REVENUE PRODUCTIVITY OF TAX REFORMS IN KENYA.

1972/73 -1990/91."

BY

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A research paper submitted to the Economics Department, University of Nairobi, in partial fulfilment of the requirements for the degree of Master of Arts in Economics.

JULY, 1993

DECLARATION

This research paper is my original work and has not been presented for a degree in another university

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This research paper has been submitted for examination with our approval as university supervisors.

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TABLE OF CONTENTS

DEDICATION

To my parents.

ACKNOWLEDGEMENT

My special appreciation goes to my supervisors, DR. F.M. Mwega and PROF. S.O. Kwasa for their suggestions and guidance in writing this paper. My thanks also go to the University of Nairobi for granting me a full scholarship that enabled me to complete the course.

Special gratitude goes to Mrs. N. N. Achieng', who has been involved in a special way in this course and who, together with Mrs. G. Kabeberi, typed parts of this paper.

Sincere appreciation also goes to my classmates for their assistance and cooperation during the entire course period and to members of my family for encouragement and support throughout my education.

Lastly I am indebted to T.L. Masila, Mr. S. Ndele and Miss S.A. Ayako for inspiration.

ABSTRACT

Under the threat of fiscal crises, many developing countries have had to make projections of additional revenues that can be realized within the existing tax structures. These projections indicate the need to activate additional means of revenue generation. Tax reforms have been on the agenda of many developing countries. Whereas the tax system may be utilized for other economic purposes revenue generation still remains one of the major objectives that a tax system ought to serve.

The paper sets out to establish the revenue productivity implications of tax reforms in Kenya using elasticity and buoyancy models. It was found out that the tax system has not been elastic with respect to income. However discretionary measures have been utilized variously in order to meet the revenue requirements. Economic policies being pursued have at times been in conflict with the requirement of revenue generation. Further measures thus have to be continuously adopted in order for the system to respond more adequately to revenue generation. This is more important now in view of raising expenditures and reduced donor funding.

1.0 INTRODUCTION

1.1 FISCAL CRISIS IN DEVELOPING COUNTRIES

Among the policy prescriptions of the structural adjustment programs initiated by the World Bank for the developing countries are policies for deficit reduction aimed at achieving real economic growth with price stability and balance of payments viability.

Indeed fiscal crises signalled by persistent and growing deficits have been common in many developing countries. This has created a situation whereby governments are more willing to contemplate fiscal reforms. The financing of overall deficits creates particular problems because too high a dependency on external loans could result in future difficulties for the balance of payments whereas domestic sources may only be able to provide part of the funds required unless a deliberate policy of excessive domestic deficit financing is followed at the risk of aggravating inflationary pressure.

Developing countries governments committed to enhancing economic growth have increased their public sector substantially[1]. However these countries have been victims of numerous economic shocks. A myriad of external and internal forces have continued to exert pressure on developing countries budgets since the first oil crisis of 1973. Having been reliant upon easily available foreign loans and revenues arising from trade to finance expenditures, the world wide economic stagnation, deterioration in terms of trade coupled with ensuing debt problems, lending declined drastically and trade taxes as a source of revenue became unreliable. These problems have then translated into major

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1 *Various reasons for this are given by, for example, Lindaurer D.L and Valenchik A.D (1992)*

fiscal crises for many developing countries. Implicit in what has been said so far is the assumption that expenditure policies of developing countries are selected and executed in an efficient manner. Stories of corruption and embezzlement as well as white elephants abound.

As a direct response to increased revenue needs, developing countries have been committed to raising their revenues. Projections have had to be made of additional revenues which can be realized within the existing tax system. Such projections have indicated the need to activate additional means of revenue generation. Developing countries have thus engaged in the pursuit of appropriate tax policies with the immediate goal of reducing deficits while at the same time enhancing growth.

The desirability of fiscal deficit reduction arises from the negative consequences associated with persistent and increasing deficits. Though the issue as to whether fiscal deficit reductions would promote growth is debatable, in view of the fact that some expenditure commitments have a direct positive bearing on increased welfare, the magnitudes of the deficits in developing countries have prompted a lot of concern. Deficits have been associated with double digit inflation rates and B.O.P crises. Given the fact that donor funds have not been forthcoming, the desirability of deficit reduction arises even more.

This has meant that continued reliance be placed upon discretionary tax measures. Such measures though previously considered inimical to sustained growth of industry and business in view of the fact that they cause uncertainties have become a necessary tool for raising revenue.

Since tax reforms have been in the agenda of many developing countries as evidenced in policy statements from time to time, a generalization of the issues concerned in reforms shall form the next sections.

1.2 TAX REFORMS

The main concerns of tax policy:

There is no consensus on an ideal profile of a developing country tax system. The criteria often used in public finance is revenue adequacy, allocative neutrality, equity and efficiency of tax administration. Though some reforms deliver simultaneous gains in each of these directions, as for instance the replacement of a sales tax with the value added tax, more often however, tradeoffs between the objectives is the outcome. An indexed tax system will require more administrative complexities while offering the benefits of enhanced vertical and horizontal equity.

As mentioned previously, fiscal deficits have been a common problem among developing countries. Related to this has been the excessive reliance on trade taxes and tax incentives, partial coverage of income taxes, complexities associated with identifying and taxing capital incomes, the urgent need to redesign the indirect taxes, the coordination of trade and domestic indirect taxes, weak tax administration as well as widespread tax evasion and avoidance. A number of countries have thus made efforts to grapple with these issues.

A review of experiences indicates that as in other economic policies, where reforms have been successful, a number of common elements have been present and this includes a well thought out program of action, support from major policy makers and systematic implementation and monitoring reduced use of tax incentives and instead aiming at broader and simpler tax basis on which lower rates are imposed. Procedural demands which complicate administration are minimized and instead training and upgrading the administrative personnel is emphasized.

Common structural elements in reforms include the turning to value added tax to replace other forms of commodity taxes while exempting basic foodstuffs to reduce taxation of the poor. To obtain greater progressivity in the distribution of indirect tax burden, many have redesigned their excise taxes to fall more heavily on items of luxury.

In the area of income tax both the personal and corporate income tax have typically been modified so that lower rates are applied to broader bases. The personal income tax has been expanded in a variety of ways including the heavier taxation of fringe benefits, consolidation of deductions and exemption and greater reliance on presumptive levies[2] for certain hard to tax groups in the economy.

Through these developments, there is now much less emphasis on achieving redistribution of welfare through the tax system as advocated by the optimal tax theory and a corresponding greater emphasis on achieving revenue adequacy, economic neutrality and the simplifying of tax system to make it correspond to administrative capabilities. The goals then are more modest but realistic. Thus although tax reforms in the various countries have typically dealt with a large number of issues there is a universal semblance of fiscal problems running through their entire experiences. A brief discussion of the problems follows.

1.2.1 SEARCH OF ALTERNATIVE INDIRECT TAXES:

One of the major shortcomings of turnover taxes is their haphazard treatment on investment and tradeable goods.

Incidence patterns associated with turnover taxes are random. There is increased realization that the VAT can be a better form of indirect tax. Adoption of the V.A.T in many developing countries has

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2 *Presumptive levies on Agriculture of 5% were introduced in 1988 but scrapped in 1993.*

been viewed as a reasonably reliable method of promoting both exports and investment while achieving a more predictable and often more equitable distribution of tax burdens. The V.A.T. has been seen as a solution for a wide variety of fiscal ills, including the need for higher revenues. The large revenue potential of the V.A.T. has made it a reliable source of funds in many countries and has shifted the mix of taxation away from income and more towards consumer expenditure.

Experience however, illustrates that the V.A.T. must be well designed. If the preparation for the V.A.T. is inadequate and enforcement is weak (as happened in Kenya when it was first introduced) or if the V.A.T. has numerous rates and is riddled with exemptions it may operate with defects and indeed be even worse than the indirect taxes that it has replaced[3].

1.2.2 PROBLEMS WITH BROADENING INCOME TAX BASE.

Income has perhaps been the hardest to tax. The major reason for this being the difficulty involved in tracing capital gains, the existence of a wide range of fringe benefits and political preferences accorded to certain sectors. There is further the assessment problem caused by the presence of large number of workers in small businesses and agriculture. Attempts at introducing lower rates on such activities have resulted in people trying to shelter their activities in these lightly taxed activities. Presumptive taxes have also been utilized in an attempt to include such groups in the income tax base.

In principle these measures should expand the size of the tax base raise total revenue,improve horizontal and vertical equity and produce gains in neutrality. In practice however efforts at introducing presumptive taxation may take the form of special tax regimes that have just the opposite effect.

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[3] *Details on the value added tax are well presented in Shoup C.(1988) and Musgrave and Musgrave(1980)*

Capital income also presents special problems;Residents worldwide income is difficult to identify. Fear of capital flight results in exemption of interest income from the tax base. Taxation of interest may ultimately lead to rising interest rates as people reallocate investment to lightly taxed assets elsewhere in the world. Increased interest rates may erode the company tax base since interest is an allowable expense for tax purposes. Higher interest rates will also add to the cost of servicing debt on the expenditure side of the budget. At the same time failure to tax interest while making it deductible offers opportunity for tax arbitrage.

Some of the measures undertaken to remedy the situation include reduced reliance on tax incentives, granting fewer exemptions, use of presumptive methods of taxation and increased withholding. In addition fringe benefits have been incorporated into the tax base in some countries . The inclusion of public enterprises in the corporate income tax base has been another major step . This is a useful step since many developing countries have many public corporations.

Alongside these developments has been the recognition that taxing corporate income may be the easier way of reaching capital income that arise in equity form (Thirsk 1990). Another alternative has been to tax the expenditures undertaken by the recipients of capital income.

As regards interest, some countries tax the nominal while others the real interest incomes or wholly exempt interest incomes, opting for low withholding taxes on interest incomes. In addition another form of capital taxation would be gains from stock market or taxation of gains arising from real estate transactions.

Double taxation of dividends has been checked by development of imputation schemes or the exclusion of dividends at the personal level. Complementing these efforts to broaden the income tax base are reforms in the rate structures that flatten the amount of nominal tax progressivity and align the nominal corporate income tax rate with the top bracket rate of the personal income. This

movement to less nominal progressivity in the rate schedule is in response to the realization that almost no taxpayer ever paid tax at the highest rate because considerable tax payer response were devoted to avoiding that outcome.Consequently any loss in vertical equity is significantly less than a comparison of nominal rate schedules would suggest.The merging of the corporate and top bracket personal tax rates has made it easier to tax small business by reducing the temptation to convert capital income into labour income.The technique of dividend exclusion further enhances the effective integration of these two income taxes. In part the universal decline in corporate tax rates reflects the effects of international tax competition as developing countries have responded to lower rates recently introduced by a large of developed countries.

Due to the difficulties in taxing capital income through the personal or the corporate income tax , the personal income is little more than a burden on labour incomes earned in the modern sector. Part of the problem springs from the global mobility of capital (financial capital in particular), fear of capital flight and inability to tax residents worldwide income.

In countries where there is zero or no taxation of interest income at a personal level while only equity income is taxed sizable financial distortions have been created because companies have been encouraged to put excessive reliance on debt. Many countries have attempted to offset this debt bias by imposing thin capitalization rules or by reducing the rate of taxation on dividend income. This bias has been further reduced by the inability to tax stock related capital gains and the exclusion of dividends from the personal tax base in some countries such as Korea.

