THE DETERMINANTS OF VALUE ADDED TAX REVENUE IN KENYA.

BY

ASIRIGWA DIANA ADISA

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DECLARATION

This research project is my original work and has not been submitted for a degree in any other university.

Signed: ..... Date: 7th November, 2011

ASIRIGWA DIANA ADISA

REG. NO. D61/70069/2007

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

Signed: ..... Date: 08 NOV 2011

MR. HERICK ONDIGO

LECTURER, DEPARTMENT OF FINANCE AND ACCOUNTING

SCHOOL OF BUSINESS

UNIVERSITY OF NAIROBI

DEDICATION

I dedicate this work to my beloved late father, Dishon Asirigwa Efwaine.

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I would like to thank the Almighty God for the gift of life and the gracious time He gave me that made it possible for me to write this paper.

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ABSTRACT

Kenya introduced Value Added Tax in the year 1990 to replace the Sales Tax which had been in operation since 1973. VAT has been the choice instrument for unexpected expenditure by increasing VAT rates. This study evaluates VAT revenue productivity for the period 1995/96 to 2009/10. The objective of this study was to evaluate the determinants of VAT revenue and come up with a model for predicting VAT revenue in future. The study utilized secondary data obtained from the KRA database for the financial years 1995/6 to 2009/10. The analysis showed that the determinants of VAT revenue have a significant effect on the responsiveness of VAT revenue. This implies that the growth in VAT revenue during the period of study was accounted for by changes in its determinants. In the VAT revenue equation, the positive intercept effect is counteracted by negative effects that are greater the higher are standard tax rate, inflation rate and foreign exchange rate. This study also finds that multiple rates, higher range between highest and lowest non-zero VAT rates, and the longer the VAT has been in operation (age of the VAT) are associated with higher revenues.

This study provides decision makers with an analytical framework which can be used to estimate the associated revenues for a VAT in Kenya and guidance to policymakers in countries planning to introduce a VAT. It identifies the determinants of VAT revenues which when properly understood, documented, and captured in relevant tax revenue models, would make it possible to estimate accurately VAT revenues within a specified period of time. Although past studies advocated for raising rates within the existing system as the most obvious approach for increasing revenues, policy makers should note that this study finds that the tax rate cannot be pushed too high without markedly reducing VAT revenue. The study also contributes to the existing literature on the VAT structure in Kenya and stimulates further research in the area of VAT. Researchers should study the impact of Electronic Tax Register (ETR) and Withholding VAT on VAT revenue.

The study concludes that Kenya's VAT revenue is very responsive to changes in its determinants and supports other researchers' findings that the determinants of VAT revenue have a significant effect on VAT revenue.

TABLE OF CONTENTS

LIST OF TABLES

Tables

Figures

LIST OF ABBREVIATIONS

AERC	African Economic Research Consortium, Nairobi
CBK	Central Bank of Kenya
CIF	Cost, Insurance, Freight
ETR	Electronic Tax Register
FOB	Free on Board
IMF	International Monetary Fund
KIPPRA	Kenya Institute of Public Policy Research and Analysis
KNBS	Kenya National Bureau of Statistics
KRA	Kenya Revenue Authority
OECD	Organisation for Economic Co-operation and Development. It is made up of thirty four member countries in North and South America to Europe and the Asia-Pacific region, and promotes policies that will improve the economic and social well-being of people around the world.
SPSS	Statistical Package for Social Sciences.
VAT	Value Added Tax

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Taxes have been with us for as long as civilization. The common objectives of a tax system are to raise revenue to fund government operations; to assist in the redistribution of wealth or income; and to encourage or discourage certain activities through the use of tax provisions. While all tax systems share these objectives, what differs is the weight placed in a given country to each of these objectives (Bird and Zolt, 2003). In Kenya, taxation is the single largest source of government budgetary resources (Moyi and Ronge, 2006). One of the striking characteristics of Kenya is that unlike many other Sub-Saharan countries today, it is a high tax-yield country with a tax-to-GDP ratio of over 20 per cent (KIPPRA, 2006). German businessman Wilhelm Von Siemens is credited with coming up with the idea of a Value Added Tax (VAT) in the 1920s (Ebrill et al, 2001). A value added tax (VAT) is a tax on the value that a business firm adds to the things it buys from other firms in producing its own product (Thuronyi, 1996). The VAT was implemented in France in 1954. Indirect taxes such as VAT generate a substantial part of tax revenue in many countries. Its spread has accelerated since, with strong support from the IMF, as it has now been implemented in 156 countries and in these countries it typically accounts for about one-quarter of all tax revenue (Lejeune, 2011). Despite its name, the VAT is not generally intended to be a tax on value added as such; rather it is usually intended as a tax on consumption.

The prevailing view of tax professionals is that an optimal VAT would have the following characteristics: a broad base, a single rate, the credit-invoice method of collection, the destination principle, and a significant sales threshold for registration. A VAT is comprehensive if it covers all economic activity. VAT is a broad-based tax levied on commodity sales up and up to and including, at least, the manufacturing stage, with systematic offsetting of tax charged on commodities purchased as inputs - except perhaps on capital goods - against that due on outputs (Ebrill et al, 2001). Statistics show rapidly declining corporate income tax rates throughout the EU and other global economies, while standard VAT rates have increased and in most countries it has been used to increase revenues.

1.1.1 VAT in Kenya

Sales tax was introduced in Kenya in the fiscal year 1971/72 and was later replaced by VAT, which was introduced in 1989/90 in the global economic arena and countries had to choose whether to open up or remain closed from the rest of the world (Adari, 1997). VAT is charged on the supply of taxable goods or services made or provided in Kenya by a taxable person in the course of or in furtherance of any business carried on by that person and on the importation of goods and services into Kenya (VAT Act, Sec.2). The Value Added Tax Act Chapter 476 governs the administration of VAT. VAT has become a cornerstone in Kenya's tax and economic system, it is more than just an additional revenue source, it is the largest single source of tax revenues. VAT was perceived as the tax of the future in line with the country's objective of reducing reliance on direct taxes as well as diminishing the role of trade taxes (KIPPRA, 2004). In this respect, the performance of VAT becomes an important issue for study.

A distinct feature of VAT in Kenya is that it has been the choice instrument for dealing with exceptional circumstances, and unexpected expenditures have been financed with increased VAT rates (Karingi et al, 2005). VAT offers a very important avenue by the government to finance its recurrent and development budgets. The tax has also been used as part of the industrial strategy. Surprisingly, it was not until 2003/4 that VAT was recognized as an important instrument that could be used to boost consumption demand in the country. At the time of VAT introduction, the concept of tax policy simplicity had not firmly taken root in Kenya: the VAT was introduced with a standard rate of 17 percent, but with 14 other rates (the highest being 210 percent) that made the VAT appear more like a differentiated commodity tax regime. The rate or rates at which VAT is levied is an important consideration in the operation of VAT. The current VAT rates are zero rate, the standard rate 16%, another rate 12%, and exempt supplies. VAT has undergone major rationalization with the maximum rate being reduced from 210% to 16% and the number of tax rates from 15 to 3 (KRA, 2010).

Rationalization of rates and the lowering of the VAT ceiling were aimed at minimizing tax evasion and making local products more competitive. The high and wide range of rates is thought to have led to widespread misclassification and other methods of tax evasion. In response to these concerns, the number of VAT rates was

quickly reduced to four by 1993-94, when the top rate was set at 40 percent. Since then, the rates have been further lowered, and currently there is a single standard rate of 16 percent and another lower rate of 12 percent, with some sales zero-rated and others exempt (KRA. 2010). *Appendix VII* provides a snapshot of VAT collections in Kenya for fiscal year 1995/1996 through 2010/2011. The constant growth can be attributed to the continuous structural and procedural changes being implemented (KRA, 2010). There has also been an increased awareness created among the taxpayers which has greatly changed their attitude towards tax payment.

1.1.2 Determinants of VAT Revenue

Although appealing in terms of revenues raised, the VAT has come to a turning point in its life as countries reflect on the need to raise revenue to deal with the significant increases in public debt caused by recent economic and financial crises (Charlet and Owens, 2010). It is estimated that the VAT currently raises some 20 percent of the world's tax revenues (Ebrill et al, 2001) and has been the centerpiece of tax reforms in many developing countries. VAT has developed a worldwide reputation as a governments "money machine" (Terra, 1990), as few other single tax instruments can mobilize as large revenue as a well designed and implemented VAT. Cnossen (1990, p. 5) has written that purely from a revenue point of view, VAT is probably the best tax ever invented. VAT eliminates the cascading problem, which is typical for the turnover tax. He observed a clear, consistent trend for greater use of the VAT to collect sales tax revenues among OECD countries.

The potential revenue which can be raised from the VAT depends on a number of factors, such as the standard tax rate, the number of taxes, the range between the highest and the lowest nonzero rates, the age of VAT, foreign exchange and inflation rates, how broad the tax base will be and the degree of tax compliance. In estimating a VAT's revenue yield, economists use the operating assumption that a VAT would be fully shifted to final consumers in the form of higher prices of goods. A revenue estimate does not take into account the possible shifts in consumption patterns that might be expected if some items are taxed and others excluded from taxation (Bickley, 2011).

A country's tax revenue can be expanded by adding new taxes or by expanding the base of existing taxes. VAT tax base is the final price of goods and services, inclusive of all wholesale and retail trade margins (Le, 2007). Tax base also includes any excise tax arising in connection with such supply, discounts and allowances shown on the tax invoice, and excludes the VAT itself. For Imported goods, Tax base is the sum of C.I.F. price, Import duty, Excise Tax and any other taxes and fees; while for Exported Goods it is the sum of F.O.B. price, Excise Tax and any other taxes and fees. The narrower the base, the higher the rate that is required to generate a given amount of revenue. The higher the tax rate, the greater the benefits of avoiding or evading the tax. Tax evasion erodes the tax base and hence the amount of public revenue that is generated (Schenk and Oldman, 2007).

1.2 Research Problem

Ebrill et al (2001) studied revenue raised by a VAT as a function of variables describing the rules of the tax system - rates, threshold, and presence of a large taxpayer unit. Not all tax rules, however, were available in his data set, such as the extent of exemptions or resources allocated to auditing. For a sample of OECD countries, Agha and Haughton (1996) find that the ratio of actual VAT revenues to the yield they estimate would be obtained under perfect enforcement increases with the age of the VAT, suggestive of an experience effect in administration. The empirical possibilities are somewhat limited, given that many key features of the VAT and its administration are not available for a sufficiently large sample of countries. Results are reported for four measures: the threshold, the range between the highest and lowest (nonzero) VAT rate, a dummy taking the value unity if the VAT extends to the retail stage and zero otherwise, and a dummy taking the value unity if VAT is levied on a broad base of goods and services and zero otherwise. The effect is that the wider the range the higher is VAT revenue. This runs counter to the findings of Bogetic and Hassan (1993, 1995), one of the few empirical attempts to explain VAT yields, that a great range is associated with a lower efficiency ratio.

Past studies that have been undertaken on the response of tax revenues to changes in GDP in Kenya have found a positive relationship between tax revenues and GDP (Wawire, 2011). However, these studies use annual total GDP data while VAT revenue data are collected and reported as per fiscal year, which starts on 1st July

each calendar year and ends on 30th June the following calendar year. It is therefore key that any study to identify the determinants of VAT revenues should use average GDP. This study explores whether VAT has proved an effective form of taxation, how VAT revenue can be predicted given its determinants, and the impact of the determinants of VAT on the revenue collected annually. This study combines the different variables used by previous researchers (Ebrill et al, Agha et al, and Bogetic et al) and uses average GDP and fiscal year data, unlike past studies which use annual total GDP data and calendar years. This study incorporates time series analysis and examines the impact of several variables on subsequent VAT collections. To achieve this, the study aims to answer the following question: What are the main determinants of VAT revenue?

1.3 The Objective of the Study

To establish the determinants of VAT revenue in Kenya.

1.4 Value of the Study

The main purpose of this study is to provide decision makers with an analytical framework which can be used to estimate the associated revenues for a VAT in Kenya and also assist them in setting their tax policies. It provides an informed basis for taking action on tax policy in addition to filling the gap about what is currently known about VAT revenue function in Kenya. Policymakers in countries which are currently planning to introduce a VAT will from this study have guidance on robust estimates of the VAT revenue.

The results of this study could be used to design growth-oriented programmes and carry out tax changes that are growth enhancing. The study provides an empirical groundwork on Kenya's VAT revenue structures upon which prudent tax measures could be based. It identifies the determinants of VAT revenues which when properly understood, documented, and captured in relevant tax revenue models, would make it possible to estimate accurately VAT revenues within a specified period of time. Literature and empirical work on VAT is surprisingly sparse, given that it has now become a core part of the most countries' tax systems. The study contributes to the existing literature on the VAT structure in Kenya and stimulates further research in the area of VAT.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter discusses the justification for VAT, reasons why it has been adopted by different countries, how it is applied and how its performance can be measured. Sections 2.2, 2.3 and 2.4 discuss the theories of taxation, the rationale and reasons for adopting a VAT. The chapter further discusses VAT mechanism and the rate structure of the VAT in sections 2.5 and 2.6 while effects of inflation on VAT and VAT performance measures are discussed in sections 2.7 and 2.8. The existing empirical evidence is discussed in section 2.9. Conclusion is then drawn from this review of literature which forms the basis of the study in section 2.10.

2.2 Theories of Taxation

VAT is an indirect tax; this section looks at relevant theories about indirect taxes. The economists have put forward many theories of taxation at different times to guide the state as to how justice or equity in taxation can be achieved.

2.2.1 The Benefit Theory

This theory holds the individuals should be taxed in proportion to the benefits they receive from the governments in public services and that taxes should be paid by those people who receive the direct benefit of the government programs and projects out of the taxes paid. It was developed in the seventeenth century by English philosophers Thomas Hobbes (1588-1679) and John Locke (1632-1704), and Dutch jurist Hugo Grotius (1583-1645). This theory has been subjected to severe criticism on the following grounds: If the state maintains a certain connection between the benefits conferred and the benefits derived, it will be against the basic principle of the tax. A tax, as we know, is compulsory contribution made to the public authorities to meet the expenses of the government and the provisions of general benefit. There is no direct substitution in the case of a tax. Secondly, most of the expenditure incurred by the state is for the general benefit of its citizens, it is not possible to estimate the benefit enjoyed by a particular individual every year. Thirdly, if we apply this theory in practice, then the poor will have to pay the heaviest taxes, because they benefit

more from the services of the state. This is against the principle of justice (Saleemi, 2005).

2.2.2 The Ability-to-Pay Theory

This theory originates from the sixteenth century. It was scientifically extended by the Swiss philosopher Jean Jacques Rousseau (1712-1778), the French political economist Jean-Baptiste Say (1767-1832) and the English economist John Stuart Mill (1806-1873). This theory holds that the taxation should be levied according to an individual's income or ability to pay and is the basis of progressive tax as the tax rate increases by the increase of the taxable amount (Jones et al, 2011). This theory is indeed the most equitable tax system since people with greater income or wealth and can afford to pay more taxes should be taxed at a higher rate than people with less individual income tax and has been widely used in industrialized economics. However, there is no solid approach for the measurement of the equity of sacrifice in this theory, as it can be measured in absolute, proportional or marginal terms. VAT does not tie in with this theory because the amount of VAT on a particular good will be the same for everyone, however much they earn. VAT is thus regressive since it represents a smaller proportion of a person's income as their income rises.

2.2.3 Equal Sacrifice Theory

Another suggestion to make a tax satisfy the theory of justice is that we take into consideration the sacrifice entailed by the taxpayer. The equal-distribution theory also known as Equal sacrifice or Proportionate theory holds that income, wealth, and transaction should be taxed at a fixed percentage; that is, people who earn more should pay more taxes, but will not pay a higher rate of taxes. It was suggested by J. S. Mill and some other classical economists order to satisfy the idea of justice in taxation (Musgrave, 1989). These economists were of the opinion that if taxes are levied in proportion to the incomes of the individuals, it will extract equal sacrifice. Thus, equal sacrifice can be measured as (i) each taxpayer surrenders the same absolute degree of utility that s/he obtains from her/his income, or (ii) each sacrifices the same proportion of utility s/he obtains from her/his income, or (iii) each gives up the same utility for the last unit of income; respectively. The modern economists, however, differ with this view. They assert that when income increases, the marginal utility of income decreases. The equality of sacrifice can only be achieved if the

persons with high incomes are taxed at higher rates and those with low income at lower rates. They favor progressive system of taxation, in all modern tax systems.

2.2.4 The Cost of Service Theory

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

2.3 The Rationale for VAT

The VAT replaces other unsatisfactory indirect taxes. Many developing countries have introduced the VAT to replace turnover tax or some type of single-stage sales tax. The replaced taxes are inherently troublesome in terms of either revenue leakage or economic inefficiency or both. Turnover tax is imposed on every stage of the production-distribution chain. A serious problem with this tax is the "cascading effect," literally understood as the tax-on-tax effect. The tax generates a trail of accumulated distortions carried from the first stage of production on to the last stage of the retail sales distribution (Bird, 1999).

Single-stage tax can be imposed at any single stage of the production-distribution chain. The tax is expected to eliminate the cascading effect and does not require huge administration costs (the base is significantly smaller than the one with the turnover tax). It has many potential problems, however. The tax at manufacturing level needs "ring fencing" the production of capital goods in order to avoid any bias against capital and escalation of production costs (Mikesell, 1997). On the other hand, the retail sales tax administration is not simple because it requires that all retailers be registered to collect taxes from their customers; and multiple exemptions and rates, and limited coverage tend to erode the base and give rise to the need for setting high standard rate for sufficient revenue collection (Kuo, McGirr, and Poddar, 1988). The

high rate, however, would become an attractive invitation to evasion and avoidance (Ring, 1999).

