Direct Tax Revenue and its Contribution to Uganda's Economic Growth

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ABSTRACT

Uganda registered a tremendous increase in total tax revenue collections from US$2.05 million in 1987 to US$2,860 million in 2011. However, the economy is still highly indebted and is currently faced with a public debt of over US$1,960 million, translating into about 69% of total tax revenue collections. While there have been considerable changes in policy and adoption of Structural Adjustment Programs, in particular, the liberalization of trade in the early 1990s, the adoption of Universal Primary Education in 1997 and Universal Secondary Education in 2007 among others, the current focus of government includes the improvement of tax administration and enhancement of tax compliance. The study explores the impact of changes in various macro-economic indicators on direct tax revenue collections, highlighting the distinctive ways through which these interact to determine the level of tax revenue and thus how it could be boosted. The variables include; inflation rate, public investment, private investment, and labor force. A multiple regression model was estimated using Ordinary Least Squares method. The distributions of the major variables of interest were reviewed using the Jacque-Bera statistic before drawing final conclusions, although it is assumed in multiple regressions, that the residuals are normally distributed. The results confirm normal distribution of variables, the existence of a strong multicollinearity among the variables, and trended series of the different direct tax components. Also according to the findings, investment has the biggest impact on the level of direct taxes in the economy, with private investment having a positive effect and public investment having a negative impact. The presentation shall focus on discussion of the analytical outputs and emerging policy recommendations

1. INTRODUCTION

Taxation in Uganda traces its roots in the *hut tax* that was introduced way back in 1900, and the first tax legislation was introduced in 1919 (Kakongoro, 1996). Since then, a series of taxation laws have been introduced with those rendered obsolete either repealed or subjected to substantial amendments to cope with the contemporary situation. The first tax body, Uganda Revenue Authority (URA) was setup in 1991, as a central body for assessment and collection of specified tax revenue. It was to administer and enforce laws relating to tax revenue, account for the revenues, and to advise government on tax policy.

Insufficiency of tax revenue is one of the major problems faced in developing countries over centuries. In many of these countries, government revenue crisis arises because the tax system fails to perform its function as a primary instrument for resource mobilization and as a result, tax collections are not commensurate to the economy's needs. For instance tax revenue contributes about 75% of Uganda's national budget. The method of financing such deficits can lead to unstable economic performance over and over.

Uganda's direct tax collections accounted for 24 percent of total tax collections in the year 2012. Although it's an improvement from the 17% in 1991, this ratio is still below

those found in most low-income countries in Sub-Saharan Africa and the upper middle income countries, for example, in 2007, Rwanda had 31%, Kenya 32.7%, Zambia 33%, Namibia 34.9%, Singapore 53.7% and Uganda 28%. More notably is that these proportions are far less compared to developed economies, largely because a small proportion of the population earns salaries in the formal sector in former. Direct taxes in Uganda include corporate tax, rental income, casino, with holding tax, and individual income tax mainly pay as you earn (MoFPED, 2005, Musaga B, 2007) and the contribution of each is as shown in figure 1.1 below.

Fig 1.1: Direct tax components 1992-2012
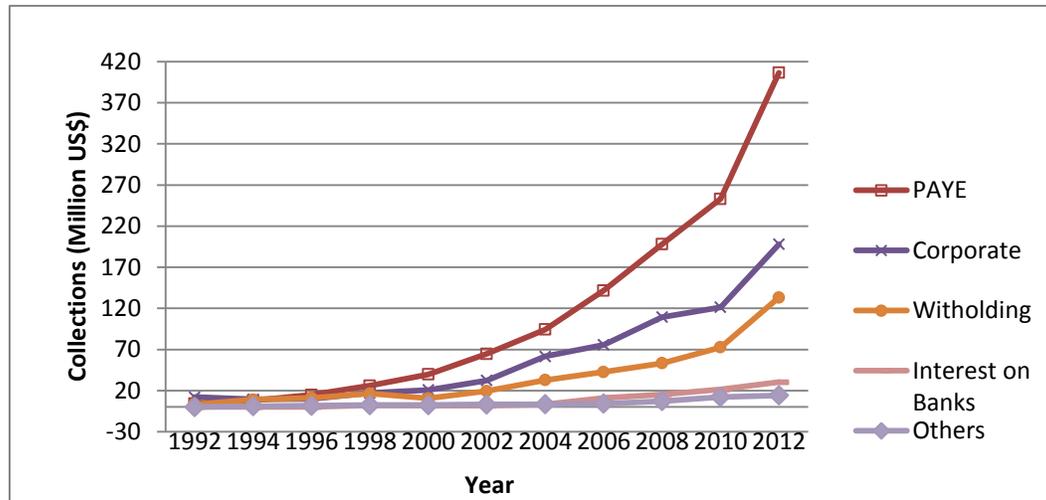
Sources: -URA-Tax performance report 2003/4, 2008/9,
              -MoFPED-Annual Budget Performance Report, 2011/12

