

IMPACT OF TAXATION ON ECONOMIC GROWTH IN KENYA

(1975-2014)

BY

KARUMBA APOLLO KAIRANYA


X51/67189/2013

**A Research Project Submitted in Partial Fulfillment of the Requirements for the Award
of the Degree of Master of Arts in Economic Policy Management of the University of
Nairobi, Kenya.**

2016

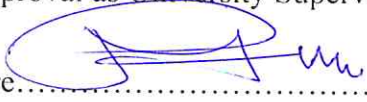
DECLARATION

This research paper is my original work and has not been presented for a degree in any other University or institution of higher learning.

Date: 25/11/2016.....Signature

Karumba Apollo Kairanya

This paper has been submitted with my approval as University Supervisor:

Date: 25th Nov, 2016.....Signature.....

Mr. Raphael M. Kabando

School of Economics

University of Nairobi

ACKNOWLEDGEMENT

Although I am exclusively accountable and responsible for the contents and any shortcomings in this study, I feel greatly indebted to a number of people who made this paper a success. I highly acknowledge the efforts and commitment of my Supervisor, Mr. Raphael M. Kabando, whose close and intellectual guidance enabled me to complete the paper. His encouragement and positive criticisms have been quite invaluable. His immense support and advice has molded me into a responsible scholar.

With pleasure, I am very grateful to my lecturers in the School of Economics for their intellectual guidance in various areas of study.

I also register my sincere thanks to my post graduate colleagues without whom it would have been difficult to write a quality paper. In particular I bestow my gratitude to Benard, Nancy, Tony, Jemimah, Laura and James who were my intellectual advisors on many occasions and for their encouragement when knowledge seeking endeavor proved to be a challenge.

Sincerely and from the depth of my heart, I wish to thank my wife Carol for her encouragement when coping up with loneliness since I had to spend most of my time struggling in front of the laptop at unholy hours to meet the set deadline. Am also apologetic to my son and daughter who wondered why their dad was ever glued in the laptop most of the evenings after the work, instead of playing and bonding with them.

Finally and most importantly, I do acknowledge the Almighty God for His blessings of life to pursue this study. I remain immensely indebted to HIM who has granted humanity knowledge as a means of subduing the earth for the blessings of the people.

Karumba Apollo Kairanya
School of Economics
University of Nairobi
November 2016

DEDICATION

To my wife Carol, my son Chris, my daughter Christine, my late mum Gladys Gaiti, my late father Benard Karumba, my sister Esther and my brothers Patrick and Jackson.

LIST OF ACRONYMS & ABBREVIATIONS

AIC	Akaike Information Criteria
ADF	Augmented Dickey Fuller
BEPS	Base Erosion and Profit Shifting
BoP	Balance of Payment
BRICS	Brazil, Russia, India, China and South Africa
CBK	Central Bank of Kenya
CGT	Capital Gains Tax
Chi ²	Chi Square
COMESA	Common Market for East and Southern Africa
DT	Direct Taxes
D1	First Difference
EAC	East Africa Community
EACCET	East Africa Community Common External Tarrif
EACCMA	East Africa Community Customs and Management Act
ENECA	United Nations Economic Commission for Africa
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GEM	Generalized Endogenous Model
GNP	Gross National Product
GOK	Government of Kenya
IMF	International Monetary Fund
ITA	Income Tax Act
IT	Indirect Taxes
ITMS	Integrated Tax Management System
HQIC	Hannan and Quinn Information Criterion
LDCs	Less Developed Countries
LD	Lag one

L2D	Lag two
L3D	Lag three
L4D	Lag four
LR	Likelihood Ratio
MLE	Maximum Likelihood Estimator
MPC	Marginal Propensity to Consume
MPT	Marginal Propensity to Tax
KIPPR	Kenya Institute for Public Policy Research and Analysis
KNBS	Kenya National Bureau of Statistics
KRA	Kenya Revenue Authority
OECD	Organization for Economic Co-operation and Development
OLS	Ordinary Least Square
PAYE	Pay As You Earn
PIN	Personal Identification Number
PLSM	Pooled Least Square Method
RESET	Regression Equation Specification Error
SBIC	Schwarz's Bayesian Information Criterion
TP	Transfer Pricing
UNDP	United Nations Development Programme
UNICEF	United Nation Children's Fund
VAT	Value Added Tax
VAR	Vector Auto Regression
VECM	Vector Error Correction Model
WBIFS	World Bank-International Financial Statistics
WHT	Withholding tax
WTI	World Tax Index

Table of Contents

CHAPTER ONE.....	1
INTRODUCTION.....	1
1.0 Background of the Study	1
1.1 Tax Policy and Economic Growth.....	3
1.2 Trends in Kenya’s real GDP Growth Rates.....	4
Figure 1.1: Kenya’s Real GDP Growth Rate over 1975 to 2014.	4
1.3 Trends in EAC, Africa & the World’s Economic Growth	6
Figure 1.2: Comparison of GDP Growth rate of Kenya, EAC, Africa, BRICS & the World over 2008 to 2014.	6
1.4 Institutional and Legal Arrangements of Tax Administration in Kenya	7
1.5 Tax Reforms in Kenya.....	8
1.6 Trends in Kenya’s Tax Structure.....	9
1.6.1 Direct taxes in Kenya	11
1.6.1.1 Income tax	11
1.6.2 Indirect Taxes in Kenya.....	12
1.6.3 Other Taxes in Kenya	14
1.7 Tax Regime in EAC Countries.....	14
1.7.1 Direct Taxes Regime in EAC Countries.....	14
1.7.2 Indirect Taxes Regime in EAC Countries	14
1.8 Reasons for Government’s Focus on Taxation to Drive Economic Growth	15
1.9 Statement of the Problem	17
1.10 Research Questions.....	18
1.11 Objectives of the Study.....	18
CHAPTER TWO.....	20
LITERATURE REVIEW.....	20

2.0 Introduction	20
2.1 Theoretical Literature Review	20
2.1.1 Classical Growth Theory	20
2.1.2 Neo-Classical Growth Theory	21
2.1.3 Keynesian Theory	21
2.1.3 Traditional Tax Handle Theory	22
2.2 Empirical Literature Review.....	23
2.3 Overview of Literature	29
RESEARCH METHODOLOGY AND THE MODEL.....	31
3.0 Introduction	31
3.1 Conceptual Framework.....	31
3.2 Theoretical Model.....	32
3.2 Empirical Model Specification	34
3.3.1 Pre-Estimation Tests	35
3.3.2 Post-Estimation Diagnostic Tests	36
3.4 Definition and Measurement of Variables.....	36
3.5 Expected Outcome.....	37
3.6 Data Source and Collection	38
3.7 Estimation Procedure and Data Analysis	38
CHAPTER FOUR	39
EMPIRICAL RESULTS	39
4.1 Introduction	39
4.2 Descriptive Statistics	39
4.3 Correlation Matrix	40
4.4 Diagnostic Tests	41

4.4.1 Heteroscedasticity.....	41
4.4.2 Serial correlation.....	41
4.4.3 Multicollinearity	42
4.4.4 Normality	43
4.5 Stationarity Test.....	43
4.6 Vector Autoregressive (VAR) and Vector Error Correction Model (VECM)	45
4.6.1 Lag length Selection	46
4.6.2 Johansen Test of Cointegration	46
4.7 Vector Error Correction Model (VECM)	48
4.8 Interpretation of the Results.....	49
4.9 Discussion of the Findings	49
CONCLUSIONS AND POLICY IMPLICATIONS	51
5.1 Introduction	51
5.2 Summary and Conclusions	51
5.3 Policy Implications and Recommendations.....	52
5.4 Limitations of the Study	53
5.5 Areas for Further Study	53
REFERENCES	54
APPENDICES	58
Appendix I: A summary of Various Taxation Acts and the type of tax they administer	58
Appendix II: Raw and refined data.....	59
Appendix III: Growth Rates of EAC, Africa, BRICS and World for the period 2008 to 2014.....	60
Appendix IV: Government Revenue as % of GPD for Selected African Countries	60

List of Figures

<u>Figure 1.1: Kenya's GDP Growth rate over 1975 to 2014.</u>	4
<u>Figure 1.2: Comparison of GDP Growth rate of Kenya, EAC, Africa, BRICS & the World over 2008 to 2014.</u>	6
<u>Figure 1.3 Trends in Kenya's Tax Structure</u>	10
<u>Figure 1.4 Conceptual Framework on the Model Variables.</u>	31

List of Tables

<u>Table 3.1 Summary of Variables</u>	38
<u>Table 4.1: Descriptive Statistics</u>	39
<u>Table 4.2: Correlation matrix</u>	40
<u>Table 4.3: Test for Heteroscedasticity</u>	41
<u>Table 4.4: Serial correlation</u>	41
<u>Table 4.5: Multicollinearity</u>	42
<u>Table 4.6: Test for Normality</u>	43
<u>Table 4.7: Test for Stationarity in Levels</u>	44
<u>Table 4.8: Test for Stationarity (First Difference)</u>	44
<u>Table 4.9: Test for Stationarity (Second Difference)</u>	45
<u>Table 4.10: Vector Autoregressive (VAR) Lag Selection Criteria</u>	46
<u>Table 4.11: Johansen Test for Cointegration (Max statistics Model)</u>	47
<u>Table 4.12: Regression Results for Vector Error Correction Model</u>	48

ABSTRACT

This study analyzed the impact of taxation as a whole as well as the impact of indirect and direct taxes on economic growth using a simple endogenous growth model. The study used time series data for the period (1975-2014) to analyze the impact.

The study employed an endogenous growth model that was first employed by Egen and Skinner (1996). The model was improved by Lee Young (2004) who specified an econometric model to study the taxation effects on growth rate of per capita Gross Domestic Product (GDP). Later Ogbonna and Appah (2012) used the same econometric specification of the model but took a country specific approach to study the effect of tax reforms to growth of Nigerian economy.

Using the Ordinary Least Square (OLS) method, the study estimated the long-run cointegrating equation. Pre-estimation tests were carried out to determine homoscedasticity, serial autocorrelation, multicollinearity and normality of the variables.

The results revealed overall significance of the explanatory variables in explaining GDP. The coefficient of determination showed that 96.8 percent of the variation in GDP is explained by indirect taxes, direct taxes, other taxes, interest rate, foreign direct investment and net exports. The findings further revealed that the coefficient of indirect taxes was negative and individually significant in influencing the economic growth in Kenya in the short run. On the other hand, the coefficients of FDI and net exports were revealed to be positive and separately significant in affecting the economic growth in Kenya in the short run.

In view of these findings, it implies that indirect taxes increase consumption and reduce savings in Kenya. The implications of this is that policy makers should focus more on how to enhance international relations in order to attract FDI and also enhance export promotion so as to increase the exports which are good for economic growth.

CHAPTER ONE

INTRODUCTION

1.0 Background of the Study

The main challenge of national governments worldwide is to continually increase the welfare of its people through the implementation of appropriate economic policies and programs. Governments attempt to achieve this national objective by providing public goods, such as roads infrastructures and public services such as education, security, health, sanitation among others, hence forming the economic and social infrastructure. The adequacy of such infrastructures is a firm foundation for a country's economic growth and development. If possible, all public expenditures should contribute to the creation and promotion of an empowering domestic economic environment for local and foreign investments, boost both local and international trade; attract tourists and other foreign visitors, increase agricultural productivity; and boost craftsmanship and small scale industrial production. All these economic activities generate productive employment and hasten economic growth and development in the short, medium and long terms.

Public expenditure by any government whether central, regional or local, is financed primarily through taxation. The effect of such taxes on growth of an economy can only remain positive if taxes levied create the right incentives (depending on economic activities) for the efficient allocation of resources in a given country. Additionally, in order to improve the welfare of its citizens, a given government should adopt fiscal policies with a tax structure that maximizes positive externalities while minimizing negative externalities, such as pollution and corrupt practices.

Musgrave and Musgrave (1980) postulated a law of public expenditure growth in the United States of America, where, as national income per capita grew, so did government tax revenue when compared on percentage basis to the GNP. The implication of this is that as the U.S. registered economic growth, so did the country's tax effort. The authors' findings are in conformity with (Ariyo, 1997 and Hebel, 1995) empirical findings in the discipline of development economics which indicates that as a country's economy grows, its tax base grows commensurately. However, growth rates of both the economy and tax

capacity tend to differ among the countries for different periods of time, due to both short and long term causative factors, including internal and external economic shocks.

Tax capacity is the maximum tax which a country can raise given its economic, institutional, social and demographic arrangement. The low taxable capacity in developing countries like Kenya was noted as far back as when the country gained its independence when Kaldor (1964) noted that; whereas developed countries' tax revenue averaged at least 25% of GNP, in developing countries they barely surpassed 15%. Tax revenue accruing to the GOK increased from 19.8% of GNP in 1980 to 22.4% in 1994 (World Bank, 1996). In comparison, the ratios in 1994 were, 31.9% for the United Kingdom and 38.0% for France respectively, two countries among those the bank classifies and are globally recognized as high income or developed economies. Further, as per the same study by the World Bank, the upward trend as far as the Kenyan tax effort was concerned, though relatively small, is an indicator that the country was on the right economic growth path as far as taxation is concerned.

Focusing on tax is supported due to many reasons. The most important reason is that with increased tax revenue the country can realize an excellent nation building. However, with regard to effect of taxation on growth of an economy, the relationship between taxes rates and economic growth is an issue that concerns policy makers. There is an inverse relationship between taxation and GDP growth rate from an economic theory perspective (Marsden, 1983, Skinner & Engen, 1992, Feldstain, 1994, Cushin, 9915 and Ariyo, 1997),

Taxes has also been observed to raise the investment cost and accordingly lowering the return on investment with regard to taxation of the invested activity whereby income taxes create a deterrent to earning taxable income (Newberry & Stern, 1987). Taxpayers, may they be individuals and firms have a motivation to engage in activities that will reduce their taxable income, hence minimizing the resultant tax burden. As they exchange activities with lower taxation rate with the ones having higher taxation rate, the tax payers will eventually focus in less productive activity within an economy (Onduru, 2003). Additionally, the government expenditure will also have an effect on economy's growth of a given country.

1.1 Tax Policy and Economic Growth

William G (2014) while studying effects of changes of taxation on economic growth, found out that increase of taxation negatively affects the growth of an economy. However, similar to many economic questions, it is vital to review the past information for confirmation of what the theory indicates. The relationship between taxation and economic growth for a given country has been one of the most significant matters in economics (Onduru, 2003). However, while it is clear that the level of taxation could impact on country's GDP level, the theoretical link between this factor and growth of an economy was not explicitly recognized in the normal neoclassical models (Cushin, 1995). Smith (1776) explained growth in terms of savings and capital accumulation in the context of *laissez faire* while Keynes argued for a greater involvement of the state to bolster production, employment, aggregate demand and consumption. Solow (1956) and Romer (1986) stressed on investment in human capita and on technical progress as sources of long term growth.