The VAT is relatively more advantageous than the alternatives, be it turnover tax or single-stage tax. First, the VAT is generally more broad-based (it is extended to cover both goods and services). Second, it is less risky in terms of revenue leakage (the invoice-based credit mechanism in administering the VAT facilitates collection and enforcement; even if revenues are missed in one stage, they are still collected in other stages). The VAT has, therefore, greater revenue potential than its alternatives (Le, 2003).

Opponents to the VAT usually argue that the VAT is more complex to administer than other types of consumption taxation, and the complexity naturally leads to higher collection costs (defined as the combined compliance costs from the taxpayer side, and administration costs from the tax authority side). However, as described, the taxes replaced by the VAT in developing countries are generally far from being simple in their design and riddled with narrow base, multiple rates, and numerous exemptions (McMorran, 1995).

Oldman and Woods (1983) conclude that an effectively administered VAT does seem to have some advantage over other taxes with respect to both the amount of tax that can be evaded and the ease of detecting evasion. They also argue that the nimble taxpayer can indeed evade the VAT. Some of the commonest methods are (Tait, 1988) understating sales, inflating claims for VAT paid on inputs (Chang, 1990), claiming credit for tax paid on inputs used in producing goods which are exempt from VAT, a firm not remitting VAT collected to the fisc, claiming VAT credit for non-creditable purchases, non-registration for VAT, diverting zero-rated exports to the domestic market, claiming the transaction is not a taxable event.

All the foregoing types of evasion are possible even with a single-rate VAT. However three-fifths of all VAT systems currently in operation have more than one tax rate, mainly on equity grounds (Aaron, 1981; Balladur and Coutiere, 1981). The increasing recognition of these additional difficulties may explain the marked tendency for value-added taxes to get simpler with time (Jenkins and Lamech, 1991). Tait

identifies eleven arguments against multiple rates (1991). Cnossen (1989) claims that this is the main reason why German tax officials prefer a single-rate VAT.

2.4 Reasons for Adoption of VAT

There are three main groups of reasons to adopt a VAT: revenue, neutrality, and efficiency (Tait, 1991). Traditional income and sales taxes have been meeting public resistance and the VAT provides a new, buoyant revenue base, typically yielding more than initial estimates, as the case of Indonesia, Korea, New Zealand, Portugal, and Tunisia show. However, this is by no means an automatic result. For instance, Kenya and the Philippines experienced an initial revenue shortfall after introducing the VAT, but this was partly because insufficient lead time was taken over the introduction and the tax administration could not be fully prepared. Broadly speaking, the VAT contributes from 12 percent to 30 percent of revenue in most countries, representing about 5-10 percent of gross national product. This reliable revenue creates a valuable alternative tax source, especially in countries that have a limited income tax base or that must rely on revenues from primary commodities that may be volatile, such as oil, minerals, coffee, sugar, and cocoa.

The VAT is non-distortionary, provided there are few exemptions and little zero rating. VAT on investment should be fully credited and this frequently is an improvement over the taxes replaced that often taxed capital goods. Similarly, the way the VAT on an export can be fully identified and rebated should ensure that exports compete on an equal footing (Ebrill et al, 2001). The VAT has often replaced inefficient, distortionary, and badly administered taxes which include taxes that cascade liabilities, use many rates, tax capital goods and exports, favor imported goods, reduce the base, and frequently involve an antiquated (and sometimes corrupt) administration. The introduction of the VAT provides an opportunity to sweep away the cobwebs and revamp a substantial part of the tax administration (Bird and Gendron, 2007). Finally, the VAT has proven popular, with over 150 countries implementing it. The more examples there are of well-functioning VATs the more familiar it becomes. Moreover, the revolution in computerization has transformed VAT administration, especially for smaller administrations, making the management of the tax less formidable than it had been earlier.

Not everything is in favor of VAT. It is not an immediately easy concept for the public to understand and this is why some countries prefer a more farmiliar name that seems less threatening. For example, Canada and New Zealand call the VATs the goods and services tax (GST). The VAT also appears more complicated to administer than other sales taxes and substantial refunds van be involved; collecting VAT and paying refunds simply means spinning wheels for no revenue and this is clearly inefficient (Bickely, 2003). The solution is to eliminate the need for refunds, that is, to use the zero rate only for exports.

2.5 The VAT Mechanism

The VAT, by definition, is the tax on the value added at each stage of a production-distribution chain. The value added, in turn, can be defined in two alternative ways. First, value added is equivalent to the sum of wages to labor and profits to owners of the production factors including land and capital. Second, value added is simply measured as the difference between the value of output and the cost of inputs. The two ways of definition of value added give rise to three major alternatives for computing the VAT liability (Hamada, 1999).

Under the addition method, tax liability is equal to the tax rate multiplied by the value added defined as the sum of wages and profits. The addition method, in practice, would be politically hard to sell to the public, as taxpayers would simply view the VAT as an additional layer of tax burden on top of corporate and personal income taxes (Slemrod and Bakija, 2000). Tax liability under the subtraction method is equal to the tax rate multiplied by the tax base or value added measured as the difference between the values of outputs and inputs (Ture, 1979). The most common method of the VAT computation is the invoice-based credit method. Under the invoice-based credit method, a firm at any stage of the production-distribution chain charges its customers the VAT on its output, submits the tax to the treasury, and then claims for the VAT already paid on its input purchase.

The prevailing view of economists is that the credit-invoice method is superior because of better enforcement (Hamada (1990)). This method requires registered firms to maintain detailed records that are cross indexed with supporting documentation. A VAT shown on the sales invoice of one firm is the same as the

VAT shown on the purchase order of another firm. Hence, the credit-invoice method allows tax auditors to cross check the records of firms. The invoice-based credit VAT apparently has advantages over both addition and subtraction methods. The addition method relies on accurate information on wages and profits which are hard to obtain in developing countries, and thereby runs into the same problems faced in income taxation. The subtraction method, on the other hand, requires an explicit estimation of the tax base—this would be fine for a VAT with a single rate structure but would result in serious problems for a multiple-rate VAT regime. Misaligned information and the resulted monitoring problem inherently make the subtraction method practically hard to apply (Le, 2003).

On the other hand, under the invoice-based credit method, the VAT on outputs and inputs is, essentially, assessed and collected separately, and the refunds are credited on the basis of the invoice on input purchases (Le, 2003). As the tax base does not need to be directly calculated, the system handles a multiple rate structure more efficiently than does the subtraction method. However, the invoice-based credit method cannot escape from the apportionment problem in some complex cases. An extra benefit of the invoice-based credit mechanism is that it requires firms to retain invoices and hence self improves the general record keeping practice. Self-policing, a desired character of the VAT, is specifically related to the invoice-based credit VAT. These advantages, while real, should not be overstated. A retails ales tax may be cheaper to administer, since there are fewer taxpayers; since it is simpler, it can also be introduced faster. The importance of collecting tax at pre-retail stages of production has been questioned (OECD, 1988), and the self-enforcing mechanism has been termed "illusory". When Sweden replaced its retail sales tax with a VAT in 1970 there was no perceptible change in the tax yield (OECD, 1988), although when a similar change was made in Ireland in 1972 an increase was observed.

Invoice-based credit VAT, the most common form of VAT, is, in principle, self-enforcing and hence a buoyant tax. The VAT is, in principle, described as "self-enforcing." The description stems from the nature of the invoice-based credit VAT: a taxable business can claim for the refund of the input VAT only if the claim is supported by purchase invoices—the mechanism provides strong incentives for firms to keep invoices of their transactions and is an efficient means for tax authorities to

check and cross-check for enforcement enhancement. In reality, the tax is, however, not at all self-enforcing—"ghost" invoices and false refund claims are common (Brondolo and Silvani, 1996).

A tax is regarded as buoyant if the tax collection grows at a rate higher than the growth rate of the economy. Despite certain inherent problems in administration, the VAT is empirically found to be a buoyant tax (Tait, 1991). Most countries started the VAT with an initial idea of reforming the existing sales tax system on a revenue-neutral basis but then realized that the VAT is revenue-enhancing, largely due to the improved compliance. A recent survey by the IMF (Ebrill et al., 2001) shows that this is true for all regions, except for Central Europe, Russia, and some other countries of the former Soviet Union. Being a buoyant tax, the VAT may allow for some relief in income taxes; and if the VAT introduction accompanies a reduction in income taxes, the whole tax system tends to be more politically acceptable and hence more stable.

Unlike income taxes, consumption-based VAT does not distort consumption-savings/investment decision. Being a consumption tax, the VAT does not have discriminating effect on savings/investment because savings are essentially excluded from the consumption VAT base (Le, 2003). Moreover, economists generally take the view that VAT encourages savings and investments because it is a tax on consumption and not income. Recent OECD work suggests that VAT is more pro-growth than an income or corporate tax.

It has sometimes been suggested that the adoption of a VAT should be good for export performance, as a consequence of the exclusion of exports from the tax. The theoretical issues here are more complex than they may seem, since the exchange rate and/or internal prices can adjust to offset to some degree the effects of taxes bearing on production costs. For these reasons, improved export performance is rarely used as an argument for adoption of the VAT. Recent empirical work suggests, however, that in developing countries the presence of a VAT is associated with, if anything, lower trade flows (there being no significant effect in high income countries): Desai, M. A. and J. R. Hines Jr., 2002, "Value Added Taxes and International trade: The Evidence" (mimeo, University of Michigan).

A VAT on destination principle may relieve exports from indirect tax burden on inputs if the tax is properly applied. Under strict origin principle, if the rate applied in exporting state is higher than the rate in importing state, part of the tax burden on the imports, measured as the difference between the export tax and import refunds, carries on and raises the total tax revenues in the chain. On the other hand, if the VAT rate in exporting state is lower than the one applied in importing country, the total VAT burden gets reduced—part of the burden in the chain is subject to the lower rate applicable in the exporting country (Le, 2003). A destination VAT zero rates exports and taxes imports. If properly applied, zero rating removes exports from all VAT burden: exporters do not collect the VAT when exporting but are still eligible to claim for refunds of all the VAT paid on their input purchase. This is true, however, only in the case where refunds of the input VAT are made in a timely manner (Devereux, 1996).

In practice, it is not uncommon that the VAT refunds are delayed by as long as six months in developing countries. Without any interests earned on the portion of the eligible but delayed refunds, export-manufacturing firms lose in terms of time value of money. Desai and Hines (2002) argue further that empirically, the VAT is associated with less trade (fewer exports and imports). They explain that in addition to the delayed and incomplete refunds, exporters suffer from exchange rate appreciation, which is likely resulted from the VAT introduction. One may, however, question the data and methodology applied in their paper.

An exempt stage is completely eliminated from the production-distribution chain: an exempt firm is not required to collect the tax on output sold to its consumers, but it is not entitled to claim for the credit of the tax the firm has already paid on its input purchase (Shoup, 1988). A zero rated firm charges no VAT on its consumers—equivalently put, the firm charges the rate of zero percent on its sales—and then, it claims for refunds of the VAT previously paid on its input purchase. In essence, zero rating does not break the link between the zero-rated stage with others in the whole production-distribution chain—zero rating can be thought of as an extreme case of reduced rate on output of eligible products (Tait, 1988).

The VAT tends to impose high compliance costs on small traders who generally do not have sufficient resources to keep proper records of their transactions and to comply with accounting rules. On the other hand, the number of small traders is huge—including them in the tax net would, therefore, drain the limited resources of revenue administrations—but the revenue potential is expected to be insignificant because their turnover and value added are generally low. The IMF estimates that on average, the largest 10 percent of businesses account for at least 90 percent of total turnover (Ebrill et al., 2001); this implies that the administration costs incurred in taxing the whole group of small businesses may well outweigh the potential benefits (in terms of extra tax collection). The problem is generally resolved by setting a specific threshold, under which businesses are exempted from the tax net.

Many developing countries have weak tax administration but set too low thresholds. The low thresholds generate unintended compliance and administration problems and ultimately threaten the sustainability of the whole VAT system. In practice, many countries start a VAT with a low threshold, but after some "learning by doing" period, they realize the need to adjust the threshold to a new, and significantly higher, level (Le, 2003).

2.6 Determinants of VAT Revenue

2.6.1 Rate Structure of the VAT

Multiple rate structure is inherently complex, but yet, many argue for it on both efficiency and equity grounds. The efficiency argument hinges on Ramsey rule applied to consumption taxation. (Le, 2003). The rule specifies that to minimize dead weight loss, tax rate on a good should be set inversely proportional to the good's own demand elasticity. It implies that the rates should be differentiated across different groups of goods and services of various demand elasticities. On the other hand, supporters of a multiple rate structure on the equity ground would argue that tax rate differentiation is needed to mitigate the regressivity of a tax: lower rates must be applied to the goods and services consumed primarily by the poor. In practice, however, a multiple rate structure poses a great challenge to the tax compliance and administration.

A VAT with multiple rate structure requires firms to keep separate records for different purchases. This is, in turn, costly for auditing (more records to be checked; more incentives and opportunities for firms to misclassify goods) and is cumbersome for application of the self-assessment (complex for taxpayers to comply; and hard for tax administration to detect fraud). In general, a more complex VAT would require tax administration to collect more information to determine the tax liabilities and refunds. (Tait, 1988).

2.6.2 VAT and Inflation

There has been concern that with the introduction of the VAT, a broad-based consumption tax, all businesses including exempt firms raise their prices—at the rate of the tax—and thereby trigger long-lasting inflation. Experience of countries adopting the VAT shows this concern is unfounded, however. It indicates that the VAT is not inflationary, even though in some countries such as Japan and Denmark, the VAT resulted in once-and-for-all increase in the general price level (Tait, 1991). If the VAT is revenue-enhancing, it will help the government pursue tight monetary policy, and then the VAT may even exert downward pressure on inflation—in this case, the VAT is deflationary rather than inflationary.

While the VAT may lead to a one-time increase in prices, it is not the case empirically that VAT inevitably, or even usually, leads to continuing inflation. None of this implies that the VAT would unilaterally solve the country's fiscal problems; nor would it be painless. Nevertheless, the VAT is a relatively attractive choice, given the need to close the fiscal gap and the other options for doing so (Gale and Harris, 2011). Although the VAT is non-inflationary or even deflationary, it is critical to consider the timing in introducing VAT. Practical experience indicates that the VAT should not be introduced when inflation is rising; otherwise, the VAT would be wrongly perceived as inflationary and become a hard sell to the public (Le, 2003).

Most countries with a Value Added Tax follow the "European model," whose key features are a consumption base; tax credits based on invoices; a single rate rather than multiple rates; a single, relatively high threshold regarding turnover; a broad basc with minimal exemptions to avoid distortion of purchase (input) decisions and to provide transparency; use of the destination principle (Devereux, 1996) whereby

exports are zero rated and imports are taxed; and the timely provision of input credits for the purchase of capital goods (Ebrill, Keen, Bodin and Summers, 2002). Most tax practitioners also favor a VAT with a single rate and with no exemptions, largely on the grounds that this reduces evasion and makes administration and compliance cheaper and easier (Agha and Haughton, 1996).

2.6.3 Impact of GDP on Tax Revenues

The studies that have measured the impact of GDP on tax revenues include Wildford and Wildford (1978a) who estimated income-elasticity and buoyancy of the tax revenue in Central America for the period 1955 to 1974, using an exponential tax revenue function. The study found that income elasticity of the tax revenue was less than unity. This suggested that the tax structure was stable and therefore tax revenue grew less than proportionately in response to growth in income.

2.6.4 Effect of Age of Tax

Mankiw et al (2009) studied Optimal taxation in theory and in practice and found that the theory of optimal taxation has yet to deliver clear guidance on a general system of history-dependent, coordinated labor and capital taxation for a realistically-calibrated economy. Instead, it has supplied more limited recommendations. One proposal is to use average income over the life-cycle as a basis for taxation. A more recent example is that, following the argument for regressive capital taxes, disability insurance (and perhaps other social insurance programs) ought to be asset-tested. Asset-testing prevents individuals from claiming these benefits when, optimally, they should not, because they are actually supporting their consumption with oversaving from earlier in life. One element of history-dependent taxes is straightforward to implement but nevertheless has the potential for large benefits: making taxes a function of age. Age dependence allows the tax system to respond to the predictable evolution of abilities over the life-cycle. Old VATs raise significantly more, all else being equal, than do new.

2.7 VAT Performance Measures

The concepts of tax buoyancy and elasticity can generally be used to evaluate the performance of the VAT or any other type of tax or the whole tax system (Shome, 1988). Tax buoyancy is defined as the ratio between the real growth rate of tax

revenues and the real growth rate of GDP or GNP. The data on revenue collection used in estimating tax buoyancy incorporates the impact of any discretionary changes in the tax rate or base or both during the reporting period. Tax elasticity is defined in the same way as tax buoyancy. However, the data on revenue collection used in estimating elasticity excludes the impact of any discretionary changes during the reporting period. Thus, tax buoyancy measures the efficiency of both underlying tax structure and discretionary changes, whereas tax elasticity measures the efficiency of the fundamental tax structure. In general, the VAT performance is considered to be satisfactory if the buoyancy or elasticity is greater than or equal to one: in this case, the VAT collection keeps up with the growth of the economy (Le, 2003).

Other diagnostic tools for the VAT performance include efficiency ratio and C-efficiency ratio (Ebrill et al. 2001). Efficiency ratio (E) is defined as the share of the VAT in GDP divided by the standard VAT rate. An efficiency ratio of, say, 30 percent, implies that if the standard VAT rate is increased by one percentage point, the shares of the VAT revenues in GDP is expected to increase by 0.3 percentage point. In general, the higher the ratio E, the better the performance of the VAT. The efficiency ratio is an imperfect and, even misleading, statistic. The C-Efficiency ratio is defined as the share of the VAT in consumption divided by the standard VAT rate. This statistic—based on consumption rather than GDP—is a more reliable diagnostic tool than the Efficiency Ratio, E (Le, 2003). VAT productivity is another tool for measuring the performance of VAT. It is derived by dividing the ratio of VAT revenues to GDP with a VAT's standard rate. (Bird and Gendron, 2006). This is the tool used in this study.

