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GROWTH AND STRUCTURE OF CENTRAL GOVERNMENT  
TAX REVENUE IN UGANDA: 1948-61 \*

Introduction.

The purpose of this paper is to study in detail the growth and changes in the structure of central government tax revenue in Uganda during the period 1948-61. The ultimate objective of the exercise is to determine whether Uganda possesses an income elastic tax structure or not. This we can only determine by examining the changes in the tax bases and rates of the most important tax sources in Uganda -- during this period.

Section A of this paper is concerned with some aggregate relationships between tax revenue (T) and monetary G.D.P. (Y) in Uganda over the period 1948-61; section B contains a detailed discussion of the five most important tax sources for Central Government in Uganda -- Export Taxes, import taxes, excise duties, Corporate tax and individual income tax -- with respect to changes in yield, tax rates, tax base etc. Finally, section C draws together the main conclusions of the study and ends with some tentative observations on the future elasticity of the Uganda tax system.

Section A: Tax revenue, monetary G.D.P. and tax burden.

(1) Growth of Central Government tax revenue can conveniently be divided into two distinct periods: 1948-52 and 1952-61. Table I shows that tax revenue during the period 1948-52 grew at a rate which can only be described as 'phenomenal'; it increased very nearly three fold in four years. The growth in tax revenue is of course a reflection of the exceptionally high rate of growth of the economy as a whole during this period.

The period since 1952, on the other hand, has been characterized by a relatively slow growth in tax revenue: between 1951-52 and 1959-60, tax revenue increased by a mere 23%. In particular, it is worth remarking that tax revenue has declined every year between 1959 and 1962(1). 1953 stands out as a year in which there was a sharp fall in revenue, resulting from the collapse in commodity boom consequent upon the cessation of the Korean War. Using 1950 as our base, the index of total tax revenue stood at 194 in 1960-61.

(2) Tax revenue (T) and monetary G.D.P.(Y).

The ratio  $T/y$  may be used as a rough index of "the burden of taxation" on the economy. If we ignore the years 1960 and 1961 as exceptional, Table III shows that  $T/y$  has maintained a remarkable constancy throughout the period, with fluctuations between 15-16%, but with no trend upwards or downwards. The years 1960 and 1961, of course, show a substantial fall in  $T/y$ , but as has been mentioned before, they must be treated as abnormal years. Although the figures for Y for the period 1948-53 are not based on as firm foundations as the figures for 1954-61, I feel they are broadly correct, being an estimate from various official calculations of national income during this period. The conclusion from these ratios must therefore, be drawn that although Y has increased very substantially over the period,  $T/y$  has remained unchanged. This has obvious implications for the financing of public expenditure, which has been increasing relative to Y.

\* I am heavily indebted to my research assistant K. Dawood, for computing various ratios contained in the tables I-VIII. Without his able assistance, the "production period" for this paper would have doubled!

(1) This decline was mainly due to the economic crises in 1960 and 1961 caused by a drought and subsequent floods.

A better index of tax burden is the ratio of total taxes (central government plus local authorities) to Y. These figures are available only for the years 1957 to 1961. Between 1957 and 1959, this ratio averaged about 18.8%

It may, however, be objected that even this is not a fair measure of the burden of taxation on the economy; we ought instead to compare tax payments with income per head, or better still the income per worker. Monetary income per head rose very substantially between 1948 and 1952; but it has risen very little since then; in fact there has been a slight decline in monetary income per head every year between 1957 and 1961. Thus our conclusion must be that in the earlier years, say from 1948 to 1952, the economy was taxed relatively heavily, while it was taxed relatively lightly in the years 1955 to 1957.

(3) Changes in the structure of tax revenue.

The most characteristic feature of the Uganda fiscal system is its overwhelming dependence on taxes on foreign trade, especially on coffee and cotton exports. Table II shows that except for 1961, the contribution of taxes on foreign trade to total tax revenue has been above 58% every year during this period; this figure was about 80% in 1951-52. Table II also brings out the decline in the relative importance of these taxes in the post-1952 period.

The dominant role in the Uganda tax system has been played by the export taxes on cotton and coffee, which increased rapidly in relative importance between 1948 and 1952 and have been declining since then, especially in the period 1959-61. The obverse of this is, of course, the increasing relative importance of other main taxes, such as income tax, import taxes, and excise duties. In 1959, the import taxes became the single most important source of tax revenue to Uganda government. Using 1950 as our base year, we find that income tax revenue (including both Individual and Company tax) has shown the greatest increase up to 1960-61 --it rose over five-fold; excise tax revenue rose over four-fold, while revenue from import taxes rose three-fold over the same period. The relative stability of these tax sources has to some extent offset the characteristic instability of export tax revenue. These changes in revenue from individual tax sources are the result of changes in the tax rates and/or the tax bases. Hence, the growth of a particular tax revenue is no indication of its elasticity. In order to determine the latter, we have to separate out the effects of changes in tax rates and tax bases. This has been done in the following section.

Section B: Income elasticity of some important Central government taxes.

(1) The basic model:

This section is the core of the paper and analyzes the changes in the yield of the five most important taxes with respect to changes in Y. The detailed analysis of each individual tax will throw some light on the structural changes in the fiscal system outlined in the last section. The basic analysis carried out in this section can best be summarized in the following equations:(2)

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(2) For the meaning of various symbols, see "guide to notation".