1.2.3 NON-REVENUE OBJECTIVE

Undermining the revenue potential of taxes on capital income has been the propensity of many developing countries to offer generous saving and investment incentives. In the sixties a complex and detailed system of incentives was part of the overall planning process. Recently however there has been a wavering of faith in the ability of tax incentives to perform a useful role in promoting economic development hence incentives have been substantially pruned. In many countries however there is a growing appreciation of the ability of tax incentive firms to shelter the income of non-incentive firms from taxation through transfer pricing and other income shifting devices.

1.2.4 VERTICAL EQUITY IN TAXATION.

Many countries have been concerned about reducing their reliance on direct taxation in viewof the limited revenue capacity of income taxes. Many countries have been redesigning their structure of indirect taxes to either reduce the burden of these taxes on low income groups hence the exemption of basic necessities from value added tax or other forms of sales tax plus the imposition of higher taxes on luxury goods. The effect of these on horizontal equity has been neglected.

Some indirect taxes may be progressive for example raising import duties in the presence of quantitative restrictions may be an effective way of raising taxes from wealthy holders of import licenses. No significant achievement has been gained in reducing burdens on the poor.

SIMPLIFYING THE TAX SYSTEM.

Among the weakness in administration include the inability to collect accurate and timely information on tax payers circumstances to determine defaulters , accuracy of declaration and detection of fraud and the collection of already assessed taxes.

If direct and indirect tax laws are significantly simplified, administration resources could be concentrated on audit and collection function with likely gains in both revenue and equity. Stiffer sanctions for non payments,more frequent audits, shorter lags in collection process, computerization and streamlined legislation may all be prerequisites to achieving effective tax reforms.

To obtain better compliance, the countries considered have made efforts to create a unique taxpayer identification number. Together with computerization this will help in maintaining better check. Widespread tax evasion is another of the consequences of weak administration. This operates through different channels which include failure to file returns, the misrepresentation of income and expenses, use of fraudulent invoices and resort to transfer prices involving exempted or preferentially taxed activities. Issuing no invoices to underreport sales or resorting to fake invoices in order to claim higher tax credits have been common problems with the V.A.T. With such rampant evasion tax systems are neither efficient nor equitable.

1.3 KENYA's ECONOMIC PERFORMANCE

Fiscal policy can be utilized variously to address economic issues. In the face of increased deficits for example,the government could choose a variety of methods to meet its financial obligation. Each of these has it's consequences on the economy. Usually a combination of policies are utilized.

The tax system as a fiscal tool is designed and adjusted frequently to address specific economic problems. Tax policies will therefore closely correspond to specific economic objectives.

In reviewing the economic performance of Kenya, it is evident that the tax system has been continuously used to address specific as well as broad economic issues.[4] It would be thus a tedious exercise to go through the range of annual tax reforms in a study such as this. The highlights of events will therefore be undertaken.

Kenya's economic performance could be very broadly categorized into 3 phases:

The first phase spanning independence in 1963 to the first oil crises of 1972. A period when commendable growth was achieved. The average annual growth rate was 6.8 per cent, an average that has not been achieved thereafter. Inflation rate was low and the balance of payment was viable with reserves growing steadily. The only years when the B.O.P was in deficit was 1967 and 71 and even then these were only modest. Though the economy registered a downward trend between 67 and 69, this was reversed at the onset of 1970.

Various factors have been attributed to the favourable performance. Trade with the outside world was steadily growing, external pressures were minimal and previously idle resources were easily utilized.

The main task of fiscal policy at independence was to reduce dependence on British government grants at a time when there was massive outflow of private capital. Hence in response to this desire, there was an active evolution and expansion of fiscal system. The government limited expenditure to available resources. The pressure to increase taxes was minimal since revenues were steadily

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[4] *The Kenya government accounting year begins in July and each budget encompasses various taxation reforms.*

growing in response to favourable economic environment. The period was therefore uneventful as regards tax reforms. The only significant attribute was the tendency of the share of direct taxes in total tax revenue to increase at the expense of indirect taxes upto the fiscal year 68/69, by which time it was estimated that 42% of total revenue would be derived from direct taxation as compared to 36% in the 63/64. fiscal year.[5] The main reason for this was probably the lowering of income tax allowance and the fact that raising employment had caused many people to pay income tax as PAYE for the first time.

The policy of cautionary spending was reversed in 1970/71 when the then finance minister undertook an expansionary policy "to utilize resources that were lying idle"[6].

The effect of these expenditures were soon registered and the introduction of the sales tax in 1973 was a direct response to the need for meeting revenue requirements of the government. The culmination of the period was the onset of the first oil crises of 1973. With the resultant negative effects on the economy, which necessitated reforms in economic policy including taxation in response to the changing economic circumstances.

The second phase running from 1974 to 1982 the Kenyan economy was adversely affected by external shocks. The first round effect of the oil crisis adversely affected the economy and a deficit of Ksh.442 million was achieved in the overall balance of payments as compared to a surplus of Ksh 234 million in 1973.

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5 *See economic survey 1969.*

6 *In his first budget speech of 1970, Mr Kibaki announced a 170% increase in expenditure.*

By 1975 it was clear that the circumstances that had led to Kenya's impressive economic performance in the first decade after independence had run their course.

Delivering the budget speech for the fiscal year 75/76 the minister noted that the average import prices in 1974 had increased by 64% even without accounting for the increase in oil prices import prices had risen by 42%. Export prices on the other hand rose by only 30%. As a result of this adverse swing in terms of trade an additional K£75 million was required to finance shortfalls in revenues, outlook for growth in income was not good, profits of firms were tending to fall and low real incomes meant low spending resulting in low tax receipts.[7] Alternatives open included cutting back on imports, taxing heavily and reducing expenditure, these could lead to recession. More than mere administrative reform were needed. Among these undertaken included a withholding tax of 20% on non resident entrepreneurs, capital allowance was allowed for investment in rural areas only, a new tax on sale of property was introduced, including tax on shares and a tax on sale of land, custom tariff of 10% on a wide range of items previously duty free was introduced.

The coffee boom of 1977 helped improve the situation and the B.O.P registered a surplus of Ksh.2249 million in 1977. A substantial windfall occurred to private agents,[8] and resulted in increased demand from imported goods resulting in Balance of payment deficit in 1978, by which time the coffee prices had stalled.

By 1979/80 the deterioration in terms of trade due to using import prices, reduction in availability of domestic credit, coupled with lower returns to agriculture and commerce lead to serious shortfalls

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7 *For further exposition of financing problems at this time, see budget speech 1975/76.*

8 *Temporary terms of trade windfall usually accrue to government revenue. In the Kenyan case export taxes being negligible, this accrued to private agents. Despite denying itself substantial revenue the government found itself in receipt of substantial revenue from expenditure taxes (notably tariffs) Beevan D.P.et al (1990).*

in revenue. Sales tax continued to play an important role in fiscal and economic policy. The general rate of sales tax was increased from 10 to 15% in the fiscal year 79/80. Indeed the government had expressed the need to rely more on indirect taxes from the early seventies. As a result of this the amount raised from import duty, excise duty and the manufacturers sales tax amounted to 59% up form 50% in 76/77. On the other hand the share of revenue from personal income tax and export duties decreased from 36% to 29% of recurrent revenues.

In May 1980 the government published sessional paper No.4 'economic prospects and policies' and this made reductions in the projected growth rate during the 79-83 plan period. Revenue targets were subsequently revised since G.D.P growth rate no longer seemed able to reach their targets.

In the face of all these crises, expenditures were raising rapidly. The reason for this was expansionary policies, undertaking of large development projects including education, social service and agriculture and security needs especially along the border. Further the collapse of the East African Community in 1977 forced the government to incur large expenditure to form fully owned corporations. The capacity of the government to provide essential service was continually becoming strained. While the rapid growth and low productivity of government expenditure were the principle causes of long term problems, they were the consequences of strategies and policy decisions adopted since independence.[9]

Hence all budgets hereafter expressed increased difficulties of financing expenditures justifying increased revenue generation from local sources. The need for financial prudence had nonetheless to be carefully balanced with the development needs of the nation.

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[9] *See Working Party on Government Expenditures 1983.*

Up until this period, the industrial policy pursued was import substitution (hereafter I.S) and the tax system was hence geared to promoting conditions of survival of I.S industries. These were rationalized as having the objective for laying down the foundation for development of an industrial sector. Import duties were kept high and were a major earner of revenue.

Import substitution industrialization however provided protection to inefficient industries and failed to meet the objectives for which they were advanced, hence they fell out of favour by the early 80's.

The third phase running from the 80's to the present has been characterized by serious macro-economic problems. The rate of inflation rose, the balance of payment worsened while annual G.D.P growth slackened. Between 1980-85 the G.D.P. growth averaged 2.5 per annum. There was a widening gap between revenues and expenditures.

The financial crises of 82/83 had it origin in serious shortfall in recurrent revenue. This reflected the severe impact of international recession and the related need to curtail imports as foreign exchange reserves diminished.

There was then a major turn in policy when the 5th development plan was launched in 1984. There were 2 major changes in composition of revenue, both reflecting on major policy decisions of the government.

The first related to the governments effort to stimulate industrial efficiency and competitiveness in export markets as announced in the budget of June 1983. This would take the form of reducing tariffs and excessive protection of domestic industries so that competitive efficiency improves. This would have the effect of reducing the share of recurrent revenue derived from custom duties and

increasing the share derived from sales tax.This then set the beginning of trade liberalization policies which were a part of the major changes advocated in the structural adjustment policies.

The second of this decision was that of relying more heavily in the future on cost sharing as a means of financing many government services.

The liberalization policies were aimed at giving manufacturers and farmers more ready access to imported inputs, to rationalize protection granted in some industries and induce such industries to increase efficiency. Specifically import licensing was liberalized through shifting from more to less restrictive rule. In 1984 import tariffs were reduced by 12%. In addition to this other measures at revenue generation included the review of excise tax on cigarettes and tobacco to a level in line with inflation, thus excise duties were raised by 12%. Other taxes reviewed were hotel accommodation and traffic act taxes. To compensate citizens for inflation tax, brackets were increased by Ksh.300 so that the first Ksh.1800 instead of 1500 were eligible for Ksh.2 per pound in taxation. Between 86 and 89 further liberalization policies were adopted. External resources were available for backing the adjustment policies being undertaken. Budget rationalization policies were given prominence. As a result of this the performance of exchequer receipts registered a welcome improvement in 1987. The economic survey attributed this to the improved performance of the economy and the continuing effort to streamline revenue raising machinery which rose from the tax study recommended in sessional paper No1 of 1986. The government aimed at placing greater burden of tax structures on consumption in order to encourage savings and promote investments. accordingly sales tax became the most significant contributor of revenue.

By 1989, the sealing of loopholes on tax remission, improved weather conditions, moderately high world coffee and tea prices, increased domestic demand and international demand, trade liberalization and budget rationalization proved a boost to the country's economic performance.

However this was only short lived so that by 1990 the countries entered into what has continued into the present period characterized by slow growth, reduced donor and aid assistance and balance of payment problem.

It is clear that tax reforms have focused primarily on raising revenue and meeting specific economic policy. Though liberalization has meant relocation of taxation on imports, the move has been counter balanced by increased taxation on domestic transaction with the specific objectives of revenue generation. Indeed the current development plan points out that the government's intention to reduce the budget deficit will be realized through measures to increase revenue including improved tax administration, reform in tax structure as well as cost sharing to be introduced in successive budgets during the plan period. How effective these measures have been in revenue generation will be the focus of the study.

