THE RELATIONSHIP BETWEEN MACRO-ECONOMIC FACTORS AND TAX COLLECTION: THE CASE OF KENYA REVENUE AUTHORITY

BY

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DECLARATION

I declare that this is my original work and has not been presented before for an academic credit. Where work of any other individual has been used, acknowledgement has been duly given.

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This research project has been submitted for examination with my approval as the university supervisor.

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DEDICATION

To my lovely parents, brothers and sisters your prayers and sacrifice towards my education and good parental guidance has made me who I am today.

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LIST OF ABBREVIATIONS

A-I-A	-	Appropriations-in-Aid
FDI	-	Foreign Direct Investment
GDP	-	Gross Domestic Product
KNBS	-	Kenya National Bureau of Statistics
KRA	-	Kenya Revenue Authority
KIPPRA	-	The Kenya Institute for Public Policy Research and Analysis
LDI	-	Level of disposable Income
OECD	-	Organization for Economic Development
PAYE	-	Pay as You Earn
TOT	-	Turnover Tax

ABSTRACT

Kenya Revenue Authority (KRA) collects more than 95% of all government revenue. Through taxation, government is able to raise revenue that is sufficient for public spending without too much borrowing. Tax revenue may be affected by various factors such as inflation, unemployment, tax rates, level of actual income and foreign direct investment. A number of studies have been done in Kenya as far as tax collection is concerned but still we are not effective thus the study was meant to identify if macro-economic factors affect tax collection in KRA and if so what is its relationship and level of significance. The study was based on descriptive case study method. Quarterly data from 2005-2014 was collected using secondary method then was coded and entered into Statistical Package for Social Sciences (SPSS, Version 22.0) for analysis. From the research findings, the amount of tax collected has been on an upward trend since 2005-2014. The rate of Inflation has been fluctuating longitudinally since 2005 with the highest inflation rate in the second quarter (April-June) of 2008. FDI was significantly high in the year 2005 and 2014. The rate of unemployment maintained a plataeu state till 2009 when the increase became exponential. There was continuous increase in the level of disposable income since 2005-2014. From the study we can conclude that the rate of unemployment has high level of significance as opposed to other variables. Rate of inflation comes second whereas level of disposable income and FDI comes third and fourth respectively as shown by the equation; Y= -6.847+ 1.470(ROI) + 0.0000(FDI) +0.168(LDI) + 15.012(ROU). The researcher recommends that the rate of unemployment be reduced. Policy makers should come up with policies to control the inflation rate in Kenya since it negatively affects tax collection. The limitations the study encountered was that the ten year period data was not long enough to take into consideration the pre-reform periods. Further research should be done on other macro-economic factors like GDP and corruption since the ones mentioned in the study are not the only factors affecting tax collection. The study focused on overall tax collection and not on specific type of taxes.

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

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

Kenya Revenue Authority (KRA) collects more than 95% of all government revenue. The revenue collected may be affected by various factors. One of the factors is corruption. Imam and Jacobs (2007) through their study on revenue generating capacity of different tax categories in the Middle Eastwere able to estimate the impact of corruption. They found out that compared to other middle income regions, there was low revenue collection as a share of GDP in Middle East and this was partly due to correction. This suggests that corruption is one of the factors that influence amount of taxes collected by governments. This view is also held by Ajaz and Ahmed (2010).Wilford and Wilford (1978) found that GDP had an impact on tax revenues. Osoro (1993) revealed that tax reforms in Tanzania had a negative impact on tax revenues.

As far as tax collection is concerned, several theories have been put in place. Keynesian taxation theory was initiated by John Keynes who advocates that the state should intervene by regulating the market economy (Keynes 1963). According to Keynes, state intervention is achieved at the level of effective demand since economic development is based on market expansion and an associated increase in consumption. Keynes argues that low tax rates leads to economic instability since it reduces the revenue collected by

the government. High taxes stimulate the stability of the economy since it acts as integrated flexibility mechanism (Keynes 1963).

The ability theory was presented by Arthur Cecil Pigou. It is also known as voluntary exchange theory. Here taxes are based on one's ability to pay. The ability theory treats government revenue and expenditure separately. This theory suggests that the payers of TOT should pay unconditionally and according to paying capacity (Chigbu, Eze and Ebimobowei, 2012).The Khaldun's theory of taxation argues that the government should lower as much as possible the amount of tax imposed on individuals who are able to undertake business. This will in turn encourage them since they will be confident of making profit. Khaldun advocates for lowering of tax burden for businessmen in order to encourage them hence ensuring greater profits to entrepreneur and revenue to the government (Ishahi 2006).

1.1.1 Macro-Economic Factors

Hubbard & O'Brien define macroeconomics as the study of the whole economy focusing on factors like; unemployment, inflation and economic growth. According to Oliver (2000), macro-economic factors refer to happenings on broader levels that affect the economy and the people of a nation. These are inflation, unemployment, tax rates, level of disposable income and foreign direct investment.

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

According to Lipsey & Chrystal (2007), the rate at which an individual or corporate is taxed is called a tax rate (Lipsey & Chrystal 2007). This rate is based on an individual's taxable earnings or a corporation's income. Tax can be of three categories progressive, proportional or regressive. Progressive tax is a tax system where the rate of tax increases

as the taxable amount increases. KRA uses this type of tax system. Proportional tax is where everybody pays the same proportion of income taxes irrespective of the level of income. Regressive tax system is where persons earning low incomes pay higher proportions of income tax as compared to those who are earning higher incomes. (Lipsey & Chrystal, 2007).

Money that is received in exchange of provision of a service, good or investment of capital is defined as income. Most forms of income are subjected to taxation. Levels of income vary from one individual to another depending on salary scale and type of business if earning business income. Begs, Fischer and Dornbusch (2008) explains FDI as the purchase of foreign firms or the establishment of foreign subsidiaries. It is a controlling ownership in business enterprise in one country by an entity based in another country. It includes building new facilities, mergers and acquisitions.

1.1.2 Tax Collection

Tax collection is the process by which government raise revenue from its people. Tax revenue is the income earned by the government through taxation. Tax can be collected by the central government or the government can give license to an agent who can collect on its behalf (Haughton and Desmeules, 2001).PAYE is the common way of collecting tax. This is where employer withholds for each cycle then remits to KRA. The VAT was introduced by the government in the year 1990 to replace the old sales tax. This is because the old sales tax applied only to goods at manufacturing level whereas VAT applies to goods at consumer level hence increase government revenues.

The challenges that confront tax collection include; insufficient capacity to process big volumes of returns and refunds for zero rated transactions and slow response to VAT reforms. Other than the mentioned challenges, economic factors also affect the tax collected by the government.

According to Treasury report (2016) KRA realised Ksh 687 billion of revenue within its first eight months and with four months left, this means that KRA probably going to miss its targeted collection of 1.21 trillion for the year. KRA missed its targeted half year tax

collection by Ksh. 47.6 billion as a result of deep payroll taxes and delayed signing into law of the Excise Duty Act 2015.

There was a big deficit in revenue collection by end of December 2015. PAYE revenue had a shortfall of Khs 26 billion while VAT from imports had a deficit of Ksh.15.9 billion. Total cumulative revenue for 2015 including A-I-A amounted to Khs. 575.2 billion against a target of Kshs. 642.9 billion (Treasury report 2016).

1.1.3 Macro-Economic Factors and Tax Collection

Hubbard &O'Brien (2008) mention that inflation disturbs the distribution of income and wealth by creating unemployment and lowering economic growth. It creates uncertainty and raises costs of production. Profitability of investment is lowered making it less attractive as a result. This will in turn lowers tax collection since the government will loose the revenue that would have been generated if the investment were profitable. Inflation hurts people on fixed incomes, since their purchasing power will fall (Hubbard &O'Brien, 2008). This will in turn lower the tax that will be collected.

Anderton (2008) views unemployment as costly to the government because it will loose revenue that would have been collected if these workers had been employed.When employed, employers tend to spend more hence the government is able to collect more revenue from more VAT and excise duties. When citizens are unemployed, government is not able to collect tax (Begs, Fischer and Dornbusch, 2008).

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

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

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

1.1.4 Kenya Revenue Authority

KRA was formed by an act of parliament on the 1st 0f July 1995 by chapter 469 of the constitution. It collects revenue on behalf of the government. The policy decisions implemented by the KRA management are made by board of directors who are composed of both private and public experts. The board's chairman is elected by the president whereas the commissioner general who is also the chief executive of the authority is appointed by cabinet secretary of finance.

