REVENUE PRODUCTIVITY OF ZIMBABWE'S TAX SYSTEM

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ABSTRACT

This study evaluates the revenue productivity of Zimbabwe's overall tax system and of individual taxes on the basis of estimates of tax buoyancy using yearly time series data for the period 1975-2008. The tax buoyancy is computed using the Dummy Variable Technique to abstract from discretionary changes in the tax system. The estimation results demonstrate that the tax system as a whole and the individual taxes, with the exception of customs duty, are both not buoyant. Also most of the buoyancy coefficients are found to be greater than the elasticity coefficients implying that discretionary tax measures (DTM) were used to generate additional tax revenue during the study period. These results have important implications for tax reform. A buoyant and elastic tax structure is appropriate in a developing economy, since it implies that tax collections will grow automatically with the growing economy without resorting to frequent, potentially sensitive discretionary changes in tax structure. The study recommends improvements on tax administration, reduction in tax evasion and reducing the number of tax exemptions so as to improve on revenue generation.

Keywords: Tax buoyancy, tax elasticity, revenue productivity, tax reform, Zimbabwe

INTRODUCTION

Most developing countries are finding it difficult to raise enough tax revenues to spearhead their developmental aspirations. The existence of large informal sectors makes it particularly difficult to trace and capitalise on potential tax sources. This is further constrained by weak tax administrations and poor governance to enforce tax compliance. Zimbabwe is not an exception as taxes are a critical source of government revenue, contributing an average 88.1% between 1980-1989 and about 89% between 1990 and 1999. In the new millennium, tax revenues averaged 95.6 percent of total revenues, peaking to 98 percent in 2005. In the recent period a strong resurgence of a large informal sector constrained the government's capacity to raise sufficient revenue, and thus revenue in proportion of total spending has been declining. The imbalance between government revenue and expenditure resulted in persistent fiscal deficits.

The IMF, in its Article IV Consultation of 2009, recommended that Zimbabwean authorities follow through with their plans to improve tax administration and review the tax regime to increase budget revenues. Interestingly, the country has implemented a number of tax reforms in a bid to raise the revenue mobilization capacity of the tax system. Unfortunately, very little is known about the revenue mobilization capacity of the tax system. This study seeks to evaluate the productivity of the tax system in Zimbabwe through the application of the concepts of tax buoyancy and tax elasticity. The application of these two concepts will help us to find out whether the tax structure ensures that revenue grows faster than national income as required by the growth in expenditure. In other words, the tax policy has to ensure that: a) every tax source's yield is responsive to national income changes and b) that predominant taxes in the revenue are those with a highly elastic yield with respect to national

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income. If these attributes feature in a tax system, then the tax weapon can be applied to mitigate the dangers of perpetual fiscal imbalances (Muriithi & Moyi, 2003).

We proceed with an Overview of Macroeconomic Background to Zimbabwe, a brief review of tax reform in Zimbabwe, Literature Review, and Methodology description, Results, and finally the Conclusion and Policy Recommendation.

OVERVIEW OF MACROECONOMIC BACKGROUND

Before independence Southern Rhodesia was relatively isolated from the rest of the world. International sanctions forced the then government to implement an import-substituting industrialization stance encompassing a wide-range of controls on foreign trade and capital movements in a bid to mitigate possible balance of payments crisis. Price controls, subsidies and other interventions were subsequently introduced. Inflation as measured by the Consumer Price Index (CPI) averaged 15.7% over the period 1970-75 and increased to an average 24.2% in the period 1976-80 (at constant 1990 prices). Real GDP increased over the same period from an average of ZW$11.868 billion to ZW$12.354 billion respectively (refer to Table 1). On the fiscal side, the Smith government managed to control the fiscal deficit such that expenditures almost equaled revenue receipts during the period 1970-3. For the period 1974-79 the deficit gradually increased from ZW$0.251 billion in 1974 to ZW$1.502 billion by 1979. Government revenue to GDP ratio averaged 17.40% while expenditure to GDP ratio was 25.22%.

