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Assessing the Dynamics of Fiscal Performance in Zimbabwe

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Abstract *- The study examines the dynamics of fiscal performance in the Zimbabwean economy. The study used annual time series data starting from the year 1990 up to 2020 to establish the economic factors contributing to budget deficits. During the period under review, Zimbabwe has experienced perpetual budget deficits except during the years 2009, 2010 and 2011 where budget surpluses were chronicled. The fiscal imbalance that has characterised the economic landscape of Zimbabwe have had negative pass-through effect on the broader economy at large. The variable budget deficit was used as the dependent variable whilst the explanatory variables used in the study are unemployment, gross domestic product, gross fixed capital formation, foreign debt, real interest rates, and the lagged value of the budget deficit. Using the full-bodied OLS regression methodology, the empirical results indicated that three variables which are unemployment, gross domestic product, and the legged value of the budget deficit are significant in explaining budget deficits in Zimbabwe. The variables unemployment and the legged value of the budget deficit were found to be positively related to budget deficits whilst the GDP variable was found to be inversely related to budget deficits. It is against this background that this research recommended the government reduce unemployment to increase final demand in the economy which boosts tax revenues thereby reducing budget deficits. The government is encouraged to balance its books and avoid the rolling over of budget deficits to the forthcoming year to avert perpetual deficits. The government also needs to increase gross investment levels in the country to boost GDP which will result in the reduction of the budget deficit via multiplier effects.*

Keywords: *revenue, gross domestic product, GDP, Zimbabwe*

INTRODUCTION

Fiscal performance has been a focus of countless deliberation and dialogue among economists for many years such that the issues surrounding fiscal performance are not new but have led to renewed interest in the fiscal themes. The Fiscal Council (2012) defined fiscal performance as the relationship between total government expenditure and revenue in a specific year. When government expenditure exceeds revenue, the government is said to have ran a budget deficit. A budget surplus occurs when government tax receipts exceed government expenditure and a budget deficit or surplus is usually expressed as a percentage of GDP.

The budget deficit and its financing are a major predicament in front of many countries in the world, Zimbabwe is not spared. Budget deficits have characterised the economic landscape of Zimbabwe as far as from 1990 to 2020 except in 2009, 2010 and 2011 where budget surpluses were recorded. Ross (2018) argues that budget deficits result in serious challenges to the economy which include crowding out the private sector from the borrowing market, distortion of investment structures and interest rates, a reduction in net exports, higher taxes, and higher inflation among others. Zimbabwe is not spared from the economic tribulations that are brought about by budget deficits. In this look upon, this study aims to analyse the dynamics of fiscal performance in Zimbabwe paying attention to the economic determinants of budget deficits.

BACKGROUND TO THE STUDY

Zimbabwe's independence came in 1980 and the country maintained the economic course that was used by that of the preceding government of Ian Smith (Sibanda and Makwata, 2017). The economy was protected and dominated by controls on trade, a deep-seated import substitution strategy, controls on foreign currency, exchange rates, price controls, and regulation of wages and interest rate caps.

The government embarked on massive capital expenditure on infrastructure developments such as roads, schools and hospitals. The justification for this huge expenditure was to rebalance the lack or unavailability of these basic amenities to the majority of Zimbabweans (Saungweme, 2013). Such enormous social expenditure programmes, coupled with extensive development in infrastructure, immense industrial and agricultural subsidies, blew up public expenditure against government revenue. As a result, the budget deficit averaged 10% of GDP between 1980 and 1990.

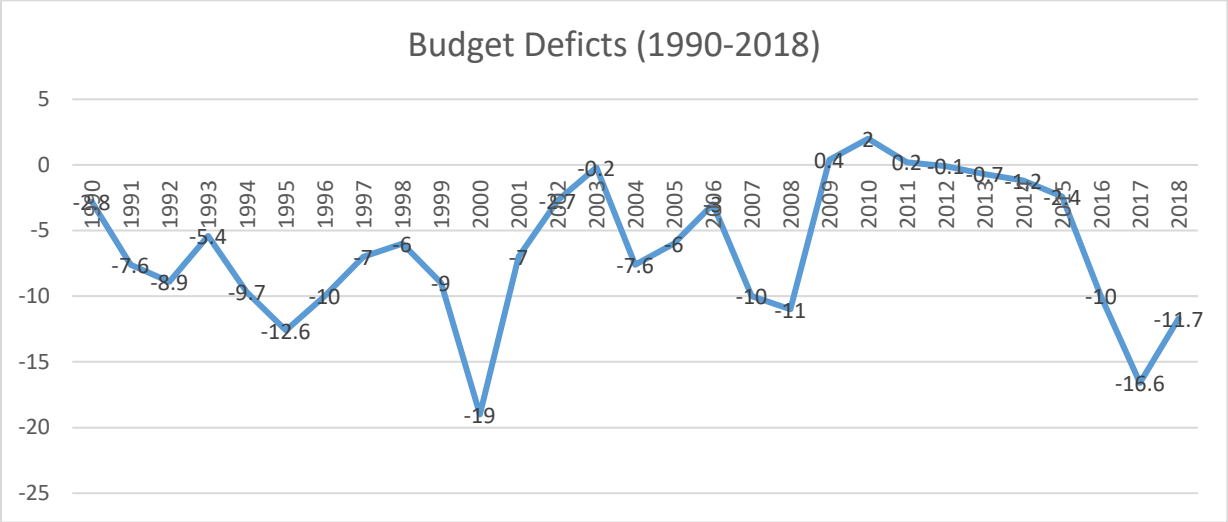
Between 1980 and 1990, the economy was affected by a series of economic challenges which included industrial inefficiency, low productivity, low import cover, rent-seeking behaviour, and public sector decay (Tekere, 2001). To solve these challenges, Zimbabwe announced a five-year reform package in 1991, the Economic Structural Adjustment Programme (ESAP) which was confined within the framework of the World Bank and the International Monetary Fund. The rationale of the programme was to reform the public sector by cutting expenditure on social services so that the resources can be channelled towards the capital formation. The reform package aimed at reducing the budget deficit from 10% of GDP to about 5% of GDP between 1991 and 1995. The ESAP reform package failed to meet the target as the budget deficit widened to 12% of GDP in 1995 (Sibanda, and Makwata, 2017).