With the ever-dwindling external financing, there has been an increasing need for developing countries to mobilize their internal resources instead of relying on external credit. The single most important instrument of internal resources mobilization is an effective tax structure compromising of taxes whose yields are more income-elastic and exhibiting greater automatic response to changing needs of the economy.

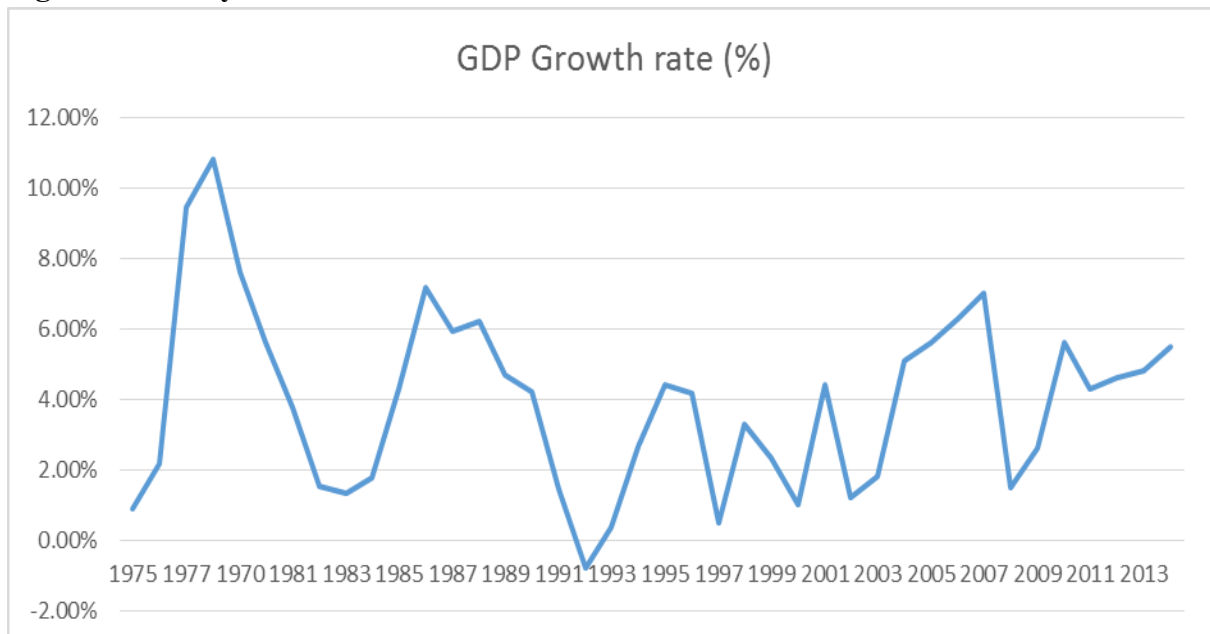
Given the severe administration and political limitations of the Less Developed Countries (LDCs) to the extent to which additional taxation measures such as base expansion, rate increase, or imposition of new taxes may not be easily resorted to, the built-in elasticity of a tax is very important (Prest, 1962). The criteria for adopting an effective tax structure would be; broadly based taxes, few deductions and exemptions, relatively low rates, and compatibility with tax administrative capabilities (Bhatia, 2001). The contribution of Due (1970) provided an important base on which subsequent studies on this subject has been perfected.

1.2 Trends in Kenya's real GDP Growth Rates

The highest ever-recorded GDP growth rates in Kenya are 9.4% and 10.8% in 1977 and 1978 respectively following the coffee boom. These rates plummeted to 3.7% in 1979 following the Middle East oil crisis which escalated the price of crude oil, but averaged 5% between 1980 and 1981, a fact attributed to increase in real investment and good performance in the agricultural sector. Between 1982 and 1984 the growth rate slowed to less than 2% partly due to 1982 *coup d'état* which disrupted investment, and the severe droughts of 1983 and 1984, which crippled the agricultural sector (Republic of Kenya: 1978-1990).

Trends in the 1990s were that of consistent decline reaching 0.1% in 1993 and registering a negative 0.3% in the year 2000. The decline in real investment occasioned by the uncertainty over the first multiparty elections of 1992 and the subsequent freeze on donor funding, coupled with these of the collapse of the major agricultural sub sectors, all combined to ensure these pathetic growth in GDP. The line graph below is used to illustrate the Kenya's economic growth rate for the last fifteen years.

Figure 1.1: Kenya's Real GDP Growth Rate over 1975 to 2014.



Source: Republic of Kenya Economic Surveys (Several years)

For the long term, the Government enunciated some several long term macroeconomic policy frameworks such as National Poverty Eradication Plan (NPEP) 1999-2015, Poverty Reduction Strategy Paper (PRSP) 2000-2003, Economic Recovery Strategy for Wealth and Employment Creation (ERSWEC) 2003-2010, Vision 2030 just to mention but a few on management of economy for an improved economic growth. The economic growth rate of 5.6% per year was targeted between 1986 and 2000 (Republic of Kenya 1986). While the economy stabilized and growth increased to an average slightly above 4% per year, political instability and poorly managed economic liberalization led to declining economic performance and high inflation that peaked in 1994 at an unprecedented 46%. Government austerity measures and the resumption of foreign development aid, including budgetary support, resulted in improved economic growth that was short-lived as the el nino weather phenomenon in 1997-1998 followed by drought that adversely affected agricultural and electric power production led to an economic slump that bottomed out at a recessionary contraction of -0.6% in 2000.

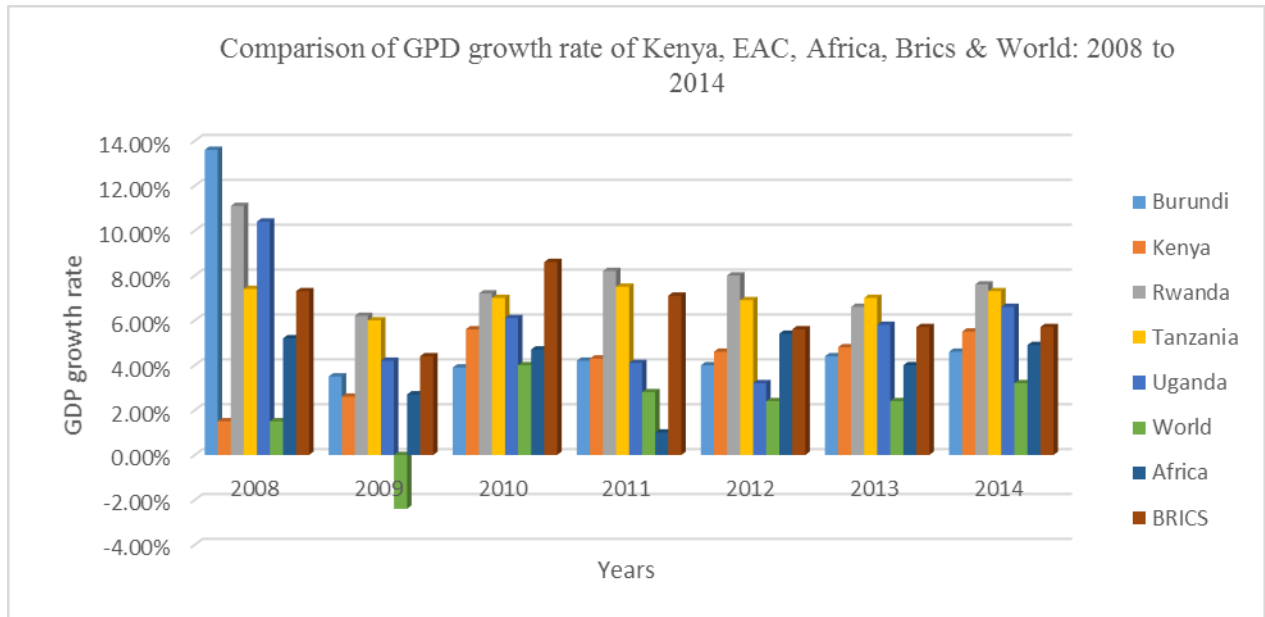
From the year 2000, the Kenyan economy registered increasing growth partly attributable to increased investor confidence due to a government regime change in 2003 and sound economic management that included increased government expenditure on public works programs and free primary education. The upward trend in economic growth was abruptly curtailed to 1.5% in 2008 following violence and economic disruption that followed the disputed results of presidential elections of December 2007. Worse, a global economic crisis stemming from a meltdown of financial institutions in the United States, the world's largest economy by far, had an adverse impact on the domestic economy and the recovery beginning 2009 to date was relatively modest in that year at 2.6% before rising to a more robust 5.6% in 2010. However, high petroleum and food prices in the first half of 2011 has pushed inflation beyond a single digit to 12.95 in May 2011 and the weakening of the Kenya Shilling from 78.03 to the U.S. \$ at the end of 2010 to over 90 shillings in November 2011 were pointers to a gloomy prospect for the Kenya's economic.

1.3 Trends in EAC, Africa & the World's Economic Growth

From a review and comparison of economic growth of East Africa Community (EAC) Countries, the entire Africa, the fastest growing BRICS economies, and the whole world for the period 2008 to 2014, the trend indicates that countries' economies were growing at a modest rate of 3.5% to 7%. On average the countries of BRICS seemed to be doing well compared with EAC countries and the Africa in general as their growth rate averaged 4.4% to 8.6% in the year 2009 and 2010 respectively. The other years showed that the economic growth rate was above 5% (United Nations Economic Commission for Africa (UNECA, 2014) on tracking progress on macro-economic and social developments in the EAC region.

With regards to Africa and the whole world, the economic growth was on average between 1% to 5.2% and -2.4% to 3.2% respectively. The world highest economic growth rate was 3.2% in 2010 while for Africa, the highest economic growth rate was 5.4% in 2012. Rwanda seems to be doing far much better compared with other EAC countries.

Figure 1.2: Comparison of GDP Growth rate of Kenya, EAC, Africa, BRICS & the World over 2008 to 2014.



Source: UNECA, 2014: Tracking progress on Macro-economic and Social developments in the EAC Region

1.4 Institutional and Legal Arrangements of Tax Administration in Kenya

During the colonial administration, the settlers used their administrative powers that forced tribal chiefs to offer a share of able men to work on their farms as laborers for some period like three months. This system was found out to be ineffective and burdensome from administration perspective. In view of this, a more long-term solution had to be developed. Introduction of taxation on natives was the only solution to create the much money needed which was still an unfamiliar idea on Africans. Additionally, it was necessity to incorporate Africans into a monetary economy. The essential for money that was created for the Africans was as a result of taxation. If Africans were to pay taxes, then they had to work for either the government or the settlers, eventually leading to introducing of taxation in Kenya.

The introduction of taxation was taken as a means of compelling Africans to work for the colonial masters so as to earn money that would enable them make payments for taxes as opposed to it being a necessary public finance measure. The introduction of taxes in Kenya led to confrontation and acrimony between Africans on one hand and the government on the other hand. This was in many ways interpreted into European colonial masters. In 1901, Hut tax was introduced that which was charged on all huts used as dwellings places for two Rupees per annum. The inhabitant of the hut was accountable for tax payment. In 1910, Poll tax was brought into force which enabled the Commissioner to impose tax on anyone who did was not subjected to the earlier hut tax. The system of taxation in Kenya for Africans ignored one of the fundamental principles of taxation that is the ability to pay since the Africans were being taxed as coercion for labor provision.

Following Kenya's independence and between 1970 and 1990, numerous pieces of legislation with regard to taxation were introduced to increase revenue for Kenya which had newly acquired independence. The Kenyan tax system is mainly a two tier system based on the central government and the county governments. The Kenyan constitution empowers the government to levy tax on given individuals and organizations. Article 209 of the Kenyan constitution, distributes legislative authority which includes taxation between the national assembly and the county governments (Kenyan constitution, 2010).

In Kenya, tax is administered by Kenya Revenue Authority (KRA) that was established through a Parliamentary Act in 1995, namely the Kenya Revenue Act (Chapter 469). The authority main mandate is to assist the Government in revenue mobilization, providing effective tax administration as well as ensuring sustainability in revenue collection. KRA is a body corporate which is a government agency for collection and receipt of all revenues.

The tax law in Kenya comprise numerous statutes administered by the Authority. Every tax is provided for by specific statute and most revenue Acts are amended annually through the budgeting process to administer a give tax (refer to appendix I on a summary of Various Taxation Acts and the type of tax they administer).

1.5 Tax Reforms in Kenya

The government strived to increase the tax revenue due to persistent fiscal deficits during late 1970s following the oil crisis of 1970s. However, before this situation, the government of Kenya had maintained a balanced budget in 1960s. These fiscal deficits made the government to resort to borrowing which led to increased debt burden. To address this challenge, the government of Kenya has to think seriously on taxation measures such as tax compliance, introduction of incentives, hence it made various tax reforms.

The reforms on the Kenyan tax system had a substantial effect on the whole taxation structure and on various tax handles. While Kenya embraced massive tax reforms in 1986, there is little that is known on the performance of these reforms with respect to improving the aspect of revenue mobilization capability of the tax system. It is not clearly indicated how tax sources are affected by the tax reforms (Muriithi & Moyi, 2003). Some of these reforms included the establishment of KRA a body that was responsible for tax collection instead of a department within the ministry of Finance. The government also made reforms in the income tax by introducing a Personal Identification Number (PIN) for each tax payer as a way of reducing tax evasion.

Other key tax reforms introduced included the introduction of Integrated Tax Management System (ITMS) for online filing of returns, introduction of turnover tax to cater for small and micro enterprises operating in informal sector who are not registered for VAT, the introduction

of real estate tax to bring into tax net the ever increasing real estate industry, introduction of Customs Simba System for monitoring imports to assist in collection of customs duties and the enhancement of Transfer Pricing (TP) regulations to guard against Base Erosion and Profit Shifting (BEPS).

The recent reforms has seen the KRA introducing the online platform (i-Tax) for the taxpayers to file their tax returns and make payment of taxes through the mobile tax payment platform. This is meant to increase the tax base by bringing more tax payers into tax net. Other recent reforms involve the introduction of withholding VAT agents who would withhold VAT and pay directly to the KRA when paying their suppliers. All these reforms and changes are meant to enhance the revenue collection for the Government.

1.6 Trends in Kenya's Tax Structure

Kenya's fiscal structure displays an interesting pattern. Between 1992 and 1997, the tax/GDP ratio averaged 28.5% well above the average of some selected low-income Sub-Saharan countries whose tax/GDP ratio were 23.4% during the same period (World Bank International Financial Statistics (WBIFS), refer to appendix IV).