$$(1) \frac{T}{Y} = \frac{TE}{Y} + \frac{Tm}{Y} + \frac{Tx}{Y} + \frac{Tp}{Y} + \frac{Tc}{Y} + \frac{To}{Y}$$

$$(2) \frac{TE}{Y} = \frac{TEc}{Y} + \frac{TEF}{Y}$$

$$(3) \frac{TE}{Y} = \left( \frac{Ec}{Y} \cdot \frac{TEc}{Ec} \right) + \left( \frac{EF}{Y} \cdot \frac{TEF}{EF} \right)$$

$$(4) T_{Ec} = f(R, Pc, Vc)$$

$$(5) T_{EF} = F(RF, PF, VF)$$

$$(6) \frac{Tm}{Y} = \frac{M}{Y} \cdot \frac{Tm}{M}$$

$$(7) Tm = f(Vm, Em, Rm, Gm)$$

$$(8) \frac{Tx}{Y} = \frac{X}{Y} \cdot \frac{Tx}{X}$$

$$(9) Tx = T_{beer} + T_{sug} + T_{cig.} + T_{tob.} + T_{other}$$

$$(10) Tx = f(R_{beer}, V_{beer}) + f(R_{sug.}, V_{sug.}) + f(R_{cig.}, V_{cig.}) + f(R_{tob.}, V_{tob.})$$

$$(11) \frac{Tc}{Y} = \frac{Yc}{Y} \cdot \frac{Tc}{Yc}$$

$$(12) Tc = f(Rc, Yc)$$

$$(13) \frac{Tp}{Y} = \frac{Yp}{Y} \cdot \frac{Tp}{Yp}$$

$$(14) Tp = f(Yp, Rp, A, D, S)$$

$$(15) \frac{T}{Y} = \left( \frac{Ec}{Y} \cdot \frac{TEF}{EF} \right) + \left( \frac{M}{Y} \cdot \frac{Tm}{M} \right) + \left( \frac{X}{Y} \cdot \frac{Tx}{X} \right) + \left( \frac{Yc}{Y} \cdot \frac{Tc}{Yc} \right) + \left( \frac{Yp}{Y} \cdot \frac{Tp}{Yp} \right)$$

(2) The export taxes.

An overwhelming proportion of export taxes in Uganda are derived from coffee and cotton; however, a small proportion is due to taxes on hides and skins. Table IV shows that export taxes as a proportion of monetary G.D.P. ( $\frac{TE}{Y}$ ) rose sharply between 1948 and 1952, increasing from 4.8% to 9.4%; but the general trend in the post-1952 period has been a decline in  $\frac{TE}{Y}$  with especially marked falling in 1953 and 1960 and 1961. In general, the increase in  $\frac{TE}{Y}$  was the consequence of an increase in both  $\frac{E}{Y}$  and  $\frac{TE}{E}$ ; likewise the decline in  $\frac{TE}{Y}$  has been, by and large due both to a shrinkage of tax base and a reduction in average rate of taxation; though there are some years e.g. 1954 and 1956, when the two ratios have moved in the opposite direction.  $\frac{E}{Y}$  is a function of the volume and price of cotton and coffee exports, while  $\frac{TE}{E}$  is a function solely of the price of cotton and coffee; therefore, we should expect them to move generally though not always, in the same direction. It would also appear that except for 1960 and 1961 fluctuations in  $\frac{E}{Y}$  have been greater than fluctuations in  $\frac{TE}{E}$ .

It is, however, more illuminating to break both taxes and exports into their cotton and coffee components, and study their elasticity with respect to income; this is done in tables IV (b) and (c). A study of these two tables shows that the decline in  $\frac{TE}{Y}$  since 1951 has been caused for the most part by a decline in  $\frac{TE_c}{Y}$  i.e. in the ratio of cotton export tax to monetary G.D.P., which in turn has been the consequence of a decline in  $\frac{E_c}{Y}$ , with especially sharp falls in 1953, 1955 and 1959.  $\frac{TE_c}{E}$  was well maintained until 1957; but it has fallen fairly rapidly since then. The fact that  $\frac{TE}{Y}$  has not fallen more since 1952 has been due entirely to a gradual upward trend in  $\frac{TE_f}{Y}$ , caused mainly by a rise in  $\frac{E}{Y}$  i.e. in the importance of coffee exports relative to monetary G.D.P. Apart from occasional falls, in 1953 and 1955, the average rate of taxation on coffee ( $\frac{TE_f}{E_f}$ ) was well-maintained until 1958. However, it fell drastically in 1960 and 1961, as did the average rate of taxation on cotton.

It is worth remarking that for every year except for 1958 the average rate of duty on cotton has been very substantially higher than the duty on coffee.

To what extent have changes in tax rates been responsible for changes in the average rate of cotton and coffee taxation? Cotton export duty rates have remained substantially unchanged throughout the period. There is a price floor below which no duty is levied; beyond that level, average rate of taxation rises with price increases, and becomes constant at a marginal rate of 24%; this was true until April, 1961; since then, the marginal rate has fallen to 20%. Thus under the present rates, the maximum rate cannot exceed 20%; though it could and did exceed this figure prior to 1961.

Two different rates have been levied on robusta and arabica coffee. Since, however, the former provides an overwhelming proportion of coffee exports, we need concern ourselves only with rates on robusta coffee. Up to August, 1956, the price floor was £36 per ton; beyond this floor, there was a constant marginal rate of taxation of 20%. In August, 1956, the floor was raised to £90 per ton for robusta, and the marginal rate to 28.47%; at the then ruling prices, this change had the effect of taxation in 1956. The price floor was again raised to £120 per ton f.o.B. for Robusta in June, 1957 and the marginal rate to 33%. This had the effect of lowering the average rate of taxation in 1957, and this effect was intensified in subsequent years because of the fall in the price of coffee. The average rate of duty would have been higher in the period 1957-61 if August, 1956 rates had been in force. The price floor was restored to its 1956 level in April, 1963, but the marginal rate was kept at its higher level of 33 1/3%.

We may justifiably conclude that although changes in coffee export tax rates may have had some influence on  $\frac{TE}{E}$  in later years, by and large, changes in average rate of export taxes have been the consequence of changes in export prices of cotton and coffee. This is brought out by a fairly close correlation between  $\frac{TE}{E}$  and average prices for cotton and coffee.