2.8 Empirical Review

Klemm and Parys (2009) examined the Empirical Evidence on the Effects of Tax Incentives and showed that strategic interaction over taxes is not restricted to tax rates, but is equally present on tax incentives, notably tax holidays. This is not to say that countries compete over every aspect of their tax systems, as there is no evidence on interactions on investment allowances. We have also shown that tax holidays, just like tax rates, do appear to affect FDI, while investment allowances do not. In combination with the findings on tax reactions, this suggests that countries compete only over tax instruments that also affect FDI. This can be interpreted as evidence—

though clearly not proof—of the resource-flow model of fiscal interactions, as opposed to pure tax mimicking, which would cover all taxes. The possibility of countries simply following similar trends in their tax policy also remains a possibility that cannot be ruled out.

Karran (1985) studied The Determinants of Taxation in Britain. The results were that at its simplest, tax revenue accruing from a specific source in any one year is determined by three factors. First, the tax base, that is, the object defined by law as subject to tax, whether it is personal income, consumer goods or wealth. Second, the rate of tax payable on the given base e.g. the income tax rate in the pound, or the excise duty on alcoholic drink. Thirdly, the Determinants of Taxation in Britain can be affected by the administration of tax collection. In underdeveloped countries problems with administering taxes can lead to serious shortfalls in expected revenue. The effectiveness of tax administration is not a serious problem in contemporary Britain, where tax evasion relative to total revenue is comparative'y minor. The tax base and tax rate determine the amount of tax revenue, but they are not set or changed of their own volition. Both rate and base are intervening variables influenced and altered by political and economic factors.

Osoro (1993) examined the revenue productivity implications of tax reforms in Tanzania. In the study, the tax buoyancy was estimated using double log form equation (2) and tax revenue elasticity using the proportional adjustment method (equation 4). The argument for the use of proportional method was that a series of discretionary changes had taken place during the sample period, 1979 to 1989, making the use of dummy variable technique impossible to apply (Osoro 1993). For the study period, the overall elasticity was 0.76 with buoyancy of 1.06. The study concluded that the tax reforms in Tanzania had failed to raise tax revenues. These results were attributed to the government granting numerous tax exemptions and poor tax administration.

Ariyo (1997) evaluated the productivity of the Nigerian tax system for the period 1970 - 1990. The aim was to devise a reasonable accurate estimation of Nigeria's sustainable revenue profile. In the study, tax buoyancy and tax revenue elasticity were estimated using equation (4) and (5) respectively. The slope dummy equations were

used for the oil boom and SAPs. It was found that on the overall, productivity level was satisfactory. However, the results indicated wide variations in the level of tax revenue by tax source. The variations were attributed to the laxity in administration of non-oil tax sources during the oil boom periods. Significant reduction in public expenditure and prudent management of financial resources were suggested as solutions to the fiscal deficit. The study further asserted that there was need to improve the tax information system to enhance the evaluation of its performance and facilitate adequate macro-economic planning and implementation (Ariyo, 1997:33)

Chipeta (1998) evaluated effects of tax reforms on tax yields in Malawi for the period 1970 to 1994. The results indicated buoyancy of 0.95 and an elasticity of 0.6. The study concluded that the tax bases had grown less rapidly than GDP. Kusi (1998) studied tax reform and revenue productivity of Ghana for the period 1970 to 1993. Results showed a pre-reform buoyancy of 0.72 and elasticity of 0.71 for the period 1970 to 1982. The period after reform, 1983 to 1993, showed increased buoyancy of 1.29 and elasticity of 1.22. The study concluded that the reforms had contributed significantly to tax revenue productivity from 1983 to 1993.

Milambo (2001) used the Divisia Index method to study the revenue productivity of the Zambian tax structure for the period 1981 to 1999. The results showed elasticity of 1.15 and buoyancy of 2.0, which confirmed that tax reforms had improved the revenue productivity of the overall tax system. However, these results were not reliable because time trends were used as proxies for discretionary changes and this was the study's major weakness. In relation to Kenya, Ole (1975) estimated income elasticity of tax structure for the period 1962/63 to 1972/73. Tax revenue was regressed on income without adjusting for unusual observations. The results showed that the tax structure was income inelastic (0.81) for the period studied. The study recommended that the system required urgent reforms to improve its productivity. The results also implied that Kenya's tax structure was not buoyant and therefore the country would require foreign assistance to close the budget deficit.

Njoroge (1993) studied the revenue productivity of tax reforms in Kenya for the period 1972/73 to 1990/91. Tax revenue was regressed on income after adjusting tax revenues for discretionary changes. The period of study was divided into two to make

it easier to analyze the effects of tax reforms on revenues from various taxes. Income elasticity of total tax structure was found to be 0.67 for the period 1972 to 1981. This meant that the government received a decreasing share of rising GDP as tax revenues. The elasticity estimates for individual taxes were as follows: sales tax 0.6, import duties 0.45 and income tax 0.93. The buoyancy for the overall tax system for the same period was 1.19, implying that the tax system was quite buoyant. For the period 1982 to 1991, Njoroge (1993) found that the overall elasticity was 0.86 while buoyancy was 1.00. The study concluded that from a revenue point of view, the system did not meet its target, hence it required constant review as the structure of the economy changes. However, the results could not be relied upon because the study never took into account time series properties of the data.

Adari (1997) study focused on the introduction of value added tax (VAT) in Kenya that replaced sales tax in 1990. The study analyzed the structure, administration and performance of VAT. The estimated buoyancy and elasticity coefficients were less than unity implying a low response of revenue from VAT to changes in GDP. This suggested the presence of laxity and deficiencies in VAT administration. However, the estimation of buoyancy and elasticity coefficients were done in total disregard of the time series properties and without taking care of unusual observations in the data. Therefore, the results were not reliable for planning purposes. Wawire (2000) used total GDP to estimate the tax buoyancy and income-elasticity of Kenya's tax system. Tax revenues from various sources were regressed on their tax bases. Based on empirical evidence, the study concluded that the tax system had failed to raise necessary revenues. However, the shortcomings of the study were, first, it never considered other important determinants of tax revenues, for example, unusual circumstances that could have affected tax revenue productivity. Second, it never disaggregated tax revenue data by source hence it was difficult to say which taxes and bases contributed more to the exchequer. Third, it never took into account the time series properties of the data.

Muriithi and Moyi (2003) applied the concepts of tax buoyancy and elasticity to determine whether the tax reforms in Kenya achieved the objective of creating tax policies that made yield of individual taxes responsive to changes in national income. The results showed that tax reforms had a positive impact on the overall tax structure

and on individual tax handles. The study concluded that despite the positive impact, the reforms failed to make VAT responsive to changes in income. However, VAT had been around for about eleven years only and subjecting it alone in a regression model did not make statistical sense. The current study differs from this study because it separates the effect of average monetary GDP and average total GDP on tax revenue and uses average figures instead of the annual ones because the tax revenue figures are on fiscal year basis that starts on 1st July while the GDP figures are on calendar year that starts on 1st January. In an attempt to highlight the trends in Kenya's tax ratios, tax effort indices and their implication for further tax reforms, Wawire (2003 and 2006) performed a regression of tax revenue on income. The estimated tax equation was used to compute tax effort indices by dividing the predicted with the actual figures. After examining the tax effort indices, the study concluded that the slowdown in economic growth had resulted in high levels of taxation that did not match delivery of public goods and services. The study however, never took into account the time trend characteristics of variables that were used.

Bogetic and Hassan (1993) examine the main determinants of VAT revenue in a simple cross country framework using data from 34 countries to answer certain key questions: What empirical relationship emerges from existing data on VAT revenue and VAT rates for countries with a single VAT rate? How much, on average, can a one percent increase in the VAT rate be expected to raise VAT revenue as measured by VAT-to- GDP ratio? What key determinants of VAT revenue emerge from a cross-country analysis of the full sample of countries? Is there a statistically significant difference in VAT revenue performance between countries with a single VAT rate and countries with multiple VAT rates? They find that - other things being constant - VAT generates higher revenue in countries with a single VAT rate than in countries with multiple VAT rates. The difference in the estimated models for the two country groups is statistically significant, indicating a structural change. However this change in the pattern of VAT revenues cannot be explained exclusively in terms of differences in rate structure.

Countries with similar VATs as measured by the standard rate can have significantly different revenue performance as measured by the ratio of VAT revenue to GDP. The revenue produced by a VAT depends on three broad sets of factors: the rules

describing rates, bases, threshold, and other structural features of the tax: the scale of taxable activities; and the degree to which the rules are complied with. The interactions between these factors are important. Tax rates, for instance, are typically set in the light of tax bases and revenue requirements. The ease of enforcement will depend on the formal structure of the tax: multiple rates, for example, may lead to misclassification of items, and a high standard rate may encourage evasion. To understand fully the revenue yield of a VAT these interactions would need to be explored in detail. Information limitations make this difficult. In particular, sufficient information is rarely available to estimate the VAT revenue that would be raised if the rules were implemented perfectly: the extent of evasion is generally unobserved (Tanzi et al, 2000).

Ebrill et al (2001) studied revenue raised by a VAT as a function of variables describing the rules of the tax system - rates, threshold, and presence of a large taxpayer unit. Not all tax rules, however, were available in his data set, such as the extent of exemptions or resources allocated to auditing. As would be expected, revenue increases with the standard rate. Ebrill et al (2001) however found out that revenue increases less than proportionately with the standard rate. Instead the implication is that higher standard rates tend to be associated with narrower VAT bases.

Though barely significant, there are indications of a role for the age of the VAT, measured in the number of years since its introduction (AGE). Old VATs raise significantly more, all else being equal, than do new. One interpretation is that administration of the VAT, and compliance with it, improves with experience. For a sample of OECD countries, Agha and Haughton (1996) find that the ratio of actual VAT revenues to the yield they estimate would be obtained under perfect enforcement increases with the age of the VAT, suggestive of an experience effect in administration. The empirical possibilities are somewhat limited, given that many key features of the VAT and its administration are not available for a sufficiently large sample of countries. Results are reported for four measures: the threshold, the range between the highest and lowest (nonzero) VAT rate, a dummy taking the value unity if the VAT extends to the retail stage and zero otherwise, and a dummy taking the value unity if VAT is levied on a broad base of goods and services and zero

otherwise. The effect is that the wider the range the higher is VAT revenue. This runs counter to the findings of Bogetic and Hassan (1993, 1995), one of the few empirical attempts to explain VAT yields, that a great range is associated with a lower efficiency ratio. The maturing of a VAT contributes to its yield not through increased experience but through tangible developments in the structure of the tax correlated with those included in the regressions. The results on the range of the VAT rates suggest that even the tendency for the number of rates to increase as the VAT matures can be associated with improved revenue performance.

2.9 Summary of Literature Review

From the review of literature on Value Added Tax, the following conclusions can be derived; First, VAT was introduced to replace other consumption taxes (Bird, 1999) because VAT is generally more broad-based, and it is less risky in terms of revenue leakage (Le, 2003). Second, VAT was adopted because it raises reliable revenue; it replaced inefficient, distortionary, and badly administered taxes; and efficiency (Tait, 1991). The most common method of the VAT computation is the invoice-based credit method. A destination VAT zero rates exports and taxes imports (Devereux, 1996). Third, although complex, many argue for multiple rate structure on both efficiency and equity grounds (Le, 2003). Fourth, practical experience indicates that the VAT should not be introduced when inflation is rising; otherwise, the VAT would be wrongly perceived as inflationary and become hard sell to the public (Le, 2003). The revenue yield of a VAT would depend on the size of the tax base, the number of tax rates, the range between highest and lowest nonzero VAT rates, the age of the VAT, inflation, foreign exchange rate, and the standard tax rate. Finally, VAT productivity can generally be used to evaluate the performance of the VAT (Shome, 1988).

Earlier studies have looked at taxes in general, and used the normal years. The purpose of this study is to bridge the gap in empirical study. This study will examine the impact of determinants of VAT on VAT revenue collected in Kenya for the periods 1995/96 to 2009/10, and construct a measure of potential VAT revenue for Kenya. Particular attention is paid to the effect of multiple rates, the range of the VAT rates, foreign exchange rate, inflation rate, standard VAT rate, the age of the VAT and the number of VAT rates.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research design, target population and sample adopted in the study in sections 3.2, 3.3 and 3.4. The methods of data collection and data analysis are further discussed in sections 3.5, and 3.6 respectively.

3.2 Research Design

The research design adopted in this study was causal study. In causal research design, the problem under investigation is structured; the aim being to establish a "cause and effect" relationship between one or more variable with other variables, and measure the extent of relationship between the variables. It attempts to explore cause and effect relationships where causes already exist and cannot be manipulated. It uses what already exists and looks backward to explain why. If one or more independent variables change, then we should expect a change in the dependent variable. The aim of causal research is to provide explanations and specify the nature of functional relationship between two or more variables. (Kothari, 2004).

Causal research design was used because data already exists and cannot be manipulated. This study will identify the factors that affect the VAT revenue and quantitatively analyse the VAT revenue collected by KRA. VAT revenue is a function of standard tax rate, age of the VAT, range between the highest and the lowest nonzero rates, number of tax rates, inflation and foreign exchange rate. This study followed a cross-sectional research since it is carried out once and represents a snap-shot of one point at a time. It considered the VAT collection trends over the study period and the effect of the independent variables on VAT revenue collected. The period comprised of 15 annual collections, represented as t_{15} for the total period under review.

3.3 Population of the Study

The target population for this study consisted of the monthly VAT collections paid by the 80,000 businesses registered with the commissioner of domestic taxes and

importers upon importation of goods to be consumed locally, from the inception of VAT in Kenya to date.

3.4 Sample and Sampling Procedure

The sampling design adopted by this study involved the purposive, non-probabilistic choice of VAT over the other tax regimes. The study utilized all the data available on VAT registered taxpayers making both domestic and import contributions to KRA.

The second level sample selection involved the choice of the fiscal years 1995/1996 to 2009/2010. The methodology employed on data collection involved the use of KRA's and CBK's data base for the periods 1995/96 to 2009/10 (15 years) for a number of reasons. This period was representive and long enough to capture the responsiveness of VAT revenues to changes in its determinants, and particularly due to the availability of complete annual data to enable trend model development. Before the incorporation of Kenya Revenue Authority in 1995, tax administration was under five separate departments (custom duty, excise duty, sales tax, income tax and corporation tax departments) in the Ministry of Finance and thus data for prior periods could not be obtained.

3.5 Data Collection

This study used secondary data which were obtained from KRA database, KNBS and CBK websites and databases for the fiscal years 1995/1996 to 2009/2010 to provide a window relevant to measure the determinants of VAT revenue in Kenya. KRA, KNBS and CBK databases provide objective, accurate and reliable source.

3.6 Data Analysis

Analysis was done using regression model to establish the relationship between independent variables affecting the VAT revenue collected in a given fiscal year. The performance of VAT was measured using Efficiency Ratio, which is derived by dividing the ratio of VAT revenues to GDP with the VAT standard rate (VAT as % GDP)/20 (Bird and Gendron, 2006).

The values of the regression model and the effect of the determinants of VAT revenue collected were determined by running a multiple linear regression using SPSS version

18. Fischer distribution (F statistic) was used to test the significance of the overall model at $\alpha = 5\%$. t-statistic was used to test the significance of each predictor variable to test whether they were important for predicting VAT revenue. Level of confidence: 95%.

The following equation was used to regress the factors that affect VAT revenue:

$$\mu_i = \alpha + \sum \beta_k x_{ik} + \mathcal{E}_i$$

$$= \alpha + \beta_{std} x_{i,std} + \beta_{rates} x_{i,rates} + \beta_{age} x_{i,age} + \beta_{range} x_{i,range} + \beta_{exch} x_{i,exch} + \beta_{inf} x_{i,inf} + \mathcal{E}_i \ldots \textit{Eqn 3.1}$$

Where,

μ_i represents the observed scores which is the VAT revenue collected in time *i*. It is the dependent variable.

α is the constant term which represents the intercept at the beginning of the modeling,

β_k are the regression coefficients,

x_{ik} is the value of the independent variable in year *i*,

k is the number of independent variables (the determinants of VAT revenue), which are:

std - standard tax rate,

rates - number of tax rates applicable,

age - age of the VAT,

range - range between the highest and the lowest positive tax rates,

exch - exchange rate,

inf - inflation rate,

and,

$\mathcal{E}_i$ measures the error,

$$\mathcal{E}_i = \mu_i - \hat{\mu}_i$$

where,

μ_i = observed value of VAT revenue collected in year *i*

$\hat{\mu}_i$ = predicted value of VAT revenue collected in year *i*

Analyzed data was presented on tables and graphs and interpreted.

CHAPTER FOUR
DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter provides descriptive and analytical results, and discussion of the findings. It describes the performance of VAT collections over the past fifteen years, which also coincides with the establishment of KRA as an agent to collect and account for taxes in Kenya. This chapter also models a VAT revenue function and evaluates the effect of the determinants of VAT revenue on VAT revenue collected. Finally, conclusion is drawn from the results to summarize the empirical effect of the VAT revenue determinants on VAT revenue in Kenya.

