic)	0.000002			

Source: Computation using Eviews econometric software, version 7.

From the regression results in Table 4.6, the R^2 (0.6270) of the regression showed that the independent variables explain about 62.7% of the variations in the dependent variable. It implies that: customs duty, excise duty, income tax and value added tax explained about 62.7% percent systematic variations in output growth over the observed years in the Kenyan economy while the remaining 37.3% percent variation is explained by other determining variables outside the model.

The empirical result of the estimated model show that the probability value of F- statistics (0.000002) is less than the 5 per cent critical level. We therefore accept the alternative hypothesis that the explanatory variables which includes, Customs Duty (CD) Excise Duty (ED), income tax (IT), and Value Added Tax (VAT) are effective determinant factors of the economic growth (GDP). As a result the model was perfectly specified and there is statistical evidence to show that customs duty, excise duty, income tax and value added tax can jointly influence economic growth. The Durbin Watson statistic (1.955) illustrates the absence of auto correlation.

The regression gives a short-term model of the form:

$$\text{GDP} = 0.0679 + 0.1228\text{CD} + 0.3709\text{ED} - 0.0252\text{IT} + 0.0356\text{VAT} + \mu \dots \dots \dots (4.1)$$

(3.044) (5.968) (-0.3653) (0.5171).

4.6 The Statistical Significance of the Parameter Estimate

The statistical significance of the parameter estimate can be verified by standard error test; the adjusted R -squared, t-statistics, the F-statistic and the Durbin-Watson statistics.

4.6.1 The effect of customs duty on Economic Growth in Kenya.

The null hypothesis (H_{01}) that custom duty has no significant effect on economic growth in Kenya. We can test the statistical significance of the parameter estimate (a_1) by standard error test; and t-statistics.

The null hypothesis dictates if probability of t-statistics is greater than 0.05 the parameter estimate is not statistically significant. From Table 4.6 above, the results of the t-test had probability values 0.0046 less than 0.05; hence the non-statistical assumption of the parameter estimate is rejected. The decision rule is that the variable is statistically significant at 5% level of significance.

In summary, since the econometric tests applied in this study show a statistically significant relationship between the GDP and customs duty. The estimates of the model parameters show consistency with the theoretical expectations for variable a_1 . The estimated value of the partial

regression coefficient CD that is a_1 is positive. This implies that Customs Duty correlates positively with economic growth (GDP). At 0.05 level of significance, the coefficient of CD is statistically significant. This suggests that Customs Duty is an important determinant of growth. We therefore accept the alternative hypothesis which states that: Customs duty has significant effect on economic growth in Kenya.

This logical finding can be explained by the fact that customs duty increases the revenue base of government and make funds available for development purposes that will accelerate economic growth. Secondly, we also discovered that customs duty have more impact on economic growth than Income Tax and Value Added Tax. The reason for this revelation could be attributed to the high rate of imports in the country. As imports increase, the duties on imports will continue to experience growth, and ultimately increase output. This outcome is in tandem with the result of studies carried out by Yanikkaya (2002), Dejong and Ripoll (2005,) ,Okafor (2012), Gacanja (2013),Gober and Burns (1997) among others, all of whom reported positive and significant relationship between customs duty and economic growth. However, this finding is inconsistent with the findings of Dritsaki and Katerina (2005),Sameti and Rafie (2010),Onduru (2003) who opined that customs duty has a significant negative effect on economic growth.

The positive and significant relation between customs duty and GDP indicates that policy measures to expand customs revenue through more effective custom administration will impact positively in growing the economy. These results run contrary to the view that higher custom tariffs are universally detrimental for growth. This is important from a policy perspective, since it indicates that the maintenance of high tariff barriers does not appear to be a leading culprit for the economic stagnation suffered by Kenya and other developing countries in the world.

4.6.2 The effect of excise duty on Economic Growth in Kenya

The null hypotheses (H_{02}) that excise duty has no significant effect on economic growth in Kenya. We can test the statistical significance of the parameter estimate (a_2) by standard error test; and t-statistics.