(3) The Import duties: Next to export taxes, import duties have been the most important source of revenue to Central Government in Uganda during this period. In fact, as we have seen, they have been the single most important tax source since 1959. Our interest, however, is in the yield from import duties relative to monetary G.D.P. Table V shows that there was a downward trend in  $\frac{TM}{Y}$  between 1948 and 1952, reasonable constancy in 1953-56, and an upward trend since 1957. The figures for 1962 and 1963 show that this trend is being maintained.

The upward trend in  $\frac{TM}{Y}$  since 1957 is however, entirely due to an increase in  $\frac{TM}{M}$ . The latter ratio has risen every year since 1952, with only two 'pauses' in 1955 and 1957; in particular, there has been a rapid increase in  $\frac{TM}{M}$  between 1957 and 1961, from 14.8% to 25.8%. The increase in  $\frac{TM}{M}$  has to some extent been offset by the downward trend in the tax base --  $M/Y$ , which has fallen every year since 1953 with the exception of 1955. The contrast with export taxes is illuminating: there has been a relative contraction in imports, as in exports, but unlike export taxes, the yield from import duties relative to monetary G.D.P. has risen in recent years. The reason for this is, of course, that unlike taxes, the average rate of import taxes has shown an upward trend.

Changes in  $\frac{TM}{M}$  could come about either as a result of changes in import duty rates or in the composition of imports. It is important to separate out these effects as they have a close bearing on the income elasticity of import duties. It is not possible to go into the details of all the changes in the import duty rates during this period. The general tendency, however, is clear. From 1948 to 1953, there was a general reduction in import duties from their high level reached during the War. Since 1955, the general tendency seems to have been towards an increase in import duties, except for 1957. This tendency has been especially marked since 1958. But we do not have adequate information to separate out the effects on import tax yield of changes in rates and composition of imports.

As the basis of classifying imports, was changed in 1964, we shall confine our comments on changes in the composition of imports to the period 1954-63. For this purpose, our tax base will be net home consumption<sup>3</sup> rather than retained imports. The two important categories with respect to both value of imports and import tax yield have been "manufactured goods classified chiefly by material" and "Machinery and Transport equipment," according to S.I.T.C.; their contribution to "net home consumption" of imports has varied from 65% to 70% during the period 1954-61. The former category in particular has maintained its share of imports at around 37%, while the average rate of duty has increased sharply since 1958; thus "manufactured goods...." make the largest contribution to import duties revenue; it is only in 1962 and 1963 that their relative importance both with respect to value and yield has declined substantially. Another category "Mineral fuels etc." which has maintained its share in net home consumption of imports since 1957, has experienced the highest increase in tax rates, which have risen steeply every year since 1957. In 1961, although "mineral fuels etc." constituted 8.5% of total net home consumption of imports, they contributed 21.5% of revenue from import taxes; in 1963, the two figures were 8.1% and 29.3%. The only other category of interest in this context is "Beverages and tobacco", which have borne an average duty of well over 25% every year between 1954 and 1963, being highest in 1957 at 351.3%! Thus, although they constituted only 1.4% of net home consumption of imports, their contribution to import duties yield amounted to 19.3% in 1954; however, their yield was only 8.7% of the total yield in 1961 and 5.5% in 1963. This has been the result both of lower average duty and a relative decline in its share of imports. Here we clearly see the fiscal implications of a successful import substitution policy - a topic which we shall take up in the last section. Another category - "chemicals" - has greatly increased its share of "net home consumption" of imports; its contribution to import duties has remained relatively small because of the low rate of duty levied on chemicals. This, again, illustrates the kind of fiscal problem arising from a change in the composition of imports that is bound to become more important in future.

A study of net home consumption and import duty figures points to the conclusion that increase in import tax yield since 1957 has been more the result of increases in average rates of import duties by legislation rather than a consequence of greater consumption of relatively heavily taxed imports. In fact, there are indications that changes in the composition of imports have had the effect of reducing the average rate of import taxation.

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3) "Net home consumption" refers to net imports minus government imports on which there is no duty, and would thus appear to be a better base. However, it includes re-exports; import duty is not refunded on all re-exports.

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#### 4. Excise duties

The share of excise duties in total revenue ( $Tx/T$ ) declined between 1948 and 1952, from 10.2% to 6.5%; but it has shown a steady upward trend since then, rising to 16.7% in 1961. Likewise, Table VI shows that  $Tx/Y$  declined between 1948 and 1952, from 1.6% to 1%; but has risen steadily in the subsequent period, amounting to 2.4% in 1961.

It is unfortunately not possible to analyze changes in  $Tx/Y$  in terms of changes in  $X/Y$  and  $Tx/X$ , as figures on the value, as opposed to the quantity, of excisable goods consumed are not available. Excise revenue in East Africa is obtained principally by duties on domestically produced beer, sugar, cigarettes and tobacco. A study of changes in excise tax rates and yield leads one to the conclusion that excise revenue has not been a very income elastic source of revenue in Uganda. Between 1948 and 1953, there was only one important change in excise rates - increase in excise duty on beer by 50% in late 1951; yet between 1948 and 1952,  $Tx/Y$  fell every year; it rose in 1953 only because  $Y$  fell very sharply in that year. In all the subsequent years, except 1956 and 1960 when there was no change and 1958 when the duty on sugar was reduced, there has been a considerable increase in tax rates on excisable commodities. Although it has not been possible to separate out the revenue effects of changes in tax rates, a study of the quantities of excisable commodities consumed inclines one to the conclusion that  $Tx/Y$  would have fallen in years of substantial increase in  $Y$  but for the upward changes in rates of excise duties.

A study of the composition of excise tax revenue shows that cigarettes have been the most important revenue earner throughout this period, though their relative share has tended to decline since 1954: while in 1953-54 their share amounted to very nearly 60%, in 1962-63 it had declined to just over 41%. The greatest relative increase has occurred in the shares of beer and sugar, rising respectively from 2.8% and 6.4% in 1948-49 to 20.9% and 30.9% in 1962-63; while the greatest decline has occurred in the share of revenue from tobacco, which has fallen from just over 30% in 1948-49 to about 6.4% in 1962-63.