1.4 STATEMENT OF THE PROBLEM

Persistent and growing deficits have serious consequences on the economy. The government sets the tax rate and makes decisions to borrow to finance the deficit.However since heavy borrowing through various methods is not viable in the long term, efforts have been made to design a tax system that responds adequately to the revenue needs of the government.

To this end, the government has relied on discretionary tax changes to increase the productivity of the tax system. The need to rely more on the tax system is greater now considering external sources to finance expenditure have recently not been forthcoming and the availability of these will become more difficult in future.

Despite various efforts, revenues have not been adequate and hence deficits continue to be a common phenomenon. Alongside revenue shortfalls, there is yet the belief among citizens that they are overtaxed. This could then point a finger at inappropriate expenditure patterns. Indeed expenditure switching policies have been included among the structural adjustment policies.

There is an explicit commitment to continued tax reforms given the fiscal problems that have afflicted the nation. Given this deliberate attempt at reforms, there arises a need to examine the impact of various reforms on revenue generation in order to access their contribution to shares and efforts. This is the more important if tax system is to be exempted from the blame of having failed to generate adequate revenues. Hence the productivity of the discretionary measures will be examined in the study.

1.5 OBJECTIVES OF THE STUDY

The study has the broad objective of examining the revenue productivity implications of the tax system and the individual taxes in Kenya. This will involve:

1) An analyses of tax elasticity at two levels: tax to base elasticity and base to income elasticity.

2) An estimation of tax buoyancies to discern the relative productivity of tax reforms in Kenya.

3) An estimation of the tax effort of the government.

4) Based on the findings, to draw policy recommendations on the various revenue productivity implications of tax reforms.

1.6 SIGNIFICANCE OF THE STUDY

The empirical results of the study will have important implications for tax reform. An elastic tax structure is appropriate in developing countries because it implies that tax collection will grow automatically with growing incomes without need to resort to discretionary measures. Since elasticity is an important measure in taxation it is important that the authorities be able to identify those taxes that are elastic. To raise overall elasticity requires utilizing heavily those taxes which are most income elastic.

A buoyancy coefficient greater than elasticity coefficient indicates that discretionary measures are more important for increased revenue generation.

Analyses of the components of the overall tax elasticities brings out the importance of the two components as key factors in explaining elasticity of a system. Tax to base elasticity can be improved through better administration (more efficient procedures,minimization of evasion, abolition of exemptions, use of ad-valorem rates among others.) To this extent, tax to base elasticity is largely within the control of the authorities.

In contrast,base to income elasticity is mainly determined by the manner in which the structure of the economy changes with economic growth. In designing income elastic taxes both the predicted response of the tax to base and base to income should be considered.

CHAPTER 2

2.0 LITERATURE REVIEW

This chapter reviews theoretical and empirical literature on the productivity of tax systems. In the last section of the chapter an overview of the literature is undertaken.

2.1 THEORETICAL FRAMEWORK

The great importance of fiscal policy in many underdeveloped countries arises from the fact that the state is called upon to play an active role in promoting of economic development. Fiscal policy has been defined as a policy under which the government uses its expenditure and revenue programmes to produce desirable effects and avoid undesirable effects on the national income, production and employment (Chelliah 1969). The fiscal theory has undergone developments since the 1940's when under the impact of depression, Keynes work on the General Theory of Employment Interest and Money that advocated for active government participation in the economy was published.

All governments therefore take responsibility of producing a range of goods and services. Governments need to raise revenue and regulate the economy for a variety of reasons and they invariably have to make compromises between an ideal set of economic rules for a market economy and their own objectives (World Bank 1987). The tax system thus comes into play as it provides one of the major sources of revenue for financing expenditure, moreover taxation policy can be manipulated to meet specific economic objectives. It is for this reason that tax systems are reviewed and adjusted accordingly from time to time. Khan (1973) points out that taxation policy is the most important element for mobilizing the increments in national income for investment or expenditures by the state.

While a simple comparison of tax ratios gives some indication of the relative levels of taxation in various countries any inferences of tax performance or effort based merely on such a comparison fails to take into account the fact that some countries are more favourably placed to levy taxes, that is they are said to have greater taxable capacity than others (Chelliah et al 1975). Of the variables that have been used to explain taxable capacity the average level of income,degree of openness of the economy and the composition of G.D.P have been utilized. These factors can be embodied in different measures to see which combination best explains taxable capacity of developing countries. The results agree with those of studies undertaken earlier. The mining share emerged again as an important determinant of tax ratios in developing countries. The share of agriculture not only affect the taxable capacity but the willingness to tax. The study also finds that taxes on international trade constituted the largest share of total taxes followed closely by those on production and internal transactions

The productivity of a tax system is measured by two concepts: (1) Buoyancy and (2) Elasticity: The actual tax collection depends on two main factors: the actual or realizable economic surplus which determines what is available for taxation and the mechanisms or tax handles of the government which is associated with the ability of the government to extract the surplus (Mtatifikolo,1990). At an early stage of economic development the surplus (production net of consumption) is small as the economy expands there is a built in response of the tax system to the expansion in income and therefore a resultant increase in revenue.

However the government has tools which it can utilize to influence magnitudes of changes in tax revenues. These are referred to as tax handles or discretionary tax measures. These options include changes in rates, introduction of new taxes and improving of tax machinery. These changes can influence collection independent of the built in response due to national income changes. Since there are severe administrative and political limitations to the extent to which additional taxation measures such as expansion of the base,increasing of the rates or imposing of new taxes can be resorted to, the

built in elasticity of a system becomes important. Most authors therefore agree that in considering the criteria for a tax system in a developing country the response of tax revenue to changes in national income is a vital ingredient (Mansfield 1972, Chelliah 1971, Prest 1962, Sahota 1961, and Bryne 1983)

The overall response of tax system both built in and that due to discretionary measures is called the buoyancy. However the elasticity of a tax system measures only the built in response hence abstracting from the effects of discretionary measures.

In order to estimate elasticity therefore one has to abstract from the effect of changes in tax legislation over the period. To this end various techniques have been developed and extensively utilised. These include the constant rate structure, the divisia index method, the dummy variable technique and the personal adjustment method.

The constant rate structure method requires data on income bracket and commodity rates and sufficiently dissaggregated information on the growth and distribution of the reported bases. If such desegregated data is available it would be possible to construct a constant rate-base series that would represent hypothetical yields under a system assumed to remain unchanged during the period under review *(Choudry 1975)*. This is done as follows:

$T_{ip}(t)$ = Assessed personal income tax (or whichever tax one is dealing with) and $Y_i(t)$ = The assessed income of the ith group. $T_p(t)$ is the aggregate assessed personal income tax in the period

$$T_p(t) = \sum_{I=1}^{I7} \text{------1)}$$

t.

$$Y(t) = \sum_{I=1}^{k} Y_i(t) \text{------2)}$$

Is the aggregate assessed income in the same year.

(r) = reference year.

Then the average effective rate of taxation for the ith income group in the reference year is

$$t_i(r) = \frac{T_{ip}(r)}{Y_i(r)} \text{-------3)}$$

so that,

$$T_p(r) = \sum_{i=1}^{k} t_i(r)\, Y_i(r) \text{------4)}$$

thus the simulated assessed personal income tax in the tth year is,

$$T_p(t) = \sum_{i=1}^{k} t(r)\, Y_i(t)\,,\ t=1 \ldots n \text{-------5)}$$

from equation (5) above it is clear that the constant rate structure method incorporates only the discretionary changes in statutory tax rate, that it ignores those changes that could arise due to administrative efficiency. Furthermore, information particularly on distribution of tax bases by rate categories is not readily available consequently the adjusted data involve measurement errors, which in turn create specification bias in the estimate of elasticity. The method also assumes that inter-class or inter groupings of the base will remain unchanged during the period under review. Naturally the validity of this assumption will decline as the number of income groups or commodity groupings fall due to aggregation *(Ehdaie 1990)*. *Choudry (1979)* proves that the constant rate method becomes inefficient where a tax has many progressive elements and second, where tax bases grow at the same rate. Under the first circumstance, the method does not guarantee that the tax elasticity will be larger (smaller) than the buoyancy even when discretionary changes produce an overall negative (positive) revenue effect. Under the second circumstance there is the possibility that the elasticity estimate fails to detect the effect of discretionary changes.

Choudhry (1975) estimates the elasticity of assessed personal in Malaysia for the period 1961-70.He justifies his use of the C.R.S. method by data availability. He goes further to compare these results to those obtained from the actual (collected) income taxes.He concludes that the observed differences between buoyancies and elasticities of actual and assessed income tax imply deficiencies in their growth rates.

-2)
The divisia index method has been extensively derived and used in *Choudry (1979)*. The method is widely used in measuring technical change. It was discovered through an intuitive appreciation that the characteristics of the effects of discretionary tax measures an tax yield are analogous to the effects of technical change on total productivity. The intuition being that discretionary tax measures produce changes in tax yield over and above those caused by automatic growth in the tax bases as technical changes induce changes in productivity aver and above those that can he accounted for by increase in factor inputs. At an aggregate level, it is then assumed that there is a stable relationship between aggregate tax yield and bases just as in factor inputs and output. A technical change is assumed to induce a shift in the production function because a given technology is altered so to a discretionary tax measure does the same to an aggregate tax function since it alters the tax system.

In a pioneering article "technical change and the aggregate production function", *Solow (1957)* showed that under certain circumstances the divisia index is an appropriate index of factor inputs where the weights are the factor share in total output. The effects of discretionary measures on tax revenue are estimated by an index that isolates the automatic growth in revenue from total growth. After calculating the buoyancy, the buoyancy measure is adjusted by a suitable transformation of the index obtained initially in order to arrive at the elasticity.

Despite the strong theoretical base for its developments, Choudry proves that in practice the divisia index method can undermine(over state)the positive (negative) revenue effects of such measures. If

the discretionary measures produce very large effects this method does not give satisfactory results. Despite these limitation the index is expected to provide a reasonable measure of the effects of such measures. The main advantage of the method is that it requires no specific information on the revenue effect or on the frequency of past discretionary tax changes.

The dummy variable technique has been employed as a proxy for discretionary tax measures by *Khan (1973). Singer (1968), Chand and Wolf (1974)* and *Artus (1974)*, use one dummy variable as a proxy for each D.T.M. Undertaken during the period under review. *Singer (1968)* has suggested that any reform be considered as an exogenous factor and that each should therefore be represented by a dummy. Elasticity of the tax system is then worked out by fitting the data on the function:

$$T=\alpha+\beta Y+\sum_{I=1}^{n} d_I D_I$$

which when transformed into log linear form becomes:

$$\log T=\alpha+\beta \log Y+d_1 D_1+\ldots\ldots d_n D_n$$

Where D stands for n number of dummy variables and ß the elasticity coefficient. Accordingly then the method requires use of one dummy variable for each change in tax rate or base. *(Khan 1973)* however introduces a dummy for those reforms whose gross effect is relatively greater on the total tax system.For individual taxes, a dummy variable was introduced for particular reforms and not the overall changes in that tax structure.

Estimates of elasticity by this method are not precise and reliable because of multicollinearity problem created as a result of including more than one dummy variable in the tax function. In spite of being

simple, its application to estimating elasticity becomes very limited when the number of discretionary measures is large relative to the length of the data *(Ehdhaie 1990)*.

Khan (1973) reports astonishing results using the method The buoyancy figures are lower than elasticity estimates (except for income tax and customs duty) implying that the reforms had only dampened the responsiveness of the tax system. Only some of the dummy variables had coefficients statistically significant. This means that only some of the tax reforms had an appreciable effects on the buoyancy the others were either minor or so recent that their effects had not been registered. However he notes that this results were consistent with tax policy for the period.

