Journal of Economics and Behavioral Studies (ISSN: 2220-6140)
Vol. 12, No. 2, pp. 1-8, April 2020

Re-Visiting the External Debt-Economic Growth Question in Zimbabwe

Brian Tavonga Mazorodze
Post-Doctoral Research Fellow, Department of Economics, University of Zululand, South Africa
brianmazorodze@gmail.com

Abstract: This paper quantifies the threshold effect of external debt on economic growth in Zimbabwe between 1980 and 2016. Results from the Fully Modified Ordinary Least Squares (FMOLS) technique confirm that external debt (up to 57% of GDP) raises economic growth. Beyond the 57% of GDP threshold, external debt lowers growth. A separate analysis of variance shows that the mean GDP per capita is lower by 11% when external debt exceeds 57%. From the sample average, the 57% of GDP threshold suggests that debt stock above 4.7 billion USD can be detrimental to the country's long-run growth prospects. Currently, Zimbabwe's external debt is standing at over 11 billion USD which is way above the estimated threshold level. Therefore, the policy implication arising from this paper is that the country's Finance Minister needs to pursue debt-reduction strategies given that the country's stock of external debt is already sitting in the growth-reducing territory.

Keywords: *Fiscal Policy, External Debt, Threshold, GDP per capita, Zimbabwe.*

1. Introduction

Criticism levelled against the Zimbabwean government during the past two decades has been centred around, the accumulation of debt owing to excessive fiscal spending in spite of a collapsing revenue base. According to the Reserve Bank of Zimbabwe's May 2018 Monthly Economic Review, the government's total external debt doubled in only 8 years, from 5.6 billion USD in 2009 to 11.2 billion USD in 2017. In 2008, it stood at 147.7% of GDP, its highest since the country attained independence in 1980. With the country at a critical juncture post-elections held on the 31st of July 2018, some economists and the international community especially the IMF have begun contemplating that further debt-financed spending can stunt economic growth. It is against this background that the country's newly appointed Minister of Finance articulated in the 2018/2019 budget a raft of cost containment measures which include a 5 percent salary cut for senior government officials coupled with a 2 percent electronic transactions cost aimed at raising revenue trades performance, which is essential to raise foreign currency reserves required to repay the external debt (mostly owed to the Paris Club and the African Development Bank), has however been far from satisfactory. From an academic standpoint, several questions have been raised concerning the debt situation but the critical one appears to be one which questions the effect that this ballooning debt is likely to have on the country's long-run growth prospects. This is not a new question in economic literature.

In fact, it is an old controversial macroeconomic question whose controversy took the centre stage when Reinhardt and Rogoff (2010) confirmed from a broad sample of developed and developing countries that debt is detrimental to growth when it exceeds 90% of GDP[1]. In economic theory, debt arises from deficits and deficits reflect a mismatch between revenue and expenditure. In this sense, prima facie evidence claiming a negative effect of debt on growth (see for example, Diamond, 1965; Saint-Paul, 1992; Schclarek, 2004; Adam & Bevan, 2005; Aizenman, Kletzer, & Pinto, 2007; Malik et al., 2010; Shabbir, 2013) cites the distortionary effect of government spending that culminates into deficits as the key explanatory channel. This distortionary effect can include things like debt servicing costs, the mis-use of state resources in form of corruption and the crowding of private investment. The latter is explained by the fact that government spending when financed by domestic borrowing generally leaves insufficient loanable funds for private capital formation. Also, high debt levels imply that a significant amount of debt servicing in the country's future budgets will result in less resources for economic development. On the contrary, other scholars argue that debt can promote a country's long-run growth prospects if it is used to finance capital formation such as the construction of high ways,

[1] A subsequent analysis by Herndon et al. (2014) however dismissed this 90% threshold conclusion citing methodological flaws in Reinhardt and Rogoff (2010).

dams, airports and other types of infrastructure as opposed to recurrent expenditures[2]. This is particularly true when the return on investment is higher than the cost of servicing the debt.

