

Tax Elasticity, Buoyancy and Stability in Zimbabwe

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Abstract: Tax elasticity and buoyancy estimates are the dynamic tools for measuring the tax performance. The main objectives of the study are to explore the tax system performance of Zimbabwe through the traditional tax ratio trends, dynamic measures tax buoyancy and tax elasticity. The study has applied traditional regression approach and the Dummy Variable Approach to calculate tax buoyancy. For the study period 2000 – 2013, both methods have yielded a tax buoyancy statistic of 1.013 (more than unitary) implying that the tax system is responsive to growth in national income. Using the Dummy Variable Approach, the study revealed that there is no significant differences in tax performance for the Zimbabwean Dollar Era and the Dollarisation Era. In an effort to enhance efficiency in government operations, the study has highlighted parastatals inefficiency that need immediate attention. Tax ratio trend has revealed an increase in effort over the dollarisation period.

Key Words: Tax Buoyancy, Elasticity, Tax Stability, Tax Ratio, Revenue Performance, Parastatal, GDP, Zimbabwe.

I. Introduction

No doubt that Zimbabwe is over-relying on tax revenue to sponsor government spending. For over the past decade tax revenue has remained the major source of domestic revenue in Zimbabwe. The measurement of tax elasticity and buoyancy would be very beneficial in terms of reforms in tax structure as well as revenue administration. Tax elasticity and buoyancy can aid in identifying weaknesses in the tax structure and in formulating strategies to correct these weaknesses and improve the outturn on the fiscal accounts given the prevailing macroeconomic conditions, Cotton (2012). A desirable property of a tax system is that income elasticity and buoyancy should be equal or greater than unity, Bonga (2009). Such property ensures that revenue growth keeps pace with that of Gross Domestic Product (GDP) without frequent discretionary changes. Moreover, the study of tax elasticity and buoyancy is also useful for revenue forecasting.

The fiscal deficit is the core issue of most of the developing countries over the past several decades, and the reason behind the large increase in fiscal imbalance is the rapid expansion in expenditure and low revenue collection, Quazi and Sulaiman (2010). It is hypothesized that the tax revenues of a state economy would be sensitive to the macroeconomic performance of the state economy measured in terms of inflation and the growth of real income, Dholakia and Dholakia (2000). Tax revenue may change due to a variety of factors, such as changes in income, changes in tax rate and tax base, changes in efficiency of tax assessment and collection, among others. The responsiveness of tax revenue to such changes can be explained with the help of tax elasticity and buoyancy. "Tax elasticity may be defined as the ratio of a percentage change in adjusted tax revenue to a percentage change in income i.e. nominal GDP.

There have been few empirical studies done on estimating the buoyancy and elasticity of Zimbabwe's tax system. The distinction between the tax elasticity and buoyancy is very useful in analyzing and evaluating whether future revenues will be sufficient to meet the resource needs without changing the rates or bases of the existing tax. Tax buoyancy is a crude measure which does not distinguish between discretionary and automatic growth of revenue. Elasticity is a preferred measure of tax responsiveness since it controls for automatic revenue changes. **If there is no change in tax rates and tax base during the reference period, buoyancy will be same as elasticity, Mishra (2005).**

Buoyancies and elasticities can be calculated for the entire tax regime or for individual components such as income and consumption taxes, Skeete, Coppin and Boamah (2003). For policy purposes, it is usually useful to distinguish between revenue growth due to discretionary changes and revenue growth due to changing economic conditions. Tax elasticity is a measure designed for this purpose since it measures the responsiveness of tax revenue to a change in national income or output after controlling for exogenous influences such as discretionary changes in tax policy. Thus the tax elasticity is a hypothetical construct and measure what tax revenue would have been if last year's laws continued to apply this year, Quazi and Sulaiman (2010).

Against this background, this study attempts to utilize the regression approach to empirically estimate the tax elasticity and buoyancy in Zimbabwe for the period 2000-2013. Taxation is an important instrument for attaining a proper pattern of resource allocation, income distribution, and economic stability, in order that the benefits of economic development are evenly distributed, Bonga (2009). As supported by Bonga and

Mavesere(2011), increased revenues are desired for many other purposes including expanding socially desired government current expenditures, or even on pragmatic grounds, as to impress foreign aid donors with evidence of the nation’s effort to develop on the basis of domestic resources.