The ESAP also failed to meet the other broader objectives which resulted in the government adopting another blueprint, the Zimbabwe Programme for Economic and Social Transformation (ZIMPREST) from 1996 up to the year 2000. The programme intended to reduce the budget deficit to a figure below 5% of GDP. The budget deficit in Zimbabwe continued to widen as it stood at 18.6% of GDP during the fiscal year 2000. In 2005 and 2006, the budget deficit as a percentage of GDP stood at 6.1% and 3.1% respectively.

Zimbabwe experienced the most awful economic crisis during the year 2008 which was characterised by hyperinflation which peaked at 231 million percent and a cumulative contraction in GDP OF -17.7% (ZIMSTATS 2008). The rate of unemployment in Zimbabwe stood at around 95% in 2008 placing Zimbabwe as the country with the lowest rate of employment in the world. The budget deficit was also a notable feature of the 2008 crisis which was estimated at 11% of GDP.

In 2009, there was great motivation to arouse the economy and the country adopted the multicurrency regime soon after the formation of the Government of National Unity (GNU) between the then president Robert Mugabe the late and the then Prime minister, Morgan Tsvangirai the late. The inclusive government stabilised the economy as most of the macroeconomic essentials were put right back on track. Between 2009 and 2011, the country recorded budget surpluses owing to the 'we eat what we kill' mantra of the then minister of finance, Tendai Biti. This period was characterized by cash budgeting meaning that no ministry or public agent was allowed to spend beyond its budget allocation (Ministry of Finance, 2009). Zimbabwe recorded a budget surplus of 0, 4% of GDP in 2009, 2% of GDP in 2010 and 0, 2% of GDP in 2011. It is only in the last year of the GNU that a budget deficit of 0, 1% of GDP was chronicled mainly due to the 2013 general election-related expenses.

After the expiry of the GNU, the government managed to contain a budget deficit below 3% of GDP. However, in 2016, fiscal negligence affected the authorities such that the government overran its revenues thereby taking the budget deficit to 10% of GDP. In 2017, the budget deficit stood at 16.6 % of GDP much owing to the fiscal mismanagement eluded above. In 2018, 2019 and 2020 the budget deficit in Zimbabwe stood at -11.7% of GDP, 2.7% of GDP and 2.9% of GDP in that order. The trends in Zimbabwe's budget deficit from 1990 up to 2018 are shown on the graph drawn below.



Source: Own Computation with data from ZIMSTATS and WB

The graph above shows that the government of Zimbabwe has had unsteadiness in its fiscal policy with fiscal deficits dominating the scene. The instability shown above is qualified to several factors which in some instances compelled the government to intervene and, in some cases, it was uneconomic spending on the part of the government. In 1992, Zimbabwe experienced the worst drought in the country's history (Maphosa, 1994). This threatened food security at the household level and at the national level at large prompting the government to intercede through grain importation. In the years 1992/1993, the Government of Zimbabwe imported 1.85 million tonnes of grain at Z$1200 per tonne. The drought also affected most sectors of the economy which had negative pass-through effects on the ability of the government to generate revenue.

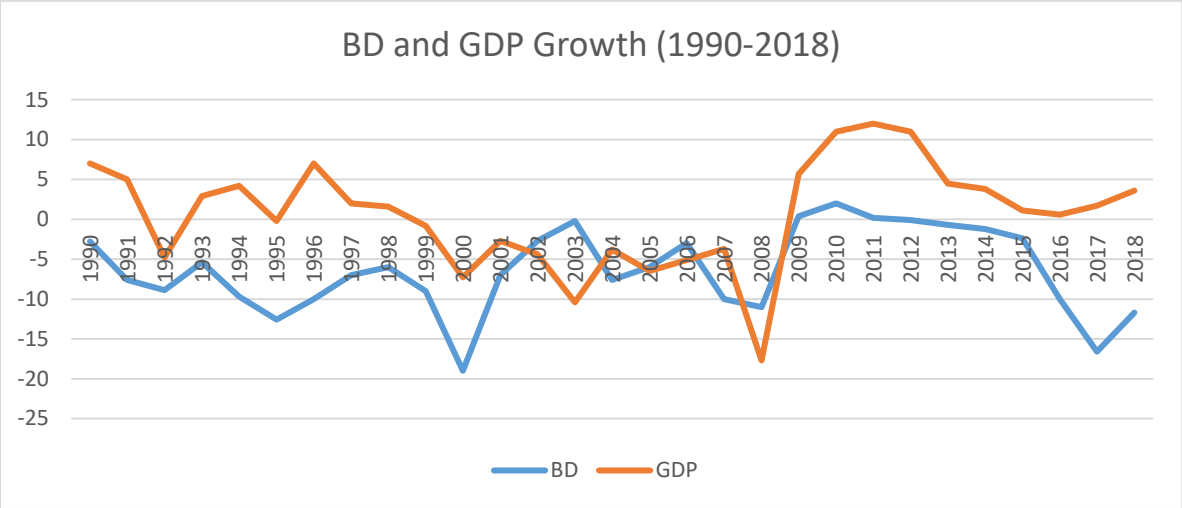
In 1997, the government submitted itself to the enormous pressure from the war veterans who commanded to be accredited for the work they did in emancipating the country. They appealed to be paid a tax-free gratuity in the form of a lump sum pension amounting to Z$50 000 (an equivalent of US$4000) per war veteran and a monthly pension of Z$4000 which was tax-free. They also demanded free education and free health care for the liberation fighters and their dependents. Makochekanwa (2010) argued that there was no proper financing mechanism for these gratuities since the government had not budgeted for them which later resulted in budget deficits.