4.2 Descriptive Statistics of VAT Revenue

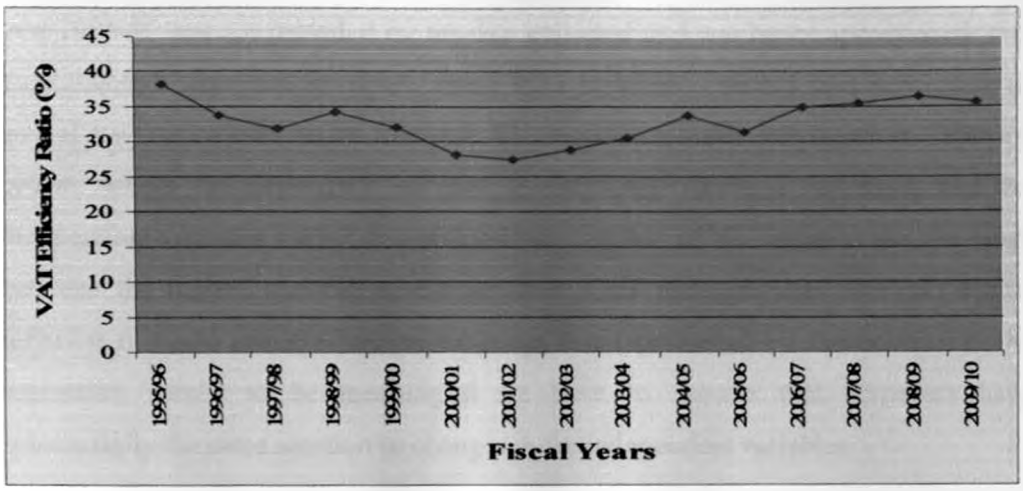
4.2.1 VAT Productivity

The diagnostic tool for the VAT performance used in this study was the efficiency ratio. Efficiency ratio (E) is defined as the share of the VAT in GDP divided by the standard VAT rate (Ebrill et al, 2001). In Kenya, VAT was perceived as the tax of the future in line with the country's objective of reducing reliance on direct taxes as well as diminishing the role of trade taxes. In this respect, the performance of VAT becomes an important issue for study. In general, the higher the Efficiency Ratio, the better the performance of the VAT. The IMF survey shows that small islands and members of the European Union (EU) have the most effective VAT systems: their estimated efficiency ratios attained at 48 and 38 percent respectively, while the worldwide average was 34 percent (Le, 2003).

Figure 4.1 below shows VAT productivity from the fiscal year 1995/95 to 2009/10. An efficiency ratio of 38% in 1995/96 implies that if the standard VAT rate is increased by one percentage point, the shares of the VAT revenues in GDP is expected to increase by 0.38 percentage. Productivity fell from 38% to 31% between 1995/96 and 1997/98. There was an increase to 34% in 1998/99 but this recovery could not be sustained. There have been some years of falling productivity (1999/2000 to 2001/02) and even though the declines have been reversed, productivity has not returned to the level of its initial phase. Productivity fell again in

2005/2006 but it has however remained above 34% in the last four years of this study, thus it is within worldwide average.

Figure 4.1: VAT Productivity in Kenya

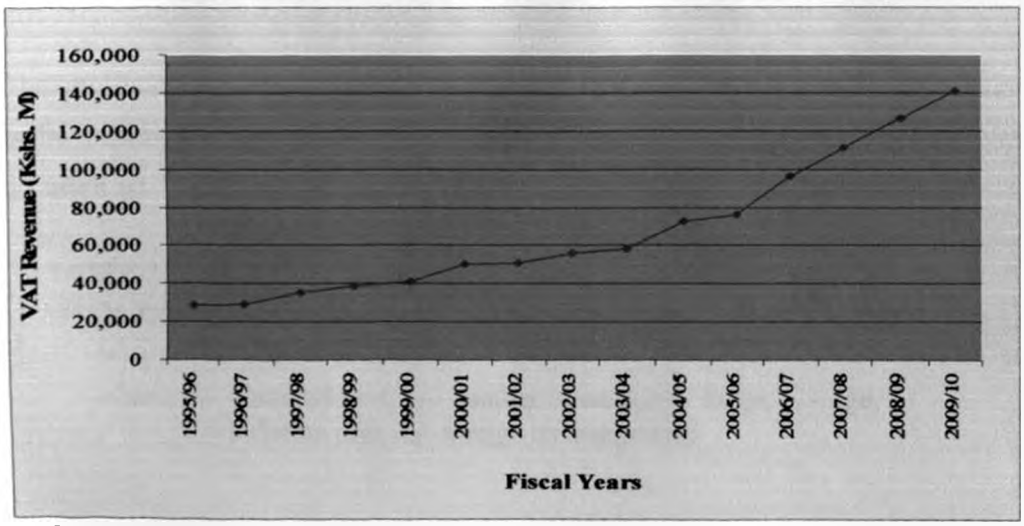


Source: Author

4.2.2 VAT Revenue Model

As shown in Graph 4.2 below, VAT revenue has never been constant; it has been increasing over the period under review. The determinants of VAT revenue have also been changing. We thus seek to come up with a model which will explain the relationship between VAT revenue and its determinants, by regressing their values across the given period.

Figure 4.2: VAT Revenue 1995/96 to 2009/10



Source: Author

The objective of the study is tested by regressing an index of VAT revenue on a number of explanatory variables using data for fifteen fiscal years (1995/95 to 2009/10). The error term, E_i, is arrived at by taking the difference between expected and actual VAT revenues for a given fiscal year, *i*. The expected VAT revenue for the year 1995/96 was not provided by the data collected and was hence apportioned from the collective target set for KRA, using VAT revenue collected as a percentage of annual revenue collections for that year. The regression results are shown in Table 4.1 below, where the dependent variable is the VAT Revenue collected, and the independent variables are the standard tax rate, number of VAT rates in use, the range between the highest and the lowest non-zero VAT rates, the age of VAT, annual inflation rate and average foreign exchange rate represented by the dollar. For the regression results to be meaningful we have to assume that taxpayers have substantially the same reaction to changes in the independent variables.

Table 4.1: Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Toler ance	VIF
(Constant)	48526.308	49342.020		.983	.354	-65256.594	162309.211		
Std Rate	-1424.385	3317.781	-.041	-.429	.679	-9075.201	6226.431	.597	1.676
No. of Rates	2984.791	7362.024	.053	.405	.696	-13992.068	19961.649	.323	3.094
Range	1105.467	1010.077	.129	1.094	.306	-1223.774	3434.708	.389	2.568
Age	9908.156	1148.465	1.234	8.627	.000	7259.791	12556.520	.266	3.765
Infl Rate	-943.637	851.248	-.093	-1.109	.300	-2906.620	1019.345	.780	1.281
Forex S	-1213.542	640.995	-.277	-1.893	.095	-2691.678	264.594	.255	3.925

a - Dependent Variable: Y
Source: Author from KRA database

The coefficient of each independent variable used in the prediction and interpretation is the unstandardized coefficient B in the table. From the above output, the regression equation is:

$$\hat{Y}_i = \alpha+\beta_1x_1+\beta_2x_2+\beta_3x_3+\beta_4x_4+\beta_5x_5+\beta_6x_6+\mathcal{E}_i$$

$$=48526.308-1424.385x_1+2984.791x_2+1105.467x_3+9908.156x_4-943.637x_5-1213.542x_6 \ldots Eq\ 3.1$$

where, x_1 – standard rate, x_2 – number of rates, x_3 – range, x_4 – age,
x_5 – inflation rate, x_6 – foreign exchange rate.

The 95% confidence intervals for the slopes (β_i) of the regression line that relates the predictors to VAT Revenue are obtained and tested. Each β_i tells us the average change we can expect in Y given a one unit change in independent variable x_i, all of the other x_j's held constant. For instance, we are 95% confident that the slope for standard rate is somewhere between -9132.593 and 6038.582. In other words, we are 95% confident that for every single-unit increase in standard rate, the average VAT Revenue decreases by at most 9132.593 or may increase by up to 6038.582.

The findings of this study are that: for every single-unit increase in number of rates, the average VAT Revenue decreases by at most 13175.710 or may increase by up to 20582.243; for every single-unit increase in range between highest and lowest non-zero VAT rates, the average VAT Revenue decreases by at most 1647.024 or may increase by up to 3156.295; for every single-unit increase in the age of VAT, the average VAT Revenue increases between 6818.972 and 12253.238; for every single-unit increase in inflation rate, the average VAT Revenue decreases by at most 2782.640 or may increase by up to 1134.118; and for every single-unit increase in foreign exchange rate, the average VAT Revenue decreases by at most 2648.761 or may increase by up to 283.249.

The results reported in Table 4.1 confirm that higher standard VAT rate, inflation rate and foreign exchange rate are associated with lower VAT revenue while multiple rates, higher range between highest and lowest non-zero VAT rates, and the longer the VAT has been in operation (age of the VAT) are associated with higher revenues. The trend equation was used to compute annual abnormal VAT collections for the period under review. Expected VAT is derived from modeling the past trends and patterns so as to extrapolate future behavior of VAT revenue.

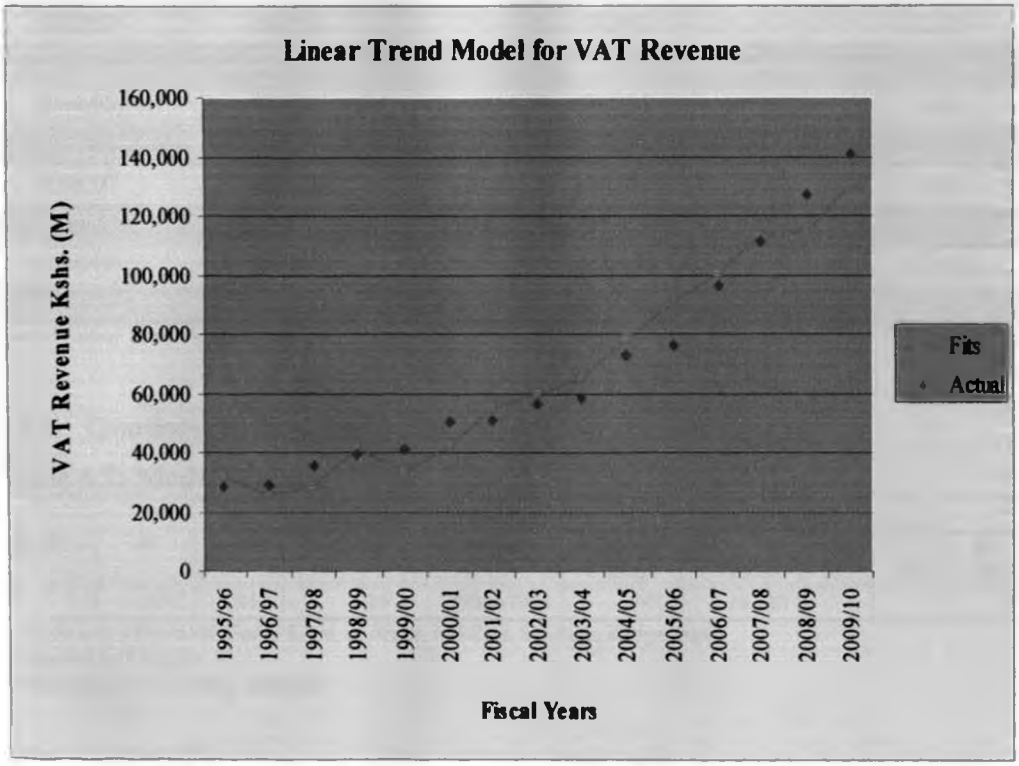
A higher standard VAT rate leads to less revenue collected, as shown in the year 2001/02. Taxpayers who face a higher tax rate have a greater incentive to evade tax (Tait, 1988). The same applies to the range between highest and lowest non-zero VAT rates, the year 1995/96 which had a high abnormal VAT also had the highest range of 19%. Since the slope for number of VAT rates is somewhere between -9075.201 and 6226.431, the tax rate cannot be pushed too high without markedly reducing VAT revenue because multiple-rate VAT systems offer more opportunity for evasion as

well as being harder to supervise. The age of the VAT has a significantly positive effect on VAT revenue. Increase in Inflation and foreign exchange rates tend to lower VAT revenue.

4.2.3 Significance of the Independent Variables

To test the significance of the independent variables, we use the *p*-values for the *t statistic*, provided in Table 4.1 above. If *p*-values are equal to or less than five percent, we conclude that they are significantly related to *Y* (VAT revenue). If they are greater than five percent, then they are not significant in predicting *Y*. The *p*-values for standard rate, number of rates, range, inflation rate and foreign exchange rate are greater than 0.05, thus they are not significant in predicting *Y*. Since the *p*-value for age is less than 0.05, we can therefore conclude that age is significantly related to *Y*.

Figure 4.3: Linear Trend Model



Source: Author

Graph 4.2 shows the scatter plot for the actual VAT revenue collected during the period under review, against the line of best fit, obtained by modeling the variables

into the linear trend model above. The actual VAT revenue collected fall around the line of best fit. The highest abnormal VATs are in the years 2005/06, 2008/09, and 2009/10.

Table 4.2 below compares the normal VAT with actual revenue collected during the period under review. The results show that actual revenue in some years surpassed normal and in others fell below normal.

Table 4.2: Abnormal VAT Collections (Kshs. Million)

Fiscal Year	Actual Total VAT	Normal VAT ($Y_i = \alpha + \sum\beta_k x_{ik}$)	Abnormal VAT
1995/96	28,398	32,122	3,724
1996/97	29,136	25,556	(3,580)
1997/98	35,656	29,055	(6,601)
1998/99	39,263	41,605	2,342
1999/00	41,212	33,985	(7,227)
2000/01	50,426	42,505	(7,921)
2001/02	50,899	55,343	4,444
2002/03	56,366	59,602	3,236
2003/04	58,773	65,400	6,627
2004/05	72,656	78,355	5,699
2005/06	76,185	90,821	14,636
2006/07	96,573	100,869	4,296
2007/08	111,008	113,588	2,580
2008/09	126,878	115,246	(11,632)
2009/10	141,041	130,418	(10,623)

Source: Author from KRA database

4.2.4 Goodness of fit of the Model

Table 4.3: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.978[a]	.957	.924	9904.67964	.957	29.322	6	8	.000

a Predictors: (Constant), Forex $, No. of Rates, Infl Rate, Std Rate, Range, Age
b Dependent Variable: Y
Source: Author from KRA database

The adjusted R Square is 0.924. It means that the model accounts for 92.4% of variance in VAT revenue, i.e., 92.4% of the variation in VAT revenue is explained by the determinants of VAT revenue. The regression equation appears to be very useful for making predictions since the value of R^2 is close to 1.

4.3 Hypothesis Testing

Table 4.4: ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17259575872.436	6	2876595978.739	29.322	.000[a]
	Residual	784821430.898	8	98102678.862		
	Total	18044397303.333	14			

a Predictors: (Constant), Forex $, No. of Rates, Infl Rate, Std Rate, Range, Age
b Dependent Variable: Y
Source: Author from KRA database

The following steps are used to test the hypothesis to determine if the model is useful for predicting the response at 5% significance level.

Hypotheses statement

Null hypothesis: The predictors are not useful for predicting VAT revenue.

Alternate hypothesis: At least one of the predictors is useful for predicting VAT revenue.

$H_o : \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$

H_a : at least one $\beta_i \neq 0$

Significance level

The significance level selected is 5%.

$\alpha = 0.05$

Rejection region

Reject the null hypothesis if p-value ≤ 0.05.

Test statistic and p-value

From the ANOVA Table, $F = 29.322$, p-value < 0.001

Conclusion

Since p-value $< 0.001 \leq 0.05$, we shall reject the null hypothesis.

Decision

At the $\alpha = 0.05$ level of significance, there exists enough evidence to conclude that at least one of the predictors is useful for predicting VAT revenue; therefore the model is useful.

4.4 Checking for Multicollinearity of Independent Variables

Table 4.5: Correlations

		Y	Std Rate	No. of Rates	Range	Age	Infl Rate	Forex $
Y	Pearson Correlation	1.000	-.035	-.513	-.571	.951	.018	.422
	Sig. (1-tailed)	.	.451	.025	.013	.000	.475	.059
	N	15	15	15	15	15	15	15
Std Rate	Pearson Correlation	-.035	1.000	.262	-.018	.077	-.411	.503
	Sig. (1-tailed)	.451	.	.172	.475	.392	.064	.028
	N	15	15	15	15	15	15	15
No. of Rates	Pearson Correlation	-.513	.262	1.000	.602	-.480	-.024	.155
	Sig. (1-tailed)	.025	.172	.	.009	.035	.466	.290
	N	15	15	15	15	15	15	15
Range	Pearson Correlation	-.571	-.018	.602	1.000	-.673	.088	-.386
	Sig. (1-tailed)	.013	.475	.009	.	.003	.377	.078
	N	15	15	15	15	15	15	15
Age	Pearson Correlation	.951	.077	-.480	-.673	1.000	.018	.600
	Sig. (1-tailed)	.000	.392	.035	.003	.	.474	.009
	N	15	15	15	15	15	15	15
Infl Rate	Pearson Correlation	.018	-.411	-.024	.088	.018	1.000	-.220
	Sig. (1-tailed)	.475	.064	.466	.377	.474	.	.215
	N	15	15	15	15	15	15	15
Forex $	Pearson Correlation	.422	.503	.155	-.386	.600	-.220	1.000
	Sig. (1-tailed)	.059	.028	.290	.078	.009	.215	.
	N	15	15	15	15	15	15	15

Source: Author from KRA database

The correlations table displays Pearson correlation coefficients, significance values, and the number of cases with non-missing values (N). The values of the correlation coefficient range from -1 to 1. The sign of the correlation coefficient indicates the direction of the relationship (positive or negative). The absolute value of the correlation coefficient indicates the strength, with larger absolute values indicating stronger relationships. The correlation coefficients on the main diagonal are always 1, because each variable has a perfect positive linear relationship with itself. The larger r, ignoring sign, the stronger the association between the two variables and the more accurately you can predict one variable from knowledge of the other variable. At its extreme, a correlation of 1 or -1 means that the two variables are perfectly correlated, meaning that you can predict the values of one variable from the values of the other variable with perfect accuracy. At the other extreme, an r of zero implies an absence

of a correlation - there is no relationship between the two variables. This implies that knowledge of one variable gives you absolutely no information about what the value of the other variable is likely to be. The sign of the correlation implies the "direction" of the association. A positive correlation means that relatively high scores on one variable are paired with relatively high scores on the other variable, and low scores are paired with relatively low scores. On the other hand, a negative correlation means that relatively high scores on one variable are paired with relatively low scores on the other variable.

