

MOBILIZATION OF RESOURCES THROUGH  
TAXATION IN ETHIOPIA

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## ABSTRACT

The task of mobilizing resources for public sector outlays is a major concern of economic policy in Ethiopia. This is especially true in post-revolution Ethiopia, where the socio-political changes that have taken place have caused the nation to rely heavily on the public sector for its social and economic developments.

Taxation is the primary means of mobilizing resources in the country. A strong tax performance is thus an indispensable condition in order for the government to step up its development expenditures.

The objective of this study was to ascertain the compatibility of the tax system with the goal of resource mobilization. Towards this end the structure of the tax revenue was analysed and its impact on the revenue raising capability of the tax system examined. Moreover, the magnitude of the tax revenue raised was evaluated by comparing it with the taxable capacity of the country, and revenue needs of the government. Finally, the tax effort made in the past was assessed, and the potentiality of the tax system to mobilize an increasing share of the national income in the future examined.

The outcome of the study indicated that despite the increased efforts made to improve the effectiveness of the tax system, tax revenue in Ethiopia remains inadequate (skimp), unstable, and inflexible. The cause of such anomalous conditions were attributed to among others, faulty tax policy, and weakness in implementation of the tax laws.

It was suggested that a synchronized action both at policy and execution aspect of the taxation process can improve the performance of the tax system.

## TABLE OF CONTENTS

	Page
Acknowledgement	i
List of Tables	
CHAPTER	
1. INTRODUCTION	1
1.1 Statement of the Problem	1
1.2 Objectives of the Study	8
1.3 Method of Study	10
1.4 Data Source, Scope, and Limitations of the Study	11
1.5 Review of Literature	
2. REVIEW OF THE DEVELOPMENT OF THE TAX SYSTEM AND ANALYSIS OF THE TAX REVENUE COMPOSITION	32
2.1 Review of the Development of the Tax System	32
2.1.1 Direct Taxes	33
2.1.2 Indirect Taxes	46
2.1.3 Tax Incentives	53
2.2 Analysis of the Revenue Composition	54
3. THE LEVEL OF TAXATION IN ETHIOPIA	67
3.1 Growth in Tax Revenue	67
3.2 Tax Performance Analysis Through the Method of International Tax Comparison Indices	72
3.3 The Relationship Between Tax Revenue and Govern- ment Expenditure in Ethiopia	77

	Page
4. THE RESPONSIVENESS OF TAX REVENUE TO CHANGES IN NATIONAL INCOME IN ETHIOPIA	86
4.1 Income Responsiveness as a Tax Criterion: A Theoretical Framework	86
4.2 Method of Estimating Tax Revenue Responsiveness	90
4.2.1 Method of Estimating Buoyancy	90
4.2.2 Method of Estimating Built-in-Elasticity	91
4.2.3 Method of Separating Automatic From Discretionary Tax Revenue Changes	92
4.2.3.1 The Proportional Adjustment Method	92
4.2.3.2 The Dummy Variable Method	94
4.2.3 Partitioning of Elasticities	96
4.3 Estimation of the Responsiveness of Tax Revenue to Income Changes	97
4.3.1 Estimation of Buoyancies and Interpretation of Results	97
4.3.2 Estimation of Built-in-Elasticities and Analysis of Results	111
4.3.3 Analysis of Elasticities by Partitioning	120
5. TAX REVENUE FORECASTING	133
5.1 Method of Projection	133
5.2 Identification of Tax Revenue Functions	135
5.3 Revenue Projections for 1984/85 to 1988/89	149
5.4 Tax Policy Implications of the Projection Results	149
6. CONCLUSION	154
BIBLIOGRAPHY	167
APPENDICES	170

## LIST OF TABLES

Table	<u>Page</u>
2.1 Tax Rates on Income From Employment (1967)	34
2.2 Tax Rates on Income from Employment (1968)	37
2.3 Rates on Income from Rent of Land and Buildings	39
2.4 Rates on Business Profit Tax	42
2.5 Rates of Agricultural Income Tax on Individuals (1967)	44
2.6 Rates of Agricultural Income Tax on Individuals (1978)	45
2.7 Excise Tax Rates	47
2.8 Tax Structure in Ethiopia (1967/68 - 1982/83 Revenue in 1% of Total Tax Revenue)	56
2.9 Tax Revenue by Type of Tax (in percent of total tax revenue)	58
2.10 Coffee Sector Performance	61
3.1 Main Taxes in Relation to GDP (Expressed in percentage)	69
3.2 Selected Developing Countries' Tax Ratio 1978-1980	71
3.3 Forty Four Developing Countries ITC Indices	74
3.4 Selected Countries of Sub-Saharan Africa's Index	76
3.5 Growth of Tax Revenue and Public Expenditure in Ethiopia 1967/68-1982/83	79
3.6 Summary of Central Government Finance 1970/71-1982/83	80
3.7 The Structure of Financing Public Sector Deficit 1970/71-1982/83	81
4.1 Linear Regressions 1967/68-1982/83	99
4.2 Log-Linear Regressions 1967/68-1982/83	101
4.3 Summary of Regression Results	102

4.4	Buoyancy of Major Taxes 1967/68 - 1974/75=	106
4.5	Buoyancy of Major Taxes 1975/76 - 1982/83	107
4.6	Summary of Buoyancy Measures for Different Periods	108
4.7	Linear Regressions	112
4.8	Summary of Elasticities of Major Taxes and Total Tax 1967/68 - 1982/83	114
4.9	Decomposition of Elasticities	121
4.10	Summary of Decomposition of Tax Elasticities	123
4.11	Difference between Buoyancy and Built-in-Elasticity of Total Tax and Major Taxes 1967/68 - 1982/83	129
5.1	Proxy Bases for Tax Revenues	138
5.2	Data on Proxy Bases 1973/75 - 1982/83	140
5.3	Data on Projected Proxy Bases (1984/85 - 1988/89)	142
5.4	Summary of Estimated Revenue Functions	144
5.5	Revenue Projection for 1984/85 - 1988/89	146
5.6	Revenue Projections by Alternative Methods (1984/85 - 1988/89)	148
5.7	Consolidated Tax Revenue Projections (1984/85 - 1988/89)	150

## 1. INTRODUCTION

### 1.1 Statement of the Problem

Development is rightly considered to be a complex process. It involves the interaction of a whole gamut of factors-economic, political, social, demographic, and cultural - to bring about growth and change. Consequently, any attempt to attribute it to any single factor would be a gross simplification. Nevertheless, to claim that finance is an underlying requirement for economic development can hardly be overemphasized. This is so because everything of importance costs a great deal. "Capital goods must be paid for, and so should the development of managerial and technical expertise. Moreover, finance is essential for the purpose of altering or adopting cultural attitudes and creating a general economic environment conducive to sustained economic development."<sup>1</sup> It is against this background that the thesis which holds, the central issue of economic development is the problem of mobilizing and allocating financial resources for development in that development becomes self-sustaining, has received a general sanction among economists.<sup>2</sup>

Historically, the contemporary developed capitalist and socialist countries have not reached their present level of economic and social development, without realizing and implementing this principle during their early stage of development process. In the former case the emerging entrepreneurial class invested its growing profit on private accounts, in the later case the big increase of surplus created in the economy was collected by the government and was channelled into priority goals by the planners on public accounts.<sup>3</sup>

In developing countries where subsistence economy is predominant and the propensity to consume is very high, which makes private saving very low, it is incumbent upon the government to undertake a major part of this task. Whatever, disagreement exists among economists about the size of the government sector, which is an integral part of the political philosophy of the countries concerned, most economists generally view the expansion of the government activity as a pre-requisite for the successful pursuit of economic and social betterment. Obviously the more actively interventionist the state is on behalf of growth and development the more important and insistent becomes the task. Thus an increasing amount of resources must be channelled into the public hands in order for the government to be able to cover the growing current non developmental expenditure, the current outlays on development and the investment in capital projects. The poorer and more backward a country is the more urgent and extensive are the needs on government outlays. As A. Prest has indicated, "it is of course true that all governments at all times have to face demands for additional spending but.... the pressure in underdeveloped countries tends to be particularly intense."<sup>4</sup> This means the expenditures needs in the developing countries is so high; so much so that some have even said that "in the developing countries governments can most often usefully invest any amount they can reach"<sup>5</sup> Indeed, to attain the desired rate of development and alleviate mass poverty, the government must provide a large number of basic services particularly in the fields such as education, public health, and transportation. The full weight of increase in government revenue, however, becomes evident in connection with formation of capital a sine qua non to economic development.

Consequently, the main preoccupation of policy makers in the developing countries is how to mobilize enough resources into the hands of the government and allocate them optimally so as to maximize the rate of economic growth, which is hoped to bring about in the countries a level of per-capita income comparable to those reached by the developed countries, in a relatively short period.

However, the hard fact is that the record in this direction has not been impressive. It is said that in most developing countries, grand and noble aspirations to raise the populations's well being, increase the tempo of economic development, alleviate poverty and improve health and educational services have not been matched by equally grand accomplishments in mobilizing resources. Plans formulated and launched, to help developing countries move out from their present state of object poverty to a desired state of development are often disappointing in their implementation. There is simply not enough money to spend and invest. Virtually every study of budgeting in poor countries ends with the conclusion that revenues are insufficient. Based on their study of the budgetary process of 14 developing countries, Caiden and Wildavsky concluded that lack of revenue is the main reason most poor countries fail to reach their desired level of economic development.<sup>6</sup>

The reason for such anomalous situation may perhaps be sought in among other things, the lack of effectiveness of the instruments used to mobilize resources. This can be borne out by examining the instruments of resource mobilization.

In general developing countries resort to domestic as well as foreign sources of revenue. But as the result of the despair and disillusionment over the flow of foreign loans and aid, developing countries have increasingly

depended on domestic sources. Consequently, several instruments have been developed and used to mobilize resources from the domestic sources. However, the limitation of the non-tax sources of revenue which, in general are either quantitatively not very significant or could not be used very liberally without creating subsequent problems, has made taxation to be the best and most appropriate instrument by which domestic resources can be marshalled. Consequently, in most developing countries, the size of government development programme and the acceleration of economic development depends much more heavily on among other things, the economic and administrative capacity of the tax system to mobilize enough resources.

However, despite their heavy reliance on taxation as a source of revenue, and in contrast to the strong reasoning established for increased mobilization of resources through taxation, it is claimed that, these countries have failed to fully exploit their tax potential. It has been stated on several occasions that the effort in this direction leaves a lot to be desired. It is argued that "compared to development needs the developing countries do not make use of their tax potential."<sup>7</sup> N. Kaldor for example, contends that "it is probably not exaggerated to say that the typical underdeveloped country collects in direct taxation no more than one-fifth or possibly one-tenth of what is due."<sup>8</sup> U. Tanwai also states, "a major characteristic of the tax system in underdeveloped country is that it does not provide governments with much revenue."<sup>9</sup> Needless to say thus, evolving an efficient tax system is a major concern in developing countries. This is what a U.N. report states when it says "if increased capital formation, and hence a higher growth rate, is to be achieved, it is essential to step up the level of existing tax effort..."<sup>10</sup>

In Ethiopia like in any other developing country the need of finance is immense. In a least developed country such as Ethiopia, with all the glaring marks of underdevelopment, it does not require us to make research to unveil what must be done. One need only look around to find scores of problems that require prompt attention. The resource need is thus so high that even if we attempt to go about adding up what it will take to alleviate all the problems, the amount of resources needed would certainly exceed the country's financial capacity. This increased financial needs receive more prominence particularly in post-revolution Ethiopia, because in the absence and limitation of private investment brought about by the socio-political changes taking place in the country, government finance must play a predominant role in generating domestic resources for development. But, although the socio-political change has resulted in the nation to rely heavily for its social and economic betterment on the government more than ever, the revenues at hand to meet them have been woefully inadequate. The government budget, the principal tool of mobilizing the resources needed for public sector investment, has been unable to generate revenue for substantial contribution to finance government and public sector investment. Thus the government outlays have been limited by the inavailability of adequate revenue. In view of these, ministries and departments have been at times asked to cut their expenditure and reduce the scope of their activities. Moreover in financing even the modest expenditure programmes, the rate of growth of government spending has persistently surpassed its revenue. "To close the gaps the government had to make sustained resort to foreign loans and money creation<sup>12</sup> which, resulted in the growing indebtedness and inflationary pressure in the country.<sup>13</sup>

Any effort to rectify this anomalous economic condition and generate revenue for further development purposes, which is apparently very large (while everything should be done to contain unproductive government consumption) makes domestic resource mobilization a major concern of economic policy in the country. A World Bank study, indicates that the high rate of consumption expenditure reflects inadequacies in domestic resource mobilization effort in the country.<sup>14</sup> The task of stepping up mobilization of domestic resources for economic development becomes all the more urgent because the country has found it increasingly difficult to obtain sufficient external capital. In recent years in particular, even the small capital flowing into the country has been obtained at unfavourable terms and conditions.<sup>15</sup> Moreover, the long-term objective of the government as enshrined in the recently promulgated Ten-Year plan is to bring about improvement of the living standards of the people, a structural transformation of the economy towards self-sustaining development, creating employment opportunities, achieving a more equitable distribution of benefits of development and laying down the foundation of a socialist society. For the realization of these long-term objectives, the main element of the government's strategy is among others, to raise the levels of investment and saving. Towards this end the plan proposes saving and investment to increase from their present level of 3.6% and 11.3% of GDP respectively to 15% and 28.3% of GDP respectively by the end of the plan period. (1993/94). Out of the total investment more than half (55.5%) is planned to be financed by domestic savings. In this regard the central government alone will provide 13.4% of it.<sup>16</sup> Obviously, all these means a major challenge to planners and policy makers to mobilize the planned resources.

Like in most other developing countries, taxation has been and is the single most important instrument utilized for domestic resource mobilization in the country. The fact that 84% and 79% of the total domestic revenue in 1979/80 and 1980/81 fiscal years respectively have been raised through taxation underscores this fact. And there is every indication that it will remain so for the foreseeable future as the potential for increased revenue generation from other domestic sources is slim indeed. There seems to be hardly any scope of mobilizing resources through non-inflationary deficit financing, and the low surplus generating capacity of the public sector enterprises is well established.<sup>17</sup> Furthermore, the Ten-Year plan envisages that about 27.2 billion or 79.5% of the total government revenue will be raised through taxation, making the magnitude of the task for taxation and the effort required in this very direction more apparent. Thus, it is hardly an exaggeration to claim that the size of the government revenue and developmental outlays for that matter, critically depends much more heavily on the ability of the tax system to place the required revenue at the disposal of the government. Thus we need no much effort to indicate that, in Ethiopia too, evolving an efficient tax system is basic.

In a developing country like Ethiopia, it is said that "tax revenue must be high enough to cover current expenditure and above that to mobilize enough resources for finance development expenditure".<sup>18</sup> The question then is, what must be the set-up of a tax system intended to fulfil this task? It is generally held that to achieve this task, the tax system must be structured in such a way that, it enables the transfer of an increasing part of the national income to the public sector. This can be best achieved if the whole tax system has a high degree of income elasticity. In such a case, the ratio of tax revenue will exceed

the average ratio, and thus tax yield will expand more than the proportionate increase in the national income, which means an increasing share of the growing national income will be ploughed back into further development efforts.

True to say that, the Ethiopian tax system has undergone quite numerous changes since its first inception. In the wake of the 1974 revolution in particular for reaching reforms, which affected practically all the component taxes were made apparently to modernize and enhance the effectiveness of the system. Notwithstanding this reforms, the overall effectiveness of the tax system in exploiting the tax potential remains to be ascertained. After all the tax system at any given period of time cannot be seen isolated from historical factors, adequate knowledge of how the economy works, the capabilities of the tax administration, the tax payers compliance, etc. Thus even a potentially well elaborated system directed at implementing the tax objective may fail in actual implementation process. This obviously calls for the analysis and evaluation of the tax system. The strategic importance which taxation plays in the economic drive of the country warrants special and keen attention from policy makers and planners.

## 1.2 Objectives of the Study

The general objective of this paper is to ascertain the compatibility of the Ethiopian tax system with the objective of resource mobilization. The study, it is hoped, would provide policy makers with an insight into the taxing process, which is highly significant from the point of view of designing a programme of tax reform appropriate to the requirement of the socio-economic development of the country. Towards this end, the specific issues which the study attempts to address itself to are:

1. To analyse the tax revenue composition in the country. This would help to see the changes in the structure of tax revenue, which reflects the differing rates at which the various taxes have been growing. Such a study is hoped to provide an insight into the administrative and political capacity of the government to implement tax policy and its readiness to break with tradition in devising its tax structure in an attempt to strengthen the revenue base.
2. To assess the revenue performance in the country both in its static and dynamic context while the former would help to see the degree of utilization of the tax potential at a given time, the latter would show the effort made in the past to increase tax revenue.
3. To determine the built-in-responsiveness of the tax system as a whole and the component taxes. Such investigation by providing a measure of the 'inherent' or 'automatic' tax revenue growth in the country, provides information on the potentiality of the tax system to raise revenue in the future, which is of considerable significance in formulating a tax policy.
4. To identify the factors which determine the degree of responsiveness of some of the component taxes. Such a study by providing insight into the width of the tax base and the nature of rate structure, would permit identification of the sources of fast revenue growth or conversely the cause of lagging revenue growth. This would help to examine whether an underutilization of tax potential is due to faulty tax policy or administrative inefficiency or both, which is very useful in tax reform planning.
5. To attempt tax revenue projection on the basis of the current tax structure. Given that the successful implementation of a plan critically depends on the availability of adequate finance, the importance of an exercise of this kind is

self evident. Such a forecast when set against the targetted total tax revenue would indicate the extent to which the planned target can be met given the present tax structure, and the effort needed in the future to raise the planned revenue, which is very useful in providing a basis for considering options in the tax reform area

### 1.5 Method of Study

Throughout the study an attempt will be made to follow, quantitative techniques of analysis, but in cases of inavailability and limitation of relevant statistical data resort to some qualitative analysis is unavoidable. Analysis of the revenue composition of the tax system will be made in terms of the trends in the ratio of individual or group of taxes to total tax revenue. The analysis will focus mainly on the direct:indirect tax ratio, and the ratio of exogenously determined tax revenue to total tax revenue.

International comparison of the Ethiopian tax performance will be made based on International Tax Comparison (ITC) index. For this reference will be made to recently published materials, with a view of comparing Ethiopia's record with that of other developing countries.

In the estimation of the responsiveness of the tax revenue (buoyancy and elasticity) as well as in tax revenue projection the least square regression technique will be used. Both linear and logarithmic functions will be entertained see which one would provide the best fit.

Since built-in-elasticity of tax revenue refers to the built-in-responsiveness of the tax system at a given rate and base structure, an attempt will be made to eliminate as far as possible the increase in revenue arising due to discretionary

changes-rate and base changes- with the help of two techniques, the proportional adjustment technique, and the dummy variable technique as the case demands. All the above methods will be discussed in detail in the appropriate section.

#### 1.4 Data Source, Scope, and Limitations of the Study

The study will cover the period running from 1967/68 to 1982/83 fiscal years. This period is chosen partly because, data relevant to our study are readily available for this period, and partly because it is during this period that major reforms in the tax structure were made, and thus be considered as one during which the tax system was perhaps becoming more development oriented.

All data related to actual tax revenue are gathered from the Ministry of Finance. Information regarding changes in tax rates and tax bases, and the estimate yields due to such changes are obtained again from the Ministry of Finance. For GDP figures and its components reference is made to the Central Statistics Office (CSO) National Bank of Ethiopia publications. Other Statistical information such as value of imports exempted from sales taxes and import duties are compiled from the archives of the Excise and Customs Division of the Ministry of Finance. All projected figures of GDP and components of GDP as well as projected tax revenue figures are obtained from the projections made by the National committee for Central Planning Office.

In assembling data for regression analysis problems of lack of uniformity of data was encountered. While most of the tax base (except GDP and its components as presented in the national accounts) figures are given for calender years, all tax revenue figures are given for fiscal years. This problem was solved by overaging the data for every two calender years, which is hoped to convert the calender years accounts to fiscal years accounts.

The study will attempt to be comprehensive and thus will try to bring all taxes (except municipality taxes) under examination, in this case it is considered to be of wide coverage. This approach is motivated in view of the lack of such study in the country. On the other hand it is clear that the task of development does not lie solely in the generation of adequate financial resources, but also in the conversion of finance into appropriate factor inputs and the efficient allocation of such inputs. This means, as much as it requires to assess the revenue side of the problem, so does require the expenditure side of the problem. The study however, is limited to the supply side of the problem only.

Finally we hasten to indicate that the dearth of relevant statistical data has been a great limiting factor in the scope and depth of this study. Even basic data relating to the number of income tax payers, the amount of assessed income, the total or commodity-wise turn-over assessed for sales tax etc. are not at all available. Faced with these problems, in establishing the relationships between the individual taxes and their bases, we are forced to use proxy rather than legal bases. Even such attempt is not possible with some of the taxes because data on what are conceptually considered to be close proxy bases could not be obtained. Another problem is the problem of measurements. Although GDP and its components are usually presented, there is a great deal scepticism about the accuracy of the GDP figures in developing countries. This is so because such an exercise requires full and accurate knowledge in quantitative terms, of the economic activities in all sectors of the economy. This obviously is a difficult task in a developing country especially when considering the existence of a large non-monetised sector in the economy. This is another limitation of the study, as it's objective is to establish the relationship between tax revenue and GDP. Thus it is with these limitations in mind that the results of the study should be interpreted.

### Organization of the Paper

The study will be presented in six chapters. In order to provide a background to the detailed evaluation of the revenue performance that will follow, we start with a brief historical review of the salient features of the Ethiopian tax system in terms of rate and base and analysis of the revenue composition. These will be presented in chapter two. Chapter three and four will be devoted to the actual appraisal of the revenue effectiveness of the tax system. While chapter three will be concerned with the evaluation of the degree of exploitation of the tax potential, and comparison of the tax revenue growth with government expenditure growth, chapter four will be devoted to the estimation and analysis of the degree of responsiveness of the total as well as individual tax revenues. In chapter five the projection of the tax revenue will be attempted. The last chapter, i.e. chapter six will present a brief summary of the findings of the study and proposals for tax reforms.

### 1.5 Review of the Literature

The strategic importance which taxation has assumed in the development efforts of developing countries, has made it to receive a great deal of attention from economists. It has assumed a recurrent theme in the writing on economic development and development finance. It is generally recognized that in the developing countries, taxation besides providing financial resources to the government to initiate development process, is also used as a policy instrument for guiding development, by influencing the trends and intensities of certain economic measures to achieve certain objectives. These include, the goal of resource allocation, income distribution, economic stabilization capital formation etc.<sup>20</sup> The extent to which these objectives of taxation are carried

out in a specific developing country, however, is a function of the prevailing political views and the role of the state as well as on its level of economic development and institutional factors. It is against this background that the maxim which states that "each country should pursue its own tax policy" is generally supported by economists.<sup>21</sup> Nevertheless, it is asserted that there are a number of common features in the taxation policies of these countries arising from their political and economic conditions. The most important of which is that in the developing countries the volume of taxation has to be large enough in order to be able to finance their economic development.<sup>22</sup> It is generally held that any country which claims development to be its objective must exploit fully its tax potential. Thus, developing countries are advised to be prepared to adopt their tax system to the unfolding socio-economic conditions in order to take advantage of their ever changing taxable capacity based on constant evaluation of their tax performances.<sup>23</sup> Consequently, the question, how to assess the tax performance has been the subject of several studies.

Ideally, it is said that any such exercise requires a complete evaluation of the tax performance in the context of what F.J. Toye calls full dress macro-economic plan, or a post-mortem on a past plan.<sup>24</sup> This method, however, demands knowledge of the impact, incidence, and economic effects of taxes imposed, which proves to be a complex process, as it eludes measurement and thus its treatment becomes enormously difficult. This is particularly true in a developing country where there is severe paucity of data.<sup>25</sup> Consequently, several alternative methods have been developed and used in the study of the tax performance in the developing countries.

A common approach towards assessing the tax performance has been, the investigation of the "tax effort" expressed in terms of the relationship between the actual amount of tax revenue collected and some measure of "taxable capacity." Generally tax effort refers to the degree of intensity of the government's willingness to tap available resources, and taxable capacity refers to the tax potential available, that may or may not be utilized.<sup>26</sup> A common indicator or measure of tax effort was taken to be the tax ratio, the percentage of tax revenue to total income. But since taxable capacity cannot be measured in absolute sense or what is the same thing, since one cannot make any meaningful enquiry what a country's taxable capacity or the maximum amount of tax that it could possibly levy by taking a country by itself, led economists to consider the question in relative terms. Thus it was considered possible to judge the tax effort in relation to those of other countries, based on the tax ratio. The first study of this nature was made by J. G. Williamson.<sup>27</sup> He used per-capita income as an indicator of the stage of development and fitted an exponential function to data for sample of 33 developed and developing countries. His result indicated that there was a significant positive relationship between the revenue ratio and per-capita income, and thus wealth as represented by per-capita income was considered a major determinant of the ability to mobilize resources. A major limitation of this approach is that, it assumes that total income is the appropriate indicator of relative taxable capacity. This is considered to be an oversimplification of the problem. It is contended that "while interesting, the mechanical relationship between tax revenue and GDP is not a satisfactory indicator of the adequacy of these (tax) revenue in relation to the government's needs or to the level of taxation that the government could raise, given the particular structure and characteristics of the economy at that particular time, which means that wealth is not the only determining factor and

does not work consistently because there are other variables that may have a stronger effect, under certain circumstances.<sup>28</sup> This is the same as saying that the taxable capacity of a country is a function of both wealth and the constraint on and opportunities for tapping it. Musgrave, points to the fact that revenue is determined not only by what could be extracted from the economy, but also by the ability of the government to implement its fiscal policies.<sup>29</sup> Thus showing the distinction between the objective determinants of tax revenue which refers to the structure of the economy and the subjective determinant which refers to the effort of the government to mobilize resources. Chelliah, also by separating "volitional" from objective determinants, tries to clarify the distinction between capacity and effort. He states, "that the ability of the government to collect taxes is determined partly by objective, structural factors and partly by such "volitional" factors as efficiency in administration and the nature of the political leadership. The former taken together with the ability of the population to pay taxes may be said to constitute the total "capacity" factors affecting the tax ratio.<sup>30</sup> Thus the question which might be asked is that is there any way in which the tax ratios can be compared among countries taking into account their potentials as reflected in their economic characteristics, so that it may be possible to assess the relative effort of a country to tap its potential resources?

A method which has been developed tries to handle the above problem by adjusting the tax ratios for the variations in tax capacity factors. This method estimates the taxable capacity by regressing the tax ratios on variable that are considered proxies for a country's "tax handles". "Tax handles" are defined as

convenient bases to which tax rates can be applied.<sup>31</sup> Thus symbolically, the taxable capacity equation may be presented as:

$$\frac{T}{GDP} = f(A) \quad (1a)$$

where:

T = tax revenue

A = a vector of tax handles.

Such empirical analysis provided an estimating equation which can be used to calculate a 'predicted' tax ratio for each country. The estimated tax ratio can thus be taken to represent relative taxable capacity, or the tax ratio which a state would have had, if it has used its capacity to an average extent. Thus a comparison of the actual ratio for a country with its estimated ratio will show whether a state is making the average degree of effort, or more or less. The actual tax ratio divided by the estimated (predicted) one would be treated as an index of relative tax effort which is used for the purpose of international tax comparison. Thus if a country's index of tax effort is below one (average) the conclusion drawn is that its taxable capacity is not being realized "which is tantamount to saying the country has made a low tax effort"<sup>32</sup> Given (according to the writers) that all taxable factors (handles) are represented in the model, what transpires from the studies is that the cause for low tax ratio is the failure of the government to tap the tax potential. This would have the policy implication that the country should examine its tax system to identify the cause there and investigate the scope for raising more revenue on the basis of detailed studies.

In an attempt to determine the explanatory variable for the tax ratio a number of studies were made, which disaggregated GNP into various components, assuming that different income types had differing taxability. Non-GNP variables,

such as openness of the economy (the ratio of foreign trade sector to GNP) or regional location were also included as explanatory variables.

According to the studies made by Hinriches,<sup>33</sup> Lotz and Morss,<sup>34</sup> and Musgrave<sup>35</sup> tax collection may be positively related to the following (1) the share of trade in production, this is represented by the ratio of exports plus imports to GDP ( $X+M/Y$ ) or by the ratio of exports to GDP ( $X_Y$ ) (2) the sectoral composition of the economy. Proxies for this variable include, the share of mining in GDP ( $N_Y$ ) and the share of agriculture in GDP ( $A_Y$ ). (3) the percentage of economic units exceeding a certain size limit and number of workers employed in such unit. (4) the importance of the large retail establishment. As factor 3 and 4 are considered to be positively correlated with the level of economic development per-capita GDP( $Y$ ) is selected as a proxy for the two of them. (5) the literacy level, represented by literacy rate ( $L$ ). Thus based on the above analysis the following functional relationship can be derived

$$T/GDP = f(X+M/Y, X_Y, N_Y, A_Y, Y_Y, L) \dots \quad (11)$$

where  $T$  = tax revenue.