In 1998, the government of Zimbabwe played a part in the DRC war where an estimated number of 11 000 troops were deployed. According to the Mail Guardian (2004), the war is believed to have been costing the economy of Zimbabwe the sum of US$1 million a day. The Financial Gazzete (2000) asserts that the government had not budgeted for this war such that the national budget for defence expenditure increased by 45% during that period. It is against this background that the disparity between government revenue and government expenditure was inevitable. Budget deficits continued to be a major problem facing the Zimbabwean Government. In 2000, the Government of Zimbabwe implemented the Fast Track Land Reform Programme. The ownership of land was transferred from the hands of the white commercial farmers into the hands of the black Zimbabweans through compulsory acquisition. Again, this process was very costly to the government as the process was done without proper planning.

The graph above reveals that the economy of Zimbabwe witnessed budget surpluses during 2009, 2010, and 2011 fiscal years. As eluded above, the country was under the administration of the GNU that had been formed by former President Robert Mugabe and former Prime Minster Morgan Tsvangirai, the late. A new culture of managing the economic affairs of the country was adopted characterised by cash budgeting. Between 2012 and 2020, budget deficits were back in the limelight in the economy of Zimbabwe.

Budget Deficits and Macroeconomic Performance in Zimbabwe

The relationship between budget deficits as a percentage of GDP and GDP growth rate for Zimbabwe is shown on the graph below.



Source: Own Computation with data from ZIMSTATS and WB

The above graph shows that a relationship between budget deficits and economic growth (GDP) can be established. For example, periods of high budget deficits such as the years 2000 and 2017 are characterised by low GDP growth rates. Between the years 2009 up to 2011, the country witnessed budget surpluses and the GDP growth rate was high. This can mean to say a high budget deficit can retard GDP growth rate whilst budget surpluses propel economic growth. However, the opposite may also be observed for the years 2005 and 2006 where the budget deficit was fairly low and GDP growth rate was low as well. Based on the data presented in the figure above, the relationship between Budget Deficits and GDP growth remains unclear. The budget deficit is a key fiscal indicator for any country since it has an important bearing on the macroeconomic performance of any economy.

Budget deficit financing in Zimbabwe

In the period before the formation of the GNU (1990 up to 2008), budget deficits that were incurred in Zimbabwe were supported commonly through the printing of money with a smaller percentage of less than five percent financed through banking sector borrowings. No significant sources of foreign finance were used to bridge the gap between expenditure and revenue during the period under review.

The economy of Zimbabwe was officially dollarized in 2009 and the central bank lost some of its functions which included the lender of last resort and money printing. As a result, the option of printing money could not be used by the Zimbabwean government to finance the budget deficit in a dollarized economy. The government of Zimbabwe could not utilize the option of borrowing from abroad to finance its budget deficit due to the high external debt. As a result, the authorities resorted to borrowing from the domestic market through the use of treasury bills and an overdraft facility with the central bank. In 2016, US$2.1 billion worth of treasury bills were issued and the figure increase to US$7.6 billion cumulatively by the end of August 2018. As at August 2018, the overdraft facility with the central bank stood at US$2.3 billion, a figure above the statutory limit of US$762.8 million (Ministry of Finance, 2018). The Reserve bank act mandates that the central bank advances to the government not exceed 20% of the previous year's revenue.

STATEMENT OF THE PROBLEM

Since 1990, Zimbabwe has recorded massive budget deficits except in 2009, 2010 and 2011 when the budget surpluses as a percentage of GDP stood at 0.4%, 2% and 0.2% in that order. It is therefore imperative to argue that the country has the ability and potential to balance its national accounts and or run budget surpluses. This prompts countless analysis on whether the budget deficits in Zimbabwe are a function of poor governance or are a result of the complex nature of the economic glitches that the authorities seek to ease. Therefore, this study pursues to scrutinize the economic determinants of fiscal performance dynamics (budget deficits) in

Zimbabwe from 1990 up to 2020. Explicitly, the study seeks to ascertain if budget deficits in Zimbabwe are a result of the fight against economic problems.