The significance of each correlation coefficient is also displayed in the correlation table. The significance level (or p-value) is the probability of obtaining results as extreme as the one observed. The t-test is used to establish if the correlation coefficient is significantly different from zero, and, hence that there is evidence of an association between the two variables. If the significance level is very small (less than 0.05) then the correlation is significant and the two variables are linearly related. If the significance level is relatively large (0.05), then the correlation is not significant and the two variables are not linearly related. The smaller the p-level, the more significant the relationship, the larger the correlation, the stronger the relationship

When independent variables are correlated, there are problems in estimating regression coefficients. Collinearity means that within the set of independent variables, some of the independent variables are (nearly) totally predicted by the other independent variables. If the absolute value of Pearson correlation is greater than 0.7, there is strong correlation and collinearity is very likely to exist. If the absolute value of Pearson correlation is between 0.3 and 0.7, there is moderate correlation thus collinearity is likely to exist and there is no linear relationship between the independent variables. If the absolute value of Pearson correlation is between 0 and 0.3, there is weak correlation.

In this study, there is a strong positive correlation between foreign exchange rate and standard VAT rate, which was statistically significant ($r = 0.503$, $p = 0.028$) and the two variables are linearly related thus one variable can be predicted from the knowledge of the other variable. The same applies to number of rates and range ($r = 0.602$, $p = 0.009$), and between foreign exchange rate and age ($r = 0.600$, $p = 0.009$).

A strong negative correlation exists between number of rates and age of the VAT rate, which was statistically significant (r = -0.480, p = 0.035); and between range and age (r = -0.673, p = 0.003). Since none of the predictor variables has a variance inflation factor (VIF) greater than ten (Table 4.1), there are no apparent multicollinearity problems; i.e. there is no variable in the model that is measuring the same relationship or quantity as is measured by another variable or group of variables.

There is a strong positive correlation between the age of the VAT and VAT revenue collected (r = 0.951, p = 0.000), and between foreign exchange rate and VAT revenue collected (r = 0.422, p = 0.059). A strong negative correlation exists between number of rates and VAT revenue collected which is statistically significant ((r = -0.513, p = 0.025) and between range and VAT revenue collected (r = -0.571, p = 0.013). Thus, VAT revenue collected is likely to be predicted by the age of the VAT, the number of VAT rates, foreign exchange rate, and the range between the highest and lowest non-zero VAT rates.

4.5 Discussion of the Findings

VAT revenue accounts for about twenty-five percent of total tax revenues in Kenya. The age of the VAT has a significantly positive effect on VAT revenue. A unit increase in the age of VAT results to an increase in Y by 48526.308 units on average, holding other determinants constant. One interpretation is that administration of the VAT, and compliance with it, improves with experience; another, that unobserved attributes of VAT design improve over time. Our results largely support the conventional wisdom, which asserts that old VATs raise significantly more, all else being equal, than do new.

Raising rates within the existing system is the most obvious approach for increasing revenues (Bird, 2006). In discussions of tax reform it is sometimes argued that in order to maximize revenue it is better to set a lower tax rate on a broader base rather than push the tax rate yet higher. Our results support this contention. The standard VAT rate has a significant impact on revenues: each 1 percentage point increase in the standard rate reduces the ratio of VAT revenues by about 1424.385 on average. Since the slope for number of VAT rates is somewhere between -9075.201 and 6226.431, the tax rate cannot be pushed too high without markedly reducing VAT revenue

because multiple-rate VAT systems offer more opportunity for evasion as well as being harder to supervise. However, the effect of standard VAT rate on VAT revenue collected appears to be not significant.

Multiple rate structure is inherently complex, but yet, many argue for it on both efficiency and equity grounds. According to Bogetic and Hassan (1993), other things being constant, VAT generates higher revenue in countries with a single VAT rate than in countries with multiple VAT rates. The lessons learned from the EU experience show that a moderate single VAT rate taxing a broad consumption base with very limited exemptions is far better than applying a high standard rate with many exemptions and multiple rates. Our findings disagree with a single rate because for every single-unit increase in number of rates, the average VAT Revenue increases by up to 2984.791 on average.

There is evidence that the range between the highest and the lowest positive VAT tax rate in countries with multiple-rate VATs also has a positive bearing on VAT revenues for a given standard rate. From the analyzed data, we find that for every single-unit increase in range between highest and lowest non-zero VAT rates, the VAT Revenue increase by 1105.467 on average. For every single-unit increase in inflation rate, the average VAT Revenue decreases by 943.637 units on average. For every single-unit increase in foreign exchange rate, the average VAT Revenue decreases by 1213.542 units. Volume of imports has significant influence on the present levels of VAT revenues. VAT on various imported products is vulnerable to external events because their prices are determined in the world market and tend to be volatile (Wawire, 2011). The increase in inflation and foreign exchange rates tend to lower VAT revenue. However, the effect of inflation on VAT revenue collected appears to be not significant.

From the correlation coefficients, the age of the VAT can be used to predict the number of rates, the range between highest and lowest non-zero VAT rates and the foreign exchange rate. The number of VAT rates in use predicts the range while the standard rate predicts the foreign exchange rate.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides summary of the study in section 5.2 and the derived conclusions from the study discussed in section 5.3. It further highlights the limitations of the study and recommendations for further research in sections 5.4 and 5.5 respectively.

5.2 Summary

The objective of this study was to establish the determinants of VAT revenue in Kenya. A causal study was adopted to measure the extent of the relationship between the variables. The data collected was analyzed using regression model at 5% level of significance, while the performance of VAT was measured using Efficiency Ratio. The results of the study show that VAT revenue over the past fifteen years has been growing and Kenya is keeping with the worldwide VAT productivity average of 34 percent. A model was developed for VAT revenue and all its variables tested. The dependent variable is VAT revenue, and the independent variables (determinants) are foreign exchange rate, number of rates, Inflation rate, standard rate, range, and age. 92.4% of the variation in VAT revenue is explained by the determinants of VAT revenue.

The actual revenues were found to be around the line of best fit. The model was found to be useful and at least one of the predictors is useful for predicting VAT revenue. Age was found to be significantly related to VAT revenue collected. There is a linear relationship between foreign exchange rate and standard VAT rate, number of rates and range, number of rates and the age of the VAT, and also between foreign exchange rate and age. The determinants of VAT revenue do not have multicollinearity problems and have been found to be useful in predicting VAT revenue. VAT revenue is likely to be predicted by the age of the VAT, the number of VAT rates, foreign exchange rate, and the range between the highest and lowest non-zero VAT rates.

5.3 Conclusion

This study concludes that foreign exchange rate, number of rates, range, and age directly or indirectly influence VAT revenue. This was observed from the increase in VAT collections over the study period, given changes in the determinants. The study also concludes that Kenya's VAT productivity is normal, comparing it with worldwide results. The results of this study are consistent with similar studies in other countries. For instance, old VATs and a high range between highest and lowest non-zero VAT rates have a positive bearing on VAT revenue, all else being equal; and that the tax rate cannot be pushed too high without markedly reducing VAT revenue.

5.4 Limitations of the Study

The results of this study clearly showed that the determinants of VAT revenue have an effect on the VAT revenue that is collected by the government of Kenya in a given fiscal year. What is not clear is the individual reaction by consumers to changes in the determinants of VAT revenue, e.g. when the standard tax rate for a particular good increases, consumers could substitute it with non-taxable goods. Variables which cannot be measured numerically i.e. nature of the tax system and taxpayers' literacy, were not taken into account.

5.5 Recommendations for Further Research

Studies on VAT performance should be done using the C-efficiency ratio. This is the ratio of VAT revenue to consumption, divided by the standard tax rate. It uses consumption because it is a more appropriate VAT base than GDP. Various factors could be behind the upward growth in VAT revenue over the period of study. Withholding VAT is a government requirement for the payer of an item of income to withhold or deduct tax from the payment, and pay that tax to the government. It was introduced in Kenya with effect from 1st October, 2003, as a reinforcement measure to ensure that all the VAT charged reaches the government, and was suspended on 30th June, 2011. Researchers should study the impact of Withholding VAT on VAT revenue, during the period it was in effect. Also, study should be carried out on the impact of the Electronic Tax Register (ETR) on VAT revenue, which was introduced in June 2004 to ensure that sales are properly recorded by registered taxpayers in the country and to enhance the accountability systems for VAT.

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APPENDICES

Appendix I: Foreign Exchange Rates

	United States dollar	Sterling pound	Euro	South Africa Rand	Uganda shilling/=	Tanzania shilling/=	AE Dirham	Canadian dollar	Swiss franc	Japanese yen (100)	Swdish kroner	Norwegian kroner	Danish kroner	Indian rupee
Jan-93	36.230	55.623						28.356	24.544	28.995	5.009	5.284	5.735	1.399
Feb-93	36.557	52.675						29.009	24.079	30.208	4.849	5.239	5.776	1.412
Mar-93	43.121	62.919						34.594	28.262	36.831	5.576	6.125	6.782	1.438
Apr-93	51.879	80.336						41.122	35.658	46.260	6.993	7.682	8.481	1.652
May-93	62.161	96.377						48.996	42.940	56.363	8.495	9.151	10.083	1.981
Jun-93	64.153	96.966						50.182	43.514	59.787	8.635	9.188	10.107	2.037
Jul-93	65.333	97.939						50.972	43.186	60.694	8.268	9.000	9.446	2.080
Aug-93	65.421	97.737						50.093	43.732	63.073	8.145	8.897	9.515	2.085
Sep-93	65.796	100.323						49.839	46.441	62.491	8.218	9.295	9.916	2.098
Oct-93	67.974	102.121		19.985				51.283	47.218	63.590	8.545	9.493	10.265	2.164
Nov-93	68.982	102.158		20.501				52.421	46.122	64.021	8.367	9.348	10.205	2.198
Dec-93	68.413	101.938		20.157				51.375	46.714	62.351	8.188	9.217	10.198	2.181
Jan-94	67.928	101.328		19.748				51.555	46.111	60.966	8.360	9.051	10.040	2.165
Feb-94	67.405	99.752		19.552				50.284	46.268	63.346	8.462	9.008	9.972	2.149
Mar-94	66.049	98.577		19.124				48.501	46.338	62.874	8.349	8.995	9.917	2.107
Apr-94	62.777	93.070		17.595				45.401	43.399	60.652	7.940	8.498	9.408	2.015
May-94	58.046	87.313		16.015				42.133	41.136	56.081	7.528	8.067	8.942	1.846
Jun-94	56.174	85.665		15.500				40.698	40.857	54.715	7.226	7.949	8.818	1.787
Jul-94	55.969	86.498		15.272				40.526	42.256	56.801	7.231	8.168	9.093	1.793
Aug-94	55.532	85.700		15.407				40.023	42.107	57.645	7.192	8.104	8.991	1.787
Sep-94	51.661	80.595		14.509				38.076	39.900	53.207	6.852	7.589	8.446	1.655
Oct-94	42.382	67.991		11.950				31.269	33.490	45.069	5.841	6.371	7.069	1.376
Nov-94	43.499	68.959		12.323				31.682	33.559	44.380	5.942	6.485	7.217	1.393
Dec-94	45.184	70.490		12.733				32.588	34.030	45.156	6.040	6.620	7.363	1.448
Jan-95	44.478	70.033		12.546				31.436	34.571	44.640	5.974		7.394	1.426
Feb-95	44.473	69.941		12.499				31.636	34.985	45.293	6.055		7.508	1.420
Mar-95	44.138	70.619		12.265				31.324	37.668	48.690	6.089		7.770	1.401
Apr-95	43.986	70.794		12.212				31.935	38.756	52.626	5.999		8.120	1.404
May-95	51.887	82.206		14.143				38.150	44.428	61.133	7.153		9.383	1.661
Jun-95	53.621	85.551		14.666				38.896	46.327	63.496	7.435		9.823	1.717
Jul-95	56.592	90.250		15.561				41.509	49.091	65.051	7.917		10.493	1.813
Aug-95	55.699	87.426		15.332				41.095	46.659	59.006	7.728		9.984	1.779
Sep-95	55.432	86.353		15.164				41.087	46.647	55.180	7.784		9.793	1.696
Oct-95	55.515	87.670		15.233				41.250	48.552	55.198	8.144		10.137	1.639
Nov-95	55.536	86.900		15.251				41.089	48.682	54.514	8.443		10.149	1.627
Dec-95	55.801	85.966		15.254				40.786	47.988	54.843	8.447		10.031	1.625
Jan-96	56.714	86.791		15.583				41.541	48.110	53.716	8.450		10.045	1.612
Feb-96	58.294	89.567		15.632				42.489	48.780	55.120	8.480		10.365	1.602
Mar-96	58.412	89.254		14.886				42.779	48.869	55.191	8.672		10.242	1.703
Apr-96	58.374	88.489		13.928				42.977	47.895	54.398	8.693		10.056	1.712
May-96	58.237	88.181		13.335				42.552	45.859	54.748	8.570		9.844	1.672
Jun-96	57.986	89.423		13.335				42.480	46.133	53.271	8.689		9.747	1.666
Jul-96	57.312	89.080		13.077	18.384	10.489		41.892	46.446	52.447	8.645		9.834	1.623
Aug-96	56.992	88.360		12.598	18.711	10.391		41.553	47.435	52.885	8.620		9.953	1.602
Sep-96	56.428	88.019		12.598	19.035	10.468		41.213	45.875	51.392	8.499		9.691	1.585
Oct-96	55.856	88.545		12.225	19.767	10.589		41.348	44.440	49.756	8.469		9.543	1.574
Nov-96	55.624	92.444		11.948	19.574	10.743		41.589	43.677	47.557	8.405		9.593	1.563
Dec-96	55.151	91.824		11.781	19.084	10.799		40.520	41.578	48.444	8.113		9.287	1.546
Jan-97	54.738	91.086		11.774	19.010	10.904		40.555	39.413	46.506	7.727		8.955	1.534
Feb-97	54.930	89.313		12.324	18.882	10.899		40.542	37.820	44.671	7.430		8.590	1.537
Mar-97	54.890	88.229		12.389	18.746	10.920		40.059	37.474	44.777	7.176		8.483	1.536
Apr-97	54.377	88.682		12.247	19.074	11.020		39.019	37.241	43.300	7.079		8.347	1.522
May-97	53.749	87.789		12.031	19.820	11.343		38.966	37.608	45.245	7.004		8.296	1.506
Jun-97	54.235	89.217		12.061	19.682	11.516		39.180	37.670	47.509	7.015		8.257	1.519
Jul-97	57.360	95.942		12.595	18.602	10.903		41.669	38.785	49.819	7.350		8.391	1.611
Aug-97	67.120	107.721		14.312	16.264	9.268		48.330	44.356	56.926	8.403		9.475	1.874
Sep-97	63.766	102.113		13.502	17.450	9.676		45.974	43.309	52.795	8.280		9.362	1.756
Oct-97	62.635	102.220		13.316	18.172	9.830		45.006	40.164	51.741	8.283		9.291	1.737
Nov-97	63.931	107.884		13.262	17.933	9.584		45.267	45.493	51.182	8.468		9.669	1.729
Dec-97	63.051	104.759		12.950	18.139	9.879		44.252	43.837	48.769	8.100		9.303	1.618
Jan-98	61.164	100.079		12.382	18.759	10.305		42.525	41.526	47.160	7.638		8.808	1.566
Feb-98	60.517	99.252		12.272	19.046	10.656		42.171	41.284	48.107	7.497		8.720	1.562
Mar-98	60.125	99.861		12.100	19.162	11.142		42.462	40.444	46.742	7.556		8.644	1.527
Apr-98	59.612	99.744		11.810	19.468	11.143		41.738	39.596	45.142	7.626		8.620	1.508
May-98	62.603	102.525		12.289	19.298	10.624		43.344	42.373	46.388	8.144		9.264	1.554
Jun-98	60.519	99.802		11.317	20.329	10.960		41.301	40.533	43.074	7.655		8.786	1.437
Jul-98	59.337	97.650		9.539	20.801	11.252		39.977	39.215	42.209	7.432		8.666	1.400
Aug-98	59.374	97.024		9.423	20.921	11.262		38.757	39.747	41.093	7.314		8.724	1.392
Sep-98	60.008	100.848		9.794	21.258	11.153		39.419	42.819	44.636	7.601		9.149	1.414