The concepts of tax buoyancy and elasticity are used as estimates of the efficiency of a tax system, that is, the ability of the tax system to mobilize revenue with and without tax policy changes, Cotton (2012). It is very useful to revisit tax elasticity and buoyancy in the present scenario, since a number of changes have taken place in the taxation front in Zimbabwe in recent years. Mitchell and Andrews (1991) noted that the knowledge of the elasticity of different taxes allows one to project the additional revenues that can be mobilized by the existing tax system as national income rises.

II. Parastatals in Zimbabwe

The Government of Zimbabwe as a way of raising revenue and at the same time providing essential service to the general public runs several state enterprises and parastatals. Parastatals therefore have a pivotal role to play in resuscitating the ailing economy. However, the institutions have been reporting perennial losses which in some instances had to be met by government bailouts. From the media reports it appears that most of the challenges facing the parastatals are self-inflicted as opposed to consequences of general economic difficulties. Corporate governance shortcomings, self aggrandisement by top management and abuse of company assets have been cited as the major contributors to the downward spiral in state enterprises’ performance.

Currently there has been a public outcry following the publication of salaries for some managers in State and quasi-state owned enterprises. The hullabaloo has been heightened on account of the poor service delivery as well as poor financial performance by the institutions concerned. There is no justification whatsoever for the managers in such enterprises to earn huge salaries when the service being provided is below par.

The investigations undertaken by ZIMRA on a number of State enterprises, parastatals and some local authorities have unearthed a number of irregularities in the areas of income tax, PAYE, withholding tax, among other tax heads. It was discovered that heads of parastatals were awarding themselves mega allowances that were not being taxed, while they offered their salaries, which were little compared to the other packages, for taxation.

On the other sides the companies also struggle to perform because of cash-flow problems, inability to attract investors and access lines of credit due to unattractive balance sheets. The following table shows various parastatals in Zimbabwe and their respective sectors.

Table 1: Parastatals in Zimbabwe

AGRICULTURE <ul style="list-style-type: none"> • Pig Industry Board • Grain Marketing Board(GMB) • Tobacco Research Board(TMB) • Agricultural and Rural Development Authority(ARDA). • Cold Storage Company(CSC) • Agribank • Agricultural Research Council (ARC) • Tobacco Industry and Marketing Board (TIMB) 	MINING <ul style="list-style-type: none"> • Minerals marketing Corporation of Zimbabwe (MMCZ) • Hwange Colliery Company • Zimbabwe Mining Development Corporation (ZMDC) 	TRANSPORT <ul style="list-style-type: none"> • Civil Aviation Authority of Zimbabwe (CAAZ) • Central Mechanical and Equipment Department (CMED) • Air Zimbabwe Holdings • ZUPCO Private Limited • National Railways of Zimbabwe (NRZ) • Zimbabwe National Road Administration (ZINARA) • Traffic Safety Council of Zimbabwe (TSCZ)
SPORTS AND ARTS <ul style="list-style-type: none"> • State Lotteries and Gaming Board • National Gallery of Zimbabwe • National Library and Documentation Services 	TELECOMMUNICATIONS <ul style="list-style-type: none"> • ZIMPOST • ZARNET • NETONE Pvt Ltd • Postal and Telecommunication Regulatory Authority • Tel One • Transmedia 	INDUSTRY AND TRADE <ul style="list-style-type: none"> • Printflow Private Limited • Urban Development Corporation • ZISCO Private Limited • Industrial Development Corporation (IDC) • ZITF Company • Zimtrade
HEALTH <ul style="list-style-type: none"> • National Pharmaceutical Company (NATPHAM) • National Aids Council of Zimbabwe (NAC) • Zimbabwe National Family Planning Council (ZNFPC) • Medicines Control Authority of Zimbabwe (MCAZ) 	FINANCIAL SERVICES <ul style="list-style-type: none"> • IDBZ • POSB • National Indeginisation and Economic Empowerment Fund • Zimbabwe Revenue Authority (ZIMRA) • SEDCO • National Social Security Authority (NSSA) 	ENVIRONMENT <ul style="list-style-type: none"> • Parks and Wildlife Management Authority • Allied Timbers Private Ltd • Environmental Management Authority (EMA) • Forestry Commission Company (FCC) SCIENCE AND TECHNOLOGY <ul style="list-style-type: none"> • Science and Industry Research and