It may also be worth remarking that although the excise rates on beer have increased by slightly less than 150% between 1948 and 1963, by far the greater proportion of increase in beer revenue has been due to an increase in beer consumption which has risen over twenty-fold during this period! The increase in sugar revenue has been due, roughly in equal measure, to increase in consumption and tax rates. During the period 1948-63, rates on cigarettes and manufactured tobacco have gone up respectively by just under 75% and 65%; but while the consumption of cigarettes by quantity has increased over three-fold, that of tobacco has shown a net decline over the period as a whole.

#### 5. Corporate taxes

Corporate taxes consist of the taxes levied on companies, clubs and trusts. Between 1950 and 1961, the revenue from corporate taxes had increased slightly less than five-fold. Table VII shows that

/the ratio



the ratio  $T_c/Y$  has also shown a steady upward trend throughout the period 1949 to 1961.

As with other taxes, changes in  $T_c/Y$  have to be interpreted in the light of changes in  $Y_c/Y$  and  $T_c/Y_c$ . However, it is not possible to get meaningful figures for  $Y_c$ . The Income Tax Department reports which provide information on total tax and income of corporate bodies define  $Y_c$  as "chargeable income." In this sense,  $Y_c$  excludes income from partnerships and one-man firms, and dividends distributed by companies. It thus appears that "chargeable income" is to be interpreted as "undistributed profits" of corporate bodies. Moreover, the reports do not give any information on company profits inclusive of depreciation, investment allowances etc; thus it is not possible to determine the revenue effects of any change in depreciation and investment allowances.

Table VII shows  $T_c/Y_c$  remained fairly constant between 1949 and 1956, that it rose sharply in 1957 and was constant again between 1958-60, rising sharply in 1961 to just over 30%.  $Y_c/Y$  rose steadily between 1949 and 1955, and has fluctuated between 6.1% and 7.1% in the subsequent period. It is, therefore, clear that the rise in  $T_c/Y$  between 1949 and 1955 was almost wholly due to an increase in  $Y_c/Y$ , but that the rise in the period 1957 to 1961 was largely due to an increase in  $T_c/Y_c$ . In other words, in the earlier period, the yield of corporate tax with respect to monetary G.D.P. rose due to the relative expansion of the corporate sector (an increase in retained earnings), while in the later period it rose owing to an increase in the average rate of corporate taxation.

( to be continued)

The tax levied on corporate bodies in East Africa has always been a proportionate one; thus we should expect a constant  $T_c/Y_c$  ratio, in the absence of any changes in tax rates. The Corporate tax was levied at Sh.4/= in the £ (20%) between 1942 and 1956. This rate was raised to Sh.5/60 cents in the £ (or 27½%) in 1957 at which level it remained until 1960. This change in the rate of Corporate taxation is reflected in Table VIII. As from 1961, the rate on public companies was raised again, by introducing a Corporate tax of Sh.2/= in the £, thus bringing the total tax to Sh.7/50 in the £ (or 37½%). However, the rate on private or "controlled" companies remained the same; it was also raised to Sh.7/50 in 1962. This change in tax rate accounts for the rise in  $T_c/Y_c$  from 27.5% in 1960 to over 30% in 1961. That the ratio did not rise to 37½% is due to the relative importance of private companies in the Corporate sector in Uganda, which as we have seen, were taxed at the lower rate of 27½%.

What is the explanation of the rise in  $Y_c/Y$  between 1949 and 1955? It is not easy to account for changes in the "chargeable income" of Corporate bodies ( $Y_c$ ). If our interpretation of "chargeable income" as undistributed profits is correct, the rise in  $Y_c/Y$  could be due to any of the following reasons: (a) the generally observed tendency for the profits to rise at a relatively faster rate in times of rapid expansion of the economy and conversely in periods of slow expansion or decline; (b) Change in the ratio of distributed to undistributed profits due to tax or other considerations; (c) Conversion of partnerships and one-man firms into private companies to profit from differences in tax liability under the two types of organizations. (d) Improvement in the coverage of Corporate income by the Income Tax authorities.

Table VIII shows that in general  $Y_c/Y$  has increased in periods of rapid expansion of monetary GDP, and has either fallen or risen very slowly in periods of falling or slowly increasing  $Y$ . The year 1953 is the only one which does not fit the above explanation. It would, therefore, appear that (a) goes a long way in explaining the observed behaviour of  $Y_c/Y$  both in the 1949-55 and in the subsequent period.

(b) and (c) are closely related as possible explanation of the behaviour of  $Y_c/Y$ . We have seen that until 1957 the Corporate tax was levied at the rate of 20%; this was, of course, considerably lower than the marginal rate of personal tax that most of the shareholders and businessmen would have been required to pay if they had distributed the Company profits. Thus the relatively lower rate of Corporate taxation must have provided a strong incentive to increase the ratio of undistributed to distributed profits by Companies and for the conversion of one-man firms and partnership into Companies. Evidence in support of this explanation comes from Table VIII, which shows that  $Y_c/Y$  has not increased since 1957 when the Corporate tax was raised. The number of Companies assessed for taxation increased very rapidly between 1949 and 1954, fell between 1955 and 1958, and rose fairly rapidly between 1957 to 1961. The evidence on the number of Companies assessed certainly does not provide a convincing support for (c). There may be something in (d), especially as regards underdeclaration of profits; but we have no evidence on that score.

(C) Individual Income tax.

If we take 1950 as our base year, the yield from individual income tax shows the highest rate of growth of any tax source; but in 1950 individual income tax yield was rather depressed. Between 1951 and 1961,  $T_p$  more than doubled. Table VII shows that  $T_p/y$  has passed through three distinct phases; it rose between 1950 and 1953, with a particularly sharp rise in 1951; fell steadily between 1953 and 1957 from 17%, and rose again between 1957 to 1961, reaching 1.8% in the latter year. The behaviour of the yield of individual income tax with respect to monetary GDP is especially interesting, as income tax is the only progressive tax in Uganda.