The null hypothesis dictates if probability of t-statistics is greater than 0.05 the parameter estimate is not statistically significant. From Table 4.6 above, the results of the t-test had probability values 0.0000 less than 0.05; hence the non-statistical assumption of the parameter estimate is rejected. The decision rule is that the variable is statistically significant at 5% level of significance

In summary, since the econometric tests applied in this study show a statistically significant relationship between the GDP and excise duty. The estimates of the model parameter show consistency with the theoretical expectations for variable α_2 . The estimated value of the partial regression coefficient ED that is α_2 is positive. This implies that Excise Duty correlates positively with economic growth (GDP). At 0.05 level of significance, the coefficient of ED is statistically significant. This further suggests that Excise Duty is an important determinant of growth, thus, we accept the alternative hypothesis which states that: Excise duty has a significant effect on economic growth in Kenya.

This logical finding can be explained by the fact that excise duty can potentially raise a great deal of revenue with little distorting effect. This provides a predictable and stable flow of revenue to finance development objectives that will accelerate economic growth. Excise duty also reduces aggregate consumption and raises savings, stimulating capital accumulation and economic growth. This outcome is in tandem with the result of studies by Gustavo, Vazquez and Vulovic (2013) Okafor (2012), Gacanja (2013) Anyanwu (1997), among others, all of whom reported a positive and significant relationship between excise duty and economic growth. However, this finding is inconsistent with the findings of Ebiringa (2012) and Onduru (2003) who opined that excise tax revenue has a significant negative effect on GDP.

The positive and significant relation between excise duty and GDP indicates that policy measures to expand excise revenue through more effective excise administration will impact positively on growing the economy.

4.6.3 The effect of sales tax/VAT on Economic Growth in Kenya

The null hypotheses (H_{03}) that VAT duties have no significant effect on economic growth in Kenya. We can test the statistical significance of the parameter estimate (α_4) by standard error test; and t-statistics.

The null hypothesis dictates if probability of t-statistics is greater than 0.05 the parameter estimate is not statistically significant. From Table 4.6 above, the results of the t-test had probability values 0.6086 greater than 0.05; hence the non-statistical assumption of the parameter estimate is accepted. The decision rule is that the variable is not statistically significant at 5% level of significance

In summary, since the econometric tests applied in this study show a statistically insignificant relationship between the GDP and value added tax, the estimates of the model parameters show consistency with the theoretical expectations for variable α_4 . The estimated value of the partial regression coefficients VAT, which is α_4 is positive. This implies that VAT correlates positively with economic growth (GDP). At 0.05 level of significance, the coefficient of VAT is statistically insignificant. This suggests that VAT is not an important determinant of growth. We therefore accept the null hypothesis that VAT has no significant effect on economic growth (GDP). Thus, we accept the null hypothesis which states that: VAT has no significant effect on economic growth in Kenya. The insignificant relationship between VAT and economic growth is quite surprising since value added taxes are not terribly harmful since they tax consumption and do not affect labour market incentives, yet they even provide an incentive to save and invest, this stimulates capital accumulation and economic growth.

The insignificant impact of VAT on growth is because VAT has an effect on consumption which in turn has effects on investment and employment and ultimately income and output. This outcome is in tandem with the result of studies carried out by Skinner (1987), Miller and Russek (1997), Lee and Gordon(2005), Sameti and Rafie (2010), Ehigiamusoe (2013) and Acti and Abigail(2014) among others, all of whom reported insignificant relationship between VAT and economic growth. . However, this finding is inconsistent with the findings of Enokela (2010),

Rostami, Fariba and Akbarian (2012), Umeora (2013), Gacanja (2013) who opined that VAT revenue has a significant effect on GDP

The policy implication of the above findings is that the Kenyan VAT system should be reformed to engineer a system that would have a significant impact on economic growth. If this is done, the growth rate of VAT revenue would increase thereby accelerating the internally generated revenue in the country and this would make the VAT system effective. An effective VAT system should satisfy the twin purpose of raising maximum revenue and at the same time encourage production. Moreover, tax revenue should be transparently and judiciously utilized for investment and in the provision of infrastructure and public goods and services so as to accelerate economic growth, employment and wealth creation.

4.7 Cointegration Tests

It has been established that all the variables are integrated (non-stationary). The implication of this is that unless there is cointegration (long-run relationship among the variables in the model), the resultant regression is likely to be spurious (Okello, 2001). Therefore, to build an econometric model which makes sense in the long-run, we have to test if the variables form a cointegrating relationship or not.