THEORETICAL LITERATURE REVIEW

The Keynesian Theory

The Keynesian model is hinged upon three key assumptions with the first one being that the economy is assumed not to be at the full employment level of production. In other words, it is a rare case for an economy to always be at the full employment level, economies are at an under-employment level. Secondly, the theory assumes that there exists a considerable number of liquidities constrained economic agents. Thirdly, it is assumed that consumption is related to current income. The grouping of these three critical assumptions purifies a positive impact of an increase in the budget deficit on consumption and investment and thus output

Deficit spending upsurges demand, which gets previously unutilized resources into the production process thereby increasing output. Consumers who are constrained in terms of liquidity have a high inclination to consume from the escalations in disposable income resulting from tax cuts or government expenditure increases. Given the fact that some resources are underutilized in the economy, an increase in aggregate demand escalates production and the overall profitability of investments (Eisner (1989)). Keynesians argue that public investment is complementary to private investment and that the high level of demand resulting from large deficits increases investors' expectations of profitability. Through these two mechanisms, deficit-financed public investment can crowd in private investment, thereby increasing the rate of capital accumulation

Oluba (2008) asserts that the Keynesian uprising brought the budget deficit out of the closet as an important macroeconomic variable. Keynes argued that the primary cause of unemployment is under consumption of goods in any economic setup. In this respect, unemployment is a result of insufficient or weak aggregate demand for goods and services in the economy. Deficit spending by the government stimulates the economy by making households feel wealthier thereby raising total private and public consumption expenditure. Since the economy is assumed not to be at full employment level, deficit spending boosts aggregate demand, private investment, and savings at a given level of interest rates in the economy. This stimulates domestic production in the economy thereby accelerating capital accumulation and growth. Keynes argued that aggregate demand in the economy can be stimulated by running budget deficits through the increase in government expenditure and/or reducing taxes.

In as much as Keynesian theory plays a critical role in explaining the significance of deficit financing in the economy, it is subject to criticism. The theory did not give enough attention to the money supply variable which has a pervasive influence on economic behaviour. Also, Keynesian theory did not look at inflation as a policy problem. Apart from the above, Reinhart and Rogoff (2010) argued that fiscal deficits could impact negatively on the external sector of the economy reflected by the trade deficit.

The Neoclassical Hypothesis

The standard neoclassical model is made up of three normal central features or assumptions. Firstly, the consumption of each individual is determined as the solution to an inter-temporal optimization problem where both borrowing and lending are permitted at the prevailing market rate of interest. The other central feature is that the individuals have a finite life span meaning that the economic agents do not live in perpetuity. As a result, each consumer belongs to a specific generation and the lifespans of the successive generations overlap. Lastly, the market is assumed to be clear in all periods meaning that the economy is always at or moving rapidly towards the full employment of resources. In light of these three important assumptions, a permanent increase in government consumption brought about by a permanent increase in the budget deficit raises interest rates, reducing private investment (Diamond, 1965).

The school of thought states that budget deficits raise the total lifetime or generation consumption by shifting taxes to the future generation. This is so because the individuals living in the current period perceive the prevailing budget deficits to be financed by future generations in the form of taxation. In this respect, government budget deficits increase the level of consumption in the short run. Since the economy is assumed to be at full employment level, an increase in consumption decreases the level of savings in the economy. Examining this relationship from the saving-investment identity in the economy, interest rates will increase to

balance the decrease in savings. The increase in interest rates makes private investments less profitable thereby decreasing private sector investment significantly. Alternatively, the Neoclassical economists argue that if the government finances the deficit by issuing treasury bills instead of increasing taxes, aggregate demand will increase and national savings will fall leading to the crowding out of private sector investment.

The effect that the budget deficit has on interest rates depends on whether the economy is closed or open. In a closed economy, a budget deficit increases interest rates because the demand for loanable funds to finance the deficit increases relative to the supply of the funds. The increased interest rates are said to have crowded out private investment (Abedian, 1998). In an open economy where the exchange rate is freely floating with perfect capital mobility, the increase in the interest rates in the domestic market attracts foreign capital. This causes the real exchange rate to appreciate thereby decreasing the competitiveness of domestic goods on the international market. This naturally translates into a deterioration of the country's balance of trade and in real terms, the budget deficit is said to be financed by an increase in the trade deficit.

However, some of the assumptions used in the build-up to the neoclassical hypothesis are not close to reality. The assumption of full employment of resources is spurious in the context of both developed and developing countries. The assumption of perfect market clearing is also not close to reality. In theory and practice, the concept of perfect markets is an ideal and not a possibility. Individuals are not as rational as asserted by the neoclassical hypothesis, especially to advocate that they have all the information they need to plan in a given life cycle. Information asymmetry is ubiquitous in most economic setups.

The Ricardian Equivalents Hypothesis

The Ricardian School was first proposed by David Ricardo and was later advanced by Barro (1989). The main idea behind the Ricardian hypothesis is that a budget deficit signifies a rescheduling of taxes into the future. The theory is made up of several assumptions with the first one being that successive generations are linked by altruistically motivated transfers. The other second critical assumption building this theory is that capital markets are either perfect or they fail in some way. Consumers are also assumed to be rational and far-sighted, and the postponement of taxes does not redistribute resources across families with systematically different marginal propensities to consume. Taxes are also assumed to be non-distortionary and the use of deficits does not create any value. The last assumption is that the availability of deficit financing as an instrument doesn't alter the political process.

The Ricardian equivalence proposition states that budget deficits and taxes have the same effect on consumption (Barro, 1974). An increase in the budget deficit that is brought about by a tax cut has no impact on consumer spending. In other words, a tax cut by the government reduces government savings leading to an offsetting increase in the level of the desired private saving leaving the level of national savings unchanged. If the consumers are Ricardian (forward-looking), they are fully aware of the intertemporal budget constraint of the government. They anticipate that if the government reduces taxes today and borrows by issuing government debt, the future generations will pay the debt in the future in the form of higher taxes. As a result, permanent income is not affected, given the absence of liquidity constraints and perfect capital markets, consumption will remain the same (Barro, 1974). In this respect, there is a Ricardian equivalence between taxes and debt. Perfect Ricardian equivalence implies that a reduction in government savings resulting from a tax cut is fully offset by higher private savings, and aggregate demand is not affected.