Based on the above relationships several equations which include various combinations of the explanatory variables were estimated by several writers. To take an example, out of the numerous exercises made, the one that has got the best statistical soundness is that of Bahl.<sup>36</sup> He conducted a study of 49 developing countries in which average for the three year period 1966-1968 were used. According to him, taxable capacity is a function of three factors - stage of economic development, sectoral composition of income produced, and the size of foreign-trade sector. He took the agricultural share of income as a proxy for

the stage of economic development and the other two factors determined by the mining share of income and the export share of income. But due to the high degree of multicollinearity between the mining share and the export share, the latter was found to be statistically non-significant and was dropped from the estimating equation, which thus ended up showing taxable capacity as dependent on the agricultural share of income and the mining share of income. The regression equation derived was

$$T/Y = 14.95 - 0.0742AY + 0.29NY \quad R^2 = 0.411.... \quad (1c)$$

where  $A_y$  = percentage of GDP originating in the agricultural sector

$N_y$  = percent of GDP originating in the mining sector

Similar other studies by others were also made using different explanatory variables. Chelliah<sup>37</sup> for example, using the data of 49 developing countries, found out that, the tax ratio was significantly related to the degree of 'openness' (represented by the non-mineral export ratio) and the economic structure (the mining share serving as a proxy). While the level of development (represented by the per capita non export income) was not significant.

Based on such taxable capacity equations and others, tax effort indices were calculated and countries were ranked in accordance to their tax performances. Such rankings have been important guidelines for action by policy makers<sup>38</sup> and terms of references for writers in the field.<sup>39</sup>

This method of evaluating tax performance has however, come under mounting criticisms and its shortcomings have been pointed out. Firstly the prior justifications for the use of the selected independent variables which are believed to affect only taxable capacity and explain variations in it fully are slim indeed. In practice there may be factors that simultaneously affect taxable capacity and tax effort. For example, the per-capita income variable does affect the capacity

to pay taxes, but it may also influence tax effort through its impact on the demand of public services.<sup>40</sup> Secondly, it is argued that the concept taxable capacity is an elusive one which defies measurement. It is argued that, while the collection of revenue by government depends upon the country's taxable capacity is self evident, the precise statistical relationship between revenue and taxable capacity however, is not self-evident, a relation that normally varies from country to country and within a country from time to time.<sup>41</sup> This greatly complicates efforts to find proxy variables for taxable capacity and make meaningful international comparisons difficult. Thirdly, it is contended that in this method of study, the level of taxation is not unambiguously related to any concept of effort. Normally, tastes relevant to public-private mix would differ across countries which would have significant bearing on the tax ratio. Thus, two countries seeking to equate the marginal social benefits of private and public goods may end up having quite different tax ratios and yet one may be considered as making unsatisfactory tax effort as far as the effort index can show.<sup>42</sup>

Despite the controversial nature of the method and its obvious limitations, proponents of the method argue that this method successfully summarizes large amount of information which makes it to retain utilitarian value for tax performance evaluation purposes.<sup>43</sup> It also effectively overcomes the limitation of the straight forward comparisons based on the simple ratio of T/GNP, by taking into account differences in taxable capacity, and thus measures more accurately the sacrifice undertaken to raise tax revenue.<sup>44</sup> Furthermore, it is said that by eliminating the misleading term "tax effort" and replacing it with the neutral term International Tax Comparison (ITC) index, the connotation that countries with low indices could try harder to raise their tax revenue and that they are making insufficient effort to raise them can be eliminated.<sup>45</sup> However, it is

also cautioned that the margin of error in the measurement of tax effort based on broad definition of tax variables cannot be very small, especially when viewed in the context of the quality of data available. Different assumptions as regards the choice of variables would also result in different tax effort rankings and thus in interpreting effort very minor differences should be disregarded as not accounting for a significant differences in tax effort.<sup>46</sup> Thus by putting into consideration the above qualifications and avoiding the use of the indices in a mechanistic manner, the method is considered very useful in judging tax performance.

But while important and useful information can be obtained from the use of the above method, tax performance evaluation analysis based on this method only can hardly be considered sufficiently detailed and complete. As indicated while tax performance is a process i.e. it takes time into consideration, the ITC index method is based on cross sectional analysis, an approach which is open to criticism, for it concentrates only on current relationships that exist among a highly diversified universe and neglect the historical innovational changes that occur through time that enrich the analysis.<sup>47</sup> Moreover it can be seen that the approach deals only with the overall tax ratio - the ratio of the sum of all taxes over GDP., i.e. it doesnot deal with the relationship between individual taxes and the related economic bases. This of course is a major limitation, especially when the objective is to make recommendations on the steps that have to be taken in particular taxes to exploit the tax potential.<sup>48</sup>

Faced with these problems alternative methods which can help fill the gap were sought. There seems to be a general agreement that "any examination of tax structure must grapple directly with data on the operations of each tax system"<sup>49</sup>

Moreover as stated by Wang "a serious effort at re-examination of the tax system must be considered within the framework of the entire socio-economic system. It will have to be largely on a country-by-country basis, since conditions in each country are different."<sup>50</sup>

An attempt in this direction was to evaluate tax performance by equating the taxable capacity of a country to the economic surplus concept. This approach is based on the contention that what the people of a given country can afford to pay in taxes depends not only on the income but also on the extent to which the incomes of various groups are above a minimum consumption level. Chillian for example once stated that "the starting point for any realistic theory of public finance for underdeveloped countries must be the concept of the economic surplus generated in the economy."<sup>51</sup> But the definition of essential consumption has proved to be difficult. Yet some approximate measures have been used. The World Bank attempts in this direction can be taken as an example. "Take India... its taxable surplus may be defined as all incomes above the poverty line (defined there as the income of the fortieth percentile in the distribution of income). On this basis India's taxable surplus in 1975 was 41% of the aggregate income, the ratio of taxes to taxable surplus therefore, was 34% - comparable with the tax-to-GNP ratio of industrialized nations".<sup>52</sup> The expediency of such an approach, however, has been questioned, for, as Prest has put it, "the concept of a subsistence level is highly elusive and is dependent not just on known physiological needs, but also on people's willingness to have their consumption standard squeezed. This inturn depends on the acceptability of the cause for which their standards being squeezed."<sup>53</sup> Any effort to use the above method is considered to be crude and not free from the flaws of the method discussed above.

An alternative approach in this direction which has received a wide attention and has been widely used for tax performance evaluation is the tax revenue-income responsiveness methodology. The tax revenue income responsiveness is discussed under two headings. The buoyancy of the tax revenue which measures the historic aggregate responsiveness of the revenue structure to GDP change (tax base) changes, and built-in-elasticity of tax revenue, which relates to the automatic responsiveness of revenue yield to movements in economic activity alone. Both these approaches take time into consideration and have proved good measures of examining the behaviour of the tax system over time.<sup>54</sup> The former, by showing the change in the overall ratio of tax to income (base) changes, permits the evaluation of the national effort-political and administrative - to increase the effective tax rates or the coverage of the tax system.<sup>55</sup> The later, by measuring the inherent or automatic growth of tax revenue to changes in income (tax base) provides an insight into the progressivity of the rate structured.

Quite a considerable amount of tax performance studies, comparative as well as country studies have been made through the use of these methods. A pioneering work in this direction is perhaps that of G.S.Sahota.<sup>56</sup> He used both approaches in his study of the tax performance in India, for the period 1948-1958. The main finding of the study was that the tax system was inelastic, and the main cause of the inelasticity was attributed to the inelasticity of the income taxes. This was a surprising result in view of the fact that even at that time, India had a highly progressive income tax structures. Upon investigation, the causes for the inelasticity of the income tax were found out to be defective slab structure and rate schedule, wide spread tax evasion and income redistribution in favour of the "non-income tax payers group, or in favour of

the low income brackets within the tax paying group."<sup>57</sup> Another important study of this kind was also made by Charles Mansfield.<sup>58</sup> He applied the method of analysis to Praguay and after rigorous analysis of the elasticity of the tax revenue he discovered that the cause of the modest income elasticity of the revenue system was not the commonly taken reason of stagnant tax bases but, it was due to evasion, wide exemptions, and faulty tax rates.<sup>59</sup> Similarly other important studies using similar methods were made by other writers.<sup>60</sup>

But it can be seen that, the above method, apart from indicating the tax effort made and the tax behaviour over time, does not provide information about the existence or non existence of tax potential. This limitation and the virtual absence of standards or norms against which to compare the elasticity coefficients, has led to the development of using a composite tax effort indices in an overall tax effort analysis. This consists of using static and dynamic tax effort indices. The static index of tax effort represents the degree of use of taxable capacity, and is given by the ITC indice<sup>s</sup>, while the dynamic index of tax effort represents the effort made over a given period to increase tax revenue, and is given by the income elasticity (buoyancy). This approach also has been widely used. R.J Chelliah<sup>61</sup> for example used both methods in a comparative study of tax performance of sixteen developing countries, and on the basis of both studies he concluded that "governments in developing countries can raise the ratio of taxes to total income when they are determined to do so."<sup>62</sup> More or less similar conclusion was reached by W. Parmena,<sup>63</sup> who used both methods in his study of tax effort of sixteen African countries. Similarly, a World Bank<sup>64</sup> study on the tax performance of Egypt, used both methods and discovered that both indices indicate a high tax effort. Based on this information the study concluded that Egypt's financial crisis did nto arise as a result of low tax effort.

In Ethiopia to the knowledge of the writer no study of this nature has been made during the period of our study. But some studies have been made using one or the other method of analysis. Moreover, most of these studies have been directed at evaluating individual (component) taxes rather than the whole tax system.

One of these studies is that of Wasenie Yirko.<sup>65</sup> As part of his study of analysing the Financial revenue structure in post-revolution Ethiopia, he attempted to examine the contribution of taxation towards establishing the material basis of socialism. He estimated the buoyancy and built-in elasticity of the total tax revenue for the period of 1975-1981, and examined the difference between the two measures in an attempt to assess the revenue impact of the tax reforms made during the period. His conclusion was that the reforms have significantly increased the tax revenue in the country. Although the approach used for comparisons can be considered important, the estimation results however, can hardly be considered correct. This is so, because in estimating the built-in-elasticity the writer used the proportional adjustment method to remove the revenue effects of the tax reforms, while it is known that the method is unable to effectively remove the revenue impact to tax rate changes, when the changes are more progressive than before. Several of the tax reforms made in Ethiopia during the period were more progressive than the rates they modified.

Similarly Kibre Moges<sup>66</sup> examined the role of taxation, in the primitive socialist accumulation process which is under way in Ethiopia. Although none of the methods discussed above were used in the study, by examining the tax revenue data, the writer showed that taxation is the only method as compared to the other

methods - price policy, credit policy etc - used to mobilize resources from the private sector to the public sector.

Another study is that of Melaku Kifle.<sup>67</sup> He used the income-elasticity method as one of the methods for examining the productivity of the agricultural income tax. Eshetu Chole<sup>68</sup> also used the buoyancy approach in comparing the productivity of the pre-and post-revolution income taxes.

A commendable work was made by Teshome Mulat<sup>69</sup> in this regard. He used a variant of the built-in-elasticity method in examining the revenue effectiveness of the coffee export taxes. He did this by relating the tax revenues to the value and volume of coffee exports. Furthermore, by displaying considerable statistical ingenuity, the writer derived the relevant revenue equations from the tax laws themselves. The finding of this study was that the revenue was volume as well as price inelastic. The writer thus suggested that "the present coffee tax formula requires constant revisions of tax laws whenever significant changes in price and/or volume of coffee export occur"<sup>70</sup>

Notes

1. Samuel Sey, "Source of Finance for Development," in the Financing of Long-term Development, (London: 1979), p. 61.
2. Gunnar Myradal, Economic Theory and Underdeveloped Regions, (London: Duckworth 1957), p. 82.
3. See W.A. Lewis, The Theory of Economic Growth, (London: Irwin Inc. 1965), p. 226.
4. A. R. Prest, Public Finance in Underdeveloped Countries, III Edition, (London: Weidenfeld and Nelson, 1962), p. 14.
5. H.T. Oshima, "Share of Government in GNP for various countries" American Economic Journal, Vol. 47, No. 3 (June 1957), p. 386.
6. N. Caiden and A. Wildavsky, Planning and Budgeting in Poor Countries, (New York: Wiley, 1974), p. 47.
7. J.R. Lotz and E.R. Morss "Measuring 'Tax Effort' in Developing Countries," International Monetary Fund (IMF) Staff Papers, Vol. 14, No. 3 (November 1967).
8. N. Kaldor, "Will Underdeveloped Countries Learn to Tax" in Richard M. Bird and Oliver Oldman. (ed.) Reading on Taxation in Developing Countries III edition, (London 1975), p. 146.
9. U. Tan Wai, Taxation Problems and Policies of Underdeveloped Countries, "International Monetary Fund Staff Papers", (November 1966), p. 429.
10. United Nations Secretariat, "Tax Reform Planning", in Richard M. Bird and Oliver Oldman, op.cit., p. 58.
11. Although the government revenue went up from about 10% to about 20% of GDP during the fiscal period 1970/71 to 1980/81 it did not keep pace with the growth of total public expenditure which grew from 11% to about 25% GDP during the same period.
12. For example the period 1974/75 to 1979/80, on the average about 36% a and 43% of the expenditure was financed by foreign borrowing and Bank credit respectively.
13. According to a research made during the period 1974-1980 the general and the food retail prices have grown at a rate of 17.1% and 20.4% per year respectively for Addis Ababa; while in other towns the growth rate was 20%. The cause of such price rise is attributed partly to the high level of money expansion. See Shiferaw Gurmu, "An Emprical Analysis of Recent Price Trends in Ethiopia", Ethiopian Journal of Development Research, Vol. 4, No. 2, (1980), p. 36.
14. World Bank, Ethiopia: Recent Economic Developments and Future Prospects, (May, 1984), p. 8.

15. It is reported that Ethiopia receives a low level of net inflow of medium and long term loans by international standard. Moreover, the terms of loans has been growing unfavourable. For example the share of short term loans in the total foreign loans inflow has increased from ( 6% in 1972/73 fiscal year to 35.4% in 1979/80. It is to be noted that the terms of amortization of this loans are very stringent in which in most cases the interest charges are 5%, and above all the payment period are mostly below seven years. See World Bank, op.cit., p. 8. See also የብሔራዊ አብዮታዊ የዎርት ዘመን ፓርቲ ማዕከላዊ ንግግር ማህበራዊ የአሥር ዓመት ልማት መሪ ዕቅድ/000 ረቂቅ/ ጥራዝ አገልግሎት አዲስ አበባ፣ መጋቢት 1975 ዓ.ም. ገጽ 30፡፡

16. See የኅብረተሰብ አዎንታዊ ስራ ምክርቤት ጊዜያዊ ወታደራዊ መንግሥት የብሔራዊ አብዮታዊ የዎርት ዘመን ፓርቲ ማዕከላዊ ንግግር ማህበራዊ መሪዎች የአሥር ዓመት መሪ ዕቅድ ረቂቅ ጥራዝ አገልግሎት አዲስ አበባ፣ የካቲት 1976.

17. It has been stated that the industrial (Public) Sector not only holds a low place in the Nation's economy but it has also reached a stage where it more or less is operating at a maximum capacity. Moreover, as the result of the operational and management weakness the majority of these enterprises do not generate profit. Thus additional production generated in this manner cannot meet the requirement to accelerate the economic development of the country. See Documentation and Resolution of Second COPWE Congress, (Addis Ababa, 1980), p. 54.

18. United Nations Secretariat, "Tax Reform Planning", in Richard M. Bird and Oliver Oldman, op.cit., p. 60.

19. A.R. Prest, op.cit. p. 25.

20. See W. W. Heller, "Fiscal Policies for Underdeveloped Countries," in Richard M. Bird and Oliver Oldman, (ed.) Reading on Taxation in Developing Countries, third edition, (London: the John Hopkins University Press 1975), p. 1.

21. R. M. Bird, "Assessing Tax Performance in Developing Countries: A Critical Review of the Literature," in J.F. Toye (ed.), Taxation and Economic Development, (London: Frank Cass 1978), p. 5; P.C. Afxentiou, "Fiscal Policy and Economic Development," The Developing Economies, Vol. XIV, No. 2, (June 1976), p. 1970. W. Maing, "Government Capacity of Levying Taxes in Peripheral Countries: the Example of Direct Taxation", Economics, Vol. 27 (1983), p. 62.

22. N. Kaldor, "Will Underdeveloped Countries Learn to Tax?" In R.M. Bird and O. Oldman, op.cit. p. 29, see also Winfried, Maing op.cit., p. 62; P.C. Afxentiou, op.cit., p. 170.

23. U.N. Secretariat, "Tax Reform Planning," in R.M. Bird and O. Oldman, op.cit., p. 58.

24. F.J. Toye, op.cit., p. 5.

25. Ibid., see also Afxentiou, op.cit., p. 173-174.

26. Alex Radian, Resource Mobilization in Poor Countries, (London: Transaction Book 1980), p. 27.

27. J. G. Williamson, "Public Expenditure and Revenue: An International Comparison", The Manchester School of Economics and Social Studies, xxix (1961), p. 43-45.
28. International Monetary Fund (IMF), Taxation in Sub-Saharan Africa, Occasional Paper, No. 8 (October, 1981), p. 46.
29. It is argued that wealth seems to exert a decisive influence only after per-capita income has risen far above the level of bare subsistence. It has been found out that countries in the per-capita income range of U.S.\$200-300 have on the average higher tax ratios than those in the higher ranges disproving the thesis that the tax ratio would rise systematically with per-capita income. See R.Chelliah, "Trends in Taxation in Developing Countries," IMF Staff Papers, (July, 1971), p. 280.
29. R.A. Musgrave, Fiscal Systems, (London: Yale University Press, 1969), p. 101.
30. R. Chelliah, op.cit., p. 293
31. R.A. Musgrave, Theory of Public Finance, (New York: McGraw Hill Inc., 1959), p. 131.
32. R.W. Bahl, "A Representative Tax System Approach of Measuring Tax Effort in Developing Countries" IMF Staff Papers, Vol. 19, No. 1, (March 1972), p. 572.
33. H.H. Hinrichs, "Determinants of Government Revenue Shares among Less-Developed Countries", Economic Journal, Vol. 75, No. 299, (November, 1965).
34. J.R. Lotz and E.R. Morss, "A Theory of Tax Level Determinants for Developing Countries", Economic Development and Cultural Changes, Vol. 8, No. 3, (April, 1970).
35. R.A. Musgrave, Fiscal Systems, op.cit., Chapters 5 and 6.
36. Roy Bahl, op.cit.
37. Raja Chelliah, op.cit.
38. International Organizations or other aid donors view the taxable capacity as the potential for mobilizing domestic revenue and insist on certain level of overall tax effort to match any grants. For instance the U.S. Government required an indication of tax effort (the ratio of tax revenue to GNP taken as indicator) to justify foreign aid to 18 Latin American Countries between 1961 and 1967. See E. Monte, Fedor, and H. Davis. "Tax Performance within the Framework of the Alliance for Progress: A Comparative Evaluation" National Tax Journal, Vol. xxiii (September, 1970).
39. See for example Eshetu Chole, Taxation in Ethiopia: An Analysis of Structure, Policy and Performance, Unpublished M.A. Thesis, (University of Illinois 1968), p. 113-118, also Tony Killick, Development Economics in Action, (London: Hienemann Educational Books Ltd. 1978), p. 147-149.

40. See Richard M. Bird, op.cit., p. 43; A.R. Prest, "The Taxable Capacity of a Country," in J.F. Toye, op.cit., p. 22.
41. P.C. Afxantiou, "Government Revenue and Expenditure in the Developing Countries", The Developing Economies, Vol. xvii, No. 1, (March, 1980), p. 126.
42. See Brothwel, "Government Finance" in W.T., Newlyn (ed.), The Financing of Economic Development, (London: Clarendon Press, 1977), p. 76.
43. See R. Musgrave, Fiscal Systems, op.cit., p. 91-206.
44. See Alan A. Tait, et.al., "International Comparisons of Taxation for Selected Developing Countries, 1972-76, IMF Staff Papers, Vol. 26, (March 1979), p. 126.
45. Ibid.
46. Ibid.
47. R.C. Afxantiou, "Government Revenue and Expenditure, op.cit., p. 134. See also William Parmena, "A Method of Comparing Tax Effort in African Countries", Eastern Africa Economic Review, Vol. 8, No. 1, (December 1976).
48. R. C. Afxantiou, "Government Revenue and Expenditure," op.cit., p. 135. See also R.J. Chelliah, "Trends in Taxation in Developing Countries," op.cit.,
49. Richard, M. Bird, op.cit., p. 47; R.C. Afxantiou, "Government Revenue and Expenditure," op.cit., p. 136.
50. N.J. Wang (ed.), Taxation and Development, (U.S.A.: Praiger Publishers 1973), p. xiii.
51. R.J. Chelliah, Fiscal Policy in Underdeveloped Countries: with special Reference to India, (London: George Allen and Unwin Ltd., 1969), p. 65.
52. World Bank, World Development, (1980), p. 73.
53. A.R. Prest, op.cit., p. 23.
54. See for similar argument R.M. Bird, op.cit. p. 50.
55. Ibid., p. 41.
56. S.G. Sahota, Tax Structure and Economic Development, (Bombay: Asia Publishing House 1961).
57. Ibid., pp. 33-38.
58. Charles Mansfield, "Elasticity and Buoyancy of a Tax System: A Method Applied to Praguay", IMF Staff Papers, Vol. 19, (July 1972).
59. Ibid., p. 441.

60. V.P. Diejomah, Tax Mobilization and Government Development Financing in Kenya, (Nairobi: Institute for Development Studies, University College. 1969); Khan M.Zubair, "The Responsiveness of Tax Yield to Increases in National Income", Pakistan Development Review, Vol. xii, No. 4, (Winter 1973); William Byne "The Elasticity of the Tax System of Zambia 1960-1977", World Development, Vol. II, No. 2, (February 1983), etc.
61. R.J. Chelliah, "Trends in Taxation in Developing Countries" op.cit.
62. Ibid., p. 312
63. William Parmena, op.cit.
64. World Bank, "Public Finance in Egypt" Staff Working Papers No. 639 (1984).
65. Wogenie Yirko, The Post-1974 Structure of Ethiopian Government Domestic Revenue, unpublished B.A. Thesis, (Addis Ababa University 1983).
66. Kibre Mogos, Primitive Accumulation in Ethiopian Context, unpublished B.A. Thesis, (Addis Ababa University 1983).
67. Melaku Kifle, Agricultural Taxation and Its Contribution to Capital Formation in Ethiopia, unpublished M.Sc. Thesis, (Addis Ababa University 1982).
68. Eshetu Chole, Income Taxation in Pre and Post-Revolution Ethiopia: a Comparative Review, mimeographed, (February 1983).
69. Teshome Mulat "The Revenue Effectiveness of the Ethiopian Coffee Export Taxation", Public Finance, Vol. xxxiv, No. 3, (1979).
70. Ibid., p. 382.

## 2. REVIEW OF THE DEVELOPMENT OF THE TAX SYSTEM AND ANALYSIS OF THE TAX REVENUE COMPOSITION

The main objective of this chapter is to examine the tax revenue composition in Ethiopia. This is an essential first step study in any tax performance evaluation attempts, as it would help to assess the direction in which the government has been attempting to increase its tax revenue. But, before embarking on this issue a brief summary of the Ethiopian tax system is given below.

### 2.1 Review of the Development of the Tax System

Although the rudiments of fiscal policies are reported to have existed starting 1908, with the establishment of the Ministry of Finance, the benchmark of a relatively comprehensive system of revenue collection and expenditure in the country is traced back to 1941.<sup>1</sup> The promulgation of the land tax in 1941 marked the departure from the hitherto used feudal mode of taxation of land chiefly tributes and the institution of a uniform pattern of land tax payable in cash. Other laws regulating the payment of customs and excise duties as well as personal and business income taxes were enacted in 1943 and 1944. This period was followed by a proliferation of new tax laws, amendments and revision of old laws (albeit "on an ad hoc basis, in response to specific needs and pressures."<sup>2</sup>) in an attempt to improve the performance of the tax system. With the advent of the 1974 revolution, with its profound political, economic and social changes, far reaching reforms, which affected practically all the component taxes were made. Except for the reforms of direct tax as on agriculture in 1976, most of the changes in the tax system took place in the years 1976/77 and 1978/79. In this part of the paper we attempt to follow up and describe briefly the pro-

cess of the main changes and developments that have taken place within the tax system, as it evolved during the period of our study. The aim is to give a general picture of the tax system without tending to make a detailed description and analysis of the tax rates and bases.

### 2.1.1 Direct Taxes

At present, the main direct taxes in Ethiopia include, the Income Taxes and Land use Tax.

#### Income Taxes

Income taxation in Ethiopia was first introduced in 1942,<sup>3</sup> under the name Personal and Business Tax. Since then it has undergone several modifications which altogether transformed the system from simple tributes to a highly developed modern income tax system. The latest of these changes is that of 1978<sup>4</sup>, which is currently in force.

Since the Income Tax Proclamation of 1963, the various incomes are taxed separately. This is to say, the taxes are schedular ones, with taxes calculated on the amount of income which fall under the purview of each category irrespective of the tax payer's income from the other sources. From 1967<sup>5</sup> to 1976, the income tax was divided into four schedules. These are Schedule A, which applied to the taxation of incomes from employment, Schedule B, which applied to incomes from rent of land and buildings as well as from crop-sharing arrangements between land owners and tenants, Schedule C, which applied to the taxation of incomes from any trade, business, professional or vocational occupations, and Schedule D, which applied to income from agricultural activities. These are described briefly below.

Tax on Employment Incomes (Schedule A). At present tax on employment income is levied on incomes including salaries, wages, pension and other emoluments. Under the 1967 tax law, employment income was chargeable at a mildly progressive rate, ranging from about 2% to 25%. The rate structure is reproduced in table 2.1. As structure clearly shows, monthly incomes of birr 25 per month.

Table 2.1

## Tax Rates on Income from Employment (1967)

Taxable Income Per Month			Tax Per Month
Eth. Birr			Eth. Birr or %
up to	-	25	Nil
25	-	40	0.75
40	-	50	1.50
50	-	60	2.00
60	-	80	2.75
80	-	100	3.75
100	-	125	4.75
125	-	150	6.00
150	-	175	7.50
175	-	200	9.00
200	-	250	13.50
250	-	300	18.00
300	-	350	22.50
350	-	400	27.00
400	-	450	31.00
450	-	500	36.00
500	-	550	40.00
550	-	600	46.00
600	-	650	52.00
650	-	700	60.00

Table 2.1 (Contd.)

Taxable...		Tax per month
700	- 750	67.00
750	- 800	10%
800	- 850	10.5%
850	- 900	11%
900	- 950	11.5%
950	- 1000	12%
1000	- 1075	13%
1075	- 1150	14%
1150	- 1250	15%
1250	- 1500	16%
1500	- 1750	17%
1750	- 2000	18%
22500	- 2500	20%
2500	- 3000	21%
3000	- 3500	22%
3500	- 4250	23%
4250	- 5000	24%
Over	5000	25%

Source: Negarit Gazeta, 27th year No. 4 (November, 1967) pp. 20-21

and below were exempted and taxable income brackets started at birr 30 per month and culminated at Birr 5000 per month. These incomes above birr 25 but not exceeding birr 750 per month were divided into brackets each charged at a specific rate, while incomes above birr 750 were subject to ad-valorem rates. Notwithstanding the progressive structure of the tax, it is possible to detect proportionality and regressivity built-in the tax system.<sup>6</sup> Moreover, the progressivity of the structure was compared to be one of the lowest by any standard.<sup>7</sup> The 1978 income tax proclamation however, ushered in a major change in this category of tax. The exemption limit was raised from birr 25 in the old law to birr 50 per month, and the rates were made marginal thus eliminating the

cause of regressivity present in the old law. Moreover, the rates were made to be higher and steeply progressive ranging from 10% on the first slab which is birr 250 to a maximum of 85% on incomes above birr 3750, making "the latter rate among the highest marginal rates in the world".<sup>8</sup> The rate structure is presented in table 2.2. A characteristic feature of the income tax reforms made in the late seventies is that they are designed to bring about accelerated formation of cooperative societies. Towards this end, members of urban co-operatives societies, whose income do not exceed birr 500 per month are exempted from this tax. But those whose incomes are higher than birr 500 are charged at the following rates:

above 500	below 700 birr	=	24 birr
"	700 " 900 "	=	40 "
"	900 " 1200 "	=	70 "

above 1200 are charged according to schedule C (which is described below)

Unlike in most developing countries, the tax on employment income in Ethiopia does not contain any provision of exemption, on the basis of marital status, nor does it provide any allowance for dependent children. The tax is levied on gross income, and the principle of income aggregation (within each schedule only) is applied. The tax is collected on "pay-as-you earn" basis monthly, and thus the administration of this tax does not pose any particular problem. Moreover the new law abolished the hitherto effective education tax (2%) applied to the employment income.