The use of cointegration technique allowed the study to capture the equilibrium relationship between non-stationary series within a stationary model. Furthermore, cointegration avoids both the spurious and inconsistent regression problems, which would have otherwise occurred with the regression of non-stationary data series (Gujarati, 2005). It also permitted the combination of the long-run and short-run information in the same model and overcame the problems of losing information that might occur from attempts to address non-stationary series through differencing (Adam, 1998). Cointegration technique makes it possible to capture the information of non-stationary series without sacrificing the statistical validity of the estimated tax equations.

Cointegration tests were carried out to verify whether the variables that were non-stationary had a long run relationship. Cointegration suggests that there exists a long run equilibrium relationship linking these variables, or they tend to move together over time. Therefore,

cointegration reveals long-run effects between time series variables. When variables are cointegrated, it means that the model containing such variables can be relied upon for policy recommendation (Muwanga, 2011).

Table 4.7. Cointegration test results

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)
Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values
Unrestricted Cointegrating Coefficients (normalized by b*S11*b=I):
<i>Source: Computation using Eviews econometric software, version 7</i>

In this study, we employ Johansen Cointegration test. Therefore, by employing Johansen Cointegration test we make use of Trace statistics and Max-Eigen from the model respectively by comparing their values with the critical values at 5% level. If the values of the Trace/Max-Eigen are greater than the critical values, then, we conclude that there will be long-run equilibrium relationship. Otherwise, the regression residual is not co-integrated.

Table 4.7, reports the Johansen's cointegration results. Both Trace test and Maximum Eigen value tests indicate three cointegrating equations at the 0.05 level because the hypotheses at None, At most 1, At most 2, are rejected because they have significant probability values of less than 0.05. The result of the Johansen's cointegration test shows the existence of a cointegrating equation. This means that the estimated parameters of the regression equation are the long-run coefficients that link economic growth and indirect tax revenues (customs duty, excise duty income tax and value added tax). This shows that there exists a long run equilibrium relationship between GDP and the fundamentals used in the model. This implies that the two variables move together such that as indirect tax revenue grows, GDP also grows and vice versa. The outcome is consistent with the result of studies carried out by Dritsaki and Katerina (2005), Ogbonna and Ebimobowei (2012), Bikas and Andruskaite (2013), Gacanja (2013) among others, all of whom

found that a long run relationship exist between customs duty, excise duty, value added tax and economic growth.

4.8 Error Correction Model

Economic agents normally take time to adjust to information flow and act accordingly. Granted, the short run relationships are vital and offer a potential problem of spurious correlation in the trends. This problem is resolved by making the variables stationary through differencing. This unfortunately leads to loss of data in the long-run and is corrected by adoption of a dynamic model known as Error Correction Model.

The Error Correction Model term captures the long-run relationship and majorly attempts to correct deviations from the long-run equilibrium. This coefficient represents the speed of adjustment or the disequilibrium amount transmitted to the growth rate each period. The lagged dependent variable introduced as an explanatory variable in the model to capture dynamics in the short run model and the regression results are presented in Table 4.7.

Table 4.8. Error correction model

Dependent Variable: D(GDP)
 Method: Least Squares
 Date: 08/08/15 Time: 08:55
 Sample (adjusted): 1975 2010
 Included observations: 36 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.001232	0.006264	-0.196625	0.8454
D(CD)	0.068626	0.027000	2.541725	0.0164
D(ED)	0.346363	0.041358	8.374727	0.0000
D(IT)	-0.087403	0.048386	-1.806354	0.0809
D(VAT)	0.080937	0.047437	1.706205	0.0983
U(-1)	-1.028119	0.167241	-6.147519	0.0000
R-squared	0.786713	Mean dependent var		-0.003142
Adjusted R-squared	0.751166	S.D. dependent var		0.075290
S.E. of regression	0.037557	Akaike info criterion		-3.574902
Sum squared resid	0.042316	Schwarz criterion		-3.310982
Log likelihood	70.34823	Hannan-Quinn criter.		-3.482786
F-statistic	22.13115	Durbin-Watson stat		1.931441
Prob(F-statistic)	0.000000			

Source: Computation using E-views econometric software, version 7.