Although the tax revenue has shown an upward trend over the years, this has not matched the increase in government expenditure, revealing the existence of *please effect*, which is, the tendency of consumption expenditure to grow with revenue. For example, between 1991 and 1995, revenue grew by 25% as compared to 27% in expenditure. As a percentage of GDP, tax revenue averaged 23.7% while expenditure averaged 27.3% thereby creating a resource gap of 3.6%. It is no wonder that Kenya's budget deficit has continued to rise over the years as per (WBIFS, refer to appendix IV).

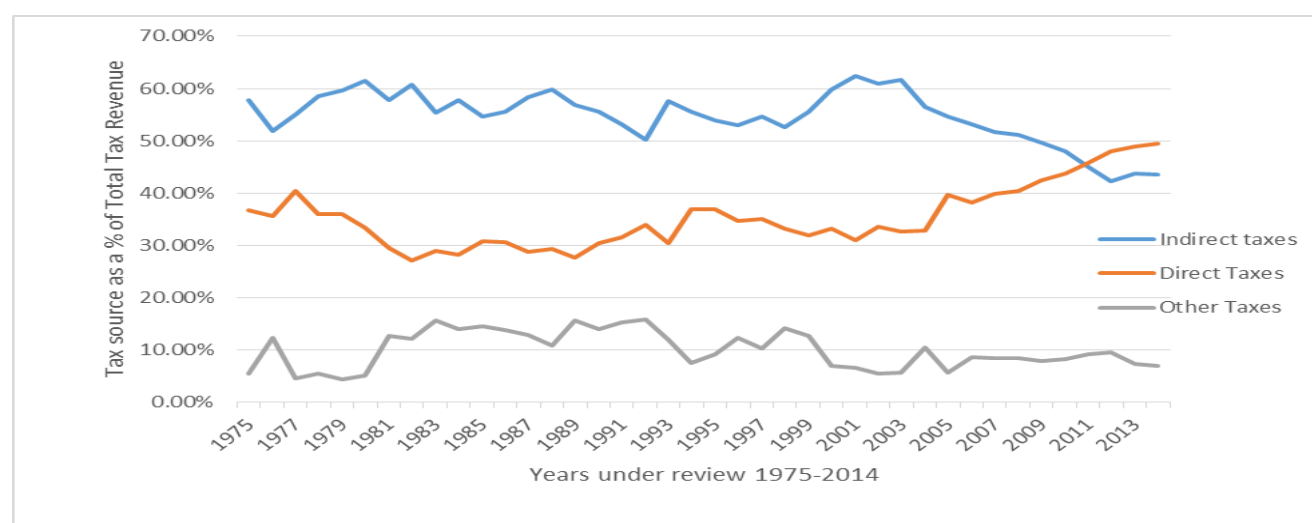
Contrary to Musgrave (1969) tax handle theory, data reveal that indirect taxes have been contributing more than 60% of the gross receipts, a fact attributable to the emergence of the VAT as a premier tax.

Table 1.1: Composition of Taxes in Kenya from 1975 to 2014 (as % of Total Tax Revenue)

Year	Indirect taxes	Direct Taxes	Other Taxes	Year	Indirect taxes	Direct Taxes	Other Taxes
1975	57.88%	36.65%	5.47%	1995	53.92%	36.88%	9.20%
1976	51.94%	35.65%	12.42%	1996	52.96%	34.70%	12.34%
1977	55.10%	40.42%	4.49%	1997	54.57%	35.10%	10.33%
1978	58.48%	35.97%	5.56%	1998	52.57%	33.29%	14.14%
1979	59.58%	35.99%	4.42%	1999	55.53%	31.83%	12.64%
1980	61.51%	33.36%	5.13%	2000	59.87%	33.22%	6.91%
1981	57.82%	29.51%	12.67%	2001	62.45%	31.04%	6.52%
1982	60.70%	27.10%	12.20%	2002	60.93%	33.62%	5.45%
1983	55.39%	28.95%	15.66%	2003	61.64%	32.73%	5.62%
1984	57.87%	28.20%	13.93%	2004	56.57%	32.86%	10.57%
1985	54.56%	30.87%	14.56%	2005	54.57%	39.74%	5.70%
1986	55.52%	30.60%	13.88%	2006	53.25%	38.15%	8.60%
1987	58.36%	28.70%	12.94%	2007	51.71%	39.88%	8.41%
1988	59.91%	29.28%	10.81%	2008	51.13%	40.43%	8.44%
1989	56.80%	27.62%	15.59%	2009	49.70%	42.49%	7.81%
1990	55.60%	30.50%	13.90%	2010	48.00%	43.81%	8.18%
1991	53.14%	31.49%	15.37%	2011	45.03%	45.83%	9.14%
1992	50.22%	34.03%	15.75%	2012	42.33%	48.08%	9.59%
1993	57.61%	30.36%	12.03%	2013	43.77%	48.92%	7.31%
1994	55.56%	36.96%	7.48%	2014	43.54%	49.49%	6.97%

Source: The KNBS (Various publications)

Figure 1.3 Trends in Kenya's Tax Structure



Source: The KNBS (Various publications)

As can be observed from the table 1.1 and figure 1.3 that the contribution of total indirect tax revenue has been growing over the period of analysis. Also it is observable that there is marginal increase of direct tax compared to the indirect tax on the total tax revenue in the period under review. Many factors could be attributed to this trend. One of the most recognized explanation could be the Olivera-Tanzi effect which looks at the effect of price or inflation on the total tax. Olivera-Tanzi effect assumes that revenue tax could grow nominally due to the usual inflation. Another key determinant of this trend could be due to economic growth which affects the tax bases. Discretionary tax measure is another attribute that could affect the growth of tax even when growth has not occurred.

The current tax structure encompasses direct and indirect taxes. The direct taxes on one hand is made up of income taxes for individuals as well as corporates, while, the indirect taxes is made up of three main taxes which include VAT, Excise tax, and Customs duties (KIPPRA Policy Brief 2006). The main categories of taxes are briefly discussed below.

1.6.1 Direct taxes in Kenya

1.6.1.1 Income tax

Income Tax was introduced in 1937 when the commercial and manufacturing sectors depicted steady growths. Additionally, the local market for manufactured products had substantially grown that justified taxation on profits for these business. In July 1941 two regulations were passed to tax excess profits in addition to the 10% tax on company profits which was supposed to apply to every trade, business, profession or vocation for whatever period of time it was carried out.

Income tax can be defined as a tax charged on all income of a person, whether resident or not, for each year of income (Income Tax Act 2010). Income tax forms part of direct tax that is imposed on both individuals and corporate bodies. It is administered under the Income Tax Act (Cap 470 Laws of Kenya). It also covers corporation tax, Pay As You Earn (PAYE), withholding tax (WHT) among others. The general rate of corporation tax is 30% for resident persons while the individual rate of tax is graduated starting from a low of 10% to a high of 30%.

1.6.1.2 Capital Gains Tax

Capital gains tax (CGT) is a form of direct tax that was initially introduced in 1920 during colonial times through a legislation on sale of capital equipment used in business provided that the sale price was in more than the written down cost. It was again reintroduced in 1975, suspended in year 1985 and then reintroduced in 2014. It is mainly charged on gains upon disposal of capital properties such as buildings and other investments.

1.6.2 Indirect Taxes in Kenya

1.6.2.1 Value Added Tax in Kenya

VAT forms part of consumption tax charged on acquisition of taxable supplies which could either be goods or services. In Kenya, VAT is administered under the VAT Act 2013 following the repeal of the previous VAT Act 2010 (Cap 476) Laws of Kenya. This Act contains statutes that guide the operation, administration, collection and enforcement of the tax. VAT has been in operation in Kenya since 1989 when it replaced Sales tax. The resolution to replace sales tax with VAT was mainly due to identified deficiencies with regard to the sales tax. Some identified deficiencies included inter alia; sales tax system being a single stage collection system leading to a greater loss of revenue through evasion than VAT, sales tax was a tax on tax and the sales base was narrower than the VAT base.

Under the VAT regime, the end user is the one that ultimately bears the incidence of tax. The person who acquires the taxable supplies for private use is not allowed a claim the input VAT incurred, hence, bearing the cost of the input tax. The tax is levied on each transaction along the production and distribution chain, but most taxpayers in the chain are allowed to deduct the input tax incurred. The VAT rates in a given country change from time to time. In Kenya, the current rates is 16% being the standard rate on supply of goods and services made in Kenya and 0% (zero rate) for the export of goods and services.

One can argue that the objectives of introduction of VAT has been achieved since it eases on doing the business as the tax is borne by the final consumer. Also, it has enabled the government to increase revenue generation following the ever increasing tax collections from VAT.

1.6.2.2 Import Duty in Kenya

Customs duty was first introduced in Kenya around 1923 on all importations to the colony. The tax was meant to protect the emerging manufacturing sector particularly the beer industry. Import Duty is a tax imposed on goods imported or exported into or out of Kenya based on predetermined tariffs contained in the tariff manual book. It includes any levy, tax, duty, cess, imposition, tax, or surtax imposed by any Act.

This tax is currently being administered under the EAC Customs. The basis of the tax is a classification of all goods in a book called the Harmonized System Code or simply H.S. Code. This book lists all possible goods that can be imported or exported, giving them a unique standard code. The government then specifies the import duty, excise duty, VAT and other taxes applicable on the classified goods both at ad valorem and specific rates.

1.6.2.3 Excise Duty in Kenya

Similar to Customs duty, excise duty was also first introduced in Kenya around 1923. It also forms part of an indirect tax charged on sale and production of specific goods or services within a country. It is a consumption tax collected at the production point of goods or on provision of services. Traditionally it was regarded as a “sin tax” which was imposed on a narrow scope of goods for which extreme consumption was harmful on the social, economic or environmental considerations. High rates were levied on these products to enable the government to counteract their impact on the users and affected third parties. Hence the public took it to be a case of punishing the sinner as retribution for their sins. Excise duty was later expanded to include luxury goods. Excise duty is a transactional tax in that there must be the occurrence of a specific activity for it to accrue e.g manufacture or sale of a good; and it is not related to profitability.

In Kenya, excise duty is imposed on both goods and services including beer & spirits, soft drinks, cigars & cigarettes, polythene bags (of a particular specification) wine, cars and mobile telephony services among others. It was administered under the Customs & Excise Act 2010, however, effectively, 1 December 2015, the tax is administered under the Excise Duty Act 2015.

1.6.3 Other Taxes in Kenya

The taxes discussed above contribute the largest chunk of Kenya's tax revenue. Apart from these major taxes, the government also collects numerous other taxes through its organs and agencies. These other taxes include fines, penalties and forfeitures, land rent, trading licenses, air passenger service charge, air navigation charges, second hand motor vehicle purchase tax, betting tax, casino tax, stamp duty, premium tax, fuel levy, standards levy and sugar development levy, among others.

1.7 Tax Regime in EAC Countries

1.7.1 Direct Taxes Regime in EAC Countries

A review of income tax structure in other EAC indicates a similarity in manner of principles and income subjected to taxation. There are also enabling provisions to govern the manner in which these taxes are collected. These includes corporation tax, payroll taxes and withholding tax among others. The rate of corporation tax ranges from 0% to a high of 30% depending on whether it is for resident or non-resident persons. With regard to individual rate of tax, it is graduated starting from a low of 0% to a high of 30% depending on available incentives to whether the individual is a non-resident. Capital gains tax is also a common tax among the EAC and African countries.

1.7.2 Indirect Taxes Regime in EAC Countries

1.7.2.1 Value Added Tax in EAC Countries

For VAT, all the EAC countries have laws that govern the imposition of this tax. It is noted that most of the products are subjected to VAT at the standard rate prevailing in the EAC countries. For instance, in Uganda, the tax first came into being in 1996 to substitute sales tax where the standard applicable rate is 18%. The registration threshold is UGX 150 million. VAT is also applicable on imported services and should be accounted for by a registered person. In Tanzania, VAT was introduced in 1998 and the VAT rate is 18%. The registration threshold is TZS 100 million in a period of 12 months or TZS 50 million in a period of 6 consecutive months. Similarly to Uganda, imported services are subject to VAT in Tanzania.

1.7.2.2 Customs Duties in EAC Countries

The custom duties in EAC countries are governed by EACCMA. Generally, the import duties rates ranges from 0%, 10% to 25% for raw materials, processed products and finished products respectively. However, there are products which are categorised as sensitive imports (SI) and are subjected to higher import duties of 50% to 100% with an aim of discouraging their importation in EAC. EAC also belongs to a wider block of Common Market for East and Southern Africa (COMESA) that accords preferential treatment to goods sourced within COMESA. EAC has specific rules of origin where goods sourced from one state to another are not subject to duty if they satisfy a certain criteria.

1.7.2.3 Excise Duties in EAC Countries

Most of the EAC countries have a wide range of excisable products that include alcohol, soft drinks, tobacco, motor vehicles, petroleum products and cosmetics. The laws governing excise duty varies across the countries where we have existing Acts or ministerial statements which revise the excisable goods and the excise duty rates. Excise duty is currently seen as an easy source of revenue for the EAC countries, for instance the excise duty on confectionary products in Uganda.

1.8 Reasons for Government's Focus on Taxation to Drive Economic Growth

Needless to say, taxation is the largest source of government budgetary resources in Kenya. From the government's perspective, revenue stability is desirable as it makes it easier to lay together credible spending and borrowing plans for the year ahead (Haughton, 1998). Relevant statistics reveal that indirect taxes continue to dominate revenue from taxes while the share of with direct taxes with regard to total tax revenue seems to be constant or showing only marginal increase. This scenario seems to contradict the traditional tax handle (Musgrave, 1969).

Indirect taxes are imposed on prices of taxable supplies, hence, the consumer bears the tax burden upon consumption of that commodity or services upon which the tax has been imposed. These taxes may either be specific or advalorem. Their revenue generating potential, together with the associated low administration costs, have made these taxes to gain prominence in the

LDCs. The extent and growth of these taxes have prompted a reasonable amount of research on the association between various taxes and growth of an economy.

Taxes such as excise duty have been used not only to generate revenue but also to discourage consumption patterns, which yields disutility to the society relative to their social marginal benefits. It is argued that since the decision to spend is an indicator of the ability to spend, indirect taxes promote equity by ensuring the ability-to-spend principle among taxpayers. These types of taxes are also considered to be more flexible in terms of their rates and structure such that one can be substituted for the other. For example, excise tax can be substituted with value added tax, and the latter can be substituted with sales tax. Thus with proper administration, chances of tax evasion would be minimal.

Moreover given that the tax is hidden in prices, its burden would not be felt directly by taxpayers hence chances of resistance would be less pronounced. Additionally, such taxes can be used to control inflation by reducing consumption demand and thereby dampening prices. It is necessary that revenue should increase *pari passu* if strong inflationary pressures have to be avoided.