This paper presents the performance of direct tax revenue and the economic variables that largely influence it. Primary emphasis is also placed on identifying the distinctive ways through which revenue from direct tax could be boosted in Uganda's economy.

2. FINDINGS

This analysis gives an empirical view of the performance of different variables.

Testing for trend in direct tax components

Trend test was carried out to ascertain the characteristics of direct tax components. At 95% level of confidence using the sign test, Z-values were computed. The computed Z-values, are greater than the critical value of $Z_{0.05} = 1.96$, except for tax on banks interests. Therefore, the null hypothesis H_o is rejected and it is concluded evidently that the series of PAYE, Corporate tax, Presumptive tax, Withholding tax, Rental income tax, Casino tax and Total Direct tax collections, are trended. On the other hand, the null hypothesis of Tax on Banks interests would not be rejected at 95% level of confidence, ($Z_c = 0.24 < Z_{0.05} = 1.96$). The results could not provide sufficient evidence for a conclusion to be made. It can however, be argued that the possibility of no trend in direct tax collections from Banks interests could be attributable to the varying interest rates.
The figure 4.1 below reveals that growth rates of GDP, Taxes and private investment follow a similar trend. This observation is, however, not statistically confirmed. It

suggests the possibility of strong and direct interdependence of these macroeconomic variables.

**The figure 4.1 Growth Rates of Variables**
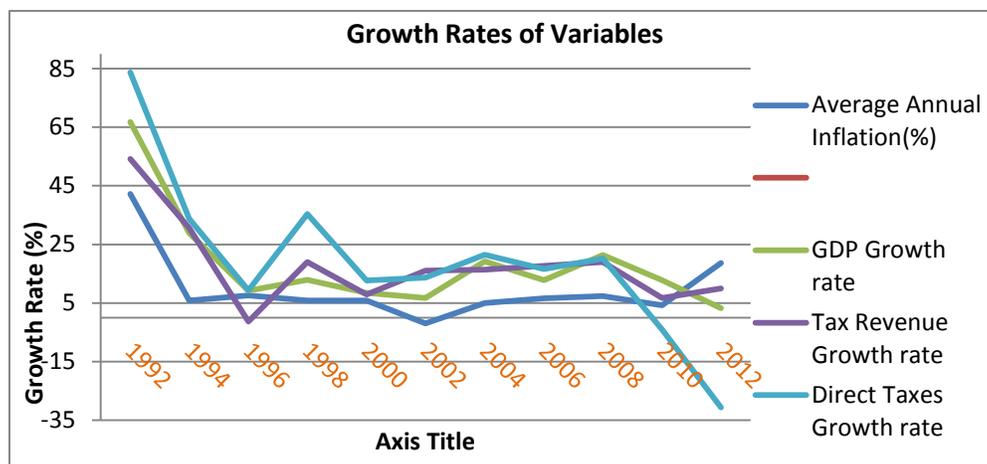
Source: Uganda Revenue Authority-Tax performance (2008/9)

The higher growth rates in early 1990s are attributed to a rise in productivity due to re-activation of productive capacities that had been unused during the years of political turmoil and to the return of flight capital of Ugandan-Asian entrepreneurs (Kappel et el, 2004). It is further observed that inflation stabilized since the 2004 and it is largely due to favorable investment climate created and the increased volume of exports and imports.