The short-run positive effect of such spending includes the boost in aggregate demand emanating directly from government purchases and the formation of jobs created largely by infrastructural projects. The long-term positive effect comes from the increase in productivity stemming from capital formation. Empirical evidence supporting a positive relationship between external debt and growth comprises Ijirshar and Godoo (2016) and Spilioti and Vamvoukas (2015). In other studies, such as were (2001), Chowdhury (1994), Warner (1992) and Cohen (1993), the impact of external debt on growth is modest at best. Given these contradicting theoretical and empirical views, this paper attempts to establish how debt has interacted with growth in the Zimbabwean economy between 1980 and 2016. Literature on external debt and economic growth in the context of Zimbabwe is limited and it comprises recent studies by Matandare and Tito (2018) and Munzara (2015). Generally, these studies confirm a detrimental effect of external debt on growth. Our work differs from these studies in two respects.

First, we estimate the non-linear effect of external debt on growth and we calculate the threshold effect. A number of studies (Reinhart & Rogoff, 2010; Kumar & Woo, 2015; Cordella, Ricci, & Ruiz-Arranz, 2010; Checherita & Rother, 2012) have shown that the impact of debt on growth can be non-linear. These studies essentially claim that debt raises growth up to a certain point beyond which further debt retards growth. It remains to be known however whether this non-linearity exists for Zimbabwe given the absence of any empirical study addressing this issue. Secondly, unlike previous literature on this subject (Matandare and Tito, 2018, Munzara, 2015), we rely on an estimation technique – the Fully Modified Ordinary Least Squares – which addresses the problem of endogeneity which features prominently in the analysis of debt and economic growth. The rest of the paper unfolds as follows: section 2 provides an overview of Zimbabwe's macroeconomic performance and literature review, section 3 specifies the empirical models, section 4 presents and interprets the empirical findings while concluding remarks are outlined in section 5.

Macroeconomic Performance in Zimbabwe: Zimbabwe attained independence in 1980 and inherited an economy which was already in debt accumulated by its former colony – Britain. Subsequently, the period 1980 – 1990 was characterised by government redistributive and investment policies that were meant to address social inequalities and improve infrastructure that had been damaged during the war. Also, the expenditures were justified by the fact that the democratic government had inherited an economy that had structural problems particularly those related to the lack of schools and public hospitals for the black majority. During the colonial period, the economy was based on a narrow economic model that was chiefly dependent on resource extraction and this meant that the new government had to embark on some stimulative fiscal policies in order to address these structural issues. However, these fiscal actions culminated in increased spending, which did not match with fiscal revenues resulting in the country experiencing high fiscal deficits and rising public debt. In 1992, Zimbabwe was hard-hit by a drought that negatively affected agriculture. Instead of negotiating with multilateral institutions for aid in form of grants, the government of Zimbabwe negotiated for loans. Despite having low interest rates, these loans added to the already existing debt. The IMF and World Bank acknowledged that these loans were not going to be channelled into productive investments that could allow the country to pay back.

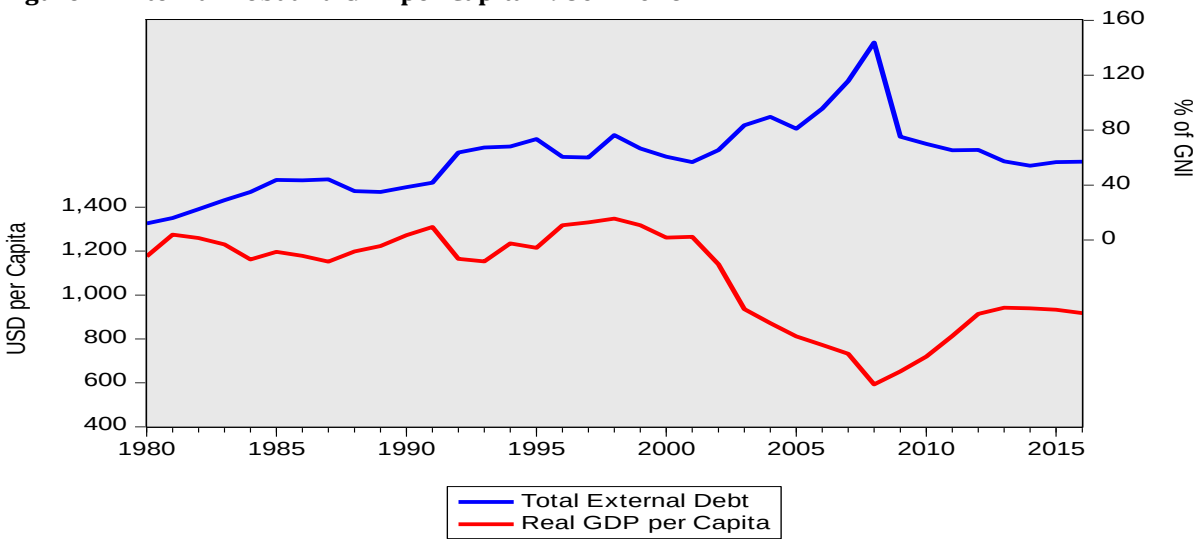
Instead, their justification was that the economy of Zimbabwe would continue to growth at an average of about 4% increasing its chances of paying back the debt. Mid-90s featured economic structural adjustment programs (ESAP) that were heavily supported by the International Monetary Fund (IMF). The ESAP period saw a significant reduction of tariffs and liberalization of markets. Having failed to reap the anticipated benefits, the government implemented the Zimbabwe Program for Economic and Social Transformation (ZIMPREST) in 1996 which was designed to achieve sustainable economic growth and poverty reduction. The economy failed to grow at a pace predicted both by the World Bank and IMF which meant that Zimbabwe was unable to pay back the debt. Instead of negotiating for debt forgiveness, Zimbabwe still pledged to these multilateral institutions for more loans. In response, the IMF came to a point of disbursing more loans that