From 1980, following independence the new government implemented the policy *"Growth with Equity, 1980-1990"* with the main thrust of redistributing income to the poor. The minimum wage, basic commodities price controls, black affirmative action and indigenization policies were rigorously pursued. There was a strong commitment to fiscal soundness, targeting a reduction in the rate of growth of net current expenditure to levels below 7% in real terms or 1% below that of GDP per annum. Table 1 highlights Zimbabwe's macroeconomic indicators for the period 1970-2011. From the table it is clear that following independence in 1980, GDP steadily increased from an average ZW$15.908 billion (1981-85) to about ZW$24.310 billion (1996-2000) before declining to ZW$20.446 billion over the period 2001-2005. Inflation, as measured by the Consumer Price Index (CPI) continuously increased in independent Zimbabwe. Zimbabwe's inflation increased rapidly from an annualized average of 55% in 2000, to 586% in 2005 and reached 231 million percent by July 2008. The hyperinflation is believed to have been occasioned by among other factors, the Fast-Track Land Reform programme of the year 2000 which caused massive farming disruptions and capital flight. According to Moyo (2004) agricultural production declined in both volume and value terms since 2000 when compared to average output during the 1990s and between 2000 and 2004 alone, agricultural production fell by 30%.

Historically, there have always been mismatches between government expenditures and revenues in Zimbabwe. Expenditures have always outweighed revenues resulting in persistent budget deficits. The long history of fiscal disequilibria placed the country in debt distress in the new millennium. The country debt to GDP ratio increased from 72.8% in 2004 to 92.9% in 2008. The country's total debt including arrears as at 31 October 2009 was US$5.417 billion, representing a debt to GDP ratio of 121.7% (RBZ, 2009). Of this amount external payment arrears were US$3.839 billion, about 71% of the overall debt. Government arrears alone were US$2.340 billion whilst parastatal, Reserve Bank and private sector arrears accounted for US$895.7 million, US$568.8 million and US$34.4 million, respectively (2010 National Budget Statement). This is not in line with the targets for macroeconomic

convergence in SADC which requires that overall budget deficit (excluding grants) and public debt should be less than 10% and 60% of GDP respectively.

Table 2 shows Zimbabwe's fiscal operations for the period 2005-09. Tax revenue constituted about 24% of GDP in 2005, and this ratio declined to only 4% in 2008. Total revenue as a percentage of GDP should however be greater than 20% (Economic Commission for Africa, 2007). By tax sources contribution, personal income taxes accounted for 7.2% of GDP, followed by VAT (7%), corporate income tax (4.4%) and customs duty (2.3%) in 2005. These contributions reversed in 2009, with customs duties contributing the greatest chunk (8%) followed by VAT (7.6%), personal income taxes (3.4%) and corporate tax (3.3%) in 2009. This reversal is reflective of the changing structure of the economy, moving away from production to consumption. As inflation soared over the period 2005-08, domestic production declined and the country had to survive on imported products, mainly from South Africa and China. The decline in tax revenue collections over the period 2005 – 2008 is a reflection of the economic depression that the country went through which resulted in a severe informalisation of the economy. Relative to the size of the economy, Quasi-Fiscal Activities (QFA) by the RBZ accounted for the greatest share (28.4%) of government financing in 2005. These outlays by the RBZ increased to 35.7% in 2008. These activities included interest rate subsidies, support for ailing enterprises and financial institutions, payment of government debt, and financing of exchange rate losses incurred by the government. Zimbabwe's soaring inflation since 2004 was due more to the RBZ's substantial quasi-fiscal activities than to conventional government budget deficits (IMF, 2007).