According to the KRA website (2016), KRA works in six departments which cover different aspect of revenue and is headed by an official commissioner. These are domestic taxes department, domestic services, custom services, corporate support, technical support services and investigation and enforcement department.

KRA plays many roles in the economy and to mention a few; it administers and enforces written laws that pertain to assessment, collection as well as being responsible for revenues. Secondly, it advises to matters pertaining revenue collection underwritten law. Thirdly, it enhances tax efficiency and effectiveness of tax administration. Fourthly, it increases the level of compliance hence curb tax evasion. Fifth, it creates organizational structures that maximizes on tax collection (KRA Website 2016).

Other than the above mentioned roles, KRA is also responsible for shielding local industries and promoting economic growth by laying down effective tax laws relating to trade. KRA is responsible for enforcing tax policies ensuring redistribution of scarce resources in the economy. Lastly it enforces tax laws affecting various types of income hence equal distribution of income (KRA Website 2016).

1.2 Research Problem

The main aim of tax collection for governments is to stimulate economic development and guiding of social development of the country, this is determined by several factors. According to Garner (1999) the challenges facing many countries as far as tax collection is concerned are obvious and thus can be generalized. Revenue generated from taxation is the livelihood for the government to deliver to deliver services which in turn ensure economic growth. This is the case for most developing countries (OECD, 2008).

A number of theories have been put in place as far as tax collection is concerned. Keynesian taxation theory was initiated by John Keynes who advocates that the state should intervene by regulating the market economy (Keynes 1963). According to Keynes, at the level of effective demand state intervention is achieved since economic development is based on increase in consumption and market expansion. Keynes argues that low tax rates leads to economic instability since it reduces the revenue collected by the government. High taxes stimulate the stability of the economy since it acts as integrated flexibility mechanism (Keynes 1963).

The ability theory was presented by Arthur Cecil Pigou. It is also known as voluntary exchange theory. Here taxes are based on one's ability to pay. The ability theory treats government revenue and expenditure separately. This theory suggests that the payers of TOT should pay unconditionally and according to paying capacity (Chigbu, Eze and Ebimobowei, 2012).The Khaldun's theory of taxation argues that the government should lower as much as possible the amount of tax imposed on individuals who are able to undertake business. This will in turn encourage them since they will be confident of making profit. Khaldun advocates for reducing of tax burden on businessmen so as to encourage enterprise by ensuring greater profits to entrepreneurs and revenue to the government (Ishahi 2006).

There is an obvious need for tax revenue to sustain public services in Kenya since the country is on the move from being a low tax earning country to a high tax earning country. Due to the critical nature of the role played by tax collection authorities, a number of studies have been conducted as far as tax collection is concerned (Wawire, 2000; Muriithi and Moyi, 2003; Wawire, 2003). Collection of revenue in Kenya has

fallen short of expectation despite of a number of studies having been done on this subject. This study was meant to identify if the macro economic factors affect tax collection.

In 1986, Kenya adopted tax modernization programme hoping it will enhance revenue collection (Moyi and Ronge, 2006).This has not been the case. Recent failure by the government through the KRA to meet its annual revenue targets has necessitated the need to look for avenues that will lead to an increase in revenue generated by way of taxation. This calls for policy makers to look for ways that will help the government to raise more revenue. Despite the measures taken by KRA to improve its revenue collections such as the introduction of reforms and modernization programs, the authority has been falling short of its revenue targets. The study done established that some of the macro-economic factors are the reason for the shortfalls in revenues collected.

There are numerous studies done on KRA. Examples of the most recent studies on KRA include Lekasi (2010) on strategic management process, Ngui (2010) on the relationship between risk profiling and revenue performance, Nzyoki (2010) on improving service quality measurement for sustainable tax administration.Awitta (2010) on the effectiveness of revenue collection strategies, and Kiiru (2010) on tax-payer non-compliance behaviour. Others include Aliet (2008) on responses to challenges in implementation of customs reforms and modernization. Bondo (2008) on effectiveness of tax payer education as a revenue collection strategy, and Wambua (2008) on effects of reform programs on staff morale at KRA.

With the exception of Wawire (2011) who studied the determinants of value added tax revenues in Kenya, most studies on tax issues have focused on different aspects. For instance Owuor (2010) focused on risks that affect VAT revenue collection by KRA. Leseeto (2010) on effects of tax amnesty on VAT compliance in Kenya, and Chege (2010) on impact of using ETR on compliance of classified hotels in Nairobi. The study deviates from that of Wawire (2011) as the former tackled VAT while the present tackles the overall determinants of taxes collected by the Government of Kenya through KRA. Prior studies have shown that tax revenue may be influenced by corruption, tax administration reforms and GDP among others.

The study was undertaken to discover the macro-economic factors (independent variables) which determine tax collection (dependent variable). The independent variables are; rate of inflation, unemployment, tax rates, level of income and foreign direct investment. It grasped the variables volatility on tax collection in Kenya. From the research findings, there is significant linear relationship amongst the variables. The rate of unemployment has higher level of significance as opposed to other variables. Rate of inflation comes second whereas level of disposable income and FDI comes third and fourth respectively.

1.3 Research Objectives

1.3.1 General Objective

To determine the relationship between macro-economic factors and tax collection in Kenya Revenue Authority.

1.3.2 Specific objectives

i. To determine whether rate of inflation significantly affect tax collection
ii. To determine whether unemployment level significantly affect tax collection
iii. To determine whether tax rate significantly affect tax collection
iv. To determine whether level of disposable income significantly affect tax collection
v. To determine whether Foreign Direct Investment significantly affect tax collection
vi. To come up with measures or strategies that can be put in place to ensure effective collection of tax.

1.4 Value of the Study

The study helps the stakeholders among them donors to identify the variables that have more influence on revenue collection. It will also help KRA in making decisions as far as decision regarding determinants of tax revenue in Kenya is concerned.

The research findings shall provide future researchers with information that is similar or related to the subject matter. This study will act as a useful guide to students,

academicians, scholars, researchers and policy makers, as far as studies on the same topic is concerned. The study will form a basis for further research from academicians on the subject of performance of tax revenue.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter comprises of reviews of various scholarly articles and research initially done by researchers and academics in the study's domain. It first discusses the theories that provide the theoretical background of this study. The second part discusses the relationship between economic factors and tax collection ending up with a conceptual framework explaining the relationship between the factors and tax collection. The third part of the literature review discusses other studies conducted that are relevant to this study then the final part proceeds to present the chapter summary.

2.2 Theoretical Review

The theories reviewed here are; Keynesian taxation theory, the ability to pay theory and Khaldun's theory of taxation.

2.2.1 Keynesian Taxation Theory

Keynesian taxation theory was initiated by John Keynes. It advocates for government involvement in regulating market economy (Keynes 1936). Keynes stated that for an economy to develop, special attention must be emphasized on market expansion and that the associated rise in consumption leads to state intervention achievement at the level of effective demand. Mankiw (1993) economic growth is related to monetary savings only in conditions of full employment, this is the main assumption of the Keynesian theory.

In contradiction, huge savings impede economic growth since they are passive forms of income that are not invested in production; consequently, Keynes implied that extra savings should be deducted through taxation. For this reason the government must get involved with the reason of deducting savings income through taxation so as to fund investments and pay for government expenditure. Therefore, Keynes implies that taxation must be high and progressive high level progressive and low taxes result in lowered state revenues leading to economic uncertainty (Keynes, 1936).

2.2.2 The Ability to Pay Theory

This theory was presented by Arthur Cecil Pigou. According to the ability to pay theory also known as voluntary exchange theory, taxes are based on taxpayers' capacity to pay; there is no quid pro quo. Paid taxes are seen as sacrifices by the taxpayer that brings up the issue of what the sacrifice of each taxpayer should be and how it should be measured. According to Chigbu, Eze and Ebimobowei (2012) ability to pay theory was developed due to inadequacies in benefit and sacrifice theories of taxation. This is the most recognized and accepted principle of taxation, that is, people should be taxed on their ability to pay. It's only reasonable and fair that taxes should be levied on people on their ability of paying. This theory suggests that the payers of TOT should pay unconditionally and according to paying capacity (Chigbu, Eze and Ebimobowei, 2012). The ability to pay theory motivates citizens to pay tax hence increase tax collection by the KRA.