COMMERCE <ul style="list-style-type: none"> Consumer Council of Zimbabwe 	<ul style="list-style-type: none"> State Procurement Board (SPB) State Enterprises Restructuring Agency (SERA) Competition and Traffic Commission Zimbabwe Investment Authority CBZ ZABG Agribank 	<ul style="list-style-type: none"> Development Centre (SIRDC) Research Council of Zimbabwe Bio – Technology Authority of Zimbabwe Radiation Protection Authority of Zimbabwe
TOURISM <ul style="list-style-type: none"> National Museums and Monuments of Zimbabwe Zimbabwe Tourism Authority (ZTA) 	INFORMATION <ul style="list-style-type: none"> New ZIANA Broadcasting Authority of Zimbabwe (BAZ) Zimbabwe Broadcasting Holdings (ZBH) 	WATER <ul style="list-style-type: none"> Zimbabwe National Water Authority
ENERGY AND POWER <ul style="list-style-type: none"> Rural Electrification Authority (REA) National Oil Company of Zimbabwe ZESA Holdings 	EDUCATION <ul style="list-style-type: none"> Zimbabwe Schools Examination Council (ZIMSEC) Zimbabwe Institute of Public Administration and Management.(ZIPAM) 	

Given the evidence of improved efficiency cited in most countries where privatisation has taken place it can be argued that privatisation is needed in some of the country’s parastatals. Feasibility studies should however be carried out so that a balance between social equity and enterprise efficiency is achieved. Some problems which need attention to improve efficiency of parastatals include militarization, corruption, patronage, professionalization and public accountability.

III. Tax Performance in Zimbabwe

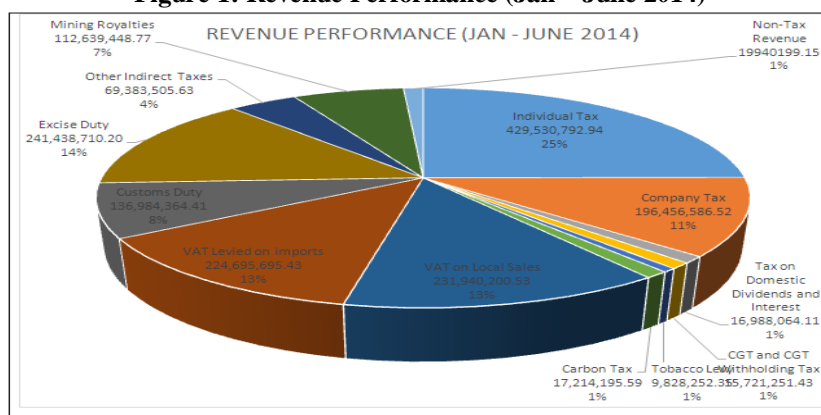
As Zimbabwe continues on the recovery journey, the tax authorities are on the hunt for revenue to finance government spending. The following table shows the revenue statistics by tax heads for the half year of 2014 (January –June) against Ministry of Finance targets.