The Ricardian Equivalence hypothesis further asserts that the financing mechanism as in debt financing or tax financing of the budget deficit does not affect aggregate demand. The assumption is that individuals are rational and have all the information about their present and future tax liabilities, as a result, their current consumption is not altered. Thus, under conditions of short-run full employment equilibrium, debt finance does not affect the price level or the cost of borrowing**.** Barro (1989) argued that the reduction of taxes in the current period would somehow still have to be offset by some future tax hikes induced by the government debt. The overall effect is that the interest rates will remain unchanged and private investment remains the same as well. Therefore, the wealth effect of the deficit would be offset. Huang (1986) is of the opinion that it doesn't matter whether government expenditure is financed from taxes or the issuing of bonds, the neutrality argument will still hold.

The Ricardian view`s base of argument is that there is no direct relationship between budget deficit and economic variables and assumes farsighted individuals with extremely long-time horizons for evaluating the

present value of taxes. Budget deficits have no real effects on the economy as they do not affect the overall level of demand in the economy. A rise in government budget deficit financed through borrowing is equivalent to a future rise in the tax burden. Lower taxes in the present are offset by higher taxes in the future. In this sense, budget deficits and taxation have equivalent effects on the economy.

The conditions required for the Ricardian Equivalence to hold as discussed above are restrictive. The restrictive nature of these assumptions poses serious challenges in applying the theory in the real world. The debt neutrality assumption breaks down if agents have finite horizons. In the real world, capital markets are imperfect meaning that borrowing constraints are always present in the borrowing market.

EMPIRICAL LITERATURE REVIEW

Studies on fiscal performance dynamics have been done for both developing and developed economies. In 2016, Zuze did research on fiscal deficit and economic growth nexus in Zimbabwe from 1980 to 2015. To analyse the relationship, he used the Vector Auto Regression (VAR) model coupled with variance decomposition and impulse response functions. As per tradition in econometric analysis, diagnostic tests were conducted using the ADF tests and the results indicated that both budget deficits and economic growth are integrated of order one. The empirical results from his study revealed that an inverse relationship between budget deficits and economic growth exists. This means that an increase in GDP is accompanied by a decrease in the level of the budget deficit.

Furthermore, Makochekanwa (2008) did another research on the nexus between budget deficits and inflation in Zimbabwe. He used annual time series data which stretched from 1980 to 2005. Two-unit route tests were done to investigate the invariant characteristics of the four-time series data. These are the Augmented–Dickey–Fuller (ADF) and Phillips Peron (PP) and in both tests, the null hypothesis of a unit root could not be rejected for the variables expressed in level form. The empirical results from his studies revealed that a strong and positive relationship between budget deficits and inflation exists

Murwirapachena *et al* (2013) researched the economic determinants of budget deficits in South Africa. In his study, he used annual data which stretched from 1980 up to 2010. To determine the impact of selected macroeconomic variables in South Africa, the Vector Error Correction (VECM) was used. The budget deficit was used as the endogenous variable and the exogenous variables used were unemployment, gross fixed capital formation, foreign exchange reserves, economic growth, and total foreign debt. The results from the findings revealed that all the variables were statistically significant in explaining budget deficits in South Africa. The results also indicated that all the variables had a positive relationship with budget deficits except for foreign debt. However, foreign reserves explained the largest component variation of budget deficit followed by foreign debt, unemployment, economic growth, and government investment, in that order.

Odim (2018) analysed the Keynesian –Ricardian dichotomy on budget deficits in Nigeria. Annual data from the Nigerian economy ranging from 1970-2007 was used to examine the relationship between budget deficits and interest rates. The study employed cointegration analysis, Granger causality tests, and impulse response functions (IRF). Both the short-run empirical findings using VEC and IRF and the long-run empirical findings using Johansen technique were in line with the Keynesian proposition (crowding in effect). The Granger causality test using pair-wise Granger causality was also employed to test if there is causality between interest rates and budget deficit and to know the direction of causality (if it exists). The result reveals the independence of BD and RIR in both the regressions except at lag 6 and 8 where there is unidirectional causality from RIR to BD. The message that a change in budget deficit implies no effect on the rate of interest supports the theoretical grounds of the Ricardian equivalence hypothesis.

Halkawt (2015) did a research in Malaysia on the impact of macroeconomic variables on the budget deficit. The study employed the OLS regression methodology using annual data from 1980 up to 2013. The research aimed at establishing if there is a significant relationship and causal effect between current account balance (CAB), interest rates (IR), total investment (INV), gross national savings (GNS) and the budget deficit. The empirical results revealed that a significantly negative relationship between CAB and INV variables with the budget deficit exists. A significant positive relationship between IR and the budget deficit was also found in the study. The Granger causality revealed the presence of unidirectional causality between IR and BDF, CAB and INV both have a unidirectional association with INR.