2.2.3 Khaldun's Theory of Taxation

This theory was developed by Ibn Khaldun who suggests lowering of tax levied on people undertaking business ventures. The theory advocates for reduction of taxes on businesses to encourage their growth by ensuring higher profits to entrepreneurs and high taxes to the government (Islahi 2006).

In practice Khaldun discovered that in early stages governments depends on low taxes, keeping with Islamic law. Consequently, businesses grow making tax base, tax revenue and governmental surplus to increase. According to Khaldun, the beginning of an empire, taxation yields low revenue from huge assessments the reason for this, according to Islahi, (2006) is that when a dynasty is founded on religion, it imposed only such taxes as stated by the religious laws, like land taxes, gratuitous taxes and poll tax.

2.3 Determinants of Tax Collection

There are several factors that determine tax collection in KRA. These are discussed below under three main categories; Corruption, Tax reforms and restructuring and Economic integration.

2.3.1Corruption

According to Ajaz and Ahmed (2010) revenue generation in developing countries is determined by corruption in tax administration. Tax evasion and corruption practiced by government officials can greatly minimize tax revenue and cripple the economic growth and its development. This view is also held by Imam and Jacobs (2007).

2.3.2 Tax Reforms and Restructuring

Chipeta (1998) poses that tax reforms contribute significantly to tax revenue productivity. This view is also held by Milambo (2001). According to Osoro (1993), Tanzanian government granted numerous tax exemptions and had poor tax administration thus failing to raise tax revenues. In addition, Ariyo(1997) found that tax administration had a big influence on tax revenue of Nigeria. Therefore tax reform is a major determinant of tax collection.

Aamir, Qayyum, Nasir, Hussain, Khan and Butt (2011) identified restructuring of the tax system as an important determinant in an economy's revenue collection. At the top level, reforming the tax system is vital to the entire economic reforms process. Larger reforms which formed important component at government level were of direct tax in economic and fiscal sector of Pakistan. Also in India, tax reforms were implemented with the aim of correcting fiscal imbalances (Panday, 2006).

2.3.3 Economic Integration

The functioning of a fully integrated capital market may be distorted by capital chasing the lightest possible taxation regimes instead of the most efficient users. According to Buti and Martinez-Mongay (2000), where capital mobility is concerned, it could hamper the ability of governments to levy capital taxes. The most mobile tax bases might be eroded due to high taxes, increased opportunities for avoiding tax and shifting to low tax areas the income taxable, which may cause tax degradation. Harmful tax competition might lead to very low or even zero tax rates on mobile factors. As a consequence, fiscal revenues could fall significantly, which would lead to sub-optimal provision of public goods. Alternatively, it could jeopardize fiscal discipline unless the tax burden is shifted to less mobile bases like labor.

2.4 Empirical study

Various empirical studies had been used to examine relationship between economic factors and tax revenue. Most studies focus on analyzing the tax revenue share variation to differences in development level, the structure of the economy, size of foreign sector, and other socio-economic variables (Agbeyegbe, Stotskyand WoldeMariam2004).

2.4.1 Global Studies

The method proposed by Wahba and Dehejia (1999) was used by Lucotte (2010) to explain dropping researched observations that have propensity marks which are greater than or higher or lower than minimal group control. Results showed to be of statistical significant and positive; all averagely estimated treatment effects. Suggesting high quantitative and drastic statistical impact of average targeting of inflation in boosting revenue of the public in new markets. This supports their theory that embracing inflation targeting can make state to boost collection of revenue from tax. Minca and Villicu (2009) research shows using theory that tight monetary policy can push state towards enhancing of quality in organizations to reduce tax erosion. They also developed a model that shows two outcomes; first, finding an inverse relation between inflation target and level of effort, Minca and Villicu reveal that lowering the inflation target, will result to increase in the government's effort to enhance its institution's quality.

Meaning, putting in place a lower inflation goal, encourages the fiscal authority to put more focus in implementing a better responsive tax collection administration so as to recover losses of seignior age revenue as a result of tight monetary policy. Consequently, reduction in target of inflation minimizes intervals which the state's efforts are reduced increasing improvement in institutional quality to maximum. In conclusion it is vital to keep in mind that the revenue collected by a state can tremendously be decreased by a significant reduction in inflation rate.

Kubatova and Rihova (2008) in their regression study made a discovery that the cycle of economic growth has a notable impact statistically on revenues got from corporate tax. All of the assessed factors; inflation, GDP growth, and unemployment were found to be important. Conversely high unemployment rates result in decreased revenues from

corporate tax. Economic cycle is therefore a vital factor affecting the revenues obtained from taxing corporations.

Haugh and Wei (2006) improved the principal-agent setup by using a financial development and social welfare function. Concluding cost of reforms in institutions; achieving low inflation target motivates the state to improve the performance of its tax collection system. Therefore incorporation of inflation targeting in developing countries should be able to positively affect tax revenue collection system. Ghura (1998) did research in nine countries in Africa within the duration of 1985-1996 and realized that the level of taxes will differently influence the growth and other indicators that are brought about by macroeconomic variables such as corruption and inflation rates.

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

Research done by Schloes and Wolfson (1992) and Himes (1999) gives insight about the effects of taxes on FDI. According to them tax influences foreign investment decision of a country due to dynamic rates of returns on assets, arguing that increased tax rates lowers the return rates and demoralize the FDI inflow to a state. Hines discovered the sensitivity of FDI to tax in which higher tax rates affect foreign investment quickly. Hines points out that a 10% reduction in tax rates will increase FDI by more than 10%.

2.4.2 Local Studies

Oketch and Mburu (2011) did a research on how tax responds to changes in Kenya's national income as from 1986 to 2009. At the end they discovered a buoyancy of 0.525 and an elasticity of 0.509. This study revealed that although there are many reforms that have been undertaken in Kenya since 1986, Kenya's tax system is yet to be responsive to

the changes in economic growth. The study observes that tax reforms that were aimed at enhancing efficiency in tax collection and reduction of tax evasion are yet to bear fruits.

Jepkemboi (2008) did a study in Kenya for the period 1970-2005 with an objective of establishing macroeconomic determinants of tax revenue share. Going by research done by Jepkemboi, the fiscal setup resonates that state expenditure and revenue have consistently showed growth patterns with expenditures surpassing revenues. The inconsistency between revenue and expenditure leads to significant fiscal shortages, after performing reforms on tax the taxes have not been forthcoming as expected. Failure in terms of coming up with revenue can cause deficits in tax system or inadequate efforts on state's part.

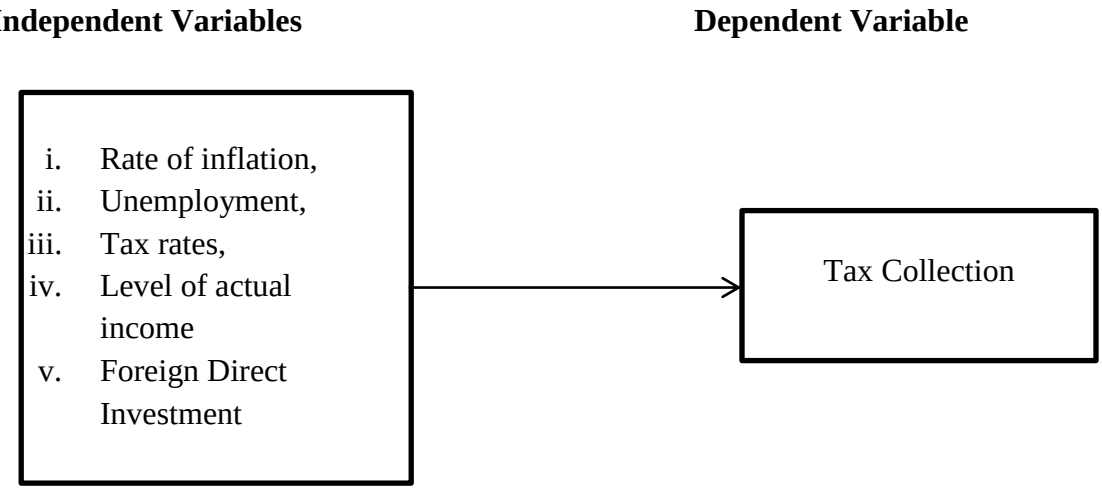
Moyi and Ronge (2006) evaluated taxation and tax modernization between the year 1996-2005 in Kenya with an aim of identifying priorities for further tax reforms. The analysis of data from KIPPRA on taxation and level of GDP revealed that inflation had adverse effects on tax revenues in Kenya. Tax structure was realized to be less buoyant and inelastic. The results also showed that VAT responded poorly towards reforms. The study concludes that there are challenges facing design of tax which includes agricultural sector taxation and informal sector.

