PERFORMANCE OF THE ETHIOPIAN SALES AND EXCISE TAXES

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Performance of the Ethiopian Sales and Excise Taxes

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ABSTRACT

Over the past three decades governments in Ethiopia increasingly relied on indirect taxes to meet their fiscal needs. Tax yields from such sources have been on the rise and seem to be insulated from the economic spiral which characterized the National economy during the years. Sales and Excise taxes have gone through profound transformations in terms of adjustments in statutory rates, coverage, and administrative efficiency. Revenue adequacy is a major yardstick by which tax systems in developing countries are gauged and this study has put to test the track record of the Ethiopian sales and excise taxes in this respect. Also on the notion that formal incidence and effective incidence rarely overlap for commodity taxes the redistributive implications of the taxes have been analyzed.

Using the proportional adjustment method to abstract from discretionary revenue effects and with the help of a historical time series tax data regression results strongly indicate that sales and excise taxes have been buoyant and elastic. Still, the not-so-strong revenue effects of changes in tax handles, which came against the background of their frequent application, need to be a concern of tax policy makers. On a different note, the study finds that the redistributive implications of the taxes are far from pro-poor. Nevertheless, any reform of the taxes on equity platform should take into account the positive roles of the tax provision that exempts food from these taxes and the structure of the excise taxes.

CHAPTER ONE:INTRODUCTION

1.1. EVOLUTION OF THE SALES AND EXCISE TAXES IN ETHIOPIA

A tax can be defined as a compulsory contribution, whether direct or indirect, which the public authorities impose upon the inhabitants or goods of a country for the purpose of financing government expenditure. It could also be viewed as a leakage from the circular flow of private income into the public sector. It is generally paid by individuals and companies to governments and therefore reduces private purchasing power. Since taxes have a displacing effect on private consumption and investment spending, government can provide social and merit goods as well as redistribute income without contributing to price inflation.

Sales and excise taxes fall in the broad category of commodity taxes. Taxes on commodities and services may be imposed upon specific commodities as in the case for excise taxes or may apply to a broad class of commodities, for example as in a general sales tax. It is also a feature of such taxes to provide exemptions to selected items and for non-uniform rate structure across commodities. Such taxes may be imposed as taxes on "production" or on "transfers," or on "sales," or on "gross income from sales," or as "value-added" taxes. They are in major part shifted to consumers even if the form of the tax may influence the degree and character of the shifting. In economic character, they are taxes on consumption.

Since their introduction in early 1950s commodity taxes in Ethiopia have transformed a lot in terms of coverage as well as kinds of taxes in place. The earliest versions of these taxes were narrow focussed in that there were a number of individual taxes each applicable on few goods. The development of the current sales and excise taxes can only be traced by looking into how the tax system responded to relatively open, modern economy that has evolved in the immediate post second world war period. Separate analysis of the development path of sales, excise tax is necessary since each had its own metamorphosis different from the other.

It was only nine years ago with the Sales Tax Council of State Special Decree No. 16/1990 that the present -day sales and excise taxes have acquired their current form. The decree had a major objective of organizing the various commodity taxes under a single tax structure. Accordingly a number of taxes ceased to exist while others had their scope of coverage altered. The following laws were repealed:

1. The Excise Tax Proclamation No. 204/1963, as amended, and legal notices issued there under and all subsequent amendments thereof;
2. The Alcohol Excise Tax Proclamation No. 217/1965 as amended;
3, The Petroleum Products and Lubricants Excise Tax Proclamation No. 249/1967 as amended and legal notices issued there under and all subsquent amendments thereof;
4. The Federal Salt Tax Proclamation No. 146/1955 as amended and legal notices issued there under and all subsquent amendments thereof;
5. Article3 (f) of Legal Notice No. 119/1948.

Apart from Phasing-off the above tax laws the Decree stipulates that the transaction Tax Proclamation No. 205/1963 shall not apply to matters provided for in the decree. Excise taxes were imposed on 'specific' imported and domestically produced goods but a separate legal and administrative framework was put in practice for each commodity. Most of the amendments to the excise taxes were on grounds of widening their coverage or adjustments in statutory tax rates. The amendments were so often there hardly passed a fiscal year or two when no new provisions were introduced into the tax law.

Government resorts to relatively high taxation of certain commodities for a number of reasons. Heavy taxation of goods and services subject to excise taxes does not stem only from the particularly high rates applied but in almost all instances these commodities are subject to sales taxes as well. It is traditionally believed that by imposing high tax rates

people would be dissuaded from consuming certain items socially considered harmful. But this rationale doesn't hold in the face of inelastic market demand of the commodities. This latter factor, however, contributes to the high yield of such taxes, arguably a realistic case to apply these taxes. Prior to the change given by the council of state special decree No. 16/1990 an extensive list of commodities excise taxed were provided by the excise tax proclamation No. 204/1963 while individual treatments were applied on alcohol and petroleum products and lubricants by proclamations No. 217/1965 and No. 249/1967 respectively.

Unlike the excise taxes where the bulk of the changes that took place in time were along rates and scope of coverage adjustments the Ethiopian sales taxes evolved out of different kinds of taxes. In terms of purpose and applicability its earliest resemblance was given by the Transaction Tax Proclamation No. 205/1963 which itself came about after repealing the Federal Transaction Tax Decree No. 17/1956 and its amendment by decree No. 35/1959, The local products excise tax decree No. 22/1957 and its amendment by decree No. 25/1957

The transaction tax involves: -

- tax on goods imported or exported;
- tax on goods manufactured locally;
- turnover tax; and
- tax on construction works.

This tax was frequently amended and a few of such cases include proclamation No. 254/1967, Legal Notice No. 329/1967, Legal Notice No. 336/1968, Legal Notice No. 397/1971, Proclamation No. 336/1968, Legal Notice 170/ 1979. Most of the elements of the sales tax active currently have come about due to transformation of the transaction tax. The rates have been changing but sales tax is levied on import, the tax base being the CIF value plus the customs duty and excise tax paid.

In contrast to the transaction tax which includes taxes on exports the present sales and excise tax law exempts goods and services destined for exports from such taxes. All export duties and taxes except those on coffee are abolished. A duty draw back and duty free import schemes have been introduced under duty draw back scheme, goods produced for export, re-exporting or raw materials imported upon payment of duties are subject to refund of the duty paid. 95% of the duty drawn back is refunded for raw materials or commodities if re-exported and 100% if exported after being processed or used for packing or containing. Under duty free import schemes, persons or organizations wholly engaged for supplying their products to foreign markets are allowed a duty free purchase of local or imported raw material for their production, and the product should be exported within one year of the purchase of such raw materials.

A component of the transaction tax which also applies on current sales tax is its application on locally produced goods. The tax base on goods produced locally is the producer's wholesale price plus excise tax and there is a provision for refund of sales tax paid for rawmaterials used in the production of local goods. It is the case that the transaction tax is more explicit with respect to where the incidence of the tax falls. In this tax law wholesaler to wholesaler transaction does not require payment of this tax.

An important aspect of the development of the sales tax relates to its coverage of services and this factors contrasts markedly the present-day sales tax with its earliest versions. Previously the only type of service upon which tax was levied was construction works otherwise it was income from activities that was taxable not the production perse. A number of services have come to face sales tax presently. (see schedule "c" of Sales and Excise tax proclamation No 68/1993). Accordingly sales tax is levied on 16 major types of services rendered locally unless the producer operates in the informal sector and her daily sale does not exceed Birr 25.

There were two amendments on the sales and excise taxes since 1993 of which the latest in this year introduced adjustments relating to services. Sales and excise tax (amendment) proclamation No. 77/1997 involved changes to the excise tax portion of the tax law. In this respect the excise tax rates for few types of products were adjusted downward. The rates on sugar excluding molasses, mineral water, pure alcohol, cigarettes, salt and alcoholic drinks (excepting beer and stout and wine) were down sized. The proposed reductions in tax rates for soft drinks except squash and other similar juices as well as for beer were conditional on size of domestic production. For the former a 50% decrease in the excise tax rate becomes operational once production has increased by 70% or new factories thereof are established. Also the excise tax rates on beer and sout would be changed from 100% to 50% if domestic production of beer increased by 50% or new breweries are established.

1.2. STATEMENT OF THE PROBLEM

Notwithstanding the on-going debates among researchers, policy makers on the 'right' measures to bring about equity, there is general consensus that equitable distribution of income or wealth is an objective for which economies need to strive for. Often government policy documents contain commitments, that are aimed at narrowing the gap between the rich and the poor.

It was a long held view that there is a trade-off between augmenting growth and reducing in equality. Two explanations are given for the view that an unequal distribution of income is necessary for, or the likely consequence of, rapid economic growth. The first, following kaldor, is that because a high level of savings is a prerequisite of rapid growth, income must be concentrated in the hands of the rich, whose marginal propensity to save is relatively high. The second, following Kuznets, is that as labour shifts from sectors with low productivity to sectors with high productivity, aggregate inequality must initially increase substantially and only later decrease.

However, the conventional wisdom has in fact been repeatedly questioned and more recently in light of evidence from East Asian Countries (Birdsall and others 1995). It is possible to pursue growth promoting policies while avoiding highly skewed pattern in income distribution. All such developments coupled with massive social cost of recent economic reforms reinforced interest on equity issues.

The case for sales tax incidence analysis rests upon the significance of the structure of income distribution in explaining economic welfare and on the fact that imposition of a tax rarely leaves the pattern of income distribution in tact. On the same token, the progressivity or regressivity of any given tax would not have been of much concern if:

1. tax induced changes in real incomes of various social groups were insignificant, and
2. the pre-tax pattern of income distribution were equitable or significantly in equitable.However, studies have shown that tax burdens, in most cases, fall non-proportionallyamong various groups of society.
3. Also if the distribution of income were significantly inequitable, then a regressive tax system would impose onerous burdens on those households already at the bottom of the income distribution scale.

Unlike the objective of equity for which policy makers have different channels to resort to the sourcing of its revenues are limited and have serious consequences on the economy. Heavy borrowing through various methods to finance governemnt expenses is not a viable option in the long term as it is likely to impose inflationary pressure on the economy, crowd out private investment, etc. There is also not much scope to acquire resources in the shape of foreign aid either through outright grants or concessional borrowings. The global demand-supply gap in foreign aid has been widening and its flow, particularly development aid is not

favorable to Sub-Saharan Africa. Also strings attached on such aid may not be compatible to developmental priorities and strategies of the country.

The need to rely on the tax system is greater and efforts have been made to design a tax system that responds adequately to the revenue needs of the government. The tax system should be productive to generate sufficient resources but its productivity can come about due to discretionary measures taken and/or in-built responsiveness of the tax to changes in economic output. It is known that much reliance on discretionary tax measures is detrimental to the economy and a balance should be struck accordingly. Hence the exercise to differentiate the sources of growth in tax revenue for Ethiopian sales and excise taxes is appropriate.

1.3. OBJECTIVES OF THE STUDY

The study has the broad objective of investigating whether the Ethiopian sales tax, given its rates, exemptions, is pro-poor in its effects on the pattern of income distribution. Moreover, it looks into the revenue productivity of the tax.

It, specifically, set out to:

1.estimate proportions of income which each household group spends on goods and /or services subject to sales tax;

2.do likewise with food considered taxable and exempt from taxation,

3.draw inferences about the impact of the Ethiopian sales and excise taxes on the pattern of income distribution;

4.identify (and if possible quantify) features of the economy pertinent in tax incidence studies for the country;

5.estimate buoyancy and built-in elasticity of the tax.

1.4. SIGNIFICANCE OF THE STUDY

The empirical results of the study will have important implications for tax reform. The Ethiopian sales and excise taxes have gone through much changes in the last three decades and in most of these instances the changes related to government manipulation of the tax handles to raise revenue. However, 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. It is important that policy makers look into the elasticity of the tax as it provides a strong measure on the performance of the tax.

A buoyancy coefficient greater than elasticity coefficient indicates that discretionary measures are more important for increased revenue generation. Also decomposing the elasticity coefficient further shade light on the two key factors that explain elasticity. Tax to base elasticity can be improved through better administration such as more efficient procedures, minimization's of evasion, abolition exemptions, use of ad-valeroem rates, etc. 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. Both the predicted response of the tax to base and base to income need to be considered in designing income elastic taxes.

The pattern of the distribution of the tax burden is also an important aspect that requires the attention of tax authorities. The sales and excise taxes law in Ethiopia constitutes provisions to address equity concerns which are also likely to entail costs interms of revenue forgone by government. Hence there is a practical case to consider incidence of the taxes.

CHAPTER TWO: LITERATURE SURVEY

2.1 THEORETICAL DEVELOPMENTS: TAX INCIDENCE

One of the desirable features of a good tax system is that it be fair or equitable. The tax literature, however, doesn't give clear-cut all-round definition of equity, but we can broadly take it to mean that, ceterus paribus, post-tax income distribution is not more skewed than that of the pre-tax situation. The 'fairness' of a tax or a tax system is usually judged along the criteria of horizontal equity and vertical equity. Horizontal equity refers to equal tax treatment of people deemed to have equal welfare while vertical equity requires 'unequal' but 'reasonable' tax treatment of people with different welfare levels. To determine if the tax system conforms to these criteria, we require a general guiding principle of tax distribution. In this respect, two theories stand out: the benefit theory of taxation and the ability to pay theory of taxation.

According to the benefit theory of taxation, taxes should be apportioned among people in relation to the benefits they receive from publicly provided goods and services. In this case horizontal equity requires that people who enjoy the same level of benefits pay the same amount of taxes. Vertical equity will be achieved if those who enjoy more of the service pay more in taxes than those who enjoy less.The ability-to-pay prinicple, on the other hand, focuses entirely on the tax side of the public sector. It assumes that the expenditure side of the budget is separately handled through political and economic processes and calls for equal tax treatment of people with equal ability-to-pay (Horizontal equity) and unequal tax treatment of people with unequal ability to pay (vertical equity).