Table 4.8. reports error correction model results, $U(-1)$ which is the one period lagged residual of the cointegrated equation and a probability value of 0.0000 which is less than 0.05 therefore it is significant meaning that there is long run directional causality from tax revenue to economic growth. The coefficient of the Error Correction Term is -1.0218119 which is a negative has a significant probability value of 0.00000. This means that there is a long run relationship between the tax revenue and economic growth and that all the tax components; customs duty, excise duty, income tax and VAT jointly correct for disequilibrium in GDP at the speed of 1.028119 annually. The value for R^2 shows the explanatory variables in the model collectively account for 78.67% of the variations in GDP growth. The adjusted R^2 value is 75.12% and indicates the explanations of the variations after correcting for the degrees of freedom. The F-statistic p-value of 0.0002 indicates that the estimated parameters are jointly significant and different from zero.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter is devoted to conclusions derived from empirical findings of the study, the policy recommendations, limitations and suggestions for further research. This chapter gives a brief summary of the study and highlights various lessons that can be adopted in policy formulation by suggesting appropriate measures that can be instigated to foster economic development. The chapter also highlights the limitations of the current study and suggests areas for further research.

5.2 Summary.

This study investigated the relationship between indirect tax and economic growth in Kenya. The motivation for this study was primarily premised on the paucity and inconsistency of empirical literature on the indirect tax – growth dynamics in developing economies. The objective was achieved by running a regression with economic growth as the dependent variable and the independent variables were income tax, value added tax, custom duty and excise duty. A combination of Johansen co integration and error correction modeling was adopted for the data analysis.

Empirical results of the study indicate that customs and excise duty are positively correlated with economic growth in a time series data of Kenya's Economy during 1973 – 2010 thereby supporting the predictions of the endogenous growth models, However, value added tax has a positive and insignificant effect on economic growth. The results of Johansen's cointegration test indicate a long-run stable relationship between tax revenue and economic growth. Error Correction Model indicates that there is a short and long run causality from tax revenue and economic growth and that all the tax components jointly correct for disequilibrium in Gross Domestic Product at the speed of 1.028119 annually. Since customs and excise duty are growth enhancing, the government should utilize the positive relationship between the variables and economic growth to realize efficient government investment expenditure that spurs economic growth in turn boosting the revenue levels.

The research closes the knowledge gap induced by inconsistency in existing empirics' on the growth effects of indirect taxation which most often has resulted in situations where results of researches done in developed economies are generalized to developing countries. The study is country specific and it utilized time series data and thereby overcomes the cross-country analysis that undermines variable differentials, productivity differentials as reflected in different production functions and above all, country differentials. Previous empirical studies adopted cross-country with cross section data analysis to relate measures of indirect tax revenue and economic growth undermining the fact that cross-sectional studies can only obtain pooled estimates that fail to disentangle results for any specific country. Since because the parameters are heterogeneous across subsets of units and errors might be non-random across temporal units.

5.3 Conclusion

The main objective of the study was to find out the effect of indirect tax revenue on economic growth in Kenya from 1973 to 2010. Based on the research findings presented and discussed in the preceding chapter (4), we arrived at a number of conclusions:-

The first objective of this study was to determine the effect of customs duty on economic growth in Kenya for the period 1973-2010. Analysis of research results has shown that customs duty has a positive and significant effect on economic growth in Kenya. Regression analysis results in Table 4.2 demonstrate this kind of relationship. It shows that if there is a 1% increase in customs duty revenue would increase economic growth by 0.1228%. Customs duty would increase the revenue base of government and make funds available for development purposes that will accelerate economic growth. From the findings, it can be concluded that customs duty has a significant positive effect on economic growth.

The second objective of this study was to determine the effect of excise duty on economic growth in Kenya for the period 1973-2010. Analysis of research results has shown that excise duty has a positive and significant effect on economic growth in Kenya. Regression analysis results in Table 4.2 demonstrate this kind of relationship. It shows that if there is a 1% increase in excise duty revenue would increase economic growth by 0.3709%. Excise duty can potentially raise a great deal of revenue with little distorting effect. This provides a predictable and stable

flow of revenue to finance development objectives that will accelerate economic growth. From the findings, it can be concluded that excise duty has a significant positive effect on economic growth.