Certain drawbacks have been pointed out in theoretical literature by Bhatia (2001). Prominent among these drawbacks is the likelihood of shifting the tax burden between either producers and consumers or sellers and buyers although this would depend on elasticities of supply and demand. These taxes also tend to be regressive especially when they are imposed on commodities, which are considered as necessities by a particular society. Such commodities are income-inelastic and hence are likely to put unequal burden on people with different income levels. Moreover, while direct taxes have only income effect on consumption via their effect on disposable income, indirect taxes have both income and substitution effects. Hence the later will impose a greater excess burden on the society (Bhatia, 2001).

Despite the foregoing, taxation remains the only alternative capable of molding the production and investment activities of these economies by guiding resource allocation towards more productive sectors of the economy (Herberger, 1990).

With the ever increasing Government expenditure budgets, there is pressure and focus on KRA to ensure that there is improved tax revenue collections.

1.9 Statement of the Problem

Over the years, revenue from taxes has been noted to increase with growth in GDP in Kenya. Some analysis have revealed that taxation impact positively on growth (Manas-Antony, 1987), while others found a negative relationship (Marsden 1983, Skinner and Engen 1992, Feldsten 1994, and Cushin 1995).

More studies have been conducted which have focused mainly on revenue productivity of the overall tax structure which include but not limited to; Wawire (1991), Osoro (1993), Njoroge (1993), Ariyo (1997), Mulusa (1997), Chipeta (1998), Ochieng (2001), Gachanja (2009) and Murunga (2014). Majority of these studies have specifically focused on various determinants of tax revenue and how to enhance tax buoyancy and its elasticity in Kenya. However, the neoclassical growth theories of Solow (1956) and Swan (1956) failed to establish any direct link between fiscal policy and economic growth

In view of the above, neither economic theory nor empirical studies provides a clear indication of how taxation affects economic growth in a given economy. While many authors concur on the fact that economic growth determines the tax structure (Tanzi) 1981, Bird (1983), Slemrod (1987), Mansfield (1988), Musgrave (1989), Osoro (1995), and Ariyo (1997), the debate on whether tax impact positively or negatively on growth is still inconclusive.

In Kenya, the situation is not different and as such the Government has been changing tax structure where the existing one has not yielded the much targeted amounts of tax revenue. This ends up resulting into inequality or skewed income distribution. Further, there is no use of any analytical framework to design these tax changes hence making the revenue forecasting a guess work. As such, there is lack of an optimum taxation model or structure for the Government to rely upon when considering taxation policy changes. In view of this, it is not clear whether the relationship between taxation and GDP growth rate of Kenyan economy is one of causation or correlation.

It is against this background that the study attempts to establish the connection between indirect taxes and direct taxes on economic growth and suggest an optimum model/structure for use in Kenya. Additionally, the study will make a contribution to the existing literature on this area.

1.10 Research Questions

This research paper attempted to address the following questions:

- What is impact of taxes on economic growth in Kenya?
- What are the policy implications that the Government can implement based on the research findings?

1.11 Objectives of the Study

The general objective of this study is to establish the relationship between taxation and the Kenya's economic growth. The specific objectives of this study are as follows: -

- 1) To identify the impact of taxes on economic growth in Kenya; and
- 2) To suggest policy recommendations on tax structure based on the study findings of the above objectives.

1.12 Significance of the Study

A study of Kenya's taxation and its impact on long term economic growth is key towards achievement of the ambitious Vision 2030 targets. Experience of various countries suggest that tax proposals must consider institutional features of a country (Goode, 1993). For example, in a low to middle income countries, such as Kenya the budget deficits can be plugged by tax revenue.

As such the share of increased government revenues lies on taxation. Moreover in a country like Kenya faced with the difficult task of making up for revenue short-falls in a slow-growth economy, and at the same time finance the poverty reduction programmes and provide growth-enhancing incentives, modelling for a tax structure which could impact positively on growth would be a milestone contribution.

Moreover, since taxation has been noted to impact either positively or negatively on growth, the findings of this paper would be informative in terms of policy implications in Kenya grappling with revenue shortfalls and alarming external debts.

This study therefore attempts develop a model which policy makers may use in future when designing a direct and indirect tax structure capable of influencing economic growth. Additionally, the statistical significance of key elements in determining Kenya's economic growth is expected to review the nature of linkage between taxation revenues vis-à-vis the economic growth and how mutual causality impacts on inter-temporal economic development for the current and future generations. This will again be useful to policy makers who will ensure prudent use of tax revenues to achieve economic growth.

In this study, focus is made on economic growth resulting from taxation because growth is among the key objectives to any government. Also it is of paramount importance to be aware of the contribution of indirect and direct taxes to this objective as a means of evaluating the overall impact of fiscal policy on economic growth.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

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

2.1 Theoretical Literature Review

The various theories on the effect of taxation and economic growth for a country include but not limited to; classical growth theory, neo-classical growth theory, Keynesian theory and traditional tax handle theory. Some of the theories of taxation and economic growth are briefly expounded below as follows;

2.1.1 Classical Growth Theory

This theory was advanced by political economist such as A. Smith, D. Ricardo and R. Malthus. Smith (1776) premised the four general canons of taxation. Firstly, the principle of equity which means that the subjects of every nation should contribute towards government support in proportion of their protection they enjoy from the state. Secondly, the principle of certainty which advocates that each individual is bound to a certain tax with clear timelines, payment manner and the quantity to be paid. Thirdly, the principle of convenient in that every tax levied at the given time and manner should be convenient to the tax payer. Lastly, the principle of economic in that very tax should ensure that the tax payer is left with some money once the tax is paid to the state.

Some of the classical theories include the Ability to Pay Theory and Benefits Received Theory. With regard to the latter theory, taxes are imposed on the ability of tax payer to make the payment. The ability to pay principle means that there is equal sacrifice for all the subjects of the state who are tax payers. This involves the one with heavy shoulders being taxed more heavily than the poor and also losing a greater absolute amount of utility. This is the most progressive tax

system leading to complete egalitarian distribution of after tax income. Variables such as assets, incomes and expenditure levels are considered as the best indicators of ability to pay.

With regard to benefits received theory, the state should to levy taxes on tax payers according to the benefits they receive from it. That is, the more the benefits a taxpayer receives from the activities of the government, the more the person should pay taxes to the government.

2.1.2 Neo-Classical Growth Theory

This model was advanced by Solow (1956) and Swan (1956) which had not clearly established the tax-growth linkage but held that the source of long-term growth was exogenous technical change, and a fiscal policy had slight effect on economic growth rate.

In the Solow-Swan model, fiscal policy could affect the rate of growth only during the transition-steady state. Once an economy reached a steady state, the growth rate would be determined by the exogenous rate of technical progress (Cushin, 1995).

The neoclassical growth models argued that income tax might influence aggregate levels of real variables in a steady state situation, but not of their growth rates (Manas-Anton, 1987). In this respect, countries that provide disincentives to capital accumulation and / or technological progress through high and progressive taxes would experience lower GDP growth rates.

2.1.3 Keynesian Theory

According to the standard Keynesian hypothesis, fiscal policies disturb private consumption and savings via disposable income and rate of return. Accordingly, a tax reduction would boost private consumption by raising disposable income. However a temporary tax cut would have minimal effects on private consumption as per the permanent income hypothesis. In the Ricardian equivalence hypothesis tax reductions would have no effect at all on consumption since, in expectation of a tax increase in future, the consumers would save rather than spend.

Increased Government spending financed through higher taxes may fuel inflationary forces, which negatively affect capital accumulation. This is due to the fact that it is associated with greater uncertainty about the returns on current savings as well as those future relative prices that

are important for returns on investment. High rates of inflation lead to a highly negative real interest rates for savers, which by reducing the flow of savings, constrain investment. However, by virtue of the Tobin-Mundell effect, high-anticipated inflation leads to shift in portfolio away from real money balances and towards real capital hence encouraging investment and consequently economic growth.

2.1.3 Traditional Tax Handle Theory

The traditional tax handles theory held that the degree of fiscal necessity is closely related to the extent of economy's development (Musgrave, 1969). According to this formulation, to attain a given rate of growth of per capita income there is need to collect a given level of national income in taxes

Taxes are compulsory contributions for which no explicit reciprocal benefit is provided in return to the payer of the tax. They are intended to force the household to pass on the purchasing power to the Government for its utilization or subsequent transfer to others. Taxes also influence allocation of resources, recognize social costs which are not reflected in the market prices and affect distribution of income and wealth since they reduce the disposable income and wealth to those who bear them (Goode, 1984).

Mansfield (1988) has supported the tax handle theory as being the most relevant one to explain the pattern of tax structure in the developed as well as developing countries. The theory held that as a country develops, that is with increase in per capita income and increased degree of monetization, indirect taxes are expected to gain prominence over direct taxes. Hence, while fiscal revenues in developed countries would be dominated by direct taxes, those of less developed countries would be predominantly from indirect taxes. A further distinction focusing on indirect taxes alone made by Bird (1987) indicated that LDcs rely on indirect taxes while developed countries rely on direct taxes.

2.2 Empirical Literature Review

Previous empirical work exploring the relationship between taxation and economic growth treated tax as dependent variable (Williamson (1961), Plasschaert (1962), Henrich (1966), and Lorz and Morss (1967)). Williamson (1961) using a sample of 33 countries tested the relationship between tax revenue and per capita income. The study found out that the relationship being positive and significant. Plasschaert (1962) examined the relationship between per capita income and the ratio of imports to GDP on one hand, against the ratio of Government expenditure. By use of a sample of 20 less developed countries, the study found out that per capita income insignificantly impacted on tax revenue.

Hinrichs (1966), in a study of 20 developed countries and 40 LDCs found out that per capita income was an important determinant of tax revenue. However taking the less developed countries alone, the study found per capita income to be insignificant. Lortz & Morss (1967) sampled 72 countries (comprising both developed and less developed) in an effort to study the relationship between tax ratios vis-à-vis the level of economic openness and per capita income. The outcomes of the regression analysis revealed that the two explanatory variables were positively significant for the entire sample. However, looking only at the sample of developed countries, then it was found out that the relationship was insignificant.

Focusing on Kenya's tax structure vis-a-vis personal incomes, Westlake (1974) examined the incidence of these types of taxes and the indirect taxes. The study found out that in both cases the effect on income distribution was slightly regressive. By use of a computable general equilibrium model to examine the incidences of various taxes and levies, Mwegu (1986) improved upon the work of Westlake (1974) by first replacing the taxes and levies by a lump sum (neutral) VAT without taking into account transfer income and secondly by incorporating transfers. In the first scenario the taxes and levies revealed a mixed impact on household incomes though largely progressive while in the second instance the impact was unambiguously progressive. The study showed that a tax structure backed by a good and effective system of transfers would impact positively on per capita income.

An attempt to establish a linkage between taxation and economic growth was made by Marsden (1983). The author found that taxation indeed affected growth in output indirectly via the product, labour and capital markets. Through its impact on domestic savings and foreign investment, taxation affect capital accumulation. Taxation may cause capital to shift from one sector to the other or from one country to other. This movement impacts on output negatively.

In the labour market, tax influences the choice between tax and leisure and also direct labour from one sector to the other. Prohibitive tax rates may cause labour to shift to non-taxed sectors of the economy such as the underground or non-market household subsistence activities. Tax increases the demand for those products, which are complimentary to leisure while reducing the demand for those commodities, which are substitutes to leisure. Taxation also impacts on input costs thereby limiting the ability of firms to diversify and expand.

Naharajan (1987) conducted a study on Kenya's fiscal structure during the period 1965 to 1983. The study revealed that the Marginal Propensity to Tax (MPT) of direct taxes (T_d) was lower (0.07554) than the MPT of indirect taxes (T_i) (0.16241). The buoyancy of direct as compared to indirect taxes were 1.21085 and 1.34364 respectively. Accordingly, indicating that more than two thirds of absolute changes in tax revenues came from indirect taxes. The study further examined the response of direct and indirect taxes to development using per capita depend inflation (measured by changes in GDP deflator (k)) as proxies for economic growth.

These results revealed a positive response to GDP not only of the overall tax but also by the individual (T_d and T_i) tax ratios. The response of T_d was rather small compared to T_i indicating that the ratio of direct to indirect taxes tended to decline overtime.

Carrying out an analysis using regression model on a larger cross section of developing countries in 1985, (Rabushka & Bartlett, 1987) reviewed that the overall level of taxation is positively correlated with rates of growth.

Herberger (1990) also attempted to trace the relationship between indirect taxes and growth. According to this study, the adoption of a broader based indirect tax is the only effective way of lowering personal income tax burden thereby boosting the disposable income, encouraging savings and capital accumulation which are considered key for economy's development.

However, such a measure of reducing the tax burden may lead to increased consumption instead of savings since the MPC in developing countries is relatively high (Gandhi, 1987). Even among the rich, the author cautions if economic signal implicit in other economic policies are not correct, such savings may be channeled to unproductive investments like speculation in, and hoarding of commodities, foreign exchange and other existing assets.

In an assessment of tax performance in Kenya, Wawire (1992) used per capita income as one of the determinants of tax ratio in GDP. Using time series data from 1958 to 1989 and applying OLS estimation techniques, the study found the coefficient of per capita income to be statistically significant at 5% level leading the author to conclude that "it is the taxable surplus embodied in a higher stage of economic development that is proxied by the per capita income".

Skinner & Engen (1992) improving upon the work of Mardsen (1983) collected data for 107 countries for fifteen years period from 1970 to 1985. Using a GEM of fiscal policy and output growth, they found out that the discretionary effect of taxation impacts negatively on growth.

Although the model by Skinner & Engen (1992) had wide coverage in terms of data, it addressed the issue of taxation in general but failed to scrutinize the impact of individual sets of taxes on growth of an economy. Even the study of the impact of taxation on savings and investment by Feldstain (1994) confined itself to the capital market, yet ignoring tax impact of product and labour markets.

Lee & Gordon (2005) while studying the impact of corporate taxes on growth of an economy, and by use of cross-country data in the U.S ranging for the period 1970 to 1997 to explore the impact of tax policies on a country's economic growth revealed that increases in corporate taxes have a negative impact on economic growth. Such an outcome in economic growth can be attributed to the fact that increased corporate taxes tend to discourage investment and also impact on the income of already established businesses, thus sabotaging possible advancement in economic growth. A similar outcome of this research was later reached by Djankov *et al.*, (2008) who established that corporate taxes negatively impacted on aggregate investment as well as economic growth.

Anastassiou & Dritstaki (2005) tested the hypothesis that a low ratio of direct taxation to indirect taxation promoted economic growth using annual data for the Greek economy for the period 1965-2002. Their conclusion was that there was a unidirectional causal relationship between the marginal direct rate of tax and the growth of economy. The policy recommendation from the study was that the Greek government should minimize the rate of direct taxation in order to attract capital and technology that will maximize economic growth. Greece is currently grappling with an economic crisis arising from an unsustainably large public debt due to excessive budget deficits. The government is implementing austerity measures underwritten by other Euro-zone countries and the IMF. The lesson for Kenya is that the level of taxation should minimize budget deficits while ensuring that savings and investments are not stifled.