Table 2.2

## Tax Rates on Income from Employment

No.	Taxable Income Per Month in Birr				Tax Rate on Every Additional Income	
1	over 50	up to 250	on the next 200		10%	
2	"	250	"	" 500	"	13%
3	"	500	"	" 750	"	19%
4	"	750	"	" 1000	"	24%
5	"	1000	"	" 1250	"	29%
6	"	1250	"	" 1500	"	34%
7	"	1500	"	" 1750	"	39%
8	"	1750	"	" 2000	"	44%
9	"	2000	"	" 2250	"	49%
10	"	2250	"	" 2500	"	54%
11	"	2500	"	" 2750	"	59%
12	"	2750	"	" 3000	"	64%
13	"	3000	"	" 3250	"	69%
14	"	3250	"	" 3500	"	74%
15	"	3500	"	" 3750	"	79%
16	"	3750			85%	

Source: Negarit Gazeta 39th year, No. 3 (October, 1978), p. 55

Taxes on Income from Rent of Land and Buildings (Schedule B): This was essentially a tax on property income, and thus was a reflection of the institutional set up which prevailed before 1974, which expressed the social and economic relationship which existed between the landlords and tenants. The tax applied to income from rent of land and buildings including income from crop-sharing arrangements made between owners of lands and tenants. Two rates one on bodies at a uniform rate of 20% and the other on persons on progressive rates ranging between 2% and 20% were levied on this income. The rate structure is presented in table 2.3. Super imposed on this rates were surtaxes which subjected income above birr 30,000 per annum to a 20% tax and incomes exceeding birr 150,000 per annum to a 10% additional tax. This tax was repealed when the rural land as well as extra dwelling houses were nationalized in 1976, which once for all dried up the source of this type of income.

Profit Tax (Schedule C). According to the 1967 law, the schedule applied to (a) income "from any trade business profession or vocation" (b) income from "the exploitation of woods and forests for lumbering purposes", (c) income from "the processing or transforming of agricultural products", (d) income from "other activities relating to agricultural forestry, breeding cattle or maintaining pasture land in cases where said activities... shall as pursued by traders or by business organizations of commercial nature", and (e) income from "any interest and from "all other sources not specifically mentioned"<sup>9</sup>

Here again, a distinction was made between bodies and persons. The rates were identical to those under taxes on income from rent of land and buildings (Schedule B). Following the 1978 income tax reform, this tax category has also

Table 2.3

## Rates on Income from Rent of Land and Buildings

Taxable Annual Income			Tax per Annum
Eth. Birr			Eth. Birr or %
upto	-	300	3
360	-	480	9
480	-	600	18
600	-	720	24
720	-	900	33
900	-	1200	48
1200	-	1500	60
1500	-	1800	75
1800	-	2100	90
2100	-	2400	108
2400	-	3000	162
3000	-	3600	216
3600	-	4200	270
4200	-	4800	324
4800	-	5400	378
5400	-	6000	432
6000	-	6600	480
6600	-	7200	552
7200	-	7800	630
7800	-	8400	720
8400	-	9000	810
9000	-	9600	10%
9600	-	10200	10.5%

Table 2.3 (contd.)

10200	10800	11%
10800	11400	11.5%
11400	12000	12%
12000	12900	13%
12900	13800	14%
13800	15000	15%
15000	18000	16%
18000	21000	17%
21000	24000	18%
24000	27000	19%
over	27000	20%

Source: Negarit Gazeta 27th Year No. 4 (November, 1967), pp.21-22

undergone a major change comparable to that of employment tax. Similar to the old law a distinction is made between organization - any government or privately owned juridical person or association that carries out business activity excluding cooperative society, and persons. The organizations are required to pay 50% of their taxable income as compared to 20% in the old law. The rates on persons have also been made higher and much more progressive, ranging from 11% for incomes above birr 1200 per annum to 89% for incomes exceeding 36,000. For the complete rate structure see table 2.4. Under this law incomes which have hitherto been exempted have also been made to pay taxes. These include taxes on dividends (25%) on chance winnings (10%), on incomes from royalties (40%) and on incomes derived from services rendered from abroad (10%). The sur taxes

which were operative by the provision of the old law were repealed by the currently enforced law. As in the case of income tax on employment no personal allowance for special circumstances are granted. There is no backward or forward carrying for losses (except in public enterprises). In arriving at taxable income, expenses incurred in earning income are deductible from gross income. Depreciation of fixed assets is also deductible.

Agricultural Income Tax (Schedule D): The Income tax law of 1967 introduced for the first time into the tax system a tax on income from agriculture. This law replaced the archaic practice of taxation such as tithe and non-cash payment which had been effective since 1944. The rates of this tax were more or less patterned after the other contemporary income taxes. Under this law taxable income was defined as gross income from a harvest less a) one third of gross income as a surrogate for costs of production (b) amount paid in land based taxes and (c) amount of rent payable. This tax operated until the 1976, Rural Land Use Fee and Agricultural Activities Income Tax reform (Proclamation No. 77 of 1976) and the subsequent amendments (Proclamation NO. 152 of 1978) brought about a major change in the rate structure. The rate structures of the 1967 tax and the current (1978) tax are given in table 2.5 and table 2.6 respectively. As is indicated in the table of rates, the current tax law stipulates that an annual income not exceeding birr 600 per annum be taxed at a rate of birr 10 and individual farmers and agricultural cooperatives earning more than birr 600 a year be subjected to a progressive tax rate rising from 10% on incomes between birr 600 and birr 1200 to 89% on incomes above 36 000.

Table 2.4

## Rates on Business Profit Tax (1978)

Annual Taxable Income		Tax in
Not Exceeding		Birr
	300	10.00
	500	18.00
	700	24.00
	900	40.00
	1200	70.00

Annual Taxable Income Exceeding Birr 1200			
No.	Annual Taxable Income	Tax Rate on Every	
	in Birr	additional Income	
1	over 1200 but not exceeding 3000	on the next 1800	11%
2	" " " 3000	6000 " " " 3000	14%
3	" " " 6000	9000 " " " 3000	20%
4	" " " 9000	12000 " " " 3000	26%
5	" " " 12000	15000 " " " 3000	33%
6	" " " 15000	18000 " " " 3000	40%
7	" " " 18000	21000 " " " 3000	47%
8	" " " 21000	24000 " " " 3000	54%
9	" " " 24000	27000 " " " 3000	61%
10	" " " 27000	30000 " " " 3000	68%
11	" " " 30000	33000 " " " 3000	75%
12	" " " 33000	36000 " " " 3000	82%
13	" " " 36000		89%

Source: Negarit Gazeta, 39th year No. 3 (October 1978), p. 56

### Land Tax

The land tax proclamation of 1942 and the subsequent amendments of 1944 and 1962 replaced the traditional land taxes paid in produce and services by a system of cash payment based upon the fertility of the land. According to the last law a land tax of birr 15 per gasha on the fertile land birr 10 per gasha on semi-fertile land and birr 5 per gasha on the poor land was levied. Additional land based taxes the education tax, and the health tax were also introduced in 1947 and 1958 respectively.

The land tax reform of 1976 issued as the result of the nationalization of rural lands, abolished all the taxes which were related to land ownership, namely the land tax, education tax and health tax. According to the current law land tax is paid in the form of land use fee by which a farmer pays a flat amount of birr 10 or birr 5 if he is a member of producer's cooperative, and birr 2 per hectare, on total holding, is paid by government agricultural organizations.

The responsibility for assessing and collecting the fee (the agricultural income tax as well) rests with the peasant associations in the case of member of cooperatives and individual farmers which earn less than birr 600 per year. Thus while the peasant associations collect the minimum income tax of birr 10 and birr 10 for land use tax, it is the responsibility of the Tax Office to assess and collect the tax from tax payers whose income is in excess of birr 600 per annum. But each peasant association is responsible for submitting a list of all tax payers within its area categorizing them according to the level of their income to the Tax Office.

Table 2.5

Rates of Agricultural Income Tax on Individuals  
(1967)

Taxable Annual Income Eth. Birr			Tax per Annum Eth. Birr or %	Taxable Annual Income Eth. Birr			Tax per Annum Eth. Birr or %
up to	-	300	1.50	6600	-	7200	552.00
300	-	480	6.00	7200	-	7800	530.00
480	-	600	18.00	7800	-	8400	720.00
600	-	720	24.00	8400	-	9000	810.00
720	-	960	33.00	9000	-	9600	10.%
960	-	1200	45.00	9600	-	10200	10.5%
1200	-	1500	60.00	10200	-	10800	11%
1500	-	1800	75.00	10800	-	11400	11.5%
1800	-	2100	90.00	11400	-	12000	12%
2100	-	2400	108.00	12000	-	12900	13%
2400	-	3000	162.00	12900	-	13800	14%
3000	-	3600	216.00	13800	-	15000	15%
3600	-	4200	270.00	15000	-	18000	16%
4200	-	4800	324.00	18000	-	21000	17%
4800	-	5400	378.00	21000	-	24000	18%
5400	-	6000	432.00	24000	-	27000	19%
6000	-	6600	480.00	over	-	27000	20%

Source Negarit Gazeta, 27th year, No. 4 (November, 1967) p. 25

Table 2.6

Rates of Agricultural Income Tax on Individuals  
(1978)

1. Income lower than Br. 600 per annum. Br. 10.00
2. Income over Br. 600 per annum tax rate on every additional income.

No	Annual Taxable Income			Tax Rate on Every	
	in Birr			Additional Income	
1 over		but not exceeding	1200	on the next	600 10%
2 "	1200	" " "	3000	" " "	1800 11%
3 "	3000	" " "	6000	" " "	3000 14%
4 "	6000	" " "	9000	" " "	3000 20%
5 "	9000	" " "	12000	" " "	3000 26%
6 "	12000	" " "	15000	" " "	3000 33%
7 "	15000	" " "	18000	" " "	3000 40%
8 "	18000	" " "	21000	" " "	3000 47%
9 "	21000	" " "	24000	" " "	3000 54%
10 "	24000	" " "	27000	" " "	3000 61%
11 "	27000	" " "	30000	" " "	3000 58%
12 "	30000	" " "	33000	" " "	3000 75%
13 "	33000	" " "	36000	" " "	3000 82%
14 "	36000	" " "			89%

Source: Negarit Gazeta 39th Year No. 2 (October, 1978) p

### 2.1.2 Indirect Tax

The major indirect taxes which are levied on production and consumption in Ethiopia include: Excise taxes, sales taxes, import duties, Export duties and others.

Excise taxes: the tax bases for excises are domestic production and imports. As is usual in countries with limited industrialization, excise revenue comes from a few selected commodities. Currently the coverage of the tax extends to twelve commodities. These are salt, textiles, yarns, sugar, tobacco and tobacco products, alcohol and alcoholic beverages, petroleum products and lubricants, soft drinks and mineral water, leather and foot wear, iron and steel rods, bars and sheets, plastic, rubber and canvas goods, and matches. The seven first mentioned products being the only ones upto the beginning of seventies, and it is only after 1971 that the list was enlarged by the remaining ones. The rates of excise taxes are given in table 2.7. The excise taxes are single-phased taxes, and as can be seen from the table all the taxes (except those levied on tobacco and tobacco products, leather and plastic goods) are specific rates. Nearly all of the taxes are payable through customs by importers or by monthly returns by manufacturers.

Sales taxes: There are two kinds of sales taxes in Ethiopia. These are the transaction taxes and turnover tax. The transaction taxes as distinct from the excise taxes are generally imposed on the sales of a wide range of goods. Currently there are three separate transaction taxes (1) ad-valorem 7% tax on domestically manufactured goods (except pharmaceutical items which are charged at 5%) as compared to 5% before<sup>17</sup> (2) ad valorem 18% tax on imported goods as compared to 15% before and (3) 2% ad valorem tax on exported goods. The tax charges are computed based on the gross amount received from sale by manufacturers of

Table 2.7

## Excise Tax Rates

Tax	Rates	
	Old	New
1. Tobacco	30%	57%
2. Alcohol. Over 30 specific rates exist differentiated, according to the type of beverages and whether it is imported or not. In most cases imported and domestic beverages bear the same rate. A sample rate is given below.		
a) Alcohol of not less than 96 degrees	-	Birr8.00
b) Alcohol liquor imported per litre	-	3.50
c) Wine 700 millilitres to 1 litre imported	2.50	3.50
d) Wine domestic, with price above Br. 3.00	0.25	1.25
e) Beer domestic, 650 millilitres to 1 litre	0.40	0.65
f) Beer domestic 350 millilitres to 650 millilitres	0.30	0.55
(Alcohol imported in transit or by diplomats is exempt, as are sacramental wines)		
3. Petroleum Products		
a) light petroleum	0.10/kg	0.10/kg
b) Regular petroleum	0.225/litre	0.105/litre
c) Super Benzine	0.225/litre	0.135/ litre
d) Naphta diesel oil	0.185/ "	0.065/ "
e) Kerosene	0.185/"	0.05/ "
f) Lubricating oils	0.285/kg	0.10/kg
4. Iron and Steel		
a) Iron and steel rods and bars	1.00/100kg	same
b) Iron and steel sheets	0.10/100kg	"

Table 2.7 (contd.)

5. Soft drinks		
a) upto 250 cc	0.02	same
b) 250 cc upto to 350 cc	0.03	"
c) 350 cc upto 1 litre	0.05	"
Mineral water upto 1 litre	0.02	"
6. Sugar (excluding mollasses)	15.00/ctl.	21/ctl
7. Textiles		
a) Cotton yarns	0.15/kg(net)	0.25/kg
b) Cotton fabrics	0.34/kg "	0.49/kg
c) Silk, nylon fabric	2.00/kg "	2.82/kg
8. Leather and foot wear		
a) footwear per pair (all leather domestic)		40%
b) footwear per pair (imported)	1.00	16%
c) footwear per pair (domestic without leather)	1.00	16%
9. Plastic or Rubber Products		
(plastic and rubber footwear subject to the footwear excise is exempted)	5%	5%
10. Salt		
percentage of foreign elements in salt		
a) not over 10%	Birr 8/100kg	
b) over 10% but not over 30%	" 5/100 kg	
c) Over 30%	" 3/100 kg.	

## Note:

Old = tax rates effective 1971 or 1973

New = tax rates effective 1978 or 1979

Source: Proclamations (amendments) Nos. 284, 285 of 1971

Proclamation (amendment) No. 314 of 1973

Proclamation (amendment) No. 114 of 1977

Proclamation (amendment) No. 162 of 1978

Proclamation (amendment) No. 160 of 1979

locally produced goods and disposed of by manufacturers other than by sale. Custom duties and transaction tax paid during the importation of raw materials that have gone into the production of the taxed goods are deducted when computing the charges. Moreover, most of the excises paid are deductible from the gross receipts. Apart from these the sales of several goods are exempted from the tax. Transaction tax on goods imported or exported is charged, levied and collected by the customs administration at the point of entry or exit of goods, and the general rules of assessment and collection applicable to custom duties also apply to the transaction tax.

The Turnover tax is payable by any person selling movable goods, at a rate of 2% on gross receipts. This tax is not limited to a one-point tax levy, but has a cascading behaviour i.e. a one-point tax levy commonly develops into a multi-point tax, imposed on every sale at all stages of production and distribution. Thus, the turnover tax on certain commodities may be not only 2% but as high as 4% or 6%. Exemptions are however extended to the following sales (1) sales by an importer to a person (natural or juridical) acquiring the goods for direct export sale, (2) sale by a manufacturer to a person acquiring the goods for resale (3) sale by an agricultural producer to a person acquiring the goods for resale, (4) sale of petroleum products, books and newspapers lottery ticket, water, electricity, telephone and telephone services.

Import Duties: the complexity as well as the enormosity of the custom tariffs makes it difficult to present the complete rates structure in detail. We attempt to give instead, the salient features of the tariff structure. The items taxed are classified in approximately 500 general categories classified in 98 chapters. The tariff schedules include both specific duties and ad valorem

duties. The duties on majority of the goods are ad valorem, the rates ranging from nil on capital and other exempted goods to 200% for goods considered to be luxuries.<sup>10</sup> These duties are based on the c.i.f. value of merchandise which is their free on board (f.o.b) value at the point of embarkation plus freight, insurance and other transportation costs. While the specific duties are calculated on the basis of bulk weight and other liquid or dry measurements.

For many years import duties have been very important sources of revenue for the government, and to claim that import duties have been highly revenue motivated can hardly be exaggerated. But in addition to the above objective, they have had other aims to fulfil. In conjunction with the administrative measures such as import prohibition and foreign exchange control, they have been designed to achieve the following goals: to conserve foreign exchange, to protect domestic enterprises<sup>11</sup> and to promote the development of domestic industries.<sup>12</sup> All the above motives have played part in the past years, although the operation of each one varied over the years. The possibility of taking a restraining influence on the import volume by means of taxes especially with consumer goods has gained more importance. The protective measures have also been important and it seems that it will remain so in the future as in the early stage of industrialization, the cost of production is so high that they need protection. Import duty relief (which is discussed further below) is granted to some commodities as part of the policy of the government to promote the development of domestic industry. Apart from these several goods are imported duty free or at reduced rates, apparently, either because they are considered as necessities or because they are not meant to be for commercial purposes.

Export Duties: Export duties in Ethiopia are levied on a small number of commodities and unlike the import duties they are simple. A bulk of the export duties revenue is obtained from those on coffee exports and to a smaller extent from those on hides and skin exports. Others include those levied on the exports of live animals, ivory, civet, chat, bees wax, butter, and leopard skins. Apart from the export duties proper another form of tax, the surtax is levied on the export of coffee as well as on the export of sugar and cotton seeds. This is specially designed to enable the government to collect some of the increased profits which accrue to the exporters as the result of increase in prices for the commodities in the world market. Moreover, cess tax originally intended to finance the then National Coffee Board, but now accruing to Central Government Treasury is levied on coffee exports. Export duty on coffee exports is equal to birr 5 per 100 kg., the cess tariff is equal to birr 3 per 60 kg. While the surtax is levied on a sliding scale varying with the New York price for "Santos 4" (U.S. cents per lb). At New York price of 30 cents per lb. surtax payable is 1.00 per 100 kg. of exported coffee and "there will be a corresponding increase in surtax for every one U.S. cent increase:

- a) from 30 upto 50 cents per lb birr 1.00 per 100 kg.
- b) above 50 upto 100 cents per lb birr 2.00 per 100 kg.
- c) above 100 U.S. cents per lb. birr 3.00 per 100 kg. respectively, of coffee prices"<sup>14</sup>

The surtax levied on sugar and cotton seed are also presented below:<sup>15</sup>

	kg.	F.O.B. Price	Surtax %
Cotton Seed	100	-upto 20	Free
		over 20 upto 80	40%
		" 80 " 120	50%
		" 120 " -	60%

	LKg	F.O.B. Price	Surtax %
Sugar	1000	upto 600	Free
		over 600 upto 960	80%
		" 960 " 1400	85%
		" 1440 " 1920	90%
		" 1920	95%

The taxes levied on the other export commodities are specific in nature.

Other forms of taxes in the Ethiopian tax system which are of little importance in terms of revenue generation are the stamp duties and the Tobacco Regie taxes. Stamp duties were introduced in 1957.<sup>16</sup> The law requires an obligatory use of stamped paper for a variety of instruments such as contracts, articles of association, paper in court proceedings, bills of exchange, leases and insurance policies, as well as tickets of admission to public entertainments. The rates imposed varies according to the type of document and value of transaction. The Tobacco regie tax was introduced in 1942<sup>17</sup> and since then tobacco, matches and pocket lighters were brought under state monopoly. The monopoly covers (a) the purchase, preparation, manufacture, sale, import and export of tobacco and tobacco products (b) the manufacture, possession and trade in paper for the preparation of cigarettes (c) the manufacture, possession and trade of machinery and detached pieces of machinery for machines, serving in the manufacture of tobacco products (d) the manufacture possession and trade of matches and pocket lighters.

### 2.1.3 Tax Incentives

Like most developing countries, Ethiopia offers tax incentives, the principal objective being the encouragement of investment for promoting industrial as well as agricultural developments. Moreover, today tax incentive is used in Ethiopia to accelerate the socialization process of individual producers both in rural as well as urban areas.

The incentive laws focus mainly on three aspects of taxation.

1. Exemption from income tax for a given period
2. Exemption, or a special low duty rate on imports
3. Exemption from sales taxes.

Income tax exemption have been in effect in Ethiopia, since 1963.

According to the proclamation for the encouragement of capital investment,<sup>18</sup> income tax relief is granted for a period of five years, for enterprises, investing a minimum of birr 200,000 from the date at which such operation begins; an existing enterprise investing additional capital investment of not less than birr 50,000 is also granted an exemption for a period of upto five years. Furthermore, according to the proclamation governing the establishment of joint ventures issued recently,<sup>19</sup> a joint venture is exempted from the payment of income tax for five years in the case of new project, and for three years in the case of major extension of existing projects. Moreover, the taxable income of a joint venture is taxed at the rate of 40%, and the salaries and allowances of expatriate employees of a joint venture are not subjected to income taxation. Moreover, as indicated earlier, to bring about rapid socialization of small producers, the incomes of cooperatives members are either taxed at lower rates or incomes below certain level are exempted.

Apart from income tax reductions and exemptions, import duty relief is granted for some commodities. Among the goods which are imported free of duty are the agricultural and industrial machinery and parts thereof, imported for the exclusive use in agriculture and industry. The joint venture proclamation also contains provisions for granting exemptions from import customs for a first round spare part imports by a joint venture undertaking. Exemptions from transaction taxes are also granted for the imports and exports of certain goods under the two incentive proclamations.

While these in brief are the tax incentives provided in the country, it is not difficult to see that, the granting of exemptions for incentive purposes results in the forfeiting of government revenue. This is especially true in developing countries such as Ethiopia, where the bulk of the import commodities are mainly capital goods and other essentials, which necessarily are exempted from duty charges.

Such in summary is the general framework of the tax system in Ethiopia. While the above review is hoped to provide a general knowledge about the rate structure and coverage of the tax system, the importance of each of these taxes in the overall tax revenue and the possible implication of this on the revenue raising objective of the tax system is discussed in the following section.

## 2.2 Analysis of the Tax Revenue Composition

In this part we attempt to examine the revenue structure of taxation in Ethiopia, by focusing on the relative weight of different taxes in total tax revenue. The importance of such consideration, apart from the level of taxation is clear. It has been asserted on several occasions that "the present tax structure (in developing countries) in which indirect tax dominates is.... itself responsible

for the low tax share in the national products. This is due to the peculiarities of direct and indirect taxes"<sup>20</sup> (emphasis added). A study of this nature would thus indicate, as stated earlier, the direction in which the government has been attempting to increase tax revenue, and the effort made to depart from tradition and the past in devising tax policy in an attempt to strengthen the revenue base.

Table 2.8 gives a summary of the percentage distribution of tax revenue by its important components. What emerges from the table is that the tax system in Ethiopia displays many of the features common to developing countries. The tax structure, like in other developing countries is characterized by the dominance of indirect taxes, which provided about 70% of the tax revenue on average during the period of study. Another salient feature of the revenue composition is that not only is the share of indirect tax revenue very high but is also marked by the preponderance of revenue from foreign trade. A third major feature of the tax structure in Ethiopia is the relatively small proportion of income taxes and revenue derived from taxation of domestic consumption. This is clearly seen in Table 2.9 which compares the relative importance of the component taxes with the average revenue composition of 48 developing countries.

While the above description features the general composition of the tax system, a study of the composition over time indicates that a change in the relative importance of the individual taxes has been common which may suggest changes in revenue policy. The period 1967/68 to 1974/75 marked a shift from indirect tax to direct tax, brought about mainly by the relative fall in the weight of taxes on international trade. This situation, however changed since 1974/75 in favour of indirect taxes, as the result of sharp increase in tax revenue from international trade, shiefly export tax, although the other forms of indirect taxes - on

Table 2.8

Tax Structure in Ethiopia 1967/68 - 1981/82 (Revenue in % of Total Tax Revenue)

	1967/68	1968/69	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83
<b>Direct Taxes</b>	24	29	27	29	31	29	29	30	28	24	24	28	29	36	38	37
Income Taxes	19	23	22	23	26.4	24.4	25	28	26	22	22	23.3	25.5	33	36	34
Employment Income Tax	(7)	(8)	(8)	(10.5)	(19)	(11.1)	(12.4)	(92)	11	(9)	(10)	(10)	(9.2)	(9.3)	(9.4)	(9.2)
Business Profit Tax	(8)	(9)	(8)	(10)	(10)	(10)	(10.3)	(13)	(12.4)	(11.4)	(11)	(10.2)	(12.4)	(19)	(23)	(21)
Agricultural Income Tax	(2)	(5)	(4)	(4)	(3.4)	(3)	(2.1)	(2)	(2)	(2)	(2)	(4.2)	(4.0)	(4)	(4)	(3.4)
Land Use Tax	5	6	5	5	5	4	3.2	3	2.2	2.2	2	4.1	4.0	4	3.4	3.4
<b>Indirect Tax</b>	76	71	73	70	69	71	72	70	72	76	76	72	71	64	62	63
<b>Taxes on Domestic Goods</b>	34	33	32	32	33	32	32	33	30	21	21	24	28	29	28	29
Excise Taxes	(25)	(30)	(23)	(23)	(23)	(22)	(22)	(22)	(17)	(12)	(11)	(13)	(15)	(15)	(15)	(18)
Turnover Tax	(2.6)	(3.2)	(3.1)	(3.3)	(3.6)	(3.5)	(3.5)	(4.2)	(4.5)	(3.7)	(4.1)	(4.7)	(4.7)	(4.8)	(4.7)	(4.6)
Transaction Taxes	(3.7)	(3.8)	(3.1)	(3.3)	(3.6)	(3.5)	(3.6)	(4.2)	(4.5)	(3.7)	(4.1)	(4.7)	(4.7)	(4.8)	(4.7)	(5.5)
<b>Taxes on Foreign Trade</b>	43.6	38.2	40.7	38	35.5	35.5	39.4	37.2	42	53	55	48	43	34.4	33.3	33.3
Import Duties	(32)	(31)	(30)	(29)	(28)	(27)	(30.0)	(30)	(28)	(28)	(25)	(28)	19	21	(20)	(20)
Export Duties (Coffee)	(11.6)	(7.2)	(10.7)	(9)	(7.4)	(10.6)	(9.4)	(7.2)	(14)	(25)	(30)	(20)	24	13.4	(13.3)	(13.3)
				(6.7)	(8.6)	(8)	(6.6)	(4.2)	(11.2)	(23)	(29)	(17)	(22)	(12)	(12)	(12.6)

domestic goods showed a marked relative decline. Beginning 1978 a reversal of the trend was registered, in which the situation altered in favour of the direct taxes. One can observe that the period beginning 1978 seems to be a period of readjustment away from the traditional source of revenue - the now declining foreign trade tax to the growing income tax and taxes on domestic goods. Direct taxes as a whole have reached an unprecedented level of 38.8% in 1981/82 as opposed to 24% in 1967/68. The increased relative importance of the direct tax in the overall tax revenue can be attributed to among others the relatively higher revenue - income elasticity of direct taxes as compared with indirect levies.<sup>21</sup> This trend seems to conform to the general statement which says "with the gradual industrialization and commercialization of the economy, it would be possible for developing countries to shift from personal and crude property taxes to taxes on the incomes of individuals and corporation taxes and that, concurrently, with diversification of domestic production, sales and excise taxes would tend to gain at the expense of import and export taxes."<sup>22</sup> This is a desirable trend in so far as the tax revenue becomes free from its extreme dependence on a single foreign trade source, which makes the government's revenue base much sounder than before.

On the other hand, this trend in adjustment is less real than it might appear at a glance. Firstly, the changes or the fall in foreign trade tax is accounted by the fall in export tax rather than import tax which normally accompanies any structural change in tax structure. Secondly, the decline in the importance of import tax has taken place due to the foreign exchange difficulties which led to tight exchange controls and reduced imports, which in general led to increased restriction of non-essential items and the composition of imports changing in favour of duty free or low dutied essential items. All these hardly

Table 2.9

## Tax Revenue by Type of Tax (In Percent of Total Tax Revenue)

Tax	Developing* Countries	Ethiopia**
Income Tax	30.7	23.3
Individual Income Taxes	(10.9)	(9.6)
Corporate Income	(17.5)	(13.8)
Domestic Taxes on Goods and Services	26.1	24.3
General Sales Tax	(9.7)	(9)
Excises	(11.9)	(13)
Foreign Trade Taxes	33.4	48.6
Import duties	(26.5)	(24.0)
Export duties	(7)	(24.6)

Source: For developing countries, Vito, Tanzi, Quantitative Characteristics of the Tax Systems of Developing Countries, in IMF, Departmental Memoranda No. DM/83/79 (November 1983) p. 11-25.

For Ethiopia Table 2.8

\* Average taxes of 1978-1980 for most of the countries

\*\* Average of 1978-1980.

make the changes that have taken place wholly structural. Some of it seems to be a temporary change rather than permanent. Moreover, the short observation period during which the changes have taken place precludes the possibility of making any firm conclusion.

Thus, although a relative shift in the importance of the tax revenue towards direct taxes has taken place in the last few years, Ethiopia's revenue composition does not differ materially from that of other developing countries. As table 2.9 clearly corroborates, reliance upon indirect taxes, largely import and (to a lesser extent) export taxes, the limited yields from direct personal income and corporate taxes, and the selective use of sales and excise taxes are all features of the tax revenue structure of most developing countries into which the Ethiopian tax structure fits reasonably well.

Reliance for the major part of revenue on indirect tax sources, which is dominated by foreign trade tax revenue, however, is associated with a number of constraints on socio-economic development in general, and on the priority of financial purpose of tax collection in particular. Focusing our attention on the priority of financial purpose of tax collection, the constraints posed by such kind of structure are due to two reasons. The first is due to the low income-elasticity of the indirect taxes and the second is due to the uncertainty and fluctuations which characterize the budgetary revenue.