That government should use its taxation power to eliminate or reduce inequalities of wealth and income is not a new notion. As early as the fifteenth century, the Florentine scholar Guicciardini wrote:

Since we are all citizens of the same state and each the equal of the other . there can be no true equality or justice in taxation unless the taxes reduce us all to the same economic level-----. If, then, we introduce the progressive principle (with sufficient severity) we shall become truly equal as we reasonably ought to be (Shultz and Harris 1965)

However, even if there exists general consensus in that the tax burden should be 'fairly' shared among individuals and social groups, the issue is more complicated by the fact that the formal incidence of a tax (the person physically rendering payment) may differ from its effective incidence (the person whose real income is ultimately reduced by tax). This is because taxes are often shifted deliberately to others and more often not deliberately but comes through modification of business costs and/or supply-and-demand pressures.

The shifting of a tax is the recovery by tax payers of any part of their tax payment through pricing adjustments. Due to shifting, neither the statements of the tax law nor the points of tax collection are sufficient to establish true incidence of a tax. Incidence is the ultimate resting of any part of a tax upon some economic class who can not shift it further. Incidence is the ultimate resting of any part of a tax upon some economic class who can not shift it further. Incidence study looks into the impact of taxes on distribution of income, i.e. tax induced changes in real incomes of people.

Taxes have direct bearings on level of effective demand and employment as well as on work incentives, amount of savings, and level and pattern of investment. Also these impacts of taxes are not uniformly spread across individuals and groups of society implying that they do have redistributive effects. We do tax incidence analysis on the premise that quite often the

change in real income of those upon whom the tax is levied is smaller than the magnitude of the tax[1]. In other words, taxes are often shifted to others in the economy.

In most instances, the kinds of taxes considered are personal income tax, corporate income tax, property tax, social security tax and sales and excise taxes. Certain derivations from incidence analysis on a given tax type some times apply on others. In this study, focus is on the latter type while a passing mention is made of the others.Central to the analysis of the effects of taxes on the distribution of income is the shifting assumptions made[2]. In the case of full forward shifting, irrespective of the intentions of the tax law, the tax burden is borne by consumers. It is possible for a sales tax imposed at an early stage of production to lead to pyramiding: a process by which the final price to the consumer rises by more than the yield of the tax (Auld and Miller, 1984).

When consumer prices are sticky for one reason or another, a sales tax could also be shifted backward. Under such circumstances, the tax burden falls on recipients of factor incomes in the form of depressed earnings. The incidence assumption made may affect the proportionality, progressivity or regressivity of a tax. Although tax shifting could occur in all kinds of taxes[3], they are more pronounced in consumption taxes. Shah and Whalley (1991) contend that in a developing country context, sales and excise taxes are either fully passed forward to consumers or fully shifted backward to recients of factor incomes, depending upon how the tax law is written.

Neo classical incidence theory (also called marginal productivity distribution theory) is based on the condition that factors receive the value of their marginal products, and absolute or relative marginal productivities of the factors are insensitive to levying of general taxes.

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[1] The major finding from conventional studies of incidence is that the tax system as a whole has little effect on income distribution. However,these studies are subject to many criticisms.

[2] In the literature the terms "shifting assumptions," "incidence assumptions," and "sources and uses side effects" are interchangeably used to refer to the treatments adopted to allocate tax burdens.

[3] For example,Shah and Whalley(1991) argue that widespread tax evasion gives way to income tax shifting.

Moreover, assuming distributionally neutral government expenditures, imposition of general sales tax results in proportional tax effects in the sense that the decrease in the real income of each household is proportional to its share in Gross National Product. However, in the presence of an accommodating monetary policy, the outcome is full backward shifting.

The view that incidence is a matter of relative price changes and real income changes was established primarily by R.A.Musgrave (Mieszkowski 1969). A valuable insight in incidence analysis was latter provided by J.F. Due who concluded that, in imperfectly competitive economies, a general sales or production tax is borne in relation to consumption spending[4].

Essentially, there are three approaches to incidence. The balanced budget incidence approach varies taxes and expenditures simultaneously on the condition that full employment is maintained. Differential incidence approach, on the other hand, analyzes the effect of substituting one type of tax finance for another type while real expenditures are held constant. Finally, there is the absolute incidence approach, which is associated with inflation or deflation process.

Each approach has its own pros and cons. One advantage of balanced budget incidence approach is that it calculates the absolute decrease in real income resulting from the imposition of a particular tax, rather than being limited to analysis of income changes resulting from changes in tax regimes. A prohibitive limitation to applying this approach in this study is that government of Ethiopia does not dispose of its tax revenues according to sources.Putting it in another way, it is quite difficult to trace to what particular purposes revenues from the sales tax are used for. But even if this was known, it would still be extremely difficult to ascertain how much of the public goods are consumed by different income classes. Absolute incidence approach is also very demanding in terms of data. Hence

[4] A complementary derivation by Due is that a value-added tax of the income type was equivalent to a general consumption tax.

on the basis of its data requirement and wider application, differential incidence approach is the preferred one.

Increasing dissatisfaction with earlier literature which drew on Marshallian partial equilibrium analysis contributed to a swing in interest towards incidence analysis under a general equilibrium setting. The single most important contribution to public finance issue of tax incidence came with Harberger's adaptation of the two-sector competitive equilibrium model in his analysis of the incidence of the corporation tax (Atkinson and Stiglitz 1980). Accordingly, in situations where both commodity prices and factor prices changes, incidence should be studied in terms of the expenditure purpose of income (consumption patterns) and in terms of the sources of income. However, if each group spends the same proportion of its income on the taxed and the untaxed commodities, it is possible to disregard the spending side and to concentrate only on factor price changes.

2.2. THEORETICAL LITRATURE ON PRODUCTIVITY OF TAX

Government's role in the economy extends from the provision of security and protection of property to rights to a paternalistic role of looking after the welfare of society. These provide the background for government to function as a producer, regulator, and provider of enabling environment for economic growth. "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 roles for a market economy and their own objectives" (World Bank 1987). The tax system is a critical instrument at the disposal of government to meet different objectives.

There is general consensus that the tax system must be productive particularly in the context of developing countries. The productivity of a tax system is measured by two concepts:

buoyancy and elasticity. Actual tax collection is a result of availability of economy surplus for taxation and government manipulation of mechanisms of taxation.

The tools which government utilizes to affect magnitude of changes in tax revenue are referred to as tax handles or discretionary tax measures. These changes in tax rates, introduction of new taxes and improving of tax machinery influence tax collection independent of the built in response due to national income changes. However, the room for manipulating the tax handles to affect collection is limited not only by political considerations but by the fact that they have inimical implications to the economy.

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

Estimating elasticity of a tax system requires abstracting from the effect of changes in tax legislation over the period of analysis. Among the various techniques applied to disentagle the effect of discretionary measures are the constant rate structure, the divisia index method, the dummy variable technique and the proportional adjustment method.

The constant rate structure method requires data on income bracket and commodity rates and sufficiently disaggregated information on the growth and distribution of the reported bases. According to Choudry (1975) this enables to construct a constant rate-base series that would represent hypothetical yields under a system assumed to remain unchanged during the period under review. Thus given:

$$Tp(t) = \Sigma Tip\ (t) \text{----------} (1)$$

$$Y(t) = \Sigma Yi(t) \text{----------} (2)$$

Where Tip (t) = Assessed tax revenue for the i^{th} income group

Tp(t) = Assessed tax revenue

Yit = Assessed income of the i^{th} group

Yt = Aggregate Assessed income for the year.

Then the average effective rate of taxation for the i^{th} income group in the reference year is:

$$ti\ (r) = \frac{Tip(r)}{Yi(r)} \text{----------} (3)$$

So that $Tp(r) = \Sigma\ ti(r)\ Yi(r)$----------(4)

thus the simulated assessed personal income tax in the t^{th} year is

$$Tp(t) = \sum_{T=1....n} t(r)\ Yi(t) \ldots \quad (5)$$

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 catagories is not readily available consquently the adjusted data involve measurment errors, which inturn 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.Choudry (1979) proves that the constant rate method becomes inefficient where a tax has many progressive elements in which case the method does not

gurantee that the tax elasticity will be larger (smaller) than the buyoancy even when discretionary changes produce an overall negative (positive) revenue effect. The method also becomes ineffficient when the tax bases grow at the same rate and in this case it is possible that the elasticity estimate fails to detect the effect of discretionary changes.

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 characterstics of the effect of discretionary measures on 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 that can be 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 measures does the same to an aggregate tax function since it alters the tax system.

Solow (1957) shows that under certain circumstances the divisia index is an inapproprate 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 intially in order to arrive at the elasticity.

Choudry proves that the divisia index method cen undermine (over state) the positive (negative) revenue effects of such measures particularly if the discretionary measures produce very large effects. 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 other method widely applied to estmate elasticity of a tax system is the dummy variable technique which involves attaching a dummy value of zero to each discretionary tax measures. It has been used among others by Khan (1973), and Singer (1968). Elasticity of the tax system is worked out by fitting the data on the function:-

$$T = \alpha Y^{\beta \sum D_i}$$

which when transformed into log linear form becomes:

$$\text{Log } T = \alpha + \beta \log Y + \text{diDi} + \text{---dnDn}$$

where D stands for n number of dummy variables and β the elasticity coefficient. 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. The inclusion of more than one dummy variable creates a multicollinearity problem in this method and its applicability is also highly constrained when the number of discretionary measures is relatively large. 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 implemented in a particular year from the actual tax revenue collected that year. Further discussion of this method is given in a subsquent chapter.

Apart from resorting to gauge the revenue productivity of a tax system through estimating elasticity and buoyancy coefficients, it is possible to use a method that has gained currency namely the optimal tax theory. The problem is to establish a tax structure that enables government raise a specified tax revenue subject to minimizing the efficiency cost the tax entails. Changes in social welfare function provide a measure of efficiency loss and a number

of rules have been developed for commodity taxes. The theory's operational content is limited since the shape of the social welfare function is not a settled issue, if at all it exists.

2.3 EMPIRICAL LITERATURE:TAX INCIDENCE

During the past three decades, considerable analytical attention has been put on redistributive impacts, if any, of taxes. Miwszkwski (1969) provides an account of earlier incidence studies with particular emphasis on the corporate profits tax. Empirical conclusions from those studies which looked into the relationship between tax rates and factor shares or rates of return to establish incidence were at most suggestive. Krzyzaniak and Musgrave using American data found that the corporate profit tax on manufacturing is shifted by more than 100 percent. However, their findings were criticized for significantly
overstating the degree of shifting.Their study prompted other empirical studies centered around different incidence assumptions.

Arnold C Harberger (1962) made a non-econometric study of incidence of the corporate income tax in the U.S under a general equilibrium framework. Since his work gave precedence for quite a number of studies, it is useful to analyze the essentials of his model. The economy is divided into corporate and non-corporate sectors which employ labour and capita as factors of production.

Accordingly, imposition of the corporate tax leads, in the very short run, for the tax burden to entirely fall on earnings of fixed capital equipment in the affected industry.

Nevertheless, in the long run and in response to the tax induced disequlibrium in the capital market, redistribution of resources will force 'equalization' of net returns to labour and capital in both sectors. Harberger's model hinges on assumptions which beg much practical relevance.

First of all, the model assumes perfect factor mobility as well as perfect competition in factor and product markets. Impediments to movements of labour and capital are ignored with the result that net-of-tax rates of return are equal for each factor in all of its alternative uses. This is an untenable assumption for a country like Ethiopia where informational asymmetries, physical and institutional hindrances make factors, say labour, all but perfectly mobile.

Secondly, the assumption of fixed aggregate factor supplies eliminates the need to consider the work-leisure choice, the effects of taxation on savings, investment and growth and any interactions between the supply of labour and the supply of capital. The significance of this assumption is that it does not allow for dynamic effects.

A third assumption is that of first degree homogeneous production functions (embodying constant returns to scale), i.e. increase in inputs will result in proportional increase in output. In other words, decreasing cost industries do not exist in either sector.

Fourthly, the models assume a closed economic system. But the external sector in Ethiopia is economically important in terms of revenue sourcing, employment generation, etc. For instance, in 1989 Ethiopia fiscal year, foreign trade taxes accounted for 40.32% of total tax revenue and 27.67% of total government domestic revenue.

Fifthly, the assumption of homogenous marginal consumption propensities but likely differences in average propensities eliminates the impact of income redistribution on the allocation of resources in the private sector.

Finally the model assumes no fixed money assets considering only relative price changes. It is, however, the case that absolute price changes matter a lot in shaping economic behaviour. This is so as is the case for labour when it is of little relevance whether a given tax raises only product prices without changing factor prices or lowers factor prices with product prices

remaining in tact. Overall, the Harberger model[6] is organized under very restrictive assumptions.

J.F. Due(1970) analyzed the distribution of the Canadian sales tax on the assumption that such a tax is shifted forward to consumers of the taxed commodities. Then, the general pattern of income distribution by income classes. He found that, with food taxable, the tax is regressive throughout and, with food exempt, there is some progressiveness in the lower income brackets and regressiveness at the higher income levels.

W.Irwin Gillespie prepared estimates of the incidence of the Canadian tax system as a whole for the year 1969 based on what he considered to be the most reasonable assumptions to make about the incidence of each tax. The individual income tax is assumed not to be shifted at all while he assumed the corporate income tax to be shifted half forward and half backward. Also, Gillespie considered the tax burden of customs import duties, excise and sales taxes to be fully borne by consumers. Moreover, he constructed a distributive series showing with what each tax burden is associated with. For example consumers divide the sales tax burden in accordance to their type of consumption[5].

Using these assumptions Gillespie derived his estimates of tax incidence by first allocating tax revenue from each tax to households in various income brackets using the distributive series he worked out and then by calculating average or effective rates of tax by expressing the tax allocation to each income brackets as a percentage of broad income which includes money income, imputed income, the share of corporate earnings, taxes shifted to tax payers and other minor items.