[2] The government of Zimbabwe has been criticised for allocating over 80% of its budget on public sector wage bill

would allow Zimbabwe to settle its past arrears in order to get new loans. This therefore meant a disbursement of funds that never reached Harare but were rather transferred from one account to the other in Washington. All this meant further debt accumulation for the southern African economy which was already showing signs of economic dismay. At the same time particularly a year after implementation of ZIMPREST, (The Black Friday of 14 November 1997).

The Government of Zimbabwe paid gratuities to the liberation war veterans and simultaneously got involved in the Democratic Republic of Congo civil war[3]. This led to an increase in government expenditure that was not budgeted for and consequently marked the beginning of a persistent liquidity crisis and debt that went on to arrest the economy in the subsequent decade reversing the marginal economic gains that had emanated from both ESAP and ZIMPREST. In 2000, the government of Zimbabwe began defaulting payments. The accumulation of external payment arrears resulted in some litigations against the government by creditors. The IMF in particular reviewed Zimbabwe's overdue obligations on 25 September 2001, and declared it ineligible to access the general resources of the IMF. The African Development Bank (AfDB) took a similar stance as it imposed sanctions on the country and subsequently stopped all lending operations in the country. Owing to these external credit constraints, the Zimbabwean government shifted to domestic borrowing in form of treasury bills. This was complemented by an excessive printing of the Zimbabwean dollar which consequently led to most predicted outcome of hyperinflation that peaked in 2008.

Figure 1: External Debt and GDP per Capita 1980 – 2016



Source: Own computation using WDI Data

The economy went through a very volatile economic period that saw the Reserve Bank of Zimbabwe (RBZ) introducing a raft of measures to mitigate these problems, but to no avail. Some of the measures undertaken included the use of bearer cheques with very high denominations[4] ($1 trillion) as legal tender but this did not solve the problem. If anything, the measures worsened the situation by fuelling inflation. Amid the crisis, Zimbabwe held Presidential elections in 2008 which resulted in a new political transformation when the ruling party united with the country largest opposition party. This new political dispensation completely abolished the Zimbabwean dollar in 2009 in favour of a de facto dollarization which allowed the use of multiple currencies. The finance ministry managed to establish the Zimbabwe Aid and Debt Management Office (ZADMO) in December 2010 which was meant to review and revise the institutional and legal

[3] The government deployed at least 12000 troops in DRC to protect diamond mines which were given to Zimbabwe by the Congolese government in 1998. In 1997, the government had paid its war veterans once-off gratuity payments of Z$50000. These gratuities and the deployment of troops in DRC massively contributed to the demise of the economy in subsequent years.