RESEARCH METHODOLOGY

In order to determine the dynamics of fiscal performance in Zimbabwe, the explanatory variables to be used are, the unemployment rate, gross domestic product, real interest rates, foreign debt, gross fixed capital formation and the lagged value of the budget deficit. This research will adopt a model that was used by Murwirapachena *et al* (2013) in evaluating the economic determinants of budget deficits in South Africa. In their model, they modelled budget deficits as a function of selected macroeconomic variables and the model they used is shown below

$$BD = \alpha + \beta 1\ UNEMP + \beta 2\ GDP + \beta 3\ FOREV + \beta 4\ FODET + \beta 5\ GOVIN + \varepsilon t$$

From the model used by Murwirapachena *et al* above, the budget deficit is the endogenous (dependent) variable. The exogenous (independent) variables are unemployment, gross domestic product, foreign currency reserves, foreign debt, and gross capital formation. From the model above, the variable foreign reserves will be dropped and a new explanatory variable will be incorporated which is Real Interest Rates. Thus, the model in this study is specified as shown below:

$$BD = \alpha + \beta 1\ UNEMP + \beta 2\ GDP + \beta 3\ RIR + \beta 4\ FODET + \beta 5\ GFCF + \varepsilon t$$

Where:

BD: Budget Deficits

UNEMP: Unemployment Rate

GDP: Gross Domestic Product

RIR: Real Interest Rate

FODET: Foreign Debt

GFCF: Gross Fixed Capital Formation

α: Is the intercept term

Definition and the Justification of the Variables.

Unemployment Rate

Morr (2007) argued that unemployment occurs when a person who is qualified and searching for work is unable to find it. The effect of unemployment on budget deficits is not a clear-cut issue. High unemployment reduces the revenue of the government that is collected from taxes. High unemployment also calls for increased government social support which escalates government expenditure. Once this happens, the government will be likely to run a budget deficit such that a positive relationship between the two can exist. However, Saeidi and Valizadeh (2012) believe that a negative relationship between the two can also exist. This is supported by the famous economist Keynes who argued that during a recession, the government can run a budget deficit to stimulate aggregate demand in the economy. Thus, this variable is expected to carry a positive or a negative sign. The data on unemployment is collected from the publications of the Zimbabwe Statistics Agency (ZIMSTATS).

Gross Domestic Product

Gross Domestic Product denotes the monetary value of all goods and services produced in an economy. An increase in the GDP represents a source of liquidity in the market and the general economy at large. The relationship between budget deficits and GDP is not straight-forward (Rahman, 2012). Keynesian economists argue that a positive relationship exists between the two. This is so because the budget deficit helps the economy to grow provided that the deficits are due to productive expenditures such as education, health and capital expenditures. On the other hand, the new classical economists refute the prescriptions of the Keynesians. They argued that the government has to borrow money internally or externally in order to finance the budget deficit. This drives up the demand for loanable funds by the government which later distorts the level of private investment by increasing the interest rates. The decline in private investment will reduce the level of economic growth. It is against this background that the expected sign of this variable is also not a clear-cut issue.

Foreign Debt (FODET)

External debt is the share of a country's debt that was borrowed from foreign financiers not limited to commercial banks, governments, or international financial institutions. The principal amount and the interest of these loans are paid back in the currency in which the loan was made. The external debt increases the national income of the borrowing country during the period of borrowing and decreases it during the repayment period. During the repayment period, the borrowing countries have to decrease their investments, consumption, or both of them in line with debt repayment. This negatively affects the revenue that can be generated and collected by the government. This distorts the relationship between government revenues and government expenditure such that budget deficits will be inevitable. Sinan (2016), researched the relationship between budget deficits and external debt and found out that a negative relationship exists between the two. Thus, in this study, an inverse relationship between the two such that this variable is expected to carry a negative sign. Data on Zimbabwe's foreign debt was obtained from the World Bank, ZIMSTATS, and the International Monetary Fund.

Gross Fixed Capital Formation (GFCF)

It refers to the net increase in physical assets (investment less disposal) within the measurement period. This investment includes both private and public investments in infrastructure such as roads, bridges, and power generation. Nelson and Singh (1994) reasoned that developing economies have the desire to increase the growth rates of their respective countries. As a result, they have to increase the level of gross fixed capital formation which will have multiplier effects on the whole economy. Given the large amounts of idle resources in these respective economies, the government can increase investment by running a budget deficit. As a result, GFCF can impact positively budget deficits. Okoye *et al* (2015) conducted a research on fiscal deficits and macro-economic performance in Kenya and the empirical results revealed that a positive relationship exists between the two. It is against this background that the variable in this study is expected to carry a positive sign.

Real Interest Rates (RIR)

Real interest rates are nominal interests adjusted for inflation and the rate measures the cost of borrowing. The relationship between budget deficits and interest rates is not straight-forward as it needs careful attention. Budget deficits artificially inflate real interest rates (not the market interest rate) thereby increasing the cost of borrowing. This creates an imbalance between the supply and demand of funds putting upward pressure on interest rates. This makes it easy for the government to borrow, but hard for individuals and small companies to survive marginal increases in the real rate. Stated differently, high-interest rates make it difficult for the private sector to borrow. This means that the government will be the only player taking an active role in the borrowing market. Given the dwindling government revenues against the pressing demands of government expenditure, budget deficits will be inevitable. A study by Thomas Laubach revealed that there is a positive relationship between interest rates and budget deficits. As a result, the variable real interest rate is expected to carry a positive sign in this study. The data was collected from the Reserve Bank of Zimbabwe and ZIMSTATS.