Oct-98	59.871	101.431		10.335	21.852	11.265		38.826	44.751	49.369	7.629		9.465	1.416
Nov-98	59.630	99.130		10.558	22.600	11.329		41.582	43.107	49.577	7.464		9.336	1.409
Dec-98	61.816	103.187		10.598	22.095	10.977		40.163	45.368	52.495	7.657		9.723	1.454
Jan-99	61.802	101.993	71.752	10.349	22.094	11.029		40.659	44.682	54.614	7.887		9.636	1.455
Feb-99	62.496	101.829	70.072	10.233	22.002	10.833		41.747	43.835	53.631	7.879		9.435	1.472
Mar-99	64.011	103.804	69.723	10.309	21.569	10.804		42.183	43.711	53.539	7.796		9.385	1.510
Apr-99	65.651	105.825	70.277	10.739	21.898	10.556		44.120	43.894	54.928	7.890		9.467	1.539
May-99	68.819	111.150	73.178	11.135	22.226	10.310		47.107	45.717	56.487	8.161		9.674	1.617
Jun-99	73.605	117.519	76.411	12.095	19.636	9.731		50.100	46.183	60.962	8.649		10.094	1.711
Jul-99	73.098	115.084	75.675	11.970	19.895	10.466		49.226	47.138	61.085	8.652		10.130	1.694
Aug-99	74.414	119.554	78.947	12.143	19.653	10.645		49.834	49.347	65.653	9.014		10.615	1.715
Sep-99	75.681	122.801	79.476	12.501	19.655	10.536		51.211	47.896	70.613	9.208		10.694	1.740
Oct-99	75.571	125.261	80.980	12.408	19.992	10.554		51.198	50.811	71.302	9.290		10.895	1.743
Nov-99	74.789	121.425	77.435	12.182	20.110	10.660		50.982	48.231	71.391	8.959		10.411	1.726
Dec-99	73.943	119.306	74.858	12.026	20.311	10.785		50.154	46.769	72.075	8.689		10.020	1.702
Jan-00	70.681	116.015	71.828	11.539	21.303	11.306	19.244	48.800	44.578	67.238	8.293	8.836	9.641	1.623
Feb-00	73.219	117.416	72.031	11.602	20.763	10.933	19.935	50.491	44.779	66.975	8.477	8.863	9.682	1.679
Mar-00	74.431	117.582	71.834	11.531	20.315	10.760	20.265	50.959	44.734	69.797	8.551	8.858	9.636	1.708
Apr-00	74.363	117.823	70.541	11.228	20.459	10.757	20.246	50.714	44.762	70.580	8.533	8.674	9.455	1.704
May-00	75.970	114.701	68.917	10.812	20.475	10.520	20.665	50.818	44.266	70.200	8.367	8.410	9.250	1.729
Jun-00	77.545	117.038	73.673	11.202	20.322	10.311	21.113	52.522	47.233	73.051	8.871	8.929	9.869	1.735
Jul-00	76.406	115.364	71.907	11.107	21.029	10.456	20.773	51.715	46.363	70.892	8.551	8.795	9.667	1.706
Aug-00	76.448	113.907	69.260	10.993	21.987	10.456	20.814	51.587	44.663	70.714	8.251	8.555	9.299	1.674
Sep-00	78.197	111.998	68.091	10.871	22.676	10.239	21.290	52.719	44.506	73.235	8.098	8.480	9.125	1.704
Oct-00	79.257	115.167	67.788	10.605	23.088	10.094	21.579	52.422	44.804	73.128	7.954	8.474	9.100	1.710
Nov-00	78.857	112.515	67.452	10.263	23.434	10.161	21.470	51.152	44.375	71.443	7.859	8.458	9.050	1.686
Dec-00	78.733	114.915	70.454	10.296	22.453	10.188	21.437	51.629	46.613	70.318	8.138	8.662	9.419	1.685
Jan-01	78.606	116.251	73.814	10.115	23.191	10.223	21.402	52.314	48.290	67.304	8.328	9.007	9.437	1.690
Feb-01	78.250	113.794	72.161	10.035	22.134	10.403	21.304	51.446	46.998	67.373	8.084	8.791	9.670	1.687
Mar-01	77.753	112.427	70.807	9.863	22.470	10.701	21.169	49.960	46.100	64.167	7.781	8.650	9.481	1.668
Apr-01	77.499	111.202	69.185	9.593	22.867	11.359	21.099	49.698	45.252	62.646	7.597	8.530	9.276	1.659
May-01	78.540	112.045	68.825	9.845	22.802	11.337	21.446	50.948	44.866	64.487	7.601	8.553	9.236	1.673
Jun-01	78.620	110.293	67.152	9.767	22.616	11.332	21.405	51.548	44.117	64.445	7.302	8.459	8.995	1.673
Jul-01	79.018	111.641	67.829	9.624	21.926	11.271	21.502	51.677	44.817	63.383	7.331	8.519	9.126	1.675
Aug-01	78.914	113.366	71.043	9.505	22.172	11.297	21.475	49.581	46.919	64.944	7.684	8.764	9.551	1.675
Sep-01	78.946	115.471	71.896	9.147	22.192	11.326	21.520	50.445	48.190	66.467	7.448	8.991	9.661	1.657
Oct-01	78.967	114.687	71.583	8.526	22.054	11.344	21.499	50.281	48.326	65.122	7.493	8.943	9.626	1.645
Nov-01	78.959	113.465	70.138	8.132	22.001	11.547	21.541	49.527	47.857	64.530	7.133	8.854	9.419	1.645
Dec-01	78.686	113.238	70.238	6.862	21.857	11.649	21.423	49.753	47.602	61.928	7.451	8.793	9.415	1.642
Jan-02	78.597	112.767	69.539	6.761	22.218	11.753	21.461	48.891	47.165	59.324	7.522	8.772	9.354	1.626
Feb-02	78.250	111.358	68.075	6.827	22.365	12.162	21.304	48.797	46.083	58.609	7.420	8.737	9.170	1.607
Mar-02	78.057	111.059	68.437	6.801	22.716	12.402	21.252	49.092	46.730	59.521	7.541	8.849	9.210	1.602
Apr-02	78.274	112.906	69.338	7.060	22.902	12.499	21.311	49.242	47.099	59.585	7.590	9.042	9.276	1.600
May-02	78.315	114.365	71.818	7.726	22.960	12.507	21.322	50.333	49.263	61.901	7.764	9.539	9.659	1.599
Jun-02	78.663	116.596	75.099	7.750	22.859	12.177	21.417	51.325	50.978	63.696	8.242	10.123	10.101	1.607
Jul-02	78.797	122.581	78.274	7.800	22.899	11.982	21.454	51.347	53.510	66.753	8.449	10.575	10.530	1.611
Aug-02	78.574	120.837	76.851	7.437	22.985	12.803	21.393	50.351	52.531	66.029	8.310	10.327	10.344	1.617
Sep-02	78.807	122.547	77.272	7.429	22.939	12.364	21.456	50.377	52.731	65.267	8.424	10.488	10.405	1.627
Oct-02	79.324	123.572	77.849	7.682	23.040	12.303	21.597	50.586	53.152	64.047	8.551	10.600	10.477	1.640
Nov-02	79.565	125.081	79.679	8.211	23.029	12.390	21.667	51.069	54.325	65.495	8.777	10.863	10.728	1.648
Dec-02	79.534	126.078	80.986	8.883	23.208	12.296	21.663	51.511	54.936	65.185	8.905	11.087	10.846	1.652
Jan-03	77.718	125.662	82.603	8.941	24.079	12.807	21.159	51.092	56.479	64.414	8.999	11.242	11.115	1.621
Feb-03	76.841	123.836	82.777	9.259	24.544	13.284	20.906	51.395	56.409	64.332	9.045	10.977	11.139	1.609
Mar-03	76.583	121.166	82.667	9.502	25.395	13.549	20.850	52.347	56.241	64.539	8.963	10.544	11.139	1.608
Apr-03	75.656	119.180	82.181	9.820	26.144	13.736	20.598	52.213	54.507	63.141	8.971	10.491	11.063	1.597
May-03	71.607	116.187	82.817	9.369	27.938	14.532	19.496	51.988	54.749	61.166	9.160	10.432	11.122	1.523
Jun-03	73.722	122.531	86.076	9.347	27.119	14.092	20.072	54.525	55.909	62.339	9.417	10.528	11.595	1.579
Jul-03	74.747	121.467	85.044	9.905	26.701	13.934	20.350	54.238	54.953	62.986	9.250	10.251	11.439	1.617
Aug-03	75.960	121.118	84.700	10.246	26.324	13.730	20.681	54.396	54.981	63.935	9.172	10.238	11.395	1.653
Sep-03	77.904	125.460	87.476	10.596	25.586	13.435	21.210	57.062	56.527	67.691	9.641	10.656	11.777	1.720
Oct-03	77.765	130.413	91.015	11.141	25.595	13.441	21.172	58.743	58.812	70.972	10.078	11.042	12.251	1.713
Nov-03	76.738	129.601	89.776	11.329	25.716	13.670	20.922	58.393	57.541	70.267	9.963	10.926	12.073	1.686
Dec-03	76.019	132.927	93.283	11.642	25.494	13.905	20.697	57.897	60.000	70.496	10.303	11.304	12.536	1.667
Jan-04	76.295	138.951	96.220	11.001	25.390	14.183	20.772	58.911	61.483	71.660	10.517	11.159	12.917	1.679
Feb-04	76.390	142.600	96.557	11.249	24.413	14.498	20.782	57.487	61.376	71.716	10.491	10.975	12.961	1.687
Mar-04	77.262	141.322	94.848	11.630	24.958	14.342	21.035	58.109	60.542	71.149	10.241	11.093	12.730	1.717
Apr-04	77.910	140.525	93.410	11.859	24.620	14.263	21.211	58.252	59.979	72.431	10.145	11.242	12.549	1.775
May-04	79.243	141.466	95.125	11.576	23.395	14.053	21.574	57.391	61.708	70.597	10.377	11.568	12.790	1.752
Jun-04	79.270	144.842	96.186	12.265	22.974	14.031	21.582	58.246	63.309	72.357	10.483	11.585	12.944	1.741
Jul-04	79.991	147.415	98.187	13.034	21.856	13.750	21.775	60.475	64.315	73.183	10.643	11.570	13.205	1.737
Aug-04	80.826	147.162	98.496	12.519	21.393	13.431	22.005	61.519	64.023	73.239	10.685	11.817	13.244	1.744
Sep-04	80.721	144.754	98.612	12.320	21.326	13.273	21.977	62.565	63.928	73.358	10.816	11.790	13.253	1.750
Oct-04	81.202	146.771	101.431	12.678	21.365	13.068	22.107	65.044	65.755	74.546	11.170	12.306	13.639	1.773
Nov-04	81.204	150.849	105.363	13.390	21.324	13.020	22.110	67.816	69.247	77.455	11.671	12.921	14.182	1.800
Dec-04	79.774	153.936	106.880	13.884	21.790	13.174	21.721	65.602	69.655	76.899	11.882	12.985	14.380	1.814
Jan-05	77.930	146.511	102.334	13.046	22.213	13.943	21.219	63.717	66.184	75.477	11.282	12.446	13.753	1.782
Feb-05	76.938	145.140	100.142	12.758	22.266	14.420	20.948	62.108	64.583	73.326	10.989	12.020	13.458	1.761
Mar-05	74.803	142.707	98.803	12.465	22.863	14.800	20.366	61.390	63.884	72.297	10.835	12.056	13.270	1.715
Apr-05	76.146	144.300	98.550	12.354	23.353	14.497	20.732	61.589	63.763	71.120	10.720	12.034	13.230	1.741

May-05	76.397	141.705	96.974	12.038	23.244	14.591	20.800	60.817	62.758	71.610	10.519	11.987	13.925	1.757
Jun-05	76.681	139.521	93.245	11.339	22.656	14.683	20.877	61.741	60.605	70.575	10.051	11.809	12.521	1.760
Jul-05	76.234	133.598	91.835	11.336	22.996	14.889	20.756	62.273	58.941	68.089	9.737	11.574	12.312	1.751
Aug-05	75.809	135.866	93.165	11.685	23.939	14.910	20.640	62.833	59.981	68.458	9.960	11.762	12.489	1.738
Sep-05	74.103	134.101	90.855	11.620	24.934	15.318	20.176	62.827	58.649	66.723	9.728	11.631	12.181	1.687
Oct-05	73.709	129.853	88.559	11.204	25.150	15.468	20.069	62.613	57.185	64.219	9.408	11.290	11.874	1.644
Nov-05	74.738	129.762	88.151	11.204	24.523	15.641	20.348	63.215	57.054	63.193	9.217	11.269	11.818	1.635
Dec-05	73.107	127.624	86.690	11.445	24.807	15.998	19.904	62.937	56.003	61.633	9.184	10.870	11.632	1.605
Jan-06	72.214	127.513	87.526	11.784	25.168	16.289	19.661	62.338	56.497	62.550	9.392	10.869	11.733	1.629
Feb-06	71.804	125.614	85.841	11.691	25.270	16.567	19.549	62.480	55.080	60.936	9.197	10.639	11.499	1.621
Mar-06	72.281	125.958	86.901	11.535	25.188	16.746	19.680	62.252	55.384	61.631	9.248	10.878	11.646	1.625
Apr-06	71.304	125.836	87.454	11.653	25.611	17.159	19.413	62.183	55.503	60.935	9.364	11.115	11.723	1.593
May-06	71.764	134.128	91.638	11.337	25.565	17.310	19.539	64.642	58.892	64.241	9.814	11.750	12.290	1.583
Jun-06	73.405	135.371	92.962	10.546	25.323	17.073	19.988	65.584	59.602	64.031	10.057	11.828	12.466	1.594
Jul-06	73.657	135.722	93.501	10.382	25.197	17.205	20.054	64.344	59.615	63.708	10.154	11.763	12.533	1.588
Aug-06	72.870	137.854	93.339	10.487	25.368	17.824	19.839	64.093	59.163	62.892	10.137	11.673	12.510	1.566
Sep-06	72.866	137.591	92.863	9.846	25.451	17.990	19.839	65.136	58.665	62.260	10.018	11.004	12.446	1.580
Oct-06	72.289	135.577	91.262	9.462	25.520	17.580	19.682	64.080	57.489	60.955	9.858	10.877	12.240	1.590
Nov-06	71.127	135.889	91.580	9.802	25.519	18.229	19.365	62.635	57.611	60.649	10.058	11.096	12.282	1.586
Dec-06	69.627	136.793	92.030	9.901	26.068	18.621	18.957	60.463	57.727	59.473	10.185	11.279	12.344	1.560
Jan-07	69.885	136.906	90.872	9.738	25.972	18.553	19.028	59.462	56.419	58.091	10.003	10.980	12.191	1.577
Feb-07	69.616	136.399	91.043	9.714	25.436	18.493	18.956	59.424	56.313	57.761	9.923	11.258	12.216	1.576
Mar-07	69.293	134.908	91.769	9.431	25.259	18.131	18.871	59.263	57.022	59.080	9.851	11.284	12.323	1.572
Apr-07	68.577	136.400	92.681	9.641	25.205	18.412	18.674	60.294	56.706	57.731	9.987	11.417	12.424	1.627
May-07	67.191	133.306	90.818	9.580	25.325	18.902	18.294	61.317	55.241	55.648	9.841	11.158	12.194	1.647
Jun-07	66.575	132.250	89.332	9.288	24.974	18.970	18.126	62.505	53.984	54.274	9.546	11.090	11.948	1.632
Jul-07	67.068	136.410	91.987	9.618	24.240	18.824	18.261	63.813	55.508	55.166	9.964	11.590	12.298	1.660
Aug-07	66.946	134.570	91.151	9.258	25.802	19.093	18.228	63.109	55.632	57.384	9.723	11.432	12.203	1.640
Sep-07	67.024	135.189	93.058	9.416	26.244	18.788	18.251	65.175	56.481	58.246	9.942	11.878	12.397	1.661
Oct-07	66.845	136.521	95.087	9.866	26.127	17.596	18.204	68.350	56.933	57.756	10.278	12.353	12.775	1.691
Nov-07	65.490	135.787	96.126	9.787	26.106	17.533	17.841	68.033	58.278	58.928	10.244	12.125	12.902	1.661
Dec-07	63.303	119.887	86.088	8.660	27.112	18.358	16.088	58.664	51.908	56.519	9.727	11.493	11.541	1.498
Jan-08	68.081	134.013	100.157	9.769	25.164	17.104	19.197	67.368	61.815	63.156	10.506	12.628	13.447	1.730
Feb-08	70.624	138.461	103.963	9.240	24.240	16.457	19.197	70.486	64.628	65.800	10.867	13.082	13.945	1.775
Mar-08	64.924	130.078	100.793	8.144	25.869	18.188	17.713	65.270	64.171	64.041	10.647	12.807	13.424	1.670
Apr-08	62.256	123.372	98.083	7.992	27.055	19.569	16.953	61.491	61.569	60.831	10.454	12.318	13.104	1.556
May-08	61.899	121.621	96.316	8.136	26.653	19.489	16.851	61.879	59.289	59.379	10.338	12.240	12.911	1.470
Jun-08	63.783	125.266	99.208	8.023	25.140	25.140	17.352	62.662	61.470	59.603	10.876	12.414	13.321	1.488
Jul-08	66.704	132.617	105.405	8.751	24.363	18.641	18.144	65.869	64.974	62.434	11.122	13.065	14.124	1.557
Aug-08	67.679	127.974	101.239	8.830	23.999	17.649	18.426	64.338	62.549	61.925	10.793	12.710	13.634	1.576
Sep-08	71.409	128.576	102.958	8.884	23.065	16.269	19.418	67.396	64.471	67.000	10.743	12.614	13.819	1.569
Oct-08	76.657	129.382	101.673	7.831	23.894	16.116	20.774	64.937	67.005	76.769	10.376	11.866	13.628	1.565
Nov-08	78.176	119.593	99.329	99.329	24.494	16.051	21.285	64.018	65.582	80.711	9.827	11.275	13.346	1.591
Dec-08	78.040	116.534	105.561	7.840	25.069	16.642	21.257	63.267	68.290	85.416	9.754	11.152	14.105	1.602
Jan-09	78.950	114.279	104.845	8.006	25.050	16.993	21.500	64.523	70.270	87.447	9.749	11.353	14.102	1.619
Feb-09	79.533	114.535	101.725	7.953	24.731	16.613	21.653	63.960	68.269	86.178	9.316	11.574	13.656	1.616
Mar-09	80.261	113.975	104.979	8.066	25.464	24.731	16.304	63.490	69.511	82.218	9.390	11.645	14.057	1.570
Apr-09	79.626	116.981	105.077	8.811	27.286	16.751	21.678	64.821	69.377	80.762	9.666	11.939	14.109	1.591
May-09	77.861	120.030	106.228	9.284	28.844	17.070	21.199	67.552	70.268	80.632	10.045	12.068	14.258	1.604
Jun-09	77.851	127.219	109.028	9.634	27.473	16.864	21.199	69.084	71.983	80.609	10.027	12.193	14.651	1.628
Jul-09	76.751	125.578	108.024	9.659	27.517	17.246	20.896	68.141	71.094	81.294	9.969	12.062	14.513	1.584
Aug-09	76.372	126.342	108.835	9.600	27.141	17.279	20.793	70.152	71.409	80.495	10.642	12.551	14.633	1.582
Sep-09	75.605	123.567	110.014	10.033	26.075	17.317	20.585	69.884	72.632	82.702	10.806	12.788	14.730	1.562
Oct-09	75.244	121.647	111.245	10.061	25.266	17.504	20.486	71.382	73.904	83.384	10.823	13.678	14.970	1.610
Nov-09	74.739	124.139	111.684	9.927	25.156	17.747	20.348	70.554	73.803	83.794	10.800	13.257	14.997	1.605
Dec-09	75.431	122.539	110.268	10.070	25.200	17.650	20.537	71.479	73.384	84.118	10.587	13.081	14.811	1.618
Jan-10	75.786	122.530	108.268	10.160	25.531	17.705	20.633	72.742	73.365	83.115	10.620	13.232	14.549	1.649
Feb-10	76.730	120.097	105.094	10.007	25.995	17.577	20.892	72.507	71.564	85.079	10.506	12.942	14.110	1.651
Mar-10	76.947	115.782	104.457	10.322	27.095	17.634	20.950	75.005	72.099	85.038	10.745	12.991	14.038	1.687
Apr-10	77.254	118.505	103.707	10.499	26.957	17.747	21.033	76.929	72.342	82.764	10.732	13.068	13.932	1.735
May-10	78.541	115.198	98.790	10.285	27.659	18.205	21.384	75.513	69.602	85.254	10.214	12.514	13.276	1.717
Jun-10	81.018	119.625	98.992	10.589	27.910	17.992	22.058	78.069	71.915	89.177	10.347	12.512	13.304	1.740
Jul-10	81.426	124.341	103.896	10.778	27.735	18.403	22.169	78.013	77.213	92.896	10.940	12.942	13.942	1.740
Aug-10	80.440	125.937	103.792	11.016	27.713	18.886	21.901	77.458	77.239	94.076	11.013	13.103	13.934	1.728
Sep-10	80.912	125.936	105.612	11.325	27.833	18.760	22.030	78.181	80.753	95.879	11.444	13.351	14.183	1.760
Oct-10	80.714	127.984	112.197	11.679	28.047	18.519	21.976	79.325	83.364	98.601	12.108	13.844	15.049	1.817
Nov-10	80.460	128.524	110.073	11.539	28.445	18.556	21.907	79.538	81.785	97.647	11.805	13.513	14.762	1.790
Dec-10	80.568	125.652	106.535	11.794	28.591	18.167	21.935	79.917	83.174	96.784	11.762	13.467	14.298	1.784
Jan-11	81.029	127.701	108.161	11.749	28.806	18.399	22.061	81.575	84.748	98.135	12.136	13.826	14.515	1.785
Feb-11	81.473	131.454	111.288	11.328	28.793	18.509	22.182	82.460	85.829	98.654	12.640	14.198	14.933	1.793
Mar-11	84.206	136.099	117.881	12.158	28.433	17.933	22.926	86.192	91.606	102.966	13.262	15.017	15.810	1.873
Apr-11	83.890	137.135	121.142	12.468	28.214	17.990	22.840	87.514	93.247	100.589	13.495	15.498	16.245	1.892
May-11	85.433	139.543	122.418	12.452	27.955	17.855	23.260	88.354	97.744	105.281	13.666	15.601	16.418	1.902
Jun-11	89.049	144.399	128.113	13.101	27.609	17.786	24.245	91.075	105.672	110.622	14.046	16.340	17.180	1.985

