HOWARD UNIVERSITY.

# SOME SIGNIFICANT RELATIONSHIPS BETWEEN TAXATION AND ECONOMIC PERFORMANCE DURING TRANSITIONAL PERIOD OF DEVELOPMENT.

## (THE ZAMBIAN EXPERIENCE FROM 1964 TO 1980)

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SHADRACK OJUDO KWASA.

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# CHAPTER ONE:

## BACKGROUND SETTING: TAXATION AND GROWTH:

### INTRODUCTION:

The tax system is often identified as the most powerful lever available to governments for moving their economies towards their development goals. For developing countries, the desire to apply fiscal policies to guide and stimulate economic and social development is an aspiration which can be found heavily enshrined in the numerous development plans released by governments every year. So the link between taxation and economic development implied in the title of this chapter is the link between a universally desired end and a form of government action which is widely believed to be a means to that end. It is one purpose of this study to examine the salient features of that link between taxation and economic development in a case study of an open developing economy, namely Zambia's economy.

### THE SETTING:

Zambia, like most developing countries is now dependent on taxation[1] as a source of finance for develop-

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[1]There was a belief among some Zambians that copper

ment. This remains true despite her other once widely known source, mineral sales proceeds. The difference is that in Zambia taxation was for a while[2] regarded as a minor source of government revenue whereas in other countries taxation was, right from the outset, the main source of government revenue. For example, in 1970 the revenue[3] from income taxes constituted 30.5% while those from mineral sources were 41.2% of total government revenue.[4] But after the partial acquisition of the mining companies' majority shares, this pattern changed considerably from mineral revenue sources in favour of income taxes and other sources. For the period 1974 to 1979 the everage equivalent figures for income tax and mineral revenues were 35.9% and 10.6% respectively. It was the curiosity over this observed position of taxation and its steadily increasing importance as a source of finance for economic development that motivated the interest in further study of this

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evenue should be sufficient to provide finance for all overnment revenue needs. It originates from the old days hen copper revenue was quite substantial and was the ain source of government funds.

[2]The "while" refers to the period prior to the omplete acquisition of the 51% share of the mining ompanies.

[3]Central Statistical Office (CSO), Statistical Year-ook. (Lusaka: Government Printers), 1974, p.122.

[4]Include both internal and external sources. See onthly Bulletin of Statistics. (Lusaka: Government rinters), 1973, pp 29-32.

phenomenon.

A short time after Zambia's independence, it was clearly noticeable to fiscal experts that taxation policies and tax revenues would soon take their places in the forefront, as the crucial determinants of the future of economic development. It was therefore important that tax structure and its impact on the macro-economic policies should be carefully studied and understood. The initial interest which led to the undertaking of this study emanated partly from that realisation and partly from this researcher's own long time involvement with the issues of public finance and its linkage with economic development.

THE PROBLEM:

The general problem to which this study addresses itself is the determination of the role of taxation in an "open" African economy.[5] The specific problem is that of identifying the impact of taxation and other related fiscal policies on the economic development of Zambia as manifested in the pattern of growth during the selected sixteen years

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[5] Economists refer to an economy in which the foreign sector transactions (trade, loans, grants etc) dominates in the GNP accounts (constitutes a larger percentage of GNP than the domestic transactions) as an "open economy". In contrast a "closed economy" refers to a Robinson Crusoe type of economy.

of political independence from colonial rule.[6]

There is a specially unique characteristic of this problem. In a number of African and other Third World countries, the predominant source of government revenue during the colonial period was not taxation outside the key industries. It was some export commodity or commodities. In Zambia that commodity was copper. The result of this dependence on export revenue was that for a long time after independence the governments of those countries tended to approach the determination of tax policies on the facile concept of "that was the way the colonial regimes did it."[7] Thus they overlooked two important points. First, the recognition that the "colonial" regimes were not too concerned nor interested in the broader responsibility of developing the whole national economy. Their interest was confined to developing only the "export enclaves." These "export enclaves" were the sources of the raw material in which they were interested The enclaves were therefore developed in a highly mercantilistic style. Zambia's "Copperbelt Province" and its linking "line of rail" or Kenya's so-called "White

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[6] In Zambia this was the period of the British Colonial Government followed by the Federation of Rhodesia and Nyasaland which ended in October, 1964.

[7] A common response from interviewed government officials during the interviews by this author when asked why they continued certain practices after independence.

Highlands" provide two good examples of such "enclaves".

Secondly, the colonial regimes did not, in most cases, depend on internal sources of finance for their government revenues. A larger portion of their revenue originated from the subsidies voted them from their metropolitan government budgets and allocated for developing the infrastructure in the "overseas territories" or "dependencies." In return colonial exports were treated as a part and parcel of the metropolitan exports.

In Zambia, the United National Independence Party (UNIP) government did not own the copper industry. But by agreement with the mining companies, the government received over 60% of government revenue from copper industry through special levies and profit sharing schemes which in fact amounted to special taxes and excise duties. The most popular ones were: royalties, export and sales duties, prospecting fees and mining licences. So the government acquired revenues from the mining industry by placing the industry under specialised form of taxation. The historical approach to tax determination therefore tended to preserve rather obsolete tax policies which in turn created

two other problems:

(a) The tax policies went quite out of step with both the political and social realities as well as new pattern of income distribution. For example, Sir Roy Wellensky[8] was still sustaining the outmoded "hut tax"[9] and "poll tax"[10] Both taxes had served their colonial purposes during the colonial period. But after independence, those types of taxes were just out of fashion in the new political milieu and income distribution structure.

(b) They also had little responsiveness to the government revenue requirements.

PURPOSE AND OBJECTIVES:

The purpose of this study was to find out;-

1. How responsive to the above changes in the national income and needs the tax system was in the sixteen years covered by the study. During the colonial period the main purpose of taxation (especially of the Africans)

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[8] The first and last Prime Minister of the defunct Federation of Rhodesia and Nyasaland, a post colonial federation which was forced on the black majority of the population of what are now Zambia, Malawi and Zimbabwe from the fifties. The federation collapsed with the breakaway of Zambia and Malawi in the early sixties leaving Zimbabwe to fight it out to independence in the early eighties. Zambia achieved independence on October 24, 1964.

[9] Hut Tax - was a tax based on the number of houses (huts) that a tax payer owned. It was imposed by the colonial

was to force the Africans to go out and seek paid work in the farms, mines and other industrial centers as unskilled laborers.[11] Taxation of the Africans was therefore a basic tool of promoting the exploitation of the "export enclave" in the extraction of "raw material" for export. After independence taxation became an important source of government revenue and policy instrument for regulating the economy. How responsive to this shift in objective was the tax system was the question this study endevoured to answer.

2. The specific extent to which the tax system has succeeded in dealing with the new problem and meeting the new national economic goals is the other question this study attempted to answer. The specific goals are: full employment, price stability, economic growth, a favourable

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government at the urge of the missionaries. Those missionaries erroneosly believed that the tax would discourage polygamy. In most African societies it is customary that a polygamist builds different houses (or huts) for each one of his wives. So by taxing the huts the colonial regimes believed they would make it more costly for the Africans to acquire more wives which would imply paying more taxes. The imposition of this tax became more important for its intention rather than its achievement as it proved ineffective and was abandoned and replaced by the "Poll Tax."

[10] Poll Tax - the replacement for the hut tax which also proved ineffective. It was a village tax paid by the head of the village irrespective of his wealth or status.

[11] See S.O. Kwasa, "Taxation and Economic Development in Zambia" in Suliman and Brauw-Hay, Income Taxation in Eastern Africa, (Armsterdam: International Bureau for Fiscal Documentation), 1980, pp.199-201.

balance of payment and equitable distribution of income.

3. What role (established from items 1 and 2 above) have taxation and tax policies played in promoting economic development during the period of the study.

The objective was to achieve all the above purposes through a concerted analytical process aimed at providing specific answers to the following specific questions:-

(1) What are the main criteria for tax determination and what bearings do they have on government spending and economic development ?

(2) Is there a significant cause-effect relationship between Zambia's tax revenue and her GNP ? If so what are its main determinants ?

(3) If the answer to item 1 and 2 above is affirmative, what adjustments may be necessary in the tax system so as to make it sufficiently responsive to fluctuations in the GDP to assure a high level of economic incentive, stability and growth, and

(4) Lastly, what (if any) tax reforms may be

suggested from the lessons of the sixteen years covered by this study which might be useful in formulating the fiscal policies of the future.

HYPOTHESIS:

In order to achieve the objectives of this study and to solve its main problem, certain hypotheses have been formulated based on the researcher's observations and theories derived from previous studies by other scholars. One such theory was formulated by Harley Hinrichs[12] in 1966 and later developed by the staff[13] of the International Monetary Fund (IMF). Its main thrust is the structural changes in the tax system during the various development stages. This study may be considered as an extension of the Hinrichs Theory and its application to the specific case of Zambia in order to see if Zambia proves or disproves the theory and its conclusions.

Hinrichs conclusion provides a set of characteristics which would be apparent in an open economy of a developing country at certain given stages of development. A country's specific position

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12 Harley H. Hinrichs, A General Theory of Tax Structure Changes During Economic Development, (Harvard: Harvard Law School), 1866.

13 IMF Staff whose contributions are cited later in this paper are Chenery, Bird, Morawetz, Chelliah, Lutz, Morss, Kelly, Tait, Grantz and Eichengreen.

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on the U - shaped curve would be determined by the time scale depicted by its development stage. This time scale is not a calender time scale but a periodic time scale made up of three periodic stages: traditional, transitional[14] and modernity periods. Zambia, with its high (60%) level of dependence on foreign trade, qualifies as a very "open" economy. Being also a developing country it falls fairly well into the Hinrichs' category of Transitional Society. Therefore our first hypothesis based on the observation and reinforced by these earlier theories (summarized in Chapter Two) goes as follows:-

HYPOTHESIS I:

As a transitional economy Zambian economy shows a high external dependence on the foreign sector and a gradual shift from dependence on minerals and foreign trade based sources towards domestic tax based sources of revenue for its development finance.

This hypothesis suggests that if past studies are accurate and their conclusions are generally applicable, then in a mono-commodity economy like Zambia's, there will be a shift from dependence on that

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[14] For more details see "Definition of Terms."

single commodity to the more general dependence on taxation as a source of government revenue for development. An empirical test was carried out to confirm or reject this contention.

The IMF studies (all summarized below)[15] seem to suggest that elasticity of the tax system is closely associated with tax policy effectiveness as a tool of development. David Morawetz[16] and Hollis Chenery[17] particularly emphasize the link between the structural changes in taxation and the direction and even the rate of growth. From their conclusion and this author's other observations another hypothesis may be stated as follows;-

HYPOTHESIS II:

During the period of this study the responsiveness of the Zambian tax revenue to changes in the GDP showed an inadequate degree of elasticity to enable the economy to cope with the basic revenue needs of the government and of development.

The implication of this hypothesis is that if its assumptions are correct, then the degree of elasticity

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[15]The relevant ones are summarized in Chapter Two under "Preceding Related Works."

[16]David Morawetz, Twenty Five Years of Economic Development. (Johns Hopkins University Press: Baltimore), 1975.

[17]Hollis Chenery, Structural Changes and Development Policy, (Oxford University Press: Oxford), 1979.

ticity of the Zambian tax system during the period of this study was inadequate with respect to changes in the GDP. Consequently, the potentiality of taxation policies as instruments of economic development through their manipulable potential capacities for incentives, stability, control and growth (in addition to revenue) was utilized below capacity during 1964-80.

The relationship depicted in Hypothesis II implies further that if such a cause-effect relationship does exist between tax and GDP, then fiscal policies need to be geared towards creating such flexibility in the tax/GDP ratio so as to enhance tax responsiveness to changes in the national income. This is the problem to which the World Bank and IMF Group refer as the "elsaticity of the tax system." It is indirectly linked with the "tax effort."

The third hypothesis which links the tax system with the changes in the government revenue goes as follows:-

HYPOTHESIS III:

There is a causal relationship between the changes in the Zambian tax revenue and the changes in the GDP which is mainly determined by the impact

of the tax revenue on the government supported and financed projects.

This hypothesis is based on the observation that government revenue and expenditure is a major source of investment. The growth of the GDP therefore depends, to a large extent, on it. Consequently, the GDP growth can indirectly depend on the fluctuations of the tax revenue. This tentative conclusion was also empirically tested to verify the existence or not of such a relationship between tax revenue and GDP.

In addition to these three basic hypothesis, there are a number of axiomatic expansions arising out of the findings related to the problem of the study. These axioms will be developed as each hypothesis is discussed in the main text. But to avoid repetition, we shall define them under methodology where their functional formulae will be explained. For now the discussion will concentrate on developing the analysis from these three hypotheses as a way of placing the discussion in perspective.

DEFINITION OF TERMS:

In the text of this study the following expressions will carry the following meanings:-

"Transitional Time" will mean the interim period of economic development between the 'traditional period' and 'modernity period' as used by Hinrichs in his 1966 study. This is the period when the economy has emerged from the traditional characteristics of non-monetary barter exchange stage in a subsistence environment and progressing towards industrialization. Its main characteristics are economic dualism with two distinctive sectors (subsistence and modern) existing side by side. It is the breakaway period from the traditional social and economic systems of the earlier phase towards that of the modern new system. Figure 1 shows the comparative positions of countries as placed on the development time scale with "transitional period" in the middle.

"INCOME ELASTICITY OF THE TAX SYSTEM" means the degree of responsiveness of the tax revenue to the fluctuations in the level of income where income may be considered synonymous with GDP or GNY.

"EXPORT ENCLAVE" means that region of a developing country where development efforts were concentrated during the colonial period on the basis of its capacity to supply the raw material commodities. In Zambia, this enclave included the Copperbelt Province and the linking "Line of Rail." The Copperbelt supplied the main commodity of crucial interests to the colonial regimes, copper. It was then transported to the nearest port for shipping via the railway lines to overseas markets.

"ECONOMIC DEVELOPMENT" is generally used in the welfare criteria sense. It implies growth in per capita income accompanied by overall improvement in human welfare. This requires re-distribution as well as increase in income to bring about positive social changes. But economic development also implies the economy's ability to provide the basic needs: food, shelter, health facilities and a minimum acceptable level of literacy. Whereas growth might imply the increase in the arithmetic ratio of wealth to population, development would require and imply increasing improvement of the standard of living of all, or at least the majority members of the society.

"Line of Rail" means the region along the main railway lines described under "Export Enclaves" above. It is made up of the main line from Livingstone in the south to Chingola in the north. It goes through Kitwe, Lusaka, Kapiri Mposhi, Ndola Katwe and Chililabombwe. There is also another line from Lusaka to Chipata in the East which links Zambia with Mozambique through Malawi.

"Commanding Heights" means the mainstay of the economy which include the mining industry, commercial and distribution industries, monetary and credit industries which include the banking institutions, insurance companies, building societies and transport industry. The control over these commanding heights in any country is considered as tantamount to control over the national lifeblood through the grip on the national economic security and the nations whole future.

"Buoyancy of the Tax System" means the ability of the tax system to rise and fall with the national income. In this study it refers to the capacity of the revenue from taxation to adjust themselves to fluctuations in the levels of income as the latter shifts upwards and downward due to other economic factors.

The key notations which will be used in this study are listed below for quick reference. This will be the key to all the formulae and equations in the whole of the discussion:-

KEY TO NOTATIONS:

$Y$ = Monetary Gross Domestic Product (GDP)

$T$ = Total Tax Revenue

$T_c$ = Total tax revenue from customs and excises

$T_m$ = Total tax revenue from minerals

$T_i$ = Total tax revenue from income taxes

$T_o$ = Total tax revenue from all other taxes

$TE_c$ = Total revenue from copper exports

$TR_c$ = Total revenue from copper royalties

$E_c$ = volume of copper exports

$V$ = Volume of copper produced and sold expressed in metric tons.

In addition to these other notations will be explained as they appear in the main text.

ORGANIZATION AND METHOD:

This study was organised in sequential chapters. Each chapter dealt with a specific aspect of the problem in the following procedural pattern: Chapter One introduced the problem, outlined the purpose and objective of the study, summarized the hypothesis and discussed some preceding theories on some similar problems. It also outlined the method and organization of the study, its significance and anticipated contribution to knowledge while stating the scope of the study's coverage and limits.

In Chapter Two the conceptual focus was presented based on the selected preceding works. The ones selected for critical review were those of Professors Richard and Peggy Musgraves, the International Monetary Fund (IMF) and Dr Harley H. Hinrichs due to their close relevance to the specific problem of this study. Other works such as those of Professors Adebayo Adedeji, Alan Peacock, John F. Due, A.R. Prest, Harry G. Johnson and Milton C. Taylor, although relevant were refered to but were not all reviewed in details. This was partly because there was no need to review them all in detail but also because they deal with the general problem but do not

formulate general framework on which specific cases like this one can be tested. The selected ones seem to do this formulation better for this particular case.

Chapter Three summarized the general overview of the Zambian economic structure and laid out the basic background on which the study was carried out. In the same chapter the main inherited socio-economic constraints were discussed against the political transition and the aggregation of their repercussions on development efforts. In Chapter Four the methodology and strategic formulae used in the study were outlined. The paper put forward a set of broad leading generalizations concerning the changes in the tax structure and simulteneous changes in the GDP, through a given period of socio-economic development in Zambia. In doing so the study utilized the regression analysis of the time series approach. The sets of data were regressed to reveal the relative structural changes in the dependent variables and their explanatory variables over the period of the study, 1964 to 1980.