Gupta (2007) studied the causes of tax revenue efforts in developing countries by use of panel data set that covered 105 developing countries for over a period of over 25 years. The results of the study confirmed that structural factors such GDP, agriculture share in GDP, net exports over imports and foreign aid significantly affect economy's revenue performance. The conclusion was that countries that relied on taxation of goods and services as their main source of tax revenue had relatively poor tax yield performance. On the other hand, countries that relied more on direct taxes such as income taxes, CGT and profit taxes performed much better.

Johansson *et al.*, (2008) found out that corporate taxes are the most harmful for growth, followed by individual income taxes and then consumption taxes. Recurrent taxes on immovable property appear to have the least impact. They made a conclusion that that a revenue neutral growth-oriented tax reform would, therefore, be to shift part of the revenue base from income taxes to less distortive taxes.

Ahmed & Mohammed (2010) using panel data collected for 11 years from 1998 to 2008 from 25 developing countries studied determinants of tax buoyancy in developing countries. They applied PLSM and found out that Budget deficit in governments of developing economies increased their fiscal efforts to decrease their budget deficit by direct tax thus a significant determinant of tax buoyancy. Other determinants of tax buoyancy were financial reforms, better tax administration, active banking and financial sector and growth in import and manufacturing sectors.

Wawire (2011) on determinants of VAT revenue established that growth elasticities for VAT were significant. He found out that VAT revenues respond with significant lags to variations in its determinants and that VAT revenues are sensitive to unusual circumstances. He concluded that Kenya's VAT revenue is very responsive to changes in its determinants especially international trade. Wawire used average GDP to capture the fact that taxes are collected in a fiscal year (July to June) as opposed to a calendar year which is the time period of GDP data.

Dahlby *et.al.*, (2012) in their examination of effect of provincial government tax rates on growth of economy in Canada by use of panel data which covered a period of thirty years from 1977 to 2006. The result showed that a higher provincial statutory corporate income tax rate is associated with lower level of private investment and hence slower economic growth. The results further indicated that swapping retail sales tax with sales tax that is consistent with the federal value-added sales tax led to improvements of provincial investment and eventually the growth.

Ogbonna and Appah (2012) analyzed the impact of assessment changes on Nigerian economic growth for the period 1994 to 2009, where they observed that that tax reforms emphatically and essentially influenced the economic growth of Nigeria. To accomplish the goal of their study, pertinent secondary data were gathered from the Central Bank of Nigeria (CBN) Statistical Bulletin, Federal Inland Revenue Service (FIRS), Office of the Accountant General of the Federation, and other applicable government organizations. The data collected were analysed using relevant descriptive statistics and econometric models such as White test, Ramsey RESET test, Breusch Godfrey test, Jacque Berra test, ADF test, Johansen test, and Granger Causality test. Accordingly, based on the results, it was concluded that tax reforms enhances the income generation for the government to undertake socially acceptable expenditure that will translate to economic growth in real output and per capita basis. Notwithstanding, it was suggested that reasonable financial development can't be accomplished with expense change forms aside from out of date duty laws and rates are checked on in accordance with full scale monetary targets, degenerate free and productive assessment regulatory hardware with work force's and responsibility and straightforwardness of government authorities in the administration of tax revenue.

Mutisya (2014) studied the effect of CGT on total revenue. The findings of the study reviewed an existence of a short and long-run relationship between capital gain taxes to the total tax revenue in Kenya for the period reviewed. Negative, though insignificant relationship exists between total tax revenue and CGT, implying that introduction of CGT would lead to decrease in total tax revenue, though insignificantly.

Abdullah *et al.*, (2014), investigated the causal relationship between ecological assessments and monetary development, utilizing distinctive measures of natural charges with GDP and balanced net investment funds. A board of European nations and a different board of OECD nations were utilized from 1995 to 2006 and the standard Granger non-causality approach was connected. The outcomes propose some confirmation of long-run causality running from monetary development to expanded income from the natural duties, with additionally some proof of short-run causality in the invert bearing.

Focusing on individual tax on economic growth, (Gale & Andrew, 2016) reviewed how changes to the individual pay taxes influence long haul economic development in United States (US). The outcomes propose that not all assessment changes will have a similar effect on development. Changes that enhance impetuses, diminish existing sponsorships, stay away from fortune picks up, and maintain a strategic distance from shortfall financing will have more propitious impacts on the long haul size of the economy, yet may likewise make exchange offs amongst value and productivity.

Ching-Chong (2016), examined the impacts of capital tax collection on development and economic development, where it was discovered that there exists radical diverse impacts of capital tax assessment in short run and long run. An expansion in capital's rate of salary assessment has both an utilization and also a duty moving impact on the harmony development rates of innovation and yield. Over the long haul, the assessment moving impact overwhelms the utilization impact yielding a general constructive outcome of capital tax collection on consistent state financial development. These differentiating impacts of capital tax assessment at various time skylines may give a conceivable clarification to the blended confirmation in the experimental writing on capital tax collection and financial development.

Abala (2014), studied the determinants of economic growth in Kenya using time series methodology. The study findings showed that FDI and interest rates to be important determinants of economic growth in Kenya.

2.3 Overview of Literature

Following from Musgrave's (1969) earlier formulation of the tax handle theory, majority of authors concur that a country's stage of development would determine the tax structure to be adopted Tanzi (1981), Slemrod (1987), Mansfield (1988), Musgrave (1989), Osoro (1995) and Ariyo (1997). However, the contributions of these scholars failed to clearly point out the relationship between taxation and economic growth.

Attempts to establish this linkage have been made by Kelecky (1978), Branson (1989), Herberger (1990). However, these studies never established whether taxation affected growth rate of output positively or negatively. Kelecky (1978) established the link between taxation and growth by use of population growth and capital accumulation while Marsden (1983) established this link through use of product, labour and capital markets. However, they also did little to explain why various economies have different tax structures.

Empirical analysis by Manas-Antony (1987) showed a direct correlation between tax-GDP ratio and rate of growth in real GDP. Other theoretical as well as empirical analysis have discovered that there exists a negative relationship amongst taxation and GDP growth rate and include but not limited to Marsden (1983), (Skinner & Engen (1992), Feldstain (1994), Cushin (1995) and Ariyo (1997).

Cushin (1995) concurs with earlier empirical findings that taxes impact negatively on growth. The review incorporated taxes, transfers and investments as key explanatory variables, has received support from Ariyo (1997). However, like other version previous writers, Cushin's model did not disaggregated the various types of taxes and instead treated tax as a single explanatory variable. Mutisya (2014) investigated effect of CGT on total tax revenue using secondary time series data for the period of 1965 to 1994 concluded that CGT would have a negative and insignificant contribution to total tax revenue.

From the work done by Abdullah *et.al.*,(2014) that investigated the causal relationship between ecological duties and monetary development, utilizing diverse measures of natural charges with GDP and balanced net reserve funds, looked into some confirmation of long-run causality running from financial development to expanded income from the ecological expenses, with additionally some proof of short-run causality in the turn-around direction.

From review of a study done by Gale and Andrew (2016) on how changes to the individual taxes influence long haul economic development, the outcomes proposed that not all expense changes will have a similar effect on growth. Furthermore, the study inspected that changes that enhance incentives, diminish existing appropriations, maintain a strategic distance from bonus picks up, and dodge shortage financing will have more propitious consequences for the long haul size of the economy, yet may likewise make exchange offs amongst value and proficiency.

A study conducted by Ching-Chong (2016), examined the impacts of capital tax collection on development and monetary development demonstrated that capital tax collection has definitely unique impacts in the short run and over the long haul. Over the long haul, the duty moving impact overwhelms the utilization impact yielding a general constructive outcome of capital tax collection on consistent state monetary development. Be that as it may, in the short run, the utilization impact turns into the prevailing power bringing on an underlying negative impact of capital tax collection on the balance development rates.

In general, the correlation between taxation and economic growth seems to be stronger for developing economies. In a country like Kenya, where there is no clear framework that is followed when designing on taxation structure, the findings of this paper will go a long way in terms of identifying the policy implications to the policy makers when designing to change tax structure. Additionally, the findings will enhance in policy formulation, implementation as well as undertaking assessment on an on-going basis. In view of this, the study therefore intends to undertake an empirical investigation not only on taxation effect on growth of an economy economic but also the interplay of direct and indirect taxes and their impact on economic growth.

CHAPTER THREE

RESEARCH METHODOLOGY AND THE MODEL

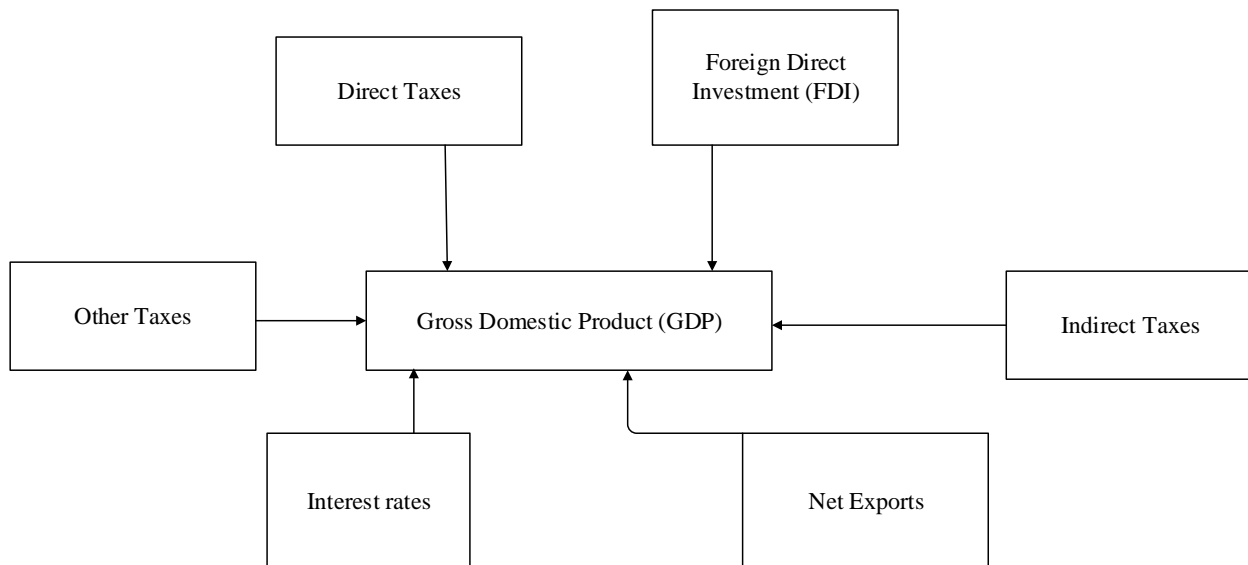
3.0 Introduction

This section presents an overview of the conceptual framework and the theoretical framework used for in the study. The various estimation equations were specified capturing the variables that were to be estimated. Data sources and the methods of data analysis used are also outlined.

3.1 Conceptual Framework

The conceptual framework aimed at depicting the variables used in the study. Economic growth is affected by a number of factors. In this study, GDP was used as dependent variable to measure economic growth. On the other hand, independent variables used included taxes as well as other control variables which does not necessary affect taxation revenue but have an effect on economic growth in a given country. The factors have been shown in the diagram below.

Figure1.4 Conceptual Framework on the Model Variables



Source: Author presentation

3.2 Theoretical Model

The theoretical model is centered on the study of taxation and economic growth as hypothesized by Engen and skinner (1996), Lee Young (2004) and Ogbonna & Appah (2012). Egen and Skinner (1996) hypothesize their study from an accounting framework first developed by Solow (1956) and Swan (1956). In this approach, an economy's yield (y), normally measured by GDP, is controlled by its monetary assets, the size and expertise of its workforce (m), and in conclusion the size and innovative efficiency of its capital stock (k). Accordingly, a nation well-endowed with resources might be relied upon to have higher per capita output than one not plentifully supplied with assets since its (per capita) capital stock is so much bigger and all the more mechanically progressed and its specialists have more abilities, or human capital. The contention progressed by these creators in this way, is development rate of monetary yield subsequently will rely on upon the development rate of these assets; physical capital and human capital and in addition changes in the basic profitability of these general contributions to the economy. Engen and Skinner (1996) decomposed the development rate of the economy's growth rate into its different segments as follows:

$$y_i = a_i k_i + b_i m_i + u_i \dots\dots\dots \text{Equation (1)}$$

Where the real GDP rate of growth of an economy, let's assume y_i is meant y_i and the net venture rate (communicated as a small amount of GDP), proportionally the change after some time in the capital stock, is given by k_i . The rate development rate in the powerful work drive after some time is composed m , while the variable, u_i , measures the economy's general profitability development. There are two other applicable factors in condition (1), which are the coefficients measuring the peripheral profitability of capital, a_i , and the yield flexibility of work, b_i .

Egen and Skinner (1996) used this framework to deduce five propositions on how taxes might have an impact on output growth, relating to each of the factors on the right-hand side of equation 1. Firstly, they expressed that higher duties could dishearten the speculation rate, or the net development in the capital stock (k_i in condition 1 above), through high statutory assessment rates on corporate and individual pay, high compelling capital increases impose rates, and low deterioration stipends.

Secondly, expenses may diminish work supply development m_i by demoralizing work constrain interest or hours of work, or by contorting word related decision or the obtaining of instruction, abilities, and preparing. Thirdly, charge arrangement can possibly dishearten efficiency development u_i by weakening innovative work (R&D) and the advancement of funding for "cutting edge" businesses, exercises whose overflow impacts can conceivably improve the profitability of existing work and capital. Fourthly, assess approach can likewise impact the negligible profitability of capital by contorting speculation from intensely exhausted parts into all the more delicately saddled divisions with lower general efficiency. What's more, fifth, overwhelming tax assessment on work supply can bend the proficient utilization of human capital by debilitating laborers from work in parts with high social profitability however a substantial taxation rate. At the end of the day, exceptionally exhausted nations may encounter bring down estimations of a and b , which will tend to hinder financial development, holding steady venture rates in both human and physical capital.

Egen and Skinner (1996) used three ways to consider the effect of a tax reforms, a 5 percentage point cut in minimal assessment rates, on long haul development rates. They initially analyzed the verifiable record of the U.S. economy to assess whether tax reductions had been connected with financial development. At that point they considered the confirmation on tax assessment and development for a huge example of nations. Lastly, they utilized confirmation from smaller scale level investigations of work supply, speculation request, and profitability development.

