Empirical Analysis of Tax Revenue Performance in Tanzania: 1973 - 1999

Research on Poverty Alleviation (REPOA)

INTRODUCTION: THE PROBLEM

There are three global trends that have a great potential to influence Tanzania's tax system: democratization, aid flows and globalization. The growing democratization has the potential of lowering the level of tax collection for two reasons. On the one hand, more and more taxpayers are becoming reluctant to pay taxes due to low incomes and dissatisfaction with the current level of service provision. On the other hand, political leaders are finding it more difficult to use coercive means to collect taxes in fear of losing their positions, most of which were obtained through the democratic process. However, the democratization process has the different potential of increasing tax revenue collection if it leads to more awareness on the importance of paying taxes by taxpayers and more accountability on the part of leaders. The net effect of these opposing possibilities could be ambiguous and which needs to be investigated.

The trend of aid flows presents another area worth investigating. According to the African Development Indicators, aid flows from all donors to Tanzania declined by 28 percent from US$1,343 million in 1992 to US$964 million in 1997. The declining aid flows and the restrictions accompanying them have exerted immense pressure on the tax system to generate funds to fill the emerging gaps. This pressure could be seen as a blessing in disguise if the tax system is malleable enough to generate the desired levels of revenue, implying more self-reliance and self-determination, less so if the tax system is inflexible.

More challenges emanate from the globalization process. The latter, among other things, advocates for a less restrictive international trade. Reducing restrictions on international trade means a decreased dependence on taxes levied on goods that are traded internationally. For a country with a high ratio of export taxes and/or import duties to total tax revenues such as Tanzania, globalization has a potential of decreasing tax revenue collection levels. Paradoxically, however, the available data for Tanzania indicate that since 1993/94 taxes on international trade transactions have been registering positive annual growth rates, and it might be useful to investigate the reason behind such a paradox.

Since these forces are possibly operating in opposing directions, it is important for Tanzania to disentangle them in order to determine how it can maximize benefit and/or minimize loss from them. Specifically, Tanzania needs to know the following: Which of these forces are a positive factor in revenue collection in Tanzania, and which ones are not? And, consequent to this, how can the Tanzania's tax system adjust to the changing global situation?

Objectives and Significance of the study

This paper attempts to respond to these questions by empirically estimating the factors that determine the performance of tax revenue based on the 1973-1999 data. Its overall objective is to seek ways through which Tanzania can maximize tax revenue collection given the prevailing global trends. To achieve this broad objective, the study seeks to explore how the economic structure (and its changes thereof)[1] is reflected in the administration of taxation. Thus it:

i) Identifies those sectors in Tanzania's economy that are easy to tax, putting into consideration the prevailing global trends. This is significant in that more taxation efforts can gainfully be exerted in these sectors.

[1] Most of this analysis is based on the tax revenue to GDP ratio, which reflects some effort on the part of the government in mobilizing tax revenue.

Since 1977, tax administration in Tanzania underwent many changes. Notable among these was the merging of the Customs Department and Sales Tax Department to form the Tanzania Customs and Sales Department in 1982. The department was responsible for the administration of custom duties, excise duties, stamp duty, motor vehicle taxes and land rent. However in June 1993, the department was broken again to form separate Customs and Excise Department and Sales Tax Department.

In 1988/89, Tanzanian government and donors were very concerned over the low revenue collections. As a result, a commission was formed to study ways and means to improve revenue collection. However, no concrete steps were taken until 1995, when a law to introduce the Tanzania Revenue Authority (TRA) was enacted. In June 1996 TRA was established. The TRA was set up as an executive agency; its objectives were to establish "a sustained revenue base to enable Tanzania to finance its recurrent and development expenditure needs without being excessively dependent on external aid" and to develop "a tax regime that is transparent, effective, and conducive to encumbered growth of private investment and international trade." The executive agency status allows the TRA to pay considerably higher wages, both as a measure to mitigate corruption and retain high quality staff. The TRA was entrusted with the task of collecting, on behalf of the government, all major taxes, including import duties, export taxes, sales, excise and income taxes, as well as VAT (as of July 1998). It collects all taxes on mainland Tanzania, and the income tax and all taxes on imports on Zanzibar (IMF, 1999).

This evolution is reflected, in large part, by the tax performance in Tanzania. Prior to economic reforms in 1986, tax revenue was driven up by government attempt to cover budgetary deficits from massive expenditures that were a reflection of the public sector dominance in the economy. The average tax revenue to GDP ratio was therefore relatively high in the pre-reforms period. For example, the tax revenue to GDP ratio averaged about 16.4 percent for the 1967/8-1985/6 period compared to an average of 11.0 percent for the 1986/7-2000/1 period. However, the tax structure during the pre-reform period was characterized by very high tax rates as a compensation for a narrow tax base, wide-ranging exemptions and quantitative restrictions, especially on imports. Such structural weaknesses contributed to smuggling and rampant tax evasion. In addition, these weaknesses distorted incentives and resource allocation and were often combined with major problems of tax administration, including poor pay, poor morale, inadequate facilities, inappropriate or lack of enforcement of penalties and weak auditing. The economic crisis of the late 1970s and 1980s led to a worsening budgetary deficit despite a higher tax-revenue to GDP ratio. For example, budget deficits averaged about 13.5 percent of GDP during the 1978/9-1981/2 as compared to the average of 5.6 percent during the 1967/8-1977/8 period.

Under the Structural Adjustment Program (SAP) and the Economic Recovery Program (ERP) of the 1980s, the government made bold attempts to reduce budgetary deficits by adopting measures to increase revenue generation and cut down growth of both recurrent and development expenditures. The government revenue was to be increased through improved efficiency in tax collection, expanded tax base and reduced overvaluation in the exchange rate. Efforts were also made to bring the self-employed (informal sector) into the tax-net using presumptive income estimation methods. Other tax reforms included lowering tax rates, simplifying tax structures by reducing tariff categories, simplifying collection procedures and strengthening tax collection institutions through foreign technical assistance. Other measures included training and better work motivation, reducing exemptions, and hiring of Societe Generale de Survaillance (SGS) and Cotecna Inspection S. A. (COTECNA) to assess

ii) Identifies those sectors in the economy that are difficult to tax and attempts to establish why they are difficult to tax, and whether they can be subjected to further tax reforms.
iii. Investigates the long-term impact of aid flows - particularly grants to the government - on domestic tax revenue mobilization. This is important as it brings to the notice of the government, donors and other interested parties the understanding of the effectiveness of the aid flow in terms of achieving fiscal stability.
iv. Analyses the impact of various economic policies and changes in external environment (other than aid flows) on tax revenue generation. This is useful as it may give insights on appropriate tax policies to adopt in the face of changing global environment, and in particular in view of the globalization process.

In line with the above tasks, the paper uses the tax buoyancy approach as opposed to tax elasticity approach. Both terms measure the responsiveness of tax revenues to GDP growth. They are, however, different in that tax buoyancy is a proportionate change in revenue collection as GDP changes by a certain proportion, measured in real terms, that is, after adjusting for inflation. Thus, tax buoyancy takes into consideration changes in policies that affect tax rates and/or bases. Tax elasticity, on the other hand, is calculated just like tax buoyancy except that the revenue part is calculated as it would have been if there had not been any change in the tax laws, including tax rates or bases. Thus tax elasticity is a hypothetical construct that tries to reconstruct what would have happened if there had been no changes in tax rules. The fact that this study measures empirically the policy changes that may have altered tax rates/bases warrants the use of tax buoyancy instead of tax elasticity.

Study Outline

Section 1 of the papery has presented the problem statement, objectives and significance of the study. In Section 2, the paper presents a brief account of the major changes in the evolution of tax system in Tanzania. This is followed, in Section 3, by a presentation of theoretical determinants of tax revenue collection in Tanzania. In Section 4, the paper presents the analytical framework, followed by the model's results in Section 5. Section 6 presents conclusion and policy recommendations.

EVOLUTION AND PERFORMANCE OF THE TAX SYSTEM IN TANZANIA

Tanzania's tax system owes its structure - composed of income, consumption, and international transactions taxes - to the country's two colonial masters: the Germans (1901-1918) and the British (1920-1961). In 1949 the British introduced many changes to the system, charging the East African High Commission with the task of supervising the collection of income, customs and excise taxes. Personal tax was put under the control of the Treasury but it was the District Commissioners who were charged with the task of its collection. At the local level, local chiefs and authorities were responsible for collecting taxes for local governments.