Table 2: Revenue Performance: January – June 2014

REVENUE PERFORMANCE:- JANUARY – JUNE 2014			
	TARGET US\$	ACTUALS US\$	% VARIANCE
Individual Tax	346,000,000.00	429,530,792.94	24%
Company Tax	190,000,000.00	196,456,586.52	3%
Tax on Domestic Dividends and Interest	15,200,000.00	16,988,064.11	12%
CGT and CGT Withholding Tax	11,857,000.00	15,721,251.43	33%
Tobacco Levy	8,764,000.00	9,828,252.35	12%
Carbon Tax	17,679,000.00	17,214,195.59	-3%
VAT on Local Sales	346,100,000.00	231,940,200.53	-33%
VAT Levied on imports	212,000,000.00	224,695,695.43	6%
Customs Duty	194,500,000.00	136,984,364.41	-29%
Excise Duty	260,500,000.00	241,438,710.20	-7%
Other Indirect Taxes	57,767,000.00	69,383,505.63	20%
Mining Royalties	77,700,000.00	112,639,448.77	45%
Non-Tax Revenue	-	19940199.15	
Total	1,738,067,000.00	1,722,761,267.06	-1%

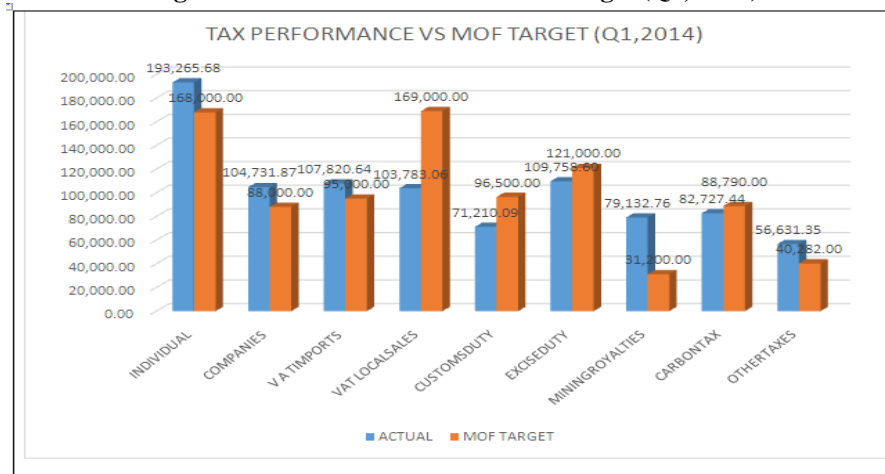
The table above shows the revenue performance of the country against what is expected from the Ministry of Finance. Net revenue collections for the first half of 2014 amounted to US\$1.72 billion against a target of US\$1.74 billion resulting in a negative variance of 1%. Most of the revenue was realised from Value Added Tax (VAT), Individual Tax and Excise Duty which contributed 26%, 25% and 14% respectively. The half year tax performance can be graphically shown as below;

Figure 1: Revenue Performance (Jan – June 2014)



From the above graph, it can be clearly shown that Individual taxes (25%), VAT on local taxes (13%) and VAT on imports (13%) are the major contributors for the half year. Due to the poor performance of companies, corporate tax remains low; many companies are still operating at less than full capacity as the economy is slowly recovering. Little is also coming from minerals as they contribute 7% of the revenue. Despite the good performance due to efforts by the Authority, the economy is characterised by closure of companies, scaling down of operations as well as retrenchments which affect revenue collection. Worth to note is the revenue performance of the first quarter of 2014.

Figure 2: Tax Performance vs MOF target (Q1, 2014)



For the first quarter the Authority has for various tax heads surpassed the set target. For the individual tax to surpass the target is because of the projects undertaken to recover previously unpaid PAYE which strongly boosted the performance of the revenue head. According to Commissioner’s report this pattern is however not predicted to continue in the medium term, nor does it imply any corresponding responsiveness of indirect taxes like VAT and Excise.