Individually considered, general sales tax, selective excise taxes and duties are found to be regressive while the personal income tax is progressive. The overall tax system (with minor differences when it is the federal system, the provincial system, or the municipal system) is

regressive but partly proportional at higher income classes. Although he derived similar results by altering the shifting assumptions of individual taxes one at a time, Gillespie did not test the sensitivity of his results to a combination of shifting assumptions. Hence a different incident outcome can not be ruled out.

Incidence estimates for whole tax systems reflect separate incidence calculations by income range for each tax which are then summed across taxes. Combined, they yield an average total tax rate for each income range. A widely cited work in such respect is by J. Pechman and B.Okner. Their imaginative study " who beers the tax burden" is on the U.S. tax incidence based on approximately 87000 income tax returns and 30,000 households from a 1966 U.S. Survey of Economic Opportunity file.

The Pechman-Okner study does not rely on any particular set of incidence assumptions.Rather they estimate the distribution of taxes using several alternative incidence assumptions. Six different taxes are considered and on the basis of several different assumptions, tax distribution measures for eight incidence variants (combinations of assumptions) are developed[5].

Pechman and Okner believe that sales taxes should be distributed among households in proportion to expenditures, not in relation to people's incomes. This is because, for any given year, poorer people generally save a smaller proportion of their income than do richer people. In other words, their derivations are based on forward shifting assumption for sales taxes with the tax burden being a function of expenditure. A sales tax may not change relative prices, and when consumption is measured in relation to permanent income rather than current income, the ratio of consumption to income may not vary much between rich households and poor.

[5] Pechman and Okner account for several possibilities of distribution of tax burdens.In all eight incidence variants are considered.For instance, in some variants sales and excise taxes are distributed according to their income while in another variant it entirely falls on shareholders.

Households are grouped by adjusted family income. Adjusted family income is an expanded income concept that includes wage, proprietors' income, net interest, net rental income, and corporate profits. Transfer payments and accrued capital gains are also included. For each variant, the average effective tax rate across all income groups is set equal to 100. The effective tax rate for each income group is then calculated as a percentage of that average.

Pechman and Okner also make use of the Gini coefficient, and the Lorenz curve to measure the progressivity of the rate structure. They, for instance, gauge progressivity by comparing the value of the Gini coefficient of the after-tax distribution of income. Their conclusion is that regressive and progressive taxes in the United States offset each other and this finding is little affected by the choice of shifting assumption used. It is often referred to as the proportionality hypothesis.

Contrary to Pechman and Okner, Edgar Browning and William Johnson using 1976 U.S. date conclude that the tax system is steeply progressive. They suggest that the impact of sales and excise taxes falls on people in relation to their earnings from labour and capital rather than uses of income. They argue that uses side effects due to differential savings rates by income range by and large disappear when lifetime savings rather than annual income are considered. They also point out that since transfers are largely indexed for changes in the price level, only factor incomes can bear the burden of indirect taxes passed forward as higher prices. Since transfers are concentrated at lower income brackets and savings at higher income brackets, sales and excise taxes are progressive in the work of Browning and Johnson.

It is no wonder, however, that the results of Pechman-Okner study are at variance with those of Browning-Johnson. This is because the two studies are based on dramatically differing incidence assumptions. The interpersonal distribution of the tax burden will appear progressive if taxes are for the most part paid from factor income while regression in rates is

but a reflection of the idea that taxes are paid, at least in part from the changes in relative prices they produce. Aronson (1985) explains that each study is based on sound theoretical logic and that Pechman and Okner provided reasonable estimates if such taxes as retail sales, corporation income, or property change relative prices significantly. Also the Browning-Johnson results are more pertinent if the taxes mainly lead to reduction of factor earnings.

Most of developing country tax incidence studies are done on a tax by tax basis rather than on systems as a whole and they followed the Pechman-Okner tradition. General indirect taxes are universally assumed to be shifted forward to consumers of taxed commodities. However, the assumption of full forward shifting has been questioned theoretically as well as empirically. For example, a study by A. Jeetun finds for Pakistan only 35 percent forward shifting from increase in the manufacturers' level sales tax.

Using 1972 Canadian data, John whalley (1984) argued for general equilibrium modeling of incidence by showing that the results of redistributive impacts of taxes are sensitive to incidence assumptions. Accordingly, a tax system can be made more progressive by 'finding' justifications for increasing the progressivity of other taxes'. The tax system changed from mild progression in the central case (average tax rates from 27.5 to 43 percent) to sharp progressivity (average tax rates from 11 to 70 percent) when savings are treated as the purchase of any annuity yielding both a future consumption stream and future tax system is estimated when capital is assumed mobile and human and non-human capital are considered substitutes.

It is argued that modeling special features of developing countries in tax incidence analysis would give results that do not tally with those derived from conventional works. Some of these include adjustments in response to taxes in informal markets, urban-rural migration, credit rationing, industrial concentration, product market competition, price controls, import-licensing regulations, exchange controls, and quantitative restrictions.

An interesting study in this respect is by Roman L. Clarete(1994) who applied an explicit computable general equilibrium model to analyze the burden of the Philippines tax system. The tax measures covered in the study are excise, import, value added, corporate , and personal income taxes.

The model has several components:-

- N production sectors, K variable factors, N sector specific factors, H consumers, and a government. Each N production sectors has the following production functions.

$$X_j = \min[V_j, A_j] \quad \forall_j \ldots\ldots\ldots\ldots\ldots (6)$$

Where V_j is the value added in the sector j and A_j the sector's intermediate input use which is assumed to be in fixed proportions to the amount of output produced. The value-added functions of the model are Cobb-Douglas functions and the production functions are specified as Leontief-type functions of value added and the intermediate inputs. Labour, capital and sector specific factors are the kinds of factors considered.

The Philippines economy is considered as a price taker in all world market and this helped to aggregate the traded goods to form a composite traded good at world prices. The domestic demand, Df, and supply, X_f, of the composite traded goods are:

$$C_f = \Sigma p_j (C_j + Id_j) \text{ and } X_f = \Sigma P_j X_j \text{----------(7)}$$
$$JET \qquad\qquad JET$$

Where the vector P denotes world prices of trade goods , IDj is the domestic intermidatedemand for good j, and T is the set of traded goods. Clearing the market of this composite traded good implies trade balance in the model. Balance of payment

account consists solely of the current trade flows. The real exchange rate is in equilibrium if the trade deficit is zero.

.The final demand functions of the consumers are:

$$C_{bj} = \gamma_{bj} \ \gamma_{b/qj} \quad \forall_b \text{ and } \forall_j \text{------(8)}$$

Where C_{bj} is final demand of consumer b for good j, γ_{bj} is the constant expenditure share of good j, and γ_b is the income of consumer b. All utility functions of the model are Cobb-Douglas functions.

It is also useful to see how Clarete chose and modeled the distortions in the Philippine economy that are likely to affect incidence outcomes. Accordingly, the stylized features of developing countries considered are foreign exchange rationing , quantitative import restrictions, rent seeking, and a Harris-Todaro labour market distortion.

Due to foreign exchange rationing and quantitative imports restrictions, imports engage in rent-seeking activities and according to the competitive theory of rent seeking, they will invest resources to secure rent- generating assets up to the value of the rents. Foreign exchange rationing is initiated when the excess money supply (exogenous) crates excess demand for foreign exchange. This process is captured in the model with an endogenous foreign exchange premium rate that drives a wedge between the lower official exchange rate and the exchange rate applied to all imports. Rents are assumed to go to the government.

According to Harris and Todaro, a positive Urban-rural wage rate differential sets in motion migration of rural workers to urban areas until the expected wage in the urban areas is equal to the rural wage. The rural-urban wage gap is equal to

$$\underline{W}^R / W^U < 1 \ldots\ldots\ldots (9)$$

where $\underline{W}^R$ = Rural wage rate

W^u = urban wage rate assumed exogenous

Equation (9) is the equilibrium migration condition of the Harris-Todaro model and can be interpreted as the probability of finding a job in urban areas.

The model was calibrated using Philippine 1983 input-output table for seven sectors and data for seven sectors and data from a family/Income and Expenditure Survey done in 1975. The sectors were crops, food, beverages, and tobacco; manufactured products; and services. the tax burden paid by consumer i is computed using the formula:

$$T_i = \left[\frac{E_{v_i}}{\sum E_{v_i}}\right]\left[\frac{R}{Y_i}\right] \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (9)$$

for all EV_i

where EV_i is the equivalent income variation for consumer i associated with removing the tax measure; γ_i is the income of consumer i in the benchmark equilibrium; and R is the yield of the tax.

Clarete found results which are at variance with those of conventional, fully-flexible-price general equilibrium models. Excise taxes are regressive if the economy has quantitative import restrictions and a Harris-Todaro labour market distortion, but are progressive if it is

rationing foreign exchange and slightly progressive in the presence of the other two institutional distortions.

Although the development of computer programmes able to handle large number of equations gives an edge to general equilibrium models, such models are not sufficiently insulated from specification problems. In other words, results are sensitive to how and which of the institutional distortions are modeled. For instance, Clarete assumed away capital flows which is too important a variable to do away with in the Ethiopian case.

2.4. EMPIRICAL LITERATURE:PRODUCTIVITY OF A TAX

Perhaps the most important function of taxes in developing countries is to provide government with resources necessary to finance its expenditure. In order to generate revenue, governments resort to several types of taxes, but the specific conditions of these countries make them rely on a few types of taxes to derive a bulk of their tax revenue. For instance, high dependence in international trade taxes is partly explained by the relative ease with which such taxes are administered.

Empirical studies using one of the four methods discussed previously to estimate productivity of a tax system were primarily driven by availability of data. Choudhry (1975) justifies his use of the constant rate structure method by data availability and estimates the elasticity of assessed personal income tax for Malaysia for the period 1961-70. By comparing those results with those obtained from 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.

Using the dummy variable technique Khan (1973) finds buoyancy figures lower than elasticity estimates for all taxes except for income tax and customs duty. This implies that the

reforms had only dampened the responsiveness of the tax system. Only some of the dummy variables had coefficients statistically significant which means that only some of the tax reforms had an appreciable effects on the buoyancy while 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.

A widely cited work in the tradition of the proportional adjustment technique is that of Mansfield in which he analyzes the growth of tax revenues for a period 1962-1970 in Paraguay- a period characterized by a conscious tax reform. The empirical results pointed to a picture of expanding tax bases and significant discretionary changes,in part offset by evasion,exemptions,the specific nature of a number of duties,and probably weak ad minstraive effort in collecting taxes at existing rates. Also he finds that the key factor in improving the income elasticity of the tax system is an increase in the tax-to-base elasticities.

Kusi (1998) applies the proportional adjustment method to estimate he makes use of historical time series tax data (HTSTD) adjusted to discretionary tax measures (DTMs). Accordingly it is found that the tax reform measures of the 1983-1993 period had a tremendous positive effect on the productivity of both the individual taxes and the overall tax system. In the 1970-1982 period. all the individual taxes, except excise duty, had estimated buoyancies of less than unity, thereby causing the total tax system to have a buoyancy of 0.72. During the tax reform period of 1983-1993, however, all the individual taxes, except excise duty and cocoa export duty, showed buoyancies of more than unity, causing the buoyancy of the overall tax system to increase to 1.29.

Osoro (1993) studies the revenue productivity implications of tax reform in Tanzania. He uses the proportional adjustment method of cleansing the revenue series of discretionary effects. The use of the dummy variable technique was very constrained as a series of discretionary changes has taken place in Tanzania during the sample period (1979-89). The

Yet it differs from the average tax progression measure in that rising tax progressivity is obtained between income levels.

T.Mulat (1987) considers developments in reforming the Ethiopian personal income tax and analyzes its revenue-effectiveness (elasticity), buoyancy and built-in-flexibility. Buoyancy of the personal income tax is measured by the overall elasticity of the tax while built-in-flexibility of a tax system is measured by the rate of the differential income changes in situation where taxes are invariant and covariant with income. Also a log-linear dummy variable specification is applied to measure built-in elasticity of the system. Doing the exercise under various tax laws, he finds that the tax has been buoyant partly due to the many revision and has also been highly income elastic for the period 1967 upto 1984. The high built-in elasticity boosts government tax receipts and enhances the role of the tax in the field of economic stabilization.

CHAPTER THREE : DATA AND METHODOLOGY

The study primarily relies on secondary data to look into the revenue productivity and distributive implications of Ethiopian sales and excise taxes. This is because the kind of information required to make such analysis is mostly available in such publications as statistical abstracts, budget speeches, economic and statistical review and the like. However, the data input and methodology applied to measure tax productivity is quite different from that utilized for tax incidence analysis. Hence it is only imperative to explain data and methodology put to use to each aspect of the study separately.

In order to gauge the revenue performance of sales and excise taxes in Ethiopia we resort to estimating tax buoyancy and built-in elasticity of the tax. This is the conventional way to measure tax productivity which was first introduced by Prest. Tax buoyancy measures the impact on tax revenue of discretionary measures and changes in income while elasticity abstracts from discretionary revenue effects to calculate the bullt-in responsiveness of the tax solely to changes in income. Given the technique applied to estimate elasticity, historical time series data is required on :

- actual and hypothetical tax yield,
- income which in this case refers to GDP at constant factor cost series,
- proxy base, i.e private consumption for this study

Apart from these data, annual budget speeches are used to make out the revenue effects of discretionary tax measures. Major problem encountered to draw the actual tax revenue series relates to absence of consistent data source. There is a definitional problem on the sales tax in particular since it came under this heading only a decade ago. Previously a number of taxes that had strong similarity in purpose, coverage were in place. For instance the transaction tax used to constitute four kinds of taxes : turnover tax, tax on construction works , tax on locally produced goods, and tax on goods imported and exported. In fact , the sales tax council of state special Decree No.16/1990 came about on the platform of organizing such taxes under a single system. This problem was more pronounced for the earliest years and to circumvent

this difficulty comparisons are made between source documents. Data is drawn from Ministry of Finance published and internal documents.