[4] The Reserve Bank also resorted to the cancellation of zeros on the bearer cheques. For example, a bearer cheque worth Z$100 000 000 would be reduced to only Z$100.00

framework for debt management. Total external debt came down from 75% of GNI in 2009 to 65.5% in 2012. During the same period, the economy was on a rebound and it registered growths averaging 10.5% per year (Nyarota et al., 2015). By the end of 2013 however, the economy began to show signs of a new crisis. Economic growth, decelerated sharply to less than 5% in 2013 and 2014 (Nyarota et al., 2015). The multicurrency system temporarily stabilized the economy but the problem of cash shortage owing to the RBZ's inability to print money became visible in 2016 and reached crisis levels by 2017. This resulted in the RBZ introducing new measures to mitigate the cash crisis. These measures include the introduction of Bond notes and coins which were initially pegged at par with the United States of America dollar (US$).

2. Literature Review

However, this failed to solve the financial crisis as banks, at the time of writing, are struggling to meet withdrawals. During this crisis period, economic growth fell from 1.4 percent in 2015 to 0.7 percent in 2016 continuing the recent decline in per capita income growth (IMF, 2017). This section provides a brief review of theoretical and empirical literature on external debt and economic growth. Theoretical explanations on this subject can be categorised into three groups. The first theoretical category proclaims that external debt can promote economic growth in poor countries distant position from the steady state through the capital accumulation process (Poirson, et al., 2004). The second theoretical view holds that debt accumulation has a negative effect on growth that arises as a result of the debt overhang hypothesis advocated by Krugman (1988), Sach (1989) and Cohen (1993). According to Krugman (1988), debt overhang occurs when the expected repayment on external debt falls short of the contractual debt value. Put differently, Borensztein (1990) described the debt overhang situation as one in which the country in debt experiences very little benefits from the return on investment chiefly due to debt service obligations. The third theoretical group argues that the effect of external debt on economic growth is nonlinear in the sense that low levels of debt can promote growth while high debt levels can achieve the opposite. Central to this argument is the presence of a threshold debt level beyond which the effect of external debt on growth can be negative. Empirically, results reported so far demonstrate that the impact of debt on economic growth is not obvious. Some studies report a positive effect while others confirm a negative effect and this is not surprising given the lack of a consensus from a theoretical viewpoint.

Within this empirical debate however, a result that appears to be dominant is that of a positive growth impact of external debt. The majority of these studies rely on time series techniques based on country-specific evidence and they include Senadza et al. (2012), Atique and Malik (2012), Ndubuisi (2017) and more recently Kharusi and Ada (2018). Senadza et al. (2012) apply an autoregressive distributed lag model to establish this relationship based on annual time series data spanning the periods 1970 and 2015 in the context of Ghana. They confirm a detrimental effect of external debt on Ghana's economic growth. Kharusi and Ada (2018) similarly apply the ARDL model in the context of Oman and confirm a similar finding – external debt hampers economic growth. Atique and Malik (2012) rely on the conventional Ordinary Least Squares (OLS) technique to determine the impact of domestic and external debt in the case of Pakistan using annual time series data covering the period 1980 – 2010. Like Senadza et al. (2012) and Kharusi and Ada (2018), the results indicate that external debt reduces economic growth. Further confirmed is that the negative effect of external debt is larger than that of domestic debt. Another study that applies the OLS technique in this area of research is that of Ndubuisi (2017) conducted in the context of Nigeria based on annual time series data observed from 1985 through 2015. Different from Atique and Malik (2012) albeit in a different country, Ndubuisi (2017) finds debt service payment as the variable that negatively affects economic otherwise the stock of external debt stock is found to have a significantly positive impact on Nigeria's economic growth. A recent paper by Shkolnyk and Koilo (2018) applies the ARDL model to examine the non-linear effect of external debt on economic growth using evidence from Ukraine and some selected emerging economies.

