Journal of Economics and Development Studies
June 2018, Vol. 6, No. 2, pp. 13-23
ISSN: 2334-2382 (Print), 2334-2390 (Online)

Published by American Research Institute for Policy Development
DOI: 10.15640/jeds.v6n2a3
URL: https://doi.org/10.15640/jeds.v6n2a3

The Impact of Budget Deficits on Inflation in Zambia

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Abstract

Despite the vast amount of research and received literature on the impact of budget deficits on inflation, the last word has not been spoken on the theme. Is there a significant causal relationship between budget deficits and inflation? In many developing countries especially in sub-Saharan African countries this question has not been adequately investigated through rigorous research. And yet, in many of these countries where inflation has often proved to be an intractable issue, it is important for policy makers to know how risky it would be to finance public programmes through deficit spending beyond certain limits. This paper examines the role of budget deficits as a contributor to inflation in Zambia where hardly any previous work has been done in recent years in addressing this question. An econometric analysis has been done using the AutoRegressive Distributed Lag (ARDL) approach. The analysis shows that while there are significant short-run impacts of deficits on inflation, no significant long-run relationship exists.

Keywords: budget deficit, inflation, Zambia, ARDL

1. Introduction

One of the tenets of macroeconomics is that budget deficits are a significant cause of inflation, with the caveat, however, that theory does not support this proposition unconditionally.According to Sharp and Flenniken (1978), inflations are too complicated phenomena to be explained by a single variable such as budget deficits.Sill (2005) argues that whether deficits lead to inflation depends on the extent to which a country's monetary policy is independent.Some others (e.g. Ishaq, 2015) say that it depends on the independence of the central bank. Ross (2018) imposes the following conditionality: Even though the long-term macroeconomic impacts of fiscal deficits are subject to debate, there is far less debate about certain immediate, short-term consequences. However, these consequences depend on the nature of the deficit.

Many more of the above kind of conditions are discussed in other works which we shall bring out in the next section.As a rule, the transmission mechanism from deficits to inflation can be thought to operate in two ways. One, a government can try to counteract the fiscal deficit by raising taxes which will push up costs of production and producers may in turn pass on these additional costs to consumers by raising prices, thus resulting in cost-push inflation from the supply side of the economy. Two,a government may try to cover the deficit through seigniorage by printing money, thereby raising the level of money supply which in turn can raise aggregate demandand prices. This is demand-pull inflation based on the well-known Fisher equation of the Quantity Theory of Money.This sequential route of increases in budget deficit leading to increases in money supply leading in turn to increases in inflation emphasises the notion of fiscal dominance immanent in the seminal paper of Sargent and Wallace (1981).

However, a plethora of empirical studies have not established any conclusive and consistent evidence of this relationship. Several pieces of research based largely on standard time series and panel data econometrics have thrown up different results.

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Much seems to depend on the spatial-temporal regions involved, levels of development, the time perspective, the prevailing macroeconomic scenario, institutional factors and the quantitative models and techniques used in the research. As a typical illustration, one may cite the now oft-quoted study by Catao and Terrones (2005) that modelled inflation as non-linearly related to fiscal deficits through the inflation tax base and estimated this relationship as intrinsically dynamic, using panel techniques that explicitly distinguished between short- and long-run effects of fiscal deficits. The results of the study spanning 107 countries over 1960-2001 showed a strong positive association between deficits and inflation among high-inflation and developing country groups, but not among low-inflation advanced economies.

Many studies in individual countries also come up with disparate relationships that are circumscribed by various kinds of conditionality. Again, we describe such studies in the section on literature review that follows. Our motivation to undertake this study is twofold. One, from a policy perspective, the attainment of macroeconomic stability and growth in any given country requires a clear understanding of this relationship between deficits and inflation. Two, not many empirical studies of this relationship have been conducted in individual countries of sub-Saharan Africa. And, apart from heuristic statements made about the causal relationship between budget deficits and inflation, no rigorous analytical study exists for Zambia. Further, in recent periods, the high budget deficits have been a matter of great concern among policy makers and Zambian economic observers.