TAX REFORM IN ZIMBABWE

Zimbabwe followed through a number of tax reform efforts over the study period. Sales Tax reforms began in 1985 with an increase in the general sales tax from 10% to 20% and subsequently to 25% in the same year. Four years later the rate was revised downward initially from 25% to 22.5% and finally to 17.5%. An amendment to the Sales Tax Act followed in 1993 with the aim of excluding finance charges on the calculation of sales tax on a finance lease to encourage lease hire. In 1994 the Sales Tax Act was further amended to allow for installments in tax payments and also in 1997 to provide for bad debts. New legislation to the Sales Tax Act were also enacted (in 1998 to allow for the introduction of sales tax on services, in 2002 to allow for the removal of sales tax on brick purchases of 5 000 and above). In 2004, a Value Added Tax (VAT) was introduced to replace sales tax and several small taxes such as gaming, betting and some stamp duties. Some institutional reforms also took place with the Zimbabwe Revenue Authority (ZIMRA) being established in 2001 from the merger of the Department of Taxes and the Department of Customs and Excise. ZIMRA was created to improve efficiency in revenue administration and to enhance revenue collection and trade facilitation.

With respect to Pay As You Earn (PAYE), the income tax rates and bands were altered and narrowed on several occasions to reflect the inflationary developments on the ground. Tax free thresholds were also adjusted starting in 2001 when the threshold was increased from ZW$30 000 to ZW$60 000 per year. In the same year income bands were altered to begin at ZW$60 000 and end at ZW$840 000 after which a surcharge of 30% was applied.

In 1975 there was a move towards a system of current corporate tax payments with the rate applied on current taxable income. Intensive audits and investigations were occasioned with regular adjustments to the corporate tax rate. The rate was generally reduced during the study period, from as high as 50% in 1982 to 30% by 2001. In 1998 the tax base was broadened to include pension funds and profits taxed at 15%. Tax incentives were granted to companies

locating in growth points. In 2006 a self assessment of corporate income tax was encouraged in a bid to allow for ZIMRA officials to focus more on auditing compliance standards.

In the early 1990s government's intention was to phase out the import surtax and to move towards greater uniformity in the tariff structure. Before then there were direct controls on imports and foreign exchange with import tariffs at varying rates across commodities and 20% import surtax. The Economic and Structural Adjustment Programme (ESAP) of the early 1990s shifted the country from quantitative restrictions to tariffs which were massively reduced. The gradual elimination of import licenses and freeing of foreign exchange took place as part of the ESAP, which also simplified the tariff structure and significantly reduced the average tariff rate to 17% by 1994 (Bautista & Marcelle, 2000). Effective nominal average tariffs which included surcharge and rebates fell substantially during ESAP. Table 3 shows the ratio of duty actually collected to import values. The statistics show a substantial decline in the ratio from 24.3 in 1990 to 13.3 in 1998. This is reflective of the trade liberalization policy adopted under the ESAP.

A BRIEF REVIEW OF LITERATURE ON ZIMBABWE

A number of studies have been carried out on the productivity of tax systems in various countries (Manfield (1979) for Paraguay, Ole (1975) for Kenya, Tanzi (1976) for USA, Chipeta (1998) for Malawi). However studies on the Zimbabwean tax system are very few. Harris & Wigwiri (1980), using the dummy variable technique, estimated the revenue performance in Zimbabwe by calculating the elasticities of income and profit tax revenues for the period 1966-1977. Results from their study showed that income and profit taxes were elastic. However, a few shortcomings from thier study can be noted. Firstly, the researchers used annual time series data over a period of 11 years. The sample size limit means that no meaningful statistical inference can be deduced from the estimation results (Newbold, 1995). Secondly, they failed to capture the effect of new policy guidelines that are contained in budget speeches which are not implemented immediately as described by Ariyo (1997). A lagged income variable would have captured this effect. Rao & Katsande (1985) carried out a similar study but this time using the partial adjustment method. Their results confirmed those found by Harris and Wigwiri except that import and excise duties were inelastic. This unproductivity was attributed to the numerous exemptions on imported goods and tax evasion at the border posts. Because there is no data on revenue receipts directly attributable to discretionary changes in tax policy, the partial adjustment method used by Rao and Katsande (1985) has its own shortcomings since the adjusted tax data used were mainly estimates (Ariyo, 1997). Instead of using such estimates, the use of the dummy variable technique as developed by Singer (1968) would circumvent the shortcomings.