In accordance with the proportional adjustment method, the historical time series data are first adjusted to a preceding year base. This is done by subtracting the budget estimate of the impact of discretionary measures measures implemented in a particular year from the actual tax revenue collected that year. This is the method adopted in the study and is fully discussed in chapter 3. *Bryne (1983)* uses the method to estimate the built in responsiveness of major taxes in Zambia particulary how it afflicted the contribution of these taxes in offsetting the decline in revenue from the mining sector over the sample period 1966-77. *Kwasa (1980)* also examined the same tax system for the period 1964-71. He notes that all the taxes taken together had shown an increase of 11.2% as compared to an increase of 12.8% in primary G.D.P. *Bryne (1983)* reports elastic income taxes and domestic taxes but the opposite holds for import duties. The findings are explained by the growth of industrial and service sector and in consumption of bottled beer, and governments policy on import substitution. In Zambia the danger of undue reliance on revenue from mining companies and the need for diversification were realized early. This had occurred but not as much as authority had wished. Import were especially had to collect due to administrative difficulties. The high buoyancy of domestic goods and services was attributable to faster than proportional growth of indirect taxes with

respect to private consumption. This indicated a high income elasticity of demand for at least some excisable products especially bottled beer.

Mtafikolo (1990) using the same method reports comparable results to those of *Rutayisire (1982)* and *Osoro (1985)* who conducted a similar exercise for Tanzania for a sample period that overlapped his own. *Osoro (1985)* utilized the proportional adjustment and the dummy variable technique.Mtafikolo reports generally low elasticities of major taxes but buoyancies are high.There were differentiated efforts directed at taxable targets with the biggest efforts directed at taxation of imported items. The most interesting results however was that of income tax where buoyancy estimate is smaller than elasticity estimate suggesting evasion and/or avoidance. When he further decomposes the elasticities into tax to base and base to income, he reports that overall the low tax elasticities are explained more by low base to income elasticities. The result, he notes, are not surprising since the rate of taxable monetization of the economy had not been keeping pace with overall G.D.P growth, and the informal and subsistence production and transaction had proliferated over the years so that tax bases had not grown accordingly.

The four methods discussed have been extensively applied in various countries. Recently, *Ehdhaie (1990)* has developed a model that incorporates the effects of discretionary measures on other bases. He contends that all the methods of estimating elasticity suffer from specification bias because they assume that changes in an individual tax do not affect its own and other tax bases. As an example an increase in the tariff on imported consumption goods raises the price of these goods compared with goods produced within the economy. In an attempt to maximize utility consumers will decrease consumption of imported goods and increase that of domestic products. As a result import tax yield will decline due to the decrease in its base. Domestic consumption tax will increase. Such are the interactions that he sets out to capture in his dynamic model. However the model he develops is a

non linear simultaneous system and hence its uses requires non linear estimation techniques that this study is not in a position to utilize.

Apart from estimating productivity through elasticity and buoyancy,another method of assessing the tax system that has gained following has been the optimal tax theory. Optimal tax theory puts thrust on analysis of the impact of tax reform on the objective of minimizing the efficiency cost of taxation through changes in social welfare function. *Ramsey (1927)* argued that the efficiency cost of taxation could be minimized under a system that equalized the welfare cost (dead weight loss) per unit of tax revenue for all commodities. *Newberry and Stern (1987)* have attempted to utilize this analysis in evaluating tax reforms.

While having strong theoretical underpinnings, the theory's operational content is limited. The information required are sufficiently daunting to the point of being almost overwhelming *Thirsk (1990)*. Apart from requiring knowledge on elasticity for all consumer goods, the theory is built upon a social welfare function of which very little is known,a~d whose existence has been doubted in public finance. *Slemrod (1990)* argues that the theory could serve as a guide if it considers the tax administration aspect, which it entirely ignores by assuming perfect administration. Once the tax is recognised the appeal for a highly differentiated tax structure that the theory advocates for is highly diminished (*Thirsk 1990)*. Others who have used the theory are *Deaton (1987), Diamond and Mirlees (1971)*. By failing to identify the real practical need for reform in developing countries, the impact of the theory on developing countries has been small.

2.2 LITERATURE ON TAX REFORM

Much of the literature on tax reform has been descriptive rather than analytical. Although many agree that there is no standard criteria for judging a system,many agree that revenue adequacy, neutrality and equity should be the most important objective that a tax system ought to serve.

Gillis (1985) reviews in great detail tax reforms undertaken in Indonesia, where a fiscal crises was not the impetus for reform,but reforms where undertaken to forestall oil revenue shortfalls[10]. Other objectives in the indonesian reforms included more effective income distribution simplification of the tax system and streamlining of tax administration.

All the studies on the subject however seem to suggest similar lessons for successful reforms. *Khalilzadeh and Shah (1990)* point out that tax changes should be made after transitional arrangements have been adequately considered. They should be presented as part of long term strategy. *Thirsk (1990)* advocates for a well thought out program of action and a clear perception of the problems of the pre reform tax system. Identification of these issues in advance is essential to determine where efforts should be concentrated and resources focused.

Ultimate adoption of reform program is critically and directly dependent on the degree of involvement of domestic officials and academicians. Another requirement is that the reforms be carefully and systematically implemented. This requires a longer time horizon. Indonesian reform were undertaken within such a setting and even went further to transform the suggested policy into legislation by involvement of legal officers *Gillis (1985).*

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[10] *Other countries where reforms where fashioned without the threat of fiscal crises were Columbia and Korea. The relatively stable political structure had allowed these governments the luxury of anticipating future fiscal goals(Thirsk 1990).*

Recent reforms aim at simpler administrative procedures, aiming more at training of the personne at hand. Measures should be directly targeted on the objective they are intended to achieve Emphasis is now on crude state of justice rather than striving for unattainable goal of complete justic *(Thirsk 1990)*. This is especially so because income redistribution through the tax system has bee cast in doubt. Incidence studies have suggested that budget should stress on expenditure and not o the tax side of the budget if it is to serve redistributive purposes[11]. *De Wolf (1975)* in his paper o fiscal incidence studies in developing countries, points out that the pattern of public expenditur represent one of the most effective techniques a government possesses to improve the conditions c the poor.However expenditure reforms also need to be undertaken in order to finance only th efficient set of public projects.

The propositions on the genre of reforms are however general, not all solutions are transferable Initial conditions in a country must be identified in order that proper remedies may be prescribe *(Thirsk 1990 Khalilzadeh and Shah 1990)*. *Thirsk (1990)* illustrates this by a few example sophisticated indexation may work in Columbia but not in Morocco where administrative complexit is already at high levels. Regressive indirect taxes may be of concern in Bolivia than in Korea whe income disparities are less marked. What is a luxury in one country and therefore eligible for excis taxation may not be perceived as so in another. However the broad lessons may be generalised a countries can learn from each others experiences.

[11] *However incidence studies are built upon assumptions and sometimes become little mor than quantification of incidence assumptions.*

2.3 LITERATURE SPECIFIC TO KENYA

Ole (1975) studied the income elasticity of tax structure in kenya for the period 1962-73. He found that though the tax structure was not very buoyant, the country could rely on foreign assistance to fill in the shortfall. The availability of foreign assistance was however suspect and recommendations were made for reforming the tax system. During the period the tax structure was income inelastic (0.81). The implication for this being that the structure could not be relied upon to finance rapidly growing government expenditures.

The inelasticity of the total system was a result of inelasticity of indirect taxes (0.63). This was due to the widespread use of specific rather than ad-valorem rates on commodities whose rate of consumption was high. Direct taxes were income elastic but only just 1.09.

Kiptui (1989) following the Olivera-Tanzi proposal measured the bi-directional effects of inflation and fiscal deficits. According to the proposal, inflation in developing countries is caused by fall in real value of revenues due to lags in collection. This fall in revenue becomes a contributory factor in the inflation process when the affected governments continue to finance deficits through printing of money. He found out that on average time lags in adjustment between desired and actual revenues are longer than those between desired and actual government expenditure lag. This becomes a possible channel through which increases in money supply occurs.

Mwarania (1988) evaluating the problems of increased expenditures as compared to revenues reported that collection administration was inefficient. The revenue base of tax payers was narrow because of low incomes of majority of Kenyans.

2.4 *OVERVIEW OF LITERATURE*

The literature examined various methods used for adjusting tax revenue figures in order to estimate elasticity. Of the various methods, *Choudry (1979)* who carries out a detailed comparison of them, concludes that the proportional adjustment technique is superior. The elasticity estimates based on the constant rate method are uniformly smaller than those of any other three method. The proportional adjustment method reports results close to divisia index method. Analytically the divisia index and the proportional adjustment method are similar. He concludes that the proportional adjustment method is superior to the divisia index which is in turn superior to the constant rate method. However it has been pointed out that the choice of adjustment method should depend on availability of data and on type and frequency of the changes. The findings depend on specific conditions and structure and can not therefore be generalised. The proportional adjustment utilizes all available information and the data requirement of its application is well available in Kenya and has therefore been adopted for the study.

The only other study on the elasticity of the Kenyan tax system was undertaken for the period 1962-63 to 1972-73 and is therefore outdated since circumstances then were different.Therefore there arises a need to estimate the productivity of the Kenyan tax system based on more current data. This would is necessary in order to identify those taxes that have been useful in meeting the revenue needs of the government, and to reform those that have not been.

CHAPTER 3

MODEL SPECIFICATION AND ANALYTICAL FRAMEWORK

INTRODUCTION

The chapter discusses the technique utilized for adjusting the tax revenue data for discretionary tax measures in order to estimate elasticity which is one of the major objectives of the study. The method as indicated in the literature review was first used by Prest (1962) and has been applied in various other studies.

ADJUSTING TAX REVENUE FIGURES

Two factors give rise to growth in tax revenue :

(1) Changes in tax system (Discretionary tax measures.)

(2) Growth in the base on which a tax is imposed.

The combined effect of the two above measures the buoyancy. In order to estimate elasticity we need to abstract from discretionary changes. Elasticity thus measures growth in tax revenues if rules of taxation would have remained unchanged. The proportional adjustment method begins with estimates of the effects of discretionary tax changes on the year's receipts. The separation of discretionary effects is accomplished in two steps. First a preliminary series of adjusted tax yields is prepared by subtracting from the actual yield for each year the estimated amount attributed to discretionary measures. This adjusted series is further refined by the application of the formulae shown below to form a final series that excludes the continuing impact of each discretionary measure on future years so that the elasticity of a given tax structure in the base year may be estimated.

The above procedures may be illustrated symbolically as follows.

$T_1, T_2, \ldots\ldots T_t \ldots\ldots T_n$ ------Actual yield for a series of years.

$D_1, D_2, \ldots\ldots D_t \ldots\ldots D_n$ ------Effect of discretionary changes of the t^{th} year on the t^{th} revenue.

T_{ij} -------Indicates the j^{th} year actual yield adjusted for the structure that existed in year i.

if i= 1 is the reference year, the series $T_{11}, T_{12}, T_{13}, \ldots\ldots T_{1t}$, represents what the tax receipts would have been if the tax structure had remained as in year 1,with all discretionary changes removed from the years following 1. It is this series that is used for estimating elasticity.

The first step involves subtracting the effects of discretionary measures:

$T_{11} = T_1$

$T_{12} = T_2 - D_2$

$T_{23} = T_3 - D_3$

$T_{34} = T_4 - D_4$

The above series is finally transformed to form thefinal series as follows:

$T_{11} = T_1$

$T_{12} = T_2 - D_2$

$T_{13} = T_{23} * T_{12}/T2$

$T_{14} = T_{34} * T_{23}/T_3 * T_{12}/T_2$

$T_{15} = T_{45} * T_{34}/T_4 * T_{23}/T_3 * T_{12}/T_2$

and so on to the final year in the sample period.