In 1961, the East African Common Services Organization was formed. The headquarters for the tax administration of the income tax and customs and excises taxes were located in Kenya. Land rent, stamp duty and export tax on sisal, copra, beeswax etc. were under the control of the District and Regional Revenue Officers.

In 1967, East African Community (EAC) was established and it took over tax administration for the 10 years of its operation until it collapsed in 1977. Under its control, sales tax was introduced in 1969. However in 1973, the EAC control over income tax broke up and each country took responsibility to administer the tax. The EAC, however, retained its control over customs and excises taxes. When it finally collapsed in 1977, the administration of these taxes in Tanzania was put under the mandate of the Ministry of Finance.

customs duties and conduct pre-shipment inspection.

The sharp drop in tax revenue to GDP ratio that occurred in the first year of the ERP implementation (1985/6) from 16.7 percent to 11.5 percent in 1986/7 did not affect much the level of budget deficits. In contrast, it reflected the sharp increase in GDP growth from 1.8 percent in 1986 to 7 percent in 1987. It also reflected a slow growth in public revenue, which was a result of a combination of a narrow tax base, inefficiency in tax collection and growing incidence of tax evasion. At the end of ERP in 1991/92, the ratio of tax revenue to GDP was 12.5%, which was still below the pre-ERP period level.

Beginning in 1992/3, massive discretionary exemptions on import duties and other taxes resulted in a collapse of tax revenue to only 9.6 percent of GDP, the lowest tax revenue effort in Tanzania's post independence history, (Ballali, 1999). The Third Phase government therefore embarked on a Recovery Program during 1995/6-1997/8. To restore donor confidence, among other things, the government adopted a short-term program for the balance of the fiscal year covering the period January-June 1996. Although the effort covered only the second half of the fiscal year, the program dramatically changed the entire budgetary profile for 1995/6. Budget deficit including grants of about 1.9 percent of GDP in 1994/5 was eliminated and a surplus of 0.1 percent of GDP was attained in 1995/6. Major institutional and structural reforms were also implemented, including the major effort to collect revenue through the already mentioned TRA, in July 1996. In 1996/7, the budget position improved substantially from budget surplus including grants of 0.1 percent of GDP in 1995/6 to a surplus of 1.1 percent of GDP in 1996/7. The increase in budget surplus was attributable to a substantial increase in donor grants, which came too late to be spent in the fiscal year. In spite of all these achievements, the recent 1997/8-2000/1 period has experienced relatively low tax revenue to GDP ratio, and consequently, the budget deficit including grants has resurfaced. Such a phenomenon begs the question: What is happening to Tanzania's tax system? As explained in the preceding section, the motivation to do this study is engendered by such concern.

THEORETICAL FRAMEWORK: DETERMINANTS OF TAX REVENUES IN TANZANIA

This section presents theoretical determinants of tax revenues in Tanzania. In order to keep the reader informed of the Tanzanian situation, the performance of each determinant is briefly presented, justifying the use of such determinants in the study.

Tax Base

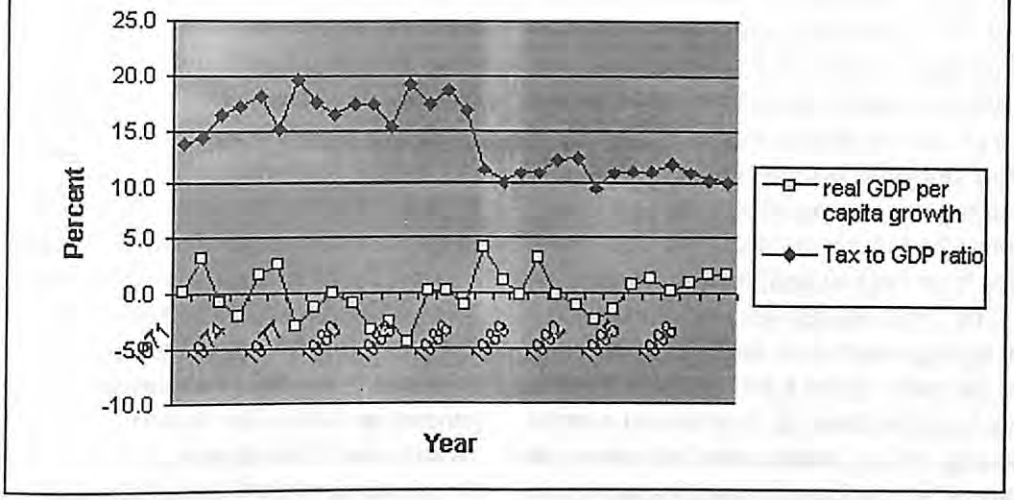
Theory states that an increase in per capita income raises taxable income, and with efficiently operating tax system, the absolute amount of tax revenues is expected to increase. However, in Tanzania, the relationship between per capita income and tax revenue to GDP ratio has been more or less negative (Figure 1), suggesting that either the tax system is regressive in nature or that tax administration is inefficient.

Sectors' GDP

Theory also states that with an efficient tax system, sectoral growth leads to an increase in tax revenue. Tanzania's economy is made up of 9 sectors: agriculture; mining; construction; electricity and water; public administration; manufacturing; transport and communications; internal trade, hotels and restaurants; and financial and business services.

Agriculture has consistently been the most dominant sector, contributing an average of about 50 percent of GDP. Logically, it should also be the main tax revenue source. However, agriculture has generally been overtaxed, and following globalization, further taxation of the sector is discouraged in order to give incentives

Figure 1: The Relationship Between Per Capita Income and Tax-GDP Ratio



for food production and export promotion. Thus, it is not included in the model.

Some of the sectors that might fill the tax gaps caused by agriculture's withdrawal are not up to the task. For example, although Tanzania has a very large potential in the mining of gold, gemstones, coa, and base metals, the mining sector is small, contributing on average about 1.5 percent of GDP since 1967. Furthermore, the sector has been receiving substantial exemptions through certificates of incentives by the Tanzania Investment Centre. Other sectors that should have generated a substantial amount of revenues but do not are electricity, water, construction services and public administration, mainly because of the government's involvement in their provision. Consequently these sectors are also not included in the model.

In this view, the sectors of focus in this study are manufacturing; internal trade, hotels and restaurants; transport and communications; and financial and business services. As seen below, these sectors have contributed most of the tax revenues in Tanzania and still stand a better chance if they are tended properly.

Manufacturing

Manufacturing sector has been the major contributor of both direct and indirect tax revenues in Tanzania. Employing many people in labour-intensive activities, the sector has been the main source of individual taxes. The sector also contributes significantly to direct tax revenues through corporation tax and payroll or manpower tax. As for indirect taxation, the sector has been the main source of sales tax (later value added tax - VAT) and excise tax.

The economic situation of the country has been reflected in the level of performance of the sector. From the rapid growth of the sector's share to GDP from 4 to 13 percent following the Early Industrial Strategy of 1961-1971, production stagnated during the Basic Industrial Strategy (1972-1979), leading to the sector's contribution to GDP of between 13.2 percent and 14.0 percent. Thereafter, and in line with the economic crisis of the late 1970s and the 1980s, the value added in the sector decreased rapidly to an average of about 10.5 percent in 1985. Industries were not producing to demand levels, which led to rampant shortages and forced the government

to introduce rationing mechanisms and price controls, which interfered in business activity. With liberalization in 1986 there had been an upturn in industrial performance. For example between 1986 and 1991 manufacturing value added rose to an average of about 3.2 percent per year. During the same period, individual, corporate and manpower tax revenues averaged about 24 percent of the total tax revenue annually. The different recovery programs launched by the government had in a way helped in recovery of the sector from the bad performance of the early 1980s. The 1992-94 period saw a decline in manufacturing output as a result of removal of subsidy (as part of the Civil Service Reform Program implementation), insufficient capital, surmounting debts, inadequate infrastructure services, erratic supplies of electricity, aged plant and machinery, lack of foreign exchange and competition from cheaper imported goods. Consequently, individual, corporate and manpower tax revenues declined to an annual average of 18.1 percent of total tax revenue in this period. The findings of this study would be informative of the nature and behaviour of this sector during the period after 1994, warranting its inclusion in the analysis.