2. Literature review

There is indeed a vast amount of research that has been conducted on this theme over several decades. Here we provide a fair sample of studies undertaken more recently. Given the specific focus of our paper on the impact of deficits on inflation, one can see from the table below that these studies fall into three broad groups:

- Those that suggest a significant impact of budget deficits on inflation;
- Those that suggest that inflation impacts on budget deficits but not the other way round;
- Those that find no relationship between the two.

In the following table, we provide relevant details of our sample studies.

Table 1: Selected studies of the impact of budget deficits on inflation

Author (s), year	Country/countries covered	Period	Methodology	Result
Bakara*et al, 2014*	Nigeria	1975-2012	ECM	Statistically significant impact
Catao& Terrones, 2005	107 countries	1960-2001	Dynamic Panel techniques	Strong impact only in high-inflation, developing countries
Datta& Upadhyay, 2011	Indonesia	1971-1999	VAR, VECM	Inflation causes deficit, not the other way round
Erkam& Cetinkaya, 2014	Turkey	1987-2013	VAR	Positive significant impact in high-inflation period and no causality in low-inflation period.
Ishaq, 2015	11 Asian countries	1981-2010	GMM	Deficits are inflationary, particularly strong where financial markets are not fully developed and central banks are not independent.
Jalil*et al,* 2014	Pakistan	1972-2012	ARDL	Deficit is a major determinant of inflation.
Khumalo, J., 2013	South Africa	1981-2012	VAR, Impulse Response function	Deficit positively contributes to inflation.
Khundrakpam& Pattanaik, 2010	India	1953-2009	ARDL	Deficit could pose medium-term risk to future inflation path.
Lin& Chu, 2013	91 countries	1960-2006	DPQR	Strong impact of deficits in high-inflation episodes and weak impact in low-inflation episodes
Lozano, 2014	Columbia	1955-2007	ECM	Statistically significant impact
Lwanga& Mawejje, 2014	Uganda	1999-2011	VAR,VECM	Inflation impactson deficit, not the other way round.
Makochekanwa, 2010	Zimbabwe	1980-2005	Johansen Cointegration	Significant inflationary impact of deficits.
Narayan*et al,* 2014	Fiji	1970-2004	Bounds Testing approach	Deficit Granger-causes inflation only in the long run.
Samirkas, 2014	Turkey	1980-2013	Johansen Cointegration	No impact
Solomon& Wet, 2004	Tanzania	1967-2001	ECM	Significant impact
Vieira,2000	6 European Union countries	1950-1996	ARDL	No impact
Zonuzi*et al,* 2011	Iran	1990-2007	Bounds Testing, GARCH	Strong impact of budget deficit and volatility of budget deficit on inflation

Source: Authors' compilation
Abbreviations used in Table 1:

ECM: Error Correction Model; VAR: Vector Auto Regression; VECM: Vector Error Correction Model; ARDL: Auto Regressive Distributed Lag; DPQR: Dynamic Panel Quantile Regression; GMM: Generalized Method of Moments; GARCH: Generalized Auto Regressive Conditional Heteroskedasticity.

Apart from the many caveats we have already alluded to earlier that are reflected in the results of the various studies listed in Table 1, some broad inferences can be made:

- The adverse effects of budget deficits on inflation are largely a phenomenon of the developing countries. Deficits seldom lead to inflation in advanced/developed countries.
- There is a starting point handicap. The impact of budget deficits is greater in a country that is already facing high inflation as compared to a country where prevailing inflation is low.
- Budget deficits may not be the only factor that contributes to inflation.
- Institutional factors such as the autonomy of the central bank and the independence of monetary policy can influence the impact of budget deficits on inflation.

3. Methodology

Model

We formulate the model as:I = F(BD, ER, GDP)
Where I = inflation rate; BD = ratio of budget deficit to GDP; ER = official exchange rate;
GDP = Gross Domestic Product in constant prices.
The explanatory variables have been chosen on the basis of received literature as well as a due consideration of what would be appropriate in the Zambian context.
In several studies, some money supply variable such as broad money M_2or an index of money supply indicators, is included. However, in a country like Zambia there is likely to be a high multicollinearity between the budget deficit and money supply. Hence we have dropped this variable.
We apply the ARDL (Auto Regressive Distributed Lag) / Bounds testing methodology developed by Pesaran *et al* (2001) to the estimation of econometric time series data.
The data used cover the period 1991 to 2016. We have chosen this period since economic liberalization began in 1991. This will enable us to reasonably assume that there is no major structural break during this period.
The analysis has been done using EViews, a package for conducting time series-oriented econometric analysis.
The basic ARDL model would then be:

$$I_t = \beta_0 + \beta_1 I_{t-1} + \ldots\ldots\ldots + \beta I_{t-p} + \alpha_0 BD_t + \alpha_1 BD_{t-1} + \ldots\ldots\ldots\ldots + \alpha_q BD_{t-q} + \delta_0 ER_t + \delta_1 ER_{t-1} + \ldots\ldots\ldots + \delta_r ER_{t-r} + \gamma_0 GDP_t + \gamma_1 GDP_{t-1} + \ldots\ldots\ldots\ldots + \gamma_s GDP_{t-s} + \varepsilon_t \quad (1)$$

It can be seen that Equation (1) has four variables: one dependent variable I and three explanatory variables BD, ER and GDP with lags p, q, r and s respectively.
The main advantages of using the ARDL approach (as opposed to the conventional cointegration method) are that it involves only a single equation, that it can be used with a mixture of I(0) and I(1) data and that different variables can be assigned different lag lengths. However, the ARDL cannot be used if any of the variables is/are I(2).

The ARDL methodology involves the following sequence of steps:

1. Make sure that none of the variables is I(2). This can be done by applying the ADF (Augmented Dickey-Fuller) and Kwiatkowski-Philips-Schmidt-Shin (KPSS) tests;
2. Formulate an "unrestricted" or "conditional" ECM (Error Correction Model). It will take the form:

$$\Delta I_t = \beta_0 + \beta_p \Sigma\Delta I_{t-p} + \alpha_q \Sigma\Delta BD_{t-q} + \delta_r \Sigma\Delta ER_{t-r} + \gamma_s \Sigma\Delta GDP_{t-s} + \theta_0 I_{t-1} + \theta_1 BD_{t-1} + \theta_2 ER_{t-1} + \Theta_3 GDP_{t-1} + \varepsilon_t \quad (2)$$

Equation (2) looks similar to a conventional ECM. The difference is that the lagged values in (2) have replaced the Error Correction Term, say z in the conventional model.

3. Select the appropriate values for the maximum lags. Several criteria are available but the Schwarz-Bayes Criterion (SBC) is generally preferred especially when the sample size is not very large.
4. A key assumption for the use of the ARDL is that there should be no serial correlation in the errors of equation (2). Hence once the appropriate version of equation (2) has been estimated, we use the Lagrange Multiplier (LM) test to check for this.
5. Since we have an autoregressive structure, we have to ensure that the model is dynamically stable. Dynamic stability can be tested using the Cumulative Sum (CUSUM) and Cumulative Sum of Squares (CUSUMSQ) tests originally suggested by Brown *et al* (1975). Despite the many drawbacks from which these tests are supposed to suffer, it has been shown by Caporale and Pittis (2010) that the two tests, especially the CUSUMSQ, perform well in an ARDL model which rules out serial correlation.
6. We now conduct the bounds testing. This is basically an F test of the null hypothesis H_0: $\theta_0 = \theta_1 = \theta_2 = \theta_3$ against the alternative that H_0 is not true. Pesaran *et al* (2001) provide the lower and upper bounds for the critical

valuesfor the asymptotic distribution of F. If the observed value of F is below the lower bound, the model is I(0) and there is no cointegration. If the value is above the upper bound, the model is I(1) and there is cointegration.

7. If the bounds test indicates there is cointegration, we can estimate the long-runequilibrium relationship between the variables. The long-run coefficients for the three explanatory variables BD, ER and GDP will be given as θ_1/θ_0, θ_2/θ_0 and θ_3/θ_0 respectively.

Data sources

Data on the inflation rate (measured as a percentage change in the consumer price index, CPI), the nominal exchange rate (measured in terms of Zambian Kwacha per US dollar, ZMW/US$) and the real GDP measured at 2010 constant US$ were all obtained from the World bank's World Development Indicators WDI) database. Data on the budget deficit as a percentage of GDP were obtained from the International Monetary Fund's World Economic Outlook (WEO) database.