The Interpretation of the formulae is as follows:

To adjust the tax yield of any year to the hypothetical yield for that year if the base year tax structure had prevailed,the actual tax yield is multiplied by a sequence of multiplicative factors. The effect of any one of these factors is to adjust tax yields to the tax structure that prevailed in the year to which

the factor referred . Each such factor reveals what the proportion of the total yield for that year would have accrued automatically in the absence of any discretionary changes for that year.

3.2 THE MODEL

After adjusting revenue figure elasticity is estimated by the following model.

$$\text{Log } T = \text{Log } \alpha + \beta \text{ Log } Y + e_i$$

The model is specified this way because it allows direct estimate of elasticity and is also a preferred functional form in other studies *(see Mansfield (1972), Khan (1973), Bryne(1983)*

ß gives the percentage change in tax receipts T, accompanies 1% change in income. It is the coefficient of income elasticity.

Such a form indicates that the relationship between revenue and income is approximated by :

$$T = \alpha Y^{\beta}.$$

It contains an important assumption that the elasticity is constant over the range of income considered. The constancy requires that the proportionate response of the tax revenue to income change of 1% will be the same-regardless of level income. Ordinary least squares estimation technique is used to estimate the model because it gives unbiased and consistent estimators.

A high tax elasticity is said to be a particular desirable attribute as it allows growth in expenditure, preferably related to development to be financed by raising tax revenue without the need for politically difficult decision to raise taxes. It also allows an increase in capital formation if additional tax revenue is productively utilized. In addition rapidly increasing needs for social services requires responsive tax revenue.

An elasticity of less than one implies that the government automatically received a decreasing share of the rising national income in tax revenues.It further implies that the mechanism of collection is not well built to deal with the built in response.

Although elasticity of tax revenue to income is often presented as a single number , it is more realistically visualized as a weighted average of the sum of elasticities of separate taxes that respond divergently to changes in income.

Thus overall tax elasticity should be analyzed by the separate taxes.

To further identify the underlying factors behind the automatic changes in tax revenue collected elasticity can be decomposed into two constituents:

(1) tax to base and

(2) base to income elasticity.

Where elasticity of i^{th} individual tax to base = $\triangle T_i/\triangle B_i * B_i/T_i$

and elasticity of i_{th} base to income = $\triangle B_i/\triangle Y * Y/B_i$

Where : T_i is total adjusted tax revenue from i_{th} tax,

Y is gross domestic product

$B_i$is the base of the i_{th} tax

Analyses of income elasticity in such a manner permits identification of sources of fast revenue growth or conversely the causes of lagging growth. It also permits identification of the part of the revenue growth within the control of authority. Tax to base elasticity may be raised by improvements in administration. The effect will also take place if tax structure is progressive, in this sense, tax to base elasticity is largely within control of the authorities.

Subsequent decomposition implies two conditions: that the elasticity coefficient is constant over the time period used and that the variable tax and income, tax and its rates, base and income are strongly correlated. Upon decomposition into tax to base and base to income we should have the following true if the assumptions are met:

$\log T = \log C + d\log B$ (where b is base)

$\log B = \text{Log } E + f\log Y$

Then $\log T = \log C + d(\log E + f\log Y)$

$= \log C + d\log E + df\log Y$

or $\log T = \log\alpha + ß\log Y$

where $\alpha = \log C + d \log E$ and $ß = df$

It follows then that in a system of n taxes,

$$E_Y = T_I/T_T\ (\triangle T_I/\triangle Y * Y/T_I) + \ldots\ldots\ldots T_N/T_T(\triangle T_N/\triangle Y * Y/T_T)$$

This states that the elasticity of total tax revenue Ey is equal to the weighted sum of the individual tax elasticity.

The elasticity of any separate (individual tax) may be decomposed into the product of elasticity of tax to its base and elasticity of base to income.

$$Ek = (\triangle Tk/\triangle Bk * Bk/Tk)(\triangle Bk/\triangle Y * Y/Bk) \ldots\ldots\ldots\ldots (2).$$

Using 1 and 2 above, elasticity of total tax revenue in a system of n taxes depends on the product of the tax to base and base to income elasticity of each of the separate taxes weighted by the importance of that tax in total system.

$$Ey = T1/Tt(\triangle T1/\triangle B1 * B1/T1)(\triangle B1/\triangle Y1 * Y/B1) + \ldots\ldots\ldots\ldots$$

$$Tn/Tt(\triangle Tn/\triangle Bn * Bn/Tn)(\triangle Bn/\triangle Yn * Y/Bn).$$

The taxes discussed fall into the following categories:

(1) Corporate income tax.

(2) Payroll tax.

(3) Tax on domestic consumption(general sales and selective excise on goods and services).

(4) Import tax (tariff, customs duties and other charges)

Due to lack of legal bases proxy bases for the respective taxes will be used as follows:

(1) Value added in manufacturing sector.

(2) Money wage bill.

(3) Manufactured output + final imports.

(4) Import value (cost insurance freight) respectively.

The choice of basis is closely determined by theory and evidence; what is considered a reasonable representative of the component of national wealth of transactions upon which a particular tax can be assessed (Mtatifikolo 1990).

3.3 TAX BUOYANCY

The buoyancy coefficient is also measured from the double log function as follows:

$$\text{Log } T = \log + ß \log Y.$$

The only difference being that in the case of buoyancy actual and not adjusted tax revenue figures are utilized. In the above case then ß measures buoyancy coefficient.

The difference between tax buoyancy and elasticity shows the importance of discretionary changes. A tax buoyancy that is significantly greater than tax elasticity indicates positive efforts to increase revenue collection. A tax by tax comparison of the two measures points to the taxes for which discretionary changes are most important.

3.5 DATA SOURCES

Data on sales tax revenue and income taxes was derived from publications of customs and excise department and income tax department of the ministry of finance. Data on the various bases was obtained from economic surveys and statistical abstract. Data on impacts of any measure was derived from budget speeches. The study utilize data from 1973 to 1991 because this is the period when many tax reforms have been undertaken. Figures on G.D.P and its components are taken at current factor cost because taxes are levied on the same value.

3.6 DATA LIMITATIONS

The method of adjusting for discretionary tax changes relies on budget estimates of discretionary changes. Such estimates are likely to differ substantially from actual outturns. Further the absence of any legal base requires use of proxy bases. The study relies on secondary data which sometimes vary slightly according to source.

In addition tax revenue figures are reported on fiscal year bases while that on income and relevant bases is reported on calendar year. Each two consecutive calendar years had therefore to be averaged in order to correspond to fiscal years.

CHAPTER 4.

In this chapter, a summary of empirical results of a computer solution of ordinary least square regression estimates of the elasticity and buoyancy models for the period (1972-1991) using secondary data are presented. The computations were done on P-C GIVE programme.

First the overall results of the elasticity of the tax system are reported.

Next the breakdown into tax-to-base and base-to-income elasticity is undertaken. Finally buoyancies of the various taxes are reported, and compared to elasticity estimates in order to discern the importance of discretionary measures. Further the estimate of tax effort of the government is undertaken.

ELASTICITY OF THE TAX SYSTEM : 1972-1991.

The elasticity of the system and the major taxes between 1972-1991 are presented in Table 1. Income elasticity of total system was 0.67064. Those of individual taxes were divergent. Sales taxes had an elasticity of 0.60421, import taxes had an elasticity of 0.45355. Income tax in general had an elasticity of 0.93766, with company tax and PAYE having an elasticity of 0.9555 and 1.2122 respectively. From the results we can point out the following:

An overall elasticity of 0.67064 implies that the government received a decreasing share of raising national income in tax revenues.

Consumption taxes, the major source of revenue, had a low elasticity, being the major source of tax, it weighted heavily on the elasticity of the whole tax system.

Aggregate economic models assume that tax revenues are functionally related to G.D.P. (*Mansfield, 1972*). Interpretation of the R^2 statistic is important because it measures the extent to which changes in tax revenue are systematically correlated to changes in GDP. For total tax system, the R^2 is equal

to 0.94. This would seem to bear out such a relationship on purely statistical as opposed to causative grounds since the range of this statistic is wide for particular taxes from a high 0.98 for PAYE to a low 0.48 for import taxes.

Though income inelastic, income taxes performed the best. PAYE, one of the major sources of income tax revenue had an elasticity greater than unity. The inelasticity of income taxes is therefore a result of the inelasticity of other forms of income taxes, company taxes included.

Table 1. Elasticity of the tax system and major taxes : 1972-1991.

	Elasticity coefficient	Weight of tax in 90/91 (in % of total)	R^2	T-test	D.W
1. Income tax	0.93766*	26.4	0.97	24.023	1.99
- Company tax	0.95545*	-	0.95	31.286	1.55
- PAYE	1.21221*	-	0.98	39.986	1.58[a]
2. Sales taxes	0.60421*	39.25	0.94	11.353	1.79[a]
3. Import tax	0.45355*	12.8	0.48	3.9080	1.58[a]
4. total(1)-(3)		80.93			
5. total tax system	0.67064	100	0.94	23.93	1.89

* Coefficient significant at 1% level.

a - indicates use of cochrane orcutt method to correct for autocorrelation.

DECOMPOSITION OF ELASTICITIES.

Since the legal bases are not available the yields of the major taxes have been related to the proxy bases. These relationships are presented in Table 2 and discussed below.

Table 2: KENYA: Decomposition of tax elasticities: 1972-1991.

(figures in parenthesis are t-values.)

	Tax to income Elasticity			Tax to base elasticity.			Base to income elasticity.		
	Coef.	R^2	DW	Coef	R^2	DW	Coef	R^2	DW
Income Tax and non agric gdp	0.93766*	0.97	1.99	0.84275* (14.917)	0.9329	2.10a	1.0494* (18.23)	0.954	2.14a
PAYE and wage bill.	1.21221*	0.98	1.58	1.23726* (44.420)	0.9197	1.64	0.8869* (30.470	0.984	1.50a
company tax and value added in manufacturing sector.	0.95545*	0.95	1.55	0.98946* (29.28)	0.9805	1.52	0.9520* (21.96)	0.968	1.79a
consumption taxes and manufacturing output + value of final imports.	0.60421*	0.94	1.79	0.48302* (11.526)	0.8989	1.80a	1.2326* (43.72)	.9916	1.56
Import taxes and imports(c.i.f)	0.45355*	0.48	1.58	0.55713* (4.326)	0.5319	1.70a	0.8960* (11.67)	0.900 9	1.64a

* Coefficient significant at 1% level.

a - indicates use of cochrane orcult method to correct for autocorrelation.

NB/. The product tax-to-base and base-to- income should be equal to the elasticity measure in table 1. However data problem on the proxy bases may be responsible for anomalies. These anomalies however are small.

Table 2 shows that the inelasticity of import taxes was more a result of low tax-to-base elasticity (0.55713), Though base-to-income was inelastic at (0.89598). The poor performance of the sales taxes is a result of low tax-to-base elasticity (0.48302). Base-to-income elasticity is 0.92031 suggesting that over the period the sales tax base had not accelerated with the growth in income. Income taxes on the other hand had a tax-to-base elasticity of (0.84275) and a base-to-income elasticity of 1.04935. PAYE is the only tax that has an elastic tax-to-base elasticity (1.23726), it's base to income elasticity however is 0.8869 which implies that wage level had not accelerated in line with national income growth. For company tax, both tax-to-base and base-to-income showed no significant variance and were 0.98936 and 0.98006 respectively.