Internal Trade, Hotels and Restaurants

Internal trade, hotels and restaurants constitute the second largest sector in terms of the contribution to the total GDP with an annual average of about 18.9 percent in 1967-2000. Business licenses, VAT on food charges in designated hotels and restaurants and hotel levy have characterized the sector's main taxes. The sector's taxation policy has been very much in favor of stimulating growth in tourism. For example, as of July 1998 tourist hotels were charged a business license of only 50,000 Tanzanian shillings (US$60) per room whereas non-tourist hotels were levied 80,000 (US$100) Tanzanian shillings.

Like the manufacturing sector, the sector was mainly a domain of the government prior to 1986. This led to low output growth as a result of distributional problems such shortage of commodities. Hotel service problems mainly revolved around poor and inadequate hotel and transport facilities. With the 1986 reforms, the sector's growth rate averaged 3.8 percent for the 1987-1991 period. Due to the negative output growth between 1992 and 1993, the government among other things introduced the Tanzania Tourist Board (TTB) at the expense of the Tanzania Tourist Cooperation (TTC). Consequently, there has been a remarkable achievement in the sector as output grew from 1.2 percent in 1994 to 6.5 percent in 2000. The recent increase in GDP growth rate in the trade sector is also a result of the private sector growing participation in providing tourist and distribution services. As a whole, the sector's total tax revenue has benefited more from trade than the hotel sub-sector, as hotel levy contributed annual averages of about 0.8 percent in 1987 - 1991, 0.8 percent in 1992 - 1993, and 0.5 in 1994 - 1999. This leads to questions as to whether the preferential business licenses conferred on tourist hotels is worth maintaining.

Transport and Communication

The sector constitutes road transport, urban passenger transport services, rail transport, civil aviation, marine transport, lake transport, and telecommunication services such as telephones, telex and radio calls. Although taxes related to communication are difficult to trace, the Tanzania's tax system constitutes many taxes related to transport. The following are some of the transport taxes with their respective tax categorization in brackets: shipping tax, transport tax and withholding tax (income tax); motor vehicle transfer tax (taxes on property); motor vehicle registration tax and motor vehicle licenses (consumption taxes); and road tolls (other taxes). Since 1986 road tolls followed by motor vehicle

licenses have been the major sources of tax revenues in the sector.

The sector contributed about 5.3 percent of total GDP between 1967 and 2000. Until the break-up of the East African Community in 1977, Tanzania, Kenya and Uganda shared common services for posts, transport and telecommunications. During 1970-1980, the transport and communication sector accounted for about one-third of fixed capital formation in the economy, and transport equipment about one-third of the economy's investment in equipment. In regard to output, the sector performed well between 1967 and 1971, accounting for an average growth rate of about 11.1 percent per annum. Thereafter, output growth declined to an average of 2.7 percent between 1972 and 1979. After a recovery in 1980, the sector's output further declined at an average of 3.4 percent per annum. Economic reforms necessitated private involvement in the sector and this can partly explain the positive growth rates registered since 1986, which averaged about 4.5 percent per annum between 1986 and 2000. The sector's share in tax revenues from business license is expected to rise given the increased private participation in the sector. It is also interesting to note that between 1986 and 1997 the trend in the share of total tax revenues from motor vehicle transfer tax, motor vehicle licenses, and motor vehicle licenses has been more or less similar to that of the sector's share in GDP (see Figure 2), despite the global trends discussed earlier. From 1997, there have been divergences in the trends partly because of the increasing private involvement particularly in telecommunication.

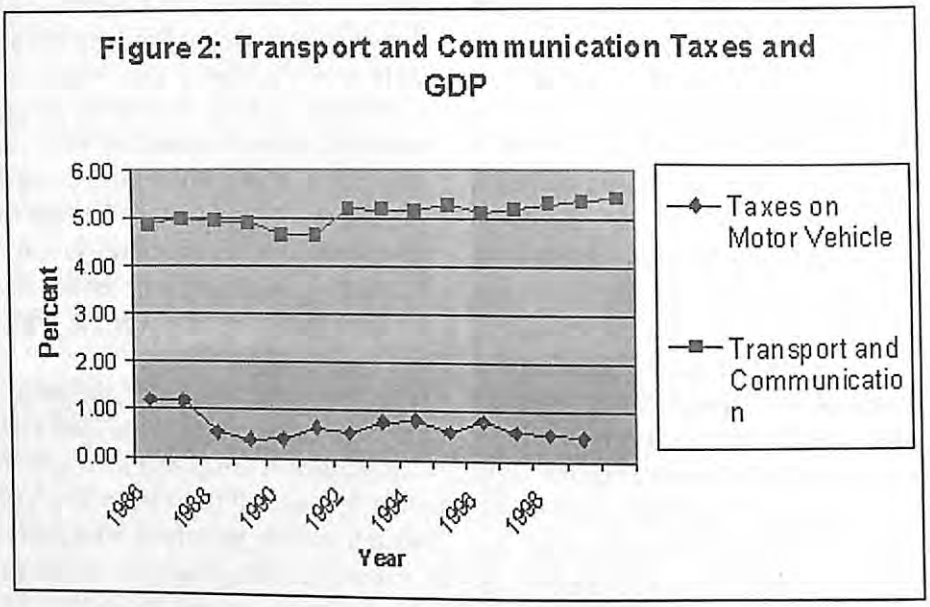
Financial and Business Services

Historically, taxation in the sector has been hampered by public domination in the provision of financial services as well as the upsurge in the small business operations, which are difficult to administer. Public domination in the sector began with the Arusha Declaration of 1967 in which all private commercial banks operating in mainland Tanzania were nationalized and replaced by a new state-owned bank, the National Bank of Commerce (NBC). However, given the recent financial reforms started in 1991 coupled with attempts to bring small businesses into the tax net, the sector is likely to be one of the major contributors of tax revenues in the near future. The sector has a high potential in generating income tax revenues from profit, withholding and corporation taxes.

In terms of performance, the share of financial and business services in the total GDP has been increasing over time since 1967 and has averaged about 5.3 percent during the 1967-2000 period. Since a record growth of 14.4 percent in 1997 the sector has been registering low growth rates of less than 10 percent per annum. In the 1970s, the annual output growth rate ranged from 2.4 percent in 1979 to 5.9 percent in 1979 with a peak of 7.2 percent in 1975. Despite the economic crisis in 1978-1982, the sector registered a relatively high average growth rate of about 5.9 percent per annum between 1978 and 1980. Financial and business services deteriorated in the early 1980s as the sector recorded an average growth rate of about 4.2 percent between 1981 and 1985. Even with the financial reforms of 1991, the sector's output growth could not recover as it resulted into a low average growth rate of about 1.6 percent between 1991 and 1996. Recently the sector has been performing well as a result of the growing private sector involvement in financial and business services. Output has been growing at an average of 6.7 percent per annum between 1997 and 2000.

Openness

The concept of openness encompasses both exports and imports. As noted before, export taxes were abolished in 1983/84 after being in operation since 1969/70 in order to provide incentives for exporters. In this view, taxes on imports have largely characterized the



international trade taxation. International trade taxes include import duties, excise duties and VAT. The taxes are generally levied on the c.i.f. value of imports. It is expected that an increase in imports will result in an increased level of total tax revenue in general and revenues from international trade taxes in particular. As of 1998, the tariff schedule for import duties, which is basically ad valorem, had the rates of 5 or 10 percent for intermediate and capital goods and most other items taxed at the rate of 30 percent. As regards excise duties, the rate by the same year was 30 percent and specific rates were levied on alcoholic beverages, tobacco, and petroleum products. The VAT rate stood at 20 percent.

The trend in the international trade taxation shows that the sector is characterized by decreases in trade tax rates. The latter have posed threats on tax revenue performance since they have not been accompanied by improvement in tax administration and reduction in the scope of exemptions. The increasing dependence on trade taxes has called for measures to broaden the domestic tax base but its implementation faces many challenges. One of the major challenges is that although reduction in the dependence on trade taxes improves resource allocation in the economy in general, it results in allocation inefficiencies within the import-substituting industrial sector. This is attributable to the current tariff structure in which low tariff rates are levied on raw materials and intermediate goods while higher rates are charged on finished goods. The distorted tariff structure leads to extensive use of exemptions to compensate for import tax burden of the finished goods. The use of exemptions has negative implications for the transparency of the tariff structure (IMF, 1999).