The authors find evidence of a non-linear relationship between external debt and economic growth. In particular, they show that very high external debt levels impede economic growth supporting the theoretical view of a tipping point in the way external debt affects economic growth. This evidence also corroborates the conclusions reached in an influential paper by Reinhardt and Rogoff (2010) which is that public debt is detrimental to growth when it exceeds 90% of GDP and that for emerging economies, external debt negatively affects growth when it exceeds the 60% of GDP mark. Studies on external debt and growth in the

context of Zimbabwe are limited. They include Murangwana (2012) who sought to determine the impact of external debt on Zimbabwe's economic growth using data covering the 1985 – 2009 sampling period. Relying on the OLS technique, the author confirmed a detrimental effect of external debt on growth as reported in most studies. Other studies such Munzara (2015) and Saungweme and Mufandaedza (2013) also apply the OLS technique and confirm a similar result – external debt correlates negatively with Zimbabwe's economic growth. At the outset, we attempt to improve this literature in two ways. First, we apply a more robust estimation technique – the Fully Modified Ordinary Least Squares (FMOLS) technique – which addresses the endogeneity problem that normally features in the debt-growth relation. The OLS technique which most of these previous studies relied upon assumes exogeneity of explanatory variables which seems very unlikely to hold since external debt is often endogenous. In this case, one can argue that OLS estimates will be biased and inconsistent. Second, we consider a non-linear specification to determine the threshold effect of external debt.

3. Methodology

The objective here is to establish the relationship between external debt and economic growth in Zimbabwe and therefore we require data on real GDP per capita and external debt. Such data are sourced from the World Development Indicators (WDI) for the period 1980 – 2016 which is essentially a post-independence era. Since data are annual, this period gives us a sample size of 37 years. Stretching the sampling period to 2017 though desirable is constrained by data unavailability at the WDI. Since most of the variables that affect growth are possible indirect channels through which debt affects growth, I consider a parsimonious specification that allows me to capture the full impact of external debt. The model takes the following form.

$$\log \mathrm{GDP_PC}_t = \vartheta_0 + \vartheta_1 \mathrm{EX_DEBT}_t + \vartheta_2 \mathrm{EX_DEBT}_t^2 + \vartheta_3 \mathrm{TREND} + \varepsilon_t \qquad (1)$$
$$t = 1980, \dots, 2016$$

Where subscript t signifies time, GDP_PC denotes real gross domestic product per capita, EX_DEBT is external debt as a percentage of GDP, $\mathrm{EX_DEBT}^2$ captures the potential non-linear effect of external debt (see Reinhardt and Rogoff, 2010). The trend component on the other hand captures time-dependent shocks that may affect both debt and growth. The last term, ε, is an error term which is assumed to follow a normal distribution with a mean of zero and a constant variance. If Reinhardt's prediction that debt raises growth up to a certain threshold point is true, then ϑ_1 and ϑ_2 should be significantly positive and negative respectively. The threshold debt would be solved by algebraically equating to zero the first derivative of equation (1) with respect to debt. Endogeneity is likely to feature prominently in the growth-debt relationship owing to the potential reverse causation and the omission of other relevant variables that may possibly affect both growth and debt. In the former case for example, it is possible that Zimbabwe engaged external creditors to save the economy that was already heading south. We do not want to unfairly blame external debt for pre-existing distortions as such would be akin to blaming humanitarian assistance for the loss of lives following a natural disaster. I therefore rely on the fully modified ordinary least squares method which addresses the endogeneity problem in non-stationary and possibly co-integrating relations.

4. Results and Discussion

To avoid running a spurious regression, I first conducted stationarity tests using the Breakpoint unit root test, the Augmented Dickey-Fuller (ADF), the Phillips-Perron (PP) and the Kwiatkowski-Phillips-Schmidt-Shin (KPSS) tests. Results in table 1 show that both GDP per capita (in logs) and external debt are generated by a non-stationary process in levels but are stationary once differenced implying an integration of order one.

Table 1: Unit Root Tests

Variable		Break-Point	ADF	PP	KPSS	Order of Integration
log GDP_PC	Levels	3.113	1.044	0.633	[TI]0.164**	I(1)
	Δ	4.848**	4.772***	6.279***	0.227	
Ex_Debt	Levels	3.115	1.386	0.587	0.605***	I(1)
	Δ	8.152***	7.571***	8.691**	0.116	

Note: **, *** denote p<0.1, p<0.05&p<0.01 respectively [TI] Signifies specification with trend and intercept.