Preliminary Data Analysis and Data Characteristics

Unit root testing is conducted to test for the stationarity of the time series variables used in the study. A time series is said to be stationary if the mean, variance, and autocorrelation structure does not change over time. Conducting regression with non-stationary variables can produce results that do not make any economic sense. Unit root testing is conducted using the Augmented Dickey Fuller (ADF) Test or the Phillip Peron (PP) test. The ADF test is used in a situation where the data has no structural breaks and the PP test is used if the data contains structural breaks.

The Engle-Granger methodology was employed to test for the presence of cointegration. The method generates the residual and tests it for stationarity using the ADF test. Cointegration does not reflect whether the pairs would move in the same or opposite direction, it reveals whether the distance between them remains the same over time.

The Chowbreak Point Test was conducted to ascertain if the structural break affected the parameters in the model. If the p-value of the f statistic is less than 5%, it means that the parameters were affected by the break and this requires the estimation of two regression models, one before and the one after the break.

To detect the presence of multicolinearity, the variance inflation factor (VIF) was used. Using the VIF, multicollinearity exists when the VIF coefficient is greater than five. To correct for multicolinearity, the least important variable amongst the correlated ones is dropped (Gujarati, 2004)

Autocorrelation occurs when there is a connexion between the error terms of sequential observations. Thus, the error term relating to any observation should not be influenced by the error term relating to any other period. The Breush-Godfrey Serial Correlation LM Test is going to be used to test first-order serial correlation.

RESULTS PRESENTATION AND ANALYSIS

Unit Root Tests Results.

Variable	ADF Statistic	Critical Value	Intercept	Order of Integration
BD	-5.530167***	-3.711457 -2.981038 -2.629906	YES	I(1)
UNEMP	-5.60111***	-3.699871 -2.976263 -2.627420	YES	I(1)
GDP	-6.918591***	-3.699871 -2.976263 -2.627420	YES	I(1)
RIR	-3.389405***	-2.650145 -1.953381 -1.609798	NO	I(0)
FODET	-3.836565***	-3.711457 -2.981038 -2.629906	YES	I(1)
GFCF	-4.221585***	-3.699871 -2.976263 -2.627420	YES	I(1)

**means significant at 10% **significant at 5% and ***means significant at 1% and at all levels.*

The above results reveal that the variable Real Interest Rates is stationary at level whilst the rest of the variables are difference stationary. The ADF test statistic of all the variables is greater than the critical values at all levels thereby signifying stationarity of the variables.

Cointegration Test Results

The Engel and Granger methodology was used to test for cointegration. The method generates the residual and tests it for stationarity using the ADF test statistic. If the residual is stationary at the level, it means that it is a cointegrated equation. The results are presented below.

Summary of the Cointegration test Results

Variable	ADF Statistic	Critical Values	Intercept	Order of Integration
Residual	-2.635351**	-2.655351 -1.953858 -1.609571	No	I(0)

***means significant at 5% and 10%*

The above results reveal that the residual is stationary at the level implying the presence of cointegration. The ADF test statistic is greater than the critical values especially at a 5% level of significance thereby implying stationarity of the residual.

Multicollinearity Test Results

The Variance Inflation Factors were computed to detect the presence of multicollinearity. Multicollinearity makes it difficult to separate the effects of each explanatory variable on the dependent variable

Summary Variance Inflation Factor Results

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
UNEMP	0.093838	1.433794	1.433664
GDP	0.024551	1.475254	1.474767
RIR	1.21E-05	1.674690	1.443989
FODET	3735.330	1.313796	1.296350
GFCF	0.092330	1.437132	1.434594

The above results show that both the centred and uncentred VIFs of all the variables are less than five indicating that there is no severe multicollinearity amongst the explanatory variables.

Autocorrelation Test Results

F-Statistic	Probability	Obs* R-Squared	Probability
2.926310	0.0757	6.320648	0.0424

From the results above, the Breusch-Geodfrey Serial correlation LM test has a p-value of 0.0757 which is greater than 0.05. This implies that the null hypothesis cannot be rejected revealing the absence of autocorrelation in the model.

Chow Break Point Tests Results

Year	P value: Chow test	P value: Chow forecast	Structural break	Parameters affected
2000	0.9465	0.1298	No	No
2008	0.1666	0.1217	No	No

The above results for the year 2000 showed a p-value of 0.9465 which is above 0.05 thereby dismissing the possibility of a structural break. The results for the year 2008 also revealed a p-value greater than 5% meaning that there was no structural break during that period. To add on, the chow forecast results for both years also revealed that the parameters were not affected. This justifies the use of a single model since the p-values of the F-statistic of the Chow Forecast tests were greater than the 5% level of significance.

Model Estimation Results

The variable budget deficit was regressed on six explanatory variables which are real interest rates *(RIR)*, gross domestic product *(GDP)*, gross fixed capital formation *(GFCF)*, unemployment rate *(UNEMP)*, foreign debt *(FODET)*, and the lagged value of the budget deficit *BD(-1)*. The *E*-views 8 econometrics software was used to run the regression.