It is a common knowledge that indirect taxes are mostly income-inelastic or possess limited built-in-elasticity. This is to say an increase in tax ratio automatically with the increase in national income is not possible, but needs special and constant changes in the tax laws or rates to suit the changing conditions of the economy. In Ethiopia, where the inefficiency and inexperience of the tax administration is very high, the task of adjusting the tax system to the

changing or unfolding socio-economic conditions, in order to take advantage of the changing taxable capacity, is too demanding an exercise. It is thus easy to see how far the revenue mobilizing capacity of the tax system is hampered due to the structure of the system. Indeed in a condition where more than 70% of the revenue is derived from indirect taxes, the revenue which fails to accrue to the government, simply due to the nature of the tax can be very substantial.

In Ethiopia, not only is the share of indirect tax in the total tax revenue very high but is also marked by the dominance of revenue from foreign trade. This is clearly seen in table 2.8. In 1977/78 fiscal year for example as high as 55% of the total tax revenue was derived from foreign trade, out of which coffee export tax alone contributed 30%. This of course, is an unhappy situation, because it makes the revenue of the government highly susceptible to foreign trade which is notorious for its fluctuations. This is further demonstrated by table 2.8 in which the ratio of exogenously influenced revenue (export and import tax) to total tax revenue fluctuated widely ranging between 33.3% and 55%. It is thus easy to see the precarious position the Ethiopian tax revenue is based on. Certainly, in a situation where the mainstay of the revenue structure is vulnerable to exogenous influences the uncertainty and fluctuation which characterize the budgetary revenue could sometimes be disastrous. The fluctuation in the fiscal contribution of foreign trade is caused by two interrelated factors - the fluctuation and deterioration in the international prices of exports and the loss in import capacity due to changes in international prices. These changes are reverberated into the fiscal system through the tax revenue they produce.

The deterioration in Ethiopia's terms of trade has been considerable since 1976/77. Taking 1976/77 as a base, the price index for Ethiopia's exports in 1980/81 was 53.2.<sup>23</sup> This has resulted in the fall of value of exports despite

Table 2.10

## Coffee Sector Performance

	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83
Exports									
Volume (000 tons)	49	77.1	42.9	57.8	86.3	80.1	88.4	80.2	87.5
Value (Birr 19)	117.5	297.7	408.9	412.5	514.6	613.7	524.3	477.2	478.2
Unit Price (Birr/kg)	2.4	3.86	9.53	8.87	6.28	7.87	5.93	5.95	5.48
Coffee duty + surtax	25.0	68.8	199.9	263.4	215.6	292.3	161.0	172.1	191.2

Source: World Bank, Ethiopia: Recent Economic Development and Future Prospects (May 1984) p. 36

the significant increase in the volume of exports. This situation is clearly seen in table 2.10 for the export of coffee, the main export of Ethiopia. In 1980/81 for example, the export price of coffee fell by 25% below the 1979/80 price level, which resulted in a 17% decline in coffee export earnings, despite a 10% increase in the volume of coffee exports in that year. Hence, the fall which coffee export tax revenue suffered during the year was high, amounting to 45%. The loss in import capacity due to international changes in prices is also estimated very high. In 1980/81, it was estimated to be about birr 178.02 million (1979/80 prices) or 20% of expected merchandise imports.<sup>24</sup> Although the import tax revenue loss due to the fall in imports is not given, it can be easily seen that the loss could be substantial.<sup>25</sup>

Moreover, when the flow of the meagre resources is compounded by instability, the havoc which financial uncertainty wreaks in the budgetary process cannot be under estimated. This obviously leads to repetitive-making and remaking the budget-in the course of the year, and changing priorities to meet the new revenue conditions. This situation also results in what is called the "paradox of underspending." Where the flow of revenue is characterized by uncertainty, the Treasury is in no position to take the risk of running out of resources before the year is over. Thus on the one hand resources are insufficient and on the other not everything available is spent. This results in the exasperation or sharpening of the problem of scarcity of revenue. Thus, the National Bank report states, "the heavy dependence of government on tax from international trade... activity, not entirely under the control of the country, has rendered government budgetary exercises less than fully effective tools of economic management."<sup>26</sup>

The alternative, to evolve an elastic tax revenue and to protect revenue against the uncontrollable and unpredictable changes lies in relying more on direct taxes levied on personal and company incomes. This is what U Tun Wai suggests when he says "the direct taxes system has built-in structure for giving governments larger component of revenue from growth without changing the level of taxation.... On the other hand, if indirect taxes are a large component of revenue, government revenue will lag behind the increase in money incomes and prices."<sup>27</sup>

There are those who argue that "that developing countries rely heavily on indirect taxes cannot be held against them. What one can criticize is the enforcement of these taxes and how good a use of them developing countries makes in the pursuance of their economic development."<sup>28</sup> The validity of this statement cannot be totally rejected, considering the structure of the economies of these countries, which are characterized by low average personal income, large agricultural subsistence sector and small independent production unit. But what is equally important is that the tax structure of a country is not determined by the structure of the respective economy only. Beyond wealth and economic structures are other factors, notably administrative efficiency, the political inclination of the government, which may prefer some type of taxes over others, and the expenditure programme of the government which determines the extent of use of the tax bases. In nutshell, the revenue structure of a country is determined by objective factor- economic structure of the country as well as by subjective factors- policy and implementation capacity of the country. This boils down to the fact that, there is a scope for strengthening the revenue base and enhance the revenue effectiveness of the tax system in the developing countries if the governments are determined to do so. There seems to be a general agreement among fiscal experts on this regard. Nicolas Kaldor, for example, once stated "no doubt the taxation potential of a poor country... is generally

lower, and in many cases appreciably lower, than that of a rich country. But more important in my view is the low coefficient of utilization of that potential due to bad tax laws and bad tax administration or bot."<sup>29</sup> The poor tax administration referred above is prevalent especially in the area of direct taxation, because it is commonly held that, it is the relative administrative ease, with which the tax is collected, that has resulted in the more extensive use of the indirect tax as compared to direct tax bases in these countries. Others have also pointed out that the lop-sided development of the tax system in the developing countries is due to the frequent raising of rates on easily administered taxes and those that are difficult to administer are neglected.<sup>30</sup> In Ethiopia, to say the least, it is a problem of administration and implementation, which has resulted in the mobilization of only 3% on the average of tax revenue from incomes from agricultural activities. A very small sum when considered against the GDP contribution of the sector, which is estimated to the tune of 50%<sup>31</sup>. Similar problems are also prevalent on the tax on income of individually owned businesses. We shall come to this in subsequent part of the study.

## NOTES

1. Eshetu Chole, Towards a History of the Fiscal Policy of the Pre-Revolutionary Ethiopia State 1941-1974. A paper prepared for the East African History Conference, (mimeographed) (December 1982).
2. Ibid.
3. Proclamation to provide for payment of a tax by all individuals and businesses No. 60 of 1944.
4. A proclamation to Amend Income Tax Proclamation No. 144 of 1978.
5. Income Tax (amendment) proclamation No. 255 of 1967.
6. For example for the income bracket ranging from birr 1000 to 1075, the rate is 13%, which demonstrates proportionality. The inherent regressivity can also be demonstrated by taking two incomes birr 150 and 175. Under the law both are charged at birr 7.50 each. This would mean the first income would be taxed at 5% rate as compared to 4.2% with the second.
7. Eshetu Chole, Taxation in Ethiopia: An Analysis of Structural Policy and Performance, op.cit., p. 56.
8. Eshetu Chole, Income Taxation in Pre-and Post-Revolution Ethiopia. op. cit.
9. Proclamation No. 255 of 1967.
10. For a complete information about the customs rates see, Provisional Military Government of Socialist Ethiopia, Ministry of Finance Customs Tariffs.
11. See Eshetu Chole, Import Substitution in Practice: The Case of the Ethiopian Textile Industry, unpublished Ph.D. Dissertation (Syracuse University 1973), p. 46-51.
12. Investment Proclamation No. 242 of 1966.
13. See National Bank of Ethiopia Quarterly Bulletin 1964, p. 29-30.
14. Legal Notice No. 46 of 1976.
15. Regulation No. 23 of 1975.
16. Decree No. 26 of 1953.
17. Proclamation No. 30 of 1942.
18. Investment Decree No. 57 of 196.
19. Proclamation No. 235 of 198=.

20. Winfried Maing, op. cit.
21. The elasticity of income taxes (except that on agricultural income) was high during the period. See Chapter 4.
22. Raja Chelliah, "Trends in Taxation in Developing Countries," op.cit. p. 268.
23. World Bank, Economic Memorandum of Ethiopia, (December 1981), p.4. .
24. Ibid
25. In 1976/77 fiscal year, it is reported that birr 76.1 million or 20% fall from the targetted level of the import tax was registered chiefly because of the fall in import goods. National Revolutionary Development Campaign (NRDC) and Central Planning Supreme Council (CPSC), Third one year plan, (1981), p. 67.
26. National Bank of Ethiopia, Annual Report (1980), p. 44.
27. U. Tun Wai, op. cit., p. 433.
28. P.C. Afxentiou, "Fiscal Policy and Economic Development", The Developing Economies," Vol. xiv, (June 1976), p. 176.
29. N. Kaldor, "The role of taxation in economic development", An Essays on Economic Policy, (London: Gerald Duckworth Co. Ltd. 1964), p. 226.
30. A. Hart, "Fiscal policy in Latin America," Journal of Political Economy, Vol. 78 (July/August 1970), p. 857-889, cited in Charles Mansfield, op. cit., p. 40.
31. See Eshetu Chole, Income Taxation in Pre and Post-revolution Ethiopia, op. cit.

### 3. THE LEVEL OF TAXATION IN ETHIOPIA

That the ability of the tax system to bring in sufficient revenue to meet government expenditure is the basic criterion of taxation in developing countries is a fact which we have attempted to establish earlier. Thus, the efficiency with which the revenue objective is realized is an important consideration in tax evaluation. Some fiscal experts even consider revenue productivity as a single consideration for evaluating a tax system in developing countries.<sup>1</sup>

In this chapter we attempt to gauge the volume of taxation in Ethiopia by relating the magnitude of tax revenue to the level of the country's taxable capacity, and to the fiscal needs of the government.

#### 3.1 Growth in Tax Revenue

The total domestic revenue the government raised during the period 1967/68-1982/83 is presented to Appendix I. Perhaps the most remarkable feature of the fiscal system during this period is a slow but steady growth of the tax revenue between 1967/68 and 1976/77, followed by a relatively considerable upswing during the rest of the period. This pattern of growth has culminated in the total nominal tax revenue receipt increasing from birr 314 million to birr 1493.5 million over sixteen years. Alternatively, this implies an annual average rate of growth of about 11%, which is almost double the average rate of growth of GDP at current market prices during the same period. This increase in tax revenue was brought about by an increase in practically all the component tax revenues. The average nominal growth rates for income, excise, sales, import and export tax revenues were 15%, 9.4%, 11.5%, 7.8% and 25.9% respectively, during the same period. This is obviously a remarkable performance.

Nevertheless, some reservation should be made in using the above information as indicator of tax effort. The situation is that the tax revenue in Ethiopia at the beginning of the period of study was so low that it makes our base of comparison accordingly low, which unduly magnifies the growth rates. According to a study made in 1967/68, Ethiopia's tax performance was one of the lowest by any standard.<sup>2</sup> Moreover, from the point of view of mobilizing adequate resources to finance government expenditure needs, the relevant measure of tax performance is not the rate of growth of tax revenue but the increase of the tax revenue to the increase in national income. This is essentially the question of the responsiveness of the tax revenue to changes in national income, which indicates the change in the overall ratio of tax revenue to income (GDP) over the given period. This is extensively dealt within chapter 4. Nevertheless, even at this point some impression of the tax performance of the total tax revenue as well as individual taxes can be obtained by examining the changes in tax ratios. Obviously this would give better information on the development of tax revenue than do absolute figures of tax revenue. The tax ratios of the total tax revenue and component taxes are presented in Table. 3.1.

As is depicted in the table, the tax ratio in the country almost doubled over the period of study. But one can also observe that there was no appreciable distinct trend upwards until 1976/77. It took eight years for the tax ratio to increase from 8% to about 10%. Thus, we can conclude that the tax revenue was more or less stagnant and for a long period did not provide to the public sector an increasing share of the growing GDP. It was not before the mid-seventies that a conspicuous upward movement set in, although for the last four years of the period no upward movement of the tax ratio was registered. The table also indicates that, although the increase in tax ratio was common in all the major tax categories, the growth attained by the aggregate tax ratio was the outcome of

Table 3.1

Main Taxes in Relation to GDP (Expressed in Percentage)

	1967/68	1968/69	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83
Total Tax	8.2	8.2	8.3	8.6	9.0	9.6	9.6	10.6	10.2	12.5	12.9	14.5	15.3	15.3	14.8	15
Direct Taxes	2.0	2.4	2.1	2.4	2.6	2.7	2.6	3.2	2.9	3.0	3.1	3.4	4.4	5.5	5.6	5.6
Income Taxes	1.5	1.9	1.7	2.0	2.2	2.3	2.2	3.0	2.6	2.7	2.8	2.8	3.8	4.9	5.1	5.0
Employment Income Tax	0.6	0.6	0.6	0.9	0.9	1.0	1.1	1.2	1.1	1.0	1.1	1.2	1.3	1.4	1.3	1.0
Business Profit Tax	0.6	0.7	0.7	0.8	0.9	0.9	1.0	1.3	1.2	1.4	1.4	1.3	1.9	2.9	3.1	3.0
Agricultural Income Tax	0.1	0.4	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.6	0.6	0.6	0.5
Land Use Tax	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.3	0.3	0.6	0.5	0.5	0.5	0.5
Indirect Taxes	6.1	5.8	6.2	6.2	6.4	6.9	7.0	7.4	7.3	9.5	9.8	11.1	10.9	9.8	9.2	9.5
Excise Taxes	2.1	2.0	2.0	2.0	2.3	2.4	2.5	2.6	1.9	1.7	1.6	2.2	2.5	2.5	2.4	2.8
Transaction Taxes	1.5	1.0	1.0	1.0	1.1	1.2	1.4	1.4	1.3	1.5	1.3	1.8	2.1	2.3	2.5	2.1
Turnover Tax	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.5	0.7	0.7	0.7	0.7	0.7
Import Duties	1.8	1.7	1.7	1.7	1.6	1.6	1.7	1.8	1.8	2.3	2.2	2.5	1.5	1.7	1.5	1.7
Export Duties	0.6	0.5	0.8	0.7	0.6	0.9	0.7	0.6	1.2	3.0	3.7	2.7	3.4	1.9	1.8	1.9

Source: Appendix I

largely different and partly opposite developments in the performance of the individual taxes. An interesting point, which makes the record particularly remarkable during the period 1976/77 - 1982/83 is that the tax ratio was maintained at the level of 15% in the teeth of highly adverse trends in the world price for Ethiopia's exports which made the revenue duties to fall. We have shown in chapter 3 that there was a sharp downward trend in the price of Ethiopia's exports in general and that of coffee in particular.

All in all, what can be stated from the above analysis is that the productivity of the tax system in Ethiopia had been stagnant for a long period and that a substantial increase in tax revenue has been achieved recently, indicating an increased effort made to mobilize more tax revenue.

The above analysis apart from indicating that the tax ratio has recorded a stride, does not answer the basic question, whether what has been achieved is the maximum amount of revenue the country could possibly levy, given its taxable capacity. For this, the concept of tax effort to the extent that it is measured by the tax ratio can be meaningfully presented in relative sense, i.e. by comparing it with the experience of other countries. However, for reasons given earlier,<sup>3</sup> instead of the straight forward comparisons of simple ratios, we attempt to study the tax effort by analysing the tax ratio in terms of the country's taxable capacity or 'tax handles' through the method of International Tax Comparison (ITC) indices. Nevertheless, short of any final normative interpretation, we also compare the ratio of the country with that of other countries' in order to see the relative position of the Ethiopian tax ratio.

Typically, in a developed country the part of national income collected by taxation (including social security taxes) is equal to 36%,<sup>4</sup> clearly the tax ratio in Ethiopia is much lower than that of the developed countries. The higher

level of tax ratio reached at in the country is 15.3%. A comparison of the Ethiopian tax ratio with that of other countries which are present in Table 3.2 using data of 1978-80 also shows that the tax ratio in Ethiopia is lower than in most similarly placed developing countries. Although the comparatively low tax ratio may give a prima-facie indication of a relatively low tax effort in the country, a final pronouncement about the tax effort should await a complete analysis of the tax ratio through other methods, one of which is the ITC index method, which we take up in the following section

Table 3.2: Selected Developing Countries "Tax Ratios 1978-1980

Country	Income*	Tax Ratio
Togo	419	24.9
Zambia	561	23.2
Sri Lanka	224	21.9
Kenya	387	19.9
Ivory Cost	118	21.9
Ethiopia	119	12.4
Egypt	527	20.9
India	652.5	15.2
Jamaica	914	18.2
Tanzania	217	17.6
Sudan	404	12.3
Upper Volta	175	11.9
Tunisia	1123	22.8
Ghana	505	17.0
Guyana	558	24.0
Pakistan	273	14.0
Zaire	192	18.3
Senegal	470	19.7
Somalia	145	23.8**
Maurituis	750	20.1***

Source: World Bank, "Public Finance in Egypt," Staff Working Papers No. 639 (April 1984), p. International Monetary Fund, Taxation in Sub-Saharan Africa, Occasional Paper No. 8 (October 1981), p. 54.

\* GNP per capita in US dollars \*\*data of 1977

\*\*\*data of 1978

### 3.2 Tax Performance Analysis Through the Method of International Tax Comparison Indices

In this part of our study we refer to two attempts made recently at constructing indices of the tax effort for developing countries, and make comparisons of Ethiopia's record with that of other developing countries in order to assess the relative tax performance in the country. The two studies are chosen because they are particularly important in our analysis, not only for their being recent, but also for the nature of the sample of countries included in the studies. One of these, that is a work by the World Bank<sup>5</sup> provides data and estimates indices of tax effort for a group of developing countries from different parts of the world, and the other by the International Monetary Fund<sup>6</sup> performs similar estimation for a group of sub-saharan African countries. A tax comparison analysis based on these studies would permit us to see the relative position of the country versus the developing countries at large as well as versus its African counterparts.

The first one presents data and computes tax effort indices for forty five developing countries, Ethiopia included, using data for 1978-80. In this study the potential tax ratios are computed by regressing tax ratios on different combinations of the variables, which from a theoretical point of view are considered to exert a strong influence over the tax ratio through their effects on the capacity factors. These variables are:

1. the level of economic activity as measured by per-capita GNP
2. the sectoral composition of the economy, represented by the share of agriculture in GDP and the share of mining in GDP
3. the openness of the economy, whose proxy variable is measured either in terms of total exports as a ratio of GNP, or total value of foreign trade (export plus import) as a proportion of GNP.
4. the share of mining in exports.

Five taxable capacity equations<sup>7</sup> are derived based on different combinations of the variables and the countries are ranked according to their indices. Out of the indices computed to each specification one which corresponds to the first specification is given in table 3.3.

What emerges from this study is that, regardless of the type of specification used, Ethiopia shows an ITC index below unity. Bearing in mind the reservations voiced earlier about the precision of the results, it can be seen that the tax effort in the country was below average, indicating a low tax effort to mobilize the tax potential. As the result, the country's performance compares unfavorably with those reached in other developing countries. As the table shows the country stands 28th out of the 45 countries.

Similarly, following the same methodology, the IMF study estimated ITC indices for 34 sub-Saharan countries, Ethiopia again included, using data for the year 1977. Following the second specification presented in note 7, the approach consisted of correlating the ratio of actual tax revenue to GDP against per-capita non-export income, the share of mining in GDP, and an export ratio excluding mineral exports.<sup>8</sup> The ITC indices for the 34 countries calculated using the above equation and the ranking of the countries are presented in table 3.4.

Similar to the above study, the table shows that the Ethiopian tax effort index is below unity, which is equal to 0.95; indicating once again, that the country exhibits below average performance, even by the standard of sub-Saharan Africa. Indeed the effort reached indicates a low coefficient of utilization of the taxable capacity, especially when compared with those achieved by other African countries such as Togo, Somalia, Zambia, Benin etc, all of which scored an index equal or above 1.24. Consequently the country ranks 21st out of the 34 countries included in the study.

Table 3.3

## Forty four Developing Countries ITC Indexes

1978-80

Country	ITC Index	Ranking	Country	ITC/Index	Ranking
Togo	1.593	(1)	Korea	0.979	(23)
Trinidad and Tobago	1.507	(2)	Pakistan	0.974	(24)
Zambia	1.384	(3)	Mali	0.972	(25)
Guyana	1.312	(4)	Venezuela	0.963	(26)
Sri Lanka	1.309	(4)	Jamaica	0.959	(27)
Senegal	1.294	(6)	<u>Ethiopia</u>	<u>0.887</u>	<u>(28)</u>
Kenya	1.285	(7)	Honduras	0.871	(29)
Chile	1.282	(8)	Singapore	0.852	(30)
Malayasia	1.268	(9)	Sudan	0.851	(31)
Ivory Coast	1.264	(10)	Upper Volta	0.843	(32)
Egypt	1.260	(11)	Thailand	0.799	(33)
Tunusia	1.252	(12)	Philippines	0.784	(34)
Tanzania	1.242	(13)	Brundi	0.758	(35)
Peru	1.224	(14)	Mexico	0.747	(36)
Zaire	1.224	(15)	Rwanda	0.744	(37)
Turkey	1.210	(16)	Costa Rica	0.743	(38)
Morocco	1.209	(17)	Colombia	0.689	(39)
Indonesia	1.32	(18)	Praguay	0.647	(40)
Brazil	1.109	(19)	Bolivia	0.567	(41)
India	1.067	(20)	Guatemala	0.566	(42)
Ghana	1.059	(21)	Ecuador	0.559	(43)
Argentina	1.042	(22)	Nepal	0.438	(44)

Source: World Bank, op. cit. p. 55

An interesting point which emerges from the above discussion is that, while one would on a priori grounds expect a relatively higher tax effort index in a country like Ethiopia, in which the government plays a dominant role in the development drive, which makes the demand for public sector current and capital expenditure exceptionally high, such performance does not appear to be a feature of the country's tax system. Not only does the country perform poorly relative to the socialist oriented countries, notably Tanzania, India, Benin, Somalia, Srilanka, Congo, etc. (which seems to satisfy the priori expectations) but also has a long way to go before reaching the stage attained by countries considered to be market-oriented, such as Kenya, Ivory Coast, Egypt, etc.

In conclusion, the outcome of the above discussions show that, although a significant increase in tax revenue has been achieved, the tax level reached when compared with the taxable capacity of the country, however, indicates that the tax effort leaves much to be desired. Thus it remains true today as it was more than a decade ago, that the tax ratio is comparatively low not because of a low taxable capacity, but because of the inadequate effort to effectively mobilize the tax potential.

On the other hand, the above situation indicates the existence of an unexploited tax potential. All that is called for is a systematic and sustained effort to tap this potential.

The above method assesses the tax performance by considering it at a given time, i.e. by making reference to static indices of tax effort. However, as we have pointed it out earlier, tax effort is a process and thus, it is not fair to judge the performance by how it looks at a point in time. Consideration of tax effort must include tax effort in a dynamic sense, which appraises past effort made to raise increased tax revenue and the potential for future development. This is essentially the question of responsiveness of tax revenue to growth in national income, which is the subject of the subsequent chapter.

Table 3.4

Selected Countries of Sub-Saharan Africa's ITC IndexFiscal Year 1977

Country	Actual Tax/GDP	ITC Index	Ranking
Togo	25.04	1.69	1
Somalia	23.86	1.35	2
Zambia	22.13	1.33	3
Benin	15.58	1.29	4
Seychelles	20.66	1.24	5
Swaziland	27.31	1.20	6
Lesotho	17.00*	1.18	7
Congo	22.38*	1.14	8
Upper Volta	14.55	1.11	9
Senegal	17.13	1.10	10
Mauritius	21.9	1.06	11
Sudan	14.04	1.04	12
Tanzania	15.26	1.03	13
Zaire	22.35	1.03	14
Gabon	24.76	1.02	15
Ivory Coast	18.33	1.00	16
Mauritania	17.46	1.00	17
Nigeria	22.16	0.98	18
Botswana	22.61	0.98	19
Central African Rep.	14.92	0.97	20
<u>Ethiopia</u>	<u>12.78</u>	<u>0.95</u>	<u>21</u>
Brundi	13.74	0.91	22
Madagascar	13.74	0.89	23
Kenya	14.89	0.89	24
The Gambia	20.74	0.89	25
Mali	13.37	0.89	26
Liberia	25.34	0.85	27

Table 3.4 (contd.)

Country	Actual Tax/GDP	ITC Index	Ranking
Cameroon	13.19	0.84	28
Rwanda	11.42	0.81	29
Sierra Leone	14.71	0.80	30
Malawi	12.05	0.71	31
Chad	8.25*	0.61	32
Ghana	6.32	0.59	33
Uganda	6.59	0.52	34
			3

Source: International Monetary Fund *op.cit.* p. 55

\* Data relate to 1976

### 3.3 The Relationship Between Tax Revenue and Government Expenditure in Ethiopia

The foregoing discussion relates to the issue of tax potential available and the extent to which, the potential has been utilized. In this part we address ourselves to the issue of how the tax revenue relates to the fiscal structure-total tax revenue and total government expenditure together. This is not to suggest that, the actual spendings themselves reflect the amount which the country needs for its development. We have noted earlier that the expenditure requirement in a developing country is so huge that it certainly exceeds any country's financial capacity. What we intend to do in this part is to assess the ability of the tax system to meet the revenue needs of the country to undertake its modest expenditure programmes.

The comparison is presented in table 3.5. Even a glance at the table is enough to observe that in most of the years revenue from taxation has not been able to keep pace with the increase in government expenditure. During the period

of the study, expenditure covered by taxes reached 69% only once, and sometimes even remained around 50%. What is more disconcerting is that, during the period of study, there was not even a single year when tax revenue was able to cover current expenditure. Moreover, the picture describes a progressively deteriorating relationship between tax revenue and government expenditure - total as well as current.

The lagging of the growth of tax revenue behind the growth of current expenditure has resulted in a poor saving performance in which, as indicated in table 3.6 government savings contributed little to the financing of the government capital expenditure. The inability to match increased expenditure needs with government revenue has resulted in entrusting the major burden of financing development expenditure on foreign loans and grants and domestic loan finance. As table 3.6 shows, deficit financing grew from 65 million in 1970/71 to 1, 333 million in 1982/83, covering on the average, about 76% of government capital expenditure. The structure of financing the overall government deficit as is presented in: table 3.7 indicates that, on the average about 61% of the deficit was financed by foreign loans and grants. Furthermore, the table shows an increase in the share of domestic financing relative to foreign financing. This reduction in foreign financing can be attributed mainly to the problem of mobilizing foreign resources. This is quite clearly indicated by the growth in the reliance on bank financing. For most of the period for which data are available, bank financing was the largest source of domestic financing for the budget deficit. This method of financing has emerged to be a major problem for economic management. The increased reliance on bank financing has caused an expansion in the supply of money in the economy which has resulted in a significant inflationary pressure.<sup>10</sup> The increased reliance on foreign finance has also

Table 3.5

Growth of Tax Revenue and Public Expenditure in Ethiopia1967/68 - 1982/83

Fiscal Year	Total Revenue (in million Birr) 1	Total Expenditure (in million Birr) 2	1 ÷ 2	Recurrent (in m. Birr) 3	1 ÷ 3
1967/68	314.0	523.2	60	442.2	71
1968/69	335.6	530.5	63	454.6	74
1969/70	373.6	584.9	64	478.9	78
1970/71	406.2	631.5	64	507.3	80
1971/72	428.8	671.2	64	521.5	82
1972/73	484.4	716.0	68	563.1	86
1973/74	537.3	777.7	69	611.2	88
1974/75	589.8	1048.9	56	811.3	73
1975/76	613.5	1200.4	51	917.6	67
1976/77	856.1	1344.5	64	1019.8	84
1977/78	939.1	1696.6	55	1367.2	69
1978/79	1147.2	1846.2	62	1477.4	77
1979/80	1298.2	2138.2	60	1695.0	76
1980/81	1352.6	2295.5	59	1791.2	75
1981/82	1411.7	2418.4 <sup>1</sup>	56 <sup>1</sup>	1836.6 <sup>1</sup>	76
1982/83	1493.5	3012.9 <sup>1</sup>	49 <sup>1</sup>	2176.7 <sup>1</sup>	68

Source: Ministry of Finance

<sup>1</sup> data does not include external grants in kind.