Moyi and Murithi in 2003 studied Kenyan system of tax for the period 1973 to 1999 to assess whether tax reforms introduced in Kenya in 1980's achieved the intended objective of making the results of individual taxes responsive to changes in income. Applying concepts of elasticity and buoyancy they computed the coefficients for the pre reform and post reform period. During the period of pre reform overall tax system produced elasticity of 0.276 against a buoyancy of 1.023 while post reform periods recorded buoyancy of 1.661 and elasticity of 1.495.The result proved that reforms on tax positively influenced individual taxes and the tax structure. Results also showed elasticity of direct taxes was higher after reforms and indirect taxes were low. The study observes that the low elasticity of VAT is detrimental due to effects of corruption, tax evasion and inefficiencies in its administration. It concludes that tax reforms have a huge effect on

direct taxes as opposed in indirect taxes .It recommends further improvements necessary in areas of exemptions, increase in VAT administration capacity, reduction of rates and strengthening development of audit skills. The major limitation of their study is they did not take into account the time properties so data.

2.5 Conceptual Framework

This defines the relationship between dependent variable and independent variable. Where the independent variables are; rate of inflation, tax rates, unemployment, level of income and foreign direct investment while the dependent variable is tax collection.



Source: Researcher

2.6 Literature Review Summary

Theories highlighted in this literature review guided the analysis as far as the relationship between macro-economic factors and tax collection is concerned. As seen from the empirical review most of the global studies have focused on inflation whereas local studies have focused on tax reforms. Therefore the study leaves a gap for further research in the area of relationship between economic factors and tax collection, as this may not be the only macro-economic factors affecting tax collection.

Existing knowledge was built so as to asses relationship between tax collection and macroeconomic factors and recommendations were made which will in turn improve tax collection. Also of key to note is that the global study deviates from the other studies that have been done on the Kenyan market by focusing on overall tax revenues rather than specific taxes.

CHAPTER THREE

RESEARCH METHODS

3.1 Introduction

This topic involves methods the researcher used in collecting data for the study, clearly explaining the data collection procedures, research design and data analysis procedures.

3.2 Research Design

This research was based on descriptive methods of case study and this involved primary research methods. According to Schindler and Cooper (2003), descriptive studies attempts to define a subject or describe it by creating group problems, people or events profile. Study of descriptive design seeks to explain relationship between macro-economic factors and tax collection at Kenya Revenue Authority. The main advantage of using this design is to enable the researcher to identity the factors and measure their performance.

3.3 Data Collection

The main source of data was secondary data from the Kenya Revenue Authority records. Information and data was collected from the KRA official website and other reports maintained by Kenya Revenue Authority. Also Central Bank website was used as well as the World Bank and Kenya National Bureau of Statistics.

In this case, quarterly data from 2005-2014 was collected. The quarterly data for 10 years period is large enough to cater for the variations in quarterly revenues collected over the time. The specific data collected were for the tax collected (dependent variable), rate of inflation, unemployment, tax rates, level of income and FDI (all independent variables).

3.4 Data Analysis

Secondary data was collected, coded and entered in Statistical Package for Social Sciences (SPSS, version 22.0) and analyzed. This particular package was chosen because of its user-friendliness. Quarterly data on total revenue for the last ten years was

collected. It has been presented in figures, graphs and tables, summary statistics of the mean, and standard deviation. In addition, the correlation matrix of the independent variables was created. A result from the regression model was developed and tables were used to indicate results of regression of the country's performance.

3.4.1 Analytical model

To establish if there is a relationship between macro-economic factors and tax collection, the researcher conducted the following multiple regression analysis model;

$$Y= \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_{5+} \varepsilon$$

Where;

Y= tax collection which was measured using quarterly revenue figures for 2005-2014 available on KRA website

α = Constants

$\beta_1 \ldots \beta_5$ = the slope which represents the degree with which tax collection changes as the independent variable change by one unit variables.

X_1 = Rate of inflation (independent variable) was measured using Consumer Price Index (CPI). The quarterly figures for 2005-2014 are available on KNBS website.

X_2 = Unemployment (independent variable) was measured using number of people who are actively looking for a job as a percentage of labour force. The quarterly rates for 2005-2014 are available on KRA website.

X_4 = Level of disposable Income (independent variable) quarterly figures for 2005-2014 was retrieved from World Bank.

$X_{5=}$Foreign Direct Investment (independent variable) quarterly figures for 2005-2014 were retrieved from KNBS website.

ε = error term

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

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents analysis, findings and discussions of the study as set out in the research objective and the research methodology. The aim was to establish the relationship between macro-economic factors and tax collection at the Kenya Revenue Authority. The data was gathered exclusively from the secondary source which is Kenya Revenue Authority, Central Bank of Kenya, Kenya National Bureau of Statistics and World Bank.

4.2 Data Presentation

4.2.1 Dependent and Independent Variables

The figures below show relationship between Tax Collected and each of the independent variables that is Foreign Direct Investment, rate of inflation, level of disposable income and rate of unemployment. The corporate tax rate has been a constant figure since 2005 to 2014 and therefore we could not draw significant relationship between tax collected and tax rate.