In order to assess the performance of the system in the sample period, the elasticity of the individual taxes in the total system has been sub-divided into two periods; 1972-81, and 1982-1991, using 1972 as base year.

Elasticity of the tax system: 1972-1981.

The elasticity of the tax system between 1972-1982 are presented in table 3. Elasticity of individual taxes were again divergent. Sales taxes had an elasticity of 1.09108, import taxes 0.49, income tax in general had an elasticity of 0 .9873, with company tax and PAYE with an elasticity of 1.000654 and 1.38734 respectively. From the results we can point out the following:

Sales taxes, the major source of revenue had an elasticity slightly greater than one. With sales tax having been introduced in 1973 the tax had performed well. Elasticity of income tax was below unity however, that of PAYE and company taxes was greater than unity. The low elasticity of income tax is therefore a result of the inelasticity of other forms of income tax. Import duties performed the poorest. Being one of the major taxes at the time, it contributed greatly to overall low tax elasticity.

Table 3. Elasticity of the tax system and major taxes: 1972-1981.

	Elasticity coefficient	weight of tax in 90/91 (in % of total)	R^2	T-test	D.W
1. Income tax	0.9873*	28.8	0.98	19.796	1.50
-Company tax	1.00065*	-	o.94	11.218	1.81
-PAYE	1.38734*	-	0.90	8.1735	1.68a
2. Sales taxes	1.09108*	39.25	0.81	6.0149	1.59
3. Import tax	0.49*	12.8	0.51	2.8935	1.53
4. Total(1)-(3)		80.85			

* Coefficient significant at 1% level.

a - indicates use of cochrane orcult method to correct for autocorrelation.

DECOMPOSITION OF ELASTICITIES :1972-1981.

Since the legal bases are not available the yields of the major taxes accounting for approximately 80.85% of the total tax revenue in 1990/91 have been related to G.D.P . Elasticity of an individual tax is a product of tax to base and base to income elasticity.

These relationships are presented in Table 2 and summarized below.

Table 4: KENYA: Decomposition of Tax Elasticities, 1972-1981.
(Figures in the parentheses are t-values.)

	Tax to income Elasticity			Tax to base elasticity.			Base to income elasticity.		
	Coef.	R^2	DW	Coef	R^2	DW	Coef	R^2	DW
Income Tax and non agric. GDP	0.9873*	0.98	1.50	0.6398** (2.75)	0.519	1.76a	1.1119* (4.570)	0.749	1.37
PAYE and wage bill.	1.38734*	0.90	1.81	1.33	0.99	1.73	0.947* (3.444)	0.664	1.43a
company tax and value added in *manuf. sector.*	1.000654*	0.94	1.68	1.00711* (10.592)	0.9335	1.79	1.4856* (4.075)	0.735	1.58a
consumption taxes *and manuf.output* +value of final imports.	1.09108*	0.82	1.59	0.85928* (6.989)	0.8593	1.69a	1.3280* (29.42)	0.991	1.47
Import taxes and imports (c.i.f)	0.49*	0.51	1.53	0.5036* (8.59)	0.59	1.48a	1.0303* (4.87)	0.969	1.88

* Coefficient significant at 1% level.

** Coefficient significant at 5% level.

a - Indicates use of Cochrane Orcutt method to correct for autocorrelation.

NB/. The product tax-to-base and base-to- income should be equal to the elasticity measure in table 3. However data problem on the proxy bases may be responsible for anomalies. These anomalies however are small.

IMPORT TAX.

Import duties failed to respond well to changes in its tax base. Table 4 shows that the inelasticity of the tax was a result of low tax to base elasticity (0.5036). Base to income elasticity was fairly elastic (1.030).The low responsivess of import duties at a time when its base was responsive to income shows existence of exemptions and low rates on major categories of imports.This can be further attributed to import substitution policies adopted since independence and continued in the period until early 80's when major changes in industrial policies were undertaken. The policy called for the protection of domestic industries. Low tariffs were maintained on capital goods which constituted a large portion of total imports over the period (see appendix table 5 and 6). High tarrifs were maintained on some categories of imports that constituted a small portion of the total, included among these were beverages and tobbaco.

The elastic base-to-income (1.03) is explained by the growth in imports relative to G.D.P. The fiscal system that favoured importation of highly valued capital goods and intermediate goods for use in import substituting industries.

SALES TAXES.

The tax-to-base elasticity of the tax is 0.8593 which implies that it is inelastic. Base-to-income is elastic at (1.32795) The fair response of the consumption tax with respect to manufacturing output and final imports indicates higher rates of the sales tax that were applicable to a large number of goods. The taxes are also easy to collect since they form a component of final price of the commodity.

Base-to-income elasticity (1.32795) implies that the level of manufacturing output and final imports had accellerated in line with the growth in G.D.P.

INCOME TAXES.

Elasticity of this tax was below unit. When considered separately, PAYE responded well in tax-to-base while company tax failed to do so. PAYE reports the highest tax to base elasticity.This is probably a reflection of both the high efficiency in collection since the tax is withheld at source and the over taxation of the sector relative to others in the economy. The base was however inelastic with respect to G.D.P, indicating that workers received a declining portion of G.D.P in form of wages.

TAX BUOYANCY.

The difference between tax buoyancy and elasticity estimate shows the importance of discretionary changes thus revealing how far the sole reliance on the elasticity of the system would have either been able or otherwise fallen short of revenue requirement during the period. Tax by tax analyses of the two measures points to the taxes for which discretionary measures were most important *(Osoro 1990)*. Taxes with higher buoyancies than the total system increase their relative contribution over the period. The relative importance of individual taxes on the tax system thus changes due to different buoyancies.

Income taxes therefore continually loose their dominance. This conformed to government policy of reduced reliance on direct taxes. Import taxes fairly maintain the position while Consumption taxes increase their relative contribution. Since excise tax one of the forms of sales tax remained stable over the period (see Table 2 in appendix), the high buoyancy of the sales is mainly attributable to the sales tax on manufacturing and sales tax on imports.

Table 5: Differences between tax buoyancy and elasticity for total taxes and selected major taxes: 1972-1981.

	BUOYANCY	ELASTICITY	DIFFERENCE IN % POINTS	TAX EFFORT.
TOTAL TAXES	1.1999			
INCOME TAX	1.02261	0.9873	0.03531	3.576
PAYE	1.0744	1.38734	-0.31294	(22.5568)
COMPANY TAX	1.0914	1.00065	0.09075	9.0691
CONSUMPTION TAXES	1.62	1.0908	0.5292	48.51485
IMPORT TAX	1.29707	0.490	0.80707	164

As shown in Table 5, the tax system as a whole had a buoyancy of 1.19, implying that for every 10% rise in national income, total tax revenue rose by 11.99% . The major cause of growth of total tax revenue therefore lies in discretionary changes.

Like total taxes, income taxes had a buoyancy exceeding the elasticity coefficient but only minimally suggesting that discretionary changes were only marginally responsible for growth in income tax revenue over the period.

The buoyancy for PAYE was less than the elasticity estimate. This is due to the fact that discretionary measures undertaken had been aimed not at raising revenue but at raising the take-home pay of the workers especially those in the lower income bracket. However these efforts had only marginal effects on tax collection.

Sales tax had the largest buoyancy, larger than elasticity coefficient. The fact that consumption taxes were responsible for a larger portion (33.96) of the total revenue weighted significantly on the buoyancy estimate of the tax system. Discretionary measures on this tax were numerous and largely responsible for increase in yields.

Import taxes had the largest percentage difference between elasticity and buoyancy. The major cause of growth in revenue lies in discretionary measures. Though average rates were being adjusted

downwards (see appendix table 5) in response to tariff rationalization policies announced in 1973, the import substitution policies still in favour at the time necessitated use of higher rates on these taxes.

TAX EFFORT

The size of the difference between buoyancy and elasticity usually expressed as a percentage of the latter is normally used as an indicator of tax effort of the government (Thac and Lim 1984).This measure is shown in the last column of Table 5.

The table shows that there was differential effort directed at different taxable targets with the largest effort directed at taxation of imports. This is quite in agreement with economic policies undertaken during the period.

The next biggest effort was in the sales tax. Though income tax shows net positive effort, PAYE's effort is negative, evidence exists of government efforts to lower marginal rates.The difference in effort between company tax and PAYE shows that income earners were pursued with different intensities.

ELASTICITY OF TAX SYSTEM: 1982-1991.

Elasticity of major taxes in the total tax system between 1982-1991 are presented in Table 6. Overall income tax exhibits an elasticity of 1.07130 with company tax having an elasticity of 0.85669 and PAYE 1.22248. The elasticity of sales taxes deteriorated and was inelastic at 0.73031 as against 1.0908 achieved during the 1972-81 period. Import taxes improved to 0.98668 as compared to previous period elasticity of 0.490.

With the exception of consumption taxes all taxes seem to have improved as compared to the previous period. The reason for the system being largely inelastic would then seem to lie in the poor performance of consumption taxes which constitute the largest share in total tax system.

Table 6: **KENYA: Elasticity of the major taxes and total tax system 1982-1991.**

	Elasticity coefficient	weight of tax in 90/91 (in % of total)	R^2	T-test	D.W
1. Income tax	1.07130*	28.88	0.99	32.913	2.04
- Company tax	0.85669*	-	0.93	9.9667	1.68
- PAYE	1.22248*	-	0.98	25.39	1.61
2. Sales taxes	0.73031*	39.25	0.87	6.8286	1.40a
3. Import tax	0.98668*	12.80	0.81	5.4949	2.07a
4. total (1)-(3)		80.93			

* Coefficient significant at 1% level.

a indicates use of Cochrane Orcutt method to adjust for autocorrelation.

Decomposition of elasticities:1982-1991.

The yields of the major taxes have been related to the same bases as in the previous period.

Table 7 summarizes these relationships.

Table 7. Kenya: Decomposition of elasticities:1982-1991

Figures in parenthesis are t-values.

	Tax to income Elasticity			Tax to base elasticity.			Base to income elasticity.		
•	Coef.	R^2	DW	Coef	R^2	DW	Coef	R^2	DW
Income Tax and non agric gdp	1.07130 (32.913)	0.99	2.04	0.85767* (17.147)	0.977	1.97a	1.2244* (13.67)	0.964	2.21a
PAYE and wage bill.	1.22248 (25.39)	0.98	1.61	1.17075* (12.92)	0.965	1.48a	0.975* (70.03)	0.998	1.40a
company tax and value added in manf. sector.	0.85669 (9.96670)	0.93	1.68	0.81436* (8.8210)	0.917	1.71a	1.0277* (62.58)	0.998	2.05a
consumption taxes and manf.output + final imports..	0.73031 (6.82836)	0.86	1.40	0.51352* (6.88)	0.871	1.40a	1.3893* (80.95)	0.998	1.52
Import taxes and imports(c.i.f)	0.98668 (5.49497)	0.81	2.07	0.88012* (6.21)	0.8448	1.74a	1.1109* (18.42)	0.979	1.62a

*cofficient statistically significant at 1% level.

a indicates use of cochrane Orcult method to adjust for auto-correlation.

NB/ The product tax-to-base and base to income elasticity should be equal to the elasticity measure in table 7. However data problems on the proxies may be responsible for anomalies. Once again these anomalies are small.