The main changes which were analyzed include the changes in the GDP, government revenue, total tax

evenue and the four main categories of taxes: (i) income ax, (ii) customs and excises, (iii) mineral taxes and oyalties and (iv) all other minor taxes. The main purpose f this excise was to reveal the significant changes in ie importance of each tax contribution to government evenue and through that its impact on the growth of the )P. Population data was introduced in this analysis to ow the significance of the effect of population growth that of per capita income which is one indicator of onomic development.

Chapter Five gave the actual regression analysis tcome. It presented the summary of the regression sults in a tabular form from which the $R^2$ and the test results can be easily read out. The chapter also scussed the interpretation of the results and went rther to outline their significance and implications. ese findings were also discussed in terms of their n-economic repercussions for the economy.

In Chapter Six the paper put forward and argued e case for a tax reform in Zambia which was one result the findings of the preceding analysis and observed enomena. Chapter Seven outline the main social and

political ramifications of the findings of the study. Summaries and conclusions were outlined in Chapter Eight.

SCOPE AND LIMITATIONS OF THE STUDY:

This study covers only the Republic of Zambia, a politically sovereign state situated in the south central Africa between latitudes 23S - 35S and longitudes 8E - 18E. The study covers the sixteen years from 1964 (when Zambia achieved independence from colonial rule) to 1980. This period was chosen because of its uniqueness as a period of economic and social transition from one phase (colonial) of political system to another phase. Consequently, it was for Zambia (as for all other ex-colonial countries) a period of adjustment in terms of economic and political goals and objectives. But more specifically, it was chosen because Zambia, unlike other ex-colonial countries, had to make some extremely drastic adjustments in its fiscal policies having previously depended heavily on mineral revenues which were rapidly dwindling during the period of this study. The need for an alternative source of finance for development was therefore pressing.

Many overlapping developments interacted during this period in Zambia all of which cannot be exhaustively discussed in this paper. The paper does

not, for example, discuss in details the political and other social developments of the same period. They are only outlined and refered to where their ramifications on the economic scene directly affects the results of this study. Even the economic variables are selectively chosen to concentrate the analysis only on those factors relevant to the specific focus of this study, namely, the tax and other fiscal policies. It analyzes the relative impact of the changes in the tax revenues, total trade and government revenue on national income. It does not go into such discussions as monetary policies, foreign loans and grants all of which partially affected the final results of economic performance. Therefore, this study is basically an in-depth analysis of economic data within the socio-political framework of the period 1964-80.

SIGNIFICANCE AND CONTRIBUTIONS:

There are two contributions that this study makes to the understanding of fiscal problems. It applies the general theories that were recently developed by fiscal economists, especially the World Bank Group to explain the behaviour of the tax revenue during economic development to a specific country situation. In this way we seek to find out how useful the understanding of these problems and dealing with them, the models can be.

Secondly, this study will add substantially to the existing knowledge of the releationship between the GNP, on the one hand, and that crucial aspect of public finance - taxation. For fiscal policy-makers, this contribution can fill an important gap in the guidelines for policy formulation. For most developing countries the knowledge of the tax/GDP relationship requires the knowledge of the income elasticity of the tax system. To be able to formulate realistic national development policies, the expected revenue sources must be both predictable and reliable. Taxation, being the most reliable, flexible and predictable source of finance for development, such plans must depend on it. Therefore, a study like this one which determines the [illegible] trend and income elasticity of the tax revenue, is a prerequisite for a meaningful planning for national economic development. This study does, therefore, supply this essential ingradient for future development plans for official and unofficial (academic) use. The general conclusions and findings of this study will be applicable not only to Zambia but also to other developing countries especially those with open mono-commodity economies.

# CHAPTER TWO:

## THEORETICAL FRAMEWORK AND RELATED WORKS:

### A. PAST CONTRIBUTIONS AND PRECEDING RELATED IDEAS:

With the emergence of the Third World in the World economic scene, the core of discussion on the problem of taxation assumed a dual focus. In the developed countries, the discussion had previously centered around the general role of fiscal policy as a supplement to monetary policy in the effort, among other things, to stabilize the economy. In this sense the concern and the leading idea was not very different from those with which the classical scholars[1] had been concerned. But in the developing countries the leading issues revolved around the link between taxation (and other fiscal policies) and development. There are three basic leading ideas around which the discussion on taxation in developing economies revolve:-

The first leading idea is the concern about what the governments of developing countries should do to accelerate economic development utilizing taxation and other fiscal policy tools, One of the original contributors

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1 From Adam Smith's four canons of a good tax the succeeding scholars such as Adolf Wagner, Bastable, Selligman, Colbert, John Stuart Mill, Sismondi and Robert Jones to name just a few, have all discussed the various approaches to the same problem without coming to any single unanimous agreement.

to the ideas on this problem was Professor Arthur Lewis[2] who in his many writings placed this problem high in his priority hierachy. He identified nine functions of government in a developing economy. These functions fit fairly well into the five general goals of a developing economy as shown on Table I below.

Just as the general goal overlap so do the functions of a government overlap. This explains the reason why, for example, function 8 appears against both goals A and E. Other functions could also appear under several goals in a similar manner. But in the table we have placed each function against the goal or goals to which it contributes the most without implying that its contribution is limited to that goal alone. Lewis discusses some broad issues of government policies as they affect or are directed to promote those nine functions. His study leads him to conclude that these nine government fumctions can be best carried out by use of a fiscal policy in which taxation as an instrument of policy is judiciously applied to regulate the level of saving, investment and provisions for incentives. The idea [illegible] is further developed by Professors Nicholas Kaldor, John Due and later examined further by Ursula Hicks.[3]

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[2]Arthur Lewis, "Government" in Milton Taylor's Taxation for African Development. (African Publishing Corporation: New York), 1970, pp 4-24.

[3]Milton Taylor, pp. 25-202.

TABLE 1:

ECONOMIC GOALS AND GOVERNMENT FUNCTIONS IN A DEVELOPING COUNTRY.

| GOALS OF A DEVELOPING NATIONAL ECONOMY. | LEWIS' FUNCTIONS OF THE GOVERNMENT. |
|---|---|
| A. ECONOMIC GROWTH | 1. Maintaining Public Services.<br>2. Influencing Attitudes.<br>3. Influencing Level of Investment.<br>8. Influencing the Use of Resources |
| B. FULL EMPLOYMENT | 4. Ensuring Full Employment. |
| C. STABILISATION | 5. Controlling the Quantity of Money.<br>6. Controlling Business Fluctuations. |
| D. INCOME DISTRIBUTION | 7. Influencing Distribution of Income |
| E. DIVERSIFICATION | 8. Influencing the Use of Resources.<br>9. Shaping Economic Institutions. |

Source: Athur Lewis, "Government" from Taxation for African Development, edited by Milton Taylor; (New York: Africana Publishing Corpotation), 1970, p. 6.

Kaldor attempts to establish the optimum tax system and the means for its achievement. He argues for high agricultural taxation and no concessions to attract foreign investments at all. The former, he considers as a feasible means of increasing food for sale and thus increasing "savings" for economic development. The latter, he regards as a mere "begger-thy-neighbour" form of competition which is unlikely to assist development.

Professor Due, on the other hand, considers tax incentives to the business sector as the surest means of encouraging investment for development. Lastly, Hicks discards the conventional methods of financing that many developing nations have, in the past, depended upon such as foreign aid (gifts, grants and loans) and recommends domestic taxation as the vital and dependable motive force behind economic development.

Divergent as these prescriptions may appear, they still agree on one thing; that in developing countries taxation must be given higher priority as a policy instrument for development. This leads to the next idea on which the discussion on taxation in developing countries is set.

CACERES - SAMUELS HYPOTHESIS:

The second leading idea is the role of the foreign sector and its significance in the determination of the position of taxation in an open national economy. The idea was first discussed by L.H. Samuels[6] who argued that in most African "open economies" with foreign trade representing sometimes as much as 60% of domestic money incomes, tax revenue may heavily rely on this foreign sector. External economic fluctuations may prove to be the crucial determinants of the fluctuations in the tax revenue. Consequently, tax policies may be highly sensitive to the expected impulses emanating from the external sector. Therefore as a domestic policy tool, taxation may be an instrument with highly constrained perspective under these conditions. In this respect an earlier study by Caceres[7] may be of some interest as it deals with a similar problem.

Caceres in his contribution cited above concludes tha import substitution type of industrialisation tends to distort the economy making it more dependent on external forces. If such a distortion takes place when the need

[6] Milton Taylor, op.cit. pp.52-76.

[7] L.R. Caceres, "Export Taxes and Economic Growth," in Toye, J.F.J., Taxation and Economic Development. Frank Cass: London), 1978, pp 105-124.

for growth and development is urgent (as is the case in most developing countries), then the only effective policy option must be a radical structural change in the economy involving tax credits, possibly land reforms and redistribution of incomes. These must be designed to bring the benefits to a wider spectrum of the population. This according to Caceres, is the only way to bring about economic growth and development. This need for structural change brings this discussion to the last leading issue.

## THE HINRICHS' MODEL:

The third leading idea on taxation in developing economies is the issue of structural changes in the tax system during economic development. Following Hinrichs' study of 1966 which examined structural changes there have been other studies especially by the IMF staff. Hinrich examined a number of African and Asian countries over the years 1957 through 1960. His findings seem to bear out Lewis' and Hicks' observations that compared with other policy tools, taxation is the crucial policy instrument of economic development in under-industrialised economies. But he goes further in his study and provides empirical data to back his claim that the lower

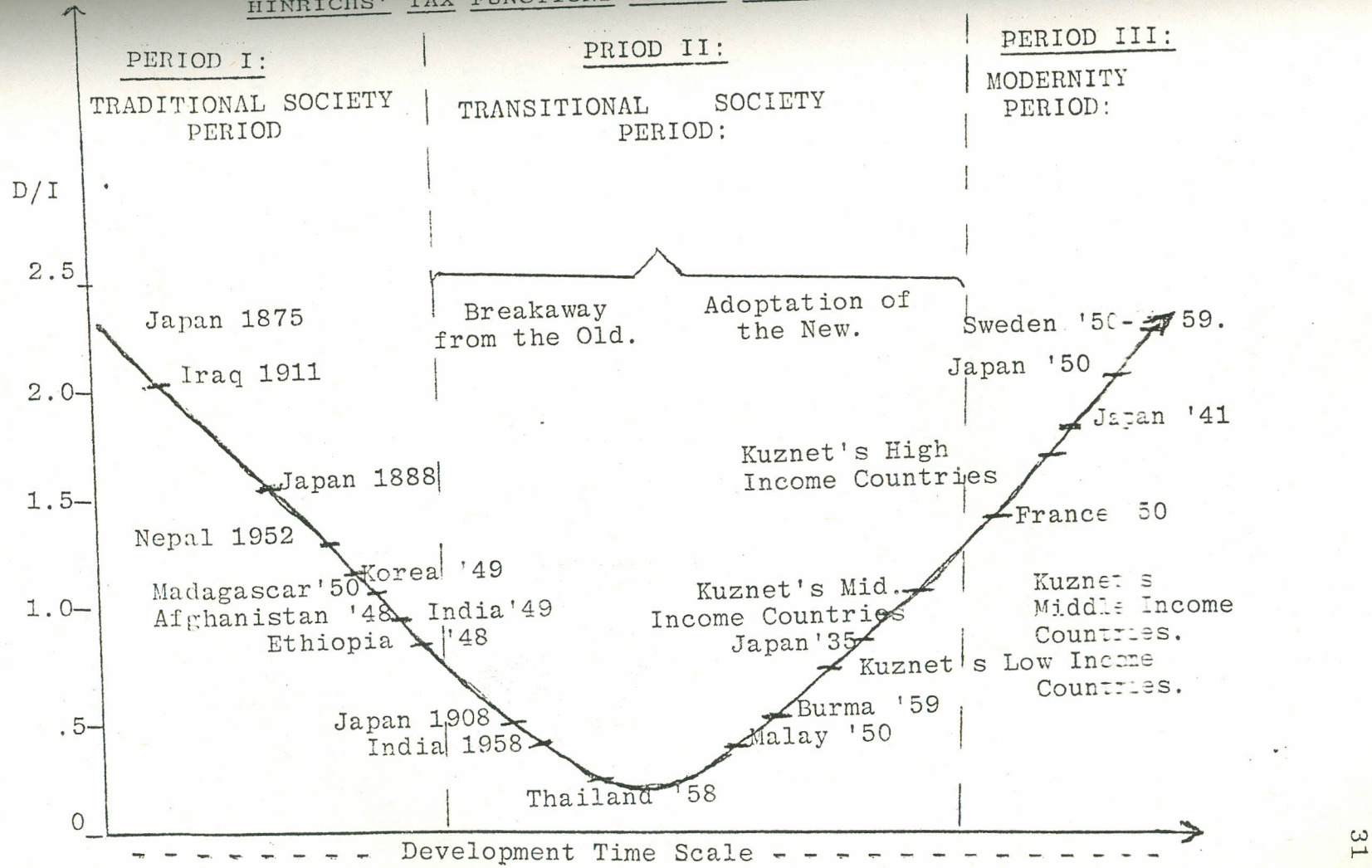
the stage of development the higher the share of external influence on fiscal policy in an "open economy".

But the most significant of Hinrichs' inventions is the U - shaped function depicting the different tax structures during the various stages of economic development shown on Figure I below. These stages range from traditional through transitional to modernity stages. He maintains that his conclusions are that:-

1. Traditional societies derive most of their government revenue mainly from non-tax sources. We tested this theory in terms of Zambian experience between 1964 and 1980.
2. During transitional period these non-tax sources diminish as ratios of both current revenues and national income.
3. When societies break away from traditional ways indirect taxes become more important especially those on trade sector. The degree of "openness" becomes a factor in determining the position of a country on the U - shaped curve.
4. Indirect taxes are important in the external sector in the early transitional period but are superceded by internal direct taxes at the latter transitional

FIGURE I:

HINRICHS' TAX FUNCTIONS DURING DEVELOPMENT PRIODS:




Source: H.H. Hinrichs, A General Theory of Tax Structure During Economic Change, Cambridge. Mass: Harvard Law School, 1966, p 101.

period. This trend continues into modernity period.

5. Finally, increased tax structure flexibility as a by-product of modernity is evident at the mature modernity stage.

These are important conclusions which once confirmed to be universally true, may well hold the key to our understanding of the behaviour of developing economies to changes in the tax policies.

In this particular study, we picked out one very open economy (Zambia) and analyzed its tax structure to find out whether or not it fits into this Hinrichs' model. We did this by probing analytically into the behaviour of its tax revenue in relation to GDP and its expenditure pattern. We estimated the income elasticity of the tax system to see how responsive to the changes in national income the tax system was as our starting point. We then broke up the tax system into its various components to assess the relative impact of each category of tax on total revnue.

## B. THE THEORETICAL FOCUS:

Theoretically, it is useful to view the role of fiscal policy as a means of raising the domestic saving ratio from an initial full employment situation. Musgrave and Musgrave[9] argue that while making a first approximation to the amount of tax revenue required to achieve a certain target rate of growth, differences between the various sources of tax revenue may be disregarded. Supposing that the objective of the tax policy is to achieve a 2% annual rate of growth in per capita income. With a 2% annual rate of population growth, income must grow at more than 4% per year. Such a rate of growth would require a certain rate of capital formation or investment expenditure as a percentage of national income. This ratio (call it z) may be crudely estimated by use of an incremental capital-output ratio and is defined as follows:

$$z = \frac{\Delta K}{\Delta Y} = \frac{I}{\Delta Y} \quad \ldots . \quad (1.1)$$

where K = capital stock, I = the level of annual investment ($=\Delta K$), and Y = GDP.

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9 R.A. Musgrave and P.B. Musgrave, Public Finance in Theory and Practice. (McGraw-Hill Kagashuka: Tokyo), 1976, pp. 102 - 124.

If g is the desired rate of growth, then

$$g = \frac{\Delta Y}{Y} \quad \ldots\ldots\ldots\ldots\ldots (1.2)$$

the required investment rate I/Y may be obtained by substitution as follows:-

$$\frac{I}{Y} = \frac{\Delta K}{\Delta Y} \cdot \frac{\Delta Y}{Y} = zg \quad \ldots\ldots (1.3)$$

Thus, if z = 3, and g = 4 per cent, then I/Y = 12 per cent. This investment ratio must be matched by a corresponding savings ratio to assure economic balance. Therefore, the economy must be able to secure 12% of national income to grow at the desired rate of 4%. It is necessary to have:

$$S_p + S_g = 0.12Y \quad \ldots\ldots\ldots\ldots (1.4)$$

where $S_p$ = private savings and $S_g$ = government savings. The level of private savings is given by

$$S_p = s(Y - T) \quad \ldots\ldots\ldots\ldots (1.5)$$

or $S_p = s(1 - t)Y$ . .

where s = propensity to save out of disposable income,

T = total tax, and

t = tax rate.