Figure 4.1 The Relationship Between Tax Collected and FDI

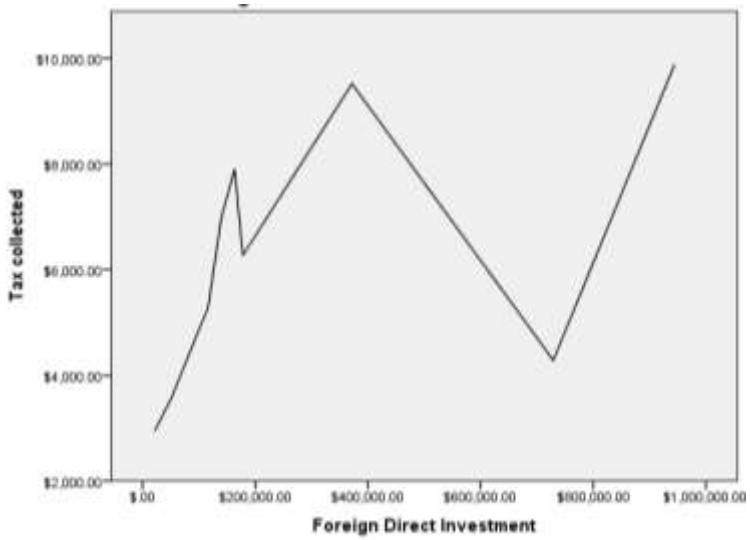


Figure 4.2 The Relationship Between Tax Collected and Rate of Inflation

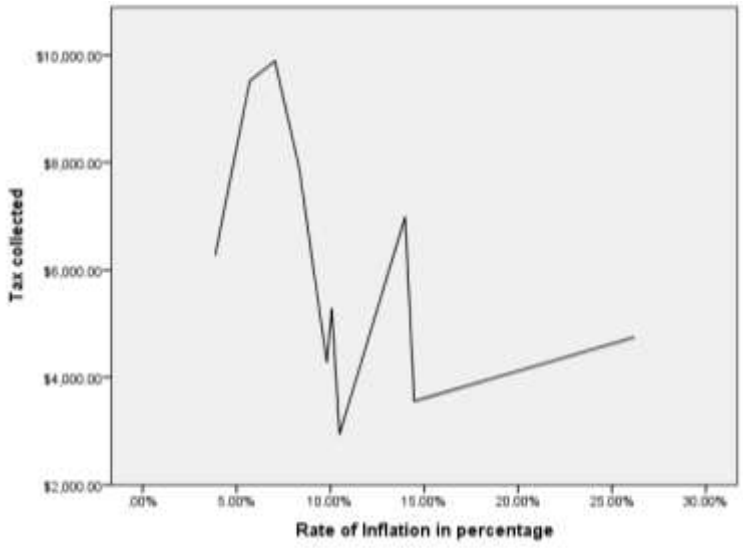


Figure 4.3 The Relationship Between Tax Collected and Level of Disposable Income

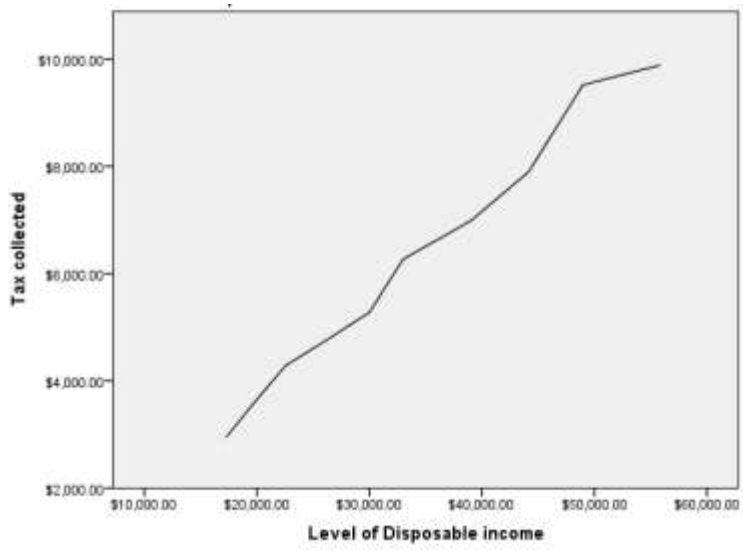
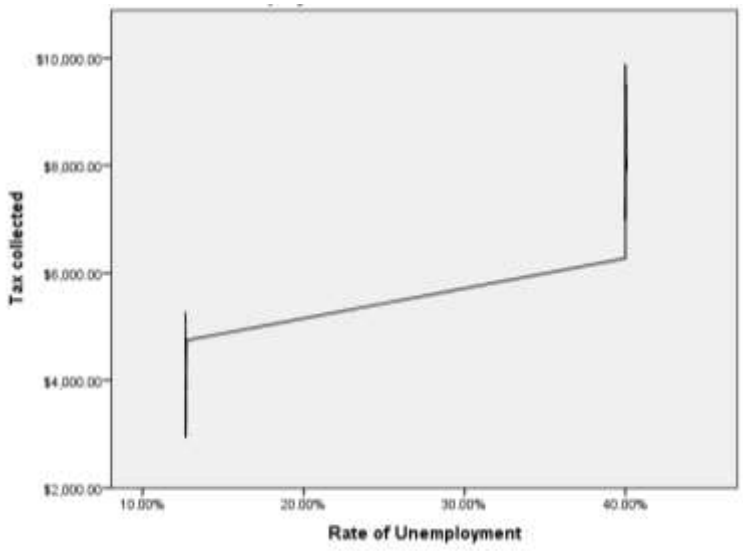


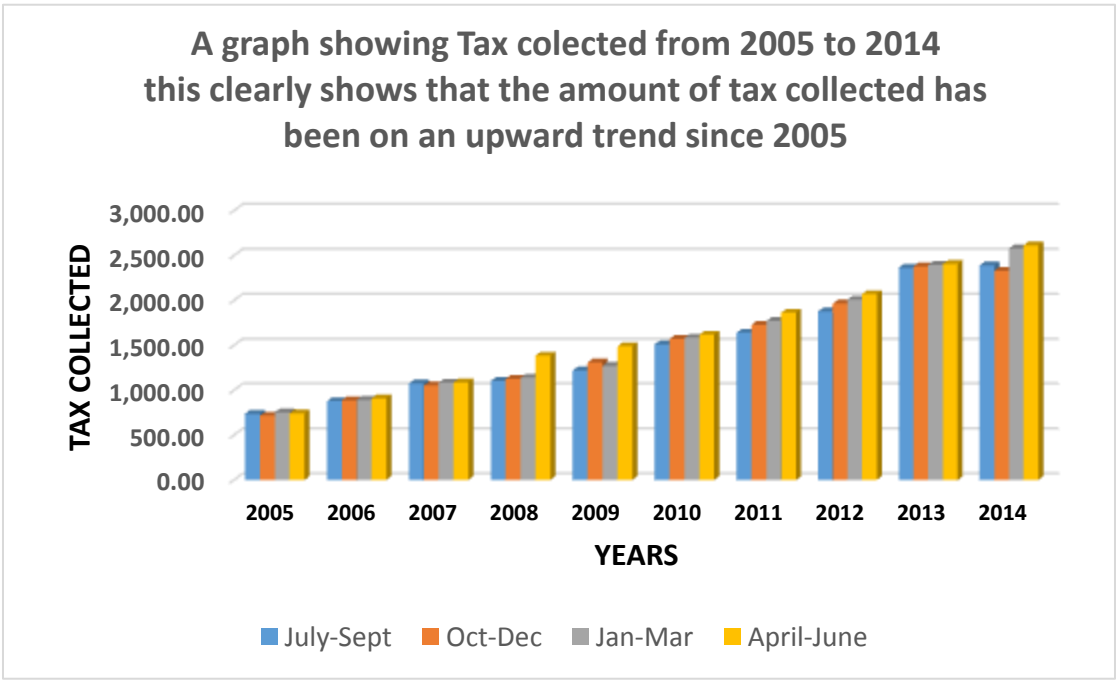
Figure 4.4 The Relationship Between Tax Collected and the Rate of Unemployment.



The following figures show the variations of the variable along the period of time that is from 2005-2014.

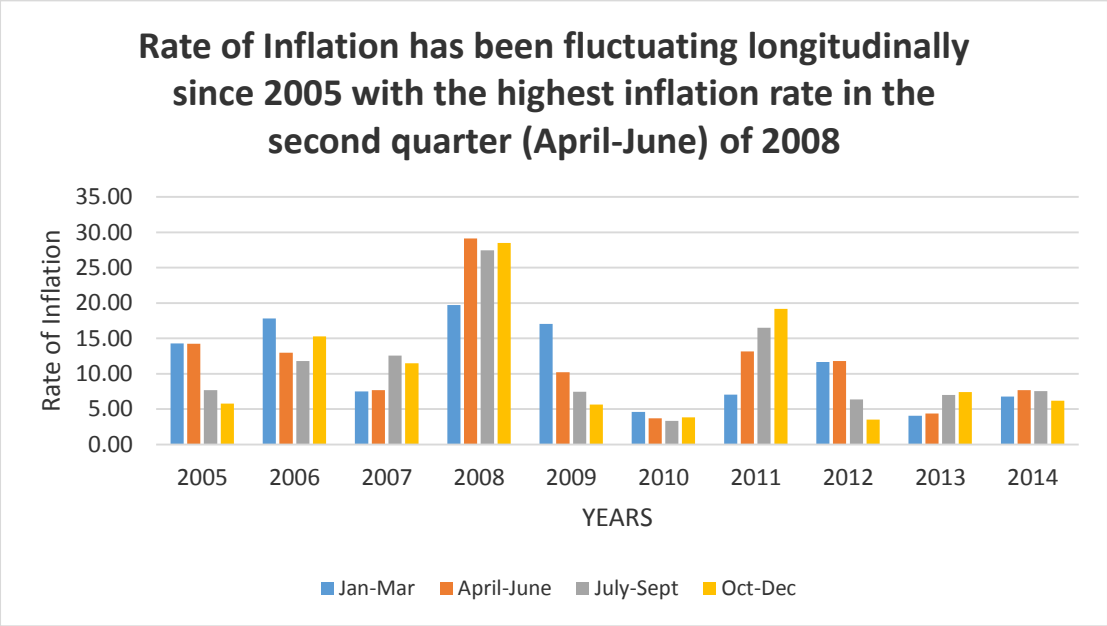
Tax collected

Figure 4.5 The Amount of Tax Collected Since 2005 to 2014.