Before we interpret changes in  $T_p/Y$  in terms of  $Y_p/Y$  and  $T_p/Y$  it is necessary to define the income tax base -  $Y_p$ . As with Corporate tax base, we are using  $Y_p$  for lack of any better index of personal income.  $Y_p$  is derived from the Annual Income Tax Department Reports where it is referred to as the "actual income of employees and individuals".  $Y_p$ , therefore, includes all income (including dividends) of employees, partnerships, and one-man firms. The term covers both residents and non-residents. However, it excludes the income of all persons not assessed for income tax. Hence, it covers personal incomes of individuals in the upper income bracket only. Furthermore, until 1963 Africans were exempted from income tax. The number of persons assessed is only a tiny fraction of the total working population. Lastly, it is very likely, owing to a fairly widespread practice of tax evasion and underdeclaration, that  $Y_p$  is an underestimate of the income of the few people who are assessed.

We can now proceed to a discussion of the changes in  $T_p/Y$  noted above. Table VII shows that  $Y_p/Y$  rose between 1950 and 1953 with an especially large jump in 1953; was reasonably constant between 1953 and 1957, and rose again in 1958 and 1959 to 15.9%, falling very slightly thereafter; while  $T_p/Y_p$  fell from 13.9% in 1951 to 9.7% in 1958, and has been rising gradually since 1958. It would, therefore, seem that except for 1951,  $T_p/Y$  rose from 1950 to 1953 due to an increase in  $Y_p/Y$ . The decline in  $T_p/Y$  between 1951 and 1957 was caused almost wholly by a steady decline in  $T_p/Y_p$ . A slight rise in  $Y_p/Y$  in 1958 was responsible for the resumption of the upward trend in  $T_p/Y$ . It was only in the years 1959-61 that  $T_p/Y$  rose because of an increase in average rate of taxation. We thus come up with the paradoxical conclusion that although income tax is steeply progressive in Uganda, the average rate of taxation fell practically throughout the period except for the last three years.

It is difficult to interpret changes in  $Y_p$ . From a study of changes in  $Y_p/Y$  in Table VII one is inclined to the conclusion that  $Y_p$  is rather flexible with respect to increases in  $Y$  but is inflexible when  $Y$  falls. That this is a plausible hypothesis can be seen from the composition of "actual income". A large proportion of  $Y_p$  consists of the income from employment and quarters of employees and individuals in upper income brackets, and as such it is unlikely to fall very much when  $Y$  falls due to a decline in export earnings. On the other hand, when there is a rise in  $Y$ ,  $Y_p$  is likely to increase as well owing to a larger number of persons entering the taxable income category. Table VII shows that  $Y_p/Y$  rose markedly in 1953 and 1958, the two years when there was a fall in  $Y$ ;  $Y_p$  continued to show an increase despite fall in  $Y$ .

The number of assessments made, which partly determines  $Y_p$ , showed a rapid increase between 1950 and 1955 and, rather surprisingly, again in 1958. This number has tended to fall every year since 1958; this has been accompanied by a rise in average "actual income".

Next we must try to find an explanation for the downward trend in the average rate of taxation between 1951 and 1958 and the subsequent upward trend. Given  $Y_p$ ,  $T_p$  is a function of allowances, rates, distribution of income by income groups and by residence. It is important to know the proportion of non-residents among those assessed because their allowances form a small fraction of their incomes and consequently they bear a much higher average rate of taxation.

Allowances for non-residents increased in 1953 and 1954; for residents, there was some increase in 1952 and a very substantial one in 1957. Allowances as a proportion of actual income show an upward trend between 1952 and 1958, rising from 36.7% to 49.4%; however, most of this increase occurred in 1957. Thus the importance of allowances in determining the yield of individual income tax is obvious. The most important reason why  $Y_p/Y_p$  has shown a downward trend between 1951 and 1958 is to be sought in the increasing relative importance of allowances. It is worth remarking that the ratio allowances/actual income has been falling since 1958 and  $T_p/Y_p$  has been rising during the same period. This process was helped by a net reduction in allowances in 1961.

The next factor to consider is tax rates. There was only one change in tax rates between 1948 and 1961, and that was in 1957. The general effect was to raise rates of taxation for chargeable income upto £2,000, and to effect a slight reduction in tax rates on chargeable incomes in excess of £2,000. It is very difficult to determine whether the over-all effect was to raise or to lower tax rate. Since about 75% of chargeable income falls in the under £2,000 category, it is likely that the general effect was to raise slightly the overall tax rate. This would have had the effect of moderating the fall in  $T_p/Y_p$  in 1957 and 1958, caused by a substantial increase in allowances.

It was mentioned earlier that allowances constitute only 2-3% of actual income for non-residents, while they have been running at about 48% for residents in recent years; consequently the former bear an average rate of taxation (nearly 20%) which is twice the average rate for residents. We find that the proportion of residents to non-residents actual income rose every year between 1950 and 1957, from 89.9% to 97.0%. This, therefore, is an additional important reason for the decline of average rate of taxation ( $T_p/Y_p$ ) during this period. The proportion of actual income going to non-residents has risen between 1958 and 1961, as has the average rate of taxation.

Lastly, we must assess the revenue effects of changes in the distribution of income by income groups. We can best do this by isolating the influence of allowances i.e. by considering the ratio tax assessed/chargeable income (which excludes allowances). This ratio fell between 1951 and 1956 and has shown an upward trend since then; the fall in this ratio is surprising in view of the fact that the average actual income of resident tax-payers rose every year between 1950 and 1957, except for 1955. The only explanation for the fall in the ratio tax assessed/chargeable income during 1951 and 1956 can be a more even distribution of chargeable income. Fortunately, the Income Tax Department Reports contain a fairly comprehensive picture of distribution of chargeable income by income groups. These figures show that there has been a general tendency since 1951 toward a decline in the proportion of chargeable income of £2,000 and over, and in the lowest income group - £1,-800, but a slight increase in the middle-income group - £801-£1999.