Lambert & Suckling (1986) in their paper titled "Revenue Elasticity of the Zimbabwean Individual Income Tax" covering the period 1967-81 found that corporate and individual income taxes were buoyant and elastic. However, their study ignored the other major tax heads VAT, customs and excise duties despite their significant contribution to total tax revenue. Using an error correction model estimation technique, Chidakwa (1996) estimated the productivity of Zimbabwe's major tax heads and the overall tax system. His study found sales tax to be elastic while the total tax system, excise duty and corporate tax were inelastic. He note that the corporate tax head failed to generate enough revenue because a significant number of small to medium scale businesses and those in the informal sector were largely outside the tax system. He further added that in some instances the income generated by the small to medium businesses and informal sector exceeded that earned by registered

businesses. In order to generate more revenue he recommended broadening the tax base and upholding the principle of equity in taxation.

METHODOLOGY AND MODEL SPECIFICATION

This study borrows from Singer (1968)'s multiplicative functional form of a tax revenue model specified as:

$$T_t = e^{\alpha} Y_t^{\beta} e^{\varepsilon_t} \qquad (1)$$

Where T_t is total tax revenue, Y_t is current real income (GDP), α is a constant term, β is an estimateable parameter, e is a natural number and ε_t is a stochastic error term with mean zero and constant variance. This specification follows standard practice in assessing the productivity of a tax system (see Ole, 1975, Wilford and Wilford, 1978a and 1979b, Rao, 1979, Omuroyi, 1983, Asher, 1989 and 1995, Ariyo, 1997, Wawire, 2000 and 2003)

Tax Buoyancy

Tax buoyancy measures percentage changes in tax revenue, including discretionary tax changes, due to a one percent increase in the base (GDP, in aggregate level). To estimate the parameters of the tax revenue model in equation (1) using the OLS method, the multiplicative equation is linearized by taking the logarithms of the variables. Therefore, the general estimating equation for the buoyancy of the tax system as a whole is:

$$InT_t = \alpha + \beta \, InY_t + \varepsilon_t \qquad (2)$$

Where; T_t is total tax revenue, Y_t is current real income (GDP), α is a constant term, β is an estimateable buoyancy parameter and ε_t is a stochastic error term. Ariyo (1997) suggested an additional modification to equation (2). He suggested the introduction of a one-year lag in GDP. The argument is that new policy guidelines contained in a budget speech may not be implemented until the relevant circulars are issued. The one-year lag in income captures the potential effects on tax revenues due to implementation time lag. If there are pronounced administrative lags or delayed remittances, the lagged value will be more significantly associated with the dependent variable in each equation. Effecting this argument into equation (2), the following tax revenue equation is estimated:

$$InT_t = \alpha + \beta_1 InY_t + \beta_2 InY_{t-1} + \varepsilon_t \qquad (3)$$

Where; T_t is total tax revenue, Y_t is current real income (GDP), Y_{t-1} is the previous year's real income (GDP), β_1 and β_2 are the buoyancy coefficients for current and previous years respectively. To estimate the buoyancies of individual tax heads (Total Tax Revenue (TTR), Value Added Tax/Sales Tax (VAT/ST), Excise Duty (ED), Customs Duty (CD), Pay As You Earn (PAYE), and Corporate Tax (CT)) the superscript i which represents a particular tax source, is introduced in equation (3) as follows:

$$InT^i_t = \alpha + \beta^i_1 InY_t + \beta^i_2 InY_{t-1} + \varepsilon^i_t \qquad (4)$$

Where; T^i_t is the tax revenue from the ith source, Y_t is the current real income (GDP), Y_{t-1} is the previous year's real income (GDP), β^i_1 and β^i_2 are the buoyancy coefficients from the ith source for current and previous years respectively.