The level of government savings equals

$$S_g = tY - cY \quad \ldots\ldots\ldots\ldots \quad (1.6)$$

where c = current government expenditure as a fraction of national income, and t = tax ratio to national income. Substituting equation (1.5) and (1.6) into (1.4) we obtain

$$t = \frac{0.12 - s + c}{1 - s} \quad \ldots\ldots\ldots\ldots \quad (1.7)$$

Using a typical value for s of 3 per cent and for c of 10 per cent, we obtain t = 19.6. That is to say that a tax rate of 19.6 per cent is needed to obtain a growth rate of 4 per cent.

The above analysis refers to a closed economy under the assumption that (a) the impact of the external sector and its influence on the internal economy is assumed to be zero, and (b) the level of savings is equal to the level of investment (i.e. S = I ex-post) within the closed economy.

But in an open economy such as that of Zambia, some adjustments must be made to take into consideration the substantial influence that the foreign sector excises on the economy. The theoretical model for

such an economy must incorporate a net export element ($X_n$) into its operational equation. Its theoretical framework may be stated by defining Gross National Product (GNP) as synonymous with Gross National Income (GNY). We use the symbol (Y) to represent it in the conventional National Income model:

$$Y = C + I + X_n + G \quad \ldots\ldots\ldots\ldots (1.8)$$

where Y = Gross National Income,

C = Consumption

I = Investment,

$X_n$ = Net Investment, and

G = Government Expenditure.

Since changes in spending are the primary concern, the relationaship is expressed in terms of changes or deviations from the previous equilibrium (1964) to the end of the study period (1980).

$$\Delta Y = \Delta C + \Delta I + \Delta X_n + \Delta G \quad \ldots\ldots (1.9)$$

So $\Delta C = \Delta a + \Delta bY = \Delta a + b\Delta Y$

$\Delta I = \Delta h + \Delta bY = \Delta h + b\Delta Y$

$\Delta X_n = \Delta E + \Delta mY = \Delta E + m\Delta Y$

$\Delta G = \Delta G.$

But since total impact on income (Y) of a change in

any of its autonomous components is significant, Y must be expressed in terms of $\Delta a$, $\Delta h$, $\Delta G$, and $\Delta E$ only. Performing the appropriate substitutions on equation (1.9)

$$\Delta Y = \Delta a + \Delta b \Delta Y + \Delta h + d\Delta Y + \Delta E - m\Delta Y + \Delta G,$$

$$\Delta Y = b\Delta Y - d\Delta Y + m\Delta Y = \Delta a + \Delta h + \Delta E + \Delta G,$$

$$\Delta Y = \frac{1}{1 - b - d + m}(\Delta a + \Delta h + \Delta E + \Delta G)$$

In this model, any change in autonomous spending $\Delta D$, will change total spending or income by

$$\Delta Y = \frac{1}{1 - b - d + m} \Delta D \quad \ldots\ldots \quad (1.10)$$

Any change in G will shift the aggregate demand function by an ammount $\Delta D = \Delta G$ which represents autonomous change in spending and will result in an ultimate change in expenditure of

$$\Delta Y = \frac{1}{1 - b - d + m} \Delta G \quad \ldots\ldots \quad (1.11)$$

So $\frac{\Delta Y}{\Delta G} = \frac{1}{1 - b - d + m}$

represents the expenditure multiplier.

The size and change of this expenditure multiplier $\frac{\Delta Y}{\Delta G}$ is what we want to establish with empirical data at Stage A3 of our format under Methodology. Similarly, in Stage A2 we wish to establish the change in Y as a function of C, I, $X_n$ and G in the dynamic form from equation (1.9). Given the nature of the change in population ($\Delta P$) and other independent variables under Stages B2 and B3

$$\Delta Y = \frac{\Delta C + \Delta I + \Delta X_n + \Delta G}{\Delta P} \quad \ldots\ldots (1.12)$$

In Zambia the variable G is of special interest due to comparatively strong impact of government expenditure on Y. So with government current expenditure which amounts to approximately 10% of national income, the government savings of 9.6 % of national income is either used to finance additional investment or loaned to finance additional private or parastatal investment.

So there is a spillover of government expenditure into the private or semi-private sectors (parastatal sector). Following the partial acquisition of majority shares in most industrial and commercial

enterprises in Zambia, these parastatals now constitute the main industrial and commercial enterprises. So in Zambia , the line of demarcation between the government sector and private sector has gradually become blurred. The government and its para-statal corporations generate a large percentage of investment. Economic growth can therefore be said to rely mainly on government and para-statal activities to a very large extent. So the expenditure multiplier $\frac{\Delta Y}{\Delta G}$ becomes a crucial determinant of the capacity of the economy to generate impetus for growth. This capacity will be determined later in the analysis of empirical data in Chapter Six.

But having made such a first approximation to its revenue needs, the government then decides whether its target is feasible and can be attained under any realistic tax reform program or not. This decision depends on the structural framework, the capacity of the tax administration machinery and the political will to make the necessary tax assessments work. In a country like Zambia, where in the past

mineral revenue covered almost all the revenue requirements, such adjustments become slow and painful processes. In addition, a development plan which is too ambitious may require more than the new revenue sources (taxation) can reasonably be expected to produce. Such a plan may be worse than no plan at all, as it tends to end up with uncompleted projects and unfulfilled expectations. So this theory is based on a tax rate within the range of 20% which is the rate likely to be achieved by most developing countries. The model used here is based on such tax range.

In equation (1.6) we noted that the determinants of government savings $S_g$ were tax rate tY and Government current expenditure (cY). The level of c in the expression cY is given by the expenditure requirements which in turn is determined by the existing economic and social circumstances. Fiscal policies have to meet these requirements as best they can. The only flexible element in the equation is $S_g$ which will fluctuate according to how the cY inflates or deflates each year in relation to Y. That leaves tax rate as the eventual determinant of

the level of government sector investment. In most developing countries , this government sector investment is an important determinant of national economic development. So let us follow further the implications of the rate effect on economic development.

Tax rate looked at in relation to national income is a good approximation of the tax ratio to GDP. Since our interest is not so much in the absolute figures of tax rate and tax ratio, but in their changes, the close relations between the two variables is sufficient for our pupose. The specific focus of our interest is in the fact that changes which occur in the tax ratio to GDP ($tY$) will be reflected in the changes which occur in the tax ratio to GDP ($\Delta t/\Delta Y$). Or to look at it from the point of view of equation (1.6)

$$tY = (cY + S_g) \quad \ldots\ldots\ldots\ldots\ldots\ldots (1.13)$$

or

$$t = \Delta T/\Delta Y$$

since $tY = T/GDP$.

Therefore in order to determine the changes in $cY$ and $S_g$ which are the determinants of the level of

government investment, private investment, stability and so growth; the focus was on the changes in the ratio $(\Delta T/\Delta Y)$:

1. THE CHANGES IN THE TAX RATIO:

Estimating the responsiveness of the tax revenue to changes in the national income as measured in terms of tax elasticity has occupied the interest of scholars and policymakers because elasticity is measured with reference to a given tax structure. The actual estimation involves regressing the tax ratio on variables which serve as proxies for a country's "tax handles."[10] As in Lotz and Morss;[11] the ratio of taxes to GDP is represented in the equation

$$T/GDP = f(H) \quad \ldots\ldots\ldots\ldots \quad (1.14)$$

where T = taxes,

GDP = gross domestic product, and

H = a vector of tax handles.

Following Lotz, Morss and Musgraves'[12] approaches, ease of tax collection is positively related to the following:-

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[10] A base to which a tax rate can be applied or pegged such as wages and salaries is often refered to as a "tax handle."

[11] J.R. Lotz and E.R.Morss - "Measuring Tax Effort in Developing Countries," IMF Staff Papers, V.14, November 1967, pp 478-499.

[12] Richard A. Musgrave, Fiscal Systems, (Yale University Press: New Haven), 1969, pp.91-206.

1) the share of trade[13] in production,
2) the sectoral composition of the economy,
3) the percentage of economic units exceeding a certain size limit and the number of workers which distinguishes them as significant contributors to employment and to tax revenue, and
4) relative importance of large scale retail establishments.

Each one of these factors is represented by the folowing proxies:-

Factor 1 by X+M/Y (ratio of foreign trade to GDP) or just $X_y$ (ratio of export to GDP). This ratio also represents the indicator of 'openness'.

Factor 2 by $N_y$ (the ratio of mining to GDP) and $A_y$ (the ratio of agriculture to GDP). The importance of large scale producers, employers and retail establishments is positively related to the level of economic development. Therefore $Y_p$ (per capita income) is taken as a proxy for Factors 3 and 4.

With these proxies it is now possible to build the fundamental relationship which incorporates various combinations of the explanatory variables. The

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13 Both domestic and foreign trade. But in a country like Zambia which has a very strong bias towards foreign trade it was mainly foreign trade.

basic relationship is:

$$T/GDP = f(X+M/Y, X_y, A_y, Y_p) \quad \ldots \quad (1.15)$$

where T/GDP = tax ratio to GDP,

X+M/Y = ratio of total trade (export + import) to national income,

$X_y$ = ratio of export to national income,

$A_y$ = ratio of agriculture to national income

and $Y_p$ = income per capita.

The various combinations of these explanatory variables were estimated in some earlier studies[14] by individual equations. But here we combine them and present the equations in in Chapters Four and Five of this study.

The reason for selecting this formula is that it measures the sucrifice incurred in order to raise tax revenue more accurately than a simple tax ratio. Similar estimations have been used by IMF to rank countries according to their "tax effort."[15] But in a country with a high tax effort, other measures may be employed to deal with a budgetary deficit. Chelliah Baas and Kelly[16] put forward the argument that the indices

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[14] Rajah J. Chelliah, H.J. Baas and M.R Kelly - "Tax Ratio and Tax Effort in Developing Countries," IMF Staff Papers, Vol.22,March 1975.

[15] "Tax Effort" is the ratio of tax revenue to national income. It is measured by relating actual tax collection to some indicator of the tax capacity in most cases the national income.

[16] Same as foofnote 14 above.

are not intended to be applied in a mechanistic manner but to be used to judge whether there is scope for additional taxes.

But the arguments may be countered by this author's view that the level of taxation is not unambiguously related to any concept of effort. Even when the relative prices of publicly and privately provided goods do not differ across countries, tastes relevant to the private-public goods combinations may still do so. It is therefore quite possible that Country P and Country Q while trying to equate their marginal social benefits and private provision of goods and services may achieve quite different tax ratios which cannot be interprated as indices of efforts but as a result of conventional maximizing behaviour. So the vert term "tax effort," this author believes, is in itself misleading. Therefore, our reference to these equations will not be to measure "tax effort" but to enable us to ascertain the relative importance of taxes of various types (as they are linked to their relative "handles"), in the determination of national growth structure.

## 2. STRUCTURAL COMPOSITION OF THE TAX REVENUE:

The second theoretical consideration is that concerning the structural composition of the revenue itself. This is the relative contribution of each tax category to the total tax revenue. The analysis also seeks to establish the dynamic relationship between taxation and government expenditure $\frac{\Delta T}{\Delta G}$ in terms of their changes over the years under discussion.

Stage A4 of our format under Methodology refers to the total tax revenue (T) and its components which may be represented as:

$$T = t_i + t_m + t_c + t_o \quad \ldots\ldots\ldots (1.16)$$

where T = total tax revenue,

$t_i$ = income tax,

$t_m$ = mineral tax (including royalty payments),

$t_c$ = customs and excise taxes, and

$t_o$ = all other remaining minor taxes.

Here again our interest is in the changes in the tax revenue as they are expressed in terms of changes in the component taxes:

$$\Delta T = \Delta t_i + \Delta t_m + \Delta t_c + \Delta t_o \quad \ldots\ldots (1.17)$$

The changes in the four tax components are functions of taxable incomes, the base of tax and the rates (index of rate derived from the progressiveness of the tax system) of that tax. Each tax component is tested individually and the results are summarised on the appropriate tables at the end of each analysis. The ratio $\frac{\Delta T}{\Delta G}$ gives the link between tax revenue and government expenditure. From there we move to the ratio $\frac{\Delta G}{\Delta Y}$ which gives us the relationship between government expenditure and GDP. The ratio $\frac{\Delta Y}{\Delta P}$ is the crucial per capita indicant which implies economic development once it can be established that its trend is positive over the period of study. So our interest is in the establishment of the hypothesis for the rate of growth of the ratio $\frac{\Delta Y}{\Delta P}$ as it is reflected at various stages from Stage I to Stage IV.

SUMMARY:

The main theoretical points which emanate from this review may be summarised as follows: The prime target of fiscal policies in developing countries is to accelerate economic development. From this vantage point the role of fiscal policy is theoretically

viewed as a means of raising the domestic saving ratio from some initial full employment situation. In a closed economy, any given value of savings ratio which implies a growth rate is found by substracting current government expenditure (cY) from the tax ratio (tY). So, the relation which exsists between ($S_g$) and (tY) via cY implies that to achieve a small growth rate (i.e. 4 per cent) a larger tax rate (i.e. 19.6 per cent) will be required. This closed economy situation is fairly straightforward. The expected change in growth rate emanating from a given or planned change in tax ratio is to a considerable extent predictable.

In an open economy, on the other hand, the impact of any change in government spending (G) will shift the aggregate demand (D) in such a manner that $\Delta D = \Delta G$. One cause of this is the very forceful impact of the changes in the expenditure multiplier which is drastically affected by the external trade factor. So the two crucial determinants of growth of national income are:

(a) the rate of government sector savings, and

(b) the rate of external sector surplus to national income.

The former being a function of tY and cY, depends on the gap between tax ratio and government expenditure ratio. The tax is a function of tax rate and taxable income. This leaves the tax rate as the crucial determinant of government saving given the level of national income. The level of government expenditure (cY) or (G) and savings ($S_g$) determine the level of government investment. Government investment supplemented by private investment determine the rate of growth and the level of stability. Fiscal policies which incorporate changes in the tax ratio are therefore the critical determinants of stability and growth. Viewed in relation to changes in population the pattern of economic development can be ascertained.

# CHAPTER THREE:

## ZAMBIAN ECONOMIC STRUCTURE AND INDICATORS: (AN OVERVIEW)

### 1. THE MAIN CHARACTERISTICS:

Zambia is a sparsely populated, landlocked country situated in the center of the southern half of Africa. Its comparatively small population of about 5.8 million people[1] is unevenly scattered over a land area of approximately 750,000 square kilometers yielding an average population density of 6.3 persons per square kilometer.[2] Zambia achieved its indpendence from Britain in October, 1964 after the break-up of the Federation of Rhodesia and Nyasaland which was made up of Northern Rhodesia (now Zambia), Southern Rhodesia (now Zimbabwe) and Nyasaland (now Malawi.

Compared with its neighbors, Zambia's population is sparse but grows at a high rate (above 3% between 1970 and 1980). Table II suggests that its gross domestic product (GDP) in 1980 was only 3.8 billion dollars[3] but has considerable potential for greater increase. Due partly to its small population, Zambia's GNP per capita is comparatively high although its rate of growth is decreasing. The latter is attributable to the high population growth against a slow GNI

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[1] IBRD, World Development Report 1982, New York: Oxford University Press; 1982, p. 110.

[2] C.S.O. Statistical Yearbook, (Lusaka: Government Printers), 1969, p.1.

[3] IBRD, op.cit. p.114.

growth. But apart from the rapid population growth which causes serious social and economic demands on the national development resources, Zambia also inherited from its colonial past some crippling socio-economic problems:

THE COLONIAL LEGACIES:

On achieving independence Zambia acquired for itself some unique opportunities but at the same time found itself with the remnants of her colonial past which were mostly liabilities. Zambian entire economic infrastructure had been deliberately geared towards one aim: the rapid exploitation of raw material (minerals) and its fast shipment to overseas markets. For example, transport facilities like railways and all weather roads were from Beira via Bulawayo - Livingstone - the Copperbelt - Lobito with the specific purpose of transporting copper to the sea for export abroad. The "Line of Rail" was comparatively more developed at the expense of the rest of the rural Zambia. So the problems which Zambia inherited may be characterised as follows:-

(1) ECONOMIC DUALISM: There was extreme dualism between the wealthy, export oriented mining sector and the poor, subsistence rural sector largely outside the money

TABLE II

ZAMBIA AND OTHER AFRICAN COUNTRIES:

(A Comparison of Population and Other GNP Indicators)

| COUNTRY | Population (1978) | GNP at Market Prices 1978 (million US$) | GNP per capita US$ (1978) | GROWTH RATE in %age | |
|---|---|---|---|---|---|
| | | | | Pop. 1970-78 | GNP per capita 70-78 |
| Nigeria | 79.0 | 40,540 | 510 | 2.6 | 4.4 |
| South Africa | 26.6 | 37,640 | 1,400 | 2.7 | 1.1 |
| Zaire | 25.7 | 5,290 | 210 | 2.7 | -1.4 |
| Tanzania | 16.4 | 3,440 | 210 | 3.0 | 2.1 |
| Kenya | 14.6 | 4,300 | 290 | 3.8 | 0.9 |
| Ghana | 10.6 | 3,940 | 370 | 3.0 | -2.0 |
| Mozambique | 10.0 | 1,320 | 140 | 2.5 | -4.3 |
| Zimbabwe | 6.7 | 3,070 | 460 | 3.3 | -0.01 |
| Malawi | 5.6 | 860 | 150 | 3.1 | 3.1 |
| Zambia | 5.1 | 3,830 | 460 | 3.0 | -0.2 |
| Lesotho | 1.3 | 320 | 250 | 2.4 | 9.9 |
| Botswana | .7 | 390 | 540 | 1.9 | 16.1 |
| Swaziland | .5 | 270 | 530 | 2.5 | 5.6 |

Source: IBRD, The World Bank Atlas, Washington D.C. 1979, p.9.
IBRD, World Development Report 1979, appendix.pp.110.

economy. At independence the minerals contributed 40% of total GNP and accounted for 20% of total employment, 90% of exports of goods, 60% of total government tax revenue and 55% of imports of capital goods (mainly mining machinery)[4]. Thus, the industrial urban areas of the country were highly developed in contrast to the stagnant agricultural rural regions. There emerged a perfect dual economy with a dynamic, export oriented, commercial and modern money sector side by side with a comparatively mixed economy and traditional rural sector. Yet over one half of the population lived and worked in the rural sector.