The income tax rates changed in 1957, resulting in a slightly higher rate of taxation for persons with income less than £2,000. Between 1958 and 1961, the ratio income tax assessed/chargeable income rose every year. This has been the result of an upward trend in average actual income and a significant rise in the proportion of total chargeable income accruing to tax payers with chargeable income of £1600 and above. This would account for the resumption of the upward trend in  $Tp/Yp$  since 1958; while the tendency toward a slightly more even distribution of chargeable income between 1951 and 1956 would explain the fall in  $Tp/Yp$  during that period.

To summarize, the ratio  $Tp/Y$  fell between 1951 and 1957, due to a decline in the average rate of taxation, which in turn was the consequence of a relative increase in allowances, a decrease in the proportion of non-resident to resident tax-payers' actual income, and a more even distribution of chargeable income.  $Tp/y$  has risen between 1957 and 1961, owing to a sharp increase in the tax base in 1958 but also due to a rise in the average rate of taxation, caused by a reversal of all the factors noted above.

Section C - Summary and Conclusion:

It may be useful to summarize the main conclusions of the preceding section. Over the period as a whole, the ratio of total tax yield to monetary G.D.P. in Uganda has remained fairly constant with, however, a distinct decline in 1960 and 1961 caused by abnormal conditions. The most important reason for this is the sustained fall in the yield of export taxes relative to monetary income in the post-1952 period. This has been caused mainly by a decline in the relative importance of cotton exports; the fall in TE/Y would have been even greater but for the upward trend in the relative importance of coffee exports. All the other important taxes show an upward trend in the ratio tax yield/monetary income over the period as a whole, especially since 1958; though there are years when tax yield from particular taxes relative to monetary income fell gradually. In general, the increase in the tax yield/monetary income ratio for import and excise duties was more the result of an increase in the average rate of taxation, rather than of the ratio tax base/monetary income. However, for Corporate taxes both these elements were important, though at different periods. Paradoxically enough, the progressive individual income tax stands out as one example of a tax which owed an increase in the ratio tax yield/monetary income to an increase in its tax base relative to income, rather than to an increase in average rate of taxation.

It follows, therefore, from our analysis that the fiscal system in Uganda does not possess a "built-in" elasticity. In particular, the most important source of tax revenue is subject to great fluctuations and is only partially amendable to government control. As long as export tax yield does not show the buoyancy of earlier years, the ratio of tax yield to monetary income could only be maintained by successive increases in tax rates in the other important tax sources.

It is intended in another paper to discuss the future yield from most of these tax sources under the existing rates of taxation. However, it may be useful to offer some observations on this subject at this stage. Import duties have become a most important source of tax revenue to Central Government; but if an ambitious import substitution programme is launched, the relative importance of imports in the economy is unlikely to increase; what is more, the composition of imports is sure to change in such a manner as to have the effect of lowering the average rate of taxation; for both these reasons, yield from import taxes is unlikely to prove elastic with respect to monetary income. It is, therefore, clear that very soon it may become necessary to consider a wide extension of excise duties or an imposition of some kind of sales tax if the government is to find adequate revenue to meet its increasing expenditure.

Nor is the outlook for yield from individual income tax very promising, as the tax is designed at present. Although the imposition of income tax on Africans since 1962 must be welcome both for reasons of yield and equity, with the departure of expatriates and an expected reduction in the number of Asians in Uganda, it is unlikely that the yield from income tax will prove very elastic. Moreover, with an increasing proportion of the

/incremental

incremental income going to persons in lower income brackets, individual income tax yield is unlikely to benefit as much as in the past from the growth of the economy. It may thus be necessary to enlarge the scope of the individual income tax to bring a larger number of people within its net.

Lastly, it has been possible in recent years to increase the yield from Corporate taxes by successive increases in tax rates because Uganda started off with a rather low rate of Corporate taxation. But with the tax rate at 7/50 in the £, this is no longer the case at present. There are now severe restrictions on the ability of the government to raise more revenue through increases in Corporate rate taxes, due to the need to attract more capital in competition with other countries offering all kinds of fiscal inducements to potential investors.

All of this leads to the conclusion that there is an urgent need for some hard thinking to devise an income elastic tax system in Uganda to meet the rapidly changing economic conditions of to-day. This will form the main theme of a future paper.

Guide to notation

Monetary Gross Domestic Product	=	Y
Total tax revenue of Central Government	=	T
Revenue from export taxes	=	T <sub>E</sub>
Revenue from Cotton export taxes	=	T <sub>Ec</sub>
"    "    Coffee    "    "	=	T <sub>EF</sub>
"    "    import duties	=	T <sub>M</sub>
"    "    excise    "	=	T <sub>x</sub>
"    "    Corporate taxes	=	T <sub>c</sub>
"    "    individual income tax	=	T <sub>p</sub>
"    "    licences	=	T <sub>L</sub>
"    "    all other taxes	=	T <sub>o</sub>
Cotton and Coffee exports	=	E
Cotton exports	=	E <sub>c</sub>
Coffee exports	=	E <sub>F</sub>
Retained imports	=	M
Value of excisable goods consumed	=	X
"Chargeable income" of companies etc.	=	Y <sub>c</sub>
"Actual" income of employees & individuals	=	Y <sub>p</sub>
Tax rates	=	R
Average price level	=	P
Volume	=	V
Allowances	=	A
Distribution of income by income groups	=	D
Resident tax payers	=	S
Composition of imports	=	G