Lee Young (2004) applies this same principle of a production function as conceptualized by Egen and Skinner (1996) to specify an econometric model to study the taxation effects on rate of growth of per capita GDP. The basic specification used by Lee Young (2004) is as follows:

$$GR = B_0 + B_1v + B_2t + B_3s + X_y + e \dots\dots\dots\text{Equation (2)}$$

Where GR represents an annual rate of growth of GDP per capita, v represents the top statutory corporate tax rate, t represents personal income tax rate, s represents the consumption tax rate, and X represents the control vector, including the log of GDP per capita, government expenditures over GDP, the primary school enrollment rate, a measure of trade openness, the average tariff rate, an index for corruption and the quality of the bureaucracy during, the average

inflation rate from, and the annual rate of population growth from. This study was based on a cross-sectional data set of countries. Egen and Skinner (1996) however, caution that one should be wary of such data due to the biases and mis-measurement of productivity in income and the variation across countries in administrative practices.

Ogbonna and Appah (2012) in their study on effect of tax reforms to economic growth of Nigeria, followed closely the econometric specification used by Lee Young (2004) but took a country specific approach. Their econometric specification was modified as follows;

$$GDB = a + B_1PPT + B_2CIT + B_3VAT + B_4ET + B_5PIT + B_6CED + e \dots \dots \dots \text{Equation (3)}$$

Where GDP is gross domestic product, PPT is Petroleum Profit Tax, CIT is Companies Income Tax, VAT is Value Added Tax, ET is Education Tax, PIT is Personal Income Tax, and CED is Custom and Excise Duties. Their specification ignores the control vector X and uses time series analysis from 1994 to 2009 which is not long enough to determine the long term impact of tax reform on economic growth.

3.2 Empirical Model Specification

This study applied the analytical framework as conceptualized by Egen and Skinner (1996) and consequently specified in both the modified versions of the Lee Young (2004) and Ogbonna & Appah (2012). The cointegration diagnostic testing is based on Johansen Cointegration test approach to the analysis of long-run relationships. The model has used the modified version of Ogbonna & Appah (2012) to determine the relationship between economic growth and taxation in Kenya.

The relationship between economic growth and taxation can be specified as;

$$gdp = f(it, dt, ot) \dots \dots \dots \text{Equation (4)}$$

In addition to the taxation variables, attempt was made to control for interest rates, foreign direct investment (FDI), and net exports which determines a country's growth rate yet not really connected to composition of tax revenue.

The relationship between economic growth, taxation and other control variables then becomes;

$$gdp = f(it, dt, ot, ir, fdi, nx).....Equation (5)$$

Where:

gdp= is the real Gross Domestic Product which measures economic growth.

it= Indirect Taxes (being made up of VAT, Customs Import Duties and Excise Duties).

dt= Direct Taxes (both corporate and individual).

ot = Other taxes.

ir= Interest rate.

fdi= Foreign Direct Investment inflows.

nx= Net Exports over Imports.

The empirical analysis used annual time-series data on taxes, control variables and economic growth for the period 1975 to 2014. The specific econometric model becomes;

$$GDP = a + b_1IT + b_2DT + b_3OT + b_4IR + b_5FDI + b_6NX + eEquation (6)$$

Where: GDP is Gross Domestic Product, a is the constant term, IT is indirect taxes, DT is direct taxes, OT is other taxes, IR is interest rates, FDI is Foreign Direct Investment, NX is net exports, b_{1-6} are the relevant coefficients for the relevant variables and e represents the random error term.

Since the study used time series data in analysis, it was important to undertake various tests to avoid spurious or nonsensical modeling. The test carried out included; ADF test, Auto correlation, cointegration, Breusch-Godfrey test and heteroscedasticity.

3.3.1 Pre-Estimation Tests

Several tests to give the model the proper functional and mathematical form were conducted. The first phase was to undertake a diagnostic test on each of the relevant variables in determination of its stationarity. The ADF test for unit root was utilized. A correlation analysis

was also undertaken to ascertain the relationship between the regressand and the regressors. Further, a normality test was carried out to check whether the data follows a normal distribution and so as to ensure normality of the residuals.

3.3.2 Post-Estimation Diagnostic Tests

The tests were conducted to ensure the fitness of the model and to examine the structure of the residuals to ascertain the conclusions to be made from the estimated results. The tests in this study included: the Ramsey RESET test was undertaken to test for errors in model specification, residual normality test, Breusch Godfrey test for serial correlation and heteroscedasticity test.

This test was necessary to review the long-run relationship between the level of taxation and economic growth. The estimation method adopted here was based on the Maximum Likelihood Estimator (MLE) of the parameters of a cointegrating Vector Error Correction Method (VECM).

3.4 Definition and Measurement of Variables

In this study, the following variables were measured in absolute monetary terms and specifically in Kenya million pounds.

GDP is the total production within the country by all residents irrespective of nationality. In this study, GDP is measured in real per capital basis.

Direct taxes are also income taxes derived in Kenya levied on corporations and individuals in Kenya whether resident or non-resident.

Indirect taxes are made up of VAT, Customs import duties and Excise duties. VAT is a consumption tax levied in Kenya on designated local supply of good and services. It is normally charged as 16% of the value of the goods or service. Customs Duties are taxes imposed on imported commodities and services to raise the domestic price of such commodities above the landed international price level by the margin of the tax. On the hand, Excise Duties are taxes on levied on specific products and services which are viewed as being luxury in nature. Some of these commodities include alcoholic beverages, tobacco products, high end motor vehicles, petroleum products, carbonated drinks, cosmetics, jewellery and telephone services.

Other taxes are other taxes that include fines, penalties and forfeitures, land rent, trading licenses, air passenger service charge, air navigation charges, second hand motor vehicle purchase tax, betting tax, casino tax, stamp duty, premium tax, fuel levy, standards levy and sugar development levy, among others.

Interest rates refer to the rate commercial banks charge private investors who borrow from them so as to invest in productive projects.

FDI inflows refer to foreign direct investment that an economy receives from other countries for development.

Net Exports represents the difference of trade activities between the exports of a country from other countries over its imports from the other countries.

3.5 Expected Outcome

The research was expected to confirm whether there exists either a positive or negative relationship between growth of an economy and the indirect taxes, direct taxes, other taxes as well as the other control variables such as interest rates, FDI and net exports as specified in the model for a Kenyan economy. The empirical studies have showed mixed results between economic growth and taxation. Some studies have indicated taxation has a positive impact on economic growth while others have found out that there exists a negative effect on economic growth due to its negative effect of slowing investment. On the other hand some studies have indicated a direct relationship about the impact of FDI, and net exports on growth of an economy arguing that FDI and international trade boost economic growth.

Table 3.1 Summary of Variables

Variable	Expected sign	Measurement
Gross Domestic Product (GDP)	Dependent Variable	Economic growth measure.
Indirect Taxes	Negative (-ve)	Made up of VAT, Customs duties, export duties and excise duties.
Direct taxes	Positive (+ve)	Income corporation taxes and individual taxes.
Other taxes	Positive (+ve)	Other taxes such as CGT, levies and charges.
Interest rate	Negative (-ve)	The rate of commercial banks charge on loans they lend to investors.
FDI	Positive (+ve)	Foreign direct inflows from other countries.
Net exports	Positive (+ve)	Value of exports minus imports.

3.6 Data Source and Collection

This study has used secondary annual time series data for the Kenyan economy for a period of thirty years from 1984 to 2013 to try and find out empirically the relationship of taxation and economic growth. Data has been collected from various publications by the National Treasury, KRA, CBK, KNBS and World Bank Publications.

3.7 Estimation Procedure and Data Analysis

The linear regression analysis was applied on the time series data. The GDP was taken as the dependent variable, while the various taxes variables as stated above was the independent variables. Data analysis was done using statistical Analysis Software (STATA), a programme that is widely used in economic data analysis and model testing. Joint significance was tested using Chi-square statistic while individual significance was evaluated using t-test.

CHAPTER FOUR

EMPIRICAL RESULTS

4.1 Introduction

This chapter presents an analysis of the data. The chapter presents descriptive statistics of the data, diagnostic tests and report on the regression results.

4.2 Descriptive Statistics

Descriptive statistics of the data series is shown in table 4.1. Descriptive statistics of GDP, indirect taxes, direct taxes, other taxes, interest rates, FDI and net exports. Distribution of a series can be determined by evaluating various statistical measures as indicated in table 4.1.

Table 4.1: Descriptive Statistics

Variable	Observations	Mean	Standard Deviation	Mini	Maxim
Gdp	40	33300.53	2373.60	29451.08	41321.33
It	40	5122.97	6015.87	112.12	22446.85
Dt	40	4332.74	6445.77	71	25514.15
Ot	40	884.68	1066.06	10.59	3719.3
Ir	40	17.36	6.99	7.89	36.24
Fdi	40	278.76	260.62	1.95	811.45
Nx	40	-1851.40	3179.54	-10880.4	301

Source: Computation from STATA

The total observations considered in this study were 40 with seven variables (one dependent and six independent variables). Range is obtained from the difference between the maximum value and minimum value. For example the maximum value of GDP is 41321.33 million Kenyan pounds while the minimum is 29451.08 million Kenyan pounds giving a range of 11870.25 million Kenyan pounds. The standard deviation indicates the spread of the values from the mean

and is of great importance for evaluation purposes. For example the data indicates that direct taxes has a larger spread as compared to other variables. GDP has a standard deviation of 2373.603, indirect taxes have 6015.87, other taxes have 3532.80, interest rate has 6.99, FDI has 260.62 and net exports have 3179.54.

4.3 Correlation Matrix

Correlation of the variables is examined in the table shown below.

Table 4.2: Correlation Matrix

Variables	It	dt	ot	ir	fdi	nx
it	1.0000					
dt	0.9786	1.0000				
ot	0.9712	0.9700	1.0000			
ir	-0.0899	-0.1318	-0.0339	1.0000		
fdi	0.7749	0.7791	0.7743	-0.2836	1.0000	
nx	-0.9477	-0.9727	-0.9416	0.2160	-0.8284	1.00

Source: Computation from STATA

Correlation analysis is used to examine the extent of the correlation of different pairs of variables under study. It measures the correlation coefficient between 1 and -1. This further predicts presence or absence of multicollinearity which is considered to exist when there is perfect linear relationship between the variables under the study. The correlation matrix was used to determine if any pair of independent variables was highly collinear through the magnitude of the correlation coefficient of the pairs of variables established. This bias arises when one or more pairs of independent variables are perfectly correlated to each other. Multicollinearity would be considered present if the correlation coefficient was equal to or above 0.8 as it may lead to spurious regression. As indicated in Table 4.2, the study found that the pairs of independent variables that had a correlation coefficient of more than 0.8 were indirect taxes and direct taxes, indirect taxes and other taxes, direct taxes and other taxes, other taxes and net exports and FDI

and net exports. This implied presence of Multicollinearity. To correct that, the study applied differencing the variable that exhibited this characteristic.

4.4 Diagnostic Tests

4.4.1 Heteroscedasticity

Using Breusch-Pagan test results are as shown in table 4.3.

Table 4.3: Test for Heteroscedasticity

Breusch-Pagan test for heteroscedasticity			
Ho: Constant variance			
Variables: Fitted values of GDP			
chi2(1) = 0.80			
Prob> chi2 = 0.3719			

Source: Author's computation based on STATA.

The results in table 4.3 reveal absence of heteroscedasticity since the p-value of 0.3719 is insignificant which leads to failure to reject the null hypothesis of constant variance.

4.4.2 Serial correlation

Breusch Godfrey test was used in testing for serial correlation. The results are indicated in table 4.4.

Table 4.4: Serial correlation

Breusch-Godfrey test for autocorrelation			
lags(p)	chi2	Df	Prob> chi2
1	22.493	1	0.0000
H ₀ : no serial correlation			

Source: Computation from STATA

The test results in table 4.4 reveal presence of serial correlation since the p-value of 0.0000 is significant thus leading to the rejection of the null hypothesis. To correct for serial correlation, the study used robust standard errors.

4.4.3 Multicollinearity

To test for multicollinearity, Variance Inflation Factors (VIF) was examined. For VIF values greater than 10, multicollinearity is deemed to be present (Nachtsheim, 2004). The VIF are calculated as shown below.

Variance Inflation Factors

$$VIF = \frac{1}{1 - R^2}$$

Where VIF= variance inflation factor

R²= coefficient of determination

1/VIF= tolerance

The VIF values are shown in table 4.5

Table 4.5: Multicollinearity

Variable	Variance Inflation Factor (IVF)	1/VIF
Dt	53.44	0.018713
It	29.68	0.033696
Nx	26.76	0.037374
Ot	25.18	0.039714
fdi	3.62	0.276283
Ir	1.50	0.666589
Mean VIF	23.36	

Source: Computation from STATA

From table 4.5, it is evident that there is Multicollinearity between indirect taxes, direct taxes, net exports and other taxes. This is because the two variables have a VIF of greater than 10. On the other hand other taxes illustrate absence of Multicollinearity because it had a VIF of less than 10. The variables that showed presence of Multicollinearity will be differenced so as to correct the problem of Multicollinearity.

4.4.4 Normality

In testing for normality of the error term, Shapiro Wilk test was used. The results are shown in the table 4.6. The null hypothesis in this situation indicates that the error terms is normally distributed whereas the alternative hypothesis indicates that the error term is not normally distributed

Table 4.6: Test for Normality

Variable	Observations	W	V	z	Prob>z
Residual	40	0.59410	16.044	5.841	0.00000

Source: Computation from STATA

The probability value in table 4.6 is significant thus leading to rejection of the null hypothesis. This therefore has an implication in that the residuals are not normally distributed. To correct this, the study adopted log linear model.

4.5 Stationarity Test

Stationarity means the variable is integrated of order zero and therefore inference is applicable. However, presence of a unit root lead to spurious regression which renders inference inapplicable and therefore the model cannot be used in forecasting. The unit root test was done by use of the Augmented Dickey Fuller Test on the individual variables. The test results are as shown in table 4.7.

Table 4.7: Test for Stationarity in Levels

Variable	Test statistic	1% critical level	5% critical level	10% critical level
GDP	0.834	-3.655	-2.961	-2.613
Indirect taxes	8.504	-3.655	-2.961	-2.613
Direct taxes	15.362	-3.655	-2.961	-2.613
Other taxes	-3.302	-3.655	-2.961	-2.613
Interest rates	-1.399	-3.655	-2.961	-2.613
FDI	-2.464	-3.655	-2.961	-2.613
Net exports	2.633	-3.655	-2.961	-2.613

Source: Computation from STATA.

Table 4.7 shows that all variables used in the study are non-stationary at levels since test statistics of all variables are greater than all significance levels. The variables were differenced and the results are as shown in the table 4.8.