A brief overview of the external trade performance shows the share of total exports of goods and non-factor services to GDP to have declined from 21.7 percent of GDP in 1976 to 6.8 percent of GDP in 1985 and to have increased due to economic reforms from 9.6 percent of GDP in 1986 to 24.1 percent of GDP in 1995. The decline in export share between 1976 and 1985 translated itself into the decline of average export tax revenues from 7.0 percent in 1976-1980 to 5.5 percent of the total tax revenues in 1980-1985. Export earning declined from 1995 to 2000 but this did not affect the level of total trade taxes since export taxation was not in operation. The

trend in the share of total imports of goods and non-factor services to GDP averaged 25.9 percent in the 1976-1980 period; 17.2 percent in the 1981-1985 period; and 32.6 percent in the 1986-2000 period. The 1986-2000 imports situation shows that trade liberalization, which included, among others, the reduction of import controls through e.g., the Own-Fund-Import scheme and the devaluation of the shilling raised the level of imports. For example, the 'retention' and 'own' funds schemes for privately financing imports are estimated to have brought in US$250 million between 1984 and 1990. Trends in exports and imports of goods and non-factor services suggest that imports were largely responsible for the worsening of the current account balance particularly during 1986-2000.

Economic Policy

Economic policies in place determine the performance of each sector, and this in turn determines the level and performance of tax revenue collection. We discuss two of these policies here: inflation and the real exchange rate.

Inflation

In theory, the effect of inflation on tax revenue can be registered through three main channels. First, according to the Tanzi-Olivera effect, in an inflationary environment when actual tax payments lag behind the transactions to be taxed, tax obligations are lower in real terms at the time of tax payments (Tanzi, 1977). Second, excise duties on a number of products may be levied at specific rates that may not necessarily be adjusted in line with inflation. Finally, high inflation rates have a potential to reduce the tax base because in order to protect the real value of their wealth, economic agents make portfolio adjustments in favor of assets that typically escape the domestic tax net (see Ghura, 1998). In an environment where inflation may not be too big, the Tanzi-Olivera effect may not be observed. In addition, the negative relationship between inflation and tax revenue can be violated if the tax system is characterized by frequent changes in tax rates or if the trend in inflation has not been high enough to lead to significant portfolio adjustments. This ambiguity warrants an inclusion of inflation in the model.

Real Effective Exchange Rate (REER)

Theory also establishes a close link between real effective exchange rate and tax revenue performance. Whereas real effective exchange rate appreciation reduces the competitiveness of exports by making them expensive in international market, it makes imports cheaper. Thus, an appreciation of the real effective exchange rate may result in high level of imports and an increase in the level of revenue from international trade taxes, and the opposite is true.

The trend in real effective exchange rate (REER) in Tanzania shows that it has been depreciating at an average annual rate of 1.9 percent between 1971 and 1979. However, macroeconomic instability caused mainly by the economic crisis in the late 1970s and early 1980s resulted into its appreciation during 1980-1985 with an average annual rate of 13.1 percent. The reversed trend in REER began in 1986 when the country embarked in major economic reforms. The reforms resulted in REER depreciation, which averaged at an annual rate of 28.2 percent between 1986 and 1992. Despite the macroeconomic stability reflected by the declining trend in inflation, still the rate of depreciation of the nominal exchange remained low (12.6 percent) compared to the inflation (22.8). As a result, REER appreciated between 1993 and 1998 at an average annual rate of 6.8 percent from the index level of 99.1 in 1993 to 65.1 in 1998. The recent depreciation of REER shows the reversed situation where average inflation between 1999 and 2000 has been 6.9 percent compared to the nominal exchange rate average depreciation of 10.8 percent in the same period. Given the fact that import duties count more than export taxes

(which have been discouraged), and given the fact that REER has been depreciating, one would expect import taxes to decrease with the fall in the level of imports.

External Environment

External environment has a strong influence in tax administration efforts in mobilizing tax revenues. We focus here on the trends of foreign aid, external debt and terms of trade.

The relationship between tax revenue and foreign aid inflows can take either direction. On one hand, when tax administration views aid inflows as substitute to tax revenue mobilization efforts, tax collection effort decreases. The same applies if the collected taxes are used for non-productive expenditures. On the other hand, when foreign aid is viewed as complementary to tax collection efforts and the administration views this aid as something that needs to be repaid, tax collection efforts are increased. In addition to this, if aid is used in productive activities, the multiplier effect will generate more employment, which will lead to more tax revenues.

External debt is another external factor that may affect tax revenue performance. When a country has a high external debt (e.g. Tanzania[2]), it is faced with capital flight and reduced foreign investment, both of which lead to lower tax revenue levels. In addition, servicing such a huge debt has a potential to reduce the expenditure in key economic areas, leading to further fall in tax revenue collection. In the specific case of Tanzania, the high debt to GDP ratio and high debt service costs led the country into adhering to the conditions given for countries to benefit from the Paris Club initiative. Under this arrangement, Tanzania government benefited from debt cancellation of US$523.8 million and debt rescheduling of US$3,537 million.

In June 1999, the Group of Seven rich countries in the world (G-7) adopted a new initiative in debt relief for highly indebted poor countries, namely Enhanced Highly Indebted Poor Countries Initiative (HIPC). The World Bank and IMF endorsed the initiative in September 1999. The Paris Club donor community and other donors will therefore grant debt relief based on the fulfillment of HIPC conditions. Tanzania reached the decision point under Enhanced HIPC Initiative on April 4th 2000 when the IMF and the World Bank endorsed Tanzania's request. The initiative is expected to complement Tanzania's effort towards reducing poverty and stimulating economic growth. According to the Poverty Reduction Strategy Paper (PRSP) progress report 2000/1, the conditions for the HIPC completion point have all been implemented with the exception of the privatization of the Dar es Salaam Water and Sewage Authority (DAWASA). It is noteworthy that the recent decrease of external debt reflects the government efforts since 1996 in putting in place appropriate macro economic policies which include among others, government expenditure control and strengthening revenue collection where part of the revenue was used to service the external debt.

Theory states that increasing terms of trade increase taxable income, and consequently, tax revenues. The opposite holds when a country faces declining terms of trade of its main products.

In the period 1970-1976, Tanzania's terms of trade were relatively high, averaging about 127.4 per year (at 1992 prices standardize to 100). The terms of trade reached their peak of 139.3 in 1977 during the coffee boom and thereafter started declining. In 1978-1982, the loss of income purely on account of terms of trade movements amounted to 12 percent of GDP. Furthermore, the oil import bill, as a proportion of total export earnings, rose sharply from 26 percent in 1978 to 56 percent in 1982, with quantities remaining fairly constant. Since the mid-1970s Tanzania has traded in an environment of escalating world

[2] For example, between 1983 and 1996, Tanzania's debt to GDP ratio averaged about 132.5 percent per year.

prices for oil and manufactured goods, while simultaneously incurring low prices for agricultural exports whose dominance in the total export accounts for more than 50 percent. The general trend from 1978 to 1998 shows that the terms of trade have been declining at an annual average of 1.9 percent.

ANALYTICAL FRAMEWORK

Model Development

According to Heller (1975), the utility function of a public decision maker is given by:

$U = U(Y - T, G, D, F + L)$ .....(1)

U_{Y-T} and $U_G > 0$,

U_D and $U_{F+L} < 0$ if D and F+L>0, and

U_D and $U_{F+L} > 0$ if D and F+L<0.

Where:

i) Y-T equals to private sector's disposable income (Y) minus tax revenue (T));
ii) D is net domestic government borrowing;
iii) G is total government expenditure; and
iv) F+L is net foreign financing, consisting of grants (F) and loans (L), including accumulation or decumulation of external arrears net of amortization. The variables D and (F+L) can take either positive or negative values and the variables in the utility function are in real per capita terms.

Heller (1975) proceeds by defining the budget constraint faced by the decision maker:

$T+F+L+D=G$.....(2)

Leuthold's (1991) applied tax model assumes that the actual tax revenue to GDP ratio (T/Y) is a function of the desired tax revenue-GDP ratio (T/Y)* and the availability of certain tax bases (B), the status of economic policies (P) and the level of corruption (C). That is,

$T/Y = f((T/Y)^*, B, P, C)$.....(3)

The present study includes the level of external environment as per Ghura (1998) but differs from it by excluding the level of corruption (C) and by incorporating institutional changes (A). Therefore, the model looks as follows:

$T/Y = f((T/Y)^*, B, P, X, A)$.....(4)

Where X is the level of external environment.