Data input source for GDP series is from the National Economic Accounts Unit of the Ministry of Economic Development and cooperation (MEDaC). Since a new accounting system was introduced in 1980E.C data before and after that period were found incomparable. To solve this problem and produce a consistent data series the following adjustment mechanism is used :

$$x' = X \cdot Y'/y \ldots\ldots (10)$$

where x' = up dated GDP figure for the latest old figure series (1979).

Y= updated figure of the earliest new series, 1980

x = old figure for the latest year in old series , 1979.

Y= old figure for the earliest year in new series, 1980.

The above formula is used since the change to new series doesn't affect the rate of growth in GDP between any two years. Beginning from the earliest year of the new series, (1980) this exercise is repeated until the whole sample period in the old series is covered, i.e. 1956-1979. Data base for the proxy base which is private consumption is also drawn from the same source.

The following equation is estimated to derive the buoyancy coefficient :

$$\log T_t = \log \alpha + \beta \log Y_t + et \ldots\ldots\ldots (11)$$

Where T is actual tax yield, Y is GDP figure and β the buoyancy coefficient estimate. Similarly b, provides the elasticity estimate in the following equation :

$$\log T_t^* = \log a + b_1 \log Y_t + e_t \ldots (12)$$

Where T* is tax revenue adjusted for discretionary revenue effects.

More over the two equations below respectively provide estimates of tax-to base elasticity and base-to-income elasticity :

$$\log T_t^* = \log a + b_2 \log y_t + e_t \ldots\ldots\ldots (13)$$

$$\log B_t = \log a_2 + b_3 \log y_t + v_t \ldots\ldots\ldots (14)$$

Where B is the base of the tax b_2 and b_3 are tax to - base and base -to - income elasticities respectively.

Recent years have witnessed a growing dissatisfaction with the stationarity and ergodicity assumptions upon which the bulk of econometric theory has been founded . Most economic time series appear to have first and second unconditional moments that are far from time invariant. The primary problem which arises from attempting to analyse $Z_t \textcircled{i} I(k)$ if $k>0$ is that the usual statistical properties of first and second sample moments (e.g Converging to their population counterparts) do not hold. Thus a different distributional theory is required for non-stationary, non-ergodic processes (Hendry 1991).

Economic theory usually suggests the existence of long-run equilibrium relationships among variables. Though short-run deviations from the equilibrium point are most likely, due to random shocks, these deviations are indeed bounded since stabilizing mechanisms tend to bring the system back to equilibrium. Despite the fact that a time series can be non-stationary in an unlimited number of different ways, one particular class of non-stationarity processes has almost monopolized the interest of econometricians, namely that of integrated processes. It is an empirical fact that while many individual time series are trending stochastically over time, there exist certain linear combinations of them which appear to be stationary. Granger put forward the cointegration concept which accommodates this empirical observation and interpreting the stationary combinations as long-run or equilibrium relationships among the variables.

A graphical analysis (fitting actual data against time) on GDP, Sales tax revenue, excise tax revenue, and private consumption series used in this study suggests that these variables are

non-stationary and hence it is important prior to estimation to account for this phenomenon. Using differenced series to draw a stationary series is ruled out as this method compromised long run relationships among the levels of the variables. Instead, attempt is made to test if the variables are cointegrated and the Engel-Granger method was applied as follows:

Step 1. Unit root test of the Dickey-Fuller type was used to see if each variable is integrated of the same order. The test results show that all the variables are integrated of order one. In other words, negative Dickey-Fuller type statistics at 1% significance levels for first differenced series is indicative of presence of unit root in level variables.

Step 2. Unit root test on the estimated residuals retained from original equations were also found to be stationary.

The test results, therefore,strongly indicate existence of non-spurious relatinonships between the variables at levels.

The incidence portion of this study puts to use , to a large extent, the 1995/96 ousehold Income, Consumption and Expenditure Survey done by the Central Statistical Authority (CSA, 1997)[6]. The survey was conducted on a sample basis covering both rural and urban Ethiopia excepting the non sedentary population in Afar and Somali Regions as well as residents of collective quarters and homeless persons.

About 23,000 rural and urban households were covered in two rounds to collect data on basic population characteristics: consumption of food, drinks and tobacco; expenditure of the household in various consumption and non-consumption items; household income and receipts. The urban centers were divided in to two groups:

Group I. Ten major urban centers that were treated as domains were Mekele, Bahir Dar, Gonder, Desie, Jimma, Debre Zeit, Nazareth, Harar, Dire Dawa and Addis Ababa.

[6] The Central Statistical Authority admitted of many data processing problems and produced a revised version in June ,1998. Accordingly this study makes use of the revised output.

Group II.Other urban centers selected with probability proportional to size in their respective regions, size being the total number of households according to the 1994 Population and Housing Census Map work.

CHAPTER FOUR: REVENUE PERFORMANCE OF SALES AND EXCISE TAXES IN ETHIOPIA

4.1 An Overview

The sourcing of revenue by means of taxes to meet ends for governments dates back to centuries. These days apart form their function as provider of resources to government taxes are widely applied to advance sophisticated policy measures. These include distribution of income among the haves and the have-nots, ensure harmonisation in regional as well as sectoral growth performance, fine-tune macro-economic fundamentals such as controlling inflationary pressures, enhance competitiveness of the external sector, etc. The viability of each option, however, depends upon the specific conditions with respect to the tax system with all its legal and administrative framework prevailing in a country. In sub-Sahara African countries taxes are primarily meant to meet the resource needs of governments and it is therefore the case that tax reform measures are designed mainly to improve the revenue yield of taxes.

Revenue adequacy is the basic elementary standard that a tax system ought to achieve. That many developing countries experience persistent budget deficits may have been indicative of that the tax systems are not revenue productive. Even if excessive spending or temporarily adverse economic conditions could also cause huge budget deficits its persistence for a long time signals that tax reform embody the revenue productivity objective.

Worldwide the 1980s was an important period for tax reforms and significant elements of these trends have included the introduction of a uniform rate value-added tax system (VAT) as a standard model of commodity taxation, a change in the direction of broader personal and corporate income tax bases, and more emphasis on improving tax administration. As regards income taxation, the inclination has been to broaden the tax base to reduce the tax rates, both of which bring about important effects on the efficiency of the tax system and on vertical equity. Using income taxes as main instrument to achieve the goal of vertical equity fell out of favour to be replaced by base broadening and higher tax revenues, from tax reforms. In

Musgrave's opinion, these trends imply a change in the perception of income tax as the main instrument of progressive taxation, an increasing acceptance of consumption as the tax base, and the emergence of VAT as the appropriate means for income tax reform.

A common feature of the tax structures in most developing countries is that they are complex (difficult to administer and comply with), inelastic (non responsive to growth and discretionary policy measures), inefficient (raise little revenue but introduce serious economic distortions), inequitable (treat individuals and business in similar circumstances differently), and unfair (tax administration and enforcement are selective and skewed in favor of those with the resources to defeat the system). The tax reforms across countries have also had remarkable similarity in terms of tax policy design as well as the directions of the reforms. A detailed discussion of this issue is provided by khalilzadeh-Shirazi and Shah (1995) which includes:

1. The value added tax should be instrument of choice for developing countries contemplating reform of their sales tax.According to Harberger (1990), there was no such thing as value added tax (VAT) some fifty years ago. Since its introduction in the early 1950s, however,VAT has become a fiscal innovation that has swept half of the world, including many developing countries. The VAT has thus become an instrument of choice for most developing countries contemplating reform of their sales tax.A VAT can provide greater revenue, tax neutrality (economic efficiency) and, under certain circumstances and to a limited extent, vertical equity.

2. The base of existing taxes should be broadened at the same time that tax administration reform is carried out.Base broadening is compatible with a number of economic objectives. It can increase revenues and improve the simplicity, neutrality and equity of the tax system.

3. The use of the tax system for special tax preferences should be carefully evaluated. Using the system to provide tax incentives (tax expenditures) usually causes a serious dr on the national treasury by conferring windfall gains on existing activities or by shifting resources to tax-preferred activities.

4. Tax reform must take into account the initial conditions of home and abroad.In reforming their tax systems, developing countries are severally constrained not only by their own institutional settings but also by the tax structure in capital exporting countries. Moreover, the circumstances in many developing countries are usually such that they would experience serious transitional difficulties if the tax system were to be redesigned from scratch. Developing countries must therefore take into account initial conditions conditions at home and abroad.

5. The credibility of the tax regime is the key to the success of any tax reform. A Stable tax policy environment encourages businesses to take a longer-term perspective in their finance and investment decisions. Making tax changes without giving adequate consideration to transitional arrangements can undermine the credibility of the tax regime Therefore, transitional arrangements require much more careful analysis than they have hitherto been given in developing countries. In addition, tax changes must be presented as part of longer term strategy to improve the public sector environment for the private sector. The tax regime will gain the confidence of business if more attention is paid to the preparation and analysis of reforms, advance consultation, providing a reasonable period of adjustment prior to implementation and ensuring consistency of the reform measures.

6. The tax reform process must be well coordinated. Coordinated tax reform offers significant advantage over isolated piecemeal tinkering with the tax system.A coordinated reform ensures that individual tax changes will be consistent with the central objective. For example, a reduction in tariffs without a corresponding increase in other taxes, generally of a value added type, can increase the fiscal deficit and exacerbate macroeconomic difficulties. Furthermore, to improve economic performance in general, tax reform should be closely integrated with structural adjustment measures.

4.2. MEASUREMENT OF REVENUE PRODUCTIVITY

Two factors give rise to growth in tax revenue:changes in tax system (discretionary tax measures) and growth in the base on which a tax is imposed. Said differently, changes in any individual tax revenue result from discretionary changes in the legal rates and rules governing the tax, and/or endogenous changes in the base on which the tax is imposed. Since

the tax base is affected by variations in GDP, growth in tax revenue in response to GDP growth constitutes an "automatic" growth component and a component which resultes from government's manipulation of tax handles. The revenue productivity implications of a tax system existing or following a tax reform are studied using the concepts of buoyancy, which measures the combined effect on tax revenue of discretionary tax measure and growth in the base and elasticity which measures growth in tax revenue if rules of taxation would have remained unchanged.

4.2.1. Buoyancy

Tax buoyancy measures the responsiveness of revenue to changes in income or output with no attempt to control for discretionary changes in tax policy. As explained above this measure gauges the combined effect on tax revenue of government policy changes such as adjustments in statutory tax rates, redesigning exemption and allowance structure, changes in tax administration, etc and in built responsiveness of the tax to growth in income. 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. Studies show using buoyancy estimates that the tax system in most of sub-Sahara African countries has much to be desired. In exercises to study the revenue productivity of a whole tax system or several individual taxes under a broad category a tax by tax comparison of the two measures points to the taxes for which discretionary changes are most important.

The traditional way to estimate the buoyancy of a particular tax, k , is with the following model :

$$T_k = \alpha_k Y^{bk} e_k \text{.....(15)}$$

Logarithmic transformation gives :

$$\ln T_k = \ln \alpha_k + \beta_k \ln y + u_k \text{.....(16)}$$

where T_k = tax revenue series for the t^{th} tax.

y= GDP series which provides the tax base which strongly correlates with the base.

u_k = a stochastic disturbance term.

Using ordinary least squares the above equation is estimated to derive unbiased and consistent coefficient estimates for α and β. The coefficient β provides a measure of the buoyancy of the tax in question. Since the equation is in double log form, the buoyancy coefficient measures the percentage response in tax revenue to growth in income.

4.2.2 ELASTICITY[7]

Elasticity of a tax measures the in-built responsiveness of tax revenue to growth in income when all discretionary tax measures are assumed away. It attempts to establish a counter-factual scenario in which through out the sample period the tax system underwent no adjustments and any growth in tax revenue is accountable only to growth in GDP.

A number of techniques are applied to measure the elasticity of a tax system either using historical time series tax data adjusted for discretionary tax measures or data not adjusted for discretionary tax measures. One method that doesn't require adjusting actual tax revenue data series to measure elasticity is the dummy variable technique developed by Singer in 1968. The method involves proxing each exogenous tax policy change with a time trend and or a dummy variable and can be put as:

$$\log T_k = \log r_{ok} + \tau_{ok} \log y + \sum \tau_{2i} D_i + e_k \ldots\ldots\ldots(17)$$

where the dummy variable D takes a value 0 before the discretionary change, and 1 after the change. The summation accounts for the possibility of multiple changes during the

[7] A related concept to elasticity is built - in flexibility which is not in the context of this paper to apply. Its relevance is in the area of tax effects on economic stabilization.

period while r_{a_k} provides an estimate for elasticity coefficient. The performance of this

method is highly constrained when the number of discretionary tax measures during the period of study are not few. During the sample period commodity taxes in Ethiopia have undergone several changes in rates, bases and administration, hence it is not appropriate to use this method in this study.

The divisia index method uses an index to isolate the automatic growth in revenue from total growth which finally helps to measure the effects of discretionary measures on tax revenue. 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. It requires no specific information on the revenue effect or on the frequency of past discretionary changes. Still the method is proven to give unsatisfactory results when discretionary measures produce very large effects which, however, it is hypothesised to be the case in this study.

Another method used to estimate elasticity which this study doesn't make use of is the constant rate structure technique which involves adjustment to historical time series tax data. It requires data on income bracket (or commodity rate) and sufficiently disaggregated information on the growth and distribution of the reported tax bases. Its data requirement is prohibitive to put it into practice in this work.