2. EXTERNAL DEPENDENCY: Zambia also inherited a strangling dependency on external sources for its most crucial necessities. (a) Due to the shortage of skilled local manpower, technical services of all types relied on imported contractual staff. This situation was a result of the normal policy of the colonial governments to discourage the training of local people in highly skilled professions. By independence time (1964) the country had less than 100 persons with higher than secondary education, one dentist and less than ten doctors[5]. During the colonial period highly educated Africans had been considered as potential rivals in the labor market while certain professions (Law and Philosophy) as politically risky.

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[4]See GRZ, Second National Development Plan (SNDP) Government Printers: Lusaka: 1971, p.3.

[5]See GRZ, First National Development Plan (FNDP), Government Printers: Lusaka: 1965, pp 1-10.

So educational dualism while not accidental created the need to import large numbers of expatriate professional and skilled technicians on which the country had to depend for considerably long time.

(3) EXTERNAL REVENUE: The bulk of mineral revenue on which 60% of government revenue originated came from copper sales proceeds and royalties. The volume of copper sales and its price in the London Metal Exchange (L.M.E.) market were therefore important determinants of the annual government budgets. But these copper revenues were unpredictable. So the government gradually found itself in a precarious revenue situation every year. The copper companies in Zambia were privately owned by giant multinational conglomorates whose shareholders outside Zambia were interested only in one thing - profits. They did not care what happened to the countries like Zambia, Zaire or Chile where their profits originated. But what complicated the issue even more was that the multinational corporations which owned the copper companies also owned the main copper buying companies overseas. Therefore, any move to nationalize the industry in Zambia was likely to encounter a damaging retaliatory boycot of Zambia's copper

in the international market which could strangle the nations economy. So the policies relating to the copper industry faced some serious constraints due to the economy's dependence on external sources for its internal fiscal requirements.

(4) IMPORTS: At independence time Zambia also found itself dependent on imports of both consumer and producer goods to an unhealthily high degree. This phenomenon was partly a result of the underdevelopment of the industrial sector outside the mining industry, and partly of the reduced level of productivity even in the agricultural sector. The former was due to the concentration of industrial activities in the export oriented mineral production. The latter was due partly to the flight of large scale white farmers to Rhodesia (now Zimbabwe) and South Africa following independence. It was also a result of the exclusion of the Africans from ownership of large-scale farming land during the colonial days. So it required some time for unskilled African farmers to acquire both the skill and the interest to move and to succeed in commercial farming. Finally, the educated Africans prefered to seek office work in towns which were considered more prestigious than farming. So Zambia found itself short of both agricultural and manufactured good for every domestic consumption

requirements. It depended on hostile South Africa for considerable amount of its needs for domestic consumption.

## II: SOME STRUCTURAL CHANGES IN THE ECONOMY:

Table III below shows some selected indicators of Zambia's economic structure changes during the period 1964-80. The table suggests that the average growth rate of real domestic production of the Zambia economy was 2.8% during the period. The population growth during the same period was 3.5% per year. The suggested implication is that there was no significant increase in the real per capita GDP. In addition to that, while GDP increased at 2.8% p.a. its most important contributor, the mining industry, registered a negative growth of over 2.5% per year. Subsistence agriculture on which 55% of the population depends for its livelihood grew at only 0.9% over the same period. As the mining and agricultural sectors constituted the largest contributors to the GDP, the relatively poor perfomance of these two sectors can be considered as the main explanation for the decline in the GDP growth shown on Table III below. The positive

performance of the other sectors: commercial agriculture (8.3%), manufacturing (6.6%), construction (4.1%) and services (7.2%) were not sufficient to offset the impact of the negative trend of mining and subsistence agriculture.

TABLE III:

THE GROWTH STRUCTURE OF ZAMBIAN ECONOMY: 1965-80.
(per cent per annum)

| | 1965-70 | 1971-80 | 1965-80. |
|---|---|---|---|
| GDP | 2.0 | 2.8 | 2.8 |
| Agriculture, Forestry and Fishing | 1.7 | 3.3 | 2.8 |
| Commercial Agriculture | 5.9 | 9.3 | 8.3 |
| Subsistence Agriculture | 0.7 | 0.9 | 0.9 |
| Mining and Quarying | -4.8 | -0.8 | -2.5 |
| Manufacture | 11.2 | 2.9 | 6.6 |
| Construction | -2.4 | 8.3 | 4.1 |
| Transport, Communication and Storage | 2.7 | -0.4 | 0.2 |
| Services | 9.3 | 5.4 | 7.2 |

Source: calculated from:

C.S.O., Monthly Digest of Statistics, (Government Printers: Lusaka), Vol. XI, 1975, p. 55 and Vol. XVIII, 1981, p 51.

A. INVESTMENT AND SAVINGS:

During the period 1964-80, the gross national savings averaged 36% of GDP, while the domestic investment was 27%.[6] This was quite sufficient saving to finance investment. As Table IV shows, savings were high up until 1970. After 1970 they fell to an average of 29% from 1971 through 1980. At the same time investment rose to 39%. The gap between domestic savings and investment was filled by foreign investment funds including loans from international organizations. This fall in domestic savings may be explained by (a) the drying up of government recurrent budgetary surpluses, (b) the increase in current private transfers and (c) net payment for factor services. The large net foreign capital inflows were never quite sufficient to make up for the decline in national savings relative to GDP and so the foreign exchange position continued to deteriorate. The situation was not helped by the worsening oil crisis of the latter part of 1970's.[7]

B. GOVERNMENT REVENUES:

The government budgetary surpluses which depended on the mining revenue was also adversely affected by the falling

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[6] C.S.O., National Accounts and Input-Output Tables, (Government Printers: Lusaka), 1975, p.7.

[7] IBRD, The World Bank Annual Report. (Washington D.C.) 1981.

TABLE IV:

INVESTMENT AND SAVINGS: 1964-80;
(in thousand Zambian kwacha)[8]

| | 1964-70 | 1971-80 |
|---|---|---|
| Gross Domestic Investment | 1,385 | 3,627 |
| Gross Domestic Savings | 2,316 | 3,925 |
| Net Factor Service | 298 | 521 |
| Net Transfers | 192 | 594 |
| Gross National Savings | 1,885 | 3,383 |
| Central Government | 635 | 92 |
| The Rest of the Economy | 1,251 | 2,903 |
| (as Percentage of GDP) | | |
| Gross Domestic Investment | 28 | 39 |
| Gross National Savings | 38 | 29 |
| Central Government | 12 | 7 |
| The Rest of the Economy | 25 | 32 |

Sources: C.S.O. National Accounts and Input-Output Tables, (Government Printers: Lusaka) 1975, p. 8; 1976, p.8 and
C.S.O. Monthly Digest of Statistics, (Government Printers: Lusaka), Vol. V, 1966, pp56-7, Vol.VI, 1970, pp56-7, and Vol.XVI, 1981, pp 50-1.

[8]Zambian kwacha is the official currency in Zambia. One Zambian kwacha (ZMK) is equal to 1.12 US dollar at the time of this writing (1982).

volume and prices in the L.M.E. The overall deficit continued to rise throughout the sixties and the seventies. The short-term internal borrowing have assisted by providing temporary palliatives. But the pressure which the falling mining revenues imposed on the government revenue can best be seen in the trend of government revenue as a percentage of GDP. In 1964 that ratio was 31.3% but fell to 25.4% by 1979. By way of contrast, the government expenditure increased from 26% to 41%[9] over the same period.

On the government revenue side, the period 1965-77 saw a decline in the mining contribution while that of taxes of various types were rising. In comparison with the period 1971-80 the share of income taxes rose from about 14% to 28% (Table V).[10] By 1975 Zambia's tax ratio was the largest of any developing country studied by the IMF staff.[11]

According to the Ministry of Finance[12] the current net expenditure also expanded at an average annual rate of 16%, a rate that is quite high compared with other countries. From 1965 through 1980 the biggest increases were in personnel employment and recurrent departmental budgets. The overall share of government expenditure on capital goods also

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[9] CSO, Monthly Digest of Statistics, (Government Printers: Lusaka), 1970, 1975 and 1980 pp. 30.

[10] CSO, Financial Report, (Ministry of Finance: Lusaka), 1979, p.5.

[11] IMF, World Economic Outlook, (Annual Report), Washington D.C. 1976, 1982.

TABLE V:

THE GOVERNMENT BUDGET AND FINANCE, 1965 - 77.

(million kwacha)

| | 1965 | 1968 | 1970 | 1973 | 1977 |
|---|---|---|---|---|---|
| GDP | 711 | 1,062 | 1,269 | 1,282 | 1.921 |
| Recurrent Revenue (% of GDP) | 217 (31) | 306 (29) | 432 (34) | 385 (30) | 450 (26) |
| Mining Revenue | 142 | 164 | 291 | 108 | 15 |
| Non-Mining Revenue | 76 | 103 | 181 | 278 | 500 |
| Total Expenditure (% of GDP) | 185 (26) | 400 (33) | 417 (33) | 513 (40) | 749 (39) |
| Net Recurrent Expenditure | 122 | 209 | 256 | 370 | 595 |
| Net Capital Expenditure | 63 | 191 | 160 | 143 | 153 |
| Overall Deficit (-) | 32 | 94 | 16 | 128 | 249 |

Source: Financial Report, Ministry of Finance: Lusaka, 1979, p.5.

decreased. Between 1965 and 1980 it fell from 14% to 10%.[13] All these occured while gross fixed investment fell from 51% to 37% over the same period of time.[14]

The public finance position of Zambia can therefore be summarized as demonstrating the following charecteristics during the period of this study: First, it showed a reduced dependence on the mining revenue which tended to generate certain disturbances leading to instability in total revenues. Secondly, there was the increasing contribution of non-mini ng sources especially from tax sources. Thirdly, the recurrent expenditure tended to build up rapidly. Fourthly, there appeared to be some significant declines in government savings, both in absolute terms and relative to the GNP, government revenue and total capital formation. Finally, the nominal government capital formation tended to stagnate.

III: THE PRODUCTION STRUCTURE:

Zambian economic system is characterized in this study as dualistic with a sophisticated high technology urban-industrial monetary sector existing side by side with a

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[12]Minister of Finance, The Annual Budget, (Ministry of Finance: Lusaka), 1970, 1975 and 1981.

[13]Minister of Finance, -do-

[14]Minister of Finance, -do-

relatively poor subsistence sector. The industrial monetized sector consists mainly of the mining and other related industries and the large scale commercial agriculture. The subsistence is mainly the traditional rural countryside. The former is concentrated around the copper mining industry. Other industries are relatively small but are rapidly growing. Most of the service industries are centered around the Urban-industrial centers.

A. THE MINING SECTOR:

In the modern sector, mining is the main industrial activity in Zambia. In 1965 it accounted for 41% of the share of the real GNP. Within the mining industry itself, copper occupied a predominant position and contributed 45% of government revenue. It also accounted for 95% of total foreign trade earnings. This over-dependence on the mining industry has rendered the economy highly vulnerable to the fluctuations in the world copper prices in the foreign market.[15]

The performance of the mining sector in the years under this study showed a decline both in volume and value. The real value added has been falling at an average of 20% per year.[16] The volume has also fluctuated between 560 and 750 thousand metric tons per year during the same period of time. The falling copper prices in the L.M.E. has been

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[15] Mines Department, Annual Report, (ministry of Mines and Mineral Development: Lusaka), 1971.

[16] Mines Department, -do-.

cited as the main cause of these fluctuations. The future of copper production and its position as a source of revenue will most likely depend on the following factors:-

1. The real production cost trends,
2. The quality and quantity of copper ore reserves,
3. The availability of finance for investment in mining, and
4. Government policies towards the mining sector.

Copper ore reserves are estimated at approximately 27.2 to 29.0 billion metric tons which will last for another twenty years.[17] In comparison with other major copper producers (see Table VI below), Zambia has the fourth largest copper reserves after the U.S.A., U.S.S.R and Chile. The production costs have been rising at 2.7% per annum since 1970 due mainly to the decline in the grades of the reserves, transportation cost increases, falling labor productivity and increasing cost of machinery and higher oil prices. Table VII illustrates the fact that the value of copper does not entirely depend on the volume of copper sold but also on its price in the world market.

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[17] Sampson, The World Metal Statistics: (La General des Carrices et Mines: Kinshasa), 1971.

TABLE VI:

WORLD COPPER PRODUCTION GRADES AND AVAILABLE RESERVES BY MAJOR PRODUCER COUNTRIES: (1970)

| Name of Country | Production (in metric tonnes) | Grade | Reserves (billion metric tonnes) |
|---|---|---|---|
| U.S.A. | 1560.0 | 0.79 | 77.5 |
| U.S.S.R. | 925.0 | n/a | 34.9 |
| Chile | 685.6 | 1.53 | 53.8 |
| Zambia | 686.0 | 3.38 | 27.2 |
| Canada | 613.4 | 1.04 | 20.8 |
| Zaire | 386.0 | 4.20 | 18.1 |
| Peru | 212.1 | 1.14 | 22.3 |

SOURCE: Mines Department of Ministry of Mines and Mineral Development, Lusaka, Zambia.

World Metal Statistics, Sampson (i.e., former RST Group, 1971, la Generale des Carrices et Mines, Zaire (pers. comm.) 1971.

Bulletin of U.S. Bureau of Mines No. 650, 1970 Edition.

Mineral Resources of Canada via Robinson, (Geological Survey Canada 1971).

cost of mining machinery.

While copper is undoubtedly the outstanding export commodity, other minerals also show comparatively high levels of contribution to the economy. Table VII shows the comparative values and volumes of other minerals in comparison with copper:

TABLE VII:

PRODUCTION AND VALUE OF THE MAIN MINERALS PRODUCED IN ZAMBIA IN 1980 (in K 1000 TONS).

| MINERAL | VOLUME IN METRIC TONNES | VALUE IN IN '000 KWACHA |
|---|---|---|
| Copper | 686.1 | 650,363.4 |
| Zinc | 53.5 | 10,304.3 |
| Lead | 27.2 | 5,159.7 |
| Cobalt | 2.1 | 4,525.5 |
| Coal | 633.0 | 1,246.0 |
| Amethyst | 34.4 kg | 391.2 |
| Silver | 1,530.4 oz | 1,837.1 |

Source: Ministry of Commerce and Indistry, Division of Mineral Exploration, Licencing and Development, Mines Department, 1981.p 3.

In terms of revenue earnings, Zambia's copper earnings in the fifteen years after independence (1964-79)

TABLE VIII:

COPPER EXPORTS AND EARNINGS: 1964-79:

(Yearly Averages)

| YEAR | VOLUME (in millions of metric tons) | VALUE (in millions Zambian kwacha) |
|---|---|---|
| 1964-70 | 660 | 491 |
| 1971-75 | 476 | 550 |
| 1976-79 | 665 | 708 |

Sources: CSO, Monthly Digest of Statistics, (Government Printers: Lusaka), Volumes VI, No.4,1970,pp 18-19; XI, 1975, pp20-21 and XVI, 1981, pp 21-22.

B: OTHER NON-MINING SECTORS:

1. MANUFACTURING: Apart from the predominant mining sector

Apart from the predominant mining sector, there are other important industries too. Manufacturing sector originally catered for the needs of the mining sector. The main activities were in the processing of foodstuffs, beverages and tobacco, textiles, non-metallic mineral products, metal production and electricity. The index of industrial production shown on Table IX gives the relative contributions to economic growth by different industries. The main heavy industries include one medium size car

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[18] CSO, Monthly Digest of Statistics, (Government Printers: Lusaka), 1980, pp 20-21.