Figure 4.2 below reveals very small ratios for both Direct tax-GDP and Total tax-GDP for the period before 1999 with record total collections of less than 10 percent of GDP. A significant rise in direct tax-GDP ratio between 1997 and 1998 was due to the abolishment of income tax exemptions on all locally recruited employees of NGOs and Diplomatic missions in 1996/1997. Although the trend of total tax-GDP ratio has increased over years, the maximum of current level of 19% and 5% for total tax and direct taxes respectively is still low and a lot is therefore needed to be done.

Figure 4.2 Ratio of Direct tax revenue to GDP and Total tax revenue to GDP
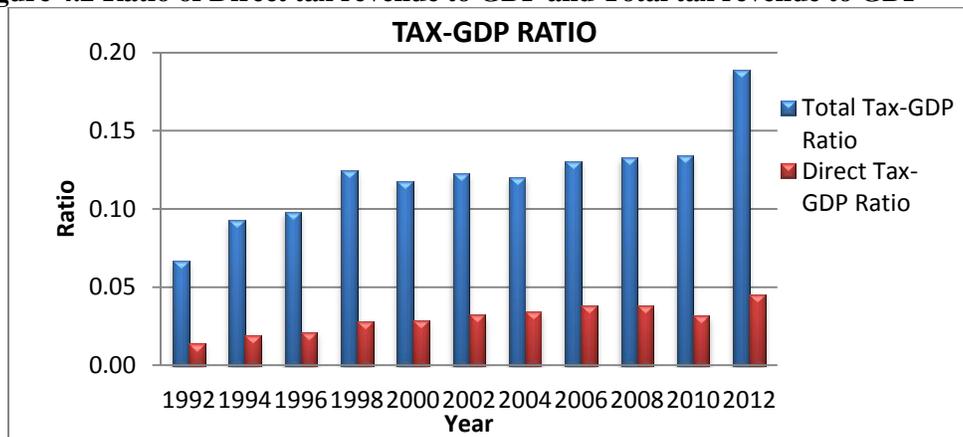
Sources: -URA Tax performance report 2008/9
-UBOS Statistical abstracts 2009, 2012

Testing for normality

Although it's assumed in multiple regressions that the residuals (predicted minus observed values) are distributed normally, it is *always* a good idea, before drawing final conclusions, to review the distributions of the major variables of interest. The Jacque-Bera statistic tests whether the series is normally distributed by measuring the difference of the skewness and kurtosis of the series with those from the normal distribution.

Jarque-Bera= $\dfrac{N-K}{6}$ $(-S^2 + \frac{1}{4}(k-3)^2)$

---(1.1)

Where **S** is skewness, **K** is kurtosis and **k** is the number of estimated coefficients used to create series. If the residual are normally distributed, the histogram should be bell-shaped. It thus follows that a series will be normally distributed if the probability of the Jacque-Bera statistic (**J-B**)>0.05.

Normality test results

Variable	Annual Inflation	Direct tax revenue	Public investment	Private investment	Labour supply
Jacque-Bera value	16.09	4.87	4.99	3.25	4.00
Probability	0.0003	0.0877	0.0826	0.1973	0.1352

An observation made from the normality test result in the table above is that with the exception of annual inflation rate which was non-normal, the other variables were normal. The probability of the Jacque-Bera statistic of inflation rate was 0.0003 which is far less than the rejection point of 0.05.

Testing for Multicollinearity

A test for the presence of multicollinearity was conducted and a pairwise correlation matrix generated, which gives the satisfactory tests of the linear relationships between the variables of interest. With a 5% level of significance, all relationships are strong (coefficient>9) and significant (p<0.05) at 95% level of confidence except for inflation. The relationship between inflation and any other variables is negative and weak (coefficient<0.5). The relationship that inflation has with labour supply (p=0.03) and public investment (p=0.04) are statistically significant at 5% confidence level where as it is insignificant with GDP, taxes and private investment. The results confirm the existence of a strong multicollinearity among the variables.