IV. Tax Ratio Analysis

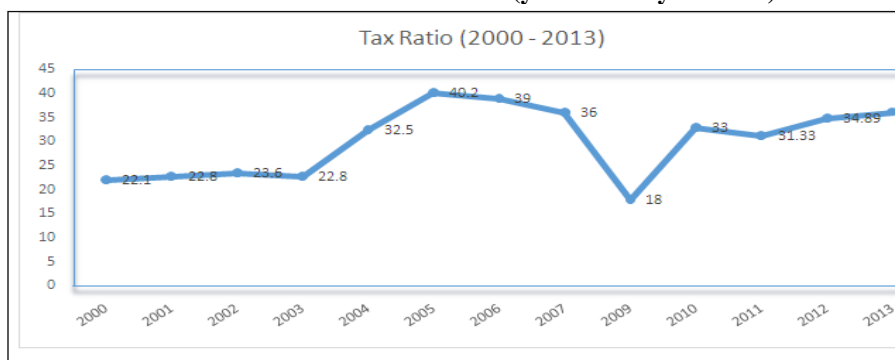
The tax-to-GDP ratio is an economic measurement that compares the amount of taxes collected by a government to the amount of income that country receives for its products. Tax ratio has been traditionally used to measure tax performance of various countries. And it has been concluded that developing nations are characterised by lower tax ratios as compared to developed world. By comparing this amount to the amount that is collected in tax revenue, economists can get a rough idea of how much the economy of a specific government is fueled by its tax collection.

The following table shows the tax-to-GDP ratio of Zimbabwe from 2000 to 2013. The maximum tax ratio experienced in Zimbabwe is 40.2% in 2005, and the lowest is 18% in 2009. The tax performance as measured by the ratio shows variability over the years indicating inconsistency.

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Tax Ratio	22.1	22.8	23.6	22.8	32.5	40.2	39	36	-	18	33	31.33	34.89	36.2

The same fact can be explained graphically as below;

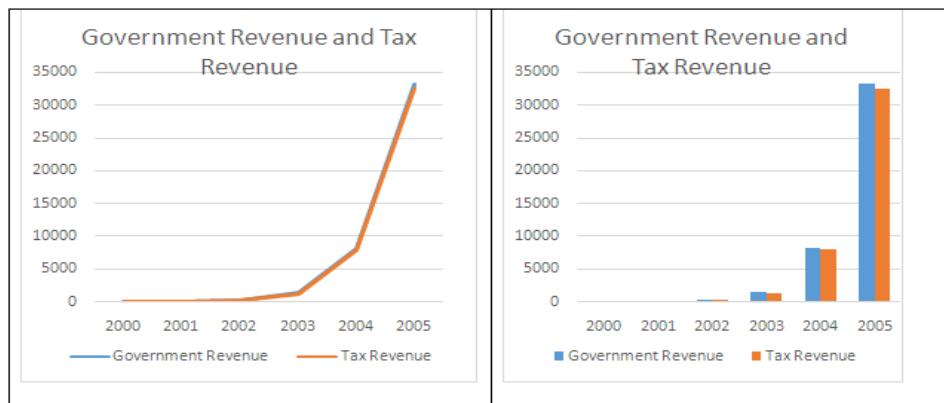
Table 3: Tax Ratio in Zimbabwe (year 2000 – year 2013)



According to the line graph above, the tax ratio trend is not stable implying inconsistency in tax performance. From 2000 to 2003 the ratio was almost the same, showing consistence in tax revenue performance as compared to the national income, thereafter the tax ratio increased sharply reaching the maximum in 2005 through 2004. Year 2008 has been neglected due to the effect of hyperinflation which affected statistics to be in normal range. From 2005 the ratio declined to reach its lowest point in 2009, and thereafter it rise sharply to 2010, and a slight decline in 2011 and gently rose in 2012 and 2013. A rise in the tax ratio implies that performance is increasing over time.

V. Government Revenue Vs Tax Revenue

Government revenue should come from various sources including form parastatals and aid. The following graphs seeks to show how important tax revenue is for the Zimbabwean economy. It is clearly shown that nearly all government revenue comes from taxation. In actual case we can simply say government revenue is tax revenue in Zimbabwe.



VI. Data Collection And Analysis

The study rely on secondary data collected from ZIMRA website, Quartely and Annual Tax Performance Review and ZIMSTAT. Collected data is for GDP, total tax revenues and various tax heads. Collected data will then be transformed into logarithms for econometric analysis. Data is collected for years 2000 to 2013. The data will be analysed using STATA statistical software and an Ordinary Least Squares (OLS) regression is preferred. Specifically, a double-log regression model will be run to the stationary time series data based on Augmented - Dicky Fuller [ADF] and Phillips-Parron [PP] Tests .