4. Empirical Results

Unit Root Tests

Before estimating the ARDL, the ADF and KPSS tests wereused to examine the stationary properties of the variables. These tests are necessitatedby Perasan et al. (2001)'s view that estimating an ARDL model in which the variables have an order of integration of more than one gives spurious results. Table 2summarises the results of the unit root tests. The results from the unit root tests indicate that the variables are either I(0) or I(1). Therefore, the ARDL approach can be applied without the risk of producing spurious results.

Table 2: Unit Root Tests

	ADF Test				**KPSS Test**			
Variable	**Level**		**First Difference**		**Level**		**First Difference**	
	i	**i & t**	**i**	**i & t**	**i**	**i & t**	**i**	**i & t**
LNCPI	-9.61*	-9.89*	-3.72	-2.95	0.72	0.19*	0.55*	0.17*
BD	-6.56*	-5.98*	-7.88*	-7.77*	0.39	0.15*	0.31	0.07
LNER	-7.39*	-1.47	5.13*	3.75	0.66*	0.18*	0.45	0.19*
LNGDP	-3.31	-1.40	-0.66	0.83	0.73*	0.18*	0.41	0.19*

Note: i represents intercept and t represents trend. * implies stationarity at the 5% level of significance.

Lag Selection

The appropriate values for the maximum lagswere identified using an unrestrictedvector autoregressive (VAR) setup (see appendix 1).Table 3 summarises the optimal lag lengthsselected by different information criteria. The Schwarz information criterion, which is preferred in small samples,was used to determine the optimal lag length for the unrestricted ECM.The optimal lag length selected by this criterion is one.

Table 3: Lag Selection

Lag/IC	LogL	LR	FPE	AIC	SC	HQ
0	-89.9	NA	0.03	7.83	8.02	7.88
1	37.5	201.9	0.000003	-1.46	-0.48*	-1.2
2	62.6	31.3*	0.000002*	-2.21*	-0.45	-1.75*

Note: * indicates lag order selected by the criterion. LR: sequential modified LR test statistic (each test at 5% level). FPE: Final prediction error. AIC: Akaike information criterion. SC: Schwarz information criterion. HQ: Hannan-Quinn information criterion.

Short-Run and Long-Run ARDL Model Results

The study proceeded to estimate an unrestricted or conditional error correction model (ECM) presented in equation (2); on the basis of one lag. Table 4below presents the results of the unrestricted ECM.

Table 4: Unrestricted Error Correction Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-4.21288	5.93462	-0.70988	0.4887
D(LNCPI(-1))	-0.10045	0.27693	-0.36274	0.7219
D(BD(-1))	0.008081*	0.00294	2.753242	0.0148
D(LNER(-1))	0.078677	0.21224	0.370699	0.716
D(LNGDP(-1))	0.612661	0.7126	0.859753	0.4035
LNCPI(-1)	-0.16426	0.22086	-0.74374	0.4685
BD(-1)	-0.0074	0.00504	-1.46829	0.1627
LNER(-1)	0.001938	0.16774	0.011554	0.9909
LNGDP(-1)	0.211369	0.28148	0.750915	0.4643

Note: * implies significance at the 5% level of significance. R-squared = 0.89; Adjusted R-squared = 0.83; F-Statistic = 15.4; Prob(F-statistic) = 0.0000.

The coefficients β_p, α_q, δ_r and γ_s in equation (2)capture the short-run dynamics. From Table 4 above, our results show that a widening of the budget deficit increases inflation in the short-run. This conclusion is on account of the positive and significant relationship between the budget deficit and inflation. Specifically, a one percentage point increase in the budget deficit increases the CPI by 0.08%, ceteris paribus. In the short-run, however, the exchange rate and real GDP growth were found to have no significant impact on inflation. A key assumption made about the error terms in equation (2) is that there is no serial correlation among them. To tests whether this assumption is satisfied, the Breusch-Godfrey (BG) or Langrage Multiplier (LM) test was performed. The null hypothesis for this test is that the error terms are not serially-correlated. The test statistic for this test is the product of the number of observations (N)and the coefficient of determination (R^2) of the test regression equationwhich, asymptotically, follows a chi-squared distribution. The null hypothesis is rejected if the p-value of the test statistic is less than the conventional 5% level of significance (Asteriou and Hall,2007, p.145). This study found a p-value of 0.5252 or 52.52% (see appendix 2).