TABLE IX:

ZAMBIAN INDEX OF INDUSTRIAL PRODUCTION (1961 = 100).

| YEAR | TOTAL | MINERAL | OTHERS TOTAL | FOOD-STUFF | BEVERAGES & TOBACCO | TEXT-ILES | MINERAL PROD. NON-METAL | METAL | OTHER | ELECT-ricity |
|---|---|---|---|---|---|---|---|---|---|---|
| Weights | 1000 | 901 | 78 | 15 | 18 | 3 | 11 | 14 | 17 | 21 |
| 1962 | 97 | 97 | 99 | 101 | 107 | 93 | 82 | 107 | 95 | 96 |
| 1964 | 115 | 114 | 124 | 117 | 148 | 136 | 128 | 105 | 117 | 105 |
| 1966 | 110 | 105 | 173 | 146 | 136 | 177 | 208 | 175 | 103 | 90 |
| 1968 | 128 | 119 | 237 | 188 | 288 | 174 | 278 | 179 | 257 | 99 |
| 1970 | 134 | 123 | 250 | 230 | 336 | 228 | 205 | 174 | 269 | 142 |
| *New Weights | 1000 | 804 | 167 | 54 | | 18 | 15 | 31 | 25 | 29 |
| 1972 | 111 | 94 | 129 | 125 | | 154 | 133 | 129 | 348 | 476 |
| 1974 | 126 | 96 | 139 | 132 | | 160 | 136 | 136 | 410 | 867 |
| 1976 | 129 | 95 | 132 | 133 | | 159 | 175 | 130 | 314 | 1060 |
| 1978 | 126 | 88 | 130 | 135 | | 142 | 169 | 136 | 312 | 1146 |
| 1980 | 122 | 81 | 131 | 134 | | 144 | 171 | 105 | 308 | 1260 |

Calculated from: C.SO. Monthly Digest of Statistics, (Lusaka; Government Printers), 1972 - 1981.

* Based on 1969 = 100.

assembly plant at Livingstone, a glass manufacturing industry at Kapiri Mposhi, Indeni Oil Refinery in Ndola, explosives manufacture, colliery and truck assembly plants in Kitwe, battery and gasket factory in Kabwe, to mention a few emerging heavy industries. But on the whole, Zambia is still a primary commodity producing country.

2. TRADE:

Imports consist mainly of heavy machinery and transport equipment, manufactured goods, foodstuffs, chemicals, electricity and raw material. Out of a total import bill of K404 million in 1972, heavy machinery and transport equipment accounted for 41.8%, manufactured goods for 21.8%, foodstuffs for 9.2%, chemicals for 8.2%, electricity and mineral fuels for 6.7%, raw materials for 1.9% and other miscellaneous items for the remaining 10.4%.[18]

Export capacity outside that of copper (91% of total export) is mainly made up of tobacco 0.55%, maize 0.18% and timber 0.2% in 1972. The remaining gap is filled by other minerals including zinc, lead, manganese ore, cobalt and some precious metals.[19]

Zambia's trade with neighboring countries like Malawi, Zaire, or the three East African Community countries is growing, especially after the border closure, but is still

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[19] Sampson, op.cit.

comparatively small. Trade with the rest of Africa as a whole is also relatively small compared with her trade with other parts of the world especially the sterling area as table X below suggests:-

TABLE X:

ZAMBIA'S TOTAL TRADE WITH THE REST OF AFRICA AS COMPARED WITH HER TRADE WITH THE STERLING AREA[20]
(ZMK million)

| YEAR | Total Exports | With Sterling Area as %age of Total Trade | | With Other African Countries as %age of Total Trade | |
|---|---|---|---|---|---|
| | | Value | %age of Total Trade | Volume | Value |
| 1964 | 335.5 | 158.1 | 47.0 | 2.1 | 0.6 |
| 1965 | 380.3 | 182.6 | 48.2 | 4.0 | 1.1 |
| 1966 | 393.5 | 199.9 | 40.0 | 3.0 | 0.6 |
| 1967 | 470.0 | 165.0 | 35.1 | 4.2 | 0.8 |
| 1968 | 544.4 | 181.7 | 33.4 | 2.8 | 0.6 |
| 1969 | 766.5 | 227.3 | 29.6 | 2.1 | 0.3 |
| 1970 | 715.0 | 200.3 | 28.0 | 4.0 | 0.6 |
| 1971 | 484.9 | 116.7 | 24.1 | 3.2 | 0.6 |
| 1972 | 541.8 | 149.0 | 27.7 | 3.3 | 0.6 |
| 1973 | 742.0 | 191.2 | 25.1 | 6.2 | 0.8 |
| 1974 | 905.1 | 241.8 | 26.1 | 9.7 | 1.1 |
| 1975 | 521.0 | 131.1 | 26.1 | 9.0 | 1.8 |
| 1976 | 751.5 | 157.4 | 20.9 | 8.0 | 1.1 |
| 1977 | 708.0 | 140.0 | 19.7 | 14.4 | 2.0 |
| 1978 | 686.8 | 159.7 | 22.9 | 14.8 | 2.2 |
| 1979 | 1090.9 | 234.0 | 21.5 | 14.8 | 1.1 |

Source: C.S.O. Monthly Digest of Statistics, (Lusaka: Government Printers), Vol. VI, 1970, p.21; Vol.XI, 1975, p.21 and Vol.XVI, 1981, p.23.

The largest majority of Zambians are self-employed. They cultivate the land or rear cattle or fish in the rivers and lakes which have abundance of fish. Wage and salary earners constitute only 18% of Zambia's total population.

In recent years there have been two important attempts to affect two shifts in the Zambian economy. The first was the attempt to shift from the economic dependence on the copper industry through diversification into other industries, agriculture and commerce. The second was the attempt to shift the transport system from exclusive dependence on the southern routes through Rhodesia (now Zimbambwe), South Africa, Mozambique and Angola to the northern rout through Tanzania. This effort was accelerated by the "border closure"[21] of 1972. The results have been the accelerated construction of the Tanzanian and Zambian combained Tanzam Railway

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[20]Sterling are here excludes English speaking African countries.

[21]Rhodesia first announced the the closure of their border with Zambia in 1972. Both South Africa and Portugal reacted angrily because they stood to lose ZMK 31million and ZMK 17 million respectively in revenue from Zambia's use of rails and ports. Rhodesia then made an exception to copper. But Zambia rejected the the exception and abandoned the route altogether. After several weeks during which the rebel regime

(Tazara) and its completion ahead of schedule. This made it possible to join up the old Livingstone to Copperbelt railway with the new railway at Kapiri Mposhi. It followed the completion of a number of major roads including the Great North road, the Great East Road and the Westen road. The largest part of Zambia's trade then shifted from the southern to the northern and eastern routes.

RELATIONSHIP BETWEEN EXPORT EARNINGS AND GDP:

Zambia's economy like those of other African countries show a high correlation between GDP and export earnings. This correlation tends to reflect the significance of external earnings as factor in the national economic growth. The one most outstanding item in that external earning is the proceeds from copper sales. Table XI shows the general pattern of these items.

The next most outstanding determinant of the changes in monetary GDP was the government expenditure. Table XI below seem to suggest this phenomenon fairly well. First, if we look at the pattern, we cannot escape the suspicion that something about the

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believed the Zambians would go down on their knees or "face economic collapse" neither of which occured, the rebels, under pressure from their own domestic farmers and industrialists and from South Africa and Portugal, re-opened the border. But by that time Zambia had herself decided to use the other routes and closed the

harmony and uniformity of fluctuations in the GDP, export earnings and copper export sales proceeds was phenomenal. It was too harmonious to be coincidental. It actually

TBLE XI;

SOME SIGNIFICANT DETERMINANTS OF ZAMBIAN ECONOMIC GROWTH FROM 1964 TO 1979;
(ZMK millions at current prices)

| YEAR | GDP | Capital Formation | Total Export Revenue | Copper Sales Proceeds | Government Final Consumptio Expenditure |
|---|---|---|---|---|---|
| 1964 | 502 | 76 | 336 | 297 | 59 |
| 1966 | 782 | 176 | 393 | 461 | 86 |
| 1968 | 1240 | 253 | 544 | 516 | 127 |
| 1970 | 1178 | 266 | 715 | 681 | 200 |
| 1972 | 1582 | 270 | 542 | 490 | 345 |
| 1974 | 1916 | 250 | 905 | 838 | 358 |
| 1976 | 2011 | 207 | 752 | 688 | 501 |
| 1978 | 2337 | 212 | 687 | 598 | 591 |
| 1979 | 2409 | 215 | 1091 | 901 | 681 |

Sources: CSO, National Accounts, (Government Printers: Lusaka), 1972, and 1980. p.3.

CSO, Monthly Digest of Statistics, (Government Printers: Lusaka), 1966, 1972 and 1980, p.50

reflected the closeness of the links between the three items.

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boreder on it side. Zambians maintained the closer untill Rhodesia independent as "Zimbabwe."

Copper sales we noted earlier, constituted approximately 90 to 95% of total export revenue. Therefore, only about 5% was accounted for by all other exports. That is to say that during the period 1964-70, every time foreign trade experienced any fluctuations the whole domestic economy was affected in the same direction. Therefore, whenever copper sales declined, as it did after 1969, both export revenues and GDP declined with it. The decline in the volume of the latter two were normally caused by reduced tax revenue from copper and lower volume of sales.

The other interesting feature of the three items is their trend. In each case, the trend was upward. The gradient of each item differs slightly but the general direction is the same. Gross domestic product shows the steepest gradient while that of government spending appears to be the least steep. The implication of this is that it reflects the comparative changes in the volumes of the different items. For example, contrary to the general belief that the government is the most extravagant spender of all and that its expenditure probably rises more rapidly than either the GDP or the export revenue can cope up with, are all according to this finding, incorrect. The reverse is in fact the truth. Government expenditure in Zambia rose by a much smaller

amount compared with either the GDP or the export revenues.

Lastly, the general decline in every item except government expenditure from 1969 reflects the importance of the copper industry in Zambia. Copper is in fact the outstanding leading indicator of economic performance and can be used as a fairly accurate yardstick for measuring the general economic performance. So the general downswing which started in 1969 can be almost totally explained by the reduced copper earnings due partly to the Mfulira Disaster[22] and partly to the fall in copper prices in the London Metal Exchange. An additional reason was the increased payment to the mining companies in partial redemption of the 51% of their share which the government had acquired under the Matero Economic Reform Policy[23]. This payment was normally made

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[22]On the 25th September, 1969 at Mfulira Mine (the largest of all Zambian copper mines which produced one quarter of Zambia's total copper), there was an unexpected explosion and flooding which killed a large number of miners caught underground. As a result the mine was closed for the better part of that year resulting in substantial losses in production. By 1970 when production resumed it recorded only 3,000 tons a month (1/5th of its normal output). Foul play was suspected.

[23]Named after the African residential compound where the President first announced the new economic policy at a public address. That was the Matero Compound just outside the capital city, Lusaka. The thrust of the reform was the acquisition of majority shares of mining companies by the government.

from copper sales proceeds before it was remitted to Zambia. So the total revenue from copper proceeds for 1971 fell to 27.2 million[24] from 171.5 million in 1970.

OTHER CONSTRAINTS:

The main drawback was the constraint imposed on Zambian economy by both transport and power problems. The latter was mainly a result of the oil crisis; while the former could be attributed to Zambian position as a landlocked country. The situation was aggravated by Rhodesia's Unilateral Declaration of Independence (U.D.I) in 1965, and by the border closure on January 9, 1974. As a result, imports of some 900,000 tons could not reach Zambia in 1973 alone. On the other side some 430,000 tons (i.e. 53% of its total exports) could not reach the foreign market in 1973. But a point to note here is that despite these apparently serious bottlenecks to trade, actual transport costs over the new routes via Dar-es-Salaam were, contrary to the popular belief, comparatively less than would have been via Rhodesian route.[25]

When this border closure problem came up, two projects to assist the Zambian transport situation were

[24] CSO, Statistical Yearbook, (Government Printers: Lusaka), 1975, p.29.

[25] Ministry of Planning, Third National Development Plan (TNDP), (Government Printers: Lusaka), 1979 p. 2.

already underway. The first was the construction of the Tanzania/Zambian Railway (TAZARA) which was both financed and built by the Peoples' Republic of China. The second was the construction of the cubal variant on the Benguella Railway. The projects were aimed at increasing the carrying capacity of the Zambian Railway system to insure complete transportation of all imports and exports without further delay. For the longer term projection, it was reasonable to assume that as soon as Zimbabwe became independent, the southern route would be immediately re-opened which was what happened.

EMPLOYMENT:

Employment in Zambia increased gradually up to 1976 when it fell drastically. According to the Labor Ministry statistics[26], the aggregate increase in employment over the five years between 1968 and 1973 was 30.1%. It then levelled out from 1973 to 1976. But after 1976 it dropped and remained very low and has remained that way up to 1980 and after. Zambia's fairly high rate of population growth

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[26]CSO, Monthly Digest of Statistics, (Government Printers: Lusaka), 1970, 1975 and 1981, pp 5-7.

(i.e. 2.7 to 3.0% per year)[27] makes the need to accelerate the rate of growth of employment even more urgent so as to keep pace with it.

OTHER ACTIVITIES:

Outside the mining industry, the significant commercial activities carried out by Zambian enterpreneurs are mainly of service industry types.

AGRICULTURE:

Agricultural production forms the basic rural sector economic activity of importance. Under the Second National Development Plan (SNDP), some 85 million kwacha were set aside for the development of the rural sector. This large figure was indicative of the importance the Zambian government placed on the rural development as a national priority. The actual performance in that sector was, however, not very encouraging. From 1972 to 1973 there was a decline of 8.6% in agricultural contribution to the GDP, while the actual value of marketed products also fell by 13%. Higher input costs and other adverse conditions were blamed for the declines. Even the

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[27] CSO, op.cit. p.6.

once celebrated Intensive Development Zone (I.D.Z.) Project[28] turned out to be something of a dissappointment. According to the Monthly Digest of Statistics[29] food imports first increased from ZMK 14.3 million in 1964 to ZMK 48.2 million in 1971 and then declined to ZMK 31.6 million by 1978. But the decline during 1971-78 was mainly due to shortfalls in foreign exchange and not in demand capacity.

CONCLUSION:

The discussion in this section suggests that Zambian economic structure places it in a special category as a result of some unique characteristics. These include its geographical position, its historical background and its natural resource endowment. Its landlocked position renders its economy vulnerable to

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[28] Intensive Development Zone (IDZ) Project was a brainchild of technical experts. It was a strategy for attacking the rural development problem by concentrating development efforts intensively in small selected areas where the government would provide the infra-structure. Theoretically, as soon as these intensive developement zones would blossom the development efforts would then be extended to cover wider and wider areas untill the whole country was fully developed. 12,000 hectares was selected in northern, eastern and north-western provinces for a start. The local populations were to be incorporated in the project. After two years of the intial five years project it was found that three quarters of the money had been used but no dent had been made to rural scne in terms of development. It was immediately abandoned.

[29] C.S.O. op. cit. p. 19 and 20.

unfriendly neighbours like South Africa to the south. Its colonial and federal backgrounds set the pattern for a dualist economy as an inherited problem with a highly skewed distribution pattern of economic development. Its rich mineral resources provide the source of most of the needed finance for development. These unique characteristics combine to form the economic structure which were the framework of the present structure.

The main economic indicators must of necessity be related to or determined by these features. First, the gross capital formation is moulded by both the revenue earnings from mineral sales and taxation and the general performance of the industrial, commercial and agricultural sectors. According to the Statistical Yearbook, the government's final consumption expenditure increased from ZK 59.4 million in 1964 to ZK 148.2 million in 1970, an increase of about 150 per cent in six years or an average of about 16.5 per cent per year in monetary terms. Private final consumption expenditure increased from ZK 249.8 million in 1964 to ZK 480.9 million in 1970, an increase of about 11.5 per cent per year. Gross fixed capital formation increased from ZK 32.1 million in 1964 to ZK 76.2 million

in 1970, an increase of about 15.5 per cent per year. Export of goods and services increased from ZK 355.2 million in 1964 to ZK 685.4 million in 1970, an annual increase of 11.6 per cent. As a result of all this the average GDP increased over the period was at the rate of 12.8 per cent per year. These indicators suggest a satisfactory rate of economic activity over the period. For comparison, the tax structure which accompanied these changes in economic indicators may be examined. What are the important implications for the fiscal policy do these economic features of Zambia suggest? In order to tackle this problem it is necessary to present an analysis of Zambia's tax structure and the changes in it which accompanied the fluctuations of the indicators described above. This will be the main task of the investigation in succeeding chapters.

# CHAPTER FOUR:

## METHODOLOGY AND STRATEGIC FORMULAE:

The main theoretical and empirical hypotheses which relate taxation to economic development in this study have been outlined in Chapter One. In this chapter, the selected formulae will be assigned in a systematic manner to each one of these hypotheses. The purpose of this excise is to specify the tests which have been carried out for each hypothesis.

The method that has been used is the least squares regression of the time series data to analyse the main interelated changes in tax revenue, government revenue and expenditure on the one hand and GDP on the other hand. The approach utilises two or more test equations to estimate and to test each of the three basic hypotheses which are related to (i) "openness" of the economy, (ii) tax elasticity and (iii) tax/GDP ratio over the period of the study.

The main dependent variables are classified according to the four levels of basic processes which link taxation to economic development. Table XII

gives the main variables whose structural changes are considered relevant for this study although not all will be individually analyzed. These four processes also constitute the main pillars on which the strategy of the analysis rests. Each one of these processes is a function of an array of variables which interact to bring about the changes with which we are concerned in this study. The four basic processes to be analyzed are defined by a set of fourteen variables (Set A) for which relevant time series data are available. Taken together these fourteen processes define the most crucial relatioships for this study at various levels of economic activity. These processes eventually come to bear on economic development. The three independent variables (Set B) also affect the final resulting outcome.