The third objective of this study was to determine the effect of value added tax on economic growth in Kenya for the period 1973-2010. Analysis of research results has shown that value added tax has a positive and insignificant effect on economic growth in Kenya. Regression analysis results in Table 4.2 demonstrate this kind of relationship. It shows that if there is a 1% increase in value added tax, revenue would increase economic growth by 0.0356%. The insignificant impact of VAT on economic growth is that VAT has effect on consumption which in turns has effects on investment and employment and ultimately income and output. From the findings, it can be concluded that value added tax has an insignificant effect on economic growth. This study shows that the effect of value added tax on the economy is not large enough to influence the economic growth.

5.4 Recommendations

The results indicate that customs and excise duty provides a predictable and stable flow of revenue to finance development objectives that will accelerate economic growth. However, the effect of value added tax on the economy is not large enough to influence the economic growth.

The government should rely more on indirect taxes (custom and excise duties) than income tax due to its growth prospect and its less distortionary nature, and also utilize the positive relationship between the tax variables and economic growth to realize efficient government investment expenditure that spurs economic growth. In light of the findings outlined above, the following recommendations are made:

5.4.1. The following recommendations are made to achieve the objective of economic growth through Customs duty;

To increase the rate of growth of customs duty, the government should tackle the challenges of porous borders, smuggling, security and shortage of adequately trained personnel at the agencies responsible for the assessment, collection and administration of customs duty in Kenya. The various customs officers should be alive to their responsibility to reduce the rate of smuggling which is a major method of tax evasion in the country.

The study recommended that the tax authorities should establish good relationship with the professional associations involved in tax matters in order to reduce tax malpractices perpetrated by custom tax payers with the connivance and often active support of external auditors and tax consultants. It may also be necessary to re-visit and review some custom tax laws and regulations that are repugnant to the performance of the custom tax system, so as to block and discourage the loopholes that are being exploited by taxpayers to either evade or avoid tax payments. Constant review of existing custom tax laws will keep the act in pace with the economic reality.

5.4.2. The following recommendations are made to achieve the objective of economic growth through Excise duty;

There is a need to increase excise tax revenue, which can be achieved through expanding the tax base whereby private final consumption plus import values grow in line with growth in Gross Domestic Product. Reducing taxes on consumable products and narrowing down unemployment rate can increase private final consumption. That may result into increment in excise tax revenue that leads to reduction in the national budget deficit and enhances economic growth.

The study recommends that, the government should maximize revenue collection through proper documentation and registration of companies in the country. The revenue collection agencies should be equipped with the appropriate infrastructure and technology to effectively modernize the tax system in Kenya. This would ease tax assessment, payment, monitoring and back-duty audit. There should be constant training and re-training of excise administrators through seminars and conferences to keep them abreast of the modern trends in excise tax administration.

The study proposes that both customs and excise duty are good for the economy. Therefore, to improve economic performance the government should use taxes collected to provide more public goods and services, which enhance productivity and hence economic growth (Leibfritz et al., 1997).

5.4.3. The following recommendations are made to achieve the objective of economic growth through Value Added Tax;

The findings of this study indicate that value added tax is not a significant determinant of economic growth. However, mobilizing internal revenue to finance expenditure is good for the

economy (IMF, 2011). For Kenya to attain its economic growth and development, she must be able to generate enough revenue in order to meet the challenges of her expenditure in term of provision of social amenities and the running costs of the government. The results of this study indicate that if more goods and services are taxed, the revenue base of the country will increase. It has been recommended, among others, that Kenya Revenue Authority should pay attention to the informal sector of the economy by creating VAT offices at the local communities so as to generate more revenue and to fully achieve the objectives of wealth creation through VAT.

Value Added Tax, being a consumption tax levied at each stage of the consumption chain is borne by the final consumer and is capable of increasing the prices of products thereby fuelling inflation and reducing real output. It may become necessary for the government to adopt the appropriate fiscal and monetary policies to control inflation arising from the imposition of Value Added Tax. Value added tax revenue should be transparently and judiciously utilized for investment and in the provision of infrastructure and public goods and services so as to accelerate economic growth, employment and wealth creation.