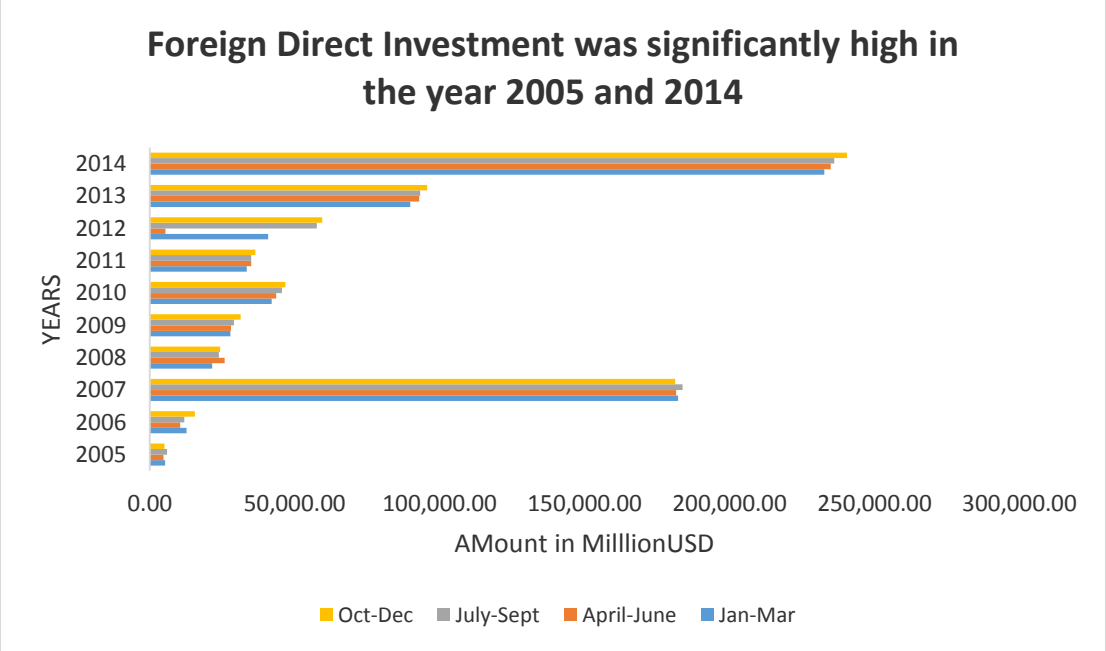
Rate of inflation

Figure 4.6 The Rate of Inflation Over the Years Since 2005 to 2014



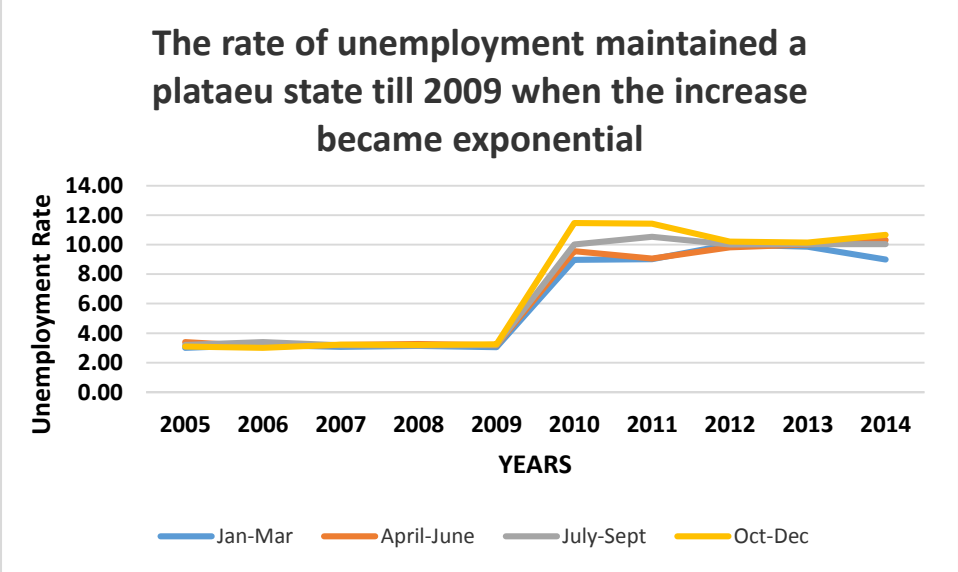
Foreign Direct Investment

Figure 4.7 The Amount of Foreign Direct Investment Injected into the National Economy Between 2005 and 2014.



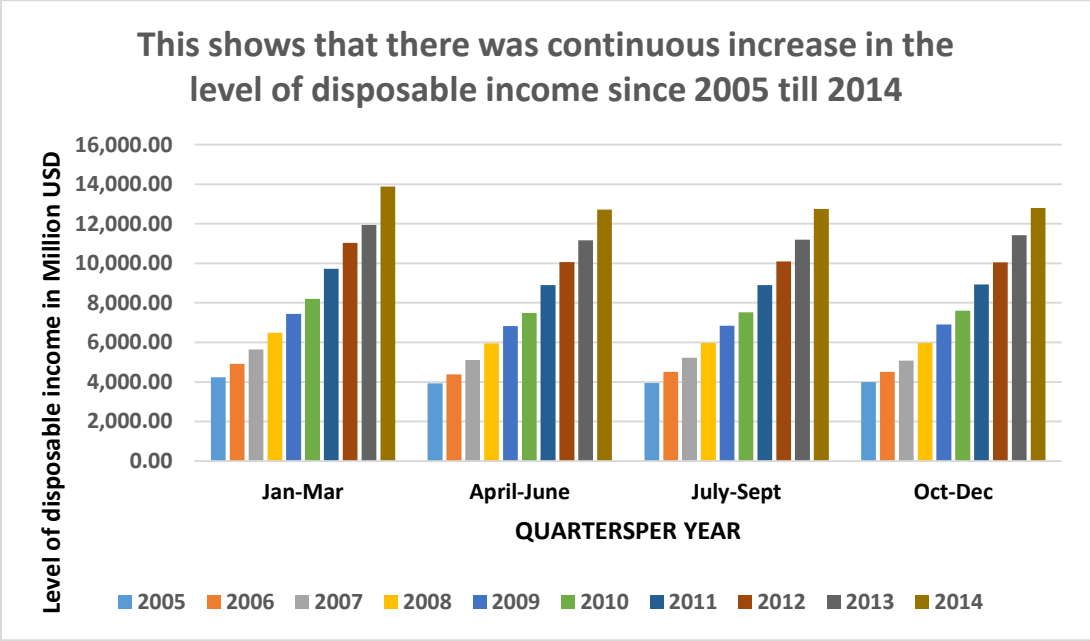
Rate of Unemployment

Figure 4.8 The Rate of Unemployment in Kenya from 2005 to 2014



Level of Disposable Income

Figure 4.9 The Level of Disposable Income Between 2005 and 2014.



4.3 Descriptive Statistics

The mean rate of unemployment between 2005 and 2014 stood at 26.4% and the standard deviation at 14.4%. FDI's mean was $ 281,028M whereas level of disposable income was $33,649.37M. Inflation rate stood at around 11%. The mean tax collected was $6,136.5225.

Table 4.1 Means, Standard Deviations, Coefficient of Variation and Skewness.

Descriptive Statistics									
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Tax collected	10	$6,942.13	$2,942.75	$9,884.88	$6,136.5225	$2,410.28460	5809471.863	.377	.687
Rate of Inflation in percentage	10	22.32%	3.87%	26.19%	10.9990%	6.28649%	39.520	1.666	.687
Foreign Direct Investment	10	$923,116.00	$21,211.00	$944,327.00	$281,028.0000	$311,876.33857	97266850561.333	1.540	.687
Level of Disposable income	10	$38,581.93	$17,254.60	$55,836.53	$33,649.3765	$13,022.30884	169580527.616	.428	.687
Corporate Tax Rate	10	0.00%	30.00%	30.00%	30.0000%	0.00000%	.000	.	.
Rate of Unemployment	10	27.40%	12.65%	40.05%	26.3590%	14.40209%	207.420	.000	.687

4.4 Correlation Analysis

According to table 4.2, Variance Inflation Factor (VIF) values for the rate of inflation, foreign direct investment, level of disposable income and the rate of unemployment were 1.025, 1.568, 5.122 and 4.098 respectively which therefore means multicollinearity did not happen since all the values for the independent variables are between 1 and 10.

Table 4.2 Test for Multicollinearity among Independent Variables

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-6.847	54.580		-.125	.901		
	Inflation	1.470	2.257	.017	.651	.519	.976	1.025
	FDI	.000	.000	.025	.782	.439	.638	1.568
	LDI	.168	.011	.900	15.327	.000	.195	5.122
	Unemployment	15.012	8.772	.090	1.711	.096	.244	4.098
a. Dependent Variable: Tax collected'000000 in USD								

4.5 Regression Analysis and Hypotheses Testing

The following figures show linear relationship between tax collected and each of the variables by use of scattergrams.

Figure 5.0 The Linear Relationship Between Tax Collected and the Rate of Unemployment.