Therefore, the null hypothesis is not rejected; implying that the 'no serial correlation'assumption is sustained. The estimated model was also tested for dynamic stability. For this purpose, two related tests were used: the Cumulative Sum (CUSUM) and Cumulative Sum Squares (CUSUMSQ) tests.Figures 1 and 2 below show the results of the two tests. For both tests, the null hypothesis is that the model is dynamically stable. It is rejected if the trend line lies outside the bounds at 5% level of significance. From the figure below, it is clear that trend line largely lies inside the bounds. Therefore, the null hypothesis that the model is dynamically stable is not rejected.

Figure 1: Cumulative Sum (CUSUM) Stability Test

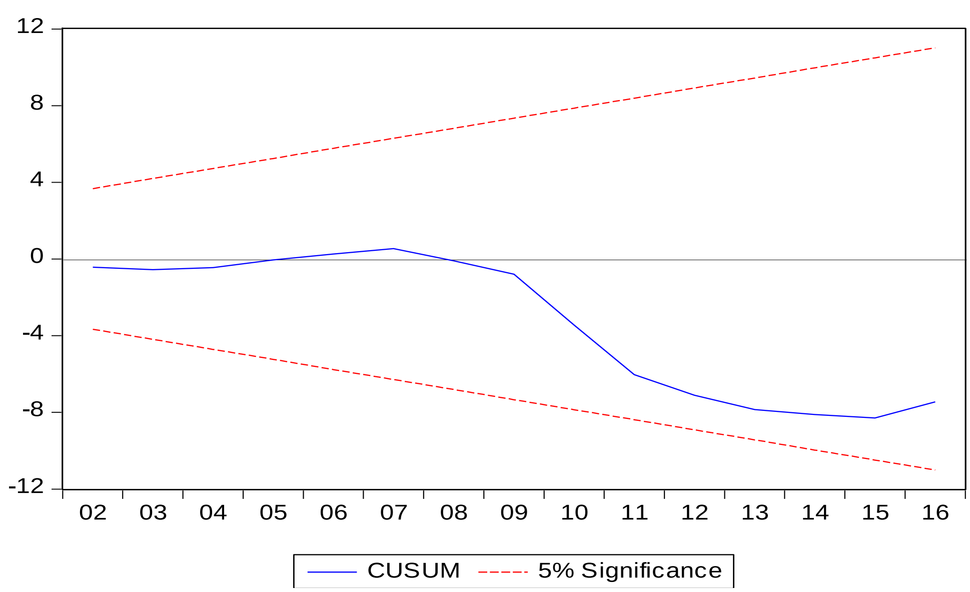
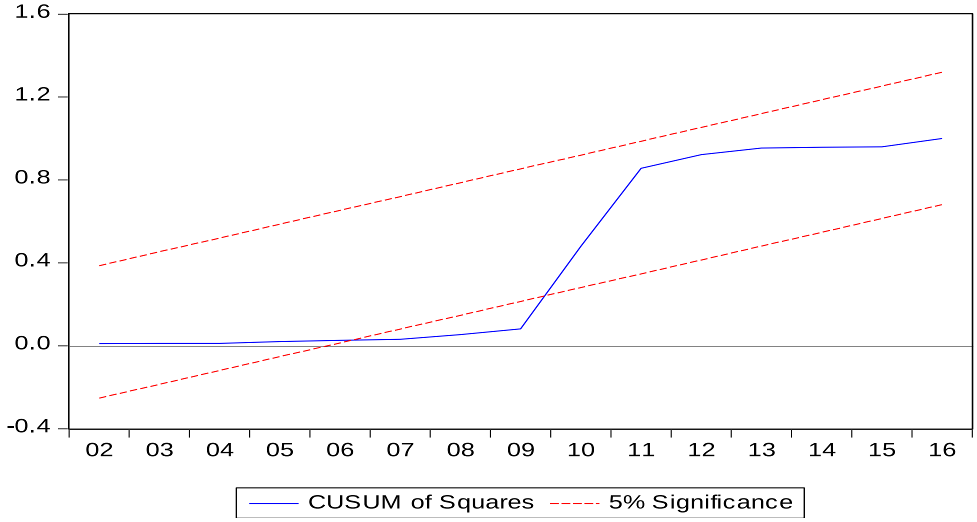


Figure 1: Cumulative Sum Squares (CUSUMSQ Test for Stability



To determine theexistence of a significant long-run relationship among our variables of interest, bounds testing was used. Thenull hypothesis forthe bounds testing is that the coefficients of the variables capturing the long-run dynamics in equation (2), θ_0, θ_1, θ_2 and θ_3,are all simultaneously equal to zero. This implies that there is no long-run or cointegrating relationships among the variables. The alternativehypothesis is thatthese coefficients are not all equal to zero; implying the existence of a long-run relationship among the variables.