Different formulations have been tried and the following were found to be the most suitable for this study. The basic relationship for this study is that relationship between tax revenue, (T), on the one hand, and

## TABLE XII:

## FORMAT OF STRUCTURAL CHARACTERISTICS:

A: DEPENDENT VARIABLES:

1. Economic Development:
   a. Change in GDP
   b. Distribution of GNP
2. General National Product Determination
   a. Private Sector Incomes
   b. Public Sector Incomes
   c. Foreign Sector Incomes
   d. Other Revenues
3. Government Sector Revenues (Public Sector)
   a. Investment Output of Private Sector
   b. Volume of Trade (X +M)
   c. Tax Structure
   d. Foreign Loans and Grants
4. Taxation:
   a. Income Taxes (i) Direct (ii) Indirect
   b. Customs and Excise Duties
   c. Mineral Taxes
   d. All Other Taxes

B. INDEPENDENT VARIABLES:

1. Population
2. Government Policies:
   a. Fiscal Policies
   b. Monetary Policies
   c. Foreign Trade Policies
   d. Non-economic (Political) Policies
3. Exogeneous Economic Factors i.e Business Cycles

gross national product (GNP) on the other. We depict this ratio by its determinants in the equation:

$$T/GDP = f(X - M/Y, X_y, N_y, A_y, Y_p) \quad . . . (3.1)$$

where X = export, M = import, N = mineral (mining), A = agriculture and $Y_p$ = per capita GDP. The subscript $_y$ means the ratio of that variable to GDP. For example, $X_y$ means the rate of export to GDP.

The determination of the tax/GDP relationship is usually estimated using the following five equations which have the combinations of explanatory variables:

$$T/Y = f[Y_p - (X+M)/Y] \quad . . . . . (3.2)$$

$$T/Y = f(Y_p - X_p, N_y, X'_y) \quad . . . . . (3.3)$$

$$T/Y = f(Y_p - X_p, X_y) \quad . . . . . (3.4)$$

$$T/Y = f(N_y, A_y, X_y) \quad . . . . . (3.5)$$

$$T/Y = f(N_y, A_y) \quad . . . . . (3.6)$$

where $X_p$ = export income per capita, and $X'_y$ = the ratio of non-mineral exports to gross national product.

The expression of dependent variables as ratios is here used to facilitate an estimate for structural changes. When the tax rate is decreased, for example,

government revenue declines. Under strict balanced budget policy such a decline reduces government expenditure. But at the same time it increase disposable income of the public. The degree of consumption increase depends on the income elasticity of demand and the level of marginal propensity to consume (MPC). But it is the relative expansion or contraction of government expenditure which determines the changes in the structure of the aggregate demand. The share formulation allows a direct testing of such an expansion itself.

The rationale for the specification are:-

1. The dependent variable (T/Y) which is the rate of tax revenue to GDP indicates the relative significance of the tax share in the determination of GDP. The sum of all shares is 100 %.

2. The trade ratio (X + M) shows the relative significance of of "openness" of the economy in the determination of the growth of GDP in relation to other factors.

3. The share of mining ($N_y$) in GDP does the same thing for the role of mining contribution via taxation and royalties to GDP in relation to others.

4. Agricultural share ($A_y$) brings out the relative impact of agricultural contribution to GDP.

5. Per capita GDP ($Y_p$) is the crucial indicator of economic growth as it incorporates the influence of the independent factor "population" in the process.

The analysis in this study is carried out in two stages. The first stage involves the analysis of the causal relationship between tax/GDP ratio (T/Y) and the various tax handles. The general operational formula is:

$$T/Y = f(X,M,N,A,P) \quad \ldots\ldots\ldots\ldots (3.7)$$

where X = export revenue,

M = import revenue,

N = mineral revenue,

A = agricultural revenue,

P = population.

This is the structural equation which incorporates the main tax handles considered crucial in the determination of the tax contribution and impact on economic growth.

The first set of tests are those aimed at testing the causal relationship between foreign trade sector and GDP and its tax ratio. Two equations are used in this test:

$$Y = B_o + B_1(X+M) + ut \quad \ldots\ldots\ldots (3.8)$$

$$Y = B_o + B_1(N) + ut \quad \ldots\ldots\ldots (3.9)$$

This is the test for "economic openness". Its purpose is to determine the impact of total trade (export and import) on GDP and on mineral revenues on the GDP.

The last set of tests deal with tax elasticity to changes in income. The equations used are closely similar with only one important difference: one incorporates per capita income as one of the explanatory variables while the other does not.

$$T/Y = B_o + B_1X + B_2M + B_3N + B_4A + ut \quad \ldots (3.10)$$

$$T/Y = B_o + B_1X + B_2M + B_3N + B_4A + B_5Y_p + ut \quad (3.11)$$

This excise is undertaken to find out what difference in the explanation of the dependent variable (T/Y) the variable $Y_p$ (per capita income) would make in the results of the test The purpose of the tests is to confirm or reject the claim of Hypothesis III.

The next set ot tests were those which related tax revenue to GDP. Two approaches were utilized to provide comparative results. First, government revenue was regressed on the tax revenue (3.12), and then the GDP was in turn regressed on government revenue (3.13):

$$G = B_o + B_1T + ut \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (3.12)$$

$$Y = B_o + B_1G + ut \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (3.13)$$

Then GDP was regressed directly on the tax revenue:

$$Y = B_o + B_1T + ut \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (3.14)$$

The rationale for this approach is that it provides two comparable results which can be studied to find out if the analysis of the government revenue and expenditure in addition to that of GDP makes any significant differnce in the final results.

In order to maintain consistency, a uniforn set of data have been used for all processes to provide a meaningful comparison of the results of data analysis. The results are shown on Table XIII and discussed in the succeeding Chapter Five.

The second stage of the analysis is based on the structure of the tax components and their relationships to total tax and with each other. The operational equa-

tion for these relationships are:-

$$T = f(T_i, T_c, T_n, T_o) \quad \ldots\ldots\ldots \quad (3.15)$$

his is the tax structure equation which has the various ax components. The analysis of the equation depicts the elative contributory significance of each component tax n the determination of the total tax. This section of the nalysis is the subject of the second part of Chapter Five. t deals with the anlysis of changes in the total tax tructure as the result of changes on the component taxes rom (i) incomes, (ii) customs and excises, (iii) mineral nd royalty taxes and (iv) all other taxes.

## II: LIMITATIONS OF METHODOLOGY AND DATA:

Time series data usually face a number of limitations. ome of those limitations are common to any econometric data. ome of those can be traced back to the problem of obtaining or failure to obtain) complete and perfectly uniform data.

### . ACCURACY OF DATA:

Apart from the general problem of collecting data ource of which may not be quite accurate. There is in Zambia or example, quite a substantial "informal" (non-monetised)

sector which is never fully covered in any census. The bulk of data used in this study which comes from three main sources also covers this informal sector. It may therefore suffer from inaccuracy due to this inability to cover all the data fully and comprehensively. The three sources of data for this study are:

1. Zambian Government main Statistical Offices. The bulk of data used in this study came from this office including the annual Statistical Yearbook and the Monthly Digest of Statistics.Office of the Commissioner of Tax, Ministry of Finance and Economic Planning and the Office of the President were the other government sources.

2. The United Nations agencies particularly the World Bank and IMF, FAO, UNCTAD, UNIDO, ECA and OAU papers were also useful sources of data.

3. The rest of the data were calculated from raw statistics and from information gathered during interviews and questionaires.

This researcher cross-checked these dat[a] against unpublished data gathered during field trips and archives of the University of Zambia. However, despite these checks it is still possible that there could be a number of errors which might have

escaped his notice. It is still possible that there could be a margin of error that could be associated with the data due to the imperfect nature of statistical data in developing countries. But every effort has been made to get as accurate data as possible given these limitations.

There is also the abrupt changes which occur in the national data system as a result of policy or even procedural changes. These disrupt the harmony and so the consistency of data coverage. Two such examples which this researcher encountered were:-

(1) The change in fiscal year from January to December to a new system when fiscal year started in July and ended in June from 1966 caused considerable problem for this researcher. It made the ann al comparison of data quite difficult as it made the data for the year 1966 cover 18 months while that for 1967 covered only six months.

For this study the data for the two fiscal years were averaged. This is why the fugures appear in the text to give the impression that the two years were identical in every economic data. But this was the best that could be done. (2) The annual budget usually meant a drastic change in the base and the rate of taxes in the mid-seventies which rendered the comparison of the tax ratios in terms of GDP less consistent. But in both cases the next best approaches were used to minimise the adverse effects of these limitations.

TIME:

Although in ideal situation, time variables should capture temporal changes in the dependent variables which are not associated with variations in the explanatory variables, yet in practice it is difficult to identify the estimated time effect with the overall process of economic change. This is mainly because high correlationbetween an economic variable (like expenditure) and time tend to lead to muticollinearity. If dummy variables are introduced, the time coefficient may give better results of the effects of exogenous shifts which lead to changes independent of the variable under consideration. In view of this problem of multicollinearity, the selection of what specific equation to use for any variable was deliberately made to minimise the adverse time effect.

ESTIMATION PROBLEM:

Whenever the estimation procedure is that of ordinary least squares (OLS), the classical assumptions of regression analysis with respect to the error term (u) must hold in order for the OLS to yield "BLUE" (best linear unbiased estimate) of the parameters of the equation. If, however, any of the assumptions fail to hold, then the result can not be BLUE any more. A problem could arise, for example, if there are heteroscedasticity errors in the variables (a specification problem) and so on.

The crucial assumption on which OLS estimates such as the one used in this study are based is that the OLS itself is BLUE, that is, successive disturbance terms have the same variance i.e. they are homoscedastic. But in most cases the variance of the regression errors are related to the sizes of the explanatory variables such that if there happens to be heteroscedasticity, the OLS estimates would still be unbiased but not BEST (minimum variance). In such a case the estimated variance of the coefficient would also be biased. It is possible to reduce such biases by use of log transformation or by the use of share data. In this particular case share data was used.

MULTICOLLINEARITY PROBLEM:

In a study like this one in which the explanatory variables are closely related in terms of their origins, the problem of multicollinearity is a real and a difficult one. For example, in the case concerning the regression of the GDP on government revenue and on tax revenue, muti-collinearity is inevitable since government revenue is made up mostly of tax revenue. This problem was therefore encountered in this analysis. The solution adopted in dealing with it was the Klein's Rule[1] which states that if multiple $R^2$ is greater than simple $R^2$, then multicollinearity may be ignore since its effect is insignificant. This rule which is based on Professor Klein's finding that as long as multiple $R^2$ is greater than simple $R^2$, the effect of multi-collinearity does not significantly change the final result of the estimation was found to be applicable in this case study. It was established by checking the results that the rule can be invoked and was applied.

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[1]Lawrence Klein, A Textbook of Econometrics, (second edition), Engelwood Cliff (N.J): Prentice Hall, 1974.

# CHAPTER FIVE:

## EMPIRICAL TESTS AND RESULTS:

In this Chapter we present and analyze some empirical results of the various time series regressions related to the tax/GDP ratios. The analysis is presented in two stages: The first section presents the test result summaries and their implications. The second section presents the analytical explanations of the findings of the study on the economy as a whole. Table XIII summarizes the main results of the empirical tests of the three basic hypotheses related to (i) economic "openness", (ii) tax elasticity and (iii) tax/GDP ratio:-

### I THE TOTAL TRADE EQUATION:

To determine the impact of the foreign sector on the Zambian economy, two regressions were utilised. Total trade and mineral revenue were selected as the two variables which represented the the impact of the foreign sector on the economy. Foreign trade was defined as "export (X) + import (M) and represented by (X+M). Mineral revenues was represented by (N). GDP (Y) was first regressed on total trade (equation 4.7) and then on mineral revenue (equation 4.8). This is the test for economic "openness." The results are shown on Table XIII in Section I.

TABLE XIII:

EMPIRICAL RESULTS:

| PROCESS | EQUATION | DEPENDENT VARIABLE: | EXPLANATORY VARIABLES: | $R^2$ | F | NO. OF CASES: |
|---|---|---|---|---|---|---|
| I: TOTAL TRADE AND GDP | 4.7 | Y = | -382.44 + 1.765(X+M): (8.56) | $R^2$ =.84: | F = 73.3: | 16 |
| | 4.8 | Y = | 108.49 + 2.153N: (4.136) | $R^2$ =.55: | F =17.11: | 16 |
| II: TAX ELASTICITY AND AND GDP | 4.9 | T/Y = | .237 + .000394X - .000046M - .000448A - .0002224N: (1.0103) (.329) (2.0378) (.6178) | $R^2$ =.559: | F = 3.49: | 16 |
| | 4.10 | T/Y = | .1637 +.0006407X - .000186M - .0006555A -.0005N +.057Y: (1.6017) (1.0595) (2.622) (1.2824) (1.499) | $R^2$ = .64: | F =3.5597: | 16 |
| III: TAX-GDP RELATIONS | 4.11 | Y = | -17.2314 + 3.84G: (8.698) | $R^2$ = .84: | F =75.655: | 16 |
| | 4.12 | Y = | 17.774 + 1.0697T: (33.53) | $R^2$ = .9877: | F =1124.589: | 16 |
| | 4.13 | Y = | 33.24 - 4.004T: (7.295) | $R^2$ = .79: | F =53.212: | 16 |

The results of both tests suggest that the estimated coefficients of the total trade (1.765) and that of mineral revenues (2.153) with respect to GDP and their signs comply with our "a priori" estimation. The size of the total trade and mineral revenues coefficients both confirm the Hinrichs hypothesis and the hypothesis of this study concerning the economic "openness" in a transitional stage. The gist of that hypothesis is that during transitional period external economic depedence predominates the national economy. The result of this test suggest that hypothesis is sustained. The impact of the foreign sector in the Zambian economy is confirmed as highly significant in the determination of the growth of the GDP. The $R^2$ - ratio of the two regressions suggest that total trade and mineral revenues changes account for 84% and 55% of the variations in the GDP in Zambia. respectively. The first part of our Hypothesis I is thus confirmed. The second part will be taken up under tax elasticity in the next section.

The result of this regression test further confirms the axiom that although in absolute terms the ratios of both exports and imports have declined over the period of the study; their combined influence on the determination of the GDP still remains quite strong. The roles of foreign trade and mineral revenues (extern-

al sector impact) in Zambia although declining, is still a crucial determinant of economic perfomance and growth. The detailed impact of this "openness" will be further discussed in the second section of this chapter.

II: INCOME ELASTICITY OF THE TAX REVENUE EQUATION:

To determine the role of the tax revenue on the changes in the tax/GDP ratio, a stepwise regression of two related equations were run. The tax/GDP ratio (T/Y) was regressed on the four critical variables: Exports (X), Imports (M), Minerals (N) and Agriculture (A) (equation 4.9). The same tax/GDP ratio was also regressed on the same four variables and in addition per capita income ($Y_p$) was added as the fifth variable (equation 4.10). For the two regressions the explanatory variables (independent variables) were picked for two reasons: First, they form the main sources of taxable incomes and secondly, they constitute the main tax handles of importance for this study. The test results are given on Table XXIV section II.

The original hypothesis of this study that was to be tested in these regressions was that the Zambian tax system is sufficiently elastic to be able to cope with the revenue needs at various levels of GDP growth. The results of the multivariate regressions based on the equations 4.9 and 4.10 show that in equation 4.9 each individial variable demonstrates an insignificant coeff-

icience at 95% level of significance. But taken togeth-
er they significantly affect the changes in the tax/GDP
ratio. In other words, the t-test of the B-coefficient
of each perimeter individually shows that each tax
handle has an insignificant effect on the changes in the
tax/GDP ratio but the F-distribution test of the combi-
ned impact of all four perimeters show that they jointly
do have a significant impact on the tax/GDP ratio.

Equation 4.10 which has an added perimeter ($Y_p$)
representing the per capita variable, also gives a result
that is basically similar to that of equation 4.9. with
one interesting difference. In equation 4.10 the agri-
cultural perimeter (A) shows a significant t-distribut-
ion which implies that agriculture is the only tax handle
that has a significant impact on the tax/GDP ratio is
implied by the calculated $t = 2.622$ in relation to the
test table $t = 2.145$. It is interesting because that
perimeter also shows a negative B-coefficient (-.0006555)
which also suggests that the significant impact on the
dependent variable is really a negative one. Agriculture
therefore contributes a negative tax (subsidy) which is
sufficiently large to affect the tax/GDP ratio signifi-
cantly. The implication of this feature will be discus-

sed further under Agriculture in the latter part of this section.

The rest of the tax handles show the same characteristics as those they showed in equation 4.9. Once again the combined impact of the tax handles on the tax/GDP ratio is significant under the 95% level of significance test. This combined result is the impact we were testing. This test result is therefore a confirmation of our initial hypothesis. which implied that these tax handles affect the changes in the tax revenues and so the tax/GDP ratio significantly. Thus, the response of the tax revenue to changes in the national income is of significant magnitude and does affect both the rate of GDP growth. This result also agrees with the findings of Chelliah, Chenery and Bird. But of even more interest for this study was the individual behaviour of the coefficients of the tax handles in the two equations 4.9 and 4.10. They are discussed in the order of the magnitude of their coefficients.