In this study the proportional adjustment technique is used to draw a historical time series tax data that abstracts from actual tax revenue the discretionary revenue effects part. It is done in two steps :

1st cleansing the discretionary revenue effects from actual data;

2nd estimating a tax revenue equation using adjusted historical time series tax data on the left-hand side and GDP as a right-hand side variable. To accomplish the derivation of a hypothetical yield a two-step procedure is followed :

- Subtract from actual tax revenue figures estimates of current discretionary measure effects.

$T_{11} = T_1$
$T_{12} = T_2 - D_2$
$T_{23} = T_3 - D_3$
$T_{34} = T_4 - D_4$

- Transform further the above series as follows :

$T_{11} = T_1$
$T_{12} = T_2 - D_2$
$T_{13} = T_{23} - D_{12} / T_2$
$T_{14} = T_{34} - D_{23} / T_3 \times T_{12} / T_2$
$T_{15} = T_{45} - D_{34} / T_4 \times T_{23} / T_3 \times T_{12} / T_2$

and so on to the final period. The symbols translate as:

T_i = actual tax yield for the i^{th} year.

D_i = effect of discretionary changes of the t^{th} year on the t^{th} revenue

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

In a nut shell, the technique involves multiplying by a sequence of multiplicative factors the actual tax yield for that year to derive a hypothetical yield for the same year. This helps to control for the lagged impacts of discretionary tax measures on subsequent years actual tax yield.

Finally the adjusted historical time series tax data is used to estimate the elasticity coefficient using the following equation :

$$\log T^* = \log a + b_1 \log (B_1) + e_t$$

where T^* = adjusted tax revenue series

B = GDP series

e_t = a white noise disturbance term.

Elasticity of the tax is measured by coefficient estimate for b_1 using ordinary least squares. Elasticity for the overall tax system is more appropriate when considered as a weighted average of elasticities of individual taxes even if the conventional way is to put is as a single number.

DECOMPOSITION OF ELASTICITY

Decomposing the elasticity of the tax into elasticity of the tax to base and elasticity of the base to income enables further identification of the factors behind the automatic changes in tax revenue collected . Symbolically, these elasticities can be defined as follows :

Elasticity of total tax revenue to income :

$$E_{T_t Y} = \frac{\Delta T_t}{\Delta Y} * \frac{Y}{T_t} \text{.....(18)}$$

Elasticity of k^{th} individual tax to income :

$$E_{T_k Y} = \frac{\Delta T_k}{\Delta Y} \cdot \frac{Y}{T_k} \text{.....(19)}$$

Elasticity of k^{th} individual tax to base :

$$E_{T_k B_k} = \frac{\Delta T_k}{\Delta B_k} \cdot \frac{B_k}{T_k} \text{.....(20)}$$

Elasticity of k^{th} individual base to income :

$$E_{Bk} Y = \frac{\Delta B_k}{\Delta Y} \cdot \frac{Y}{B_k} \text{.....(21)}$$

Where

T_t = total tax revenue

T_k = revenue from k^{th} tax

Y = income (GDP)

B_k = base of k^{th} tax

Δ = the discrete change in the variable associated with it.

It then follows that in a system of n taxes :

$$E_{T_t Y} = \frac{T_1}{T_t}\left[\frac{\Delta T_t}{\Delta Y}\cdot\frac{Y}{T_t}\right] + ... + \frac{T_k}{T_t}\left[\frac{\Delta T_k}{\Delta Y}\cdot\frac{Y}{T_k}\right] ..... \frac{T_n}{T_t}\left[\frac{\Delta T_n}{\Delta Y}\cdot\frac{Y}{T_n}\right] .....(22)$$

Since elasticity of any individual tax can be decomposed as a product of the elasticity of the tax to its base and the elasticity of the base to income , that is

$$E_{T_t} Y = \left[\frac{\Delta T_k}{\Delta B_k}\cdot\frac{B_k}{T_k}\right]\left[\frac{\Delta B_k}{\Delta Y}\cdot\frac{Y}{B_k}\right] .....(23)$$

the elasticity of total revenue to income is rewritten as :

$$E_{T_t} Y = \frac{T_1}{T_t}\left[\left[\frac{\Delta T_1}{\Delta Y}\cdot\frac{B_1}{T_1}\right]\left[\frac{\Delta B_1}{\Delta Y}\cdot\frac{Y}{B_1}\right]\right] + ... + \frac{T_k}{T_t}\left[\left[\frac{\Delta T_k}{\Delta B_k}\cdot\frac{B_k}{T_k}\right]\left[\frac{\Delta B_k}{\Delta Y}\cdot\frac{Y}{B_k}\right]\right] + ...$$

$$+ \frac{T_n}{T_t}\left[\left[\frac{\Delta T_n}{\Delta B_t}\cdot\frac{B_t}{T_n}\right]\left[\frac{\Delta B_t}{\Delta Y}\cdot\frac{Y}{B_n}\right]\right] .....(24)$$

Such decomposition permits identification of the sources of fast revenue growth shown by elasticity greater than one and sources of lagging revenue growth elasticity of which is less than unity. Also it allows identification of that part of growth under the control of policy makers.

The choice of appropriate base is not a straight forward issue. That sales and excise taxes in Ethiopia are levied at the producer or whole saler level tempts one to use domestic manufacturing output. However, a sizeable portion of sales and excise tax revenue is derived from goods imported. Hence it is found more appropriate to use private consumption as the tax base.

4.3 EMPIRICAL RESULTS

During the past three decades taxes on commodities have been vital instruments in generating revenue for governments in Ethiopia with both domestic indirect taxes and foreign trade

taxes exhibiting marked growth. Between the period 1973 Ethiopian Fiscal year (EFY) and 1990 EFY revenue collection from domestic indirect taxes grew threefold while that from international trade on goods and services rose by more than 390 percent. Such taxes are to the most part levied on the basis of the wholesale prices of the goods produced locally or the C.i.f. and F.O.b prices as the case may be, hence inflation is partly to explain the recorded increases in tax revenue.

In any year total domestic revenue reflects the level of economic activity in the country because the former is primarily made up of tax revenue from taxable economic surplus. Apart from actual tax collection which can be broken down broadly into domestic indirect and direct taxes as well as taxes from international trade, government raises resources from its direct economic involvement in the form of investment income. The contribution of each revenue source is measured not only by its amount but by its dynamism as a provider of stable, high-yielding revenue flow. In this respect indirect taxes in Ethiopia compare favourably with domestic direct taxes (DDT) and government investment income(GII).

Table1. Relative Contributions of Indirect Taxes** (Selected Years)

YEAR (EFY)	AS % of total tax revenue	RATIO TO	
		DDT	GII
1973	64.06	1.78	2.21
1975	61.21	1.57	1.54
1976	62.05	1.63	1.91
1985	66.55	1.98	1.21
1986	69.28	2.25	2.47
1987	66.19	1.95	1.26
1990	64.60	1.82	1.46

** Indirect taxes include domestic indirect taxes and foreign trade taxes.

Source : computed from Ministry of Finance, annual budgetary revenue and expenditure accounts.

As table above shows indirect taxes provide more than two third of total tax revenue in any average year. Considering the 1973 - 1990 EFY period the share of indirect taxes experience a slide in the late '70s and early '80s only to pick up in recent years. A comparative investigation with other sources of government revenue indicates that these taxes have the edge over domestic direct taxes and government investment income in meeting budgetary needs.

It can be gathered from the above tabular presentation that for every one Birr government raised in terms of direct domestic tax and government investment income it was able to acquire from indirect taxes about Br. 2.25 and Br. 2.47 respectively. Setting aside the cost implications of raising a unit of revenue from any one source indirect taxes are comparatively more productive sources of overall domestic revenue. Even during years when revenue collections from indirect taxes hit low their ratio to tax revenue from direct taxes and investment income exceeded one. A significant share of indirect tax revenue comes from sales and excise taxes applicable both on cross border trade and internal trade.

The current sales and excise taxes as outlined by sales and excise tax proclamation No. 68/93 and its amendment by proclamation No. 77/97 have gone through a number of adjustments over the years before they assumed their present form. Disentangling the revenue effects of each manipulation of the tax
handles is very difficult, if not impossible, given the frequency and kinds of the measures undertaken. Indeed it is the frequent resort by government to discretionary measures which dissuades applying the dummy variable technique to estimate elasticity of the taxes In this study. Nevertheless, the changes in the structure introduced by policy makers through out the sample period can be classified under three major categories :

- Changes to existing statuory tax rates.

This is perhaps the type of adjustment that has occurred more frequently in which amendment proclamation No.77/97 provides a recent case in point. In this measure, the excise tax rates on several commodities were revised downward while conditional downward adjustments for other items were introduced pending an expansion of domestic output of same items by a specified level. The tax literature , however, clearly shows that statutory tax rates are hardly on par with effective tax rates. Hence, unless the changes in rates are coordinated with the fundamental economic variables prevailing in the country discretionary revenue effects from such measures may well be short lived.

. Adjustments affecting the tax base

Time and again new provisions were introduced into existing tax laws which have the apparent effect of narrowing or widening the tax bases. For instance in earlier years the only service type subject to sales tax was construction work but this was later expanded to 16 types of services unless daily income from the service is less than Birr 25. Moreover,in order to encourage exports goods destined for exports were exempted from all types of taxes except those on coffee. Exemptions from sales tax extended to such items as food,fertilizers,imported bullion for National Bank and coins,etc.have the direct effect on the base of the tax.

- Changes to administrative structure of the taxes.

Tax administration links legal statutes and the "real" implemented tax system and thus affects and the tax burdens of different sectors and income classes. It is closely linked to fiscal policy because its ultimate result is to increase or lower government revenue and the overall fiscal deficit : to place higher or lower tax burdens on particular sectors of the economy : and to favour or penalize particular income classes and different factors of production.

The most sweeping change in such respect to sales and excise taxes in Ethiopia came with the Sales Tax Council of State Special Decree No.16/1990. This law brought under a single framework the hitherto disorganized commodity taxes and more pronounced changes were on

excise taxes. Also some years back the policy making and actual revenue collection functions were separated between two independent bodies, i.e Ministry of Finance and the Federal Inland Revenue Authority.

The exercise to differentiate the sources of tax revenue growth between discretionary effects and tax responsiveness to GDP growth is based on estimation of buoyancy and elasticity of the taxes. A sample period of 1956 to 1988 EFY (inclusive) is used to this effect and the computations were done on PC-GIVE programme.

Table2. Estimates of Buoyancy and Elasticity Coefficients : 1956-1988

Measure	Sales Tax	Excise Tax
Buoyancy Coefficient	3.96 (22.066) DW=1.54* R^2=0.94	3.16 (20.73) DW=2.11 R^2=0.93
Elasticity Coefficient	2.50 (13.42) DW=2.07 R^2=0.78	2.64 (22.93) DW=1.89* R^2=0.94

*- Indicates the use of the Cochrane Orcutt method to correct for serial correlation.Figures in parenthesis are t-ratios all significant at 1% level of significance.

In order to derive measures of revenue productivity of the taxes which involve

Estimating buoyancy and elasticity coefficients as well as decomposition of the latter into tax-to-base and base-to-income elasticity components the model requires running five equations of univariate type. In the course of this study two major estimation problems surfaced, which if left not corrected,would significantly compromised the validity of any standard statistical inferences.

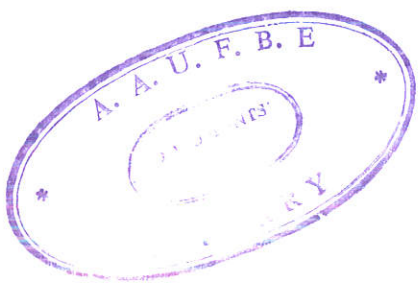
Many an economic time series exhibit non stationarity in the sense that their first and second moments are not time invariant. A graphic test that fits historical time series for tax revenue,GDP,and private consumption against time shows that each is non stationary. One way to go about is to utilize first differenced series for estimation. However,this option is ruled out as it fails to address relationships between variables at levels.

The treatment of the variables at levels is further justified after the two-step Engle-Granger cointegration test established existence of a linear specification of the variables which is stationary. The test firstly involves ascertaining if the variables are integrated of order same order. Unit root tests using the Dickey-Fuller test statistic returned negative values significant at 5% level of significance. Secondly, residuals from any arbitrary fit of the variables were also found stationary.

A low Durbin-Watson statistic suggests presence of serial correlation. Since, a very low DW could also signal misspecification problems further graphical check on residuals fitted against timeis made for to see if they show any pattern. This strongly indicated autocorrelation in error terms and on the assumption that the serial correlation is of an AR(1) type corrections were made using the Cochrane Orcutt method.

The t-ratios at 1% level of significance for buoyancy estimates establish that both discretionary tax measures and growth in income are important in explaining growth in tax revenue observed for sales and excise taxes over time. Similarly, the tax yield sufficiently responded to growth in income even if one is to abstract from changes in tax handles.

Table 2 provides estimates of buyoancy and elasticity coefficients for the two types of taxes under consideration. For the period under consideration both sales and excise taxes were buoyant and this is somewhat expected since the factors that make up buoyancy of the tax were active. In other words, quite a number of discretionary measures were put in place while GDP has also been on the rise. Sales tax was slightly more buoyant than the excise tax despite the fact that the latter had a larger share in terms of changes in the tax handles for the period



Estimation results also indicate that during the period of study both taxes were income elastic implying that even if one abstracts from discretionary measures the taxes would have registered income induced growth in yield. Said differently, expansion in income solely is to explain part of the overall increase in actual yield of these taxes.

The difference between tax buoyancy and elasticity estimates 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. These differnces are 1.46 and 0.52 for sales and excise taxes respectively and in view of the frequency of discretionary measures taken it can be deduced that discretionary revenue effects were not that large. At the same token, government would have been able to capitalize on their income elasticity without much resort to changing the tax measures.

Elasticity of a tax can also be measured as a product of tax to base elasticity and base to income elasticity. Yet such a decomposition of income elasticity of tax provides important analytical insights into the productivity of a tax. Accordingly, tax to base and base to income elasticity's are estimated for the two taxes.