[1] Unweighted average of buying and selling rates

[2] Implies currency units per Kenya Shilling

Source: Central Bank of Kenya

Appendix II: VAT Rates

Rationalization process for VAT rates in Kenya

Year	Number of Rates	Rates (%)	Standard Rate (%)
1989/90	15		17
1990/91	9	0, 5, 18, 30, 45, 50, 80, 100, 150	18
1991/92	8	0, 5, 18, 25, 35, 50, 75, 100	18
1992/93	6	0, 3, 5, 18, 30, and 50	18
1993/94	4	0, 5, 18, and 40	18
1994/95	4	0, 5, 18, and 30	18
1995/96	4	0, 6, 15, and 25	15
1996/97	3	0, 8, and 25	15
1997/98	3	0, 10, and 17	17
1998/99	4	0, 10, 12, and 16	16
1999/00	4	0, 10, 13, and 15	15
2000/01	4	0, 10, 16, and 18	18
2001/02	4	0, 10, 16, and 18	18
2002/03	4	0, 10, 16, and 18	18
2003/04	3	0, 10, and 16	16

Source: Budget Statements

Adopted from Karingi et al, 2005.

Appendix III: VAT Collections

OLLECTIONS-KSHS MILLION

	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06	Dec-06	Total
mports	2,811	2,648	3,122	2,594	3,465	2,898	3,317	3,777	3,565	3,539	3,818	3,351	**38,905**
omestic Gross	4,752	4,359	4,882	4,068	4,757	4,600	4,982	4,923	5,034	5,043	5,257	4,962	**57,619**
Refunds	614	614	614	614	614	614	900	1,400	1,400	1,400	900	900	**10,585**
omestic Net	4,138	3,745	4,268	3,454	4,143	3,986	4,082	3,523	3,634	3,643	4,357	4,062	**47,034**

	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Total
mports	2,397	2,385	2,682	2,706	2,759	2,781	2,122	3,042	2,898	2,809	2,853	2,775	**32,209**
omestic Gross	4,463	3,816	4,095	4,170	4,211	4,226	3,891	4,076	4,456	4,015	4,128	4,494	**50,041**
Refunds	700	700	700	700	700	700	1,700	1,600	1,500	614	614	614	**10,843**
omestic Net	3,763	3,116	3,395	3,470	3,511	3,526	2,191	2,476	2,956	3,401	3,514	3,880	**39,198**

	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Total
mports	2,195	2,089	2,543	2,635	2,275	2,562	2,680	2,645	2,719	2,745	2,874	3,100	**31,062**
omestic Gross	3,494	3,273	3,338	3,528	3,375	3,516	3,353	3,638	3,899	3,947	3,954	4,827	**44,142**
Refunds	500	500	500	500	450	500	700	700	700	700	700	700	**7,150**
omestic Net	2,994	2,773	2,838	3,028	2,925	3,016	2,653	2,938	3,199	3,247	3,254	4,127	**36,992**

	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Total
Imports	2,382	2,438	2,509	2,768	2,532	2,060	2,094	1,964	2,394	2,239	1,982	2,391	**27,753**
Domestic Gross	3,235	2,881	2,533	3,052	2,569	2,698	2,253	2,404	2,597	2,933	3,085	3,144	**33,384**
Refunds	448	460	451	483	449	122	315	320	500	500	500	430	**4,978**
Domestic Net	2,787	2,421	2,082	2,569	2,120	2,576	1,938	2,084	2,097	2,433	2,585	2,714	**28,406**

	Jan-02	Feb-02	Mar-02	Apr-02	May-02	Jun-02	Jul-02	Aug-02	Sep-02	Oct-02	Nov-02	Dec-02	Total
Imports	2,231	1,896	1,951	1,933	2,253	1,865	2,338	2,278	2,270	2,598	2,574	2,228	**26,415**
Domestic Gross	2,837	2,360	2,448	2,775	2,690	2,544	2,436	2,376	2,726	2,885	2,642	2,629	**31,348**
Refunds	440	300	366	458	411	381	450	435	478	452	398	449	**5,018**
Domestic Net	2,397	2,060	2,082	2,317	2,279	2,163	1,986	1,941	2,248	2,433	2,244	2,180	**26,330**

	Jan-01	Feb-01	Mar-01	Apr-01	May-01	Jun-01	Jul-01	Aug-01	Sep-01	Oct-01	Nov-01	Dec-01	Total
Imports							2,075	2,196	1,852	2,257	1,512	1,815	**11,707**
Domestic Gross							2,319	2,635	2,692	2,569	2,590	2,315	**15,120**
Refunds							201	376	335	353	172	260	**1,697**
Domestic Net							2,118	2,259	2,357	2,216	2,418	2,055	**13,423**

ource: KRA Database

REVENUE TO GDP RATIO

DEPT	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
CSD	87,422	90,630	98,748	94,616	100,575	110,240	124,970	111,155	142,449	157,304	179,361	193,752
LTO									154,446	201,513	212,657	236,204
DR									61,171	72,750	86,141	101,948
TOTAL DTD	76,757	75,960	82,821	87,665	99,711	116,876	146,489	183,614	215,617	274,263	298,799	338,152
RTD	987	1,073	1,176	1,328	1,413	2,160	2,793	2,930	2,125	2,348	2,409	2,499
TOTAL (Kshs Million)	**165,166**	**167,663**	**182,745**	**183,609**	**201,699**	**229,276**	**274,252**	**297,699**	**360,191**	**433,915**	**480,569**	**534,403**
Revenue Growth Rate (%)	6.8	1.5	9.0	0.5	9.9	13.7	19.6	8.5	21.0	20.5	10.8	11.2
GDP Series (Kshs Million)	**717,161**	**855,659**	**993,930**	**1,027,698**	**1,083,579**	**1,203,056**	**1,345,026**	**1,519,158**	**1,725,690**	**1,953,111**	**2,175,559**	**2,475,000**
GDP Rowth Rate (Market Prices) -%	9.2	19.3	16.2	3.4	5.4	11.0	11.8	12.9	13.6	13.2	11.4	13.8
Rev/ GDP Ratio (%)	**23.0**	**19.6**	**18.4**	**17.9**	**18.6**	**19.1**	**20.4**	**19.6**	**20.9**	**22.2**	**22.1**	**21.6**

Source: KRA Database

Appendix IV: Revenue to GDP Ratio

Appendix V: Inflation Rates

CPI Statistics

INFLATION TRENDS 1961-PRESENT BASE February 2009=100		
YEAR	ANNUAL WEIGHTED AVERAGE INDEX	ANNUAL INFLATION RATE
1961	0.91	
1962	0.95	3.9
1963	0.97	2.7
1964	0.99	2.1
1965	1.03	3.5
1966	1.06	2.6
1967	1.08	2.6
1968	1.11	2.4
1969	1.13	1.6
1970	1.21	7.5
1971	1.26	3.7
1972	1.32	5.4
1973	1.44	8.9
1974	1.68	16.3
1975	1.98	17.8
1976	2.17	10
1977	2.45	12.7
1978	2.76	12.6
1979	2.99	8.4
1980	3.37	12.8
1981	3.8	12.6
1982	4.64	22.3
1983	5.32	14.6
1984	5.8	9.1
1985	6.43	10.8
1986	7.11	10.5
1987	7.73	8.7
1988	8.68	12.3
1989	9.85	13.5
1990	11.4	15.8
1991	13.64	19.6
1992	17.36	27.3
1993	25.35	46
1994	32.65	28.8
1995	33.17	1.6
1996	36.15	9
1997	40.2	11.2
1998	42.86	6.6
1999	45.34	5.8
2000	49.87	10
2001	52.77	5.8
2002	53.82	2
2003	59.1	9.8
2004	66.07	11.8
2005	72.83	9.9
2006	77.24	6
2007	80.54	4.3
2008	92.36	16.2
2009	102.09	10.5
2010	106.26	4.1
2011		

Source: Kenya National Bureau of Statistics
http://www.knbs.or.ke/sectoral/cpi/cpi_inflation_trends.html

Appendix VI: Revenue Collected in the Period 1995/96 – 2010/11

REVENUE COLLECTED IN THE PERIOD 1995/96-2010/2011

ITEM	1995/96			1996/97			1997/98			1998/99			1999/00		
	Actual	Target	Variance	Actual	Target	Variance	Actual	Target	Variance	Actual	Target	Variance	Actual	Target	Variance
CUSTOMS SERVICES															
Exchequer															
Gross Import Duty						-	24,508	22,978	1,530	26,602	26,200	402	28,755	30,850	(2,095)
Refunds							200		200	240		240	240	-	240
Net Import Duty	21,150			22,188	23,508	(1,020)	24,308	22,978	1,330	26,362	26,200	162	28,515	30,850	(2,335)
Import Duty- Ordinary						-	17,396	17,056	341	19,661	19,200	461	19,638	21,600	(1,962)
Import Duty- Oil						-	6,910	6,921	989	8,711	9,000	(289)	8,877	9,250	(373)
Gross Excise Duty	22,620			24,862	25,972	(1,310)	27,715	27,800	(84)	28,789	29,600	(811)	28,483	29,750	(1,347)
Refunds															
Net Excise Duty	22,620			24,862	25,972	(1,310)	27,715	27,800	(84)	28,789	29,600	(811)	28,483	29,750	(1,347)
Excise Duty- Domestic						-	13,588	15,021	(1,433)	13,720	14,200	(480)	13,605	14,200	(595)
Excise Duty- Imports						-	816	945	(129)	1,152	1,100	52	972	1,250	(278)
Excise Duty- Oil						-	13,311	11,843	1,468	13,917	14,300	(383)	13,926	14,300	(374)
VAT Imports	13,848			14,291	15,722	(1,431)	16,829	16,347	482	18,188	17,850	338	18,616	18,850	(234)
VAT- Ordinary Imports						-	14,912	15,167	(255)	15,970	15,600	370	15,822	16,600	(778)
VAT- Oil Imports						-	1,917	1,180	737	2,218	2,250	(32)	2,794	2,250	544
IDF	-			2,926	2,410	616	4,471	3,640	831	4,357	4,500	(143)	5,049	4,785	264
Sub-Total Exchequer	57,437			64,365	67,610	(3,245)	73,321	70,772	2,549	79,694	80,150	(456)	80,583	84,735	(3,652)
Agency															
Airport Revenue	1,000			1,024	1,200	(176)	990	1,210	(220)	856	900	(44)	1,834	1,840	(6)
Aviation Revenue	-														
PDF	-			272		272	282		282	272	300	(28)	305	294	11
FMV	17			17		17	21		21	21	21		29	24	5
RML	-			3,206	3,179	27	3,656	4,086	(430)	6,513	6,300	213	7,753	7,639	114
K.A.A Concession Fees															
Road Transit Toll	-			16									124	135	(11)
Sugar Levy															
Petroleum Regulatory Levy															
Merchant Superintendent Shipping Levy															
KEBS Petroleum Inspection Fees															
Revenue Stamps	-												1		1
Miscellaneous															
Sub-Total Agency	5,017			4,535	4,379	156	4,940	5,286	(347)	7,722	7,581	141	10,046	9,932	114
TOTAL	58,444			68,900	71,989	(3,089)	78,260	76,057	2,202	87,418	87,[illegible]	(333)	90,629	94,167	(3,538)
DOMESTIC TAXES															
Exchequer															
PAYE	14,893			17,926	17,964	58	22,050	21,214	845	24,725	23,256	1,469	27,031	27,174	(143)
WCP	-			-	-								379	216	163
Total PAYE	14,893			17,926	17,868	58	22,059	21,214	845	24,725	23,258	1,463	27,410	27,390	20
Individual	2,600			2,610		2,610	2,688	2,710	(22)	2,337	2,859	(522)	2,174	2,346	(172)
Corporation Tax	20,754			21,069		21,069	23,024	23,215	(191)	20,785	24,295	(3,620)	18,507	19,976	(1,469)
Other Taxes	269			179		179	118	119	(1)	108	140	(32)	124	134	(10)
Advance Tax															
Withholding Tax	3,684			6,666		6,666	8,079	8,146	(67)	7,512	7,996	(484)	6,057	6,538	(481)
Capital Gains															
Turnover Tax															
Sub-Total Other Taxes	33,306			30,544	-	30,544	33,909	34,190	(281)	30,722	33,209	(2,550)	26,862	28,994	(2,132)
VAT- Gross						-	22,129	21,341	788	23,806	23,841	(35)	26,426	24,900	626
Refunds						-	3,202	3,600	(298)	2,730	4,200	(1,470)	2,830	3,000	(170)
Exchequer	14,750			14,845	15,606	(761)	18,927	17,741	1,086	21,075	19,641	1,434	22,596	21,800	796
Excise Duty Domestic															
Excise on Airtime	-			-	-										
Stamp Duty															
Land Rent															
Sub-Total Exchequer	63,000			63,315	33,674	29,641	74,795	73,145	1,650	76,522	78,177	(1,655)	76,880	78,194	(1,316)
Agency															
KEBS	-			-	-										
Sugar Levy															
Land Rates															
Sub-Total Agency	-														
Gross Receipts	63,009					-	78,097	76,745	1,352	79,262	82,377	(3,125)	79,686	81,184	(1,498)
TOTAL	63,009			63,315	33,674	29,641	74,795	73,165	1,630	76,522	78,177	(1,655)	76,880	78,194	(1,316)
ROAD TRANSPORT															
Exchequer	613			900	1,026	(126)	980	900	80	980	1016	(36)	1,067	1,100	(33)
Agency	-			-	-										
TOTAL	613			900	1,026	(126)	980	900	80	980	1,016	(36)	1,067	1,100	(33)
GRAND TOTAL	122,[illegible]			133,115	106,689	26,426	154,064	150,112	3,832	154,[illegible]	[illegible]	(2,804)	169,[illegible]	173,081	[illegible]
						125.0%			102.0%			98.0%			97.2%