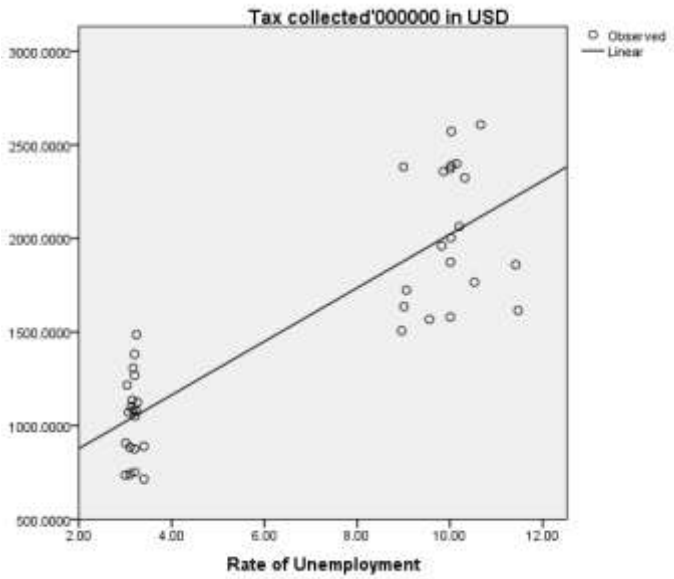


Figure 5.1 The Linear Relationship Between Tax Collected and the Level of Disposable Income.

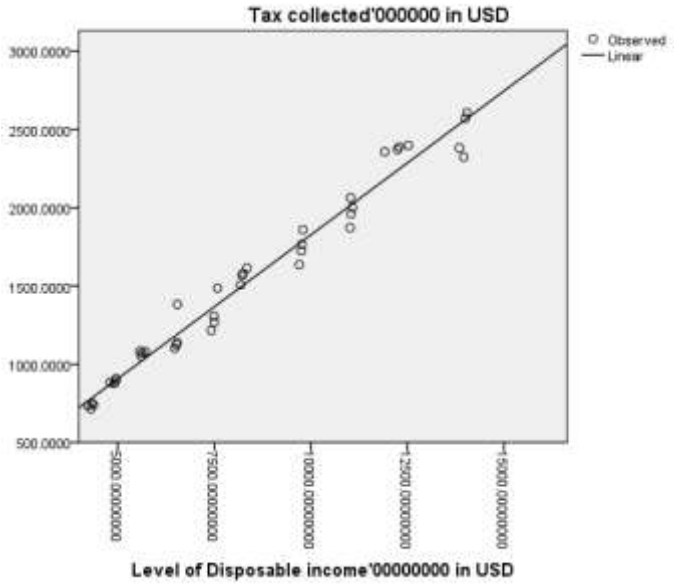


Figure 5.2 The Linear Relationship Between Tax Collected and FDI

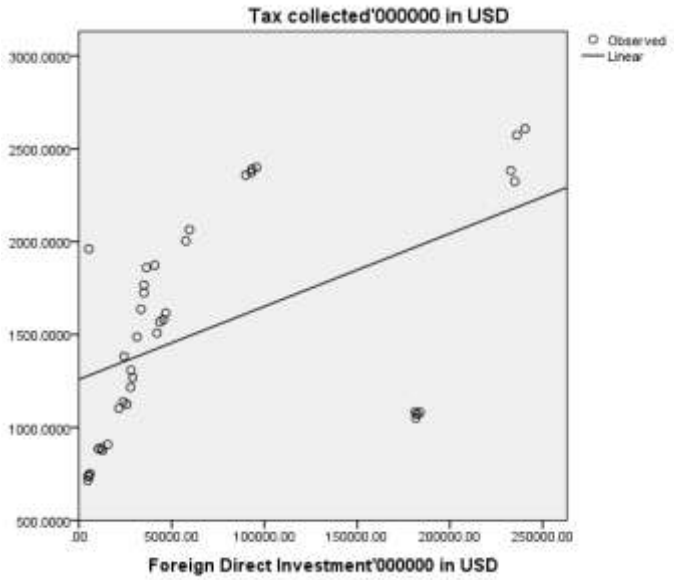
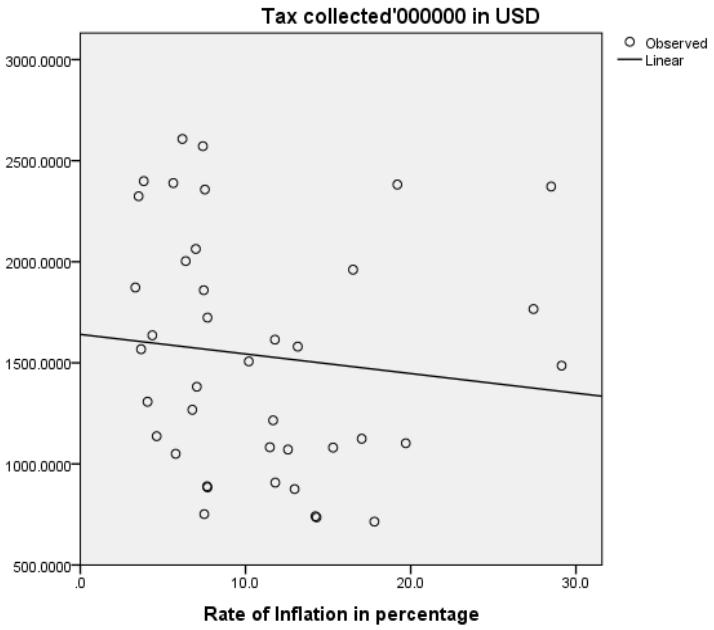


Figure 5.3 The Linear Relationship Between Tax Collected and the Rate of Inflation



As per table 4.3there is correlation coefficient of .988 which shows, that there is a linear relationship between tax collected and rate of unemployment, level of disposable income, direct foreign investments and inflation rate with all these macro-economic factors accounting for 97.6% differences in total tax collected per year. The remaining 2.4 % could be due to other factors not included in this study.The standard error of estimation 94.56 is a bit high which can be due to multiple data sources

Table 4.3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.988[a]	.976	.974	94.5602825

a. Predictors: (Constant), Rate of Unemployment, Rate of Inflation in percentage, Foreign Direct Investment'000000 in USD, Level of Disposable income'00000000 in USD

Table 4.4 Analysis of Variance

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12963716.256	4	3240929.064	362.453	.000[b]
	Residual	312957.646	35	8941.647		
	Total	13276673.902	39			

a. Dependent Variable: Tax Collected in Million USD

b. Predictors: (constant), rate of unemployment, rate of inflation, foreign direct investment in Million USD, level of disposable income.

The significance value compared to a predetermined constant indicates whether changes in dependant variable scores that a company changes in independent variables scores are significant. F-362.453 sig. 0.000 (p less than 0.001), this indicate that there is significant linear relationship amongst the variables which can be further analysed using the correlation coefficients shown below and generate a regression equation for predictions of the dependent variable-tax collected.

Significance of .000 show that the amount of Tax Collected significantly varies with the amount of direct foreign investment, level of disposable income, rate of inflation and rate of unemployment.

Table 4.5 Model of Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6.847	54.580		-.125	.901
	Rate of Inflation in percentage	1.470	2.257	.017	.651	.519
	Foreign Direct Investment'000000 in USD	.000	.000	.025	.782	.439
	Level of Disposable income'00000000 in USD	.168	.011	.900	15.327	.000
	Rate of Unemployment	15.012	8.772	.090	1.711	.096

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

$$Y=-6.847+ 1.470(ROI) + 0.0000(FDI) +0.168(LDI) + 15.012(ROU)$$

Table 4.6 Correlations

Correlations							
		Tax collected'000000 in USD	Rate of Inflation in percentage	Foreign Direct Investment'000000 in USD	Level of Disposable income'00000000 in USD	Corporate Tax Rate in Percentage	Rate of Unemployment
Tax collected'000000 in USD	Pearson Correlation	1	-.113	.506**	.987**	.[b]	.856**
	Sig. (2-tailed)		.489	.001	.000	.	.000
	N	40	40	40	40	40	40
Rate of Inflation in percentage	Pearson Correlation	-.113	1	-.102	-.128	.[b]	-.138
	Sig. (2-tailed)	.489		.531	.433	.	.396
	N	40	40	40	40	40	40
Foreign Direct Investment'000000 in USD	Pearson Correlation	.506**	-.102	1	.510**	.[b]	.264
	Sig. (2-tailed)	.001	.531		.001	.	.100
	N	40	40	40	40	40	40
Level of Disposable income'00000000 in USD	Pearson Correlation	.987**	-.128	.510**	1	.[b]	.846**
	Sig. (2-tailed)	.000	.433	.001		.	.000
	N	40	40	40	40	40	40
Corporate Tax Rate in Percentage	Pearson Correlation	.[b]	.[b]	.[b]	.[b]	.[b]	.[b]
	Sig. (2-tailed)	.	.	.	.		.
	N	40	40	40	40	40	40
Rate of Unemployment	Pearson Correlation	.856**	-.138	.264	.846**	.[b]	1
	Sig. (2-tailed)	.000	.396	.100	.000	.	
	N	40	40	40	40	40	40
**. Correlation is significant at the 0.01 level (2-tailed).							
**. Correlation is significant at the 0.01 level (2-tailed).							