The null hypothesis is rejected if the F-statistic for the test is greater than Pesaran et al's (2001)upper critical value; implying cointegration among the variables. On the other hand, we fail to reject the null hypothesis if the F-statistic is less than the lower critical value; otherwise, the test is inconclusive. Table 5shows the bounds testing implemented using Wald's test for linear restrictions.

Table 5: Bounds Testing

Upper Limit	5.07
Lower Limit	4.01
F-Statistic = 2.419075	

From the above table, the F-statistic is clearly less than the lower limit. It can, therefore, be concluded that there exists no significant long-run relationship among the variables.

5. Conclusion

Studies on the impact of budget deficits on inflation do not yield uniform results. To the contrary, the results for different countries vary a lot ranging from highly significant impacts to no impacts. The budget deficit-inflation nexus is influenced by several factors some of which are economic, some institutional and some policy decision. In Zambia, budget deficits seem to have a significant impact on inflation in the short run but not in the long run. This is not a typical result since in a large number of studies, budget deficits and inflation are known to be co-integrated.There are of course a few studies that do conclude that there is no long-run relationship of budget deficit to inflation. One is the paper by Samirkas (2014) that we have described in the literature review section that found no long-term relationship. There are also some others. For example, Mukhtar and Zakaria (2010) infer this for Pakistan on the basis of an econometric analysis using quarterly data for the period 1960 – 2007. It is also interesting that another paper published a few years later (Jalil, *et al* 2014, see Table 1) asserts that a strong long-run relationship exists in Pakistan!A similar result is obtained by Abubakar *et al,*2014) in the case of Nigeria. Again, Keho (2016) concluded that budget deficits are not inflationary in the West African Economic and Monetary Union (WAEMU) countries.

So, the Zambian result is not all that exceptional. All the same, further analysis is warranted to enable us understand the reasons for the seeming absence of a long-run relationship between budget deficits and inflation in Zambia.Notwithstanding the results of our study, it would be hazardous at this stage to infer for policy that large budget deficits are not a source of worry in Zambia as a factor that can tell on inflation in the long run.

The significant short-run inflationary impacts in Zambia justify the concerns that have been expressed about the persistent high fiscal deficits the country has been experiencing in recent years, averaging over 6% between 2013 and 2017 (See Data in Appendix 3 and Republic of Zambia, 2017). Containing inflation in the face of such high deficits can turn out to be an increasingly challenging task in the future and decision makers must take due cognizance of this riskand place fiscal consolidation on top of the policy agenda, especially in the prevailing scenario where economic growth rates since 2015 have slumped to half of their previous medium-term average.

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Appendices

Appendix 1

Table A1: Unrestricted Vector Autoregressive (VAR) Model

Dependent Variable: D(LNCPI)
Method: Least Squares
Date: 01/06/18 Time: 17:20
Sample (adjusted): 1993 2016
Included observations: 24 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-4.212878	5.934615	-0.709882	0.4887
D(LNCPI(-1))	-0.100454	0.276932	-0.362741	0.7219
D(BD(-1))	0.008081	0.002935	2.753242	0.0148
D(LNER(-1))	0.078677	0.212239	0.370699	0.716
D(LNGDP(-1))	0.612661	0.712601	0.859753	0.4035
LNCPI(-1)	-0.16426	0.220855	-0.743742	0.4685
BD(-1)	-0.007401	0.005041	-1.468288	0.1627
LNER(-1)	0.001938	0.167741	0.011554	0.9909
LNGDP(-1)	0.211369	0.281482	0.750915	0.4643