Summary of Regression Results

Variable	Coefficient	Std Error	t-statistic	Prob
C	-3.065066	1.245624	-2.460667	0.0226
RIR	0.001959	0.003206	0.610937	0.5478
GDP	**-0.343538**	**0.156687**	**-2.192507***	**0.0392**
GFCF	-0.071010	0.283645	-0.250347	0.8048
`UNEMP	**0.586671**	**0.273556**	**2.144607***	**0.0438**
FODET	42.75027	54.79177	0.780232	0.4440
BD (-1)	**0.417399**	**0.160938**	**2.593536***	**0.0170**

R^2= 0.708861

Adjusted R^2= 0.59424

D W statistic = 1.934401

F statistic = 6.928801

Probability (F-value) = 0.008670

After running the regression using the Ordinary Least Squares, the model is therefore specified as

BD = -3.065066 + 0.001959RIR - 0.343538GDP – 0.071010GFCF + 0.586671UNEMP + 41.75027FODET

INTERPRETATION OF THE RESULTS

The R^2 value of 0.708861% specifies that about 70.89% of budget deficits in Zimbabwe are described by the explanatory variables in the model. The remaining percentage (29.11%) is explained by the factors captured by the error term. The adjusted R^2 reveals that, after adjusting for the degrees of freedom, about 59.42 % of the budget deficits in Zimbabwe are determined in the model and the factors not included in the model account for 40.58%. The results also reveal a DW statistic of 1.934401 which is above the R^2 the adjusted R^2 thereby ruling out the possibility of spurious or nonsense regression analysis.

The empirical results strongly reveal that unemployment, GDP and the legged value of the budget deficit are significant in explaining budget deficits. The variable GDP had a t-statistic value of -2.192507 which is above 2 and a negative coefficient of -0.343538. The negative coefficient result shows that a negative relationship between GDP and the budget deficit does exist. An increase in the level of GDP represents an increase in liquidity in the economy attributable to the thriving business activity that will be prevailing in the economy. This then improves the revenue-generating capacity of the government which then goes a long way in reducing the budget deficit. An increase in GDP in the economy can also reduce government expenditure is other sectors that will be taken care of by the private sector. A reduction in government expenditure is necessary for reducing the budget deficit.

The empirical results also produced a positive coefficient of 0.586671 indicating that there is a positive relationship between unemployment and budget deficits. This variable was also found to be significant in explaining budget deficits in Zimbabwe since it had a *t* statistic value of 2.144607, a figure above the rule of thumb of 2. The high unemployment rate is a consequence of depressed business activity in the economy. A depressed business environment results in less tax revenue being collected by the revenue authorities. Also,

high unemployment calls for increased government expenditure on the economy as the government will be trying to provide more social services to the nation.

The lagged value of the budget deficit was also found to be significant in explaining budget deficits in Zimbabwe evidenced by a *t* statistic value of -2.593536. The empirical results also reveal that a positive relationship exists between the budget deficit in the previous year and the budget deficit in the current year. This is supported by a positive coefficient of 0.417399 that was obtained after running the regression. This means that if the government continues to roll over budget deficits into the forthcoming years, fiscal deficits will be inevitable during that particular year.

CONCLUSION, POLICY IMPLICATIONS AND RECOMMENDATIONS

The results of the empirical study revealed that unemployment, gross domestic product and the lagged value of the budget deficit be targeted as policy instruments in order to reduce budget deficits in Zimbabwe. The research revealed that an inverse relationship exists between budget deficits and GDP. This means that an increase in the level of GDP will be accompanied by a decrease in the level of the budget deficit. An increase in the level of GDP proxies an increase in the general liquidity in the economy. It can also be viewed as an increase in the number of formal businesses in the economy since they are the ones that contribute to the fiscus of the nation. This calls for the government of Zimbabwe to increase the level of GDP by boosting domestic investment and attracting foreign direct investment to the country. This can be done by easing the conditions of doing business in Zimbabwe through the elimination of unnecessary red tape, corruption in the public sector and ensuring a stable political environment. This increase in gross investment will have multiplier effects on the overall economy such that the overall effect will be an increase in the revenue that is collected by the government. An increase in GDP can help to reduce government expenditure in some way since the private sector can complement some of the roles of the government in the economy.

The government can also formalise many informal businesses that are currently prevailing in Zimbabwe. This can be done by easing the requirements needed by firms to formally register their businesses. When more businesses are formally registered in any economy, it means that they will contribute to the fiscus. This goes a long way in boosting government revenue thereby playing a critical role in reducing budget deficits.

Moreover, the research findings also revealed that there is a positive relationship between unemployment and budget deficits. This means that an increase in unemployment is accompanied by an increase in the level of the budget deficit. This is so because unemployment reduces the revenue that the government can collect in the form of taxes such as the PAYE tax. Also, unemployment reduces the final demand in the economy which naturally impacts the firm's profits. When firms record low profits, it means that they will contribute less towards government revenue which then plays a critical role in causing imbalances between government expenditure and government revenue.

High unemployment also calls for increased government expenditure in the economy through the provision of social services and needs to the unemployed. This calls for the government to reduce unemployment in the country so that budget deficits will be reduced. Unemployment can be reduced by increasing investment levels in the country. An increase in investment has multiplier effects that bring previously unemployed resources into the production line. Once this happens, unemployment levels can witness a significant decrease which has pass-through effects in increasing revenues in the economy at the same time reducing a significant proportion of government expenditure. This goes a long way in ensuring that government expenditure and government revenue align to levels required to reduce budget deficits.

The results from the model revealed that the budget deficit in the previous period increases the budget deficit in the current period. This means that the government should balance its books thereby not rolling over its budget deficit in the next period. This calls for the government to reduce the size of its budget deficit so as to avoid a recurring budget deficit in the coming periods. In the context of this study, the two other significant variables which are unemployment and GDP can play a significant role in ensuring that the government does balance its books. This implies that the government can implement the policy response measures given in light of the two significant variables above. This goes a long way via pass-through effects in the overall reduction of the budget deficit thereby avoiding the rolling over of budget deficits in the next period.

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