Table 3.6

Summary of Central Government Finance<sup>1</sup> 1970/71 - 1982/83

	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83
Domestic Revenue	464.8	489.7	555.1	618.9	711.4	781.1	1043.6	1192.2	1375.3	1559.7	1738.6	1824.0	1981
Tax Revenue	406.2	428.8	484.4	537.3	589.8	613.5	856.1	939.1	1147.2	1298.2	1352.6	1411.7	1493.5
Current Exp.	405.5	434.3	476.7	529.5	731.3	852.2	980.2	1330.7	1281.9	1548.0	1658.1	1692.4	2,187
Current Surplus	59.3	55.4	78.4	89.4	-19.9	-77.1	39.1	-138.5	93.3	11.7	80.3	129.2	-206
Capital Exp.	124.3	150.0	153.1	134.3	205.6	247.6	295.9	267.3	332.9	389.3	438.2	584.8	1,127
Overall Deficity	65.0	94.6	74.7	44.9	225.5	324.7	265.7	505.8	239.5	377.6	357.7	455.6	1,333
Financed By													
Foreign Loan (net and Grants)	52.5	68.2	63.0	47.0	91.6	111.4	99.8	71.6	141.0	142.7	128.2	460.7	384
Domestic Borrowing (net)	11.3	21.5	10.0	-2.1	133.9	213.1	133.3	334.2	78.5	234.9	229.5	-7	949
Banking Systems									(62.4)	(199.3)	(142.0)	(40)	(851)
Others									(16.1)	( 87.5)	( 87.5)	(-47)	(98)

Source: Ministry of Finance and World Bank, Ethiopia: Recent Economic Development, op. cit. p. 41

Table 3.7

The Structure of Financing Public Sector Deficit 1970/71-1982/83  
(as a proportion of total deficit)

	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83
Foreign Financing	.80	.72	.84	1.04	.41	.34	.37	.18	.67	.37	.35	1.01	.29
Domestic Financing					.59	.66	.63	.82	.33	.63	.64		.79
Banking Systems									(.26)	(.53)	(.40)		(.64)
Others									(.07)	(.110)	(.24)		(.15)

Source: table 3.6

resulted in increased debt service problems. The interest charge on foreign loans has registered a 10% growth rate per year during the period 1970/71 to 1980/81 in which case it grew from birr 17.1 million to birr 33.8 million in absolute terms. Consequently, the total interest charges payment amounted to birr 267.1 million.<sup>11</sup>

Thus, it is easy to see that the government cannot achieve any headway in expanding its development programmes due to the dearth of revenue. The tax performance is low, not only relative to the performance in other countries, but also to the expenditure programmes. As the result, even to maintain the status quo resort to deficit financing was required.

True enough, we can not expect a government called upon to meet a larger share of developmental expenditure to raise 100% of its revenue requirements from taxes only. In a developing country, where the need is great and pressing resort to some amount of deficit financing seems to be inevitable. Moreover, in Ethiopia the poor saving performance has taken place despite a substantial tax revenue increase, due to the concomitant rapid increase in government expenditure (although the expenditure is below average by African standards).<sup>12</sup> But the important issue which we raise at this point is whether adequate (tax) effort has been made to mobilize as much resources as the capacity could allow and thus avoid the need for substantial deficit financing. Our finding in the preceding section confirmed that the tax effort in the country is low by any standard, which is tantamount to saying that, the tax potential is not adequately tapped. This situation obviously does not warrant the extent to which deficit financing is resorted to in the country. This asserts our earlier statement that the size of the government expenditure and development expenditure for that matter, is constrained by the paucity of tax revenue partly due to the low tax effort of the country.

This leads to the already stated question, what was the effort made in the past to improve the capacity of the tax system to generate additional revenue, and what is the potentiality of the system for the future? This is as noted earlier the question of the responsiveness of the tax revenue which the following chapter attempts to explore.

## NOTES

1. Nicolas Kaldor, "Taxation for Economic Development" The Journal of Modern African Studies (1963) p.7.

2. See Eshetu Chole, Taxation In Ethiopia. An Analysis of Structure Policy and Performance. op. cit.

3. See literature review.

4. R.J. Chelliah, H.J. Baas and M.R. Kelly op. cit. p.

5. World Bank "Public Finance in Egypt, Its Structure and Trends" Staff Working Papers No. 639 (April 1984) p. 30-33.

6. IMF, A Statistical Evaluation of Taxation in Sub-Saharan Africa Occasional Paper No. 8. (October 1981). p. 46

7. The Taxable equations are

$$1) T/Y = 0.14 + 0.0007 Y_p + 0.0289 (x+MY) \quad R^2 = 0.086$$

(11.1) (0.76) (1.80)  $F(2,41) = 3.062$

$$2) T/Y = 0.12 + 0.0004(Y_p - X_p) + 0.002N_y + 0.074(X - X_n)/y \quad R^2 = 0.105$$

(6.3) (0.29) (2.30) (1.34)  $F = (3.40) 2.715$

$$3) T/Y = 0.14 + 0.0012N_y - 0.004A_y + 0.063X/Y \quad R^2 = 172$$

(4.82) (1.32) (0.69) (1.93)  $F(3,40) 2.715$

$$4. T/Y = 0.12 + 0.00002 (Y_p - X_p) + 0.12X/Y \quad R^2 = 0.19$$

(7.29) (2.09) (3.49)  $F(2,41) = 6.16$

$$5) T/Y = 0.17 + 0.0012N_y + 0.0008A_y \quad R^2 = 0.118$$

(6.46) (1.25) (1.42)  $F(2,41) = 3.95$

where:

T/Y = Ratio of tax revenue to GNP

Y = GNP in U.S dollars

Y<sub>p</sub> = Per capita GNP

X = exports

M = Imports

X<sub>p</sub> = Per capita exports

N<sub>y</sub> = share of mining (including petroleum) in GDP

A<sub>y</sub> = Share of agriculture in GDP

X<sub>m</sub> = Mineral (including petroleum) exports

't' = value are shown in brackets.

8. the equation derived is:

$$T/Y = 11.1904 - 0.0024(Y_p - X_p) + 0.2433N_y + 0.4849X_y$$

(8.2011)    (1.5351)    (4.2229)    (5.8187)

$R^2 = .54$  't' values are given in brackets.

9. The level of expenditure- total, and capital is very low in Ethiopia by African standard. The median value of total public expenditure over GDP and capital expenditure over GDP, in 1981, in Africa were 34.1 and 12.9% respectively, as compared to 16% and 6% respectively in Ethiopia during the same period. UN. Economic Commission for Africa Survey of Economic and Social Conditions in Africa 1981-1982 (Addis Ababa) p. 96.

10. የጠቅላይ ስጦታዎች የምርት ዘመቻ ማዕከላዊ ንግድ ጠ/መምሪያ የአባሪ ምት ለማት ጠሪ ዕቅድ /000 ረቂቅ/ ጥራዝ አራት. አዲስ አበባ ዓገባት 1975/78  
1004 11. Ibid p. 989

12. See not 9 above.

#### 4. THE RESPONSIVENESS OF TAX REVENUE TO CHANGES IN NATIONAL INCOME IN ETHIOPIA

##### 4.1 Income Responsiveness as a Tax Criterion: A Theoretical Framework

Before we proceed with the task of analysing the responsiveness of the tax system in Ethiopia, we give below a brief explanation of the essence and importance of an income responsiveness (elasticity) criterion of tax revenue in a developing country.

Generally the degree of responsiveness of the tax revenue to changes in national income is considered to be a crucial ingredient in the criteria of a tax system in both the developed as well as developing countries. But while in the former case a high income-responsive (income-elastic) tax system is sought for its anti-cyclical impact, in the later case the size of the revenue yield, and for that matter, the rate of economic development depends on the income elasticity of the tax system. This is to say in order to tax away a substantial portion of the additional income generated by the economy, the tax system must be structured in such a way that the revenue generated increases more than the proportionate growth in national income. (For Musgrave, this means "on the pessimistic side increased responsiveness to inflation... on the optimistic side increased responsiveness to growth in real output.")<sup>1</sup> In short, this means that income-elasticity of tax yield must be greater than unity or it must be elastic. According to A.R.Prest,<sup>2</sup> a tax structure can have greater than one elasticity, if either or both of two things happen, i.e either each individual tax system must be income elastic, or elastic taxes must predominate in the tax structure.

Tax revenue responds to changes in national income due to the operation of two factors. The first is due to changes in the economic activity of the base to which tax collections are related. This refers to the tax revenue changes

without any change in either the tax base or the rates of existing ones, or the addition of new imposts. Thus, this is the automatic response of tax revenue to income changes only, and is commonly known as the built-in-elasticity of the tax system. The second is due to the discretionary changes made in the tax structure, which includes changes in rates and structure of the tax system, involving its widening and deepening by way of extension of base, additions and changes in statutory rates and administrative efficiency. The total response of tax revenue due to the built-in (automatic) changes as well as due to the discretionary measures is called the buoyancy of the tax system. Thus in order to generate high yield, the tax structure must be sufficiently elastic in terms of its built-in-elasticity and buoyancy.

The first one, that is the built-in-elasticity, is considered to be an important criterion of a tax system, because the alternative to automatic growth are upward revisions of existing rates and introduction of new taxes, both unpopular at the political level and considered undesirable for their possible adverse psychological impact on the effort to invest and take risks. But most important of all which is the main concern of the study is that, in developing countries frequent changes in tax policy are rarely implemented.<sup>3</sup> Alex Radian,<sup>4</sup> after making an extensive study of taxation experience of several developing countries, concludes that, frequent tax changes do not generate the desired yields in the developing countries. According to his findings, frequent changes in tax policy make it hard for the tax payer to comply, as for the administration to enforce, by destroying routines that simplify complex and unpleasant tasks. Tax compliance is made harder because the tax payer must learn new sets of rules each time he files, administrative implementation also suffers because all changes require reforms in procedure, training and means of collecting, storing and use

of information which are difficult to effectuate. When the changes are many, it is argued, they are either altogether abandoned or only the convenient ones chosen or else the administration is crippled when trying to implement all. All or some of these problems can be avoided by having a tax structure with a high built-in-elasticity, in which a part of the additional income is automatically mobilized into government hands, without having to go through the painful and prolonged process of levying new taxes. More specifically the advantage of such a system lies in that the larger the automatic increase in tax such revenue during a given period is, the less the amount to be raised through additional measures in order to achieve a postulated marginal tax/income ratio, because in such a situation increases in income are caught in the tax net as they accrue or as they are spent, which means that additional contributions are collected from those whose incomes have risen. Moreover, this would ensure higher compliance by the tax payers as tax payers are more willing or less reluctant to let the government collect increasing revenue at existing rates of taxation than to permit rate increases and imposition of new taxes. Arthur Lewis strongly recommends for such a tax structure and says, "...this (automatic transfer of resources) is the main hope of increasing the share of government in the national income. In less developed economies the marginal rate of taxation should always be greater than the average rate."<sup>5</sup>

But, while the governments of developing countries should aim to place a major reliance on a tax structure with a high built-in elasticity for increasing their share of the national income, measures of additional tax rate changes cannot be ruled out. This makes the second criterion i.e. buoyancy of the tax revenue, which measures the historic responsiveness of the tax revenue structure an important criterion of a tax system in a developing country. This arises

from the fact that in these countries a tax structure with sufficiently high built-in-elasticity can be achieved only gradually and thus in addition to the above structure there is also the need to "start at a higher level."<sup>6</sup>

As G.S

Sahota, has aptly put it, "in an underdeveloped ...economy, there are many untapped sources of finance. There is a big "slack" to be taken. As industrialization starts and new tasks are undertaken, new incomes are generated, new aspirations are formed, new needs are felt, new values are developed and new shifts in demand take place. In these circumstances the economy has to cross a "hump" and it is necessary to widen and deepen the tax base to increase appropriately the old taxes and to levy new imposts."<sup>7</sup> (emphasis added). In pointing out the importance of these two tax criteria Sahota continues to say, "this

(changes in tax base and rates) kind of tax expansion is primarily necessary to start the cumulative forces, while "income (built-in) elasticity of a tax structure" is essential to sustain the cumulative process".<sup>8</sup> (emphasis original)

Although, there is a general consensus among economists that developing countries could benefit from a greater flexibility of their fiscal system, the question as to what should be the degree of responsiveness of a tax structure in a developing country cannot be easily answered. Obviously, there cannot be a doctrinaire answer for this, as it depends on the particular circumstances of the country which requires a detailed study of the economic social and political conditions in the country. But it was suggested that, in the case of those countries with fairly low tax ratio, the difference between the marginal and the average should be sufficiently large to attain a satisfactory level of taxation within a relatively short period of time.<sup>9</sup>

With this, as background, we pass to the description of the methods of estimation of the responsiveness of the tax system in Ethiopia.

4.2 Method of Estimating Tax Revenue Responsiveness

4.2.1 Method of Estimating Buoyancy

We have noted that the buoyancy of the tax revenue indicates the overall ability of the revenue system to mobilize financial resources, regardless of the factors stimulating revenue. The buoyancy is therefore, measured by the historic aggregate responsiveness of a revenue structure to GDP changes. Symbolically this may be presented as:

$$E_{R_t Y} = \frac{dR_t}{dY} \cdot \frac{Y}{R_t} \dots \dots \dots (4a)(i)$$

where

$R_t$  = total tax revenue

$Y$  = income (GDP)

$E_{R_t Y}$  = buoyancy of tax revenue.

The above model presents the responsiveness of the tax revenue to income as a single number. But since the tax structure is a complex of many taxes of diverse nature, changes in national income, will affect the yield of individual taxes in a dissimilar manner. A flat rate, ad valorem tax, a specific duty, or a progressive rate schedule definitely makes a tax yield react differently to changes in national income (GDP). These considerations make separate study of the buoyancy of individual taxes necessary, if the separate effects of changes in levels of rates and the national income are to be noted and the productivity of component taxes examined. To this effect, the flexibility of the tax system must be presented as the weighted average of the sum of the elasticities of component taxes. The weight being the respective yields. This may be presented as

$$E_{R_t Y} = \frac{R_i}{R} \left( \frac{dR_i}{dY} \right) \cdot \frac{Y}{R_i} \dots \dots \dots (4a)(ii)$$

where  $R_i$  = tax revenue from the  $i^{th}$  tax

In the estimation of the buoyancy of the aggregate tax and individual taxes, two types of regression models are used to see which would give us a better fit. These models are<sup>10</sup>

$$R_t = a + b_1 Y_t + U_t \quad (4b)$$

$$R_t = a Y_t^{b_1} + U_t \quad (4c)$$

$$\text{Log } R_t = \text{Log } a + b_2 \text{log } Y_t + \text{log } U_t \quad (4d)$$

where

$R_t$  = tax revenue

$Y_t$  = GDP

$a$  = intercept term

$b_1$  = marginal rate of taxation

$b_2$  = buoyancy coefficient

$U_t$  = Stochastic disturbance term

#### 4.2.2 Method of Estimating Built-in-Elasticity

As indicated earlier unlike buoyancy the built-in-elasticity of a tax system refers to the extent to which the tax system generates increased return with every increase in the national income alone. Thus if during the period under consideration no discretionary changes, either in the tax rates or tax bases or both were made, the historical tax series could be used to estimate the built-in-elasticity of the tax revenue. In this case analogous to the earlier definition of buoyancy, the built-in-elasticity of the total tax revenue and the individual taxes can be presented in the form of relationships as given in equation (4a). Similarly the estimation of the built-in-elasticity coefficients can be made using models (4b) and (4d) given above.

However, in practice discretionary tax changes are frequently made, the historical tax series thus, reflects the combined effect of the growth in income

and of discretionary tax changes. It therefore, becomes necessary to eliminate (remove) the growth accounted for by discretionary changes from the historical series, in order to estimate the built-in-elasticity of a given structure of a tax. In the section below we discuss the techniques used for the purpose.

#### 4.2.3 Methods of Separating Automatic from Discretionary Tax Revenue Changes

Several methods<sup>11</sup> have been developed and used for the purpose of separating the revenue impacts arising from discretionary changes from the revenue series. In this part however we discuss only two of the methods, which are employed in this study to "cleanse" the revenue series from the impact of discretionary changes.

For the purpose of this study, discretionary refers to changes in the legal rates and bases and major changes in tax administration. The yield effects of normal (trend) improvements in administrative efficiency is not subject to removal.<sup>12</sup>

##### 4.2.3.1 The Proportional Adjustment Method.<sup>13</sup>

This method consists of simulating a series of hypothetical revenue, which would have been obtained had the reference (desired) year's tax structure been effective throughout the given period of the study. Two steps are involved in this method. First, revenue observations affected by discretionary changes are adjusted to preceding-year basis by removing the estimated revenue impact of discretionary measures in the respective years of enactment (except for the first year, for which actual revenue is taken). As the result, revenue changes between any two successive years would reflect automatic growth during the period. Second, the adjusted revenue series is further refined by applying to each observation,

a sequence of multiplicative factors which measure the continuing revenue impact of discretionary changes in each future year.<sup>14</sup> The formula to arrive at such 'cleansed' series can be presented as follows:

$$R_{i,j} = R_{j-1,j} \cdot \frac{R_{j-2,j-1}}{R_{j-1}} \dots \frac{R_{2,3}}{R_3} \cdot \frac{R_{1,2}}{R_2} \quad (4e)$$

where  $R_j$  = the actual yield in the  $j^{\text{th}}$  year  
 $R_{i,j}$  = the collection of  $j^{\text{th}}$  year adjusted to the structure of the  $i^{\text{th}}$  year chosen as the base year and,

$$R_{j-1,j} = R_j^{-D_j}$$

where  $D_j$  is the effect (positive or negative) in the  $j^{\text{th}}$  year of the discretionary changes in that year.

When the data series are adjusted in this manner, the resulting series reflects the growth in revenue due to the change in the economic base only.

As can be seen in the above discussion, an important requirement for the application of the proportional adjustment method is an estimate of the revenue effects of discretionary changes are prepared at the time the budget is formulated and are presented in Appendix II. However, most of these estimates are of an ex-ante type, and ex-post revision of the initial estimate is not provided. Since the actual revenue effect of the discretionary changes can be different from what was expected at the revenue budget estimate, we have attempted to correct the budget estimates by multiplying the ex-ante estimates by the ratio of actual to estimated overall yield of each tax, on the assumption that the percentage error in estimating the revenue effect of a discretionary change of a particular tax would be the same as the percentage error in forecasting the overall yield of that same tax.

This method of adjustment however, is based on the assumption that the revenue effect of any discretionary measure grows in proportion to total revenue. This means that the discretionary measures changes the level of yield but does not change the built-in-elasticity of the system. Consequently, the method is appropriate only when the discretionary change is of a proportional nature, and not when the change is more progressive or less progressive than the tax it modifies. This is a major limitation of the study and thus it cannot be used uniformly in all cases. We have pointed out earlier that the tax system has been characterized by major and far reaching rate and base changes during the period under study, in which case some of the reforms made were more progressive than before. Moreover, in some cases, while information on the dates of the discretionary action are available, the necessary data on the estimate of the impact of the discretionary measures could not be obtained. Faced with these problems an alternative method was sought. This is known as the dummy variable method.

#### 4.2.3.2 The Dummy Variable Method.<sup>15</sup>

This method involves the introduction of dummy variable to make allowance for discretionary changes. By making use of the knowledge of just the years in which discretionary change occurred, the technique enables the adjustment for the discretionary changes and the estimation of the elasticities to be made simultaneously. In principle a dummy variable must be incorporated in the equation, for each discretionary change. Thus, in the relationship between tax revenue and income, if there are  $T$  observations and a discretionary change which affected the level of revenue has taken place at  $t=k$ , then the relationship for the  $T$  period is given in the following model.

$$R_t = a + cD_t + bY_t + U_t \quad (4f)$$

Where:

$R_t$  = tax revenue during the period

$D_t$  = dummy variable, and

$D_t = 0$  for  $t = 1 \dots k-1$  and,

$D_t = 1$  for  $t = k \dots T$ .

But if the discretionary change had an effect both on the marginal tax (elasticity) and on the level of revenue, then the relationship for the T period is given as follows:

$$R_t = a + cD_t + bY_t + dD_t \cdot Y_t + U_t^{16} \quad (4g)$$

The estimates of  $a$  and  $b$  for the tax structure before the reform would be obtained directly by (4g) and estimates of the parameters for the tax structure after the reform would be obtained as  $(a+c)$  and  $b+d$  respectively.

The main limitation of this method lies in that, since in practice, discretionary changes in taxation are frequently made, the problem of insufficiency of observation is faced. Besides, although in principle as many dummy variables as there are discretionary changes may be incorporated in the tax function, the method can work only if sufficiently large number of observations are available for each structure. At a minimum two observations per dummy must be available for each structure.<sup>17</sup> This means, the technique is inappropriate in a situation where the rate structure is changed in two successive years or in the last year of the observation period. It is therefore, clear that this method cannot be readily used in our case. As can be seen for Appendix II, tax changes have been the rule rather than the exception in Ethiopia during the period under review. This imposes a formidable technical problems in the use of the dummy variable method.

It thus becomes clear that neither of the methods can be used uniformly in removing all the revenue impacts of discretionary changes. Thus we use both methods for the purpose.<sup>18</sup> Where it is justified on a priori grounds that a discretionary change did not affect the built-in-elasticity of a tax, a clean data series is derived by the proportional adjustment method. But where its straight forward application is inappropriate resort is made to the use of the dummy variable method. In estimating the built-in-elasticity of the aggregate tax revenue a synthesis of both methods is used. First partial adjustment is made using the proportional adjustment method, then the dummy variable technique is used to capture the remaining effects of the discretionary changes.

#### 4.2.4 Partitioning of Elasticities<sup>19</sup>

A version of the elasticity (built-in) approach involves a partitioning of the income elasticity coefficient into its components. Normally, the income elasticity of a tax is the product of its elasticity with respect to its base and the base to income elasticity. For instance, the income elasticity of employment income tax can be divided into the elasticity of the employment income tax yield to its base, which is taxable employment income and the elasticity of the latter to national income (GDP). In general this relationship can be presented in the following form.

$$\frac{dR_i}{dY} \cdot \frac{Y}{R_i} = \left( \frac{dR_i}{dB_i} \cdot \frac{B_i}{R_i} \right) \cdot \left( \frac{dB_i}{dY} \cdot \frac{Y}{B_i} \right) \quad (4h)$$

i.e.  $E_{R_i Y} = (b_1 \cdot b_2)$

where

$R_i$  = revenue from the  $i^{\text{th}}$  tax

$B_i$  = tax base of the  $i^{\text{th}}$  tax

$b_1$  = the elasticity of the  $i^{\text{th}}$  tax with its base

$b_2$  = the elasticity of the  $i^{\text{th}}$  base with income

The elasticities i.e the tax-to-base elasticities and the base-to-income elasticities can be estimated using the methods discussed under section (4.2.3)

The above relationship holds as a mathematical identity. However, this identity is strictly true when the function is perfectly estimated. i.e  $\bar{R}^2=1.00$ . In other words, the product of the elasticity coefficients of the two components would give exactly the same result as the traditional income elasticity approach, if the base and income are perfectly related, i.e if income is a perfect proxy measure for the actual base. But, when this is not the case, and each of these elasticities are estimated separately from regression equations, the product of the component elasticities may not be equal to the income elasticity of the tax, as much as the estimates are affected by the random error term in the regression equations.<sup>20</sup>

#### 4.3 Estimation of the Responsiveness of Tax Revenue to Income Changes.

##### 4.3.1 Estimation of Buoyancies and Interpretation of Results.

In this section a study of the buoyancy of the tax revenue over the period 1967/68 to 1982/83 is made. Moreover, to make further comparison of the buoyancies and to see how discretionary changes have affected the responsiveness of the tax system over time in the country, the buoyancies are estimated for different sub periods.

The results of the two forms of equations i.e of the linear and log-linear functions, based on the data of 1967/68 to 1982/83 are presented in table 4.1 and 4.2 respectively. In order to appreciate the contribution of the components of tax revenue in determining the size of the buoyancy of the tax yield, we have also estimated the buoyancies of the component taxes. The figures in parentheses are standard errors of the regression coefficients. Other relevant statistical

data, the  $R^2$  which measure the goodness of fit, the F-level, the Durban Watson Statistics (D-W) which provide a measure of the auto correlation of the residuals and the rho ( $\rho$ ) correction factor, where first order auto correlation adjustment are required<sup>21</sup> are also presented. It can be observed that neither the linear nor the logarithmic forms of regressions are uniformly superior, although the differences are small. Thus the buoyancy coefficients of the best equations of the taxes selected on the basis of the coefficient of determination are summarized in Table 4.3.

Several observations can be made on the basis of the information given in the table. It can be seen that in most cases the buoyancy coefficients are above unity and highly significant at 0.05 significance level, implying that most of the revenue sources contributed towards increasing the tax ratio. Consequently the aggregate tax revenue recorded a high buoyancy (1.8), which indicates a high revenue performance. It can also be observed that, the high buoyancy was the outcome of a comparatively high performance of the direct taxes which is equal to 2.03, as compared to the lower performance registered by the indirect taxes as a whole (1.4). Thus it can be said that the indirect taxes, which constitute the bulwork of the Ethiopian tax (70% on average), although buoyant in absolute terms, have pulled down the overall buoyancy of an otherwise much more buoyant tax system.

Turning to the investigation of the individual taxes, it can be seen that, the largest contribution of the buoyancy of the direct tax revenue has come from business profit and professional income tax followed by agricultural income tax, with estimated buoyancies of 2.69 and 2.16 respectively. Land use tax showed the lowest buoyancy among the direct taxes.

Table 4.1: Linear Regressions 1967/68 - 1982/83 (Model 4b)

Source of Revenue	a	b	R <sup>2</sup>	F	D-W	λ	Buoy- ancy
Direct taxes	-66.90	0.074 (0.018)	.53	15.94	1.22	.75	1.66
Income taxes	-65.66	0.068 (0.015)	.60	19.86	1.24	.50	1.75
Employment income tax	-27.45	0.019 (0.003)	.81	53.79	1.45	.50	1.6
Business Profit and Professional Income tax	-126.08	0.053 (0.008)	.76	44.92	1.10	.64	2.80
Agricultural income tax	-18.60	0.008 (0.002)	.57	18.36	2.07	.58	2.16
Land use tax	-9.88	0.008 (0.002)	.58	19.56	1.93	.55	1.55
Indirect taxes	-173.60	0.132 (0.012)	.90	130.47	1.33	.40	1.40
Excise taxes	-24.14	0.034 (0.007)	.60	20.58	1.36	.68	1.36
-on domestic goods	-34.59	0.034 (0.006)	.68	28.95	1.30	.58	1.50
-on imported goods	-4.08	0.001* (0.001)	.07	1.05	1.97		0.47
Monopoly tax	.2.61	0.0006 (0.0005)	.10	1.61	0.92		0.54
Stamp duties	0.09	0.0011 (0.0001)	.87	93.75	1.59		0.98
-on domestic tools	-22.46	0.134 (0.002)	.77	46.27	1.50	.58	2.20
-on Imports	-49.47	0.017 (0.001)	.95	286.18	1.83		1.80
-on Exports	1.34	0.001	.71	34.37	1.71		0.84

Table 3.1 (contd.)

Source of Revenue	a	b	R <sup>2</sup>	F	D-W	λ	Buoy- ancy
Turnover tax	-38.81	0.011 (0.0004)	.98	598.01	1.10		2.12
Import customs	-2.15	0.019 (0.003)	.76	46.20	1.40		1.01
Export customs	-83.05	0.040 (0.12)	.45	13.33	1.60	.50	2.12
-Coffee surtax	-37.97	0.029* (0.02)	.16	1.96	1.19		1.85
Total tax	-365.32	0.222 (0.012)	.98	358.61	1.95	.45	1.70

Notes: \*Insignificant at 5% level of significance.

Table 4.2: Log-Linear Regressions 1967/68 - 1982/83 (Model 4c)

Source of Revenue	a	b	R <sup>2</sup>	F	D-W	λ
Direct taxes	-5.41	2.03 (0.102)	.97	392.48	1.11	
Income taxes	-5.94	2.16 (0.100)	.96	457.59	1.15	
Employment income tax	-2.68	2.21 (0.474)	.31	6.55	1.74	.50
Business profit and professional income tax	-8.29	2.69 (0.14)	.96	356.86	1.92	
Agricultural income tax	-6.02	1.97 (0.497)	.52	15.71	1.86	.64
Land tax	-4.18	1.50 (0.418)	.47	12.84	1.66	.55

Table 4.2 (contd.)

Source of Revenue	a	b*	R <sup>2</sup>	F	D-W	λ
Indirect Taxes	-3.23	1.63 (0.668)	.86	603.20	1.50	
Excise Taxes	-2.47	1.23 (0.300)	.54	16.87	1.86	.68
-on domestic goods	-2.83	1.33 (0.301)	.58	19.48	1.30	
-on Imported goods	-0.92	0.19* (0.505)	.06	0.94	1.88	
Monopoly Tax	-2.66	0.90 (0.470)	.20	3.35	1.68	
Stamp Duties	-2.48	0.87 (0.120)	.79	52.34	1.88	
Transaction Taxes	-5.07	1.85 (0.085)	.97	472.85	1.19	
-on domestic goods	-6.45	2.21 (0.277)	.82	63.65	1.23	.58
-on Exports	-2.81	0.98 (0.091)	.78	50.66	1.23	
-on Imports	-5.08	1.80 (0.091)	.96	383.66	1.82	
Turnover Tax	-38.81	2.12 (0.004)	.98	880.84	1.82	
Import Customs	-1.99	1.06 (0.118)	.85	79.98	1.30	
Export customs	-8.96	2.98 (0.561)	.66	28.19	1.50	.50
Coffee Surtax**	-8.45	2.78* (2.550)	0.09	1.75	1.30	
Total Tax	-3.99	1.80	.99	2130.5	1.66	

## Notes:

Figures in parentheses are standard errors

\*insignificant at 5% level of significance

\*\*data from 1970/71-1982/83

Table 4.3

Summary of Regression Results

<u>Source of Revenue</u>	<u>Buoyancy</u>
Direct Taxes	2.03
Income Tax	2.16
Employment Income Tax	1.60
Business Profit and Professional Income Tax	2.69
Agricultural Income Tax	2.16
Land Tax	1.55
Indirect taxes	1.40
Excise taxes	1.36
-on domestic goods	1.50
-on imports	0.49
Monopoly Tax	0.90
Stamp Duties	0.98
Transaction taxes	1.82
-on domestic goods	2.20
-on exports	0.98
-on imports	1.85
Turnover Tax	2.12
Import Customs	1.06
Export Customs	2.98
Coffee surtax	2.78
Total Tax	1.80

The component taxes of the indirect taxes, however differed markedly in their performances. This divergence can be attributed to the different kinds of rates which are levied on different kinds of tax bases, with which the indirect tax revenue is collected.