Table3. Decomposition of Elasticities : 1956- 1988

Tax Type	Tax to Income Elasticity	Tax to base Elasticity	Base to Income Elasticity
Sales tax	2.50 (13.42) DW=2.07 R^2=0.78	1.2217 (11.12) DW=1.11 R^2=0.82	1.7374 (9.71) DW=1.87 R^2=0.71
Excise tax	2.64 (22.93) DW=1.89* R^2=0.94	1.1721 (10.45) DW=1.34 R^2=0.74	1.7374 (9.7) DW=1.87 R^2=0.71

NB. All the coefficients are significant at 1% or 5% significance levels. Data problems may be to blame tothe small anomalies in the form of divergence between the product of tax to base and base to income elasticities and the corresponding tax to income elasticities.

From the above presentation of decomposition of elasticities two important observations are made. Firstly, elastic tax to base estimates for the two types of taxes suggests that the choice of private consumption as a proxy base to both taxes is empirically justified. In the literature selection of proxy bases is a contentious issue as estimates of income elasticity of a tax on the basis of decomposing elasticity are not robust to differences in proxy bases chosen.

Secondly, for both taxes tax to base and base to income elasticities are almost equally elastic. A 1% rise in the tax base was accompanied by a more than 1% rise in tax revenue for either tax. An elastic estimate for the base to income component implies that the rate of growth of taxable economy (i.e private consumption) outpaced that of G.D.P further underlining the role of sales and excise taxes as productive sources of tax revenue.

CHAPTER FIVE : SALES AND EXCISE TAX: INCIDENCE ANALYSIS

5.1 BACKGROUND

One of the tenets of a good tax system is that it should be equitable. Equity can be broadly described as a situation in which post-tax distribution pattern with respect to a variable of interest (such as income, consumption, etc.) is not more 'unequal' than that of pre-tax distribution. Exemptions and allowances as well as differential statutory rate structure in issues of tax design are applied to address equity considerations. However, it is known that specifics of a tax system or a given tax only partly explain its redistributive implications.

For instance the burden of consumption taxes such as sales and excise taxes can be shifted to consumers in the form of inflated consumer prices or to factor payments in the shape of depressed earnings. This is regardless to the legal stipulations as to who bears the burden of the tax. In most instances, the impact of a tax diverges from its incidence.

However, in modeling tax incidence the legal statements could be taken to indicate the directions of shifting following imposition of a tax. As Shah and Whalley (1991) argue this is particularly true for developing countries and where commodities are subject to some form of price control. The sales and excise tax proclamation No. 68/1993 was designed under the overall economic reform agenda to promote competitiveness and development. Neither this proclamation nor its amendment by proclamation No. 77/1997 explicitly attempt to address equity considerations. Any concern for distributive impacts that can be deduced from the exemption of food, specifically bread and injera, from sales taxation (see schedule "B" of sales and Excise Tax Proclamation No. 68/93) could only be justified if it is implicitly assumed that the tax is shifted forward.

The tax law requires that goods and services produced locally and goods imported are subject to sales and excise taxes at the producer or wholesaler level. While this paper is being written parliament passed a new amendment on the sales and excise tax which mainly focused in

widening its coverage of services. Accordingly a number of services hitherto non-taxable are now taxable and exemptions are extended to those services deemed essential for low income households. The argument here is that absence of explicit statements in the tax proclamation to affect its effective incidence and /or provisions included add up to establish the tax is shifted forward.

Commodity taxes introduced at early stages of the production process often lead to pyramiding whereby price rise to the final consumer exceeds the tax amount.[8] Indeed one argument for value-added-tax over general sales tax is that the former is more suited to tackle problem of pyramiding. Arguably the provision for rebate of tax paid on row material given by section 2, article 9 sub-article 1 of proclamation No. 68/93 could address this concern .It reads:

> " The sales tax paid on raw materials used in the locally produced goods shall be refunded. However, the tax paid on pure alcohol used as raw material shall not be refunded."

This tax provision endorses the proposition that producers or wholesalers have the legal green light shift forward the sales tax burden on to consumers.

Generally, in as much as legal statements are able to establish true incidence the tax burden of the Ethiopian sales and excise taxes primarily falls on consumers of final goods and services. It then follows that since people differ in their spending pattern (for example due to differences in income) impact of consumption taxes on real incomes of people is far from uniform caters paribus, the real income of households shrink as proportion of taxable commodities rise in their expenditure budget.

5.2 . MODEL

In many aspects the model applied to analyze incidences of the Ethiopian sales and excise taxes in this study makes daring abstractions from reality, For instance, the price

[8] Actually pyramiding may be neither the only nor the most important problem. Firms may resort to vertically integrate to avoid such taxes. This is tax cascading.

mechanism in Ethiopia has not developed sufficiently to allow market prices best reflect marginal costs. Still , we assume that the commodity taxes fully translate into higher prices of final goods and services. Also differences that exist between 'taxable' and 'taxed' commodities are assumed away.

The basic model this study makes use of to investigate the impact on distribution of income of sales and excise taxes in Ethiopia is developed by J.F Due (1970). The idea is that by calculating the share of spending on taxable goods and services in households total consumption expenditure for households grouped across different income brackets, we will be able to make inferences as to the distribution of the tax burden. Following are some essentials of the model.

- Direction and size of the sources and uses side effect

Shifting assumptions are central to incidence analysis not least because most tax incidence outcomes are not robust to alternations of the assumptions. Feasible assumptions could only be made by taking into account specific features of an economy which include price formation systems, tax law, relative strength of price elasticities of demand and supply etc.
In this study, the incidence assumptions are primarily derived from the intentions of the tax law on sales of goods and services. Accordingly, sales and excise taxes in Ethiopia are fully shifted forward to consumers. Anecdotal evidence to justify forward incidence assumption are not hard to come by. For example the Ethiopian Telecommunications corporation collects a 10 per cent sales tax from users on consumption of telephone services.

. Distribution of tax Burdens

The burden of commodity taxes are distributed among households in accordance to their spending on taxable commodities. Hence the problem is to ascertain the proportion of expenditure on such items in household's budget. More specifically, percentage shares are calculated for each income bracket. We consider only urban areas because it can safely be

assumed that urban households acquire the buck of their consumption items at the market. Finally, we examine the significance of exemption of food from sales and excise taxes in meeting equity objectives.

- Neutrality Assumption

This is a partial equilibrium analysis and as such possible impacts on distribution of income of other types of taxes are ignored. But the effects of other taxes may not necessarily be offsetting to those of the consumption taxes. A more important assumption of the model is neutrality in expenditure incidence. Governments often use the expenditure side of the budget to bring about equity and taxes are geared towards raising revenues, promote savings and investments, fine-tune macro economic fundamentals, etc. As a result equity concerns may not stand out significant in designing such taxes. Nevertheless, taxes have been at the fore front of recent economic reform agenda in developing countries and this naturally requires studying every aspect of individual taxes as well as the whole tax system.

5.3 REDISTRIBUTIVE IMPLICATIONS OF THE TAXES

The exercise to establish true incidence at individual tax level serves mainly two purposes. Firstly, any room for reform of the tax on equity grounds necessitates understanding of how different income groups share the burden of the tax. In case pro-poor policy measures are called for it also gives some insight into the cost of reform such as loss in tax revenue following exemptions or lower rates. Secondly, overall performance of a tax system is a weighted sum of performances of individual taxes. For instance to obtain incidence estimates for whole tax systems, separate incidence calculations by income range are made for each tax, and these are then summed up across taxes, yielding an average total tax rate for each income range. The extent of redistribution through the tax system is evaluated by examining the pattern of average tax rates by income range.

Earlier it was argued that incidence scenarios are prone to vary depending on how the sources and uses side effects are modeled. Unless specific circumstances disallow it the

impact of Ethiopian sales and excise taxes falls on producers or wholesalers of goods and services. However, based on the intentions of the tax proclamation (implicit in most cases) we assume that such taxes are shifted forward by producers to consumers through higher retail prices. The tax liability on every individual consumer is therefore associated directly with amount and kinds of goods and services consumed.

The 1995/96 Household Income, Consumption and Expenditure Survey done by the Central Statistical Authority desegregates household annual income groups at country, rural and urban levels into 14 categories. Then for each income group value of spending on individual expenditure items as well as its percentage share are worked out. Items included in the household consumption expenditure are: food; beverages; cigarettes and tobacco; clothing and footwear; housing; water; electricity, gas and other fuels; furnishings, household equipment and operation; health; education; transport and communication; entertainment; religious and cultural services; personal care and effects; and miscellaneous goods and services.

According to the model developed by J.F Due for consumption taxes differences in tax liability among households result from differing spending patterns as per size of their income. More to the point, the larger the share of taxable items in a household's consumption basket the higher will be the proportion of its income relinquished in the form of taxes. In a sense, therefore, in the study of expenditure taxes such as sales and excise taxes on goods and services main focus is on how people of varying earnings allocate their income among several consumption items.

This study primarily concerns with situation in urban areas, but a brief comparative analysis of level and pattern of household expenditure in rural, urban and country level is in order. Survey results indicate that at country level households spend 50.1 per cent of their total income on food which, however, weighs up more in rural households budget, 52.4 per cent than that of urban households 40.9 per cent. Expenses on rent energy, water and construction materials take up about 17.5 per cent of total urban household income in contrast to 15.2 per cent and 15.7 per cent for rural and country level cases respectively. In all the cases almost

but one spends 80 per cent of her income on taxable items while the other's expense for such purpose is 50 per cent. It then follows that a 10 per cent tax on expenditure translates to a tax burden of 8 per cent of income for the former individual and 5 per cent for the latter.[9]

It is known that consumption taxes are not indifferent to demographic make-up of households. This is particularly true for household size which has direct relation with consumption spending and hence tax burden. "On the average, at any income level a large family spends more, saves less and hence bears a heavier commodity and sales tax burden than a small one" (Shultz and Harris 1965). It is not possible to control for like variables in this study due to problems of data.

The effect of other household demographic characteristics such as age and sex of its members on incidence of consumption taxes is much more complex. For instance, it can be argued that fewer dependents (i.e. few number of the young and the elderly) leave more resources to savings avoiding such taxes. Conversely the available resources may induce more spending on income elastic luxury items that normally are subject to excises. Hence expenditure tax liability also goes up. Stylized facts on possible differences among households in their consumption behaviour due to differences in their gender composition are not available for Ethiopia. But this factor is getting currency among development economists in debates on how households make economic decisions.

For reasons discussed earlier incidence analysis for consumption taxes of the Ethiopian sales and excise type has more practical relevance for urban areas. Also the incidence derivations hinge upon the assumption that producers (wholesalers) upon whom the impact of the sales and excise taxes fall fully shift forward the tax burden to consumers of goods and services. It is however, possible for the burden of such taxes to fall on profit if producers apply a fixed

[9] Note that dead weight losses due to tax-induced distrortions in relative prices are assumed away in this presentation.

mark-up over cost pricing system. Equally likely is backward shifting of the tax burden on suppliers of human and other production resources.

The 1995/96 household income, consumption and expenditure survey of the Central Statistical Authority provides a breakdown of household spending on a list of goods and services for urban, rural as well as country-level cases. Regardless of their income levels all urban households spend the majority share of their incomes on food. The survey presents seventeen categories of expenditure on food. Of these cereals unmilled and bread and other prepared food take up a larger share of income spent on food. At the other end very small proposition of income is allocated on purchases of fish. At the maximum outlays on fish assume only about 0.08 per cent of annual household income. This is likely a result of cultural habits that shape consumption preferences.

Before we indulge further into tax incidence implication of income based differences in consumption behaviour it helps to briefly mention a couple of points. First since size and proportion of spending on an item are functions of the price of the good in question, it is quite possible for an expensive good to take a large slice of income when actual consumption is low. The survey data does not allow to differentiate contributions to total consumption spending of amount of purchase and cost of items. It is the former that causes uneven distribution of tax burden of consumption taxes among people.

Second it is well known that household demographic characteristic are choice variables that determine their consumption behaviour failure to control for such variables gives the wrong picture that households of equivalent income do also make similar expenditure allocations. Also inter income-group differences in spending on certain items tend to be magnified if, as we do due to data limitations, we model such differences to be solely functions of income.

Below table presents the percentage shares of households annual income spent on purchases of taxable goods and services for households categorized into certain income groups. The income based divisions follow those worked out by the Central Statistical Authority in the survey. Once goods and services subject to sales and excise taxes as well as those exempted from such taxes are sorted out using schedules A, B and C of the sales and excise tax

proclamation No. 68/93 and amendment proclamation No. 77/97 the next issue is to calculate percentage outlay on the items by each income group. A representative income level for each group is given by the class mark.

The exercise is done under two scenarios, i.e. when food is considered taxable and when it is exempted. Analysis on this line helps investigate the significance of exempting food from consumption taxes in addressing tax equity objectives. Food items not subjected to sales and excise taxes in Ethiopia are bread and 'Injera'. Fertilizers are also exempted from sales and excise taxes but customs tariff of an ad-valorem duty applies on such imports.The importance of such differential tax treatment for fertilizers with respect to equity implication requires projecting a counter factual whereby this facts is applied extensively in production and has price elastic market demand.

Certain marked differences are observed in redistributive implications of the Ethiopian sales and excise taxes when comparisons are made between the patterns where food is taxable as against when it is exempt. First, when food is exempted from tax the percentage shares in households expenditure on taxable goods and services is distributed across a relatively narrower range of 9.56 percentage points.

Data indicates that this is attributable more to the drop in share of taxable goods in low income households budget. For example, as table below shows exempting food from taxes reduced the tax burden for lowest income households by 10.6 percentage points in contrast to 2.76 percentage point decline for the highest income group.