By maximizing equation (1) subject to equation (2) we can determine the level of the desired tax revenue. Following Heller (1975) and Ghura (1998), the utility function assumes a quadratic form in order to capture the negative and positive values for the variables D and F+L. That is:

$$U = a_1(Y-T-Y_s) - \frac{a_2}{2}(Y-T-Y_s)^2 + a_3(G-G_s) - \frac{a_4}{2}(G-G_s)^2 - a_5 D - \frac{a_6}{2}D^2 -$$

$$a_7(F+L) - a_8(F+L)^2 \quad \ldots\ldots(5)$$

Where Y_S and G_S are subsistence levels of income and government expenditures respectively.

If it is assumed, following Leuthold (1991) that Ys and Gs are linear functions of income then we have:

$G_S = g_0 + g_1 Y$,.....(6a)

$Y_S = y_0 + y_1 Y$.....(6b)

By maximizing equation (1) with respect to T, G, and D, subject to the constraint - Equation (2), yields:

$$\left(\frac{T}{Y}\right)^* = \left(\frac{\alpha + a_4 g_0 - \beta y_0}{\beta + a_4}\right)\left(\frac{1}{Y}\right) - \left(\frac{a_4}{\beta + a_4}\right)\left(\frac{F+L}{Y}\right) + \left(\frac{a_4 g_1 - \beta y_1}{\beta + a_4}\right) \quad \ldots\ldots(7)$$

where $\alpha = (-a_1 - a_3 + a_1 a_4/a_6 + a_4 a_5/a_6)$, $\beta = a_2(a_4 + a_6)/a_6$ and 1/Y is the inverse of per capita

income according to Ghura (1998). The coefficient of 1/Y can be either negative or positive whereas the coefficient of (F+L)/Y is negative. Combining Equation (7) and equation (4) yields:

T/Y = f(1/Y, (F+L)/Y, B, P, X, A).....(8)

the determinants of individual tax revenues, i.e., income tax, sales tax, and import and excise duties. This disaggregation is important as it facilitates policy-making decisions.

The models also include 6 changes in the tax administration since 1973, which is important as it highlights the impact of these changes on the level of tax revenue collections. The study would be more enriched if it were possible to estimate the impact of tax exemptions on tax revenue collection, changes in tax rates, and sectoral linkages. However, lack of data makes this endeavour impossible to execute. The models are specified as follows and are estimated using STATA econometrics package:

Model 1

$$ttaxr = \alpha_0 + \alpha_1 lpacpm92 + \alpha_2 manfs + \alpha_3 trads + \alpha_4 transs + \alpha_5 fbs + \alpha_6 open + \alpha_7 infl + \alpha_8 reerg + \alpha_9 grant + \alpha_{10} dtedr + \alpha_{11} totg + \alpha_i Dummy_m \quad (9)$$

Model 2

$$ytaxr = \beta_0 + \beta_1 lpacpm92 + \beta_2 manfs + \beta_3 trads + \beta_4 transs + \beta_5 fbs + \beta_6 open + \beta_7 infl + \beta_8 reerg + \beta_9 grant + \beta_{10} dtedr + \beta_{11} totg + \beta_j Dummy_m \quad (10)$$

Model 3

$$staxr = \chi_0 + \chi_1 lpacpm92 + \chi_2 manfs + \chi_3 open + \chi_4 infl + \chi_5 reerg + \chi_6 grant + \chi_7 dtedr + \chi_8 totg + \chi_k Dummy_m \quad (11)$$

Model 4

$$cetaxr = \delta_0 + \delta_1 lpacpm92 + \delta_2 transs + \delta_3 imp + \delta_4 open + \delta_5 infl + \delta_6 reerg + \delta_7 grant + \delta_8 dtedr + \delta_9 totg + \delta_l Dummy_m \quad (12)$$

Where:

i) ttaxr is the total tax revenue-GDP ratio.
ii) ytaxr is the income tax revenue-GDP ratio.
iii) staxr is the sales tax revenue-GDP ratio.
iv) cetaxr is the customs and excise duty revenue-GDP ratio.
v) lpacpm92 is the logarithm of per capita GDP at 1992 prices.
vi) manfs is the share of manufacturing output to GDP.
vii) trads is the share of trade, hotels and restaurants to GDP.
viii) transs is the share of transport and communication to GDP.
ix) fbs is the share of financial and business services to GDP.
x) open is the sum of exports and imports, i.e., openness.
xi) imp is imports.
xii) infl is inflation.

xiii) reerg is real effective exchange rate growth
xiv) grant is grants to GDP ratio
xv) dtedr is the annual change of the total external debt to GDP ratio
xvi) totg is the growth in the terms of trade, and
xvii) Dummym are the dummy variables for the 1986 economic reforms and various tax administration changes. They take values of 1 in the years after economic or tax administration changes and 0 otherwise. The subscript m ranges from 1 to 6 reflecting 6 changes in the economy and tax administration: break-up of EAC in 1977 (Dummy1), establishment of Customs and Sales department in 1982 (Dummy2), the introduction of economic reforms in 1986 (Dummy3), the establishment of tax commission in 1988 (Dummy4), the break-up of Customs and Sales department in 1993 (Dummy5), and the establishment of TRA in 1996 (Dummy6).

The elements of the country's tax base are captured by lpacpm92, manfs, trads, transs, fbs, and open whereas the effect of macroeconomic policy is captured by infl and reerg. In addition, the external environment is captured by grant, dtedr and totg while Dummym capture institutional changes.

Hypotheses

Following the theory on the determinants of tax revenue and taking into account the specific situation in Tanzania, this paper hypothesizes that:

- Per capita income increase and the sectoral value added are positively related to tax revenue.
- The relationship between inflation and tax revenue is negative if the theories presented in section 3.2.1 hold, positive otherwise.
- The overall effect of real effective exchange rate depreciation on tax revenue is expected to be negative.
- External financing has a negative effect on the domestic tax revenue-GDP ratio.
- There is an ambiguous relationship between the terms of trade and tax revenue-GDP ratio.
- Democratization has an ambiguous relationship with tax revenue performance.

Data

The data set consists of the longest available run of annual observations for Tanzania from 1972 to 1999. As a result, the regression analysis consisted of 27 observations. Tax to GDP ratio has been calculated using GDP at market price. For the sake of consistency, the same applied in the computation of the contributions of the economic sectors to GDP as well as the per capita GDP. Since the information obtained for tax revenue was in fiscal years, linear interpolation method was used to convert all calendar year values into fiscal year estimates. The method was therefore used in computation of sectors' GDP, exports and imports, inflation, real effective exchange rate, total external debt and terms of trade. The data that have been used in the analysis were obtained from various publications, including the Central Bank of Tanzania's Economic and Operations Reports and Economic Bulletins, International Monetary Fund's International Financial Statistics, Tanzania's Bureau of Statistics' National Accounts of Tanzania, Statistical Abstracts and Selected Statistical Series, and the Tanzania Planning Commission's Economic Surveys.

RESULTS

Univariate Data Analysis

Table 1 presents all the variables with means that lie close to the respective medians suggesting normality. Since the data are in time series, stationarity test was conducted for each of the variables in order to avoid spurious regression results when a variable is not stationary. The Augmented Dickey Fuller (ADF) test was employed in the stationarity test and the nature of the ADF equation included two lags for each of the variables, a constant term and a trend

variable. The variables that exhibited non-stationarity were subjected to differencing until stationarity was achieved. The critical value for stationarity test at 5 percent was 3.6 and before differencing with the exception of *trads* and *infl*, all the variables were found to be stationary. These were included in the model after they became stationary following single differencing.

Regression Analysis Results

Equations 9 through 12 were all estimated using Ordinary Least Squares (OLS) technique but Cochrane-Orcutt iteration method was additionally used to correct for autocorrelation, particularly in Equations 9, 10 and 11. The results of the models are presented in Table 2.

Model 1

In model 1, the constant term has a very big coefficient, which econometrically implies that there are many omitted variables in determining the performance of total tax revenue in Tanzania. This explanation augurs well with the well-known fact that the tax base in Tanzania is too narrow to generate substantial tax revenue. The relationship between per capita income and total tax revenue -GDP ratio (TTRGR) is negatively significant, rejecting the hypothesis that tax revenues grow with per capita income.