(1) AGRICULTURE:

As a determinant of the tax/GDP ratio the results of the two regressions under discussion, the coefficients of agricultural perimeter confirm our initial estimation

that there was an increasing negative taxation (subsidy) in the agricultural sector. This finding conforms with the declared and deliberate government policy of subsidising agriculture. This policy emanates from the Government desire to redress the neglect of the rural sector by the colonial regimes of the past due to the crucial importance of the rural agricultural regions which supports a large (55%) proportion of the population. The finding also supports the World Bank and other earlier studies which concluded that as economies mature, the agricultural sectors shrink as industrial and service sectors grow. This phenomenon is here reflected in the structure and the form of agricultural tax revenue as they go to determine the tax/GDP ratio. This finding also confirms that the tax revenue contribution of farming sector to total tax is negative. So as agricultural sector decreases (i.e. subsidy to agriculture increases). A clear case of negative taxation.

(2) EXPORTS:

The coefficient of mineral revenues as a determinant of tax/GDP ratio was .000394 in equation 4.9 and .0006407 in equation 4.10. The t-test showed that in both equations they were insignificant which implied that indi-

vidually export revenue tax was not an important determinant of the tax/GDP ratio despite the fact that aggregate export revenue contributes quite significantly to the total government revenue. As export and minerals are closely related the detailed discussion will be combined with that of minerals in the next section.

The parallel corelation of mineral and export with tax ratio does imply a certain measure of multicollinearity of the two variables. This is to be expected from the earlier observation that more than 90% of mineral revenue have their origins from external sales proceeds (export revenue). The problem in estimation caused by this multicollinearity was treated according to Klein's Law[23] and the result was still found to be useful with the understanding that export and minerals are inevitably linked. Therefore what will be discussed under minerals will therefore be applicable to exports also.

(3) IMPORTS:

Like exports, the results related to imports suggest that Zambia's effort to reduce import was a success. The negative sign of the import coefficient and its size (.00046) in equation 4.9 and .000186) in equation 4.10 indicate that the domestic volume

and value of imports has fallen gradually over the period of study as import tax revenue contribution to tax/GDP ratio fall. This finding supports our earlier estimation. It suggests further that the government policy of "import substitution" and import control have been successful since import ratio has been declining. Despite the fact that in current values the customs and excise duties have increased, the import tax ratio to GDP has fallen with the volume and value of imports. This phenomenon has been reflected in the negative coefficient of import when tax/GDP is regressed on it. So in the import sector the government has been able to reduce the volume of import and at the same time increased the revenue from import taxation (customs duties).

(4) MINERAL REVENUES:

As a determinant of tax/GDP ratio mineral revenue like other tax handles shows an insignificant influence despite its reputation as the major contributor to government revenue and the main source of export revenue. The findings of this study place the mineral revenue coefficient at .00002224 and .0005 in equations 4.9 and 4.10 respectively. The t-ratio test suggest that in both equations mineral revenue impact on the tax/GDP ratio is insignificance.

This insignificance as a determinant of the tax/GDP

nfirms the fact to which some reference was made earlier hat while the total value and volume of minerals produced re shown on the national accounts books, only the net re- enue from export proceeds get repatriated back to Zambia d appear on mineral revenue account. The rest goes to imburse the mining companies for the 51% shares compul- rily sold to MINDECO under the Matero and Kabwe Declara- ion terms. The negative sign confirms our "a priori" stimation that there has been a decline in the dominance f mineral generated revenue in the determination of the ax/GDP ratio. This phenomenon is a direct result of a ecline in the mineral taxes and royalty contribution to he total tax revenue. Three factors were responsible r this situation:-

a) The first of these was the close link which exsists tween tax revenue and mineral export proceeds. Tax re- enue depends heavily on export revenue. Export revenue turn depends to a high degree on mineral sales proceeds which copper predominates. So as copper sales declined, did mineral tax revenue and royalties also decline.. So he negative beta coefficient of the mineral tax handle is fact a reflection of the declining effect of the mineral ax handle in the determination of the tax/GDP ratio.

(b) As a condition of copper taxation previously agreed upon by Zambian Government and the copper mining companies, only copper sold at a price above ZMK 600 at the LME is liable to taxation. Therefore, the proceeds from copper sold at prices below that critical price of ZMK 600 at the LME was not reflected in the tax entry of the domestic account. It was therefore possible for the mining companies to utilise this loophole in the agreement to avoid paying some tax by merely declaring the bulk of copper they mined as having been sold at ZMK 600 or less with considerable success untill Zambian Government formed its own copper marketing company (MINDECO) to handle the sales.

(c) As minerals constitute the largest contributor to total tax revenue, a fall in either the volume or the spot sales price was likely to affect the tax revenue quite significantly. As confirmed by the analysis results both the volume of copper mined and sold and the price of copper in the LME fell during the period of this study. The volume fell as a result of both the Mfulira accident

and the flight of most skilled mining experts due to the tensions in Rhodesia (Zimbambwe). In addition to these two problems there was also the transportation problem caused by the border closer with Rhodesia which forced copper export route to shift to the newly built TAZARA railway. All these had their effect on the ammount of copper which reached the outer world for sale. All these are shown by the result of the regression coefficient of the mineral handle of the tax/GDP ratio. So, as the dependence on mineral sales proceeds to supply government tax revenue declines (implied by the negative residual coefficient of the mineral perimeter), so does the relations between the tax ratio and the foreign sector change inversely. This confirms our estimation that as economy matures the degree of external dependence is bound to decline. Reduction of dependence on copper revenue in Zambia is synonymous with reduction of external dependence for government revenue.

(C) THE TAX - GDP RELATIONS:

To determine the behaviour of the tax revenue and its impact on GDP three partial regression equations were utilised. GDP was regressed on two variables: tax revenue and government revenue. The results pertaining to each one is discussed below:-

(1) GOVERNMENT REVENUE AND GDP:

In this equation the capacity of government revenue to determine the changes in the GDP is estimated. The sign and size of the estimated coefficient (0.919) comply with our "a priori" estimation. The $R^2$ (0.844) confirms the Chelliah and Hinrichs hypotheses. GDP in Zambia depends substantially on the public sector productivity. This finding also re-confirms what we already suspected from observation that in developing countries the public sector makes up the bulk of economic activity and so constitutes the main source of investment initiative in the early development stages. So the changes in government expenditure (mostly financed from tax revenue) is a significant determinant of the aggregate investment. But of even more interest to us is the role of this government expenditure as a link between tax revenue and GDP. Equation (4.12) tests that link.

(2) TAX REVENUE AND GDP:

Government revenue acts as a link between tax revenue and GDP. The second part of that link has been established (i.e. that government expenditure explains over 84% of the changes in the GDP). In equation (4.12) we attempted to estimate the role of tax revenue in the determiantion of government revenue. The result of that estimation seems to suggest that the

coefficient of the perimeter is considerably high. The tax coefficient (1.069) and its sign imply a high correlation. But it is the $R^2$ value (0.988) which provides the link we were looking for in the regression. As expected and as implied in our estimation, government revenue and also expenditure are both functions of the tax revenue to a very high degree. The third equation (4.13) is really an additional confirmation, in a more direct way, of what has already been found out via an indirect route (government revenue and expenditure route). Here we regressed tax revenue directly on GDP. The result was once again conclusively confirmatory. The tax coefficient with respect to GDP (4.004) and $R^2$ (0.792) point to the same conclusions as those reached by way of government revenue approach. They imply that up to 79% of the changes in the GDP may be explained by the changes in the tax revenue which re-asserts the earlier estimation that tax revenue is a significant determinant of the GDP.

In addition to understanding and appreciating the role of taxation and so the true implications of these empirical test results, it is our intention also to review some possible reform policies which might improve the fiscal system. The next chapter takes up the case for tax reform as a remedy to the revealed weaknesses in the tax system.

# CHAPTER SIX:

## THE CASE FOR TAX REFORM:

Throughout this study two important findings which came out quite clearly were;-

(a) Zambia's future economic development efforts will have to rely more and more on domestic sources of finance. This implies that the major sources of this finance (taxation) will need to be increasingly utilized to generate that finance.

(b) That the tax policies of the period of this study will need to be reviewed and reformed in order to meet this increased burden it must carry.

A fairly comprehensive tax reform will therefore be required. This situation quickly raises the question: In what particular areas of taxation will these reforms be applied with maximum beneficial outcome ? There are four goals which will most likely be the targets of any tax reforms in Zambia:-

### TAX REFORM GOALS:

### 1. ADMINISTRATIVE EFFICIENCY:

Perhaps the most immediate reform requirement in the Zambian tax system is the improvement of the tax admin-

istration machinery. The present Tax Administration Department suffers from two basic deficiencies:-

(a) Inadequate training in the efficient techniques of tax administration, and

(2) Inadequate procedural format for a quick and comprehensive coverage of geographical and structural spectrum of the taxable income.

The result of these shortcomings is a high per unit revenue cost of tax collection. It also implies a certain loss of tax revenue through inadequate coverage. Lastly, it encourages tax evasion. One possible remedy to this problem may require the government to establish a training institution to provide tax officers with sufficient training in the technical administration of the Tax Department. In the long run the opportunity cost of such training will be more than justified by the result in improved tax collection and the general administration of the tax system which will also reduce the need for tax evasion which is currently widespread.

2. ECONOMIC INCENTIVES:

Most of the current incentive oriented fiscal policies seem to have been formulated with the sole purpose of attracting foreign capital and technology into Zambia. This was a recommendable approach at a time when

Zambia relied almost entirely on mineral export as the major source of finance for development. Those days are now gone and the country is gradually but steadily shifting its source of finance for development from foreign to domestic sources. It is therefore time to review the whole set of fiscal incentives to shift emphasis from foreign to domestic incentives. Tax incentives should also be shifted towards those enterprises which generate finance within the internal economy. Tax rebates, tax holidays and tax rates should be deliberately applied to industries and other economic enterprises which utilise the most abundant domestic resources such as unskilled labour, land and other such factors. Subsidies of various types could be applied to agricultural enterprises such as fishing, farming and ranching. The main areas of tax incentives emphasis must fall under the categories of agriculture, non-mineral industries, commercial enterprises and minerals in that order of priority.

A. AGRICULTURE:

The experience of the National Agricultural Marketing Board (NAMBOARD) and that of agricultural co-operative unions seem to suggest that excessive subsidies to agricultural enterprises should be discouraged. Whatever

aid is anticipated to farming it should under no curcumstances involve a direct financial loans to farmers if that can be avoided. The experiment with the Intensive Development Zones (IDZ) was a conclusive proof of the risks involved in such projects.

B. NON-MINERAL INDUSTRIES:

After 16 years of "import substitution" experiment it appears that the replacement of import by locally manufactured commodities has not become a roaring success. In industries like textile, automobiles, food packing and processing the trend seems to be downwards despite the extremely generous tax incentives they have enjoyed. "What went wrong ?" must be the pleading question of many students of Zambian fiscal policies in the last 16 years of development efforts. What reforms might reverse the trend ?

It is tempting to wonder whether Zambian industries were not smothered by too much generous attention' The generosity of the fiscal policies on these "infant industries" might have been the cause of these "infants'" failure to "grow up". The case of the Livingstone Motor Assemblers seems to support this hypothesis. As para-

statal industry, the factory appears to have been so well protected with tax reliefs, duty-free parts import and protected domestic market that it was not able to accept any change in those terms. When necessity forced the Government to ask them to stand on their own feet and provide cheaper cars than the imports, they failed. A similar situation seems to have developed in the case of Kafue Textile industry.

If the hypothesis that it was too much protection that rendered Zambia's commerce and industry incapable of standing on their own feet is correct, then any remedial policy must involve reduced tax protection. Such a policy must be based on the concept that increased selective taxation might stir them up and get them going once again. It would include:

1. Reduction of over-generous subsidies,
2. Introduction of selective taxes which may then be ploughed back either in the same industry or in other supplementary industries.
3. Fiscal encouragement to mineral supported industries with the aim of rewarding the successful ventures with government partnerships but not rewarding failures.

One thing that must be avoided at all costs is the tempt-

ation to involve government funds (except as repayable loans with sufficient security) in industrial or commercial ventures with little or no prospects of succeeding.

C. COMMERCE:

Everything said above about Non-Mineral industries apply equally to Commercial enterprises.

D. MINERALS:

There are two areas in which tax review may be appropriate with regard to mineral industry:-

(1) The 51% of mineral tax which replaced export and royalty taxes from April 1971 may now require another review. It seems to have served its purpose which was to retain some of the large profits of the mining companies in the country. Now that the government has the majority share its review (probably downwards) may spur extra activity by the local enterpreuneurs into exploration and production in the mining sector especially in the small privately owned mines.

(2) The reinvestment agreement between the government and the mining companies does not seem to serve any useful purpose for Zambia any more. Under the terms of the agreement, Zambian Government would excempt from exchange

control the 60 million kwacha which had accumulated following Mulungushi Declaration and RST in return agreed to "contribute from funds not subject to Zambia's exchange control a 75% share not exceeding K 15 million of the capital finance required by RCM for exsisting or new mining ventures". By the same agreement ZAA offered to "hold available up to K 12 million for investment in new mining ventures for a five year period". Since development finance are likely to come from RST and ZAA via capital appropriations made by RCM and NCCM instead of from dividends, these agreements will prove to be of very little worth to Zambia. They can only be useful if the profits are very very low and ZIMCO wishes all operating company profits to be distributed so that sufficient funds can be secured to meet bond repayment. But even here the Government will have to contribute its respective share of development costs. But ZIMCO is a part of the Government (a parastatal and 100% government owned). Therefore, there is very little advantage for Zambia in this reinvestment agreement. It might therefore be advisable to to terminate the agreement altogether. The Government will then no longer be restrained in its policy concerning the accumulated funds which have not been paid in terms of exchange controls application on them.

. INCOME ELASTICITY OF THE TAX SYSTEM:

The flexibility of the tax revenue in response to omestic economic fluctuations shows a certain rigidity. tax policy reform that would encourage some more esponsive sensitivity of the tax revenue to changes in incomes would therefore be desirable. Tax revenue ould that way constitute an effective automatic stabiliser which would assist in smoothing out the amplitudes of the business cycles. The starting point for such a reform would most likely be in the copper industry. The current rigid rates which take little notice of the chaages in the external copper sales prospects nor of the internal production possibilities tends to allow gluts in certain years and deficits of supplies in others. The only provision in the past was the regulation of taxable copper revenue which itself linked to the price in the LME market. The requirement was that copper sales is taxable if and only if it was sold for a price that was above K 600 per metric ton. A new tax policy that would probably levy a lower tax per unit on copper sales but at the same time provide for liberal tax levies in the lean years and higher taxes in the boom years would probably prove desirable.

Lastly, increased use of tax policy to encourage training of technicians especially in the mining and agricultural sectors would prove to be a move that would pay handsome dividends.

PROSPECTS FOR FISCAL REFORMS:

Fiscal reforms usually meet considerable resistance because they tend to be associated with increased taxes. In Zambia of 1980's there appears to be some good justifications for some fiscal reforms to bring the economy in line with the economic problems facing the nation in the eighties. It was, for example, assumed that Zambia's economic problems were, to a large extent, caused by the closure of the border with Rhodesia (now Zimbambwe). But after the border was re-opened following Zimbambwe's independence, the magical recovery from economic depression did not materialise. This development suggests that the problem, though accentuated by the border closure, had its roots in the domestic fiscal and other economic circumstances. A reform of the general approach to fiscal and other economic policies must therefore undergo some review. A serious fiscal reform, must be a part of that review. But what are its prospects ? Will the political

and social realities allow such a review to look at the real economic problems especially those which may reflect negatively on the political decisions ?

If past approaches to econo-political issues in most developing countries are anything to go by, then a comprehensive fiscal review of the problem are likely to be faced. What one cannot vouch is whether or not the remedial steps will be taken to correct them. Although most of the problems could be identified, it would still require a considerable political will to carry out the hard and sometime politically unpopular remedial steps. This is where it becomes difficult to foretell the possible repercussions of the realisation that a fiscal problem exists and that it should be corrected. This author is not ready to guarantee that the remedies suggested in this paper will necessarily find their way into the policy making corridors of power of the Government. But if they could, the results might prove remedial. We might say that the chances are half and half depending the other non-economic factors. Whether they are implemented or not it will be a matter of time for the need to apply these or other similar fiscal reforms.

## CHAPTER SEVEN:

## OTHER SOCIAL AND POLITICAL IMPLICATIONS:

As a general rule, economic performance of any country is usually a result (and sometimes also a cause) of its social and political conditions. Zambia's economic performance during the 1964-80 period was, by this general rule, a reflection of its immediate social and political experience. That experience (or the reaction to it) became the most significant single factor in moulding the economic policies of the period under this study. The experience had therefore become the major determinant of the economic situation the nationalists (UNIP) governement inherited on the eve of independence.