The policy implication of the above findings is that the Kenyan VAT system should be reformed to engineer a system that would have a significant impact on economic growth. If this is done, the growth rate of VAT revenue would increase thereby accelerating the internally generated revenue in the country and make the VAT system effective. An effective VAT system should satisfy the twin purpose of raising maximum revenue while at the same time encouraging production.

5.5 Suggestions for Further Research

From the thesis, it is clear that there are still very significant limitations in the data needed to econometrically disentangle the complex relationships between tax policy choices and economic growth. As more data becomes available, further research will be needed to improve our understanding of how tax policy affects the prospects for economic growth in Kenya. Studies focusing on indirect tax-growth nexus in the country are scarce, and this should motivate researchers to do more work in this field. The paper suggests areas for further inquiry such as improvement on the model specification to increase its explanatory power. Research can also be

conducted to show how indirect tax affects the various aspects of economic performance such as labor productivity, social welfare and income distribution separately.

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LIST OF APPENDICES
APPENDIX I. DESCRIPTIVE STATISTICS

Var	Max	Min	Med.	Mean	Std.dev	Jarque -Bera	Prob	Skew	Kurt.
GDP	2551160	17566	244351	622784	719337	9.710	0.008	1.22	3.47
CD	46072	796	80999.5	15164	13356	3.369	0.186	0.54	2.02
ED	80567	463	7655	21005	24770	6.907	0.032	1.04	2.81
IT	272264	1176	18499.5	50551	66173	30.99	0	1.78	5.62
VAT	145707	694	23594	39179	40980	5.908	0.052	0.964	2.87

Source. Author's computation

APPENDIX II. VARIANCE INFLATION FACTORS.

Variance Inflation Factors
Date: 09/25/16 Time: 22:41
Sample: 1974 2010
Included observations: 36

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	3.92E-05	1.001297	NA
D(CD)	0.000729	1.259000	1.258958
D(ED)	0.001710	1.059275	1.058904
D(IT)	0.002341	1.188650	1.188482
D(VAT)	0.002250	1.407744	1.407646
U(-1)	0.027970	1.020291	1.019554

Source: Computation using Eviews econometric software, version 7

APPENDIX III
COINTEGRATION TEST RESULTS

Sample (adjusted): 1977 2010
 Included observations: 34 after adjustments
 Trend assumption: Linear deterministic trend
 Series: GDP CD ED IT VAT
 Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.803382	123.3298	69.81889	0.0000
At most 1 *	0.590193	68.02905	47.85613	0.0002
At most 2 *	0.525285	37.69870	29.79707	0.0050
At most 3	0.200771	12.36730	15.49471	0.1402
At most 4 *	0.130325	4.747624	3.841466	0.0293

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.803382	55.30072	33.87687	0.0000
At most 1 *	0.590193	30.33035	27.58434	0.0216
At most 2 *	0.525285	25.33140	21.13162	0.0121
At most 3	0.200771	7.619677	14.26460	0.4187
At most 4 *	0.130325	4.747624	3.841466	0.0293

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

APPENDIX IV

ERROR CORRECTIOM MODEL RESULTS

Dependent Variable: D(GDP)

Method: Least Squares

Date: 08/08/15 Time: 08:55

Sample (adjusted): 1975 2010

Included observations: 36 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.001232	0.006264	-0.196625	0.8454
D(CD)	0.068626	0.027000	2.541725	0.0164
D(ED)	0.346363	0.041358	8.374727	0.0000
D(IT)	-0.087403	0.048386	-1.806354	0.0809
D(VAT)	0.080937	0.047437	1.706205	0.0983
U(-1)	-1.028119	0.167241	-6.147519	0.0000
R-squared	0.786713	Mean dependent var	-0.003142	
Adjusted R-squared	0.751166	S.D. dependent var	0.075290	
S.E. of regression	0.037557	Akaike info criterion	-3.574902	
Sum squared resid	0.042316	Schwarz criterion	-3.310982	
Log likelihood	70.34823	Hannan-Quinn criter.	-3.482786	
F-statistic	22.13115	Durbin-Watson stat	1.931441	
Prob(F-statistic)	0.000000			

Source: Computation using E-views econometric software, version 7.