Table 4.8: Test for Stationarity (First Difference)

Variables	Test Statistic	1% Critical Level	5% Critical Level	10% Critical Level
D1GDP	-3.136	-3.662	-2.964	-2.614
D1indirect taxes	-2.256	-3.662	-2.964	-2.614
D1direct taxes	-0.632	-3.662	-2.964	-2.614
D1other taxes	-6.163	-3.662	-2.964	-2.614
D1interest rate	-5.027	-3.662	-2.964	-2.614
D1FDI	-8.670	-3.662	-2.964	-2.614
D1net exports	-4.845	-3.662	-2.964	-2.614

Source: Computation from STATA.

Table 4.8 shows that GDP, indirect taxes and direct taxes are still non-stationary in the first difference. This is because their test statistics are still greater than all significance levels. However, the variable for other taxes, interest rates, FDI and net exports became stationary after first difference an implication that the variable had one unit root. This showed that variable for other taxes has one unit root or is integrated of order 1 that is I (1). The non-stationary variables were further differenced and the results are as shown in table 4.9.

Table 4.9: Test for Stationarity (Second Difference)

Variables	Test Statistic	1% Critical level	5% Critical Level	10% Critical Level
D2GDP	-7.729	-3.668	-2.966	-2.616
D2indirect taxes	-8.427	-3.668	-2.966	-2.616
D2direct taxes	-9.513	-3.668	-2.966	-2.616

Source: Computation from STATA.

Table 4.9 reveals that GDP, indirect taxes and direct taxes became stationary after second difference. This is because their test statistics are now less than all significance levels implying that the variables had two unit roots. This indicates that variables for GDP, indirect taxes and direct taxes have two unit roots or are integrated of order 2 that is I (2). Since all variables have at least a unit root, there was need for the investigation of the presence of cointegration.

4.6 Vector Autoregressive (VAR) and Vector Error Correction Model (VECM)

Overall, the findings presented in table 4.7 indicate that all the variables are non-stationary in levels. These results suggest there might be cointegration vectors between the variables an implication that the model could be feasibly employed with the VAR framework if cointegration is found to be absent or VECM framework if cointegration is found to be present.

4.6.1 Lag length Selection

Before estimating Vector Autoregressive (VAR) or Vector Error Correction Model (VECM), it is important to identify lag length of unrestricted VAR order and VEC order. Since the two give same results, the study adopted unrestricted VAR order in identifying the lag length. The results for lag selection criteria are discussed in table 4.10.

Table 4.10: Vector Autoregressive (VAR) Lag Selection Criteria

Selection-order criteria, Sample: 1980 - 2014 Number of observation = 35								
Max rank	LL	LR	df	Prob	FPE	AIC	HQIC	SBIC
0	-1850.14				1.5e+36	103.174	103.282	103.482
1	-1617.77	464.75	49	0.00	6.0e+31	92.987	93.8467	95.4502
2	-1550.69	134.16	49	0.00	3.0e+31	91.9826	93.5946	96.6012
3	-1443.9	213.57	49	0.00	3.4e+30	88.7722	91.1365	95.5461
4	-1196.36	495.07*	49	0.00	1.0e+27*	77.7423*	80.8589*	86.6716*

Source: Computation from STATA.

From table 4.10, LR criteria show that 4 lags should be considered. FPE criterion shows that 4 lags should be chosen. Regarding AIC, HQIC and SBIC, the guideline is that the lower the value the better the model. In this case the three criteria show that 4 lags should be chosen. Since all the five criteria recommend 4 lags. This therefore implies that the study considered 4 lags in the Johansen test of cointegration and VAR or VECM framework.

4.6.2 Johansen Test of Cointegration

After identifying lag length, it is important to check whether there is long run relationship among the variables (cointegration) or not. To ascertain this, Johansen test of cointegration was adopted and the results are as indicated in table 4.11.

Table 4.11: Johansen Test for Cointegration (Max statistics Model)

Trend: Constant		Number of observation = 36		Sample: 1979-2014	
Maximum rank	parms	LL	Eigenvalue	Trace statistic	5% critical Value
0	154	-1477.48	.	562.24	124.24
1	167	-1384.13	0.99	375.54	94.15
2	178	-1307.18	0.99	221.64	68.52
3	187	-1262.88	0.91	133.03	47.21
4	194	-1225.46	0.87	58.20	29.68
5	199	-1207.25	0.63644	21.7788	15.41
6	202	-1196.49	0.44989	0.2641*	3.76
7	203	-1196.36	0.00731		

Source: Computation from STATA.

From table 4.11, it is apparent that at least there is cointegrating vector between the variables. At maximum rank 0, the null hypothesis is that there is no cointegration where the alternative hypothesis is that there is cointegration. Since the trace statistic at this point (562.24) is greater than the critical value at 5 percent level of significance (124.24), the null hypothesis is rejected. This leads to movement to maximum rank 1. At this point, the null hypothesis is that there is one cointegrating vector where alternative hypothesis shows that there is more than one cointegrating vector. Since the trace statistic at this point (375.54) is greater than the critical value at 5 percent level of significance (94.15), the null hypothesis is rejected. The process continues until we reach maximum rank 6. Here the null hypothesis is that there are 6 cointegrating equations, whereas alternative hypothesis states that there are more than 6 cointegrating equations. Since trace static (0.2641) is less than critical value (3.76), it means the null hypothesis is not rejected. This therefore implies that there are six cointegrating equations. Presence of cointegration implied that VECM framework should be adopted.

4.7 Vector Error Correction Model (VECM)

VECM framework was adopted and the results are as shown in table 4.12.

Table 4.12: Regression Results for Vector Error Correction Model

Dependent Variable: log GDP, Method: Vector error-correction model, Sample: 1980 – 2014						
	Coefficient	Stand Error	z	P>z	[95% Confidence interval]	
D_ingdp						
_ce1 L1.	-0.550*	0.181	-3.030	0.002	-0.905	-0.194
Gdp						
LD.	0.515***	0.275	1.840	0.065	-0.033	1.063
L2D.	0.291	0.251	1.160	0.247	-0.202	0.784
L3D.	0.300	0.271	1.110	0.268	-0.231	0.831
Indirect taxes						
LD.	-1.109***	0.595	-1.860	0.062	-2.274	0.0566
L2D.	-1.309	0.843	-1.550	0.121	-2.961	0.344
L3D.	-1.661**	0.792	-2.100	0.036	-3.213	-0.109
Direct taxes						
LD.	1.289	0.927	1.390	0.164	-0.529	3.107
L2D.	1.559	1.152	1.350	0.176	-0.699	3.817
L3D.	0.704	0.811	0.870	0.386	-0.886	2.294
Other taxes						
LD.	-1.598	1.542	-1.040	0.300	-4.620	1.425
L2D.	-1.320	1.346	-0.980	0.327	-3.958	1.318
L3D.	0.699	1.103	0.630	0.526	-1.464	2.861
Interest rate						
LD.	68.838	62.792	1.10	0.273	-54.231	191.907
L2D.	66.772	60.365	1.11	0.269	-51.542	185.086
L3D.	32.911	49.202	0.67	0.504	-63.522	129.345
FDI						
LD.	5.5329**	2.251	2.46	0.014	1.121	9.944
L2D.	2.876	1.950	1.47	0.140	-0.946	6.698
L3D.	1.221	1.201	1.02	0.309	-1.133	3.575
Nx						
LD.	0.9183**	0.371	2.470	0.013	0.191	1.646
L2D.	0.435	0.396	1.100	0.271	-0.340	1.211
L3D.	-0.010	0.319	-0.030	0.974	-0.636	0.615
Constants	0.016	183.585	0.000	1.000	-359.804	359.837
R-squared = 0.9680; P>chi2 = 0.0000*						

Source: Computation from STATA.

4.8 Interpretation of the Results

From table 4.12, *, **, *** indicates significance at 1%, 5% and 10% level of significance respectively. The results reveal that the model was good in terms of goodness of fit and overall significance with a (R^2) of 0.9680 and probability value of 0.0000. These means that 96.80 % of the variation in GDP are explained by the explanatory variables in the model while the other proportion (3.20%) is explained by other factors not considered by this study. Probability value of (0.0000) implies that the variables in the model are jointly significant in explaining GDP at 1% level of significance.

The coefficient of the error correction term is negative (-0.550) and significant at 10 percent an implication that there is long run causality running from indirect taxes, direct taxes, other taxes, interest rate, FDI and net exports.

The results further reveals that lag one of the log of GDP, lag one of indirect taxes are individually significant in influencing GDP at 10 percent level of significance in the short run. On the other hand, lag three of indirect taxes, lag one of FDI and lag one of net exports are individually significant in influencing log GDP at 5 percent level of significance in the short run.

4.9 Discussion of the Findings

This study explored the significant taxes and other control variables on economic growth as captured by log of GDP. The insignificant taxes and control variables were not discussed as they do not contribute to any working policy of the study. From the results, if all factors were kept constant, GDP as a proxy for economic growth in Kenya would be 1.04 million Kenyan pounds (Antilog of 0.016). The results revealed that holding all other factors constant, one percent increase in lag one of GDP leads to approximately 51.5% increase in GDP of Kenya.

The coefficient of lag one of indirect taxes is negative and significant. This implies that holding all other factors constant one percent increase in lag one of indirect taxes results to 110.9 % percent decline in GDP of Kenya. The coefficient of lag three of indirect taxes implies that holding all other factors constant, an increase in lag three of indirect taxes results to a decrease in Kenya's GDP by 166.1 percent.

The coefficient of lag one of FDI is positive and statistically significant. This implies that an increase in lag one of FDI results to about 553.29 % increase in GDP of Kenya. In addition,

the coefficient of lag one of net exports implies that *ceteris paribus*, GDP of Kenya increases by about 91.83 percent when lag one of net exports increase by one unit. These results suggest similar findings to those Herberger (1990) who showed that indirect taxes in developing countries result to an increase in consumption thus a decrease in savings.

According to Neoclassical growth model, savings are important for economic growth and therefore a decrease in savings translates to a decline economic growth. However, these results suggest contrary finding to those of (Anastassiou & Dritstaki, 2005) who found that low ratio of direct to indirect taxation promoted economic growth using annual data on the Greek economy for the period 1965-2002. Further these findings are in line with earlier study by Abala (2014) who found FDI to be important in determining economic growth in Kenya.

CHAPTER FIVE

CONCLUSIONS AND POLICY IMPLICATIONS

5.1 Introduction

This chapter presents a summary of the study and policy recommendation based on the findings of the study. The chapter is comprised of four sections namely, summary and conclusions of the study, policy implications and recommendations, limitations of the study and recommendation of areas for future research.

5.2 Summary and Conclusions

Tax revenue is important for any country since it enables the country's government to cater for the welfare of her people. In addition, a country that mobilizes adequate tax revenue reduces her budget deficit which translates into reduced external borrowing. Reduced external borrowing is good for economic growth since the amount of country's revenue which could be used in paying the external debt can be employed in other productive sectors of the economy. This in turn will assist the country to reduce the level of unemployment as well as attracting foreign direct investment. Higher tax revenue occurs as a result of high tax rates and a large tax base. However, according to Laffer curve, tax revenue increases as tax rates increase up to a certain level beyond which it starts to decline.

Kenya has embraced many tax reforms in indirect taxes for instance, moving from sales tax to VAT. With regard to direct taxes, various reforms have been embraced for instance, introduction of PIN, withholding tax and the reintroduction of CGT. However, these reforms are not based on a robust analysis of the effect of each form of tax on Kenya's economic growth. This is because understanding of the weight each tax head on country's economic growth will guide the tax policy makers on where to focus much. Based on this, study sought to investigate the effect of each of the tax head on Kenya's economic growth for the period running from 1975 to 2014.

The author made a careful selection of the control variables in addition to indirect taxes, direct taxes and other taxes as guided by empirical studies in this line of study. These variables were analyzed using econometric techniques as guided by Gujarati (2004) and other international studies in the field of study. The explanatory variables used in the study are

indirect taxes, direct taxes and other taxes. To achieve the intended objective, pre-estimation tests and stationarity tests were carried out. Augmented Dickey Fuller test was used to test for presence of unit root. The results showed that all variables were non-stationary at levels. Other taxes, interest rate, FDI and net exports were revealed to have one unit root. GDP, indirect taxes and direct taxes showed presence of two unit roots since they became stationary after second differencing. These attributes of the data informed the researcher to identify the lag length and also check for cointegration using Johansen test of cointegration. Five criteria (LR, FPE, AIC, HQIC and SBIC) for identifying lag length were used of which all recommended 4 lags. Johansen test of cointegration revealed presence of six cointegrating equations.

After identification of the number of lags and cointegrating equations the study proceeded to estimation of VECM which takes into account both short run and long run causality. The coefficient of the error correction term (ECT) was negative and significant at 1 % level of significance. This therefore implied that there was long run relationship running from indirect taxes, direct taxes, other taxes, interest rates, FDI and net exports to GDP. The results revealed overall significance of the explanatory variables in explaining GDP. The coefficient of determination showed that 96.8 percent of the variation in GDP is explained by the variables in the model.

The findings further revealed that lag one of GDP, lag one of indirect taxes, lag three of indirect taxes, lag one of FDI and lag one on net exports to be important in determining economic in Kenya. The results showed that the coefficient of lag one of GDP to be positive and significant at 10 percent in influencing economic growth in Kenya. The coefficients of lag one and lag three of indirect taxes were revealed to be negative and individually significant at 10 and 5 percent respectively in influencing economic growth in Kenya. Further, the coefficients of lag one of FDI and lag one of net exports were found to be positive and separately significant at 5 percent in influencing economic growth in Kenya.

5.3 Policy Implications and Recommendations

The findings of this study have important policy implication for economic growth in Kenya. The study has revealed presence of long run relationship between indirect taxes, direct taxes, other taxes, interest rates, FDI and net exports on Kenya's economic growth as measured by GDP.

Based on the study findings, the government of Kenya, when considering change of a tax , monetary, international trade policy, it should review the policy's impact on indirect taxes, direct taxes, other taxes, interest rate, FDI and net exports. The study findings have shown that Kenya's economic growth is negatively affected by indirect taxes but positively influenced by FDI and net exports. This implies that indirect taxes increase consumption and reduce savings in Kenya which shrinks funds available for investment. This therefore implies that policy makers should focus more on international trade so as to attract FDI which can eventually result to increased exports which is key for the economic growth of the country.

Additionally, indirect taxes should be streamlined to make them progress such that they are applied discriminatively in that goods and services used by affluent segments of the population attract relatively higher taxes. Also international trade as represented by net exports has a positive correlation with economic growth. To improve cross-border trade, prohibitive restrictions such as high tariffs and general control over mobility of resources would have to be removed. In view of this, the Government must fully and actively participate in the regional economic blocks such as COMESA and EAC.