Figures in tables are test statistics for the Break-Point, ADF and PP tests. For the KPSS, the figures represent the LM-statistic. ADF = Augmented Dickey Fuller, PP=Phillips-Perron, KSS=Kwiatkowski-Phillips-Schmidt-Shin. Having applied the FMOLS technique, two findings are in order. First, the coefficients of both the linear and non-linear terms are statistically significant at the 5% level. Second, the linear term has a positive coefficient while the non-linear term has a negative coefficient. These two results combined together indicate that external debt has a non-linear effect on GDP per capita growth. Put differently, the results support the notion that external debt has a positive effect on economic growth in Zimbabwe up to a certain point where further debt accumulation exerts a negative effect on growth. Algebraically, the threshold level turns out to be 57% which means that the positive effect of external debt on growth disappears once the stock of debt reaches 57% of GDP. Beyond 57% of GDP, further debt begins to have a negative effect on growth. The mean GDP (not GDP per capita) during the sampling period was about 8.4 billion USD which means that the threshold level is estimated to be about 4.7 billion USD. The message is that the stock of debt above 4.7 billion USD had a harmful effect on growth in Zimbabwe between 1980 and 2016.

Fully Modified Ordinary Least Squares Estimates: $\log GDP_PC_t = 6.855904 + 0.016431 EX_DEBT_t - 0.000144 EX_DEBT_t^2 - 0.015701\, TREND$
Std. Err. (0.189671) (0.006574) $(4.30E-05)$ (0.004345)
Adj. $R^2 = 0.64$ Adj. n = 36, Threshold Debt = 57%

The trend component is negative and statistically significant at 5% level showing that growth on average declined by 1.5% annually between 1980 and 2016. The adjusted R^2 is 0.64 slightly lower than the 0.69 reported in Matandare and Tito (2018) suggesting that the model explains 64% variation in growth while the remaining 36% variation is accounted for by the error term. Given the estimated threshold point, we also considered, for robustness check, an analysis of variance estimated by OLS in which a dummy variable for debt above 57% is added on the right hand-side of the equation along with a trend component. Circumventing these problems means we go beyond the OLS method as it can result in estimates that have a small sample bias which does not disappear asymptotically. This type of a specification allows us to compare the intercepts of two periods one being the years in which the debt exceeded 57% and the other being the years in which debt was below the 57% mark. Results below clearly indicate that the dummy variable of interest is significantly negative at 5% level.

The corresponding coefficient suggests that the mean annual growth is lower by about 11.4% when debt is higher than 57% of GDP relative to the period in which debt is lower than the 57% threshold. Analysis of Variance, $\log GDP_PC_t = 7.233914 - 0.114443\ EX_DEBT > 57\%_t - 0.012243\, TREND$
Std. Err. (0.048842) (0.054584) (0.002548), Adj. $R^2 = 0.51$ Adj. n = 37

Another way of looking at the results above is to compare the mean GDP per capita in levels. This way, the mean GDP per capita is 1385.635 USD which is essentially the antilog of the intercept, 7.233914. The result therefore suggests that the mean per capita GDP is lower by about 152.42USD (which is 11% of the mean) when external debt is above 57% of GDP as compared to the period in which external debt is below 57%. Put differently, the mean GDP per capita is 1385.635 when debt is below the threshold point and is 1233.22 USD when debt is above the threshold level. How does our main result above compare with those reported in previous studies? A recent study on external debt and growth in Zimbabwe by Matandare and Tito (2018) shows that external debt has had a negative effect on growth during the same sampling period our results do agree with Matandare and Tito (2018) in that external debt had a negative effect on growth in Zimbabwe but we particularly confirm that this is only true.

When the stock of external debt exceeded the 57% of GDP threshold otherwise below this tipping point, external debt significantly raised growth. Interesting is that the tipping point of 57% of GDP is close to the 60% of GDP threshold confirmed in Reinhart and Rogoff (2010). Other similar, but not identical, results are reported in Pattillo et al. (2002), Clements et al. (2003), Smyth and Hsing (1995) and Cohen (1997). The baseline model was subjected to a battery of diagnostic tests which include residual normality using the Jarque-Bera test, model specification using the Ramsey test, autocorrelation using the Breusch-Godfrey Serial Correlation LM test and heteroscedasticity using the Breusch-Pagan-Godfrey Serial Correlation test. Results indicated that the model was correctly specified with uncorrelated, homoscedastic and normally distributed

residuals. Important is that the residual from the FMOLS was stationary in levels pointing to a cointegrating relation between GDP per capita and external debt. This outcome was also corroborated by the Hansen Parameter Instability whose null hypothesis of cointegrated series could not be rejected at 20% level.