4.6 Discussion of Research Findings

The ability to pay theory states that the more you earn the more you are taxed and the converse is true. Therefore our findings support this theory in the sense that the relationship between tax collected and the level of disposable income is positive, a pearson correlation of + 0.987, which means which people who earn more contributes more to taxation as opposed to those who earn less.

Keynesian theory of taxation argues that high level progressive taxation is necessary and that low tax rates lead to reduced state revenues and as a result contributes to economic instability. The corporate tax rate has been a constant figure since 2005 and therefore it was not possible to analyze its possible effect on tax collected and other macro-economic factors.

From the research findings, the amount of tax collected has been on an upward trend since 2005 to 2014. The rate of Inflation has been fluctuating longitudinally since 2005 with the highest inflation rate in the second quarter (April-June) of 2008. Foreign Direct Investment was significantly high in the year 2005 and 2014. The rate of unemployment maintained a plataeu state till 2009 when the increase became exponential. There was continuous increase in the level of disposable income since 2005 till 2014.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of research findings, conclusion of study, recommendations for policy and practice, limitation of the study and suggestions for further research.

5.2 Summary of Findings

From the research findings the amount of tax collected has been on an upward trend since 2005 to 2014. The rate of Inflation has been fluctuating longitudinally since 2005 with the highest inflation rate in the second quarter (April-June) of 2008. Foreign Direct Investment was significantly high in the year 2005 and 2014. The rate of unemployment maintained a plateau state till 2009 when the increase became exponential. There was continuous increase in the level of disposable income since 2005 till 2014.

5.3 Conclusion

Tax collected varies linearly with the rate of inflation, FDI, rate of unemployment and level of disposable income. Regression analysis shows that 97.6% of the differences in tax collected every year depend on the above macro-economic factors. The remaining 2.4 % could be due to other factors not included in this study such as GDP, corruption among others.

There is significant linear relationship amongst the variables. The rate of unemployment has high level of significance as opposed to other variables. Rate of inflation comes second whereas level of disposable income and FDI comes third and fourth respectively. This is shown in the regression equation below.

Y= -6.847+ 1.470(ROI) + 0.0000(FDI) +0.168(LDI) + 15.012(ROU)

However from the findings, there is linear increase of tax collected and rate of unemployment over the years which can be attributed over the years to increasing number of unutilized labour force.

5.4 Recommendations

From the findings, the following recommendations are proposed. The rate of unemployment should be reduced this will mean more people will be employed thus increase level of disposable income and at the end increase tax collection. The government should lobby for higher employee salaries since this will further contribute to higher tax collection.

Secondly, the study recommends that the policy makers come with policies to control the inflation rate in Kenya as it negatively affects tax collected by KRA. The inflation rates needs to be lowered since the findings established that high inflation rates resulted to increased operational costs.

5.5 Limitations of the Study

The data covered a ten year period from 2005-2014. As much as this is a longer period, it was not long enough to take into consideration the pre-reform periods. Therefore, care should be taken in interpreting these results.

Secondly the study only used four independent variables. There are other factors which might affect tax revenues which were not considered in this study. Thus not all the factors were controlled for in the model.

Lastly, the tests for normality of distribution were not performed nor were the tests for independence of independent variables done. It is therefore not possible to ascertain whether the use of ordinary least squares regression was warranted or if there was need to use rank regression instead.

5.6 Suggestions for Further Research

Further research should be done on other macro-economic factors like GDP and corruption among others since the ones mentioned in the study are not the only factors affecting tax collection. Also of key to note is that, the study has focused on overall tax collection therefore leaving gap for future research by focusing on specific type of taxes like VAT, PAYE and excise duty among others.

Future studies should widen the research period in order to have a longer time series data which can give more reliable results than the ten year period used in this study. This can be done by focusing on a period from independence (1963) to a current period.

Further research needs to be done on effect of average income compared to the level of disposable income and rate of unemployment in relation to tax collection.

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APPENDICES

Tax Collected by KRA

MONTH/YEAR	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014	2014/ 2015
July-Sept	74.50	88.70	108.48	111.63	123.10	152.62	165.70	189.63	238.71	241.20
Oct-Dec	72.36	89.53	106.35	113.89	132.40	158.73	174.56	198.56	240.21	235.32
Jan-Mar	76.12	90.05	109.46	115.15	128.40	160.03	178.85	202.86	241.95	260.42
April-June	75.02	91.92	109.61	139.93	150.50	163.52	188.29	208.95	242.93	264.06
Total (USDBil)	298.00	360.20	433.90	480.60	534.40	634.90	707.40	800.00	963.80	1.001 Trillion

Rate of Inflation

MONTH/YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Jan-Mar	14.3	17.8	7.5	19.7	17.03	4.62	7.05	11.67	4.07	6.78
April-June	14.23	12.97	7.7	29.13	10.2	3.68	13.16	11.78	4.36	7.7
July-Sept	7.67	11.8	12.57	27.43	7.47	3.33	16.51	6.38	6.99	7.54
Oct-Dec	5.77	15.3	11.47	28.5	5.63	3.84	19.19	3.53	7.42	6.18
Total (%)	10.49	14.47	9.81	26.19	10.08	3.87	13.98	8.34	5.71	7.05

Foreign Direct Investment (Net inflows)

MONTH/YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Jan-Mar	5,302.75	12,668.5	182,261.00	21,578.15	27,826.26	42,056.13	33,482.24	40852.5	89,914	232,763.5
April-June	4,801.8	10,485.23	181,638.56	25,845.75	28,053.64	43,598	34,965.5	5368.53	92961.5	234,961.8
July-Sept	6,011.21	11,986.98	183,856.68	23,896.25	29,064.25	45576	35,005.89	57643.19	93247.65	236,081.7
Oct-Dec	5,095.24	15,533	181,287.76	24,264.85	31,313	46,834	36,408	59,545.78	95723.13	240,519.8
Total (USD Mil)	21,211	50,674	729,044	95,585	116,257	178,064	139,862	163,410	371,846	944,327

Level of Disposable Income

MONTH/YEA	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Jan-Mar	428,263.01	496,420.25	570,893.50	655,813.91	751,631.61	828,891.63	982,456.23	1,115,321.65	1,206,321.85	1,401,987.49
April-June	436,825.25	486,563.52	568,593.29	660,533.25	758,743.16	832,125.67	987,893.50	1,117,991.50	1,239,668.25	1,413,583.00
July-Sept	438,823.89	500,634.62	579,456.12	662,662.02	759,521.75	835,499.25	989,236.71	1,121,896.56	1,244,225.94	1,417,304.59
Oct-Dec	443,388.85	502,062.61	564,631.09	663,123.82	768,190.48	845,480.45	991,987.56	1,116,756.29	1,268,456.96	1,421,456.92
Total (Millior	1,747,301	1,985,681	2,283,574	2,642,133	3,038,087	3,341,997	3,951,574	4,471,966	4,958,673	5,654,332

Tax Rates-Corporate Tax Rate

MONTH/YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Jan-Mar	30	30	30	30	30	30	30	30	30	30
April-June	30	30	30	30	30	30	30	30	30	30
July-Sept	30	30	30	30	30	30	30	30	30	30
Oct-Dec	30	30	30	30	30	30	30	30	30	30
Total (%)	30		30	30	30	30	30	30	30	30

Rate of unemployment

MONTH/YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Jan-Mar	13.92	13.98	13.81	14.92	13.22	42.00	42.03	42.03	42.03	42.03
April-June	12.89	12.82	12.84	14.75	12.71	41.00	41.02	40.64	41.07	40.78
July-Sept	12.16	12.31	12.32	11.26	12.66	39.00	39.02	39.52	39.02	39.21
Oct-Dec	11.83	11.73	11.74	10.03	12.01	38.00	38.01	38.01	38.01	38.03
Total (%)	12.70	12.71	12.68	12.74	12.65	40.00	40.02	40.05	40.03	40.01