VII. Methodology

Tax (or revenue) buoyancy is defined mathematically as follows;

$$Tax\ Buoyancy = \frac{\% \Delta Tax\ Revenue}{\% \Delta GDP}$$

The study will take GDP as the base. The revenue could refer to total tax revenue, or to revenue from any given tax head.

Tax buoyancy and tax elasticity can be calculated using various formulas/methods as follows;

- (1) Traditional definition. The traditional model used to estimate tax buoyancy requires GDP to be a determinant of tax revenue. (Wawire, 2000; Ariyo, 1997; Quazi, 1994; Osoro, 1993).
- (2) Proportional Adjustment Method. This has been suggested by Sahota (1961) and Prest (1962) and was later described by Mansfield(1972) and used by Omoruyi (1983), Osoro (1993) and Ariyo (1997).The method involves isolating the data on discretionary revenue changes based on data provided by government.
- (3) Dummy Variable Method. Developed by Singer (1968), this method introduces a dummy variable for each year in which there was an exogenous tax policy change.
- (4) Constant Rate Structure. Used by Andersen (1973) for Denmark and Choundry (1975) for west Malaysia. The method involves collecting statistics on actual tax receipts and data on monetary value of the legal tax bases and corresponding revenues. The tax bracket of the base year is then multiplied by the corresponding base values and the products summed up.
- (5) Divisia Index. The method introduces a proxy for discretionary tax measures. The index measures technical change, which is taken as the effects of discretionary changes in tax yields. The index is derived from the estimated tax function analogous to the production function.

As supported by Jonathan Haughton (1998), measures of tax buoyancy tend to vary a lot from year to year, which is not very helpful. It is thus more useful to measure buoyancy over a longer period - perhaps five or ten years at a time. The study has grouped, the reference period into 3 parts due to differences in currency regimes experienced in the country as shown below;

period	years	Lengthy of period
1	2000 -2004	5
2	2005-2008	4
3	2009-2013	5

Tax buoyancy is estimated econometrically by regressing actual or unadjusted tax receipts on aggregate income. The tax buoyancy for a given time period may be estimated by fitting regression equation of tax revenue on GDP by OLS methods. This methodology follows the traditional model. The mathematical form of the regression used in the study is of double log linear form.

$$\text{Log}(\text{Tax Revenue}) = \alpha + \beta \text{Log}(\text{GDP}) + \varepsilon$$

If discretionary tax changes are netted out of the tax revenue series then (β) is the elasticity coefficient, otherwise it is the buoyancy coefficient, Skeete, Coppin and Boamah (2003).

Time series data on log (Tax Revenue) and log (GDP) will be analysed for stationarity (order of integration determined) using two tests, Augmented Dicky Fuller and the Phillips Perron. Therefore the order of integration of each time series variable is examined by the Augmented - Dicky Fuller [ADF] and Phillips-Parron [PP] Tests in levels on log (TRt) and log (GDpt) before estimating the coefficients of tax buoyancy. As supported by Upender (2008), if the calculated ADF and PP statistics are more than the critical values then the variables [log (TRt) and log(GDpt)] are said to be stationary or integrated to the order zero in log levels i.e., $\log(\text{TRt}) \sim I(0)$ and $\log(\text{GDpt}) \sim I(0)$. If the calculated ADF and PP statistics are less than the critical values then the time series variables [log(TRt) and log(GDpt)] are said to be non-stationary in log levels. If log TR and log GDP are found to be stationary in first difference then they are integrated to the order one i.e., $\log(\text{TR}) \sim I(1)$ and $\log(\text{GDP}) \sim I(1)$.

In this case the estimated model will be in the form;

$$\Delta[\log(\text{Tax Revenue})] = \alpha + \beta \Delta[\log(\text{GDP})] + \varepsilon$$

And all the interpretations of the OLS regression statistics will then remain unchanged.