Excise tax as a whole showed above unity buoyancy despite the depressing effect of the excise revenue collected from imports, which showed below unity buoyancy. This is an important finding in view of the fact that, one expects

below unity buoyancy as the result of the rate structure which is mostly specific in nature. While it remains to be analysed in detail later on as to what contributed to the level of buoyancy, it can easily be seen even at this point that the effects of rate and base changes made during the period must have contributed significantly. Out of the component excise taxes those levied on beverages and tobacco and tobacco products showed a high productivity (1.95 and 4.2 respectively), while that on petroleum products, surprisingly enough, exhibited insignificant coefficient at 0.05% level.

The sales taxes, both the turnover tax and the transaction tax emerged as highly productive revenue sources in the Ethiopian tax structure. The relatively high buoyancy of the total transaction tax was contributed mainly by that imposed on domestic goods followed by those on exports. The performance of the tax on exports was however, relatively poor.

Import customs which constitutes an important category within the indirect tax classification, showed a comparatively low productivity. The buoyancy coefficient during the period was about unity which indicates merely a proportional growth of the tax revenue with the growth of the national income (GDP). The relatively poor performance of this specific tax despite the significant revision of the tax rates upwards during the period shows that, the tax may not be counted upon as a lucrative source of revenue in the country.

As regards the export customs, any firm conclusion about its responsiveness cannot be drawn based on the figures given in the table, except perhaps the negative conclusion that export customs is poorly correlated with GDP. This in itself is a finding of meaningful significance, for it ascertains the fact that

such revenue is exogenous to GDP. We have noted earlier that export customs revenue is obtained mainly from coffee export surtax, which is a function of the capricious world prices and the volume of exports, rather than GDP movements. This makes the coefficient of little value in the process of evaluating the revenue performance of the tax. The results (for whatever they may serve) show that export customs in general emerged highly buoyant, whereas coffee exports surtax revenue buoyancy was not significantly different from zero.

In general, the above discussion shows that except customs on imports, all of the component tax revenues exhibited a proportionately higher growth rate than that of GDP. Thus, we can safely state that the revenue base of the tax system was fairly buoyant during the period of the study. This is further corroborated by the high coefficient of responsiveness of the aggregate tax revenue. The buoyancy coefficient (1.8) is highly significant at even 0.01 significance level, the coefficient of determination is also very high. Thus according to this information, it can be stated that, on the average, over the period, for every 1% change in GDP, the tax revenue structure responded with a 1.8% increase in revenue, certainly classifying the tax structure as a buoyant tax system showing a high tax effort to raise tax revenue.

However, we have indicated earlier that the buoyancy coefficient measures the built-in (automatic) growth as well as growth in revenue arising through discretionary changes during a given period. This makes the quantification of these two measures of same interest, as they would permit us to see the extent to which the buoyancy figure is attributed to automatic transfer of resources based on given tax rates or new measures taken during the period of study to increase tax revenue. This would provide a better impression of the tax effort made during the period. An investigation, into this will be made later. Suffice to say at this point, however, that a credible tax performance was recorded during the period of our study.

The above analysis has focused on tax performance evaluation over the 16 years. But as indicated earlier, the post revolution period in Ethiopia has been characterized by major reforms in the tax system, in which the objective of increasing the revenue raising capability of the tax system figured more prominently. Analysis of the responsiveness of the tax revenue during the pre-and post-revolution period and the comparison of the same can shed some light on the extent to which the discretionary measures taken have improved the revenue productivity of the tax mechanism, in response to the increased financial needs of the government. Towards this end, we have estimated the buoyancy of the aggregate tax revenue and the component taxes for the sub-periods of 1967/68 and 1975/76 which is supposed to represent the pre-revolution period and of 1976/77 to 1982/83 supposed to represent the post-revolution period.

The buoyancy estimates for the two periods are presented in Table 4.4 and 4.5. They are obtained by fitting the data to the log-linear function. To make comparisons easier the buoyancy coefficients for the three periods are summarized in Table 4.6.

An examination of the figures in the two tables reveals that as one would expect, the performance of the tax revenue as a whole registered an improvement during the second period as compared with the first. The two buoyancy coefficients 1.64 and 1.8 are significantly different as is indicated by the F value (Appendix III), demonstrating that, the relationship between tax revenue and GDP changed over time. This means the increased effort made during the second period resulted in a salutary effect on the revenue performance of the tax system, that was desired.

Table 4.4

Buoyancy of Major Taxes  
1967/68 - 1974/75

	Constant	Buoyancy Coefficient	R <sup>2</sup>	T-value of Coefficient
Direct Taxes	-5.17	1.97	.93	9.19
Income Taxes	-6.58	2.34	.94	9.40
Employment income tax	-8.95	2.87	.93	8.90
Business profit and professional income tax	-7.58	2.50	.91	7.75
Agricultural income tax	-0.90	0.53	.53	0.56
Land tax	1.17	0.03	0.0	0.13*
Indirect taxes	-3.13	1.42	.94	10.24
Excise taxes	-4.05	1.65	.93	9.32
Excise on domestic goods	-6.95	2.35	.87	6.37
Excise on imported goods	-15.05	4.35	.89	7.04
Monopoly tax	-4.71	1.44	.15	1.04*
Stamp duties	-1.21	0.53	.54	2.64
Transaction taxes	-4.68	1.75	.87	6.28
-on domestic goods	-5.78	1.90	.90	8.45
-on exports	-6.80	2.06	.78	4.57
-on imports	-4.44	1.62	.80	4.96
Turnover tax	-8.24	2.55	.92	8.71
Export customs	-4.86	1.72	.66	3.44
Import customs	-1.57	0.95	.88	6.52
Total tax	-3.43	1.64	.97	13.31

Note: \*Insignificant at 5% significance level.

Table 4.5

Buoyancy of Major Taxes  
1975/76-1982/83

Source of Revenue	Constant	Buoyancy coefficient	$R^2$	t-value of Coefficient
Direct taxes	-8.03	2.70	.95	10.61
Income taxes	-7.91	2.66	.93	9.42
Employment income tax	-6.75	2.23	.93	8.70
Business profit and Professional income tax	-9.61	3.03	.86	5.97
Agricultural income tax	-13.54	3.85	.89	6.54
Land Tax	-10.68	3.12	.87	6.26
Indirect taxes	-2.67	1.42	.91	6.20
Excise taxes	-6.22	2.17	.87	6.84
Excise on domestic	-3.16	1.40	.91	8.03
Excise on Imports	0.48	.18	.02	0.39*
Stamp duties	-4.82	1.48	.85	5.86
Transaction taxes	-6.28	2.16	.93	9.10
on domestic goods	-9.18	2.70	.90	7.26
on exports	-1.49	0.63	.59	2.92
on imports	-5.93	2.01	.91	7.93
Turnover taxes	-6.58	2.12	.95	10.90
Export Customs	-1.99	1.09	.20	1.21*
Import Customs	0.38	0.46	.21	1.17*
Total Tax	-4.09	1.80	.98	15.74

Note:

\*Insignificant at 5% level of significance

Table 3.6

Summary of Buoyancy Measure for  
Different Periods

	1967/68-1982/83	1967/68/1975/76	1975/76-1982/83
Direct taxes	2.03	1.97	2.70
Income taxes	2.16	2.34	2.66
Employment income tax	1.16	2.87	2.23
Business Profit and Professional income tax	2.69	2.50	3.03
Agricultural income tax	2.16	0.50	3.85
Land tax	1.55	0.03	3.12
Indirect taxes	1.40	1.52	1.42
Excise taxes	1.36	1.65	2.17
-on domestic goods	1.50	2.35	1.40
-on imports	0.49	4.35	0.18
Stamp duties	0.98	0.53	1.48
Transaction taxes	1.82	1.75	2.16
-on domestic goods	2.20	1.90	2.70
-on exports	0.98	2.06	0.63
-on imports	1.85	1.62	2.01
Turnover tax	2.12	2.55	2.12
Import Customs	1.06	1.72	0.46
Export Customs	2.98	0.95	1.09
Total tax	1.80	1.64	1.80

An investigation into the individual taxes also shows that there were substantial improvements in several of them. What is interesting is there was a substantial improvement in all of the direct taxes except in the employment income tax. The deterioration in the buoyancy of the employment income tax

from 2.87 in the first period to 2.23 during the second period is an unexpected one, because it so happened despite the fact that a more progressive rate structure was introduced during the second period. A detailed analysis of why the tax behaved in such a manner will be given later, but it is not difficult to see even at this point, that the cause of the fall could be nothing but the stagnation of the respective tax base, i.e. taxable employment income.

Indirect tax as a whole recorded a decline from 1.55 to 1.40. The effect of the fall on the overall buoyancy could be substantial because of the overwhelming importance of this category of tax in the overall tax revenue. The cause for the fall in the buoyancy in the indirect tax can also be easily seen in the table. Export and import customs which comprise a major portion of the indirect taxes showed no relationship with GDP as indicated by the t-statistics.

It can be concluded therefore that, the wide range tax reforms made to improve the revenue performance of the tax system as a whole during the post-revolution period have resulted in the improvement of the overall buoyancy of the tax revenue. This and the fact that most of the domestic taxes have improved their productivity very significantly, make the effort made during the postrevolution period to be highly evaluated.

Comparison of Buoyancy with ITC Index

The above section on the analysis of buoyancy, clearly establishes that a remarkable tax effort was made during the period of our study. This is indicated by the high overall buoyancy of the tax revenue estimated for the period, which, as indicated earlier is an index of tax effort in the dynamic context. But, whether the tax effort made as indicated by the buoyancy coefficient was adequate enough to effectively mobilize the tax potential in the country is not and cannot be indicated by the study. To give an answer to this question we bring together the two quantitative measures of tax effort. - the static index of tax effort based on ITC index (discussed in chapter 2 section 2.2) and the dynamic index based on the level of buoyancy. As was noted, the former provides information on relative performance in terms of degree of use of taxable potential, the latter indicates the past effort made to increase tax revenue. Obviously, an above average tax effort index (static) and a high buoyancy coefficient indicates an impressive tax performance.

Our findings indicate that the two indices do not point in the same direction. While the static tax effort index points out that the overall performance in the country is below average, the dynamic index shows that a significant progress has been made in the past to increase tax revenue. This is the same as saying that, although a highly commendable effort was made in the past, the measures taken were not adequate enough to ensure average or above average utilization of the taxable capacity of the country. The persistence of the static tax effort index to remain below average, despite the apparently high tax effort over the period implies that the coefficient of utilization of the tax potential was so low to begin with, so much so, that, even the remarkable effort made to exploit the tax potential was not adequate to ensure an average or above average utilization of the taxable capacity by the standard of developing countries. This implies the existence of an unexploited potential, which may require additional effort to tap it.

#### 4.3.2 Estimation of Built-in-elasticities and Analysis of Results

The forgoing section was concerned with the growth in tax revenue in general. In this part we estimate and examine the built-in-elasticity of the tax revenue over the period of our study and at the same time determine the elasticity of the current tax structure in Ethiopia. The results of the regression estimates based on the 1967/68 rate and base structure of the tax system are presented in Table 4.7. The parameters are obtained using models (4b) (4f) and (4g).  $a$  is constant while  $b$  is the built-in-elasticity.  $C_0$  and  $C_1$  represent the effects of the reforms on the level of revenue,  $d_0$  represent the effect of the same on the marginal rate of taxation. Since the coefficients of the independent variable GDP show the marginal rate of taxation, we have calculated the elasticities and are summarized in Table 3.8. It can be seen from the table that most of the flexibility coefficients are significant at 5% level of significance. Some of the dummy variables however, are not significant, indicating that some of the tax changes didn't have an appreciable effect on the elasticity of the tax revenue. The fairly high  $\bar{R}^2$  for the total tax revenue as well as for most of the component taxes show a systematic correlation of the changes in tax revenue with changes in GDP.

An examination of the elasticity coefficients shows that, as expected the elimination of the tax revenue accounted by the discretionary measures from the tax series reduced the elasticity coefficient in every case. This implies that particularly all the discretionary changes were directed at increasing revenue.

The built-in-elasticity coefficient of the total tax revenue, which is below unity (0.96) indicates that major discretionary changes were needed to raise the ratio of tax proceeds to GDP, i.e. without such changes one would expect an almost equal rate of growth of tax revenue with the rate of growth in national income.

The inelasticity of the total tax revenue, however, conceals the differing elasticities of the component tax revenues. This warrants a closer look at each of them.

Table 3.7

## Linear Regressions

Source of Revenue	a	b	c <sub>0</sub>	c <sub>1</sub>	c <sub>2</sub>	d <sub>0</sub>	d <sub>1</sub>	R <sup>2</sup>	D-W
Total tax	-72.42	0.100	-122.91			0.018		.93	2.23
Employment income tax		(0.018)	(44.73)			(0.007)			
Employment income tax	-23.98	0.012				0.001		.93	1.19
		(0.0011)				(0.0005)			
Business profit and professional	-72.18	0.0025	3.104*	-854.594		0.112		.98	2.28
		(0.007)	(15.766)	(232.044)		(0.028)			
Agricultural income tax	5.64	0.001	32.968					.97	1.64
		(0.0008)	(3.249)						
Land tax	12.83	0.001						.55	1.20
		(0.0003)							
Excise tax	47.38	0.10						.88	1.10
		(0.001)							
Excise on beverages	13.81	0.002						.64	1.48
		(0.0004)							
Excise on fuel	10.50	0.0004*						.93	1.10
		(0.0005)							
Excise on tobacco and tobacco products	-13.51	0.003	16.506					.97	2.48
		(0.001)	(3.266)						
Stamp duties	0.09	0.0011						.87	1.59
		(0.0001)							
Transaction taxes	-29.27	0.018						.97	1.52
		(0.0007)							
- On domestic goods	-16.88	0.007						.96	1.26
		(0.0003)							
- On imports	-14.14	0.009						.96	2.60
		(0.0005)							
- On exports	1.34	0.001						.71	1.17
		(0.0004)							
Turnover tax	-38.81	0.011						.98	1.10
		(0.0004)							
Import duties	38.34	0.008						.56	1.28
		(0.0002)							
Export duties	-27.70	0.012*	1.437	127.41				.69	1.73
		(0.013)	(1.27)	(49.15)					

Note: \*Insignificant at 5% level of significance.

Employment Income Tax

The tax yield from employment income based on the 1967/68 structure showed 1.3 elasticity and the elasticity of the same revenue source based on the 1978/79 rate structure estimated for the period 1978/79 - 1982/83 using a different technique<sup>22</sup> was about 1.35. Although elastic the degree of elasticity can hardly be considered impressive in view of the fact that income taxes have the virtue of possessing high elasticity. This may be explained by the limited applicability of the tax, in that it covers only the modern sector of the economy. What is interesting however is that, the elasticity did not show any improvement despite the much more steeply progressive structure introduced in 1978/79, and it is reported that the administration of this tax does not pose any particular problem. The cause of such anomalous situation may thus, be sought in the base of this tax. Normally, a progressive rate schedule can bring in increasing yields only if the tax payers keep on shifting to upper income brackets as income expands. Thus, if the distribution of income is in favour of the low income groups within the tax payers, no matter how highly progressive, the rate structure is the built-in-elasticity of the yield will certainly remain low. Although we cannot provide data which shows the distribution of wage and salary income in the country, a few words can be said about it. First, it is reported that the bulk of the Ethiopia's wage earners fall between birr 600 and birr 1200 levels per annum, this means the bulk of the wage and salary earners are taxed at the lower rates. Second, a partial freeze have been made on the salaries for those employed in government services.<sup>23</sup> Thus the absence of improvement despite the major reform in the rate structure can be nothing but, the contradictory operation of the tax base, which made the conspicuously highly progressive rate structure almost meaningless. The fact that the elasticity of the tax revenue based on the old structure

Table 3.8

Summary of Elasticities of the Major Taxes  
and Total Tax 1967/68-1982/83

Source of Revenue	Elasticity
Employment income tax	1.30
Business profit and professional income tax	1.51
Agricultural income tax	0.36
Land tax	0.35
Excise tax	0.58
Excise on alcoholic beverages	0.59
Excise on Petroleum and products	0.81
Excise of tobacco and products	1.32
Transaction taxes	1.30
-on domestic goods	1.70
-on imports	1.35
-on exports	0.83
Turnover tax	2.12
Export duties	0.68
Import duties	0.58
Total tax	0.96

estimated for the period 1967/68 - 1974/75 was 2.87 testifies that the progression of the tax base is much more important in improving the built-in-elasticity, than the progression of the rate structure.

### Business Profit and Professional Income Tax

The operational utility of income-elasticity approach in the examination of the productivity of the Ethiopian business profit and professional income tax is limited due to two reasons. Firstly, the revenue statistics available does not distinguish between separate sources of revenue in this group of taxes. They are available for the group as a whole including the highly progressive tax imposed on individually owned businesses and on professions, and the proportional taxes on corporate bodies, income from royalties, dividends, services rendered from abroad and chance winnings. Secondly, the revenue statistics from these sources include arrears and advances.

Bearing in mind the stated limitations, we estimated the elasticity under the 1967/68 tax structure, and found out that it was 1.52. The elasticity based on the 1978/79 structure calculated using the data of 1979/80 to 1982/83, during which no arrears collections are reported was 2.4, showing a significant improvement. Although it is not possible to give a precise answer as to which of the tax revenue is responsible for the high elasticity, given the limited contribution of the other taxes, it can be said that the two taxes—the progressive individual profit and professional income tax and the proportional company profit tax — must have been the important sources. The former one is steeply progressive and the later although levied at proportional rate, its base i.e profit has expanded much more rapidly than the growth of the national income. This becomes evident when we look at such indicators, as the growth in the manufacturing sector which is a major factor influencing the growth of the company's chargeable income.

But while no serious tax evasion is reported to exist in the process of tax collection from the corporate bodies, this is not true with the first one. It is said that this type of tax, i.e. the tax on individual business and professional income, is the most difficult to implement and administer. This is because, the individual business units apart from being numerous are found scattered all over the country, and for the most part they do not keep (accurate) records. Moreover, shortage of skilled assessors, auditors and collectors is reported to have retarded the development of this tax.<sup>24</sup> Thus the potentiality of the tax for a higher elasticity is greater as compared to what is realized.

#### Agricultural Income Tax

The agricultural income tax revenue showed 0.35 elasticity under 1967/68 structure and 0.55 under the more progressive rate of 1978/79. Again an anomalous situation, similar to the employment income tax revenue. Despite the progressive nature of the rate structure in both cases, the revenue was income inelastic. This certainly indicates the administrative incapability of the tax administration to enforce the tax law. In fact the old law was hardly implemented due to "not only ... difficulties related to collection but also (due) to underestimation of agricultural incomes, owing to pressure from landed interests in the various regions of the country."<sup>25</sup> The new law also faced the same fate, this time due to the underreporting of agricultural incomes by the peasant associations, who are entrusted with the assessing and reporting of agricultural incomes. It is said that the peasant associations report almost invariably incomes less than birr 600.<sup>26</sup> This is obviously underreporting of incomes, especially considering the fact that, similar income is reported even for coffee growing regions. Thus, the administration and implementation problems have conspired to frustrate the intention of the law, which was designed to impart to the tax a high income

coming to the land use tax, it is not hard to find the cause for the inelasticity of the land tax revenue, the rigidity of the rate structure and the inflexibility of the base i.e. area of the land are obvious reasons for the inelasticity.

### Indirect Taxes

A detailed analysis of the income-elasticities of almost all indirect taxes will be made in the subsequent section. In this part we discuss only the salient feature of the elasticities of the indirect taxes.

Among the indirect taxes, excise taxes exhibited inelastic coefficient, which is equal to 0.6 under the 1967/68 structure. But the elasticity under a constant tax structure can exceed unity, if among other things an increase in the ratio of the value of excisable goods in the national income is ensured. Since the base of the tax was broadened on several occasions after 1967/68, we have also estimated the built-in-elasticity of the tax based on 1975/76 structure to observe if there was any improvement in the elasticity coefficients. The results, estimated for the period 1975/76 to 1982/83 showed a 0.75 coefficient of elasticity. The cause for such inelasticity can be attributed to the specific nature of the tax. It was noted earlier that, excise tax is levied on twelve types of commodities and the rates levied on all of them, but two, are specific rates, which does not respond to price changes. Thus, failure to take commensurable actions on rates vis-a-vis prices have substantially reduced the effective rates of the taxes.

The sales taxes, both the turnover tax and the transaction tax recorded a high coefficient of built-in-elasticity which were equal to 2.1 and 1.36 respectively. A respectable figures indeed, which indicate that both are productive sources of revenue. The flat ad-valorem enabled the tax revenues

to respond to changes in the prices of the dutiable commodities, which are fast expanding in relation to the national income.

Import duties revenue was also found to be inelastic during the period (0.58). The explanation for the inelasticity lies partly in the rate structure of the import tariff and the policy of import restrictions made in the country. One of the basic principles underlying the rate structure in the country is protection for domestic industries, a sequel of the domestic industry promotion policy by the government. Thus we find while virtually no or little duty is levied on industrial raw materials, capital goods and machinery, high duties are imposed on consumer goods. Consequently, the composition of imports have been heavily weighted by those goods which are generally either zero rated or subject to low duties. For example, the proportion of the value of imports exempted from import duties went from 19% in 1975 to 55% in 1982 of the value of total imports.<sup>27</sup> Furthermore, the use of specific rather than ad-valorem rates on some commodities, the administrative problems encountered in the process of correct valuation due to the lack of adequate trained personnel, should have also been major factors for the low elasticity coefficient of the import duties.

Regarding the elasticity of export duties, since the bulk of duty earning are more a function of world prices rather than the Ethiopian GDP, the coefficient has little interpretative value. The insignificance of the coefficient at 0.05 level confirms our conclusion.

To sum up the above analysis shows that the Ethiopian tax system as a whole based on the 1967/68 rate and base structure was income inelastic. The relatively high elasticities recorded by some of the taxes, chiefly employment income tax, business profit and professional income taxes, transaction taxes, and turnover taxes were more than offset by the inelasticity of the other taxes. As we have noted it earlier, the elasticity of a tax system as a whole depends upon the

the responsiveness of the taxes that comprise it. If it happens that most of the taxes especially the relatively important ones are not responsive to changes in national income, then the tax system will certainly suffer from rigidity. Even inelasticity of one tax revenue may render the tax system inelastic if the importance of that tax is sufficiently large. Customs play such a role in the tax structure of Ethiopia.

But in view of the fact that, several tax reforms have been made during the intervening years of the period under review, in which some of the rates are more progressive than before, a question may be asked as to what is the elasticity of the tax system under the present tax structure. An answer based on empirical findings will be given to this question later on, but even at this point it can be stated with fair degree of certainty that even the present Ethiopian tax system is income inelastic. We have attempted to calculate the elasticities based on each of the newly introduced taxes rates and have found out that either they do not introduce any improvement or else where inelastic themselves. Moreover, the fact that the tax ratio has stagnated at 15% for the last five or so years, during which there was no rate or base change underscores our claim.

An important point which emerges from the above discussion is that, although the various tax reforms have resulted in an increase in the total tax revenue in absolute terms, the automatic rate of increase in tax revenue in relation to the growth of the national income did not improve as the result of the reforms. This means that, based on the present tax system the channelling of a progressively large percentage of increments in national income will not be possible in the future. A major implication of this finding is that in order to obtain increasing yields of tax receipts the government will have to go on imposing new taxes or raising

existing rates. But continuous resort to tax changes in order to raise tax revenue is fraught with disadvantages is a fact which we have attempted to indicate earlier. It would be preferable, as much as possible to introduce built-in-elasticity into the tax system, so that an increasing share of the growing national income may be automatically directed into the public treasury. Towards this end, it becomes necessary to investigate the causes for the high or low elasticity of each of the tax components with a view of identifying the problems and suggesting proper tax reforms. This is dealt in the section below.

#### 4.3.3 Analysis of Elasticities by Partitioning.

As indicated, the objective of this method of analysing individual taxes is to provide information concerning the reason for high or low elasticity in terms of the component elasticities. If the rate structure is progressive and the statistical results suggest a low tax-to-base elasticity, it implies either that the composition of base is shifting towards less highly-taxed categories or that tax administration is weak. Information is also provided regarding which bases are heavily taxed and which are lightly taxed.

To use the above method of analysis, additional information i.e. data on the legal bases of taxes are required. Unfortunately such information is not available for most of the taxes. This makes it necessary to select 'proxy bases'. Moreover, since data on close proxy bases which reflect adequately fluctuations on the legal bases cannot be found for some of the taxes, direct taxes in particular, the analysis is limited to the yields of the other taxes only. Furthermore, since our interest is to identify the factors affecting the built-in-elasticity of the current tax system the analysis covers the period 1975/76-1982/83 only.

Decomposition of Tax Elasticities 1975/76 - 1982/83

Table 3.8

Tax and Related (Proxy) Base	Tax-to-Income (GDP Elasticity)			Proxy Base-to-Income Elasticity			Tax-to-Proxy Base Elasticity		
	Constant	Coefficient	R <sup>2</sup>	Constant	Coefficient	R <sup>2</sup>	Constant	Coefficient	R <sup>2</sup>
Excise Tax/E	-0.65	0.78 (2.24)	.89	-4.24	1.89 (9.62)	.95	0.90	0.36 (6.34)	.90
Excise on beverages/B	0.56	0.27 (1.51)*	.28	-7.27	2.41 (6.2)	.89	1.60	0.01* (0.12)	0.00
Excise on petroleum products/P	-1.75	0.83 (5.47)	.83	-9.56	3.07 (5.35)	.85	0.79	0.29 (7.82)	.92
Excise on tobacco and Products/T	-13.51	1.32 (2.75)	.97	-10.47	3.16 (12.36)	.96	-0.50	0.88 (13.83)	.96
Transaction tax on domestic good/GMNF	-4.54	1.57 (10.46)	.94	-2031.70	2.36 (4.94)	.82	12.65	0.64 (11.72)	.96
Transaction tax on imports/MTT	-3.86	1.47 (8.19)	.91	-7.59	2.69 (10.82)	.95	0.28	0.51 (6.29)	.87
Transaction tax on Exports/X	-1.09	0.63 (2.93)	.59	-8.55	2.92 (5.02)	.80	0.67	0.11 (1.29)*	.22
Import duties/Md	1.71	0.11* (.30)	.10	-7.77	2.72 (10.64)	.94	1.77	0.12* (1.01)	.15
Export duties/X	5.70	-0.87* (0.613)	-.29	-5.52	2.15 (2.92)	.63	-0.03	0.78 (4.72)	.87

Notes: E = Value of excisable commodities, i.e. (gross value of petroleum products, tobacco and tobacco products alcoholic beverages and textiles and yarns).

B = Value of beverages locally produced and imported  
P = Value of petroleum products

\*Insignificant at 5% level of significance.

T = Value of tobacco and products  
GMNE = Gross value of the output of the manufacturing sector  
MTT = Value of imports with pay transaction tax  
X = Value of exported goods  
Md = Value of dutiable imports

(Figures in parenthesis are t-values)

The elasticities are estimated by fitting the data to the log linear function discussed earlier, and the regression equations are presented in Table 3.9. The elasticities are summarized in Table 4.10 and discussed below. In every case the discussion starts with the identification of legal tax base for a given tax, and where data on legal base is not available, with the identification of conceptually appropriate proxy base.

### Excise Taxes

We have indicated that excise revenues are collected in Ethiopia from duties on 12 selected commodities domestically manufactured as well as imported. But although the tax apply to all the goods, a comprehensive data on value of the consumed goods is difficult to obtain. Therefore, the gross value of the important excisable commodities, chiefly petroleum products, tobacco and tobacco products, alcoholic beverages, textiles and yarns which altogether provide 75% of the excise revenue on the average are taken as tax bases.