5.4 Limitations of the Study

The major shortcoming of this study is that it failed to incorporate all the variables that influence economic growth. Empirical literature reveal that, tax evasion and avoidance and tax compliance influence country's economic growth but the study failed to incorporate due to lack of data availability on these aspects. The study also used annual data but use of quarterly or semi-annually data could be much efficient in establishing the effect of the variables on the economic growth Kenya.

5.5 Areas for Further Study

Future researchers ought to investigate the effect of omitted variables on economic growth. For instance, there is need to investigate the effect of tax evasion and avoidance, tax compliance levels and tax literacy on economic growth.

REFERENCES

- Abala, D. (2014). Foreign Direct Investment and Economic Growth. An Empirical Analysis of Kenyan Data. *DBA African Management Review*. Vol. 4(1), pp. 62-83.
- Abdullah, Sabah, and Bruce Morley. "Environmental taxes and economic growth: Evidence from panel causality tests." *Energy Economics* 42 (2014): 27-33.
- Anastassiou, Thomas and Dritsaki (2005). "Tax Revenues and Economic Growth: An Empirical Investigation for Greece Using Causality Analysis", *Journal of Social Sciences* 1 (2): 99- 204.
- Arrow, K and M. Kurtz (1970). "Public Investment, Rate of Return and Optimal Fiscal Policy" Resources for the Future Inc. and Johns Hopkins Press, Baltimore Marreyland.
- Bahl, R. W. (1971). "A Regression Approach to Tax Effort and Tax Ratio Analysis," *IMF Staff Papers*, Vol. 18, pp. 570-612.
- Barro, R.J (1990). "Government Spending in a Simple Model of Endogenous Growth". *Journal of Political Economy*, Vol. 98 pp.s103-s125
- Bhatia, H.L (2003) "*Public finance*" 24th revised edition New Delhi.
- Bird, R., J. Martinez-Vazquez and B. Torgler (2006). "Societal Institutions and Tax Effort in Developing Countries", in: J. Alm, J. Martinez-Vazquez and M. Rider (eds.), *The Challenges of Tax Reform in the Global Economy*. New York: Springer, pp. 283-338.
- Chaudhry, I.S.and Munir, F. (2010). 'Determinants of Low Tax Revenue in Pakistan', *Pakistan Journal of Social Sciences* Vol.30, No.2, pp.439-452.
- Chidakwa, A.M (1996). Revenue Productivity of Zimbabwean Tax System. M.A. Thesis - University of Zimbabwe.
- Chelliah, R. J. (1971). "Trends in Taxation in Developing Countries," *IMF Staff Papers*, Vol. 18, No. 2, pp.254-325.

- Chen, Ping-ho, et al. "Short-run and Long-run Effects of Capital Taxation on Innovation and Economic Growth." (2016).
- Chipeta, C (1998). "Reform and Tax Yield in Malawi AERC RP No. 81 March 1998 Nairobi.
- Dahlby, Ergete Feredeand Bev. "The impact of tax cuts on economic growth: Evidence from the Canadian provinces." *National Tax Journal* 65.3 (2012): 563-594.
- Due J.F (1970). "Indirect Taxation in Developing Countries" .The John Hopkins University Press, Baltimore.
- Duncan O (2003). "The impact of Indirect Taxation in Developing Countries". M.A Thesis, University of Nairobi.
- Easterly, W and S. Rebello (1994). Fiscal Policy and Economic Growth-An Empirical Investigation. Centre for Economic Policy Research, Discussion Paper.
- Engen, E.M and J. Skinner (1992) Fiscal Policy and Economic Growth. Fiscal Policy and Economic Growth. NBER
- Gale, William G., and Andrew A. Samwick (2014). "Effects of income tax changes on economic growth." Available at SSRN 2494468.
- Ghura, D. (1998). "Tax revenue in Sub-Saharan Africa: Effects of Economic Policies and Corruption." IMF Working Paper 98/135 (Washington: International Monetary Fund).
- Government of Kenya (2008), Kenya vision 2030: Towards a globally, competitive and prosperous Kenya, Nairobi: Ministry of Planning National Development & Vision 2030.
- Gujarati, D.N (2004) "*Basic Econometrics*" 4th edition. McGraw-Hill, Book companies, NewYork.
- Gupta, S.A. (2007), '_Determinants of Tax Revenue Efforts in Developing Countries', *IMF Working* Washington D.C.). *Paper* (WP/07/184.

- Islam, M.A. (1979). Tax Effort in Bangladesh: Some Empirical Observation, *journal of Bangladesh Development Studies*, Vol. 7, pp.83-92.
- Johansson, A. et.al. (2008). "Tax and Economic Growth", *Economic Department Working Papers*, 620
- Keen, M. and Simone, A. (2004), Tax Policy in Developing Countries: Some Lessons from the 1990s and Some Challenges.
- Kotlan, I. and Zuzana, M. 2012. "The Influence of Corporate Taxation on Economic Growth: The Failure of Tax Quota?." *Politická ekonomie*.6 (2012): 743-763.
- Lee, Y., and Gordon, R. H. "Tax Structure and Economic Growth." *Journal of Public Economics*, Vol. 89, Issues 5-6, 2005, pp. 1027-43.
- Mungaya, M., Mbwambo, A. and Tripathi, S.K. (2012). Study of the Tax system impact on the Growth of Small and Medium Enterprises (SMEs): with Reference to Shinyanga Municipality, Tanzania.
- Muriithi M.K. and E. D. Moyi. (2003). Tax Reforms and Revenue Mobilization in Kenya, *AERC Research Paper* 131, Nairobi: AERC.
- Musgrave, R.A. and Musgrave, P.B. (1984). *Public Finance in Theory and Practice*, 5th edition. New Delhi: McGraw-Hill Book Company.
- Musgrave, R.A. and Musgrave, P.B. (1989). *Public Finance in Theory and Practice*, 5th edition. New Delhi: McGraw-Hill Book Company.
- Nachtsheim, C.J. Neter, J. (2004). *Applied Linear Regression Models*, 4th edition. Boston: McGraw-Hill Irwin.
- Ochien'g, G.O (2001). "Revenue Productivity of Tax Reforms in Kenya". M.A. Thesis, University of Zimbabwe.
- Ogbonna, G. N., and Appah, E. (2012). "Impact of tax reforms and economic growth of Nigeria: A time series analysis." *Current Research Journal of Social Sciences* 4.1 (: 62-68.
- Republic of Kenya (2010). *The Constitution of Kenya*, Nairobi: Government Printer.

- Tanzi, V. (1992). "Structural Factors and Tax Revenue in Developing Countries: A Decade of evidence in Open Economies." Cambridge University Press, Cambridge: pp. 267-281.
- Teera, J. M. (2002). "Determinants of tax revenue shares in Uganda." University of Bath, Department of Economics, United Kingdom.
- Thuto, D.B. (2010). Tax Effort and the Determinants of Tax Ratio in Sub-Saharan Africa.
- Trasberg, V. (2005). Tax Administration and the Shadow Economy, in: Bernardi, L., M. W. S.

APPENDICES

Appendix I: A summary of Various Taxation Acts and the type of tax they administer

Statute	Purpose/Role
Income Tax Act (Chapter 470)	For administration of income tax that covers corporation tax, personal tax, withholding tax and capital gains tax
Excise Duty Act, 2015	To administer the collection of excise duty on excisable goods and services.
VAT Act, 2013	To administer value added tax which covers a range of supplies.
EACCMA	For administration of customs duties within the East African Countries.
Road maintenance Levy Fund Act 1993	To govern the collection and administration of levy collected for maintenance of road through sale of fuel.
Air Passenger Service Charge Act (Chapter 475)	To govern the collection of levies on air transport by the national couriers.
The Entertainment Tax Act (Chapter 479)	To collect revenue from entertainment activities in Kenya and the utilization of the same.
The Traffic Act (Chapter 403)	To collect revenue from transport vehicles on Kenya roads and any users who violate the laid down legal provisions.
Transport Licensing Act (Chapter 404)	To collect revenue when licensing vehicles to engage in transport activities.
Second Hand Motor Vehicle Purchase Tax Act (Chapter 484)	For collection and administration of revenue with regard to disposal of second hand vehicles.
The Stamp Duty Act (Chapter 480)	To collect stamp duty revenue on transfer of documents and sale of securities such as shares.
The Directorate of Civil Aviation Act (Chapter 394)	To collect and administer revenue from aviation activities in Kenya.
The Transfer of Property Act	To administer collection of revenue on transfer of property such as land and buildings.
Local Authorities Act	To collect various revenues for local/county authorities.

Source: KRA Website, 2016: On various relevant Acts on taxes

Appendix II: Raw and refined data

Year	GDP in real terms	Indirect taxes	Direct taxes	Other taxes	Interest rates	FDI	Net Exports
1975	29,919.81	112.12	71.00	10.59	10.00	86.30	-70
1976	29,451.08	129.08	88.60	30.86	10.00	231.85	-585
1977	31,056.51	146.50	107.47	11.93	10.00	282.75	-225
1978	31,982.67	231.43	142.34	22.00	10.00	172.05	-160
1979	33,144.03	250.06	151.07	18.57	10.00	420.05	-1,179
1980	33,692.82	316.84	171.85	26.43	10.58	394.85	-765
1981	33,654.17	388.00	198.00	85.00	12.42	70.75	125
1982	32,879.77	448.00	200.00	90.00	14.50	65.00	755
1983	32,065.56	442.00	231.00	125.00	15.83	118.70	-2,585
1984	31,420.84	515.00	251.00	124.00	14.42	53.75	-1825
1985	31,575.99	532.00	301.00	142.00	14.00	144.25	-4,035
1986	32,627.09	644.00	355.00	161.00	14.00	163.65	-2,780
1987	33,344.28	785.00	386.00	174.00	14.00	196.90	-1,205
1988	34,185.98	931.00	455.00	168.00	15.00	1.95	-135
1989	34,573.90	1,053.00	512.00	289.00	17.25	310.95	-425
1990	34,825.29	1,092.00	599.00	273.00	18.75	285.50	-325
1991	34,173.86	1,203.00	713.00	348.00	19.00	94.00	60
1992	32,817.57	1,256.00	851.00	394.00	21.07	30.00	-2,035
1993	31,911.04	1,892.00	997.00	395.00	29.99	10.00	-2,255
1994	31,772.98	2,749.00	1,829.00	370.00	36.24	20.00	-2,560
1995	32,225.11	3,211.00	2,196.00	548.00	28.80	165.00	-2,275
1996	32,646.80	3,671.00	2,405.00	855.00	33.79	52.75	-400
1997	31,943.45	3,830.00	2,463.00	725.00	30.25	265.00	-15
1998	32,151.78	4,425.00	2,802.00	1,190.00	29.49	55.00	1,505
1999	32,055.15	4,819.00	2,762.00	1,097.00	22.38	69.10	1,135
2000	31,416.12	4,902.00	2,720.00	566.00	22.34	554.60	-2,820
2001	31,749.82	5,375.29	2,671.74	560.88	19.67	26.50	-1,655
2002	31,077.81	5,403.02	2,980.70	483.28	18.45	38.10	-3,970
2003	31,135.78	6,040.40	3,207.65	551.05	16.57	408.70	-4,470
2004	31,851.75	6,663.41	3,870.50	1,244.38	12.53	230.30	-3,015
2005	32,836.56	7,870.13	5,731.45	821.59	12.88	21.22	-4,730
2006	33,992.25	9,123.15	6,535.95	1,473.42	13.64	253.35	-18,655
2007	35,411.06	10,702.28	8,253.90	1,741.15	13.34	729.06	-24,540
2008	35,005.09	11,645.35	9,207.75	1,921.30	14.02	477.90	-30,635
2009	35,013.09	12,867.70	10,998.75	2,022.00	14.80	702.60	-28,695
2010	36,062.85	14,926.00	13,621.95	2,544.65	14.37	801.34	-34,620
2011	36,654.71	15,349.10	15,623.15	3,116.00	15.05	811.45	-39,642
2012	37,302.51	16,421.30	18,654.30	3,719.30	19.72	780.98	-41,886
2013	39,093.03	20,110.70	22,479.50	3,359.25	17.31	803.46	-54,285
2014	41,321.33	22,446.85	25,514.15	3,590.95	7.89	650.78	-54,402

Source: Republic of Kenya Economic Surveys, KNBS (Several years)
Government Printer, Nairobi

Appendix III: Growth Rates of EAC, Africa, BRICS and World for the period 2008 to 2014

Country/Year	2008	2009	2010	2011	2012	2013	2014
Burundi	13.60%	3.50%	3.90%	4.20%	4%	4.40%	4.60%
Ethiopia	11.20%	9.90%	10.40%	11.50%	8.80%	11.40%	10.80%
Kenya	1.50%	2.60%	5.60%	4.30%	4.60%	4.80%	5.50%
Rwanda	11.10%	6.20%	7.20%	8.20%	8%	6.60%	7.60%
Tanzania	7.40%	6.00%	7.00%	7.50%	6.90%	7%	7.30%
Uganda	10.40%	4.20%	6.10%	4.10%	3.20%	5.80%	6.60%
S.Sudan	n.a	4.30%	4.20%	1.90%	-47.60%	24.70%	n.a
E.A (11 ctrs)	7.40%	5.10%	7%	6.90%	6.20%	7.40%	7.70%
World	1.50%	-2.40%	4%	2.80%	2.40%	2.40%	3.20%
Africa	5.20%	2.70%	4.70%	1.00%	5.40%	4.00%	4.90%
BRICS	7.30%	4.40%	8.60%	7.10%	5.60%	5.70%	5.70%

Source: UNECA, 2014: Tracking progress on Macro-economic and Social developments in the EA Region

Appendix IV: Government Revenue as % of GDP for Selected African Countries

Year/Country	1992	1993	1994	1995	1996	1997
Burkina Faso	17.98	17.99	18.33	19.37	20.71	19.98
Benin	16.38	17.08	23.15	23.15	21.19	19.10
Ethiopia	13.23	13.71	17.39	20.79	21.25	22.87
Ghana	14.13	22.37	28.46	25.54	22.27	20.11
Kenya	25.87	27.04	29.16	30.86	29.38	28.80
Lesotho	58.5	58.6	56.56	57.03	58.10	58.77
Malawi	22.36	19.87	31.59	26.10	21.36	19.03
Rwanda	16.3	15.47	14.45	17.7	16.55	17.82
Sierra Leon	15.26	16.17	18.93	13.04	13.33	17.25
Tanzania	16.81	14.37	15.87	14.47	15.41	17.65
Uganda	13.10	15.15	13.6	15.48	15.54	16.20
Zambia	28.52	23.85	31.88	30.82	25.97	23.97
Zimbabwe	28.37	28.74	28.29	26.43	26.71	28.73
Average(selected countries)	22.1	22.33	24.3	24.64	23.59	23.67

Source: World Bank International Financial Statistics (various issues) World Bank Washington D.C.