All the major categories of taxes responded less than proportionately to changes in their bases. With the exception of PAYE, each 1% rise in the corresponding base was accompanied by a less than 1% rise in tax revenue. overall low elasticity of the tax system is explained more by low tax-to-base elasticities, the rate of taxable economy has otherwise been keeping pace with G.D.P growth.

SALES TAXES.

The elasticity of these taxes deteriorates from 1.09108 in 1972-81 period to 0.73031 in 1982-91. Considering their importance as a target for raising revenue, this deterioration has serious implications.

Upon decomposition, it is revealed that it is the tax-to-base that is responsible for the poor performance during the period, indeed the base-to-income elasticity slightly improves from 1.32 the previous period to 1.389 in the current period. Sales taxes perform the poorest in terms of tax to base elasticity (0.51352) as against (0.8593) the previous period. The low response at a time when its base performs well could only be attributable to inappropriateness of the sales tax. This supports the proclamation that as the economy becomes more sophisticated the many disadvantages of this tax had become more marked hence the introduction of value added tax (budget speech 1989).

INCOME TAXES.

The tax is elastic in base-to-income however the tax responded weakly to its base, thus whereas taxable capacity rose with respect to income, tax collections did not rise as fast. PAYE again performs well in tax-to-base, base-to-income is inelastic at 0.975 implying that workers received a declining share of national income in the form of wages.

The base-to-income elasticity of company taxes remained fairly stable over the two periods, the tax to base however declines to 0.81436.

IMPORT TAXES.

As compared to the first period import taxes perform better though still inelastic (.98668) as compared to (0.49) between 1972-81. The period closely corresponds with the beginning of trade liberalization policies. Trade liberalization began with the replacing of quotas and other non-tariff barriers with tariffs since tariffs are economically a more efficient means of protection thus it was inevitable that tax to base elasticity improves as many previously untaxed goods came under tariff bracket. The base to income elasticity remains fairly stable at 1.053 as compared to 1.03 the previous period this could be attributable to more liberal import policies attributable to trade liberalization.

BUOYANCY OF TAX SYSTEM - 1982-1991.

As pointed out earlier, buoyancies reflect on the importance of the tax over the period, higher buoyancy than that of the tax system for a particular tax resulting in increased ratio of the tax in total tax system over the period. Table 6 compares the buoyancy of the tax system and of individual taxes to their corresponding elasticity.

Table 6: ***Differences between buoyancies and elasticity of total tax system and selected major taxes:1982-1991.***

(i)	(ii) BUOYANCY	(iii) ELASTICITY	(iv) DIFFERENCE IN % POINTS	TAX EFFORT.
TOTAL TAXES	1.06948	0.878	0.19148	21.809
INCOME TAXES	1.07598	1.07130	-0.00468	-.4369
PAYE	1.155	1.18894	-0.03394	-2.8546
company tax	0.8976	0.85669	-0.0365	-4.261
consumption tax	1.233	0.73031	0.50269	68.8324
import duties	0.7376	0.98662	0.24902	-25.2397

Table 6 column 4 shows that discretionary measures have only been effective in yeilding positive results for consumption taxes. This is a result of government's commitment to increased taxation of consumption. The buoyancy is 1.233 is much larger than the buoyancy of 1.06948 of the tax system, this has resulted in a relatively greater ratio of these taxes in total revenue. The ratio of all the other taxes in total tax system has thus on average continued to decline. (see table 2 in appendix).

There has been explicit commitment towards downward revision of rates as far as income taxes are concerned, hence the dampening effects of discretionary measures on tax yield. However the effects

of these on yields has been small being only 0.04 for total income taxes and -3.394% and –3.65% for PAYE and company taxes respectively.

Regarding import duties discretionary measures have reduced yields. This is so because on average rates were continually declining, thus for every 10% increase in national income import taxes increased by only 7.376% .

TAX EFFORT: 1982-1991.

Column 4, Table 6 shows that the largest effort was directed to consumption taxes.However this does not necessarily imply the regressivity of the system because there has been explicit commitment to exempting basic consumption goods. These taxes have also been utilized to raise yields in line with inflation.

The dampening effort directed to taxation of income is due to the agreed consensus that lower rates of taxation on income sharpen incentive and stimulate enterprise (budget speech 1989).

Reduced effort has also been directed at import taxes in conformity to trade liberalization policies.

CHAPTER FIVE.

5.0 SUMMARY, POLICY IMPLICATION AND CONCLUSION.

The study set out to establish the revenue productivity of the Kenyan tax system in 1972-1991. In the first chapter, the major themes of tax reforms in developing countries in general were highlighted. It was seen that fiscal crises have provided the impetus for reform in nearly all the countries, though a few have undertaken reform to avoid anticipated revenue shortfalls. In Kenya specifically reforms have been undertaken both for revenue needs and in response to specific economic policies. In general equity, revenue adequacy, neutrality and simplicity have been the major objectives pursued in reforms, however they sometimes require trade-offs between them. While simultaneously delivering gains on other aspects, revenue adequacy remains an important dimension which reforms must seek to accomplish.

Chapter two reviewed the literature on tax reform and methods used to estimate revenue productivity. Elasticity and buoyancy models were discussed.

The proportional adjustment method of adjusting tax revenue figures in order to estimate elasticity was adopted and was discussed fully in Chapter Three. In addition the buoyancy model was presented.Chapter Four reports the findings using data for the relevant period covered in the study. In this chapter policy implications based on the findings are outlined and limitations as well as areas of further studies are suggested.

5.1 SUMMARY OF FINDINGS.

An elasticity of 0.67064 between 1972-1991 is for the overall tax system. Analysis of the components of overall elasticity for the period indicates that tax-to-base elasticity had a generally lower value relative to base-to- income for the tax system. If the tax-to-base elasticity of these taxes had grown

considerably fast overall elasticities would have been much higher. PAYE is the only tax that had an elastic tax-to-base elasticity.

Upon subdivision into the two sample periods 1972-81 and 1982-91, low tax-to-base elasticities still remain the cause of low elasticities of the major taxes. The performance of the import taxes and consumption taxes is at variance for the two sub periods.

Import taxes had a very low tax-to-base elasticity between 1972-81, the result of exemptions granted and low rates on a number of raw materials and machinery in conforming to industrial policy undertaken at the period.The elasticity of these taxes however improves significantly in the second sub period, the result of trade policies undertaken at the time.

It is then true that trade liberalization improves the built-in responsiveness of import taxes. Sales taxes on the hand deteriorate in elasticity in the second sub period a probable indication of the inappropriateness of these taxes as the economy becomes sophisticated.

The performance of the income taxes is not at significant variance in the two periods though the slight improvement in performance in the second period results in an elastic outcome of 1.07130. However PAYE one of the major components of income taxes is the only tax that is elastic in tax-to-base in the two periods. As pointed out in the relevant section this is probably due to the fact that the tax is fairly easier to collect since it is withheld at source.

On the whole, discretionary measures are seen to be important in raising yields, the buoyancy of the total tax system being greater than the elasticity in the whole period, sub periods included. However higher buoyancy would have been more useful in further raising of yields and thus helping to alleviate revenue shortfalls.

However, when individual taxes are considered separately it is revealed that between 1982-91 discretionary measure on import taxes, PAYE and company taxes result in reduced yields.

This is so for import taxes since rates are continually revised downwards in conforming to trade policies adopted during the period. These policies include tariff rationalization and trade liberalization.

In income taxation, the policy has been to reduce rates in order to provide incentive both for saving and investment, the discretionary measure on this tax are also responsible for reducing yields on this tax. However the effects of these measures on yields for this tax is small.

Consumption taxes on the other hand are seen to be pursued with great intensity for revenue generation purposes in the two periods. This is in response to the policy of increased reliance on indirect taxes especially consumption taxes and to compensate for anticipated revenue loss due to reduced reliance on trade taxes.

Successful implementation of specific economic objective are therefore sometimes in contradiction to revenue generation but these have been counter balanced by move to reliance on other taxes.

What is of even greater significance however is that such low elasticities occur in a period of increasing government expenditure. Persistent and growing deficit are therefore an unavoidable outcome (see Table 7 in appendix).

5.2 Policy Implications.

One of the major implication of the study is that if we are solely to judge the Kenyan tax reforms from a revenue point of view, it has failed to meet the revenue requirement of the government. However reforms have been used to meet other economic objectives, objectives which may be contradictory to revenue generation. It is the economic policies being pursued that have relevant influence on the performance of the tax system. Therefore the government ought to consider the implications of these policies on the tax yields due to the trade-offs that sometimes exist between revenue generation and successful implementation of the policies. It is then important to evaluate the contribution of such +

policies like trade liberalization on economic performance.

Moreover expenditures have grown too rapidly so that it would have been difficult for the tax system to keep in line with the revenue requirement. Such expenditures are only justifiable if they contribute positively to overall welfare.

Certain taxes are more inelastic than others therefore effort needs to be targeted differently for particular taxes.

The tax system requires constant review as the structure of the economy changes with economic growth. This is evident in the case for sales tax whose performance deteriorates with time. It is true that the structure of the tax may have been inappropriate for economy. The move to value added tax may therefore be a step in the right direction though it is too early to judge it's appropriateness.

The tax-to-base elasticity of the major taxes are seen to be the main reason behind the poor performance of the tax system. To improve the performance of the system in the years to follow effort needs to be directed to improving this aspect of the tax system in general and sales tax in particular.Fortunately this aspect is largely in control of the authorities.

5.3 Limitation of the study and areas of further research.

The study is only concerned about the revenue productivity of reforms. Reforms could however be assessed on other grounds in order to enable a better appreciation of their contribution to other avenues in the economy.

In assessing the effect of discretionary measures on the economy, the method used to adjust tax revenue figures has made an explicit assumption that a particular discretionary only affects the particular tax to which it was addressed. However different taxes are linked to each other through the economic system and a change in one tax may affect yields of another. For instance, an increase in the rate of tariff on imported commodities may make locally produced commodities relatively cheaper than imported commodities, this may shift consumption into locally produced commodities with the resultant increase in the sales tax base. Effects of particular measures should therefore be studied in conjunction with other taxes and not be limited to the tax they are addressing.

Exemptions have been used quite generously in the tax system in Kenya. These exemptions are known to reduce the base on which a tax is levied hence influencing the base-to-income elasticity.

the effects of exemption on the overall elasticity of the tax system have not been considered in the study.

Of significance too, is the relative success of the tax system in meeting other economic objectives including redirecting investment to high priority areas, increasing level of savings in the economy and in stimulating trade. Such effects that the tax system should effect need to be evaluated in order to appreciate the importance of reforms. Certain revenue reducing measures like reduction in rates will be of great importance if they will ultimately lead to better performance of the economy in the long run.