The relationship between TTRGR and sectoral growths is mixed. For example, manufacturing sector's growth is positively related to TTRGR and significant, implying that as the sector expands, more tax revenues will be collected.

Table 1: *Univariate Data Analysis for the Variables Used in the Regression*

Variable	Observations	Mean	Median	Standard Deviation.	Minimum	Maximum	Stationarity Test (Critical Value at 5% is -3.6)		
							Nature of ADF Equation (all have constant and trend)	Test Statistic	Inference
Ttaxr	27	14.34	15.20	3.31	9.50	19.50	lag(2), 24 obs	-2.18	Stationary
Ytaxr	27	4.10	4.60	1.17	2.60	6.10	lag(2), 24 obs	-1.96	Stationary
Staxr	27	5.73	5.80	2.62	2.10	10.40	lag(2), 24 obs	-1.36	Stationary
Cetaxr	27	2.86	2.9	1.42	1.10	5.90	lag(2), 24 obs	-2.27	Stationary
lpacpm92	27	10.91	10.90	0.04	10.84	10.98	lag(2), 24 obs	-1.51	Stationary
Manfs	27	9.48	8.30	2.02	7.30	12.60	lag(2), 24 obs	-1.08	Stationary
Trads	27	16.71	15.70	2.33	14.40	21.40	lag(2), 23 obs	-3.58	Stationary
Transs	27	4.93	4.80	0.46	4.20	5.70	lag(2), 24 obs	-0.89	Stationary
Fbs	27	4.98	5.00	0.41	4.30	5.60	lag(2), 24 obs	-0.95	Stationary
Open	27	33.68	35.50	9.55	16.80	48.90	lag(2), 24 obs	-1.97	Stationary
Infl	27	23.63	25.30	8.38	9.10	34.70	Lag(2), 23 obs	-3.21	Stationary
Reerg	27	3.22	-0.67	18.61	-20.00	69.93	Lag(2), 24 obs	-2.03	Stationary
Grant	27	2.47	2.40	0.84	0.80	3.80	Lag(2), 24 obs	-2.65	Stationary
Dtedr	27	0.10	0.40	11.03	-24.10	18.20	Lag(2), 24 obs	-2.34	Stationary
Totg	27	-1.49	-1.89	4.13	-9.19	9.25	Lag(2), 24 obs	-2.66	Stationary

Note: The number of observations in column 2 refers to columns 3-6 whereas with the nature of ADF equation (column 7), obs means "number of observations" and for all series with 23 observations stationarity was attained after differencing the respective variable once.

Table 2: *Regression Results from Models of Tax Revenue to GDP Ratio*

	Model 1 - ttaxr	**Model 2 - ytaxr**	**Model 3 - staxr**	**Model 4 – cetaxr**
Constant (_intercept)	401.0089** (43.6425)	1.7192** (0.4595)	9.5479** (0.8641)	-144.0399* (69.1528)
Lpacpm92	-35.9809** (4.1153)	-	-	14.7607* (6.5944)
Manfs	2.2156** (0.0927)	0.1685** (0.0578)	-0.2692* (0.1287)	-
Trads	-	-	-	-
Transs	-3.2218** (0.4658)	-	-	-3.3245** (0.8162)
Fbs	-	-	-	-
Open	-	-	-0.1395** (0.0176)	0.3380** (0.0874)
Imp	-	-	-	-0.2990* (0.1098)
D.infl	-	0.0536** (0.0143)	0.0930** (0.0284)	-
Reerg	-0.0450** (0.0053)	-	-	0.0138* (0.0064)
Grant	-0.8892** (0.1411)	-	-	-
Dtedr	-	-0.0143* (0.0060)	-	-
Totg	-	-	-0.1482** (0.0387)	-
Dummy1	1.1317** (0.3784)	-	1.5610** (0.4533)	-
Dummy3	-	-1.6197** (0.2199)	-4.0382** (0.4600)	-
Dummy5	-	-	-	-
Dummy6	-	-	1.2362** (0.2826)	-
Number of Observation	26	25	25	27
F-Statistic	F(6,19)=263.97 Prob>F=0.0000	F(4,20)=83.06 Prob>F=0.0000	F(7,17)=113.43 Prob>F=0.0000	F(6,20)=10.23 Prob>F=0.0000
R-squared	0.9881	0.9432	0.9790	0.7543
Adj. R-squared	0.9844	0.9319	0.9704	0.6806
Cochrane-Orcutt used?	Yes	Yes	Yes	No
D-W statistic (original/transformed)	2.6267	1.8114	2.2141	1.8950

** and * mean statistically significant at 1% and 5% respectively. Figures in brackets are standard errors

The relationship between TTRGR and the share of transport and communication to GDP is negative and statistically significant. This implies that as the sector expands, the ratio of taxes it generates (as a percentage of total tax revenues) declines; it may further mean that either the sector is growing faster than tax administration can catch up with tax collection, or there are massive tax evasions in the sector.

The model also shows that trade, hotels and restaurants (trads) and financial and business services (fbs) sectors did not significantly determine total tax revenue performance in Tanzania. The same is true for openness, import, inflation (implying that the Tanzi-Olivera effect and other theories in 3.2.1 do not hold), annual change of total external debt to GDP ratio, and the growth in the terms of trade. For clarity, coefficients and the corresponding standard errors of these variables have been omitted in Table 2.

There is a negative relationship between grants and TTRGR, suggesting substitution between domestic tax revenue mobilization and the availability of external grants. This is also indicative of the fact that countries with lower tax revenue-GDP ratios have been recipients of larger amounts of grants.

The effect of policy changes on the total tax revenue performance is mixed: the break-up of East African Community in 1977 and the establishment of TRA in 1996 are shown to be positively related to TTRGR, while the establishment of Customs and Sales Department in 1982, the introduction of economic reforms in 1986, the establishment of Tax Commission in 1988 and the break-up of Customs and Sales Department in 1993 do not significantly determine tax revenue collections.

Tanzania has been fairly democratic, even under a single party system. The introduction of multi-party politics in 1992 does not seem to have decreased the level of total tax revenue-GDP ratio, as the insignificance of the coefficient of dummy 5 (post-1993) indicates. Partly, this reflects the weakness of opposition parties, whose weakness has assured the ruling party of a continued stay in power and therefore little fear in its government using coercive means to collect taxes. But it may also be the case that with democratization people are more aware that their taxes are not used as they should, increase tax evasion, and when these two forces are combined, the net effect is insignificant.

Model 2

Model 2, which is disaggregated and uses the income tax revenue-GDP ratio (ITRGR) as a dependent variable instead of TTRGR, indicates that the relationship between ITRGR and the logarithm of per capita income is insignificant, implying that the growth of per capita income is not reflected in total tax revenue collection. The main explanation of this result may partly be the increased dependence on tax revenues from international trade and the dominant but non-taxed agricultural share in the economy over time. Given agricultural dominance in the economy, and the fact that the sector has been growing but its taxation has been declining, this is a plausible result.

Just like in model 1, the growth of manufacturing sector is positively related to ITRGR, once again failing to reject the null hypothesis and highlighting the importance of this sector in income tax revenue levels for Tanzania. However, the share of transport and communication to GDP (transs) does not have a significant impact on ITRGR, and this is also true for the share of trade, hotels and restaurants to GDP (trads) and the share of financial and business services to GDP (fbs). As for these sectors, the null hypothesis is rejected. The coefficients on imports and openness are also insignificant.

Inflation is shown to be significant and positively related to ITRGR, implying that either the Tanzi-Olivera effect does not work for income tax in Tanzania, or the inflation has not grown too fast. Since inflation has generally been high during

the study period with an exception of a few recent years, the first possibility is probably more realistic.

The annual change of total external debt to GDP ratio is negatively related to ITRGR, implying that over the study period, income taxes have not been growing as fast as external debt. This could be interpreted as follows: If an economy is growing in large part due to outside resources injection (i.e., external debt), it is likely that these outside resources do not create sufficient employment in the country to warrant a match between the growth of these resources (external debt) and income taxes. Indeed, this makes sense when one examines Tanzanian economy. With privatization, workers retrenchment has led to fewer people paying income taxes as many of the retrenched join the agricultural and informal sectors. This means a fall in the share of income tax to GDP. This period has coincided with Tanzania borrowing more from outside.