VIII. Regression Results And Data Analysis

1) Stationarity Tests

Tests on stationarity on the overall data (2000-2013) on tax revenue and GDP have been done using the two tests, Augmented Dicky Fuller test and the Phillips Perron test and results are shown on the table below;

VARIABLE	LOG LEVEL						CONCLUSION
	ADF TEST	PP TEST	1% Critical Value	5% Critical Value	10% Critical Value		
GDP	-1.491	-1.519	-3.750	-3.000	-2.630	GDP~I(0)	
Tax Revenue	-1.496	-1.523				TR~I(0)	
						Stationary series	

According to the two tests above, the ADF and PP statistics are greater than the critical values at all levels. This implies that the logs of GDP and TR are stationary, hence no further data transformation needed to yield unbiased results.

2) Traditional Regression Model Results

A regression equation has been run using Stata Statistical software and the following results were obtained for the overall tax system performance for the three periods.

period	Constant (α)	Slope (β)	t-value	R-squared	F-statistic
1 (2000-2004)	-0.869	1.078 (0.0000)	36.06	0.9969	1300.11(0.000)
2 (2005-2008)	-0.162	0.977 (0.000)	51.67	0.9989	2670.03(0.0004)
3 (2009-2013)	-8.66	1.8201(0.011)	5.60	0.8834	31.31(0.0113)
1,2,3 (2000-2013)	-0.652	1.013 (0.000)	172.43	0.9996	29732 (0.000)

From the above regression results, the dollarisation era has proved to be more buoyant as it recorded a 1.8201 buoyancy statistic which is significant at 5%. This is very true considering the effort being placed by the Authority to collect revenue, and continuous effort to enforce compliance. The statistic implies that a 1% increase in GDP is followed by more than proportionate increase in tax revenue (1.8201%). It implies that the tax system is very responsive to the growth in national income, and hence very efficient. Period 2000-2004 also has shown a responsive tax system, recording a 1.078 buoyancy statistic. Period 2005-2008 has recorded a buoyancy less than unitary (0.977), implying that a 1% increase in national income was followed by 0.977% increase in tax collections (less than proportionate). The tax system wasn't responsive to income growth, this was the period when Zimbabwe experienced an economic depression that led to the varnishing of Zimbabwean currency.

The overall tax system for the whole period (2000-2013) has recorded a buoyancy statistic of 1.013 which is slightly above unitary. This implies that on average the tax system was adjusting according to fluctuations in the national income. All the regression equations recorded Adjusted R-squared nearest to 1, implying that the specification was correct. Also the F-statistics has been significant at 1% level indicating the correct model used.

3) Dummy Variable Method (Us Dollar Era) Regression

The "dollarisation era" has been characterised by changes in tax rates for some commodities like beer, wine and spirits among others and revenue reforms like introduction of tollgates. To capture some changes a dummy variable has been introduced in the traditional equation. The method was developed by Singer (1968), this method introduces a dummy variable for each year in which there was an exogenous tax policy change.

Period	Constant (α)	Slope (β)	Dummy (D)	F-statistic	R-squared
2000-2013	-0.652 (0.000)	1.013(0.000)	-0.0071 (0.90)	13647.87(0.000)	0.9995

Using the Dummy Variable Approach for the study period 2000-2013, the buoyancy statistic remains at 1.013 and significant at 1% level. This shows that using both methods of calculating buoyancy, have yielded same results. The dummy coefficient (-0.0071) is insignificant even at 10% level, implying that whatever reforms have been done during the dollarisation era, have not affected the performance of the tax system. The results also implies that there is no statistical differences in tax performance for the Zimbabwe dollar era and the post-Zimbabwe dollar era.

4) Individual Tax Heads Regression Results

A traditional OLS regression has been run for selected individual tax heads to determine their responsiveness to national income changes. The regression only relates to the dollarisation era (2009-2013), due to data availability, and the regression results are as presented on the table below;

Period	Constant (α)	Slope (β)	t-value	F-statistic	Adj R ²
Individual Tax	-2.249(0.093)	1.108 (0.004)	14.92	222.61(0.0045)	0.9866
Company Tax	-1.7315 (0.713)	1.031 (0.129)	2.51	6.3 (0.1289)	0.6384
Carbon Tax	3.87 (0.324)	0.3684 (0.338)	1.71	2.91 (0.3375)	0.4886
VAT	13.265 (0.308)	-0.435(0.701)	-0.44	0.2 (0.7013)	0.4886
Customs Duty	1.471 (0.829)	0.7152 (0.358)	1.19	1.41 (0.3576)	0.1191
Excise Duty	-13.276 (0.001)	2.188(0.001)	43.7	1909.7(0.0005)	0.9984