R-squared	0.891463	Mean dependent var	0.208519
Adjusted R-squared	0.833576	S.D. dependent var	0.201492
S.E. of regression	0.082199	Akaike info criterion	-1.879358
Sum squared resid	0.101349	Schwarz criterion	-1.437588
Log likelihood	31.5523	Hannan-Quinn criter.	-1.762156
F-statistic	15.4002	Durbin-Watson stat	1.62822
Prob(F-statistic)	0.000006		

Appendix 2

Table A2: Breusch-Godfrey LM Test for Serial Correlation

Breusch-Godfrey Serial Correlation LM Test:				
F-statistic	0.239503	Prob. F(1,14)		0.6321
Obs*R-squared	0.403671	Prob. Chi-Square(1)		0.5252
Test Equation: Dependent Variable: RESID Method: Least Squares Date: 01/06/18 Time: 17:22 Sample: 1993 2016 Included observations: 24 Presample missing value lagged residuals set to zero.				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.083091	7.430911	-0.280328	0.7833
D(LNCPI(-1))	-0.10453	0.35554	-0.294004	0.7731
D(BD(-1))	-0.000256	0.003058	-0.08389	0.9343
D(LNER(-1))	-0.016786	0.220516	-0.07612	0.9404
D(LNGDP(-1))	-0.066659	0.743958	-0.089601	0.9299
LNCPI(-1)	-0.076775	0.275668	-0.278504	0.7847
BD(-1)	0.000605	0.005319	0.11365	0.9111
LNER(-1)	0.040617	0.191122	0.212518	0.8348
LNGDP(-1)	0.100605	0.354574	0.283734	0.7808
RESID(-1)	0.236327	0.482901	0.489391	0.6321
R-squared	0.01682	Mean dependent var		7.07E-16
Adjusted R-squared	-0.615225	S.D. dependent var		0.066381
S.E. of regression	0.084365	Akaike info criterion		-1.812987
Sum squared resid	0.099645	Schwarz criterion		-1.322132
Log likelihood	31.75585	Hannan-Quinn criter.		-1.682763
F-statistic	0.026611	Durbin-Watson stat		1.737907
Prob(F-statistic)	0.999997			

Appendix 3

Data

Year	*Consumer Price Index	**Budget Deficit (% of GDP)	*Exchange Rate (ZMW/US$)	*Real GDP (2010 Constant US$)
1991	0.428632003	-43	0.06464	8,385,212,483.00
1992	1.138903208	-12	0.172214	8,240,070,980.00
1993	3.226649928	-11	0.452763	8,800,171,187.00
1994	4.988443439	-1	0.669371	8,041,117,529.00
1995	6.730886151	-4	0.864119	8,274,122,491.00
1996	9.630087339	-3	1.2079	8,788,652,644.00
1997	11.98163155	-10	1.314498	9,123,852,515.00
1998	14.91215368	-14	1.862069	9,088,657,606.00
1999	18.90677617	-9.5	2.388019	9,511,297,430.00
2000	23.82828787	1.161	3.110844	9,881,983,407.00
2001	28.92605987	-5.892	3.610935	10,407,395,447.00
2002	35.35729045	-4.499	4.398595	10,876,354,172.00
2003	42.92430868	-5.314	4.733271	11,631,714,140.00
2004	50.63685795	-2.508	4.778875	12,449,702,237.00
2005	59.91577845	-2.372	4.463503	13,350,512,768.00
2006	65.31992551	16.913	3.603072	14,405,696,504.00
2007	72.28129833	-1.037	4.002523	15,608,923,120.00
2008	81.27712466	-0.668	3.745661	16,822,344,541.00
2009	92.16440247	-2.057	5.046109	18,373,423,318.00
2010	100	-2.432	4.797137	20,265,556,274.00
2011	106.4293968	-1.783	4.860666	21,393,258,427.00
2012	113.4280872	-2.832	5.147253	23,018,636,259.00
2013	121.3427317	-6.151	5.395887	24,183,235,705.00
2014	130.8219706	-5.705	6.152816	25,318,838,465.00
2015	144.0358986	-9.338	8.632356	26,058,118,447.00
2016	169.7823203	-5.781	10.31305	26,918,036,355.00

Sources: * World Bank World Development Indicators (WDI) database; ** International Monetary Fund (IMF) World Economic Outlook (WEO) database.