All dummies except one are shown to be insignificant. The exception is the dummy on the introduction of economic reforms in 1986, which is negative and significant, implying that income tax-GDP ratio has decreased after the introduction of reforms. This finding further reinforces the argument presented in the paragraph above.

Model 3

This model uses the sales tax revenue-GDP ratio (staxr) as a regressand against the same regressors used in the previous two models. The coefficient on the constant term is significantly large, suggesting an omission of important regressors. Per capita income growth has no significant impact on staxr, which makes sense since sales taxes are mainly collected from domestic production and are not dependent on people's incomes.

The model also shows that as manufacturing increases, staxr decreases, which is a means that the null hypothesis of a positive relationship between sectoral growth and tax revenue collection is rejected. Possible reasons for this result could be model misspecification (notice the omission factor), sales tax evasion, or the emerging trend in the country where more and more manufacturing factories are turning themselves into storage (rather than manufacturers) of goods from other countries.

The effect of openness (globalization) on staxr is negative and statistically significant, failing to reject the null hypothesis. This means that unless Tanzania increases its competitiveness in production, participation in global trade will lead to more dependence on imports and this will continue denying the country the sales tax that were to increase if domestic production were high.

As in model 2, staxr is positively related to inflation, suggesting once more the inapplicability of the theories in 3.2.1 when sales taxes are on the focus.

Another significant finding of this model is that the growth in the terms of trade is negatively related to staxr, which makes sense considering that the declining terms of trade have made Tanzania more dependent on imports than domestic production, leading to lower sales tax revenue levels.

This model also shows that sales taxes have been impacted by more policies than any other form of tax. The break-up of EAC in 1977 (dummy 1) and the establishment of TRA in 1996 (dummy 6) are positively related to starx; the introduction of economic reforms in 1986 (dummy 3) posits a negative relationship. It can be argued that the increase in staxr when TRA was established reflects more seriousness by the government to collect taxes than a significant increase in domestic production; this being so because the TRA was established with economic reforms (which are negatively related to staxr) in place. The establishment of Customs and Sales Tax Department in 1982 did not have an impact on staxr (probably suggesting why the department was later divided, although even after this division

in 1993 no significant impact was felt [dummy 5]). The political reforms dummy is equally insignificant.

Model 4

In this model, customs and excise taxes were regressed against the usual regressors.
The model exhibits a positive and significant relationship between per capita income and cetaxr, implying that demand for imports increases with a rise in per capita income, leading to higher customs and excise tax collections. This is in line with both theory and the hypothesis in Section 4.3.

No relationship was observed between cetaxr and the share of manufacturing in GDP (manf) and the share of trade, hotel and restaurant in GDP (trads). We would expect a significant relationship between trads and cetaxr owing to the country's heavy reliance on external trade, but probably this is dampened by tax holidays given as incentives to the hotel industry developers.

The real effective exchange rate growth (reerg) is positively related to cetarx; the null hypothesis is rejected. That is, although depreciation of REER is expected to lead to more expensive imports, more imports have actually been recorded in Tanzania.

Inflation did not affect cetaxr for reasons already explained. Of greater significance is the fact that none of the 6 policy changes adopted during the period led to a significant change in cetaxr, implying that the level of international trade (which determine the level of cetaxr) in Tanzania is determined by factors other than the instituted policies.

CONCLUSION

This paper has estimated the determinants of tax revenue in Tanzania and identified the response of tax revenue levels to sectoral growth and institutionalisation of various economic policies. It has been established that manufacturing is the only sector that responds unambiguously to total tax and income tax collections as it grows, although sales tax responds negatively to the sector's value-added output and customs and excise duties are indifferent to its value-added output. It is further noted that transport and communication; trade, hotel and restaurant; and financial business sectors have generally failed to explain tax revenue collection in Tanzania, which is indicative of either informality of these sectors, undeveloped tax base, an existence of rampant tax evasion, or any combination of above factors. That Tanzania's receipt of grants and loans has discouraged domestic tax collection efforts has also been underscored. The paper also indicates that a depreciation of the real effective exchange rate has increased the level of import duties, implying that REER depreciation is not a measure against high import levels, contrary to theory. On the effect of democracy on tax revenues, it is shown that the introduction of multi-party politics in the country has had no impact on the performance of tax revenue collection. Finally, the adopted tax policies have had a more significant impact on sales tax as opposed to other types of taxes.

In view of these findings, the following policy recommendations can be made:

- In order to raise the tax revenue-GDP ratio, Tanzania should direct more investments to the manufacturing sector.
- There is a need to expand Tanzania's tax base. For example, most of tax collections are undertaken in Dar es Salaam and a few urban centers. The success that TRA has recorded in its short span of time would be enhanced if the rigour exercised in Dar es Salaam is extended to all regions. An extra challenge to the government is to fight against tax evasion, which partly explains why some of the study's hypotheses were rejected.
- More effort by tax authorities is needed to reach informal activities in the transport and

communication sector. Given high costs of tax administration, this should be implemented alongside the formalization of the sector.

- There is a need to reform further the trade, hotel and restaurant sector, which is formalized but does not seem to contribute to tax revenue collection, as it should. In particular, it is worth reconsidering tax holidays given to major hotel developers and determine whether the policy serves the interests of the nation.
- There is a need to design ways to actively and gainfully participate in global trade. Tanzania needs to be able to increase its capacity to produce efficiently in the domestic economy and trade competitively in the international market. This will increase sales taxes and reduce import duties, as the country will rely less on imports.
- Effort should be exerted to reduce the possibility of Tanzania's tax system suffering from the Dutch Disease that is engendered by the country's excessive dependence on foreign aid.
- Effort should continue to be exerted to pin down inflation, as this minimizes the negative effects the latter has on tax revenue performance.
- For depreciation of REER to reduce the level of imports, there has to be an increase in domestic production, especially of the essential goods. For example, if demand for clothing is high and domestic textile factories are not operative, a depreciating REER will have dismal success, if any, in reducing cloth imports.
- Finally, economic reforms/policies are vital for the improvement of tax revenue performance but they are not a sine qua non factor; they are to be matched with proper tax administration and economic growth.

Limitations

At its present state, this study faces the following limitations: First, no comparison has been made between the findings of this study and those of other studies on the similar topic covering Tanzania. This was mainly because such studies could not be obtained at the time of writing this study. Secondly, the range of data is short (only 24 observations). For time series studies, such a short period is likely to penalize the degrees of freedom, and, consequently, policy inferences. More importantly, the analysis of different policy changes is based on very short periods of time (others as short as 3 years), which cannot be relied upon to give a conclusive picture about the impact of such policies on tax performance. Further shortcoming may be related to model specification in that there is evidence of omitted variables in the estimation. Indeed, even the constant term on the main model (model 1) supports this view. Despite these shortcomings, it is hoped that the findings presented in this study will present a somewhat representative picture of the determinants of tax revenue performance in the country and what should be done to improve it.