Politically, by 1964, Zambia had already undergone a set of two regressive regimes.[1] That experience had ended up in the polarization of the social system and the emergence of some quite distinctive bi-polar characteristics:-

1. Political and social dualism was firmly pegged on two diametrically opposite poles (hence the use of the term "bi-polar"). The first, with its center of gravity rooted in Pretoria and Salisbury (now Harare), tended to throw its full weight behind the multinational corporations

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[1]The first was the British colonial governement folowed by the defunct Federation of Rhodesia and Nyasaland.

forces in their resistance to the nationalist government. The latter represented the forces of African nationalism and radicalism which had its focal points in Dar-es-salaam and Maputo but with close links with the UNIP in Zambia. It supported nationalist government policies. Zambia, therefore became a kind of a battleground for these opposed ideological philosophies.

2. Economics of multinational corporation supremacy was therefore set against the domestic self-sufficiency (jitegemee) dogma of the frontliners ideologues. The former advocated[2] the centralization of economic activities in the "experienced" hands[3] of the foreign multinational corporations. The latter based its hopes in the reduction of foreign influence by enhancing domestic import substitution policies with intermediate technology as its vehicle of delivery.

3. Lastly, the domestic pressure in favor of rural reconstruction and social rehabilitation was posed against the external pressure for more multinational corporation, foreign aid and donations with emphasis on the foreign

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[2]The representative of the private sector strongly advocated a laissez faire approach to economic policies.

[3]The multinational corporations considered their own executives as more competent than the civil servants. As more "experienced hands" they wanted their views to dominate in the economic policy formulation, an attitude which quickly led the two to a collision course.

ontrol of the "commanding heights"[4] of the economic
nd political forces.

HE POLARIZATION OF THE SOCIAL SYSTEM:

With this kind of set-up as the platform of social olicies for the future, polarization was inevitable. Its dvent was enhanced by the characteristic conditions of the mbian economy which rendered it comparatively vulnerable o external pressures such as its: openness, dependence n a single export commodity, dual economy and heavy dependence on public (government) sector for investable surpluses. The situation therefore created two distinct-ive poles of tensions: The external pole of tension hich was first put to the test over the copper prices n the L.M.E. in 1967, and the internal pole of tension.

The internal tension was eventually neutralized with the UNIP government wrenching out the political power in 1964 but with the neo-colonial forces still clinging tenaciously onto the economic power. This was the state of affairs when the first economic reform policy was announced by President Kaunda on 19th September,

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[4]The main pillars of economic activities which in Zambia included the copper mining industry, the financial institutions such as the banks, insurance companies, and other credit unions.

1968, at Mulungushi Rock[5] to be later known as the "Mulungushi Declaration".[6] It was followed later by "Matero Declaration"[7] and "Kabwe Declaration"[8] as the resistance from the neo-colonial forces consolidated their tenacity.

POLITICS BEHIND THE FISCAL POLICIES:

The announcement of the Mulungushi Economic Reforms warmed up what had been a silent "cold war" between the government and foreign economic interests into an open "war" by 1968. The nationalist government was trying to recover the economic power by use of political legislation. The neo-colonial forces, with the backing of the multinational corporations subtly resisted these efforts by frustrating the implementation of those legislations or by merely side-stepping them

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[5]Mulungushi Rock is located some 18 miles north of Kabwe Town on the Great North Road. It is the birthplace of Zambia's freedom movement and independence. It was there that President Kenneth Kaunda first announced the new economic policies which later became known as the "Mulungushi Declarations." The gist of these policies was that all the major companies in Zambia previously owned by foreign interests were to sell at least 51% of their shares to the government through the newly formed Industrial Development Corporation of Zambia (INDECO). Indeco was a subsidiary of the Mining and Industrial Development Corporation of Zambia (MINDECO).

[6]See K.D. Kaunda, Zambia's Economic Revolution, (Lusaka: Zambia Information Service), 1968. An address

where possible. For example, by mutual agreement between the government and copper mining companies, the companies were to: repatriate a certain percentage of their net profit for re-investment into Zambia, expand their mineral exploration, transfer through training some technical expertise to local Zambians and modernize the mining equipments. But in practice, the companies paid almost all their profits out as dividends to their foreign shareholders, made only meagre token re-investment since independence up to 1968 and failed to honor almost all their obligations.

There was therefore, clear evidence that multi-national companies were mounting an internally passive but externally aggressive resistance to the new legislations. This triggered government reaction in the form of a series of Presidential Decrees which were quickly legalized by legislative procedures. The Mulungushi, Matero and Kabwe Declarations were the most prominent of those

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by President Kaunda on the 19th September, 1968 at Mulungushi Rock in which he explained the new reform policies.

[7] An address by President Kaunda in Matero on 12th April, 1970 during which he spelled out the blueprint for the partial (51%) acquisition of the mining industry. The new terms included substantial changes in the taxation and royalty payments of the mining industry.

[8] The third of the political and economic reform policies which was announced at a public meeting in Kabwe Township (thence the name "Kabwe Declaration" by which it was also known).

decrees but there were others too. Special parastatal corporations were also set up to cordinate and carry out the functions that were originally carried out by foreign corporations. The Mining and Industrial Corporation of Zambia (ZIMCO) was created to assume the marketing of minerals while the Industrial Corporation of Zambia (INDECO) was to assume the responsibility for cordinating industrial activities and to negotiate the terms of the takeover of the 51% of the copper companies shares.

While this tug-of-war was underway between the government and foreign industrial interests, the political system was also undergoing its own metamorphosis as a result of its own internal and international tensions. At home the economic policies were under criticism from the opposition[9]. On the tax and other fiscal policies, the opposition criticisms and those of the foreign interests were diametric opposites. The former claimed that the tax policies were overly favorable to the foreign multi-national interests , a charge that might have driven the government to tighten the squeeze on the foreign companies to the extent of driving some of them to re-locate in

[9]This was one of the Opposition Party's attacks on the government. Both Messr Simeon Kapwepwe and Harry Nkumbula refered to it in most of their speeches.

Kenya and Zimbabwe.[10] The latter, on the other hand, argued that the reform policies (which included the new tax policies) were disastrously harsh and would strangle their business efforts.[11] This was the situation when the new "Guidelines for the Next Deacde"[12] was issued as the blueprint for economic and political development of Zambia from 1968.

POLITICAL RAMIFICATION OF ECONOMIC POLICIES:

The major economic goals of Zambian national policies have been outlined as being: full employment, price stability, a favourable balance of payment and re-distribution of incomes. Linked with these economic goals were other socio-political objectives on which the fiscal policies had significant ramifications. Given the state of Zambian political economy outlined above, the main socio-political implications of the findings were:-

1. EXTERNAL DEPENDENCY:

The first of the findings was the confirmation of the hypothesis that Zambian economy showed a gradual shift fr

[10] A number of companies started off by transfering their headquarters to Nairobi or Salisbury and others just abandoned their operations in Zambia altogether citing un-favourable tax and other government policies as their reason.

[11] The mining companies which were the targets of Matero Reform policies were the loudest in their objections against these policies which they considered "harsh."

[12] See K.D. Kaunda, Zambia's Guidelines for the Next Decade, Lusaka: Zambia Information Services), 1968.

heavy reliance on foreign trade towards domestic based sources of development resources. Closely linked with that was the parallel finding that there was at the same time (1964-80) a significant shift from dependence on one export commodity (copper) towards a more diversified economic system. These twin outcomes were, in political terms, "mixed blessings" with positive and negative implications. On the positive side, they constituted a move towards diversification and a reduction of "openness". The former implied economic and political self-reliance on domestic resources for social needs had improved. This was a desirable development.

But at the same time, there was the negative effect that the policies which made these gains in self-reliance possible also alienated foreign capital and expertise necessary for increased investment. As some observers[3] have argued: Was it conceivable that the price Zambia paid for "principle" might have been more than offset by economic gains of the reform policies? It is not quite possible to assess politically motivated economic decisions in terms of purely economic gains. Consiquently, this judgment must remain a matter of

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[13]Richard S. Hall, The High Price of Principles, (London: Hodder and Stoutshon), 1969.

individual decision as there is no objective way of establishing the actual opportunity cost of a political decisio

2. TAXATION AS A POLITICAL TOOL:

The other outcome of the study was the finding that tax revenue showed an inelastic response to the changes in the GDP. This finding implied that tax revenues were not in themselves flexible enough to keep pace with the fluctuations in the national development resource requirements. The examples cited earlier in this study such as the failure of the IDZ rural development project, the failure to finance the national evelopment plans to full capacity, the failure to generate sufficient impetus for the import substitution industries like Livingston Motor Assemblers factory all tend to imply that without external aids, local funds based on taxation were unable to finance the government requiments and still sustain the requirement of the parastatal sector. Its political implication is therefore, that such failure of the government to meet its targets could generate a loss of confidence in the government. Such a loss of confidence may demoralize the local current and potential enterpreneurs and bring in economic stagnation and political apathy.

Further, with insufficient funds from taxation the government may not be able to assist the rural sector

which usually requires subsidizing from public funds. Such a situation might then force the government to resort to foreign loans and thus mortgage the political freedom and pride of a nation. Finally, whenever any nation falls into a depression there is usually a tendency to look at its leadership and to question its competence as a manager and trustee of the public welfare.

3. GOVERNMENT SOLVENCY AND POLITICAL STABILITY:

The last finding of the study was that there was a high degree of correlation between the fluctuations of the GDP and that of tax revenue. The economic performance which underlays political stability, tends to depend on the reliability of the tax revenue's elasticity with respect to the GDP. Therefore, the planning of fiscal policies were crucial factors in the determination of the government solvency and its ability to meet its re-current and development targets. It is therefore possible, given the fact (now established by this finding) that Zambia is capable of meeting its politically motivated economic targets with realistic planning and optimal implementation of its development plans.

CONCLUSION:

The discussion above seem to suggest that the experience that Zambia endured during the period of this study could be attributed more to its own economic and political policy shortcomings than to external causes. . Therefore remedial policies must concentrate on the improvements in the domestic planning, implementation of those plans, and adjustments of economic goals to realistically attainable levels. We have already discussed the need for tax reforms in the preceding chapter. In other areas it is also possible that economic policies, while subjected to foreign multinational corporations pressure also suffered from internal malais emanating from over optimistically ambitious targets but lacking in objective analyses. Such plans normally generate high expectations which when they prove unattainable create deep disappointments with demoralising effects on the public confidence. They then umdermine the public confidence in the government ability to achieve its goals. In Zambia, this seem to have been the case. The political goals of economic policies seem to have clouded the recognition of economic realities and led to the setting of unattainable planning goals. These were then given

wide publicity. For example, the First and Second National Development Plans became more of publicity documents meant for public political consumption than realistic economic blueprints for attainable economic targets.

# CHAPTER EIGHT:

## SUMMARIES AND CONCLUSIONS:

The basic purpose of this study was to examine with the view to determining the role of taxation in the process of development in an open transitional economy. The choice of Zambia for the study was prompted mainly by certain common characteristics of her economy. These characteristics included its openness, its dependence on a single export commodity, its dualistic economic structure and its dependence on the public sector investment for generation of investable surpluses. This last characteristic implies that economic development depended heavily on the impetus from the government (public) and parastatal sector. This renders the economy highly sensitive to changes in the tax revenue on which the government revenue and savings increasingly depended following independence from colonial rule.

The goals of Zambian economy were identified as being: full employment, price stability, economic growth, a favourable balance of payment and an equitable re-distribution of income. Fiscal policies

especially those related to taxation were hypothetically considered the most effective in accelerating the efforts towards these goals especially stability and growth. The problem was therefore to determine the role of taxation as a factor in economic development and to identify the main influences of fiscal policies on development during the period 1964 to 1980.

To achieve the objective of the study certain hypotheses were formulated based on the observations and on the current and past studies. The main operational hypotheses which were later tested by empirical data analysis may be summarized as follows:-

1. Zambian economy which initially depended on external trade showed a gradual shift from dependence on mineral revenue from external trade towards domestic tax based sources of finance for development.

Empirical tests carried out during this study confirmed this hypothesis. The study went further to show that there has also been a shift from dependence on a single export commodity to the more general depend-

ence on taxation for development. The implication of this finding is that an initially mono-commodity economy tends to broaden the base of its operational platform on the realisation of the risks involved in having its prospects for development based on one source of revenue. The efforts by other mono-commodity economies like Ghana (cocoa), Malaysia (rubber), Brazil (coffee), Cuba (sugar) etc seem to support this finding and the general rule derivable from it.

2. The responsiveness of Zambian Tax revenue to the changes in the GDP during the period of study showed insufficient flexibility to enable the economy to cope with its revenue needs for development ceteris paribus.

This finding confirms that Zambia's tax rate (which the IMF study of 1975 put at 31.3 per cent[1]) and its tax effort[2] ratio (which the same IMF study puts at 1:11 for 1969-71 and 1:75 for 1966-8) is among the highest in their class. It responds rather flexibly to changes in financial requirements. The explanation for the difficulties in acquiring development finance must therefore be looked for elsewhere in such areas as efficiency in utilisation.

This finding is also applicable to the problem faced by such other countries as Zaire and Kenya which also have considerably wide base of financial sources; yet they tend to be perpetually in financial difficulties when funds for re-investment for development are required.

3. Due to the observed strong links between government sector investment and tax revenue there must be a high degree of causal link between changes in GDP in the Zambian economy.

This hypothesis was also confirmed by empirical data. Its analytical conclusion was that GDP growth was highly dependent on the increase in the tax revenue and so the availability of domestic development finance responded to tax revenue changes quite flexibly.

From these hypotheses and their test results the following axiomatic derivations were formulated:

AXIOM 1: The perfomance of Zambian economy during transitional period (1964-80) was causally linked with her taxation policies on the

one hand and her degree of openness on the other. In other words, taxation and economic openness went hand in hand in determining the rate and pattern of Zambia's economic growth and general perfomance.

AXIOM 2: Taxation and other fiscal policies were found to be the crucial tools behind effective and feasible economic policies for development.

AXIOM 3. Significant effects of "openness" on the effectiveness of fiscal policy on economic development was also observed as an additional outcome of the analysis.

In Zambia the effect of openness on the economic perfomance was almost total due to the high degree of dependence on imports for both consumer essentials and capital goods.

In addition to these findings, it became clear from the study that the instability of the foreign copper market intensified the need for a stronger domestic source of finance for development.

The most reliable source of such resources was found to be taxation. But taxation on the other hand depended on domestic economic prosperity which in Zambia, relied on the foreign copper market. Consequently, Zambia found itself caught in a vicious cycle of: domestic sources of finance for investment --> taxation + mineral proceeds from foreign trade --> prosperous domestic economy --> domestic investable surpluses --> availability of domestic sources of finance for re-investment.

In theory this study argues that in a closed economy, saving is therefore an important indicator of growth rate. But in an open economy the impact of the external trade sector could outweigh the effects of the internal savings ratio. Therefore, to determine the pattern of the internal investment in an open economy like that of Zambia, two crucial variables come into play:

(1) the rate of government sector savings, and
(2) the ratio of external sector surplus to national income.

Both economic stability and growth are highly affected by these two phenomena. It can therefore be said that fisca

policies (including taxation) are the critical determinants of stability and growth.

A third factor which plays an important role in this theoretical model is population and its rate of change in relation to the national income. With the population data available, we have the necessary ingredients for determining the pattern and rate of economic development. This may be done by observing the changes in per capita and other welfare criteria based on the increases in the capacity to meet the basic needs requirements and the general improvement in the quality of life.

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| YEAR | Monetary GDP | Government Revenue | Tax Revenue | Export Value | Import Value | Agricultural Production | Mineral Products | Population (million) |
|---|---|---|---|---|---|---|---|---|
| 1964 | 502 | 157 | 134 | 336 | 156 | 53 | 221 | 3.51 |
| 1965 | 650 | 209 | 160 | 380 | 210 | 97 | 292 | 3.58 |
| 1966 | 782 | 209 | 160 | 494 | 246 | 100 | 380 | 3.63 |
| 1967 | 891 | 275 | 220 | 470 | 306 | 99 | 381 | 3.74 |
| 1968 | 978 | 306 | 272 | 544 | 325 | 100 | 413 | 3.86 |
| 1969 | 1314 | 401 | 364 | 767 | 312 | 102 | 639 | 4.06 |
| 1970 | 1258 | 432 | 393 | 715 | 341 | 106 | 460 | 4.17 |
| 1971 | 1178 | 309 | 274 | 484 | 399 | 154 | 275 | 4.33 |
| 1972 | 1335 | 315 | 250 | 541 | 402 | 172 | 324 | 4.53 |
| 1973 | 1583 | 385 | 338 | 742 | 347 | 180 | 520 | 4.68 |
| 1974 | 1892 | 647 | 601 | 905 | 507 | 199 | 616 | 4.83 |
| 1975 | 1583 | 448 | 398 | 521 | 398 | 206 | 215 | 4.98 |
| 1976 | 1941 | 443 | 390 | 752 | 469 | 273 | 341 | 5.14 |
| 1977 | 2024 | 499 | 446 | 708 | 530 | 322 | 238 | 5.14 |
| 1978 | 2259 | 550 | 485 | 687 | 493 | 357 | 287 | 5.30 |
| 1979 | 2566 | 595 | 537 | 1091 | 598 | 375 | 464 | 5.47 |

*All data in million Zambian kwacha except population which is in million people.

Source: Monthly Bulletin of Statistics (Government Printers: Lusaka), 1970-80