We have seen that the built-in-elasticity of the total excise tax revenue was low ( 78). It is interesting to note from Table 4.10 that, this was the product of the high base-to-income (GDP) elasticity (1.89) and low tax-to-base elasticity (0.36). This situation arose partly because of the specific nature of the rate structure of most of the taxes, which failed to respond to increase in prices of the excisable commodities and the apparent lagging behind of the volume of production in relation to value. The same development is manifested by the elasticities of some of the individual taxes. The built-in-elasticities with respect to GDP of beverages, petroleum products and tobacco and tobacco products were 0.27, (significant at 10% significance level) 0.83 and 1.32 respectively. For beverages the base grew rapidly showing an elasticity of 2.4 with respect to income, however, tax collection to base had an elasticity not different from zero. It is also interesting to note that the  $R^2$  statistic

Table 4.10: Summary of Decomposition of Tax Elasticities

	Tax-to-income Elasticity	Base-to-income Elasticity	Tax-to-base Elasticity
Excise tax	0.78	1.89	0.36
Excise on beverages	0.27	2.41	0.36
Excise on petroleum products	0.83	3.07	0.29
Excise on tobacco and tobacco products	1.32	3.16	0.88
Transaction taxes			
-on domestic goods	1.57	2.36	0.64
-on imports	1.47	2.69	0.51
-on exports	0.63	2.92	0.11
Import duties	0.11	2.72	0.12
Export duties	-0.87	2.15	0.78

was very high for the beverages base to GDP elasticity, reflecting a consistent growth of the base with income (GDP). However, the  $R^2$  statistics for the beverage tax-to-base elasticity was almost zero indicating that tax collection was very erratic. Similarly, for petroleum products and tobacco and tobacco products, the tax-to-base elasticities were very low (0.29 and 0.88) respectively, whereas the base-to-GDP elasticities were very high (3.07 and 3.16) respectively, demonstrating that tax collection has barely been able to keep in pace with the growth of the tax bases.

It can thus be seen that the inelasticity of the excise tax is the outcome of the contradictory operations of two important factors. While the fact that the tax is levied mainly on the consumer manufacturing sector, which is the most rapidly growing sector, due to import substitution and structural changes taking place in the economy and the fact that, the taxes are applied selectively upon goods whose demands are presumed to be elastic with income and fairly inelastic with respect to price, would make this source of revenue highly income-elastic, the specific nature of the tax rates and weak tax administration have caused tax collection to lag proportionately to the growth of the tax base.

#### Transaction Taxes

We have seen that transaction taxes fall on the sale of a wide range of goods domestically produced, imported and exported, which carry different rates. The legal tax base for the domestically produced goods is equal to the gross amount received from the sales by manufacturers less custom duties and transaction taxes paid during the importation of the raw materials that have gone into the production of the taxed goods. Moreover, the sales of several goods are exempted from this tax. Unable to obtain the quantitative value for this base, we have chosen the gross value of production of the manufacturing sector as a proxy base. Regarding the base for the tax on imported goods, given that a wide range of goods are exempted from this kind of tax, the value of goods which pay the tax constitutes the appropriate base. Since we have been able to obtain data on the value of the exempted goods, the value of total imports less the value of exempted goods is taken as a proxy base. The base for the tax on exports is the value of exports because virtually all exports pay this tax.

Examination of the figures in the table shows that, the relatively high built-in growth of the transaction tax revenue was attributable to the high base-to-GDP elasticity rather than the tax-to-base elasticity. Focussing on the tax revenue on domestic goods, it can be noted that, the gross value of manufactured goods grew more rapidly than GDP as indicated by the high base-to-income elasticity (2.36), whereas the growth of tax collection was proportionately lower than the growth of the base. This is shown by the low tax-to-base elasticity which was equal to 0.64. The  $R^2$  statistic is relatively high for all three coefficients indicating that the function assumed a good fit of the data. Thus, over the period, the manufacturing sector, which consists an important tax base in the Ethiopian tax system recorded a high rate of growth, at the same time tax collection did not keep pace proportionately to the growth of the value of the manufactured goods. This is indicated by the low tax-to-base elasticity. This latter coefficient reflects the combined effect of the proportional nature of the rate structure (flat ad-valorem) which normally imparts a unitary elasticity at best to the tax revenue and probably weak administration to enforce the tax law. Similar condition is observed about the transaction tax on imported goods and exports. While the former showed a base-to-income (GDP) elasticity of 2.7 and tax-to-base elasticity of 0.51, the latter exhibited a base-to-income elasticity of 2.92 and an insignificant tax-to-base elasticity reflecting once again the proportional nature of the tax rate and lax tax administration.

#### Import Duties

It is evident that the base of import duties are the value of imported goods. But since wide range of exemptions are granted for a number of goods - for capital goods and raw materials in particular, the value of duty free goods must be deducted from the value of imported goods. Since we are able to obtain data for the value of exempted goods, the value of total imports less the value of goods imported duty free are taken as the base for the import duties.

It is interesting to note that the extreme inelasticity recorded by the import duties is due to the lagging behind of tax collection. This is reflected by the high base-to-GDP elasticity (2.72) and by the extreme tax to base inelasticity. The  $\bar{R}^2$  for the latter was very low indicating poor systematic relationship between tax collection and tax bases. The situation reflects the cumulative effect of the use of some specific rather than ad-valorem duties, the change in the import mix in favour of the items subject to lower taxes and as noted weak tax administration.

#### Export Duties

Export duties normally fall on the exports of a number of selected commodities. But in the absence of quantitative data for the values of duty paying exports, the value of all exports would be the possible proxy base for export duties. However, as was noted, export duties are specific in character which makes the export revenue to depend upon the volume of exports. Moreover, given that coffee consists the main export and the main source of government revenue, and much of the coffee tax revenue (coffee surtax in particular) is a function of world prices, it can be said that export duties depend on the volume of exports and world price. But, since the value of export is equal to the product of price and quantity, and since the elasticity of export duty with respect to quantity is equal to unity (at least conceptually) the export value can be used as a proxy base for world price. It therefore, becomes possible to determine the revenue elasticity from export value changes.

The results of the exercise as presented in the table indicate that the tax-to-base elasticity was below unity (0.78). Indicating that the tax hardly grew in proportion to its base. This was due to

the combined effect of several factors including the use of specific rather than ad-valorem duties, the downward decline of world price for Ethiopian exports and probably lax tax administration. Thus, an important point which can be discerned from the above investigation, of the determinants of the elasticity of tax revenue is that, the inelasticity or low elasticity of the tax revenues under consideration can be explained by the low tax-to-base elasticities. This is similar to saying that, tax collections did not grow at least in proportion to their respective bases. This is due to faulty tax policy and weak tax administration. This of course, is an important finding as it clearly indicates that, the low elasticities recorded by the component taxes as well as the total tax were not due to stagnant bases. The implication of this is that some tax potential exists which can be exploited by appropriate policy reforms and improved tax administration which by and large is under the control of the government.

26

Before closing our examination of the responsiveness of the tax revenue let us round off the chapter by indicating the important points emerging from it.

In general the study points towards a picture of remarkable tax performance during the period of the study. This is illustrated by the high tax revenue buoyancy measure of the total tax revenue which is equal to 1.8, which indicates that the tax ratio has been increasing over the period. Given that the buoyancy measure can be used as an index of tax effort in the dynamic sense, the high buoyancy figure indicates that the government has made a substantial tax effort to increase tax revenue. This is further evidenced when the buoyancy figures are compared with the built-in-elasticity figures. Table 4.11 presents the comparisons. The observed 0.84 point difference between the two measures of the aggregate tax revenue suggests that a major portion of the increase in tax revenue arrived at during

the period was due to increase in tax effort - increase in tax rates "widening of existing bases and imposition of new taxes and perhaps improvement in tax administration. The tax-to tax comparisons of the two measures also indicate in the same direction reflecting once again that the reforms had applied to more or less all the component taxes. But, as is shown in the table major discretionary changes were made on business profit and professional income tax, agricultural income tax, land use tax as well as excise taxes.

On the other hand, the study shows that the improved tax performance was the consequence of additional tax measures than of built-in elasticity of the tax revenue. In other words, although the discretionary measures increased tax revenue, they did not improve the overall built-in-elasticity of the tax system. Consequently the tax system has remained income inelastic. This is due to among other things, the specific nature of some of the tax rates, tax exemptions, tax evasion, and weak tax administration to enforce the tax laws. This means that the inelasticity of the tax system cannot be ascribed to the stagnation of the tax bases. This claim is further corroborated by the low tax-to-tax base elasticity as compared to the high base-to-income elasticity of most of the taxes.

Table 4.11

Difference Between Buoyancy and Built-in Elasticity  
of the Total Tax and Major Taxes 1967/68-1982/83

	Buoyancy	Elasticity	Difference
Total tax	1.80	0.96	+0.84
Employment income tax	1.60	1.30	+0.30
Business Profit and Professional income tax	2.69	1.51	+1.18
Agricultural income tax	2.16	0.36	+1.80
Land tax	1.55	0.35	+1.20
Excise taxes	1.36	0.48	+0.58
Transaction taxes	1.82	1.30	+0.52
-on domestic goods	2.20	1.70	+0.50
-on imports	1.80	1.35	+0.45
-on exports	0.98	0.83	+0.15
Import customs	1.06	0.58	+0.48

## Notes

1. R. Musgrave, "Revenue Policy for Korea's Economic Development," in Rechard, M. Bird and Oliver Oldman, Readings on Taxation in Developing Countries, (Baltimore: the John Hopkins Press 1967), p. 50.
2. A.R. Prest, Public Finance in Underdeveloped Countries, (London: Weidenfield and Nicolson 1962), p. 25-26.
3. D.S., Wilford and W.T., Wilford, "On Revenue Performance and Revenue Income Stability in the Third World" op.cit., p. 52.
4. Alex Radian, op.cit., p. 68
5. Arthur Lewis, op.cit., p. 402.
6. S. G. Sahota, op.cit., p. 9.
7. Ibid.
8. Ibid.
9. R.J. Chelliah, "Trends in Taxation in Developing countries," op.cit., p. 303.
10. The first model (4b) is a simple linear regression which assumes constant marginal tax revenue, while the second one assumes constant buoyancy which gives directly the percentage change in tax receipts ( $R_t$ ) that accompanies a one percentage change in income.
11. Apart from the techniques discussed in this section another technique, which is commonly used for the purpose is called the "constant rate structure method." For an application of this method, see Nurum N. Choudhry, "A study of the Elasticity of the West Malaysian Income Tax System", IMF Staff Papers, Vol. 22, (July, 1975).
12. Population and demographic characteristics, lagged income, etc. may also influence tax revenues, but no attempt is made here to account for these variables.
13. This method was employed for the first time by Alan R. Prest. See Alan R. Prest, "The Sensitivity of the Yield of Personal Income Tax in the United Kingdom," Economic Journal, Vol. 72, (September 1962), p. 576-596. A slightly different method but similar in many respects to the above method was also developed by S.G. Sahota. See S.G. Sahota, op.cit. For an application of this technique see Charles Mansfield, op.cit.
14. For example, if actual collection in year b are 100 but discretionary changes in year b account for 20 of that 100, so that, at tax rates of year a, revenue would have been 80, revenue in year b are multiplied by 80/100, scaling them down by 20%, to what they would have been without the discretionary changes of the year b.

15. The application of dummy variable to tax functions is provided in N.M. Singer "The Use of Dummy Variables in Estimating the Income-Elasticity of State Income-Tax Revenues" National Tax Journal, vol. 21 (June 1968) p. 200-204. The method has also been used in several other studies see K.K. Artus, "Tax Revenue Forecasting: A Methodological Study with Application to Turkey", Studies in Domestic Finance, No. 5. IBRD. (May 1974); D. Sykes Wilford and Walton T. Wilford op.cit.

16. The derivation of the method may be illustrated in the following manner. Assuming that there are T observations, and a discretionary change, w which affected the level of revenue and which might have also affected the elasticity of the system has taken place at  $t=k$ , two equations for the two structures may be represented by the following relationships.

$$R_{0t} = A_0 + b_0 Y_t + U_{0t} \quad t = 1, \dots, k \quad (1)$$

$$R_{1t} = a_1 + b_1 Y_t + U_{1t} \quad t = k+1, \dots, T \quad (2)$$

where:  $R_{0t}$  and  $R_{1t}$  are tax revenue under the first structure and the second structure respectively.

$U_{0t}$  and  $U_{1t}$  are random error terms and

$b_0$  and  $b_1$  represents the elasticities of the two structures.

If sufficient observations are available before and after the change equations (1) and (2) may be estimated separately to derive the responsiveness of the two structures. But for the lack of sufficient observations under each structure, the revenue data can be pooled on the hypothesis that the disturbance term is unaffected by the discretionary changes i.e.  $U_{0t} = U_{1t}$  and incorporate the dummy

to indicate the change in structure. Thus the above relations can be written in the form given in the text.

17. See Raja, J. Chelliah and Sheetal K. Chand, "A Note on Techniques of Adjusting Tax Revenue Series for Discretionary Changes" FAD Working paper 74/1 (August 14, 1974) p. 15. See also, K.K. Artus op.cit.

18. For a similar approach see Raja, J. Chelliah et al. "A Note on Techniques of Adjusting Tax Revenue Series for Discretionary Changes" op.cit. K.K. Artus op.cit.

19. For a similar approach see Charles Mansfield op.cit.; Nurun, N Choudhry op.cit.

20. For a similar explanation see Charles Mansfield op.cit. p. 436, Roy W. Buhl Alternative Methods for Tax Revenue Forecasting in Developing Countries: A Conceptual Analysis DM/83/(1972) p. 18

21. Where the Durbin-Watson statistic indicated the presence of auto-correlated disturbances, the iterative (Cochrane-Orcut) process was used to compute the correction factor.

22. The year to year elasticity has been estimated using the following formula:

$$b = \frac{dR}{R_1} \div \frac{Y}{Y_1}$$

where: b = elasticity  
R = tax revenue  
Y = GDP

The elasticity for the entire period has been obtained by taking the average. The least square regression method was not used, simply because we do not have reasonably enough observation period to use the technique.

23. From 1974 to 1981, the government abandoned the normal wage increase from those earning above birr 285 per month under the Central Personnel Agency (CPA) and above birr 450 per month for those employees in the government sector outside CPA. After 1982 the government changed the above policy and allowed annual wage increments for employees earning upto birr 636 under CPA and upto 650 for those outside CPA.

24. For similar argument see Ministry of Finance, An Evaluation of the Tax System in Ethiopia: Recent Reforms, Present Characteristics, Future Developments (mimeographed) (Addis Ababa, June 1982).

25. Eshetu Chole, Income Taxation in Pre-and Post-Revolution Ethiopia, op. cit.

26. Ministry of Finance, op. cit.

27. Data obtained from Customs and Excise Office.

28. The reasoning is based on Teshome Mulat's conclusion about the base of the coffee exports. See Teshome Mulat, op. cit.

29. This, however does not imply that there is no room for increasing the yield by other means, such as broadening of bases, and perhaps introducing new ones. It is clear that both ways can work.

## 5. TAX REVENUE FORECASTING

In this chapter an attempt is made to make intermediate (five-year) tax revenue forecasting based on the current base and rate structure of the tax system, and on the assumption that, the Ethiopian economy will follow the growth path indicated in the Ten-Year-Plan just launched. Although, such forecasts are important in their own right, in that they provide additional alternative revenue estimates for the plan, the main concern, however, is to compare such projections against the target for total tax revenue resources postulated in the plan. Such comparison is hoped to shed some light on the magnitude of additional tax effort required to meet the targetted revenue.

The procedure involves the identification of revenue functions that take into account both the current structure of the tax system, and changes in economic structure implied by the plan. This is followed by the process of forecasting the automatic growth in tax revenue.

### 5.1 Method of Projection

A commonly used method for tax revenue projection is to estimate the tax revenue buoyancy with respect to some postulated determinants for example GDP from the observations in the recent past and calculate the future revenue from the assumed levels of these determinants using the buoyancy.<sup>1</sup> However, as discussed earlier a buoyancy measure reflects not only the automatic response of tax revenue to income growth but also the effects of successive changes in tax structure. This means a projection based on buoyancy involves the assumption that all discretionary changes, which occurred during the historical period taken would be replicated and would have the same effect over the period to be forecast. This of course is unacceptable assumption for forecasting

purposes. Any revenue forecast arrived using the parameters estimated by the revenue functions would be biased, as the regressions are based on the false assumption that the parameters do not change. Thus an ideal tax revenue forecast would be one that projects the automatic yield for a period ahead of the current (present) tax rate and base structure - a structure that will generate future revenue.<sup>2</sup>

The procedure would be simple if sufficient time series revenue data reflecting the current structure would be available. Unfortunately such tax yield are not available due to the frequent discretionary changes, which make the time series under a given tax structure too short to permit any meaningful regression analysis.<sup>3</sup> This makes it necessary the simulation of such revenue series. This consists of generating a series of hypothetical revenue which would have been obtained had the present tax structure been effective for a longer period, which is done by adjusting the historical yield data to the present data. If this is done, it means that, the obtained data series would show what the tax would have yielded in past years with the current base and rate structure. This makes the forecast to be based on the existing structure's elasticity.

The question which follows is how to construct the hypothetical tax revenue series. We have discussed two of the methods that could be used to adjust the revenue data to a given period tax rate and base structure and estimate the built-in-elasticity of a tax system. The same techniques - the proportional adjustment method and the dummy variable method will be used in this part also, but this time, with the last year of (representing the present tax structure) the period as the reference year. This is to say the techniques will be used in exactly parallel method but in reverse. Similar to what we

have done in the preceding chapter, in the use of the proportional adjustment method, the cleansed revenue series based on the last period tax structure is derived from decumulated ratio. The decumulation to the last year, "of some year's tax yield already adjusted to a preceding year basis is secured by the application of an appropriate sequence of multiplicative factors. The effect of any of these factors is to adjust tax yields to the tax structure that prevailed in the year to which the factor refers."<sup>4</sup> This is to say in order to derive the tax yield series based on the last year (i.e. when going back from year n) instead of eliminating the effects of discretionary measures, it is necessary to add to each year's yield the imputed effect of changes in the later years within the period.<sup>5</sup> By the same token, in using the dummy variable method, the dummy variable will take the value of one for revenues observed under the structure of the last period and value zero for other observations.<sup>6</sup>

## 5.2 Identification of Tax Revenue Functions

The next step in the forecasting procedure is to estimate the historical relationship between income (base) and 'cleaned' timeseries of tax yield. This obviously requires a sufficiently long time series data for all the variables in the model. While there is no hard and fast rule as to exactly how long the time series should be, it is suggested that at a minimum, the length of the historical period should be the number of years in the future to be forecast plus the number of degrees of freedom lost in the estimation process.<sup>7</sup> Base on this consideration ten historical revenue series of the years extending from 1973/74-1982/83 are taken in this study.

Moreover, a common procedure followed in forecasting (dictated by ease in computation than by a priori reasoning) involves the estimation of the income-elasticity of the total tax revenue and making forecasts for the tax revenue as a whole. Such an approach, however, has got some limitations which make it inappropriate for tax forecasting purposes. It can be seen that this procedure doesnot take into account the possibility of different patterns of growth of the economy in the future. It is a common knowledge that taxes are intimately related to their bases and development plans often result in significant structural transformation of the economy, that may exert a profound influence on the evolution of the tax bases. Therefore, the correct approach is that which relates revenue to bases of each component taxes and the forecast made on the basis of given projections of tax bases.

In this kind of tax revenue projection method, where tax revenue projection is made on the basis of a given projection of tax bases, it is necessary that information on the relevant tax bases should be collected. But as noted in the preceding chapter, quantitative data for the legal bases for almost all the taxes are not available. This gives rise to the selection of proxy measures, that on a priori grounds are considered to exhibit a pattern of time variations which approximate that in the true base. Unlike in the preceding chapter where past data for the proxy bases are assembled, this time, the selection of the appropriate proxy base would also depend on whether or not projections of the particular base are available for the period for which revenue forecast are to be made, which makes the task of finding closer proxy bases very difficult.

A list of the selected proxy bases for each of the tax revenues are in Table 5.2 and data on these bases are presented in Table 5.3. It can be

easily seen that the selected bases are rather aggregates, which reflects to a large extent the lack of relevant disaggregate data for the major categories of revenue.

If data (both past and projected) had been available, the most appropriate proxy base for employment income, and business profit and professional incomes taxes would have been, wages and salaries, and profits of companies and businesses respectively and for agricultural income tax it would have been taxable agricultural incomes. Unfortunately, such data information are not available. Even narrower proxy bases, such as sectoral incomes for the disaggregated income taxes, such as agricultural GDP for agricultural income tax and value added in manufacturing, mining, construction and services-trade, banking and insurance for business profit tax cannot be used, because projections of these accounts in current prices have not been made. This, therefore, had forced us to make forecast of the income tax as a whole by relating it to GDP at factor market costs.<sup>8</sup>

Since the incidence of the land use tax is on income generated in the agricultural sector, GDP originating in the sector becomes the relevant proxy bases for the tax. But as noted earlier, the land use tax is similar to 'head' tax and thus is not related to the actual or potential income generated in the agricultural sector. This makes agricultural GDP at factor cost in constant price to be a more appropriate base.

Coming to the indirect taxes, as pointed out in the last chapter, transaction tax is a single-stage sales tax levied on goods locally produced, exports, and imports. The tax consists primarily ad-valorem rates, with different rates for local production, exports and imports. Similar to what

Table 5.2

## Proxy Bases for Tax Revenues

Tax Revenue 5	Proxy Bases
1. Income taxes	1. GDP at factor market costs
2. Land use tax	2. Agricultural income at factor cost in constant price
3. a) Transaction tax on domestic production	3. a) Gross value of manufactures
b) Transaction tax on exports	b) Value of total exports at current prices.
c) Transaction tax on imports	c) Value of imports less the value of capital goods imports.
4. Excise taxes	4. Private consumption less agricultural income in current prices.
5. Turnover tax	5. Private consumption less agricultural income in current prices.
6. Export duties	6. Value and volume of exports
7. Import duties	7. Value of Imports less the value of capital goods
8. Stamp duties	8. GDP at constant price
9. Tobacco Monopoly	9. Value of tobacco and tobacco products.

is done in the last chapter, the proxy base for transaction taxes on domestic production is taken to be gross value of manufactures at factor cost, the base of the tax on exports is taken to be the value of exports and that on imports the value of imports. But as noted a wide variety of imported goods are exempted from this kind of tax which have to be deducted from the value of imports, we could not, however obtain data on projected transaction free imports, thus total import values less the value of capital goods is selected as a proxy base of the tax.

Taxes on production and expenditure are usually excise, selective or general sales taxes. These taxes are always considered to be born by the consumer. Given this consideration it becomes necessary to find as to which sector or sectors of the population bear this tax in order to determine the base of these taxes. This can perhaps be best done by examining the consumption pattern of the goods subject to excise and sales taxes. As noted earlier usually these taxes are imposed on domestic manufactured goods and in a few cases on agricultural commodities brought to the market. According to Engel's law, persons with lower income spend a larger percentage of their incomes on food items, and in the case of the very low incomes nearly all the incomes goes to food consumption. Similar other studies have also substantiated this consumption pattern, and have shown that the expenditure elasticity<sup>on food</sup> declines with rising incomes, while manufactured articles and services have shown a high income elasticity.<sup>9</sup> These findings imply that the manufactured articles are largely consumed by persons of relatively high incomes. Given that the income per capita of agricultural population is very much lower than that of the non-agricultural (urban) population it can be concluded that, in terms of the consumption of goods subject to excise and turnover (sales)

Table 5.3

Data on Proxy Bases - 1973/74-1982/83 (in million of Birr)

140

	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83
Gross domestic product at factor cost at current prices	5140.8	5103.2	5530.0	6146.3	6487.4	7110.7	7653.8	8048.2	8298.2	8607.1
Agricultural income at factor cost in constant prices <sup>1</sup>	1821.8	1785.4	1839.6	1838.7	1922.2	1968.4	2062.2	2122.7	2089.8	-
Gross domestic product at constant prices <sup>1</sup>	3936.0	3939.5	4031.4	4055.3	4009.3	4221.7	4454.2	4586.2	4653.8	-
Private consumption expenditure less agricultural incomes in current prices	1638.7	1983.5	1935.5	2287.4	2419.0	2887.6	2922.7	3028.0	3393.1	3487.3
Gross value of manufactures at current prices	724.8	725.1	807.1	864.2	862.7	1191.4	1572.3	1711.8	1956.6	-
Imports less the value of capital goods	402.1	524.5	534.8	554.5	650.6	739.7	927.9	1027.8	1048.2	1002.0
Exports in current prices	590.9	452.0	552.2	636.4	650.9	718.1	950.3	852.4	777.3	858.2
Exports in Kilograms	696.3	516.3	439.1	337.9	208.4	243.9	377.2	423.5	436.1	832.5
Value of tobacco and tobacco products in current prices	31.8	35.8	39.8	53.4	71.4	90.2	114.6	127.8	144.9	-

Notes: <sup>1</sup> at 1960/61 prices  
 - not available

Source: Central Statistical Office, Statistical Abstract, (various issues)  
 National Bank of Ethiopia, Annual Report (various issues)

taxes, the agricultural sector bears little of the tax, and these taxes are largely born by the non-agricultural tax base. Lacking any information as to the percentage of this tax revenue deriving from the agricultural sector, it is assumed that only a small proportion of it comes from the agricultural sector. The base for the taxes is therefore, taken to be total private consumption less income created in the agricultural sector.<sup>10</sup>

Regarding the duties on international trade, we have noted that most of the duties except the coffee export surtax are specific in nature. The coffee surtax rates are based on the volume of coffee exports and on the world market price for coffee. We have also noted that the movements of world market price for coffee can be represented by the value of coffee exports. Based on the above considerations, the value and volume of exports are used as determinants of export tax revenue. Furthermore, most import duties are levied on ad-valorem basis which makes the value of imports to be the appropriate base. But here again, the fact that exemptions from the tax are extended to several goods under the country's development incentive legislation it is required that the value of exempted goods be removed from the value of imports. But although such data are available for the past years, projections of such data are not available for the future. Faced with these difficulty, value of imports less value of capital goods are taken to be the proxy bases for the tax.

Unable to find data on closer proxy base for stamp duties, which carry specific rates, we have selected GDP at constant price to be the base for the duty, and for want of any other better base for tobacco monopoly, the value of tobacco and products is used as a base.

Table 5.4

Data on Projected Proxy Bases (1984/85-1988/89) (in million of Birr)

	1984/85	1985/86	1986/87	1987/88	1988/89
Gross domestic products at factor cost at current prices	9579.6	10250.1	11070.1	11955.7	12912.1
Agricultural income at factor costs in constant prices <sup>1</sup>	4400.9	4551.2 =	4704.0	4886.7	5089.8
Gross domestic products at constant prices <sup>1</sup>	9284.2	9783.6	10361.2	11036.0	11794.0
Private consumption expenditure less agricultural incomes in current prices	6488.5	7072.6	7869.4	8783.6	9766.8
Gross value of manufactures at current prices	2201.1	2448.4	2610.8	2811.1	3341.3
Imports less the value of capital goods	1217.4	1370.1	1548.6	1756.5	1993.0
Exports in current prices	1406.5	1534.7	1728.1	1949.4	2209.7
Value of tobacco and tobacco products	1155.3	173.8	193.8	218.3	240.0

Notes: <sup>1</sup>at 1973/74 prices

Source: Office of the National Committee for National Planning.

### 5.3 Revenue Projections for 1984/85 to 1988/89

Table 5.5 presents a summary of estimated revenue functions obtained by fitting the data for 1973/74 to 1982/83 into a log-linear function. The coefficients thus reflect the revenue pattern under the tax structure effective at the end of 1982/83.

Based on the elasticity obtained from the above functional relationships, tax revenue forecasts for the period 1984/85 to 1988/89 are made. The fiscal year 1982/83 is taken as the base year as it is the most recent year for which firm data are available. The forecasts are made by using a formula, which by a step-by-step procedure gives the revenue projection of a given year. For example a forecast of a revenue for the first year is given by the following formula<sup>44</sup>

$$R_{f1} = R_0 \left( 1 + b \frac{dB}{B_0} \right)$$

where:

$R_{f1}$  = the forecast value of the tax

$R_0$  = the level of tax revenue in the preceding year

$b$  = the elasticity coefficient of the tax

$\frac{dB}{B_0}$  = the projected proportionate rate of growth of the tax base in the first year.

The procedure is repeated for all subsequent years and the forecast of a particular year is built on the forecast of the preceding year. The revenue forecasts obtained are presented in Table 5.6.

The main limitation of the above method of forecasting other than the shortcomings of ceteris paribus assumption which is common in most forecasting

Table 5.5

## Summary of Estimated Revenue Functions (1973/74-1982/83)

	a	b	c <sub>0</sub>	c <sub>1</sub>	d <sub>0</sub>	$\bar{R}^2$	D-W
Income taxes	-4.55	1.80	-0.06*	-0.02*	-0.38	0.89	2.7
		(0.53)	(0.04)	(0.06)	(0.021)		
Land use tax	-5.78	2.25				0.64	2.1
		(0.63)					
Transaction taxes on domestic production	-0.46	0.73				0.89	1.23
		(0.09)					
Transaction taxes on exports	-0.40	0.49				0.60	1.39
		(0.14)					
Transaction taxes on imports	-0.31	0.79				0.89	2.23
		(0.09)					
Excise taxes	-0.55	0.83				0.93	2.16
		(0.07)					
Turnover taxes	-3.38	1.48				0.97	2.21
		(0.22)					
Import duties	1.19	0.34				0.47	1.57
		(0.13)					
Export duties	0.82	1.07		-0.36		0.94	1.88
		(0.66)		(0.15)			
Stamp duties	-10.33	3.1				0.70	2.20
		(0.56)					
Tobacco Monopoly	2.39	-0.79				0.71	2.40
		(0.20)					

\*Insignificant at 5% level of significance.

exercises, is the partial equilibrium nature of the model. While tax revenue forecasts should allow for feed-backs between taxes and their bases, in this model the direction of causation is assumed to run from income level to revenue. There are several simplifying assumptions which emanate from the use of this model. Such a model for example, assumes that tax rates on income does not affect the size of income itself, and future years specific tax base level are taken as given. Furthermore, basing projections on individual taxes rather than the tax revenue as a whole means that the relationships among the taxes are ignored.