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APPENDIX ONE

Table 1

CURRENT REVENUE

	DIRECT TAXES	*INDIRECT TAXES*							
	Income Taxes	Import Taxes	Excise Duty	Sales Tax	Other Indirect Taxes	Other Taxes	Total	G.D.P.	Total as % of GDP
72/73	54.6	32.7	27.0	16.8	2.7	15.3	149.0	709.25	21.00
73/74	58.2	29.6	39.8	20.9	32.0	9.7	190.1	827.65	22.97
74/75	77.2	29.6	42.1	22.7	46.9	8.3	226.7	994.05	22.80
75/76	90.2	40.6	49.2	20.6	59.3	9.2	269.1	1200.7	22.41
76/77	108.0	54.7	52.9	28.2	65.4	11.4	320.6	1498.7	21.38
77/78	143.0	72.4	104.2	38.5	92.8	21.3	472.2	1758.65	26.85
78/79	151.7	79.6	101.3	49.0	99.8	17.9	499.3	1933.35	25.82
79/80	173.6	87.9	102.5	59.5	154.9	24.7	603.0	2165.8	27.84
80/81	198.3	92.1	146.0	60.2	179.4	24.7	700.7	2478.95	28.26
81/82	201.1	85.8	183.5	64.0	194.8	32.6	761.9	2854.6	26.69
82/83	231.8	116.2	175.8	74.0	195.9	38.9	832.2	3261.5	25.51
83/84	251.7	111.3	183.5	79.4	253.7	43.9	923.6	3674.95	25.13
84/85	301.0	133.6	165.1	78.8	273.6	67.6	1019.6	4150.05	24.56
85/86	358.1	145.7	211.8	89.0	303.6	104.0	1212.3	4769.45	25.42
86/87	385.7	148.9	246.7	106.3	397.6	104.5	1389.6	5381.25	25.82
87/88	454.6	165.0	273.7	123.1	520.0	105.7	1618.5	6059.65	26.70
88/89	512.0	274.1	301.0	137.5	588.3	93.7	1918.6	6974.9	27.51
89/90	599.2	256.9	348.0	149.4	640.3	93.8	2087.6	8055.85	25.91
90/91	710.0	310.7	314.0	182.0	783.0	108.9	2458.6	9216.78	26.61

*

Source: Computed from statistical surveys of various years.

.1. In order to confirm to fiscal year, GDP figures are average for each 2 years.

* This is the name of the account used on recurrent account less internal borrowing and debt redemption account.

Table 2

SOURCES OF CENTRAL GOVERNMENT GROSS RECEIPTS ON THE RECURRENT ACCOUNT (PERCENT)

Year	Total Direct Taxes	Sales Tax	Import Tax	Exise Tax	Others	Total	Other Sources	Total
1972/73	47	2	23	14	14	53	-	100
1973/74	36	20	25	13	6	64	-	100
1974/75	39	24	21	11	5	61	-	100
1975/76	39	25	21	10	5	61	-	100
1976/77	31	19	15	8	3	46	23	100
1977/78	32	21	24	9	5	58	10	100
1978/79	27	18	18	9	3	47	26	100
1979/80	30	27	18	10	4	59	11	100
1980/81	28	26	21	9	4	59	13	100
1981/82	22	21	20	7	4	51	27	100
1982/83	27	23	20	9	5	56	16	100
1983/84	27	27	20	9	5	61	12	100
1984/85	29	26	16	8	7	57	14	100
1985/86	29	25	17	7	9	58	13	100
1986/87	28	29	18	8	8	62	10	100
1987/88	28	32	17	8	5	62	10	100
1988/89	27	31	16	7	6	59	14	100
1989/90	29	31	17	7	4	59	12	100
1990/91	29	32	13	7	4	56	15	100

Source: Economic Surveys (Various Years)

Table 3

KENYA: REVENUE EFFECTS OF DISCRETIONARY TAX CHANGES 72-81 (IN K£ MILLIONS)

	72/73	73/74	74/75	75/76	76/77	77/78	78/79	79/80	80/81	81/82
Income Tax	-2.5	.1	3.5	2.5	-4.5	-	-	-	3	-13
Consumption Taxes (Sales and Excise)	2.20	.25	7.6	8.5	6.6	8.65	13.7	28.2	25.65	8
Import Tax	2	-	-0.1	.2m	4.3	5	0.4	2	74	25
Others	.28	-	5.8	-	0.6	15.5	-	4.08	-19.59	0.04

Source: Budget speeches for fiscal years 1972/73 - 81/82

1. Others include : Entertainment tax, on passengers, hotel accommodation, banking, export taxes/compensation, traffic act, business licenses, video tapes and licenses.

2. Due to aggregation of total revenue effects, it was difficult to seperate those due to amendment of legislation, introduction of a new tax or strengthening of administration or rationalization of structure (tariff) among the various categories.

Table 4

KENYA: REVENUE EFFECTS OF DISCRETIONARY TAX CHANGES 1982 - 91 (IN K£ MILLIONS)

	82/83	83/84	84/85	85/86	86/87	87/88	88/89	89/90	90/91
Income Tax	-2m	-	-	-14m	5	7	-	5	6
Consumption Taxes (Sales and Excise)	3.76	34.2	52	26.9	31.75	30.5	34	40	77.7
Imports	6.51	-16.9	-30	-12	1	-2.58	1.65	10	-32
Others	8.75	-5.1	.49	12.34	3.05	0.7	10.26	3	1.7

Source: Budget speech for fiscal years 1982/83 - 90/91

1. Others include : Entertainment tax, on passengers, hotel accommodation, banking, export taxes/compensation, traffic act, business licenses, video tapes and licenses.

2. Due to aggregation of total revenue effects, it was difficult to seperate those due to amendment of legislation, introduction of a new tax or strengthening of administration or rationalization of structure (tariff) among the various categories.

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15

AD VOLEREM TARIFF EQUIVALENT RATE BY SITC CATEGORY OF IMPORT (PERCENT)

	SITC CODE NUMBER									MEAN	VARIANCE
Year	0	1	2	3	4	5	6	7	8		
1972	24	158	20	33	1	4	17	11	23	32	21
1973	18	113	20	44	0	4	15	13	18	27	11
1974	8	112	20	13	0	3	15	15	25	24	10
1975	13	52	19	14	2	4	16	12	23	17	2
1976	13	35	17	1	4	8	19	14	26	15	1
1977	29	64	11	1	4	9	19	14	30	20	3
1978	16	40	16	1	4	10	21	13	30	17	1
1979	15	43	14	12	6	12	19	14	22	17	1
1980	5	102	19	1	9	15	25	18	26	24	8
1981	5	102	27	7	27	19	32	19	16	28	7
1982	4	93	34	7	18	23	34	23	20	29	6
1983	4	86	30	6	11	20	28	26	27	26	5
1984	21	100	28	7	2	22	27	21	20	27	7
1985	7	73	27	5	1	14	27	19	21	22	4
1986	15	92	29	11	3	14	27	17	17	25	6
1987	13	73	25	10	11	17	26	18	16	23	3
1988	11	97	22	12	5	17	23	15	17	24	7
1989	17	84	22	8	1	16	21	12	15	22	5
1990	5	73	20	7	1	18	18	13	14	17	4

Key:

S.I.T.C. Codes : 0 - food and live animals
1 - beverages and tobacco
2 - crude minerals
3 - minerals and fuels
4 - animal and vegetable oils
5 - chemicals
6 - manufactured articles
7 - machinery
8 - miscellaneous manufactures

Source: Calculated from statistical abstracts

Pic 6

VALUE OF IMPORTS BY SITC CATEGORY AS PERCENTAGE OF TOTAL IMPORTS

Year:	0	1	2	3	4	5	6	7	8	9
1975	4	1	2	27	2	11	17	30	6	0
1980	5	0	2	34	2	11	14	28	5	0
1984	9	0	3	30	3	12	12	27	3	0
1985	5	0	3	32	4	16	13	25	3	0
1986	6	0	3	18	4	17	13	38	4	0
1987	4	0	3	20	3	18	14	34	4	0
1988	2	0	3	15	4	18	16	39	4	0
1989	3	0	3	16	3	16	16	39	4	0
1990	6	0	3	20	3	13	15	37	3	0

Key:

S.I.T.C. Codes :

0 - food and live animals
1 - beverages and tobacco
2 - crude minerals
3 - minerals and fuels
4 - animal and vegetable oils
5 - chemicals
6 - manufactured articles
7 - machinery
8 - miscellaneous manufactures
9 - miscellaneous transactions

Source: Calculated from statistical abstracts

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FISCAL DEFICITS

	Revenues	Expenditures	Balance
1967	1208	1412	-204
1968	1351	1593	-242
1969	1443	1793	-357
1970	1621	1978	-357
1971	2154	2488	-355
1972	2554	3336	-182
1973	2116	3312	-696
1974	3386	3944	-558
1975	4438	5697	-1259
1976	5037	6595	-1158
1977	5863	6883	-1020
1978	9166	10037	-871
1979	10376	12954	-2411
1980	12712	13839	-1122
1981	14351	18248	-3897
1982	15589	20051	-4462
1983	16025	17622	-1592
1984	18434	21144	-2170
1985	19942	23717	-3775
1986	23946	29532	-5580
1987	27513	37354	-9841
1988	32427	37947	-5526
1989	29211	45785	-6574
1990	46703	55077	-8374

Source: *IMF International Financial Statistics (various issues)*

APPENDIX TWO

DATA SET

Adjusted Tax Revenue Figures (K£ MILLIONS)

	Sales taxes	Import Taxes	Income taxes	Company Taxes	P. A. Y. E.
72/73	18.8	24.8	54.6	20.425	15.854
73/74	52.65	39.8	60.3	26.335	20.005
74/75	61.70	42.3	79.98	39.456	22.130
75/76	65.96	37.274	92.4	38.95	29.144
76/77	71.824	36.819	115.267	50.206	38.30
77/78	94.099	69.045	152.622	76.360	42.55
78/79	96.822	66.859	152.806	76.372	50.657
79/80	121.154	66.33	174.865	88.746	59.42
80/81	120.900	46.593	196.723	86.715	77.85
81/82	126.552	50.647	186.604	87.042	100.191
82/83	130.145	46.674	216.947	102.145	102.270
83/84	135.542	56.686	235.570	128.362	110.178
84/85	129.479	54.98	281.713	139.976	132.893
85/86	134.365	76.388	348.819	175.580	146.063
86/87	161.590	88.614	370.213	194.865	196.063
87/88	196.449	99.239	429.627	217.848	228.83
88/89	211.325	108.528	483.874	232.626	252.428
89/90	218.284	121.809	561.558	254.219	300.93
90/91	245.262	121.168	659.775	277.813	324.727

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TAX BASES (K£ MILLIONS)

	Imports (CIF)	Wage Bill	Manuf. output & Final Imports	G.D.P.	Value Added in Manu. Sector	Non Agri. GDP
72/73	213.15	219.05	337.26	709.25	105.855	401.65
73/74	306.2	252.75	463.345	827.65	122.055	465.95
74/75	373.25	293.3	623.856	994.05	135.59	483.4
75/76	384.8	345.95	732.141	1200.7	162.06	544.3
76/77	496.2	405.5	1018.648	1498.7	199.63	637.3
77/78	596.25	457.15	1379.346	1758.65	234.58	695.6
78/79	640.65	523.2	1444.707	1933.35	272.49	824.7
79/80	789.6	613.8	1548.486	2165.8	329.57	1038.0
80/81	945.7	726.4	1920.059	2478.95	368.16	1207.6
81/82	916.35	824.5	2244.662	2854.4	390.29	1390.65
82/83	902.95	909.25	2447.748	3261.5	434.61	1573.85
83/84	1001.4	1016.5	2783.699	3674.95	489.68	1174.6
84/85	1146.6	1147.81	3344.585	4150.05	547.385	2044.05
85/86	1266.95	1306.9	4046.971	4769.45	615.965	2347.4
86/87	1384.4	1466.45	4854.762	5381.25	704.26	2659.9
87/88	1598.04	1673.45	5757.759	6059.65	804.16	3026.55
88/89	2002.1	1954.15	7107.87	6974.9	921.38	3502.55
89/90	2392.3	2230.71	8468.6	8055.85	1077.4	4211.45
90/91	2595.77	2504.65	9988.63	9216.775	1238.655	4947.7

NB. Figures have been averaged for two consecutive years in order to confirm to fiscal years.