Tax Elasticity

The foregoing approach of evaluating tax buoyancy does not take into consideration the special characteristics of the nature of the tax system and institutional and demographic factors that shape the trends in the economy. Considering the fact that tax revenues might change over time due to changes in exogenous variables, the buoyancy estimations presented above can be re-specified and dummies introduced for discretionary tax measures. Dummies are introduced for each year in which there were major discretionary tax measures (See table 6). Closely following Wilford & Wilford (1978a), the introduction of dummy variables in those years where exogenous influences occurred through major discretionary tax changes captures the effects of non income related influences such as tax rate and tax base changes, legislative enactment and tax administration efficiency. The estimating tax revenue equation (1) is thus re-specified as:

$$T_t = e^{\sum_{i=1}^{k} \alpha_i D_i} Y_t^{\sigma} e^{\varepsilon_t} \qquad (5)$$

Equation (5) now takes into consideration the special characteristics of the nature of the tax system and institutional and demographic factors that shape the trends in the economy thus the re-specified tax revenue equation is used. Taking logarithms to equation (5) and introducing lagged income as before, the estimating equation where unusual observations are seen is:

$$InT_t = \sum_{t=1}^{k} \alpha_i D_i + \sigma_1 InY_t + \sigma_2 InY_{t-1} + \varepsilon_t \qquad (6)$$

Where; Y_t is current real income (GDP), Y_{t-1} is previous year's real income (GDP), D_i are the intercept dummy variables taking the value of 1 in the years in which there were discretionary changes and 0 otherwise; α_i are the coefficients of intercept dummies, where i=1,..,k; σ_1 and σ_2 are the elasticity estimates of the total tax revenue; k are the number of dummies representing discretionary tax changes and ε_t is the stochastic error term

Total tax revenue is the dependent variable in estimating both the elasticity and buoyancy of the Zimbabwean tax system as a whole. The productivity of a tax system is measured in terms of the total revenue it generates in response to changes in income (per capita GDP) as well as effects of discretionary tax changes over time. In this study, the total tax revenue will include revenue from taxes on incomes and profits (both individual and company taxes), taxes on goods and services (VAT/Sales Tax, customs duty and excise duty) and miscellaneous taxes which include stamp duties and fees, estate duties and business licenses. As per capita GDP increases total tax revenue is expected to increase as well. This is so because, ceteris paribus, incomes, profits, goods and services from which total tax revenue is generated will also be increasing in response to increasing economic activity.

RESULTS

Buoyancy Estimates

Table 4 shows the buoyancy estimates of the Zimbabwean tax system. Total tax revenue is used in the measure of buoyancy of the overall tax system. The estimated buoyancy for the overall tax system over the period 1975-2008 is 0.708. The coefficient has a positive sign and is statistically significant at the 1% level of significance. This means that for every 1

percent increase in real per capita income (GDPPC), revenue from the total tax system grows on average by 0.708 percent. As such, the total tax system is not buoyant with respect to GDPPC and hence is not generating enough revenue both through discretionary tax measures and through growth in economic activity. These results are consistent with those found by Chidakwa (1996) and can be attributed to great laxity in the administration of taxes. Another possible explanation for poor revenue performance is the existence of a huge informal sector which is largely outside the tax system.

VAT/Sales Tax has an estimated buoyancy coefficient is 0.815. The coefficient has a positive sign and is statistically significant at the 1% level of significance. The non-productivity of this tax source is attributed to the numerous exemptions and tax evasion necessitated by multiple and complex rates assigned to VAT/Sales Tax over the period 1975-2008. Excise duty is also not buoyant with a buoyancy coefficient of 0.496 although it is statistically significant at the 1% level of significance. This result compares favourably to those of studies carried out by Rao and Katsande (1985) and Chidakwa (1996). Both these studies found excise duties non-productive and non-buoyant. Rao and Katsande (1985) attributed the low buoyancy coefficient to the tax reforms of the early 1980's which were not so progressive in nature. However, this study's buoyant coefficient is greater than those found in the previous studies. The reason behind this is that the government has shifted to taxing excise products using the ad valorem based method instead of specific rates. To raise the same amount of revenue for instance, an advalorem tax is set at a higher proportion of the original price before the tax than a specific tax.