TABLE VII

"ACTUAL" INCOME, INDIVIDUAL INCOME TAX AND MONETARY GDP 1948-61:  
£'000

Years	Individual Income Tax	Actual Income	Monetary GDP £m.	Yp/Y	Tp/Yp	Tp/Y
1948						
1949	369	2,938	42.8	6.86	12.56	0.86
1950	347	3,402	54.3	6.27	10.20	0.64
1951	935	6,753	83.8	8.06	13.85	1.12
1952	1,093	8,255	88.3	9.35	13.24	1.24
1953	1,295	10,219	76.3	13.39	12.67	1.70
1954	1,462	12,129	92.8	13.07	12.05	1.58
1955	1,516	13,452	102.0	13.19	11.27	1.49
1956	1,375	13,679	102.8	13.31	10.05	1.34
1957	1,418	14,365	109.4	13.13	9.87	1.30
1958	1,576	16,269	106.3	15.30	9.69	1.48
1959	1,704	17,101	107.8	15.86	9.96	1.58
1960	1,888	17,518	110.5	15.85	10.78	1.71
1961	2,010	17,484	111.8	15.63	11.50	1.80

Source: Annual Reports of the Income Tax Department.

Note: For an explanation of "actual income" and "individual income tax", see the text of the article.

TABLE III.

## TAX REVENUES AS PERCENTAGES OF MONETARY GROSS DOMESTIC PRODUCT (Y)

Item	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961
T/Y	15.92	15.69	15.37	16.02	16.15	14.56	16.51	15.13	16.16	15.64	16.29	16.26	14.91	14.29
TC/Y		0.86	0.89	1.09	1.17	1.31	1.35	1.42	1.41	1.87	1.67	1.89	1.94	2.05
Tp/Y		0.86	0.64	1.12	1.24	1.70	1.58	1.49	1.34	1.30	1.48	1.58	1.71	1.80
TE/Y	4.78	6.93	7.67	9.67	9.36	5.30	7.14	5.69	6.00	5.72	5.33	4.62	2.99	1.94
TM/Y	5.16	4.11	3.83	3.45	3.39	4.34	4.07	4.18	4.11	3.77	4.37	4.95	5.35	5.64
Tx/Y	1.61	1.55	1.17	1.16	1.04	1.31	1.54	1.60	2.0	2.31	2.33	2.12	2.19	2.39
TL/Y	0.59	0.46	0.42	0.28	0.29	0.44	0.45	0.41	0.41	0.44	0.58	0.66	0.59	0.58

Notes: (2) In Table III figures for individual and Corporate tax revenue were derived from the Annual Income Tax Department Reports. Hence they differ from the figures for income tax in Table I.

TABLE IV(a): EXPORT TAXES, COTTON AND COFFEE EXPORTS, AND MONETARY GDP: 1948-61: £'000

Monetary GDP (£m.)	30.3	42.8	54.3	83.8	88.3	76.3	92.8	102.0	102.8	109.4	106.3	107.8	110.5	111.8
Cotton & Coffee Export	10,705	20,234	25,030	42,351	42,288	28,336	34,355	36,520	35,006	39,063	38,968	34,116	31,917	30,695
Export taxes	1,449	2,968	4,167	6,106	8,269	4,045	6,626	5,808	6,166	6,256	5,662	4,985	3,302	2,175
E/Y	35.33	47.27	46.09	50.53	47.79	37.14	37.02	35.80	34.05	35.70	36.66	31.65	28.88	27.51
TE/Y	13.50	14.64	16.52	18.92	19.43	14.14	19.29	15.66	17.54	16.04	14.58	14.49	10.19	6.91
TE/Y	4.78	6.93	7.67	9.67	9.36	5.30	7.14	5.69	6.00	5.72	5.33	4.62	2.99	1.94

Sources: Annual Statistical Abstracts, Annual Trade Reports;

Notes: (1) Figures for monetary DGP were derived from H.W. Ord; "The growth of Money Incomes in East Africa" E.A.E.R. June 1962.

TABLE I.  
GROWTH OF CENTRAL GOVERNMENT TAX REVENUE IN UGANDA, 1948-61: £'000.

Item	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961
Income Tax	400	602	661	639	1,169	1,785	2,189	2,756	3,160	3,078	3,231	3,533	3,542	3,567
Estate Duty	20	12	36	9	38	7	27	40	37	43	71	55	41	29
Poll, education tax etc.	721	513	537	571	605	629	863	528	553	599	628	619	606	570
Total Direct tax	1,141	1,127	1,234	1,219	1,812	2,421	3,079	3,324	3,750	3,720	3,930	4,207	4,189	4,166
Export taxes	1,449	2,968	4,167	3,106	8,269	4,045	6,626	5,808	6,166	6,256	5,862	4,985	3,302	2,175
Import duties	1,565	1,761	2,080	2,888	2,995	3,308	3,776	4,260	4,222	4,128	4,643	5,340	5,914	6,307
Excise taxes	489	663	635	973	923	997	1,426	1,629	2,055	2,523	2,473	2,285	2,423	2,675
Licences etc.	180	199	228	239	261	336	419	416	418	480	613	709	647	654
Total Indirect tax	5,685	3,791	7,110	12,206	12,448	8,686	12,247	12,113	12,861	13,387	13,391	13,319	12,286	11,811
TOTAL TAX REVENUE	4,824	6,718	8,344	13,425	14,260	11,107	15,326	15,437	16,611	17,107	17,321	17,526	16,475	15,977

TABLE II.  
PERCENTAGES OF VARIOUS TAXES IN TOTAL TAX REVENUE.