Despite higher reductions in income spent on taxable items and hence tax burdens for low income households due to exemption of food from tax the Ethiopian sales and excise tax still exhibits regressive overall results. In other words the exemptions helped to minimize the degree of regressivity but not to overturn the pattern into one of progressivity. It is argued here that the provision in the tax law not to tax food has significant pro-poor distributive impact. The gains in terms of smaller proportion of expenditure on taxable goods and services which according to the model translates into equivalent reduction on tax burden for the three lowest income groups exceeds that gained by the seven top household income groups.

The alternations in the pattern of tax burden in the case where food is tax exempted stems primarily from changes that occurred at the lower scales of the income ladder. A comparative analysis of each income sub-group clarifies the point. At the lower income sub-group, i.e. income level Birr 299.5 to 1699.5 inclusive the tax was regressive when food is exempted from tax. In fact this is the only case the tax burden distribution reversed when taxes do not apply on food as against when food is taxable.

In the middle income sub-group of annual income Birr (2299.5, 5999.5) the tax is neither progressive nor regressive in both scenarios. Since the progressive and regressive tendencies

offset each other the tax could be taken to be neutral in its distributive implications for this income sub-group. For example under the situation when food is exempted share of household expenditure on taxable items increased by 3.73 percentage points while for the rest it decreased by 4.39 percentage points. Said differently, for this sub-group the tax is marginally regressive.

Similarly, regardless of the tax provision on food the distributive pattern of the tax burden remains unchanged for the upper income sub-group of Birr (7799.5-20000). In either case it is mildly regressive. The aforementioned points suggest that exempting food from sales and excise taxes in Ethiopia does have equity implications and that these are more reflected at lower income levels.

Table 6. Share of Household expenditure on taxable commodities by Income Group (Aggregate)

Annual Income in Birr (Class Mark)	% of income spent on taxable items (food taxable)	% of income spent on taxable items (food exempt)
999.50	86.67	79.56
4299.50	82.81	78.54
13300.00	75.57	72.96

Source: Author's calculation

A comprehensive picture of the distributive of tax burden of the Ethiopian consumption taxes show that the tax is regressive but exempting food from tax somehow eased its burden on the poor. Collapsing the income groups into three subgroups we observe that the incidence of the sales and excise taxes in Ethiopia which fall upon consumers none the less is distributed unevenly among different income groups. Poorer households spend relatively larger share of their total income on taxable goods and services and correspondingly assume larger share of the burden of the tax. The distribution of the tax burden, however, is less skewed since the sales and excise tax proclamation exempts food, particularly bread and Injera; from taxes.

Literature on optimal commodity taxation basically focus on the problem of formulating a tax structure which minimises associated efficiency loss while allowing for a specified amount of tax revenue to be raised. Yet equity issues continue to spring up in tax design and policy prescriptions. Current tax reform agenda, for example recommends that excise taxes be used to introduce progressivity of consumption taxed.

The application of excise taxes refers to imposition of exceptionally high tax rates on consumption of certain goods and services. The justifications for these taxes are their heavy yield, their ease of administration, and their imposition on items whose consumption many people feel should be reduced. Their demand curve is usually inelastic and this enables government raise high revenue and by Ramsey rule entail lower dead-weight loss to the economy. But their traditional role is to discourage consumption of what Musgrave calls 'demerit' goods in society.

An extensive list of goods and services are subjected to excise taxation in Ethiopia (see schedule C of sales and excise tax proclamation No. 68/1993 and tax amendment proclamation No. 77/1999). It can be observed from the list that only a few qualify in the category of consumption discouraging even if one is able to argue that government is trying to siphon off as much revenue as possible capitalizing on their inelastic demand. A useful insight would to be to differentiate the contribution of the excise tax in the overall distributional pattern of the Ethiopian sales and excise taxes.

Following previous presentation proportion of spending on excisable goods and services in total income for each income group is derived (for items drawn from survey for this analysis see Annex). Table 5 below presents percentages at expenditure on commodities subject to excise taxes across household income groups.

Table 7.Proportion of household expenditure on commodities excisable

Annual Income in Birr	% of income spent
299.50	7.58
799.50	8.12
1199.50	6.62
1699.50	8.48
2299.50	9.34
2999.50	10.25
3799.50	10.28
4799.50	10.94
5999.50	10.48
7799.50	12.26
10799.50	11.76
14399.50	13.28
18099.50	11.78
20000.00	15.67

Source: Author's calculation

Table above signals that richer households expense larger percentage of income on goods and services that face excise taxes. A closer look at the survey data reveals that with the exception of the `personal care and effects ` category households at the bottom end of the income-class spend from half to quarter in percentages shares on excisable commodities of that of households at the top end of the income scale. It is possible to provide further proof that excise taxable goods weigh more in budget make up of relatively better-off households. For example the two highest income-group households allocate that proportion of their income for purchases of cigarettes and tobacco which is equivalent to proportion consumed by the lowest first four income-group households.

That richer households earmark relatively bigger share of income on expenditure on excise taxable goods implies that they also assume a corresponding bigger share of the tax burdens associated with this tax. Overall this means the tax is progressive in that the rich paying more. More importantly its progressivity is underlined more in inter income-sub group situation that intra sub-group pattern. Recall that the latter was responsible in scaling down the regressivity of the sales and excise taxes under the food exempt incidence analysis. In other words, the high income group households consume more in terms of commodities excise taxed than the middle and low income group households. This also holds true for middle income households vis-a-vis low income households. Within each income sub-group however, the tax is neutral or at most mildly progressive.

In previous discussion it was established that the redistributive implication of the Ethiopian sales and excise tax is burden some to poorer households. Still one part of the taxes namely the excise tax shows a pattern of progressivity. Therefore, had it not been for the incidence of the excise taxes the above worked out sales and excise tax pattern for Ethiopia would have been more steeply regressive. For tax policy purposes and reform of the sales and excise taxes on equity grounds emphasis should be on this role the excise tax plays.

CHAPTER SIX :CONCLUSION AND POLICY PRESCRIPTIONS

This study looked into performance of sales and excise taxes for a period that almost rivals their existence with emphasis on two of the principles of a good tax system : revenue productivity and equity. Analysis on the basis of pertinent models is made to test if actual tax yield over the years responded sufficiently to growth in income and to the rather frequent tax discretionary measures. Besides, analysis on the distribution of tax burden across different income groups establishes whether the taxes, with all their tax law provisions, have pro-poor redistributive implications.

Both sales and excise taxes are found to be buoyant and elastic thereby implying existence of revenue effects of discretionary measures as well as in-built responsiveness of the taxes solely to G.D.P growth. However, revenue impacts of changes in tax handles were not so strong as early results seem to suggest. The narrowness in the differences between the elasticity coefficient estimates which were computed after abstractions were made from discretionary tax measures and the buoyancy coefficient estimates derived from no such refinements indicate that tax discretionary measures were not that effective.

This brings into question the wisdom of resorting frequently to change statutory tax rates, bases, tax administration framework, etc to affect revenue from these taxes. Conversely, the taxes had been sufficiently responsive to growth in income even if government would have left the tax structure that prevailed in earliest period untampered. The elastic outcomes have come about from the operation of two equally important sources. The base to income elasticity estimates show that private spending grew faster than income meaning people tended to spend an increasing proportion of their additional income. For this taxes these translates into growth in taxable economy and hence tax revenue. The other factor is the tax to base elasticities that indicated tax revenue to grow faster than growth in the taxes base.
Tax burden distribution of sales and excise taxes in Ethiopia tilts toward low income households. Since households at the lower levels of the income ladder spend a larger share of their income on goods and services subject to sales and excise taxes it then follows that they

also assume correspondingly bigger proportion of tax burdens. It should be noted that redistribitive implications of the taxes are reflections of not only expenditure differences induced by income differences but also elements of the tax system in terms of its rates , exemptions, and so on.

The incidence outcomes are looked into under different scenarios including when food is considered taxable or exempt from taxes as well as differentiating the contributions of excise taxes towards overall redistributive outcome. The latter is motivated by current practice favoured by the Bretton woods institutions of introducing progressivity in consumption taxes .

Accordingly ,the derivations established a couple of major phenomenon . Firstly, the tax law provision that exempts food from sales and excise taxes has helped to ease tax burden on low income households . The overall regressive incidence pattern is less steep when food is not taxable as against when it is taxable and perhaps a very important insight is that from this tax provision poorer households achieved larger gains in terms of tax liability reduced.

Secondly, analyzing households` spending pattern with respect to goods and services upon which excise taxes are levied produces a progressive pattern in terms of distribution of the tax burdens. Higher income households relatively allocate larger proportion out of their income on such items which provides another factor in the tax system that lends it some equitable features.

Generally, the redistributive implication of sales and excise taxes in Ethiopia not surprisingly are not uniform and not favourable to the poor. Still, provisions included to address equity objective do have the desired effect. Studies show that modeling specific features of a developing country such as labour market distortions, activities in the informal sector, and foreign exchange rationing into tax incidence analysis could provide results that diverge from conventional works. This provides the basis for future research under the Ethiopia context.

Empirical results has shown that for sales and excise taxes discretionary tax measures are not options that pay -off much in terms of increased tax yield . This is despite the fact that policy makers have applied such measures time and again during the past thirty years. Rather, fiscal policy makers in Ethiopia need to focus more in ways to cash on the elastic sales and excise taxes to generate sufficient revenue . Better tax administration , for instance , enhances tax to base elasticity which in turn translates into more tax collection.

Prior to 1990 the taxes were highly disorganized even if most of them show resemblance in terms of purpose and coverage and this is likely to have entailed large costs in terms of administrative efficiency . Finally , promoting equity objectives using consumption taxes requires understanding how each income- group is affected by the taxes and adjustments in this respect need to take into account the positive role exempting food from such taxes plays.

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Appendices

A.1 A profile of the tax system in Ethiopia as of February, 1997

1. Tax on income and profits :- the relevant legal framework is provided by Income Tax Proclamation No. 173/1961, as amended. A number of tax types exist under this catagory classified in accordance with type of source of income.

1.1. Income tax on employment: - appropriate tax laws are Income Tax Amendment Proclamation No. 30/ 1992, proclamation No. 107/1994. This tax applies on income from employment, including without limitations, salaries, wages, allowances, directors' fee and other personal emoluments. Tax on income is withheld by employer. It provides exemption to the first Birr 120 of monthly income. A progressive rate structure is given by scheduleA.

No	Taxable Income per month (In Birr)	Tax rate on additional income (%)
1	121-600	10
2	601-1200	15
3	1201-2000	20
4	2001-3000	30
5	3001 or more	40

1.2 Rural Land and Agricultural Activities Income Tax: - appropriate laws are proclamation No. 77/1976 and Proc. No. 152/1978; Proc. No. 8/1995 (Oromia). Specific taxes applicable in Oromia National Regional State include:-

1.2.1 Rural Land Use Rent: - This is an annual rent payable on rural land held for agricultural activities in Oromia. Agricultural Investors are exempted. Farmers pay Birr 10 for the first hectare and Birr 7.50 for every additional half-hectare while state enterprises pay Birr 15 per hectare.

1.2.2 Income Tax:- Tax is payable on any annual income derived from agricultural activities and this tax also doesn't apply on agricultural investors. State farms owned by Regional State pay 40% while individual farmers pay Birr 15 for income lower than Birr 1200 per annum. Progressive tax rates are applied for annual income exceeding Birr 1200:

No.	Annual Taxable Income (In Birr)	Tax Rate on Additional Income
1	1201-5000	5
2	5001-15000	10
3	15001-30000	20
4	30001-50000	30
5	50001, or more	40

1.3 Rental Income Tax:- Relevant tax law is Proc. No. 62/1993. Tax is levied on income from the rent of houses, buildings for office or manufacturing, materials and goods, etc. The tax is computed on the bases of annual rent income after deducting annual depreciation and allowable expenses. Annual income short of Birr 1200 is exempted. Tax is progressive in rates:-

No	Annual taxable income (In Birr)	Tax rate on additional income
1	1201-6000	10
2	6001-12500	15
3	12501-21500	21
4	21501-33500	28
5	33501-50000	36
6	50001 or more	45

1.3 Tax on Unincorporated Business:- Relevant laws are Proc. No. 18/1990 and Proc. No. 107/1994). Tax is levied on income from all sources other than those mentioned elsewhere. The first Bir 1200 of annual taxable income is exempted.

No	Taxable Income per annum (In Birr)	Tax rate on additional income (%)
1	1201-6000	10
2	6001-15600	15
3	15601-30000	20
4	30001-50000	30
5	50001 or more	40

1.5 Tax on Incorporated Business:- See proc. No. 36/1996. This tax is levied on profits and provides exemptions to cooperative societies and Ethiopian Maritime Corporation. Tax rate is 35% of taxable income.

1.6 All Business: - applicable on income derived from casual rental of property. No allowances and exemptions are given and rates are same as under 1.4.

1.7 Members of Cooperative Societies:- as organized under the cooperative Societies Proclamation. Tax applicable on annual income received from a coop. society by individual. Rates are as under 1.4

1.8 Other Sources of Income:- These include:

-Income from dividends to shareholders is taxed at 10% with no exemptions

-Income from chance winning s and lottery is taxed at 10% for winnings exceeding Birr 100.

-Income from royalities is taxed at 40% and no exemptions.

-Income of nonresident persons or organizations for services rendered to persons or organizations in Ethiopia. Tax rate is 10% with no exemptions.

1.9 Tax on Income from Mining Activities: pertinent laws are proc. No.53/1993 and proc. No. 23/1996. Tax levied on income received or credited from mining operation within Ethiopia by the holder of large scale or small-scale mining license. Artisanal mining are exempted. Tax rate is 35%.

1.10 Capital Gains Tax: See proc, No. 108/1994. A tax on gains realized from the increase in value upon the sales of shares and Bonds, and urban houses. Deductions are provided from value of capital for inflation adjusted amount and capital losses in the preceding year. Annual gains not exceeding Birr 10000 are exempted. Tax rate is 30%.