With respect to customs duty, results reveal an income buoyancy coefficient of 1.917. The coefficient has a positive sign and is statistically significant at the 1% level of significance. The estimation results demonstrate an income buoyant tax head. This means that if GDPPC grows by 1 percent, customs duties will grow by 1.917 percent. Over the study period customs duties have been quite productive in generating revenue for the government. This conclusion is however different from that reached by Rao and Katsande (1985). The reason behind the improvement in revenue generation from this tax head are the intensive boarder post patrols and investigations leading to increased compliance and customs duty revenue. The other reason is the amendment of the calculation of the specific component of customs duty towards an ad valorem based method. Additionally, the Zimbabwean economy transited into a consumption economy in the new millennium due mainly to the economic meltdown. As such most goods and services had to be imported.

In respect of PAYE, the estimated buoyancy coefficient is 0.657. The coefficient is positive and statistically significant at the 5% level of significance. The main reason behind PAYE not generating enough revenue is the fact that the Zimbabwean economy went on a decline over the 1999-2008 period. This resulted in most employees being laid off and the unemployment rate spiralling to over 90%. As such this tax head which is levied on the earnings of employees declined accordingly.

The corporate tax head is found not to be buoyant with a coefficient of 0.895. These results compare favourably to those found by Chidakwa (1996) who concludes that the corporate tax head failed to generate enough revenue because a significant number of small to medium scale businesses and those in the informal sector were largely outside the tax net. Additionally, most corporates downsized considerably during the economic meltdown experienced between 1999-2008 resulting in very low profits.

The buoyancy coefficients of total tax revenue, customs duty and corporate tax with respect to $GDPPC_{t-1}$ are negatively signed and statistically significant. Total tax revenues, customs

duty and corporate tax revenues respond with lags to changes in GDPPC. This means that the previous levels of GDPPC have significant influence on the present levels of total tax revenues, customs duty and corporate tax revenues. This implies that new policy guidelines contained in the budget speeches are not usually implemented immediately and this influences total tax revenue, customs duty and corporate tax revenues collected at a point in time.

Elasticities Estimates

The effect of automatic growth alone, abstracting from discretionary changes is the elasticity of a tax. It is, by and large, a desirable property of a tax that its revenue growth keeps pace with that of GDP without frequent discretionary changes having to be made to its rates and structure. This, however, requires that the tax elasticity coefficient be equal to or exceed one. Table 5 reports the derived elasticity index for the overall tax system and the individual major tax heads in Zimbabwe. The estimated elasticity of the overall tax system over the period 1975-2008 is 0.664. The coefficient has a positive sign and is statistically significant. This means that for every 1 percent increase in real per capita income (GDPPC), revenue from the total tax system would grow by about 0.664 percent if the legislation, tax rates and bases and tax revenue administration had remained unchanged over that period. As such, the total tax system is inelastic. This result is consistent with that of Chidakwa (1996) who also found that the total tax system in Zimbabwe is income inelastic and hence revenue unproductive.

Customs duty is income elastic with an income elasticity coefficient of 1.55. This shows that over the period 1975-2008, customs duties have been quite productive in generating revenue for the government without frequent discretionary changes having to be made to their rates and structure. The reason behind this may be a reflection of the rapid growth in imports arising from trade liberalization which began during the ESAP period in 1991.

VAT/Sales Tax has an estimated elasticity coefficient is 0.735. This tax head's revenue growth is not keeping pace with the growth of GDP and hence it is income inelastic. Again this can be attributed to the numerous exemptions and tax evasions necessitated by multiple and complex rates assigned to VAT/Sales Tax over the period 1975-2008. Like manner, the following tax heads were found to income inelastic with the following elasticities: excise duty (0.59), PAYE (0.65), and corporate tax (0.79). The result on excise duty compare favourably to those of studies carried out by Rao and Katsande (1985) and Chidakwa (1996) who attributed the low elasticity coefficients to the tax reforms of the early 1980's which were not so progressive in nature.