Income Tax	8.3	9.0	7.9	4.8	8.2	16.1	14.3	17.8	19.0	18.0	18.7	20.2	21.5	22.3
Estate Duty	0.4	0.2	0.6	0.07	0.3	0.06	0.2	0.3	0.2	0.2	0.4	0.3	0.2	0.2
Poll, education, tax	14.9	7.6	6.4	4.2	4.2	5.7	5.6	3.4	3.3	3.5	3.6	3.5	3.7	3.6
Total Direct tax	23.6	16.8	14.8	9.07	12.7	21.86	20.1	21.5	22.5	21.7	22.7	24.0	25.4	26.1
Export taxes	30.0	44.2	50.0	60.4	58.0	36.4	43.2	37.6	37.1	36.6	32.7	28.4	20.0	13.6
Import duties	32.5	26.2	24.9	21.5	21.0	29.8	24.6	27.6	25.4	24.1	26.8	30.5	35.9	39.5
Excise taxes	10.2	9.9	7.6	7.3	6.5	9.0	9.3	10.6	12.4	14.7	14.3	13.0	14.7	16.7
Licences etc.	3.7	3.0	2.7	1.8	1.8	3.0	2.7	2.7	2.5	2.8	3.5	4.1	3.9	4.1
TOTAL INDIRECT TAX	76.4	83.3	885.2	90.95	87.3	8.2	79.8	78.5	77.4	78.2	77.3	76.0	74.5	73.9

Source: Table I: Annual Statistical Abstracts, Uganda.

Notes: (1) From 1954 the fiscal year does not coincide with calendar year; total revenue as well as individual tax revenues for 1954 and later years are divided by averaging two fiscal years.

(2) In Table III, figures for individual and Corporate tax revenues were derived from the Annual Income Tax Department reports. Hence they differ from the figures for income tax in Table I.

TABLE IV(b): COTTON EXPORTS, COTTON EXPORT TAX AND MONETARY GDP.

Item	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961
Cotton Exports	7 458	17 343	16 698	28 697	29 943	16 793	20 877	16 386	19 285	17 476	18 141	15 428	14 930	16 716
Cotton Exp. tax	1 106	2 668	2 977	5 907	6 442	2 601	3 936	3 144	3 574	3 193	2 399	2 477	2 177	1 649
Ec/Y	24 .61	40.52	30.75	34.24	33.91	22.01	22.50	18.06	18.76	15.97	17.07	14.31	13.51	15.01
TEc/Ec	14.83	15.38	17.83	20.58	21.51	15.49	18.85	19.19	18.53	18.27	13.22	16.05	14.58	9.86
TEc/Y	3.65	3.23	5.48	7.05	7.30	3.71	4.24	3.08	3.48	2.92	2.26	2.30	1.97	1.47

TABLE IV(c): COFFEE EXPORTS, COFFEE EXPORTS TAX AND MONETARY GDP.

Coffee Export tax	339	295	1 158	2 107	1 776	1 405	2 632	2 576	2 567	3 073	5 283	2 465	1 074	472
Coffee Exports	3 247	2 891	8 332	13 654	12 345	11 543	13 478	20 134	15 721	21 587	20 827	18 688	16 987	15 979
EF/Y	10.72	6.75	15.34	16.29	13.96	15.13	14.52	19.74	15.29	19.73	19.59	17.34	15.37	12.50
TEF/EF	10.44	10.20	13.9	15.43	14.39	12.17	19.53	12.79	16.53	14.23	15.76	13.19	6.32	3.38
TEF/Y	1.12	0.69	2.13	2.51	2.01	1.84	2.84	2.53	2.50	2.81	3.09	2.29	0.97	0.42

TABLE V: IMPORT DUTIES RETAINED IMPORT AND MONETARY GDP.

Import duties	1 565	1 761	2 080	2 888	2 995	3 308	3 776	4 260	4 222	4 128	4 643	5 340	5 914	6 307
Retained imports	9 386	12 781	16 302	21 292	23 814	25 431	24 745	33 572	27 016	27 894	26 023	24 397	24 692	24 485
X/Y	30.98	29.86	30.19	26.12	26.97	33.33	26.66	32.91	26.28	25.50	24.48	22.63	23.55	21.90
Tm/M	13.37	13.78	12.69	13.19	12.58	13.01	15.26	12.69	15.65	14.80	17.34	21.66	23.25	23.76
Tm/Y	5.16	4.11	3.83	3.45	3.39	4.34	4.07	4.18	4.11	3.77	4.37	4.95	5.35	5.64

TABLE VI: EXCISE DUTIES, CONSUMPTIONS OF EXCISABLE COMMODITIES, AND MONETARY GDP.

Excise taxes	489	663	635	973	923	997	1 426	1 629	2 055	2 523	2 473	2 285	2 423	2 675
Consumption														
X/Y														
Tx/Y														
Tx/Y	11.61	1.55	1.17	1.16	1.04	1.31	1.54	1.60	2.0	2.31	2.33	2.12	2.19	2.39

Source: Annual Statistical Abstracts, Annual Trade Reports.

TABLE VIII

"CORPORATE CHARGEABLE INCOME", CORPORATE TAX AND MONETARY GDP:  
1948-61: £'000.

Years	Chargeable Income	Corporate Tax	Monetary GDP	Yc/Y	Tc/Yc T	Tc/Y
1948						
1949	1,851	370	42.8	4.32	19.99	0.86
1950	2,423	484	54.3	4.46	19.97	0.89
1951	4,453	910	83.8	5.31	20.44	1.09
1952	5,070	1,037	88.3	5.74	20.45	1.17
1953	4,929	999	76.3	6.46	20.27	1.31
1954	6,215	1,254	92.8	6.70	20.18	1.35
1955	7,330	1,452	102.0	7.19	19.81	1.42
1956	7,158	1,447	102.8	6.96	20.21	1.41
1957	7,716	2,041	109.4	7.05	26.45	1.87
1958	6,477	1,780	106.3	6.09	27.48	1.67
1959	7,413	2,038	107.8	6.88	27.49	1.89
1960	7,797	2,143	110.5	7.06	27.48	1.94
1961	7,648	2,297	111.8	6.84	30.03	2.05

Source: Annual Reports of the Income Tax Department.

Note: For an explanation of "chargeable income" and  
"corporate tax" see the text of the article.