2. Tax on Goods and Services: Refer to proc. No. 68/1993.

2.1 Excise Tax:- Levied on selected list of locally produced and imported goods.

2.2 Sales Tax on Goods:- Levied on locally produced goods at the manufacturing level, and on imported goods at the import gate. Tax is computed on producer's wholsale price plus excise tax, and the C.I.F value plus customs duty and excise tax for imports, as the case may be. There is a refund of sales tax paid for raw materials used in the production of local goods.Exemptions from tax are provided to goods under international agreements, produced in the informal sector, and those destined for exports.

2.3. Sales Tax on Services:- Computed on the bases of service charge, it covers 16 types of services. Services with daily income less than Birr 25 exempted.

2.4 Customs Duty:- Refer to Tariff Regulations No. 122/1993 and proc. No. 67/1993,proc, No. /1996. Applies to all imports classified to a schedule of 97 chapters based on the Harmonized system of tariff classification code. Exemptions and concessions are granted to certain organizations and items.

2.5 Taxes on exports:- All export duties and taxes except those on coffee are abolished.

2.5.1 Export duty of coffee: duty payable by exporter on the basis of quantity exported. Rate is Birr 15/quintal.

2.5.2 Coffee export Cess (proc. No. 310/1973): tax payable by exporters of Ethiopian-grown coffee, collected by customs at time of export. Birr 5/quintal.

2.5.3 Coffee Surtax (coffee surtax Reg.No. 62/1978, No.65/1979, No. 4/1989):- specific tax per 100-kg bag on all coffee exported from Ethiopia, payable at the time of export by exporter to customs. The tax is graduated according to the composite daily price pursuant to the International Coffee Agreement of 1975 ex dock New York, prevailing at the close of business on the last day of the payment of the surtax. When a forward contract has been made, the price in force at the time of contract is registered is used as the reference point.

Surtax reference price (U.S.cents per pound)	Amount (Birr 100/kg)
0-50	Nil
51-75	Br. 0.5
76-100	Br. 1.0
101-125	Br. 2.0
126-150	Br. 3.0
151 or more	Br. 4.0

NB. If, for example, the reference price used is US $ 2.00, the surtax is: 0+ 12.5+25+5+75+200 (Br. 362.5/quintal)

2.5.4 Coffee Transaction Tax (Proc. No. 17/ 1956): A rate of 2% is levied after deducting other coffee export taxes. Re exports are exempted.

2.6 Stamp duties (decree No. 26/1975, as amended by proc. No. 334/1987):- Relates to obligatory use of stamped paper for many legal documents.

List of sales and Excise Tax Laws during period of review in Chronological Order (G.C)

1. Excise Tax proclamation No. 204/1963

2.Transaction Tax Proclamation No. 205/1963

3. Excise Tax Amendment Proclamation No. 220/1965

4. Alcohol Excise Tax Proclamation No. 217/1965

5. Tobacco Regie Amendment Regulations: Legal Notice No. 316/1966

6. Transaction Tax Amendment Proclamation No.254/1967

7. Transaction Tax Amendment Regulation: Legal Notice No. 329/1967

8. The petroleum products and Lubricants Excise Tax Exemptons Amend. Reg.: Legal Notice No. 337/1967

9.Transaction Tax Amendment Regulations: Legal Notice No. 336/1968

10. Alcohol Excise Tax Amendment Proclamation No. 284/1971

11. Alcohol Excise Tax Amendment Proclamation No. 205/1971

12. Transaction Tax Amendment Regulations: Legal Notice No. 397/1971

13. Petroleum Products and Lubricants Excise Tax Exemptions Amendment: Legal Notice No. 398/1971

14. Petroleum products and lubricants Excise tax proclamation No. 399/1971

15. Alcohol Excise Tax Amendment Proclamation: General Notice No. 17/1975

16. Excise Tax Amendment Proclamation: General Notice No. 18/1975

17. Transaction Tax Amendment proclamation No. 23/1975

18. Petroleum Products and lubricants Excise Tax Amendment Proclamation No. 46/1975

19. Transaction Taxes Amendment Proclamation No. 68/1975

20. Transaction Taxes Amendment Regulations No. 98/1976

21. Petroleum Products and lubricants Excise Tax Amendment Regulations: Legal Notice No. 44/1976

22. Excise Tax Amendment Proclamation No. 153/1978

23. Tobacco Regie Amendment Proclamation No. 154/1978

24. Transaction Taxes Amendment Proclamation No.159/1979

25.Alcohol Excise Tax and Excise Tax Amendment Proclamation 160/1979

26. Transaction Tax Amendment Proclamation No.165/1979

27. Petroleum Products and lubricants Excise Tax Amendment Regulations: Legal Notice No. 67/1979

28. Transaction Tax Amendment Proclamation No. 170/1979

29. Excise Tax Amendment Proclamation No. 171/1979

30. Excise Tax Amendment Proclamation No. 177/1980

31. Petroleum Products and lubricants Excise Tax Amendment Proclamation No. 312/1981

32. Excise Tax Amendment Proclamation No. 245/1983

33. Alcohol Excise Tax Amendment Proclamation No. 302/1986

34. Alcohol Excise Tax Amendment Proclamation No. 312/1987

35. Salt Tax Amendment proclamation No. 333/1987

36. Petroleum Products and lubricants Excise Tax Council of State Special Decree No. 14/1989

37. Sales Tax Council of State Special Decree No. 16/1990

38. Sales and Excise Tax Proclamation No. 68/1993

39. Sales and Excise Tax Amendment Proclamation No. 77/1997

List of Budget Speech Proclamations during Sample Period. Sup. Refers to Supplemental budget for a budget year

Budget Proclamation Numbers: 214/1964, 218/1965, 219/1965 (Sup), 239/1966, 248/1967, 260/1968, 258/1968 (Sup), 268/1969, 280/1970, 283/1971(Sup), 286/1971, 46/1975, 327/1974 (Sup), 94(a)/1976 (Sup), 144/1978 (Sup), 151/1978, 172/1978,199/1980, 208/1981, 240/1983, 253/1984, 282/1985, 293/1986, 303/1986, 308/1987(Sup.), 329/1987(Sup.), 337/1987, 12/1989(Sup.), 35/1989, 26/1992, 27/1992,81/1994,109/1995.

List of sales and excise taxable goods and services included in survey.

1. Food which is further broken down into seventeen categories
2. Beverage that includes both alcoholic and non-alcoholic
3. Cigarettes and tobacco
4. Clothing and footwear under which five slots are entered.
5. Construction materials, water charge, and fuel and power
6. Furniture, furnishings and household equipment exclusive of household operation and domestic service
7 .Medical care and health expenses
8. Transport and communication
9. Recreation, entertainment and education
10 .Personal care and effects
11. Miscellaneous goods and services such as expenditure on restaurants and cafes

List of commodities subject to excise taxes drawn from survey

1. Beverages
   - 1.1. Alcoholic
   - 1.2. Non-Alcoholic
2. Cigarettes and Tobacco
   - 2.1. Cigarettes
   - 2.2. Tobacco
3. Clothing And Foot Wear
   - 3.1. Clothing
   - 3.2. Ready Made for Adults
   - 3.3. Ready Made for Children
   - 3.4. Head wear
   - 3.5. Foot wear and Repairs
4. Personal Care and Effects
   - 4.1. Personal Care
   - 4.2. Personal Effects
   - 4.3. Jewelry

Table1 Tax Revenue from Sales and Excise Taxes: 1956-1988 EFY (in million Birr)

YEAR	SALES TAX	EXCISE TAX
1956	33.20	51.40
1957	41.30	61.80
1958	45.80	69.50
1959	49.40	75.00
1960	57.00	82.80
1961	59.10	83.20
1962	62.20	91.60
1963	66.90	98.80
1964	71.80	110.20
1965	80.60	123.00
1966	97.50	140.40
1967	112.00	147.40
1968	113.60	148.10
1969	137.80	140.50
1970	137.90	142.80
1971	201.30	188.70
1972	238.10	246.30
1973	264.20	253.20
1974	269.10	256.80
1975	289.40	283.30
1976	299.40	326.00
1977	299.60	353.60
1978	301.30	373.80
1979	388.60	409.30
1980	412.70	488.50
1981	415.50	548.20
1982	430.10	533.90
1983	696.50	534.10
1984	697.10	540.20
1985	698.10	544.10
1986	701.40	549.40
1987	729.83	552.10
1988	777.52	567.10

NB The sales tax has taken its current form only a few years back. Hence,for earlier periods taxes of similar purpose and coverage such as transaction tax,tax on imports and exports and turnover tax are lumped together to produce the series.

Source: Ministry of Finance,different statistical documents

Table2 Refined Tax Yield Series:1956-1988 EFY(in million Birr)

YEAR	SALES TAX	EXCISE TAX
1956	33.20	51.40
1957	40.25	57.20
1958	40.34	59.10
1959	46.20	71.10
1960	48.72	73.20
1961	52.30	77.10
1962	59.51	80.40
1963	61.43	83.30
1964	68.20	85.40
1965	69.20	94.40
1966	90.40	105.20
1967	91.21	113.30
1968	98.25	112.00
1969	122.44	115.00
1970	124.50	117.90
1971	15320	142.10
1972	158.50	149.30
1973	172.50	162.70
1974	195.80	171.50
1975	211.70	204.60
1976	265.50	224.10
1977	265.60	229.70
1978	267.00	235.60
1979	311.00	248.20
1980	354.00	257.60
1981	356.00	318.50
1982	362.00	348.20
1983	402.30	362.30
1984	411.40	371.10
1985	462.30	382.30
1986	465.52	387.40
1987	473.60	396.50
1988	522.50	404.30

NB In order to produce revenue series refined of discretionary revenue effects, the proportional adjustment method is applied. This method of estimating income elasticity of the taxes is extensively elaborated in main body of the paper.

Source: Budget speeches over period of analysis.

Table3 Data on Income and Tax Base:1956-1988 EFY (in million Birr)

YEAR	GDP	Private consumption exp.
1956	5381.00	2001.80
1957	5750.50	2080.60
1958	5980.00	2134.00
1959	6226.00	2296.60
1960	6459.00	2456.50
1961	6716.00	2686.10
1962	6960.12	2819.90
1963	7248.50	2990.00
1964	7577.00	3217.40
1965	7768.00	3541.30
1966	7876.00	3804.90
1967	7875.20	3744.40
1968	8012.00	3821.80
1969	8097.50	4269.90
1970	7961.30	4405.40
1971	8489.20	4678.30
1972	8922.00	5514.90
1973	8995.00	5865.80
1974	9062.00	6483.41
1975	9792.00	6880.80
1976	9309.00	6851.30
1977	8765.00	7009.80
1978	9610.00	7370.80
1979	10921.00	7431.05
1980	10924.00	7529.40
1981	11000.10	8375.90
1982	11420.10	8623.20
1983	10954.00	8421.90
1984	10521.00	8654.50
1985	11832.50	8416.20
1986	12050.11	10685.40
1987	12600.00	12044.60
1988	13990.00	13373.00

NB Two types of data problems were encountered. First there is the absence of consistent data base. Also the National accounts unit of MEDaC started to apply a new computation system as of 1980. To circumvent this problem old data series is updated after consultation with MEDaC experts. Details are available in Data and Methodology chapter.
Source: National Economic Accounts (MEDaC), various documents.

Table 4 Actual Domestic Revenue by major items:1973-1990 EFY (in million Birr)

Year	Indirect taxes	Direct taxes	Gov't inv't income	Others	Total domestic rev.
1973	873.00	489.60	277.50	117.00	1757.10
1974	871.20	565.10	328.50	111.80	1876.60
1975	953.80	604.30	387.50	228.70	2174.50
1976	1074.50	656.90	428.10	134.30	2293.80
1977	989.60	688.00	396.00	249.60	2323.20
1978	1110.30	766.00	538.40	391.40	2806.10
1979	1185.90	906.30	491.90	341.70	2925.80
1980	1304.20	1012.40	840.00	310.50	3467.10
1981	1309.20	1062.10	952.60	575.30	3899.20
1982	1234.70	924.60	627.40	356.10	3142.80
1983	1220.20	831.50	350.60	302.40	2706.70
1984	959.40	631.60	304.10	312.90	2208.00
1985	1468.00	737.70	444.40	762.70	3412.80
1986	2131.30	945.20	506.60	355.70	3938.80
1987	2567.20	1311.50	1546.80	487.20	5912.70
1988	2969.50	1753.90	822.40	1420.30	6966.10
1989	3411.60	1907.50	1518.10	912.26	7749.46
1990	3764.50	2062.70	1287.10	1300.20	8409.25

NB Indirect taxes include domestic indirect taxes,import taxes and export taxes.

Source: Ministry of Finance, annual budgetary revenue and expenditure accounts

Table 5 Fiscal Deficits:1973-1990 EFY(in milliom Birr)

Year	Revenue	Expenditure	Balance
1973	1757.00	2296.50	-539.50
1974	1876.50	2649.70	-773.00
1975	2174.50	3807.80	-1633.30
1976	2293.80	3198.10	-904.30
1977	2323.30	3924.60	-1601.30
1978	2806.00	4131.10	-1325.10
1979	2925.90	4137.10	-1211.20
1980	3467.10	5058.10	-1591.00
1981	3899.20	5912.40	-2013.20
1982	3142.80	5369.20	-2226.40
1983	2706.70	4913.00	-2206.30
1984	2207.90	4256.90	-2049.00
1985	3412.70	5305.50	-1892.80
1986	3938.80	7650.40	-3711.60
1987	5912.70	9337.50	-3425.00
1988	6966.10	9919.90	-2953.80
1989	7749.60	10113.50	-2363.90
1990	8409.25	12037.70	-3628.45

Source: Ministry of Finance, annual budgetary revenue and expenditure accounts.

DECLARATION

I, the undersigned, declare that the thesis is my own original work, has not been presented for a degree in any other university and that all sources of material used for the thesis have been duly acknowledged.

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