The alternative to the above model is constructing a comprehensive country econometric model, that takes all feedback effects or linkages into account. But in a condition where there is no sufficient amount of data, such an approach cannot be used. A more practical method, therefore, is to project tax revenue separately on the basis of a given projection of the tax base. It is argued that for medium-term tax revenue projection, the simplified one way causation assumption is reasonable and the tax proceed prepared along this lines would approximate those of general equilibrium model.

Before we proceed with the task of deducing tax policy implications from the results obtained, an attempt is made in the following part to compare our projections with alternative tax revenue projections made by the Finance Department of the National Committee for Central Planning, as part of its attempt to estimate the financial resources which is likely to be available during the Ten-Year-Plan period.

Table 5.6

## Revenue Projection for 1984/85-1988/89

(in Millions of Birr)

	1984/85	1985/86	1986/87	1985/88	1988/89
Income tax	550.6	606.6	678.2	759.5	850.6
Land use tax	54.8	56.6	61.3	63.6	70.2
Transaction tax on domestic production	93.3	100.9	105.7	111.6	126.9
Transaction tax on imports	123.9	136.1	150.1	165.9	183.5
Transaction tax on exports	11.2	11.7	12.4	13.1	13.9
Excise taxes	289.4	316.1	337.7	357.4	380.1
Turnover tax	72.7	84.6	93.1	102.8	114.4
Import duties	173.7	181.1	189.1	197.7	206.7
Export duties	207.1	227.2	257.8	293.1	334.9
Stamp duties	12.7	14.8	17.5	21.0	25.4
Monopoly tax	4.2	3.8	3.5	3.2	2.8
Total Revenue	1593.6	1738.5	1906.4	2067.9	2310.4
<u>Memorandum Items</u>					
Gross domestic product <sup>1</sup>	11067.1	11876.9	12841.5	13958.4	15156.9
Tax ratio	14.4	14.6	14.8	14.8	15.2

<sup>1</sup>Projections made by the Office of National Committee for Central Planning.

Comparison of alternative revenue projections

In Table 5.6 the projection results generated by the Finance Department using two different methods, indicated as B and C are compared with the corresponding projections made using the method discussed above indicated as A. The ratio of B to A, and C to A may be regarded as indicators of the extent of deviation of the revenue projection generated by the Finance Department from our projection. The general method followed to obtain the set of tax revenue projections indicated as B was to derive the value of the tax bases from the projections of the growth of the economy, and to derive tax rates by calculating the proportion of the tax revenue of each tax to the value of the respective base based on the observation of recent past. The rates obtained were then multiplied by the projected base values to generate tax revenue projections. To arrive at the tax rates the average figures of tax revenues and bases of three fiscal years 1978/80 to 1987/83 were taken. The second group of revenue projection indicated as C was obtained by a simple method, that involves extrapolation of the historical trend of revenue collection. <sup>11</sup>

Although these methods are the commonly used ones in tax revenue forecasting, it is not difficult, however, to point out some of their shortcomings. As far as the first one is concerned, although very important is that it attempts to obtain revenue projections based on current tax structure, its limitation lies in that the projections are made on the basis of the tax-base relationships derived from too small historical observations. The tax rates obtained may thus be significantly affected by unusual circumstances that may take place during one of those observation periods. This is a likely event in view of the frequently changing economic policies which has taken place

Table 5.7

Revenue Projections by Alternative Methods (1984/85 - 1988/89)  
(in million of Birr)

	A	B	C	Ratio B/A	Ratio C/A
1984/85	1593.6	1766.1	1980.9	1.10	1.24
1985/86	1738.5	1939.5	2115.7	1.11	1.22
1986/87	1906.4	2123.9	2250.5	1.12	1.18
1987/88	2067.9	2332.9	2385.3	1.13	1.15
1988/89	2310.4	2569.2	2520.9	1.11	1.10

the past, which have a direct bearing on the tax bases. The flaws with the second method of forecasting are that, such an approach involves the assumption that all discretionary changes which occurred during the historical period would be replicated in the future and would have the same revenue generation effect. Moreover, such methods do not take into account the possibility of any structural change or different patterns of growth of the economy in the future.

It is to be recalled that our method of projection has attempted to take into account, to certain extent, these factors which were overlooked by the methods used by the Finance Department and thus the method has been refined to overcome the shortcomings of the two methods. Therefore, it can be stated that, the ratios indicated as B/A and C/A can be regarded as indicators of distortions arising from the shortcomings of the methods which failed to take into account the factors discussed.

#### 5.4 Tax Policy Implications of the Projection Results

Two important conclusions can be drawn from the tax revenue projections as presented in Table 5.6. First, it can be observed that tax revenue is projected to increase from Birr 1493.5 million in 1982/83 to Birr 2310.4 million in 1988/89. This means tax revenue will grow at an annual growth rate of 9.2% on average, which may be considered a credible achievement. But as noted earlier our interest is on the tax ratio rather than on the rate of growth of tax revenue. This is presented in Table 5.8. According to our projections, with unchanged 1982/83 tax structure the tax ratio will show hardly any improvement. It can be seen on the table that the tax ratio in 1988/89 will be the same as that of 1981/82 and 1982/83 when it was 15.3% and 15.2% respectively. This observation substantiates once again, our earlier finding that the present tax system is income-inelastic. It can at best be called proportional. This means given the present tax structure constant, the cannalizing of proportionately higher share of the growth in national income will not be possible in the future.

Second, a tax ratio of 15.2% by the end of 1988/89 means less than the plan requirement. As is shown in Table 5.8, the Ten-Year-Directive Plan envisages a tax ratio of 162% by the end of 1988/89. This implies to achieve the revenue target set in the plan, tax effort of certain magnitude either in the form of introducing new taxes, or raising tax rates, or improving tax administration will have to be made. According to our projection, it appears that about one fifth of the expected increase in tax revenue between the period 1984/85 to 1988/89 will have to be raised through increased tax effort in one way or the other. Moreover, it can be seen that the planned tax rat

Table 5.8

Consolidated Tax Revenue Projections (1984/85-1988/89)  
(in current price)

	Plan Projection* <sup>12</sup>		Projection**	
	Birr (millions)	Percentage of GDP	Birr (millions)	Percentage of GDP
1984/85	1748.4	15.7	1593.6	14.4
1985/86	1833.2	15.4	1738.5	14.6
1986/87	2047.6	15.9	1906.4	14.8
1987/88	2231.9	15.9	2067.9	14.8
1988/89	2445.6	16.2	2310.4	15.2

Source: \*Projection by the Office of the National Committee for  
Central Planning.

\*\*Table 5.6

by the end of 1988/89 is low. Because, a tax ratio of 16.2% by then will not improve the position of the country in the spectrum of developing countries' tax ratios presented earlier. This is true especially considering the fact that, the other developing countries are very likely to improve their tax ratios. But this does not mean that, no significant tax reform will be made during the plan period to improve the tax ratio. It can be seen that the study is confined to the first five years of the plan period, while the full horizon of the plan is ten years. It seems that the full impact of the planned tax reforms will be felt in the revenue during the second half of the plan period. The fact that the tax ratio is planned to increase from 15.2% in 1988/89 to as high as about 21% in 1990/91 (two years later) under scores our claim.

## Notes

1. One of the variants of tax revenue projections in the Ten-Year Directive Plan is obtained by simple extrapolation of the post trend. See የጠቅላይ ልማት ስልጣን ቢሮ የግብርና ዘመን ማዕከላዊ ፕላን ጠቅላይ ወደፊት የሥራ ግብር ለማተፈ ስራ ዕቅድ /000 ረ ቁፅ/ ፕላን ስራ ለግብር ስራ ስራ ዕቅድ 1975 ዓ.ም.::

2. See R.W. Bahl, Alternative Methods for Tax Revenue Forecasting in Developing Countries: A Conceptual Analysis, op.cit., p. 3. See also R.J. Chelliah, a note on Techniques of Adjusting Tax Revenue Series for Discretionary Changes, op.cit., p. 1.

3. For a list of discretionary measures that have been carried out in the recent past. See Appendix II.

4. R.J. Chelliah, op.cit., p. 5.

5. For example, "if at year a's rates, collections in year b would have amounted to 80, but because of the discretionary measures enacted in year b the actual outturn was 100, we could say, assuming away any possible changes in progressivity, that the effect of the discretionary measures in year b was to scale up revenues obtainable in year a's rates by a factor of 100/80." Ibid.

6. See K.K., Artus. op.cit., p. 3 for similar method.

7. R.W. Bahl, op.cit., p. 14.

8. Even projected data on GDP at factor market cost for the period of our study could not be obtained. But since past value of GDP at market prices and GDP at factor market costs showed correspondingly equal rates of growth, the projection on GDP at factor cost is obtained by assuming that GDP at factor cost will grow at the same rate as that of GDP on market prices, for which projected data is available.

9. See H.S. Houthukker, "An International Comparison of Household Expenditure Patterns," Econometrica, Vol. 25, (1957), S.O. Adamu, Expenditure Elasticities of Demand for Household Consumer Goods, The Nigerian Journal of Economic and Social Studies, Vol. 12, No. 3, (November 1970), p. 226. C.W. Howe, "An Analysis of African Household Consumption and Financial Behaviour in Kenya and Uganda," The East African Economic Review, Vol. 4, (June 1968); Massell B.F. and Heyer Judith, "Household Expenditure in Nairobi; a Statistical Analysis of Consumer Behaviour," Economic Development and Cultural Change, Vol. 17, (January 1969).

10. For similar argument see W. Parmena, op.cit., p. 6.

11. For similar method of projection see Roy, Bahl: Alternative Methods of Tax Revenue Forecasting, op.cit., p. 15.

12 የጠቅላይ ልማት ስልጣን ቢሮ የግብርና ዘመን ማዕከላዊ ፕላን ጠቅላይ ወደፊት የሥራ ግብር ለማተፈ ስራ ዕቅድ /000 ረ ቁፅ/ ፕላን ስራ ለግብር ስራ ስራ ዕቅድ 1975 ዓ.ም  
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13. It can be observed that these revenue projections are different from the projections discussed earlier. These are the final plan projections and were derived on the basis of the earlier ones plus some other considerations, particularly the economic conditions of the country after 1975.

## 6. CONCLUSION

It is a common knowledge that the financing of economic development is primarily a "bootstraps" operation. This implies that developing countries must shoulder the major share of the burden of financing their economic development. In Ethiopia the public sector carries the heavy burden of planning for development and financing a major portion of the development programmes. Thus financial resources must be mobilized in ever increasing quantities and channelled into government hands to satisfy, as much as possible, the rapidly growing demands for spendings. The financial needs are great and pressing in Ethiopia because the government has to deal with problems of poverty and development.

The primary means of mobilizing resources into the government hand in the country is taxation. This makes the institution of an effective tax system a major concern in the country. Hence, the analysis and evaluation of the tax system becomes necessary in an attempt to ascertain its compatibility with the goal of mobilizing resources.

A comprehensive analysis of the tax system has been made in this study. The revenue structure of the tax system has been reviewed and its development overtime examined. An evaluation of the volume of the tax revenue raised vis-a-vis the tax potential of the country and the fiscal needs of the government was also made. Furthermore, the tax effort made in the past to raise increased revenue was assessed and the potentiality of the tax system to generate increased revenue in the future explored.

An important point emerging from the study is that, the tax yield has increased very significantly during the recent past years, demonstrating a substantial tax effort exerted by the government to raise increased tax revenue.

An interesting point which makes the performance particularly remarkable is that a significant upward increase in the tax ratio was achieved within a relatively short period of time, and this increase was achieved in the face of declining world price for Ethiopia's export, which comprise a major source of the country's tax revenue. Notwithstanding the high revenue yield generated, the fact remains that the tax system leaves much to be desired. Based on the outcome of the study it can be said that the problem of taxation in Ethiopia are three fold.

First, the tax revenue is inadequate (skimp). It was seen that although, increase in tax yield has taken place in the past, the level of taxation remains low when compared with the tax potential. This was demonstrated by the low index of degree of utilization of the taxable capacity, which is below average by any standard. Neither can it be considered adequate when compared with the revenue needs of the government. The tax revenue hardly grew in pace with the growth in government expenditure. Thus, it barely covered the current expenditure and no surplus was generated for capital investment.

Second, not only is the revenue inadequate but is also characterized by a wide range of uncontrollable fluctuations. This is due to its significant reliance on sources of income from foreign trade. This creates financial uncertainty which exacerbates the shortage of already meagre supply of resources, and has proved to be prejudicial to planned development in the country.

Third, the tax revenue is income-inelastic. It can, at best be considered proportional. This means the additional tax revenue generated were by and large obtained through rate changes and imposition of additional taxes, rather than automatic increase in revenue at given rates of taxation. This indicates that the channelling of progressively higher share of the national income into public treasury at the current rate structure will not be possible in the future. This is evidenced by the low elasticity coefficient of the total tax revenue.

While the above points are the outcome of the study obtained by analysing the tax process, it is also the conclusion of the study that, the problems of taxation spelled above are largely a product of both faulty mechanics of the tax rate structures, and weaknesses in its administration. Needless to say thus, in order to improve the performance of the tax system, actions are required to mitigate all these defects. To this effect a comprehensive reform of the fiscal system must be made. The crucial task of the reform should be therefore to raise the share of GDP taken in taxes and to improve the elasticity of the tax revenue. It is within these framework that policy recommendations to alleviate the problems can be given. Improving the system as a whole largely depends on knowing what the determinants of tax revenues are and understanding how they interact in the taxing process. According to fiscal experts, beyond wealth and economic structure tax revenue is determined by two important factors, these are (1) policy factors - how much is asked for and (2) implementation capacity - the extent to which policies are implemented. The revenue policy inturn is determined by the existing wealth, the government desire to tax it, and by the political feasibility of enacting fiscal policies, while the degree of target implementation depends on the magnitude of the task that has to be performed which is a function of policy stability and simplicity, and the level of voluntary compliance and the resources, and means available for implementation. The critical resources are information, personnel and expertise. The means of implementation are audit, collection and enforcement.

The question is what can be done along the above lines to ameliorate the constraints and problems of taxation in Ethiopia in order to make room for additional improvement in the future? Attempts are made here to give specific

proposals that are believed to enhance the productivity of the system. In light of the discussion given above the recommendations are given in two parts, the first concentrating on policy issues which essentially deals with suggesting policy reforms on the rate and base structure of the tax system, and the second dealing with some aspects of tax administration.

### On Tax Policies

Starting with the income taxes, it was noted that the tax largely falls on income from employment, business profit and professional, and agricultural activities. It was also noted that as far as the rate structure is concerned, all of the main income taxes (except the tax on companies) unambiguously possess a highly progressive rate structure. With such kind of rate structure, as income increases, whether in real or nominal terms, revenues from income taxes tend to rise more than proportionately to the increase in taxable bases. Thus, increasing revenue by increasing the progressivity of the rate structures cannot be defended. Moreover, the exemption levels or allowances provided are either very low or non-existent, ruling out the possibility of increasing revenue by expanding the tax bases. As far as the tax on companies goes, the rate is proportional in nature and thus although considered high (50%) it is not progressive. Accepting the justifications normally given for taxing companies at flat rate - to avoid administrative inconveniences, possibilities of evasion through break up of integrated industries, and disincentive effect on establishing large enterprises - the only possibility by which the tax can be income-elastic is if corporate income increases its share in national income. Increasing revenue yields by raising the current company tax burden cannot be defended here too as the rate is already reasonably high as compared to the rates applied in other African countries, which in most cases vary between 40% and 60% of taxable income.

One way of improving the productivity of the tax by way of expanding the tax base could perhaps be by making the incentive provisions less generous or eliminating them completely. This is suggested not because the tax incentives provided are too generous, but because there appears to be a large amount of scepticism about the effectiveness of such kind of incentives. Studies made in several developing countries indicate that the tax concessions were gratuitous and not essential to the formulation of the businesses. It is generally contended that growth in private investment is not so much the function of fiscal incentives, rather incentive is a function of the total economic policy and economic climate. Thus a situation is created in which, while on the one hand positive effects of incentives are very uncertain, on the other hand the opportunity cost of the fiscal incentives (i.e. less public investment due to lower tax yields) could probably be high.

It is clear that the scope for increasing tax revenue and the elasticity of the tax system by increasing the rates and expanding the bases of the income taxes is very limited. The main hope of enhancing the productivity of the income taxes in general lies in improving the administration of these taxes. It was indicated that there is a wide range of tax evasion among the private business enterprises and in the agricultural sector. Thus tightening tax administration in terms of assessment of taxable incomes and enforcement of the tax laws would make the tax more productive.

The land tax as was indicated is a fixed rate which falls on peasant households. The flat rate structure and the inflexible tax base would naturally result in an inelasticity of the land use fee. The situation can be altered by making the tax base reflect the productivity of the land i.e. relating it to the size of the arable land and the fertility of the soil. Such reform would make

the yield higher interms of magnitud and also more progressive and elastic. The problem associated with such kind of a tax rate is the problem of effectively administering the law. More about this later.

Turning to the indirect taxes, it is the argument of this study that the attainment of an income elastic tax structure can be effectively ensured by the direct taxes and there is the need to as much as possible supplant indirect taxes with more powerful direct taxes. While this is a valid argument, the great revenue importance of the indirect taxes however cannot be denied. It cannot be denied also that such taxes can be developed and refined to a great extent.

As far as the excise duties are concerned, it was noted that almost all are specific duties, which greatly limited the elasticity of the taxes. Any upward trend in the prices of the commodities are associated with the average rate of taxation tending to decline. Although the tendency can be rectified through frequent adjustments a more lasting solution would however be the conversion of specific rates to ad valorem rates. This would enable to establish link between tax receipts and industrial output, and prices which consequently results in the former growing at the growth rates of the latter automatically without the need for tinkering with excise duties in each budget as has been the practice so far. Such rates of course might make valuation necessary and might prove administratively more difficult, but this argument cannot be strongly presented in the case of Ethiopia. We have the case in which the general sales tax with ad valorem rates have been effective for many years and all of the items are subject to both taxes. This means that there exists already an explicit valuation procedure that could be used for purposes of an ad valorem excise tax system.

While the shift from specific to ad valorem rates would help very much in imparting built-in-elasticity to the tax revenue, further improvements can also be achieved by levying relatively higher rates on commodities with relatively high elasticity of demand, and by taking up commodities which promise a high elasticity of demand with rising incomes. Apart from certain goods, services are also considered to provide a suitable base for taxation in developing countries. The inclusion of services in the list of excisable commodities can thus increase the performance of the Ethiopian excise tax as the contribution of these sector to GDP is sizable and thus it may have a fairly large revenue potential. Taxing services as telephone, electricity etc. can be lucrative source of revenue in the country as they have proved to be in other countries.

The sales taxes both the single stage transaction taxes and multistage turnover tax have proved to be the most elastic and productive revenue source in Ethiopia. But while there is little question that a combination of turnover tax and single stage levy would offer higher revenue productivity than either of them, the administrative burden consequent to the multiplicity of rates raises the question of the possibility of consolidating them into one form of sales tax with higher rates. This leads us to consider which of the two taxes should be employed. In selecting one form to the other attention should be given to factors such as, the amount of revenue needed, trade structure, extent of record keeping in the business community, administrative capability of revenue administration, standard of voluntary compliance among tax payers etc. In considering the above taxes against these constraints and opportunities it seems that the single stage transaction tax with higher rates would be preferable by virtue of its greater administrative feasibility. In view of the low standard of compliance of

many of the tax payers and the high administrative demand to assess a very large number of retail tax payers who keep very rudimentary or even no account, the single stage transaction tax levied at a stage where assessment is administratively feasible might produce more revenue.

The productivity of the tax can also be enhanced further by extending its coverage to some of the exempted goods. The level of exemption extended to imports from the tax have resulted in the substantial erosion of the tax base detracting it from its revenue role. It is reported that only 47% of the value of all imported goods have been subject to the tax in the past. This calls for reexamination of the exemption levels.

The country relies heavily on the taxation of imports for revenue. On the other hand the productivity of this tax has declined over time. The need to conserve foreign exchange and the need to import capital and other essential goods which carry either zero rate or low rates vis-a-vis other goods has caused customs revenue to decline over the period. This also suggests that the trend is likely to continue and thus increasing reliance be placed on domestic taxes. A policy measure intended at preventing the average rate of import duties from falling will have to be directed at changing the pattern of the structure of import duties. This implies higher rates on capital goods which runs contrary to the long established policy of exempting these goods with the objective of promoting the establishment of domestic industries. We have presented the reservations voiced about the effectiveness of the incentive provisions earlier and there is no need to discuss them here again. Although a complete reversal of the policy cannot be expected, some re-examination about the policy of the level of exemptions must be made which at least results in the moderation of the decline in import tax revenue.

As far as export duties are concerned, it was shown that a bulk of the export duty yield (95% on average) is obtained from coffee export taxes. This makes our discussion to focus mainly on coffee export taxes. As noted earlier at present coffee export is taxed on four different bases. (a) duty on coffee export (b) cess tax (c) transaction tax (d) surtax. While the first two are specific rates the third is proportional ad valorem and the last one on sliding scale basis. The most important of these is the surtax. It was indicated that the rates are graduated in a way providing for relative increase in the tax burden on a fixed quantity of coffee as prices rise. It is clear that such a progressive tax rate is the ideal form of imparting built-in-elasticity to the tax in case of growing income resulting from rising prices. But if the higher export income result from increased production and sales only, the burden is proportional at best, and if prices fall, the tax revenue may show an absolute decline even if higher export incomes are derived from higher production. This was what has happened over the last few years. The revenue showed a marked decline and this decline did not result from the fall in the volume of exports but from the fall in the export prices.

In considering fiscal reforms, with the objective of improving the tax performance in this area, the question that should be asked is what is the likely trend of world price for coffee exports? Although, it is very difficult to predict world market prices, it is also very difficult to be optimistic. World market prices for agricultural commodities have shown a declining trend and there is a speculation that this will continue. Even if they do not continue to fall, a complete reversal of the situation cannot be expected. The task is then how to make the tax revenue elastic in the face of unfavourable trend in world market prices for coffee. The alternative bases are the quantity of coffee

exports, and the value of coffee exports. The advantage with the former one lies in that being a specific rate it enhances progressivity in the face of declining prices and is relatively simple to administer. The main drawbacks which make it unattractive are, as the tax is not related to price it is not possible to mop-up the occasional wind fall gains. Secondly in periods of very low prices for coffee, a specific export tax would fall unduely hard on producers, which may adversely affect their desire to increase production. This leaves us with the second alternative i.e relating the tax rates to the value of exports. It is clear that this would mitigate if not solve the problems, which can arise from the other forms of rates. Apart from this, the alternative is attractive from the point of view of preventing the government revenue from the wide fluctuations resulting from the ups and downs in the price of world market.

As regards the other duties on coffee the cess, and the export duties as far as they do not serve any separate purpose their existence cannot be justified on administrative grounds and should be consolidated into a single export duty. All that is needed is a realistic tax rate which can generate higher revenue.

Strengthening the export duties at least in the medium-term is very crucial in Ethiopia, because it is the most important method of mobilizing resources from the agricultural sector in view of the formidable problem of administration faced in effectively taxing the sector through the income tax method. Thus apart from the suggested reforms there seems also the need to convert the taxes levied on other exportable commodities from their present specific nature to ad valorem rates.

On Tax Administration

It is hardly an exaggeration to state that a tax policy is no better than its application. However noble and correctly designed a policy may be, it is not worth much unless it is implemented. It is said that in the developing countries revenue are inadequate and unstable not because of inadequate policies to tap the tax potential and insufficiency of taxable bases, but also because of partial implementation of existing tax laws. In Ethiopia likewise, the poor enforcement capacity of the tax administration is widely acknowledged. This was also revealed by our study. The low elasticity coefficients of several of the taxes were explained by the low tax-to-base elasticity which is a sure sign of ineffectiveness of the tax administration. This means that a substantial amount of revenue can be generated by strengthening the implementation aspect of taxation. Matters of fiscal administration improvements fall largely within the realm of public administration and thus is beyond the scope of this paper. Nevertheless we may briefly refer to some important steps that has to be taken to improve the tax administration.

We have seen that the factors which affect implementation are the resources and means available for tax administration. Thus any tax administration must be strengthened with the cited means and resources. In Ethiopia, however, the fiscal administration is reported to suffer from the lack of the means and resources. Officials interviewed pointed out that the means and resources are far from adequate when compared with the task of the fiscal organization. This has resulted in the low performance of the agency. We have seen for example that it is because of the administrative weakness that the agricultural income tax revenue constitute only 3% in the total government revenue. An inordinately small sum when compared with the size of the sector. Similar weaknesses are also

reported in the implementation of other tax laws. All this calls for the improvement of the tax administration by equipping it with the means and resources noted earlier. Apart from the other organizational issues the success or failure of carefully planned policies depends to a large extent on the suitability and motivation of the staff responsible for carrying them out. This means a thorough training and improving the living and working condition of the staff is very important. Moreover, at the heart of taxing process are data (information) and expertise to process and analyse it with which any tax administration must be strengthened.

It is true that establishing an efficient tax administration is an expensive venture. But ensuring administrative efficiency especially as it pertains to tax administration must be seen in a dynamic sense. Expenditure on improved administration in the short run is amply vindicated in the long run by the increased revenue productivity of a more developed tax system. For instance in view of the formidable administrative problems encountered in taxing agriculture and small private businesses through the income tax, a 'presumptive' assessment method can be recommended. The establishment of such a method may be expensive at the beginning, especially in agriculture, as it requires land recording and surveys. However, it seems that it is much more rational to bear the cost for a while, and overcome the problem over time, and institute an enduring system of taxation, geared at effectively mobilizing surpluses into development expenditure.

This in brief are the proposals we forward, which if effectively implemented are believed to enhance the effectiveness of the tax system. It is to be noted that it is only a synchronized course of action both at policy and execution level which can result in the emergence of a productive tax system.

But although the study suggests the existence of a scope for raising increased tax revenue, it should be remembered that, high tax efforts alone cannot be expected to have the desired impact on the saving rate in view of the massive savings requirements in the country. The achievement of a significant saving rate by the government demands the use of all available instruments. In the Ethiopian condition, improvement in the rate of public saving requires higher saving by both the central government and public sector enterprises. It can be claimed that a high potential for mobilizing resources lies in improving the financial performance of these enterprises. Thus policies to ensure a marked improvement in the generation of internal resources by public enterprises should receive high priority. Finally as noted at the outset, the task of development does not lie solely in the generation of increased financial resources. It is a common knowledge that, additional growth can be realized from optimal allocation of smaller amount of resources.

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## Appendix II

Tax Changes, 1967/68-1982/83

<u>Year (Fiscal)</u>	<u>Description</u>	<u>Estimate of Full Year Revenue Effect (in million of Birr)</u>
1968/69	Increased import duties on about 80 items	8.0
1969/70	Higher surtax on coffee exports	variable
1970/71	Additional education taxes on urban property and Personal Income	5.0
1971/72	Higher alcoholic excise tax on imported and local products, Introduction of new excise taxes on textiles, iron and steel rods and bars footwear, plastic and rubber products (except shoes and boats) and soft drinks	3.0
1972/73	Higher rates of transaction tax on imports	7.0
	Removal of exemptions previously granted in respect of the tax on fuel used in agricultural tractors	7.0
1973/74	Higher import duties on several items	15.0
1974/75	Increased excise rates on domestically produced beer and stout	5.0
	Introduction of new excise tax on tobacco and tobacco products	9.0
1975/76	Reduction of excise tax rate on petroleum products	30 to 35*
	Abolition of educational and health tax	-
	Introduction of: -rural and use fee	-
	-agricultural activities income tax	-
1976/77	Increased surtax on coffee exports	75-100
	Higher excise rate on alcoholic beverages (Imported and local)	13.5**
	Increased import duties on several items	23.1**

Appendix II (Contd.)

1978/79	Higher excise rates on imported and local goods	14.1
	Higher tax rates on land use and agricultural activities income	
	a) higher rates on land use	20.0
	b) higher rates and more progressive tax rates on income from agricultural activities	22.0
	Higher and more progressive tax rates on employment income	13.5
	Higher and more progressive tax rates on business and professional income	36.6
	Higher excise on leather and footwear imported as well as local	2.5
	Higher excise on tobacco and tobacco products	6.6

Source: Ministry of Finance

-not given

\*fall in revenue

\*\* ex-post estimate

Appendix III

Chow Test

Source of Revenue	F-Value
Total tax	9.31
Direct taxes	13.67
Income taxes	21.85
Excise taxes	10.07
-on domestic goods	47.04
-on imports	42.31
Transaction taxes	4.21
-on domestic goods	28.26
-on imports	0.51
-on exports	5.01
Stamp duties	4.03
Export duties	-2.29
Import duties	2.43

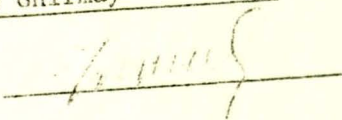
Note:

For 14 degrees of freedom the F-value indicating significance at 5% significance level is 3.8

DECLARATION

I, the undersigned, declare that this thesis is my work and that all sources of material used for the thesis have been duly acknowledged.

Name: Teame Ghirmay

Signature: 

Place: Addis Ababa

Date of Submission: October 30, 1985