Appendix A: *Central Government Finance*

	FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Total Revenue	20831	31098	46431	71790	94700	133238	173566	164110	242447	331280	448339	572030	619084	700394
Tax revenue	19661	29184	42557	63085	81516	118257	153356	146420	220359	299940	393752	505355	568123	627362
Income taxes	6176	7018	10878	16601	20195	32413	40143	45455	58505	86884	112261	133182	149787	163938
Individual/1	2211	2327	2902	3456	3947	4600	6832	10736	13223	27094	32383	47476	47821	55202
Company	3830	4286	7457	12266	15418	9829	9412	14332	38400	43044	51290	54690	54680	69933
Other	135	405	519	879	830	17984	23899	20387	6882	16546	28588	31016	47286	38803
Payroll or manpower taxes	200	320	441	577	807	975	1690	2149	2515	4858	6874	8922	10586	11806
Payroll tax	181	291	405	534	737	872	1584	1748	2308	4377	6122	8515	10586	11806
Training levy	19	29	36	43	70	103	106	401	207	481	752	407	0	0
Property taxes	100	107	116	140	188	317	345	494	891	1009	862	553	572	505
Land rent	62	67	74	97	113	194	183	269	294	367	368	0	0	0
Estate duty	2	2	2	6	33	4	12	9	12	13	16	6	14	0
Motor vehicle transfer tax	36	38	40	37	42	119	150	216	585	609	480	547	558	505
Consumption taxes on goods & services (local)	9736	13090	18087	26059	32955	47225	60385	49407	74455	76847	111358	137300	143143	178859
Local sales taxes/VAT	9288	12576	17429	25124	20124	28813	31045	28198	43730	51272	60668	60668	61736	115580
Excise taxes	..	..	..	..	11474	16375	26839	17919	26858	21372	43983	66593	78783	57797
Entertainment tax	32	29	38	50	47	55	42	19	24	1	0	0	0	0
Business licenses	85	19	62	109	185	380	479	738	766	886	1412	1985	0	2812
Other licenses	21	17	51	59	60	168	208	253	115	38	64	65	11	36
Motor vehicle licenses	189	295	168	191	266	557	629	707	810	477	1377	949	1221	1040
Motor vehicle registration	8	9	19	23	22	81	72	211	407	694	1219	1457	1368	1584
Hotel levy	113	145	320	503	777	988	1073	1364	1945	2107	2635	3583	24	8
Tax on international transactions	2837	7808	11008	16467	23110	31768	39617	31637	50230	91249	121242	163079	185699	218994
Import duties	1468	4020	5588	8478	11930	17321	21103	16288	28404	..	61271	78374	82047	88052
Sales tax on imports	1345	3519	5327	7841	8447	10388	13817	12929	19525	..	33829	54909	76445	105510
Excise tax on imports	..	..	..	..	2583	3797	3997	2420	2301	..	28142	29798	22466	25390
Export duties	..	..	..	..	..	..	..	..	..	..	..	..	4741	42
Foreign travel levy	24	69	93	148	150	284	0	0	0	0	0	0	0	0
Other taxes	612	1041	2029	3241	4281	5559	12176	17278	33763	39293	31155	62319	76336	53250
of which : Stamp duty	545	948	2198	5799	3027	3973	6195	8201	11348	14175	18176	30578	32928	11332
Non tax revenue	1170	1914	3874	6705	13184	14981	20210	17690	22088	31340	64587	66875	52961	73042
Dividends/2	441	957	2198	5799	8990	9490	9338	7406	6725	7624	15243	18376	5512	15489
Other/3	729	957	1676	2806	4194	5491	10872	10284	15363	23716	49344	48299	47449	57553

Note: Delailed items for some fiscal years are unavailable. Thus, for example, sales tax on imports, excise tax on imports, import duties, payroll or manpower and property taxes could be included in income tax.

1/ Includes single trade transaction tax.

2/ Includes dividends by the Bank of Tanzania

3/ Includes collections by Treasury, other ministries and regions, and appropriations-in-aid.

Source: Tanzania Authorities.

Appendix B: *Aggregate and Individual Tax Revenues, 1967 – 2001*

	Total Tax Revenue	Income Tax Revenue	Export Tax Revenue	Custom and Excise Tax Revenue	Sales Tax Revenue	Other Tax Revenue	GDP at current price at market price
1967/68	970.1	270.6	-	471.1	-	228.4	7608.5
1968/69	1150.2	336.7	-	559.2	-	254.3	8072.5
1969/70	1153.0	344.7	47.0	530.8	169.0	61.5	8722.5
1970/71	1322.0	442.4	55.0	549.4	217.4	57.8	9494.0
1971/72	1507.0	526.8	45.0	562.4	218.6	154.2	10493.0
1972/73	1993.0	593.3	88.0	654.3	451.6	205.8	12137.5
1973/74	2510.0	692.9	216.0	825.7	736.8	38.6	14548.5
1974/75	3165.0	1025.0	223.0	528.0	1421.4	-	17502.5
1975/76	3302.0	1011.0	156.0	525.0	1593.0	17.0	21715.0
1976/77	5205.0	1377.0	839.0	508.7	1554.0	926.3	26643.5
1977/78	5333.0	1618.8	548.0	1275.9	1845.9	44.4	30518.5
1978/79	5630.0	1877.8	448.0	1010.1	2489.6	-	34226.0
1979/80	6788.0	2406.8	466.0	811.0	2930.1	174.1	39200.5
1980/81	7908.2	2650.8	215.0	834.0	3950.7	257.7	45610.0
1981/82	8502.0	2600.0	29.0	640.0	5214.0	19.0	55514.5
1982/83	12529.3	3022.0	19.0	840.0	6133.0	2515.3	65224.5
1983/84	13397.9	4000.0	12.0	870.0	7650.0	865.9	76957.0
1984/85	18482.5	4680.0	-	1650.0	10310.0	1842.5	98802.5
1985/86	21781.8	6175.5	-	1468.4	10633.7	3504.2	130802.0
1986/87	27406.6	7017.7	-	4019.7	16094.0	275.2	238938.5
1987/88	42556.7	10897.7	-	5585.6	22745.1	3328.3	417956.0
1988/89	63083.1	16610.7	-	8478.2	33237.5	4756.7	570089.0
1989/90	81471.0	20195.0	-	25987.0	28571.0	6718.0	732222.5
1990/91	118257.0	32413.0	-	56320.0	20171.6	9352.4	958483.0
1991/92	153356.0	40143.2	-	51639.0	44862.2	16711.6	1228074.0
1992/93	146420.0	45455.0	-	36706.0	41047.7	23211.3	1547704.5
1993/94	220458.0	58505.0	-	57363.0	63254.0	41336.0	2012201.0
1994/95	299899.0	86645.0	-	91248.0	72643.0	49363.0	2659683.0
1995/96	383744.0	103870.7	-	131396.6	84558.3	63917.9	3394070.5
1996/97	505354.0	125726.2	-	168548.1	123502.6	87577.8	4238134.5
1997/98	566122.1	149787.4	-	183002.8	138179.3	95152.6	5140133.5
1998/99	616284.0	162894.1	-	171993.2	208040.4	73356.4	6002276.0
1999/00	685107.4	209713.6	-	178000.7	222341.1	75052.0	6829289.0
2000/01	827788.4	194012.9	-	250396.4	301982.8	81396.3	7670890.0

Source: (1) Bank of Tanzania, Economic Bulletin (Various Issues) (2) IMF, International Financial Statistics (3) Bureau of Statistics, Selected Economic Series (4) Own Computation, i.e., GDP at current prices at market prices.

Notes: GDP at current prices at market prices has been converted in order to reconcile with fiscal year data. For example, the average of the calendar year data for 1968 and 1969, 1969 and 1970 … etc. gives the data for the fiscal year 1967/68, 1968/69 … etc.

Appendix C: *Foreign Aid Inflows in Tanzania*

Year	Net ODA From All Donors, Nominal (In Mill. US$)	Net ODA From DAC Donors, Nominal (In Mill. US$)	Net ODA From Non-DAC Bilateral Donors, Nominal (In Mill. US$)	Net ODA From Multilateral Donors, Nominal (In Mill. US$)
1970	51.3	37.9	0.0	13.4
1971	62.4	49.8	0.0	12.6
1972	61.3	53.4	0.0	7.9
1973	100.2	90.5	0.0	9.7
1974	162.5	140.2	0.0	22.3
1975	295.4	234.7	0.2	60.6
1976	267.9	212.3	0.6	55.0
1977	340.2	257.4	6.9	75.9
1978	424.6	332.8	1.0	90.8
1979	589.0	458.1	3.6	127.4
1980	678.7	523.7	27.4	127.5
1981	702.7	485.6	43.9	173.2
1982	683.8	485.2	11.3	187.2
1983	592.6	429.4	14.9	148.3
1984	554.3	409.8	7.7	136.9
1985	484.1	372.6	10.0	101.5
1986	666.2	513.9	5.2	147.1
1987	899.7	719.3	0.0	180.4
1988	1016.0	786.1	0.3	229.6
1989	918.3	692.2	1.0	225.1
1990	1174.5	844.1	3.2	327.1
1991	1080.7	763.8	-2.5	319.4
1992	1343.3	816.2	-2.7	529.8
1993	953.2	650.1	-0.5	303.6
1994	968.5	570.3	5.9	392.4
1995	881.8	586.6	4.2	291.0
1996	893.7	605.4	-2.9	291.2
1997	963.8	569.1	56.1	338.7
1998	...	37.9	-51.3	13.4

Source: World Bank, African Development Indicators (2000)

Key:
... = Not available

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