Dummies D_i , where i=1,..,3 were assigned for changes in tax rates, tax legislative enactment and improvement in tax collection techniques respectively. Most of the dummy coefficients are negatively signed and not significant implying that the various discretionary tax changes had a very minimal effect on tax revenues. The insignificance of the dummies is attributed to the nature of the tax regime which had significant and widespread tax distortions ranging from concessional rates, exemptions, allowances, reliefs, deductions and rebates for certain activities, goods, or classes of taxpayers thus making discretionary tax changes less effective.

CONCLUSION AND POLICY RECOMMENDATIONS

This study tested the revenue productivity of the Zimbabwean tax system over the period 1975-2008 on the basis of estimates of tax buoyancies and elasticities. The main thrust was to provide means of designing a tax system that is viable and able to support government programmes without turning to printing money and seeking external funds. Based on the empirical evidence from the study, the tax system as a whole and the individual taxes with

the exception of customs duty are both income inelastic and non productive. Buoyancy and elasticity coefficients, except for customs duty, were all less than unity. This implies that the tax system has failed to generate the necessary revenue. However, all taxes except excise duty had a buoyancy coefficient greater than the elasticity coefficient, indicating that discretionary tax measures were important in raising tax revenue especially in the collection of customs duty. The study's findings show that the total tax system is neither buoyant nor income elastic.

The study findings are attributed to the numerous exemptions inherent in Zimbabwe's tax system, particularly VAT and excise duties, which are given, based on either equity or investment grounds. This not only erodes the tax base but also makes tax administration difficult and thus compromise revenue productivity. In order to boost revenue generation, government enterprises, for example, should not be exempted from paying either VAT or customs duty. In undertaking tax reform, authorities should direct such reform towards improving tax administration to minimize evasion and improve compliance, and to substantially reduce or totally eliminate exemptions which often erode the effective tax base. To reduce or eliminate tax evasion, the government should impose harsh economic penalties for under declaration and late payment of taxes and gazette tax evaders in order to deter potential tax evaders. With regards to corporate tax and PAYE, the government should come up with policies that are able to bring into the tax net the numerous limited liability companies that comprise the informal sector all over the country. This will go a long way in improving revenue generation from these two tax heads because in some instances the income generated by the small to medium businesses and informal sector, which are largely outside the tax system, exceeds that earned by registered businesses. The government must also enforce property rights and purse sound macroeconomic management so as to create an enabling environment in which business can flourish, make profit and pass the same to the government in terms of increased tax revenue. In addition, top personal tax rates must be aligned with the corporate tax to reduce the incentive of shifting income among the categories of personal income and corporate income. The ZIMRA must continuously improve and simplify tax administration procedures to ensure compliance. This can be done by, for example, computerization of tax records to detect evasion and keep registration and assessment up to date. The tax authorities must also provide and enhance the information base and tax payer education throughout the country. This will help in enhancing tax collection and encouraging more people to pay tax.

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APPENDIX

Table 1. Zimbabwe's Macroeconomic Indicators (Averages)

Year	Real GDP ZW$billion	CPI (%)	Exports ZW$billion	Imports ZW$bilion	Fiscal Deficit ZW$billion
1970-75	11.868	15.7	2.540	2.540	(0.184)
1976-80	12.354	24.2	2.650	2.630	(1.026)
1981-85	15.908	44.7	3.620	3.700	(1.075)
1986-90	19.197	80.4	4.520	4.130	(1.204)
1991-95	22.248	226.1	6.910	7.810	(1.496)
1996-00	24.310	739.9	11.100	11.610	(3.094)
2001-5	20.446	102 719.9	10.300	11.530	(0.922)
2006-08	-	-	1.819	2.113	
2009*	5.561	(5.5)	1.591	3.213	00
2010*	8.290	5.1	2.089	3.552	00
2011*	10.000	7.7	2.357	3.546	00

Sources: Central Statistical Office, Quarterly Bulletin of Statistics, various dates; Central Statistical Office, National Income and Expenditure Report, various dates, RBZ, Quarterly Economic and Statistical Review, various dates. Figures are in millions at constant 1990 ZW$ prices. * means figures in that particular year are quoted in United States dollars