Individual tax head and excise duty regressions are the only significant as indicated by the F-statistic probability. However, company tax has been marginally insignificant (0.1289). Individual tax head has reported a buoyancy statistic of 1.108 (0.004) and significant at 1% level, indicating that the tax head is very much responsive to changes in income (it changes more than proportionate). Excise duty has recorded a tax buoyancy statistic of 2.188 (0.001), implying that if GDP increases by 1%, excise duty increases by 2.188%, which implies a very responsive tax structure. Adjusted R2 for excise duty regression is 0.9984 implying that about 99.84% variation in excise duty is explained by changes in GDP. Company tax though marginally insignificant have recorded a 1.013 buoyancy statistic, implying that the tax head is responsive to income changes, however, there are some neglected aspects that also explains variation in company tax performance. VAT, Carbon tax and Customs duty regressions have been found to be insignificant, hence some factors need to be considered when modelling the tax heads.

5) Tax Stability Computations

Revenue stability is desirable, at least from the government's perspective, in that it makes it easier to put together plausible spending and borrowing plans for the year ahead, Haughton (1998). A simple measure of the

stability of tax revenue is the coefficient of variation (CV), which is defined as the standard deviation of tax revenue (as a fraction of GDP usually) divided by its mean; i.e. **Coefficient of Variation = Standard Deviation/Mean**. The CV may be calculated for tax revenue as a whole, or for individual sources of revenue.

PERIOD	STAND.DEVIATION	MEAN	COEFFICIENT OF VARIATION (CV)
2000-2004	4.3592	24.76	17.61%
2005-2008	5.9674	35.55	16.79%
2009-2013	7.3277	30.684	23.88%
2000-2013	7.1276	29.95857	23.79%

A lower coefficient variation implies greater stability. Period 2005-2008 has proved to have greater stability with CV of 16.79% followed by period 2000-2004 with CV 17.61%. The dollarisation era has proved to be less stable recording a CV of 23.88%. CV for the study period is 23.79%, this statistic however is more useful for country comparisons.

IX. Conclusions and Policy Recommendations

Tax buoyancy elucidates the growth of tax collection, changes in tax legislation and efficiency of tax administration. Tax buoyancy of less than one indicates that the rate of growth of tax collection has fallen below the rate of growth of GDP. Tax buoyancy is a measure of both the soundness of the tax bases and the effectiveness of past tax changes in terms of revenue collection.

The study has managed to explore the tax system in Zimbabwe using the traditional tax ratio and the modern tax buoyancy and elasticity approach. The study concludes that in as much as revenue is needed in Zimbabwe, almost all the needed revenue is collected by the Authority rather than other parastatals; as it is able to raise revenue in an efficient way that capitalizes on the growth of national income. The tax system has been found to be buoyant, thus, very responsive to income changes. The study encourages efficiency in other government parastatals, so as to ease pressure on government spending. Various issues have been explored that underpin the performance of parastatals, and need greater attention.

As the economy is still struggling to heal from economic depression wounds, there is need to ensure efficiency in operations of various organisations. Tax compliance should be enforced. It is also worth to note that some revenue being collected in the current years are as a result of operations taken by Authority to recover unpaid taxes and hence include penalty figures, which may not happen in the future as increased compliance is expected.

In conclusion, it is desirable to have a tax system with buoyancy and elasticity coefficients greater than one. This indicates that during times of economic growth tax revenues would be increasing at a faster rate than GDP. This can facilitate increases in savings or growth in expenditure (preferably that related to development) without the need for increases in the tax rate. Conversely a tax buoyancy or elasticity coefficient that is lower than one may point towards issues related to the structure of the tax, administration or compliance. In general, if tax policy changes were revenue enhancing over time the buoyancy coefficient is expected to exceed the elasticity coefficient.

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