Source: KRA Database

	2003/04			2004/05			2005/06		
	Actual	Target	Variance	Actual	Target	Variance	Actual	Target	Variance
	21,904	21,604	300	23,299	21,302	1,997	21,628	21,732	(104)
	26	-	26	240		240	240		240
	21,880	21,604	276	23,149	21,392	1,757	21,388	21,732	(344)
	21,782	21,604	178	22,722	21,392	1,330	20,622	20,954	(332)
	96	-	96	427		427	766	779	(12)
	68,100	68,730	(630)	64,855	62,904	1,951	30,587	32,745	(2,158)
							1,400	1,400	-
	68,100	68,730	(630)	64,855	62,904	1,951	29,187	31,345	(2,158)
	14,021	14,881	(860)	15,744	15,411	333			-
	2,374	1,264	1,110	4,236	1,856	2,380	3,736	3,899	(163)
	23,714	24,600	(886)	24,876	25,638	(762)	25,461	27,446	(1,985)
	27,362	28,705	(1,343)	32,473	28,303	4,170	34,034	35,310	(1,276)
	23,457	24,448	(991)	28,287	24,090	4,197	29,791	30,436	(645)
	3,906	4,257	(352)	4,186	4,213	(27)	4,243	4,874	(631)
	7,745	6,784	961	9,724	8,357	1,367	10,179	9,006	1,173
	97,174	97,911	(737)	110,701	102,456	8,245	94,700	97,303	(2,603)
	1,585	1,812	(227)	1,846	1,750	96	1,962	2,015	(53)
	1,510	1,324	186	1,505	1,617	(112)	1,524	1,551	(27)
	316	288	28	1,041	336	705	1,462	1,416	46
	61	57	4			-			-
	9,002	8,800	202	9,646	9,870	(224)	10,699	9,500	1,199
	61	48		53	56	(3)	66	69	(3)
	232	240	(8)	293	251	42	313	315	(2)
	234	81		267	336	(69)	351	287	64
	75	32	43	119	81	38			-
	13,066	12,682	384	14,709	14,036	673	16,767	15,543	1,224
	118,240	118,594	(354)	124,970	115,252	9,718	111,155	112,536	(1,381)
	43,100	39,097	4,003	52,767	43,665	9,102	60,566	62,910	(2,344)
	806	501	305	558	909	(351)	937	500	437
	63,888	59,598	4,290	53,325	44,574	8,751	61,583	63,490	(1,907)
	2,217	2,465	(248)	3,051	2,679	372	2,801	3,324	(523)
	26,354	23,134	3,220	31,947	26,004	5,943	39,790	36,084	3,706
	16	12	4	14	17	(3)	22	30	(8)
	271	219	52	473	250	223	380	415	(35)
	9,445	9,216	229	11,792	10,308	1,484	12,300	14,034	(1,734)
	38,303	35,046	3,257	47,777	38,758	9,019	54,307	52,898	1,409
	36,926	37,465	(539)	49,583	43,259	6,324	52,479	52,750	(271)
	5,515	5,765	(250)	8,400	8,400	-	10,328	10,328	-
	31,411	31,700	(289)	40,183	34,859	5,324	42,151	42,422	(271)
							17,615	18,212	(597)
	2,070	1,200	870	2,982	2,400		3,962	4,520	(558)
				940	450	490	2,272	1,600	672
	115,690	107,544	8,146	144,707	121,541	23,166	101,885	103,140	(1,255)
	236	252	(16)	284	263	21	308	317	(9)
	952	810	142	1,320	1,200	120	1,308	1,400	(92)
				178	160	18	63	63	-
	1,187	1,063	124	1,782	1,623	159	1,779	1,976	(197)
	122,392	114,372	8,020	154,890	131,564	23,326	183,942	185,298	(1,356)
	116,877	108,607	8,270	146,489	123,164	23,325	183,614	184,970	(1,356)
	1,848	1,364	484	2,441	2,164	277	2,501	3,176	(675)
	312	241	71	352	334	18	349	387	(38)
	2,160	1,599	561	2,793	2,498	295	2,950	3,563	(613)
	209,277	200,800	8,477	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			103.8%			113.8%			98.9%

REVENUE COLLECTED IN THE PERIOD 1999/00-2010/2011

ITEM	2000/01 Actual	2000/01 Target	2000/01 Variance	2001/02 Actual	2001/02 Target	2001/02 Variance	2002/03 Actual	2002/03 Target	2002/03 Variance
CUSTOMS SERVICES									
Exchequer									
Gross Import Duty	29,504	29,500	(96)	21,530	28,340	(6,810)	19,125	19,895	(1,670)
Refunds	640		640	253	-	253	93	-	93
Net Import Duty	28,864	29,500	(636)	21,788	28,340	[illegible]	19,332	19,895	(1,563)
Import Duty-Ordinary	20,725	21,073	(348)	17,593	19,021	(1,428)	18,192	19,895	(1,703)
Import Duty-Oil	7,938	8,517	(579)	3,693	9,317	(5,624)	140	-	140
Gross Excise Duty	28,205	28,298	(93)	32,110	31,041	1,069	35,932	38,329	(2,397)
Refunds									
Net Excise Duty	28,205	28,298	(93)	32,110	31,041	1,069	35,932	38,329	(2,397)
Excise Duty Domestic	13,293	13,076	217	12,932	14,661	(1,729)	13,243	15,564	(2,321)
Excise Duty- Imports	835	802	33	830	1,051	(221)	1,735	974	761
Excise Duty Oil	14,157	14,430	(273)	18,344	15,325	3,019	20,954	26,133	(6,179)
VAT Imports	24,131	24,216	(85)	24,452	26,500	(2,048)	28,780	26,645	2,135
VAT Ordinary Imports	20,763	20,621	142	20,901	22,855	(1,954)	24,298	22,799	1,499
VAT-Oil Imports	3,368	3,595	(227)	3,551	3,645	(94)	4,482	3,846	636
IDF	5,912	6,137	(225)	5,626	6,010	(384)	6,253	6,340	(87)
Sub-Total Exchequer	86,992	88,251	(1,259)	83,474	92,499	(9,025)	89,297	91,209	(1,912)
Agency									
Import Revenue	2,736	2,623	113	1,487	1,719	(232)	1,593	1,715	(122)
Aviation Revenue	206	275	(69)	1,182	818	364	1,219	1,284	(65)
PDF	280	293	(13)	269	298	(29)	258	300	(42)
FMV	33	24	9	51	27	24	54	30	24
RML	8,282	7,774	508	7,903	7,976	(73)	7,898	8,400	(502)
K.A.A Concession Fees									
Road Transit Toll	191	184	7	216	180	36	225	193	32
Sugar Levy									
Petroleum Regulatory Levy									
Merchant Superintendent Shipping Levy									
KEBS Petroleum inspection Fees									
Revenue Stamps	15	-	15	36	13	23	30	14	16
Miscellaneous									
Sub-Total Agency	11,743	11,573	170	11,643	11,531	112	11,276	11,936	(660)
TOTAL	98,735	99,824	(1,089)	94,817	103,530	(8,713)	100,573	103,145	(2,572)
DOMESTIC TAXES									
Exchequer									
PAYE	28,437	29,050	(613)	32,471	31,816	866	36,891	36,027	864
MCP	650	611	39	423	300	123	459	451	8
Total PAYE	29,087	29,661	(574)	32,894	32,116	778	36,350	35,478	872
Individual	2,050	2,197	(147)	2,018	2,317	(299)	2,008	2,501	(493)
Corporation Tax	17,620	18,871	(1,251)	18,087	19,320	(1,233)	23,297	22,019	1,278
Other Taxes	12	19	(7)	26	19	7	21	19	2
Advance tax	166	78	88	229	207	22	188	255	(67)
Withholding Tax	7,511	6,583	928	7,573	7,849	(276)	9,350	8,602	748
Capital Gains									
Turnover Tax									
Sub-Total Other Taxes	27,360	27,748	(388)	27,933	29,712	(1,779)	34,864	33,396	1,468
VAT Gross	30,349	30,216	133	30,872	33,865	(2,993)	32,862	34,584	(1,722)
Refunds	4,054	4,100	(46)	4,425	4,920	(495)	5,076	5,400	(324)
Exchequer	26,295	26,116	179	26,447	28,945	(2,498)	27,586	29,184	(1,598)
Excise Duty-Domestic							678	850	(172)
Excise on Airtime									
Stamp Duty									
Land Rent									
Sub-Total Exchequer	82,541	83,325	(784)	87,274	90,773	(3,499)	99,478	98,900	578
Agency									
KEBS	157	189	(32)	210	204	6	236	270	(35)
Sugar Levy									
Land Rates									
Sub-Total Agency	157	189	(32)	210	204	6	236	270	(35)
Gross Receipts	86,752	87,614	(862)	91,909	96,897	(3,988)	104,789	104,578	211
TOTAL	82,698	83,514	(816)	87,484	90,977	(3,493)	99,713	99,178	535
ROAD TRANSPORT									
Exchequer	986	986		1,106	1,162	(56)	1186	1,288	(102)
Agency	190	192	(2)	221	204	17	217	220	(3)
TOTAL	1,176	1,178	(2)	1,327	1,366	(39)	1,403	1,510	[illegible]
GRAND TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	195,873	[illegible]	[illegible]	[illegible]	[illegible]
			99.2%			93.6%			98.9%

Source: KRA Database

REVENUE COLLECTED IN THE PERIOD [illegible]

ITEM	2006/07 Actual	2006/07 Target	2006/07 Variance	2007/08 Actual	2007/08 Target	2007/08 Variance	2008/09 Actual	2008/09 Target	2008/09 Variance	2009/10 Actual	2009/10 Target	2009/10 Variance	2010/11 Actual	2010/11 Target	2010/11 Variance
CUSTOMS SERVICES															
Exchequer															
Gross Import Duty	28,150	28,523	(373)	32,779	32,577	203	36,614	36,859	(245)	41,419	40,840	579	46,023	49,143	(3,121)
Refunds	240	240	-	240	240	-	400	400	-	240	240	-	240	240	-
Net Import Duty	27,910	28,283	(373)	32,539	32,337	203	36,214	36,459	(245)	41,179	40,600	579	45,783	48,903	(3,121)
Import Duty Ordinary	27,218	27,222	96	31,967	31,596	371	35,326	36,259	(934)	40,382	39,637	745	44,860	48,094	(3,234)
Import Duty Oil	692	1,061	(469)	573	741	(168)	888	200	688	797	963	(166)	923	810	112
Gross Excise Duty	35,142	38,111	(2,969)	36,450	37,850	(1,400)	41,889	39,788	2,101	45,175	46,023	(848)	45,878	50,365	(4,489)
Refunds	2,400	2,400	-	2,400	2,400	-	2,400	2,400	-	2,400	2,400	-	2,400	2,400	-
Net Excise Duty	32,742	35,711	(2,969)	34,050	35,450	(1,400)	39,489	37,388	2,101	42,775	43,623	(848)	43,478	47,965	(4,489)
Excise Duty Domestic			-			-						-			-
Excise Duty Imports	4,909	4,900	69	6,478	5,019	1,459	6,814	6,416	398	6,994	7,767	(773)	8,016	7,972	44
Excise Duty Oil	27,764	31,811	(4,047)	27,572	30,440	(2,868)	32,675	30,892	1,783	35,780	35,856	(76)	35,459	39,992	(4,533)
VAT Imports	44,744	40,930	3,806	53,634	51,992	1,642	60,408	62,899	(2,491)	62,946	72,680	(9,734)	81,395	75,338	6,058
VAT-Ordinary Imports	40,599	35,481	5,118	48,702	47,183	1,519	55,567	57,059	(1,502)	57,594	66,655	(9,061)	74,535	68,351	6,184
VAT-Oil Imports	4,145	5,457	(1,312)	4,932	4,809	123	4,851	5,840	(989)	5,352	6,025	(673)	6,860	6,986	(126)
IDF	12,513	11,865	648	12,431	11,687	744	14,970	15,592	(622)	15,836	17,146	(1,310)	20,467	18,616	1,850
Sub-Total Exchequer	117,909	117,797	112	132,664	131,475	1,189	151,007	152,784	(1,777)	162,735	174,049	(11,314)	191,170	190,371	799
Agency															
Airport Revenue	2,116	2,293	(177)	1,921	2,367	(446)	2,144	2,224	(80)	2,464	2,477	(13)	3,026	2,821	205
Petroleum Revenue	1,674	1,766	(92)	1,694	1,925	(231)	1,966	1,864	102	2,138	2,225	(88)	2,428	2,390	38
PDF	1,349	1,593	(244)	1,318	1,421	(103)	1,415	1,424	(9)	1,585	1,512	73	1,570	1,793	(223)
F MV			-			-			-			-			-
RML	18,217	16,081	2,136	18,896	20,274	(1,378)	21,570	21,271	299	23,780	20,079	3,701	24,101	26,646	(2,545)
KAA Concession Fees	65	64	1	71	67	3	71	74	(3)	77	74	3	84	78	6
Road Transit Toll	363	356	7	352	408	(55)	463	408	55	457	503	(46)	468	529	(61)
Sugar Levy	550	401	149	176	626	(450)	266	200	63	184	307	(123)	237	238	(2)
Petroleum Regulatory Levy							122			134	126		136	138	
Merchant Shipping Superintendent Levy										32			99	96	
KEBS Petroleum Inspection Fees										0.02					
Revenue Stamps			205			-			-			-			-
Miscellaneous	206			222		222	264		264	164		164	199		199
Sub-Total Agency	24,640	22,656	1,984	24,650	27,089	(2,439)	28,207	27,498	813	31,078	27,383	3,714	32,348	34,730	(2,382)
TOTAL	142,549	140,353	2,096	157,288	158,564	(1,250)	179,208	179,720	(505)	193,752	201,352	(7,600)	223,448	225,551	(2,083)
DOMESTIC TAXES															
Exchequer															
PAYE	71,476	69,312	2,164	85,315	78,345	6,970	103,413	100,620	2,793			-			-
WCP	994	550	444	825	1,082	(257)	-	1,058	(1,058)			-			
Total PAYE	72,470	69,862	2,608	86,140	79,427	6,713	103,413	101,678	1,735	120,503	117,706	2,897	143,705	146,283	(2,578)
Rental	2,077	3,006	(929)	3,228	3,890	(662)	3,443	3,650	(207)	3,799	3,964	(165)	4,698	4,321	377
Corporation Tax	43,146	42,721	425	72,434	65,223	7,211	62,633	65,739	(3,106)	67,661	71,591	(3,930)	86,352	83,217	3,135
Other Taxes	11	29	(18)			-			-			-			-
Advance Tax	245	922	(677)	525	524	1	800	633	167	861	852	16	861	1,012	(180)
Withholding Tax	14,180	15,616	(1,436)	18,826	17,592	1,234	24,256	22,975	1,281	27,174	27,050	124	36,768	33,618	3,150
Capital Gains		100	(100)			-			-			-			-
Turnover Tax	-	442	(442)	28	111	(83)	131	442	(311)	111	198	(87)	130	143	(13)
Sub-Total Other Taxes	60,559	63,396	(2,837)	94,647	87,346	7,701	91,263	93,339	(2,076)	99,673	103,655	(3,982)	128,809	122,310	6,499
VAT-Gross	64,129	62,126	1,993	69,543	71,997	(2,454)	80,630	85,140	(4,510)	92,255	89,833	2,422	103,300	110,040	(6,739)
Refunds	12,300	12,300	-	12,188	12,188	-	14,180	14,180	-	14,160	14,160	-	13,016	13,016	-
Exchequer	51,829	49,836	1,993	57,374	59,828	(2,454)	66,470	70,980	(4,510)	78,095	75,673	2,422	90,284	97,024	(6,739)
Excise Duty-Domestic	19,809	20,441	(633)	22,070	23,542	(1,472)	23,786	28,236	(4,450)	23,756	27,013	(3,258)	28,573	29,084	(511)
Excise on Airtime	6,358	6,086	272	6,397	6,560	(163)	6,630	7,382	(752)	7,893	7,430	463	7,796	9,156	(1,360)
Stamp Duty	3,110	2,400	710	4,533	3,338	1,196	4,761	4,996	(235)	5,332	5,192	140	6,805	5,876	930
Land Rent	842	717	125	1,257	1,221	36	1,086	1,643	(557)	1,047	1,424	(377)	913	1,283	(370)
Sub-Total Exchequer	213,777	211,745	2,032	272,812	261,268	11,566	297,406	308,253	(10,847)	336,327	338,093	(1,766)	402,958	411,095	(8,138)
Agency															
KEBS	310	352	(42)	336	354	(18)	389	387	2	419	444	(25)	430	430	(1)
Sugar Levy	1,530	1,443	87	1,117	1,570	(453)	1,004	1,206	(202)	1,406	1,132	274	1,401	1,390	2
Land Rates			-			-			-			-			-
Sub-Total Agency	1,840	1,795	45	1,452	1,924	(472)	1,393	1,593	(200)	1,825	1,576	249	1,831	1,829	2
Gross Receipts	227,917	225,840	2,077	286,432	275,338	11,094	312,959	324,006	(11,047)	362,312	363,829	(1,517)	421,803	425,941	(4,138)
TOTAL	215,617	213,540	2,077	274,263	263,168	11,094	298,788	309,846	(11,047)	338,152	339,669	(1,517)	408,787	412,925	(4,138)
ROAD TRANSPORT															
Exchequer	1,698	1,820	(122)	1,859	2,469	(610)	1,910	2,767	(857)	1,964	3,650	(1,686)	2,111	2,177	(66)
Agency	427	373	54	489	469	19	499	536	(37)	535	557	(22)	537	559	(22)
TOTAL	2,125	2,193	(68)	2,348	2,938	(591)	2,409	3,303	(894)	2,499	4,207	(1,708)	2,648	2,736	(88)
GRAND TOTAL	360,191	356,086	4,105	433,815	424,571	9,244	480,488	492,873	(12,385)	534,403	545,228	(10,825)	634,883	641,212	(6,329)
			101.2%			102.2%			97.5%			98.0%			99.0%

Source: KRA Database

Appendix VII: Summary of VAT Collections 1995/96 to 2009/10.

VAT Collections for Fiscal years 1995/96 to 2009/10.

Fiscal year	VAT Amount (Kshs M.)		Percentage of Growth on VAT Collection, %
	Target	Actual	
1995/96	28,774	28,398	-
1996/97	31,328	29,136	2.60
1997/98	34,088	35,656	22.38
1998/99	37,491	39,263	10.12
1999/00	40,650	41,212	4.96
2000/01	50,332	50,426	22.36
200/-02	55,445	50,899	0.94
2002/03	55,829	56,366	10.74
2003/04	60,405	58,773	4.27
2004/05	63,162	72,656	23.62
2005/06	77,732	76,185	4.86
2006/07	90,774	96,573	26.76
2007/08	111,820	111,008	14.95
2008/09	133,879	126,878	14.30
2009/10	148,353	141,041	11.16

Source: KRA Statistical Bulletin, July 2009 – June 2010.