Table 2. Zimbabwe's Fiscal Operations 2005-2011 (% of GDP)

	2005	2006	2007	2008	2009	2010	2011
Total revenue	24.5	14.0	5.7	4.2	28.6	23.3	22.68
Tax revenue	23.7	13.6	5.4	4.0	25.3	21.6	21.0
Personal Income tx	7.2	3.3	1.6	0.7	3.4	4.1	0.04
Corporate income tax	4.4	2.4	0.9	0.6	3.3	3.22	0.02
Other direct taxes	1.4	1.3	0.5	0.1	0.8	2.2	0.01
Customs	2.3	1.8	0.3	1.4	8.0	3.5	0.03
Excise	0.8	0.4	0.2	0.2	1.8	1.5	0.02
VAT	7.0	4.0	1.7	1.0	7.6	8.5	6.5
Other taxes	0.5	0.3	0.1	0.1	0.3	0.2	0.0
Non-tax revenue	0.9	0.5	0.2	0.2	3.3	1.3	0.02
RBZ Quasi-fiscal activities	28.4	33.0	22.9	35.7	0.0	0.0	0.0

Source: Author's computation from various budget statements

Table 3. Ratio of Duty Collected to Import Values (1990-1998)

1990	1991	1992	1993	1994	1995	1996	1997	1998
24.3	24.1	22.5	19.9	15.7	13.0	13.5	14.5	13.3

Source: Central Statistical Office, various dates

Table 4. Buoyancy Estimates

Tax Head	TTR	VAT/ST	ED	CD	PAYE	CT
Constant	0.004 (0.166)	0.025 (0.835)	0.007 (0.18)	-0.015 (-0.185)	0.0106 (0.262)	-0.0119 (-0.341)
$LDGDPPC_t$	0.708* (4.058)	0.815* (3.999)	0.496*** (1.896)	1.917* (3.294)	0.657** (2.354)	0.895* (3.580)
$LDGDPPC_{t-1}$	-0.401** (-2.302)	-0.283 (-1.379)	-0.030 (-0.114)	-2.117* (-3.642)	-0.270 (-0.958)	-0.541** (-2.202)
R2	0.4	0.5	0.2	0.5	0.3	0.4
D.W	1.9	1.9	2.2	2.2	2.2	1.9
F	6.5*	10.7*	2.5***	8.9*	4.8*	5.4*

*, **, *** significant at 1%, 5% and 10% significance level respectively, t-values are in parentheses

Table 5. Elasticities Estimtes

Tax Head	TTR	VAT/ST	ED	CD	PAYE	CT
Const ant	0.094** (2.189)	0.055 (1.406)	0.044 (1.065)	0.005 (0.039)	0.029 (0.562)	-0.009 (-0.222)
$LDGDPPC_t$	0.664* (3.969)	0.735* (3.038)	0.594** (2.255)	1.550** (2.388)	0.649** (2.248)	0.792* (3.229)
$LDGDPPC_{t-1}$	-0.496* (-2.957)	-0.347 (-1.395)	-0.148 (-0.573)	-1.914* (-3.075)	-0.397 (-1.046)	-0.491*** (-1.990)
D1	-0.050 (-0.928)	-0.042 (-0.525)	-0.053 (-0.596)	-0.261 (-1.225)	-0.051 (-0.552)	-0.007 (-0.080)
D2	-0.099*** (-1.765)	-0.077 (-1.028)	-0.218*** (-2.002)	0.179 (0.803)		-0.238*** (-2.037)
D3	-0.003 (-0.048)	-0.052 (-0.588)		0.062 (0.235)	-0.056 (-0.264)	0.151 (0.164)
R2	0.54	0.6	0.33	0.53	0.35	0.5
D.W	1.9	1.8	1.96	2.0	2.2	2.2
F	4.8*	5.3*	2.5***	4.8*	2.8**	3.8*

*, **, *** significant at 1%, 5% and 10% significance level, t-values are in parentheses