The model
The prediction model (multiple regression models) was formulated by considering labor, inflation, public investment and private investment as the independent variables whereas total direct tax revenue, the dependent variable. On running the model, the variants were estimated and the results are presented in table below.

Regression results

variable	Coefficient	Std. error	t-statistic	Prob.
constant	-3.70322	1.150372	-3.22	0.006
Inflation	.0299071	.0288718	1.04	0.318

Private investment	1.320685	.2149281	6.14	0.000
Public investment	-.0511458	.180292	-0.28	0.781
Labour supply	-.7645583	1.088408	-0.70	0.494
R-squared = 0.9962		Adj R-squared = 0.9951		
F(4, 14) = 911.93		Prob > F = 0.0000		
Number of observations = 19		Root MSE = 0 .07653		

Source: Computed by author Using Stata10

Regression results in table above suggest that the independent variables explain about 99.5% of the variations in the dependent variable. The probability of the F-Statistic (0.0000) shows that the model was perfectly specified with a statistical justification. The regression gives the short-term model of the form:

$$InT_t = -3.703 -0.77InL_t + 0.03InI_t + 1.32InPt -0.05InG_t$$
$$\quad\quad (-1.12) \quad\quad (0.06) \quad\quad (8.01) \quad\quad (-0.02)$$

The first observation to be made is that a 1% change in private investment would increase direct tax revenue collections by 1.32% while the same change in public investment would decrease direct tax revenue collections by 0.05%, holding other factors constant. The effect of private investment is significant with t-value of 8.03 whereas that of public investment is insignificant with its t-value of -0.02. Since the computed t-value (-0.02) of public investment is less than the critical value, it means that there is no sufficient evidence to suggest that public investment affects direct tax revenue collections. Belloe and Vertove (2004) found a positively significant effect of public investment economic growth for a ten year horizon though their result was insignificant in the short run. Their result also shows that there exists a possible reverse causation between public investment and private investment. Casey (2006) concludes that though any change in investment would, by theory, lead to a positive change in economic growth, a result as above probably gives a picture of not properly managing public investments, in particular, and corruption in general. Also taxing people for capital projects amounts to taking money out of the country that would have mostly gone towards consumption. A 1% increase in labour force would lead to 0.77% decrease in direct tax revenue collections, holding other factors constant but the result is statistically insignificant with t value(-1.12) therefore there is no statistical evidence since this t-value is less than the critical value of t=2.
A 1% change (increase) in inflation rate would lead to 0.03% increase in direct tax revenue collections though the result is not significant t-value=0.06 < critical t=2.

3. CONCLUSIONS

From the research findings, investment has the biggest impact on the level of direct taxes in the economy, with private investment having a positive effect while public investment having a negative impact. This trend of events calls for better and continued coordination and administration of the private sector and private investment in particular while complete reform may be necessary as far as the public sector is concerned, especially in the management and administration of public investments. It however remains questionable over what particular reasons public investment did not have a statistically significant effect on direct taxes.

The tax system of any economy is used to achieve a wide range of aims which are not always consistent and which vary from time to time. A good tax system therefore should

be efficient in that it does not distort economic decision-making. To initiate improvements in her fiscal systems that would lead to increased direct tax revenue, Uganda should particularly adopt the following recommendations:

- Improve international tax cooperation and introduce systems for automatic information exchange with other tax authorities to combat harmful tax practices.
- Make substantial cuts to corporate taxes as this provides the biggest incentive to invest, create wealth, attract and grow new businesses, and create quality jobs for the citizens. All this would lead to the expansion of direct tax base.
- Improve transparency by reforming accounting systems for expenditures along functional lines, using international standards as a guide, so that amounts spent on public investment needs can be clearly determined and assessed.
- Improving the allocation of public expenditure on education so that more productive labour force is produced.

Area for future research

Taxation being a wide concept, many issues had to be ascertained to come up with the most viable conclusion. However, due to time, financial and data constraints, not all essential issues could be analysed. In order for Ugandan economy to benefit more from policy reforms, an investigation of the impact of individual direct tax policy reforms on direct tax need to be widely conducted. Therefore, these instant changes in direct tax due to a given reform could be a great area for future research.

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