5. Conclusion and Recommendations

This paper has provided evidence of a significant long-run relationship between external debt and economic growth in Zimbabwe between 1980 and 2016. Different from previous literature on this subject in the context of Zimbabwe, non-linear effects have been explored and they show, from the FMOLS technique, that external debt raises economic growth but this positive effect disappears once external debt reaches 57% of GDP. Beyond this threshold point, further debt accumulation is found to exert a harmful effect on the country's long-run growth corroborating results reported in previous studies albeit for different countries. The government of Zimbabwe commissioned a Debt Arrears Clearance Committee (DACC) in May 2015 to draft external debt-reducing strategies. The results of this paper are strongly in support of this arrangement since the country's stock of external debt is currently way above the threshold level of 57%.

References

Adam, C. S. & Bevan, D. L. (2005). Fiscal deficits and growth in developing countries. *Journal of Public Economics*, 89(4), 571-597.

Aizenman, J., Kletzer, K. & Pinto, B. (2007). Economic growth with constraints on tax revenues and public debt: implications for fiscal policy and cross-country differences (No. w12750). National Bureau of Economic Research.

Atique, R. & Malik, K. (2012). Impact of domestic and external debt on the economic growth of Pakistan. *World Applied Sciences Journal*, 20(1), 120-129.

Borensztein, E. (1990). Debt overhang, credit rationing and investment. *Journal of Development Econom*ics, 32(2), 315-335.

Cohen, D. (1993). Growth and external debt (No. 778). CEPR Discussion Papers.

Cohen, D. (1993). Low Investment and Large LDC Debt in the 1980's. The American Economic Review, 437-449.

Cohen, D. (1997). Growth and external debt: A new perspective on the African and Latin American tragedies (No. 1753). London: Centre for Economic Policy Research.

Cordella, T., Ricci, L. A. & Ruiz-Arranz, M. (2010). Debt overhang or debt irrelevance? *IMF Staff Papers*, 57(1), 1-24.

Chowdhury, K. (1994). A structural analysis of external debt and economic growth: some evidence from selected countries in Asia and the Pacific. *Applied Economics*, 26(12), 1121-1131.

Checherita-Westphal, C. & Rother, P. (2012). The impact of high government debt on economic growth and its channels: An empirical investigation for the euro area. *European economic review*, 56(7), 1392-1405.

Clements, B., Bhattarcharya, R. & Nguyen, T. Q. (2003). External Debt, Public Investment and Growth in Low Income Countries. IMF Working Paper No. 03/249

Diamond, P. A. (1965). National debt in a neoclassical growth model. *The American Economic Review*, 55(5), 1126-1150.

Herndon, T., Ash, M. & Pollin, R. (2014). Does high public debt consistently stifle economic growth? A critique of Reinhart and Rogoff. *Cambridge journal of economics*, 38(2), 257-279.

Ijirshar, V. U., Joseph, F. & Godoo, M. (2016). The Relationship between External Debt and Economic Growth in Nigeria. *International Journal of Economics & Management Sciences*, 6(1), 1-5.

IMF. (2017). Staff Report for the 2017 Article IV Consultation – Debt Sustainability Analysis.

Kharusi, S. A. & Ada, M. S. (2018). External Debt and Economic Growth: The Case of Emerging Economy. *Journal of Economic Integration*, 33(1), 1141-1157.

Krugman, P. (1988). Financing vs. forgiving a debt overhang. *Journal of development Economics*, 29(3), 253-268.

Malik, S., Hayat, M. K. & Hayat, M. U. (2010). External debt and economic growth: Empirical evidence from Pakistan. *International Research Journal of Finance and Economics*, 44(44), 1450-2887.

Matandare, M. A. & Tito, J. (2018). Public Debt and Economic Growth Nexus in Zimbabwe. *Journal of Economics and Sustainable Development,* 9(2).

Munzara, A. T. (2015). Impact of Foreign Debt on Economic Growth in Zimbabwe. *Journal of Economics and Finance,* 6(5), 87-91.

Muranganwa, P. (2012). An assessment of the impact of external debt on economic growth in Zimbabwe [1985-2009] (Doctoral dissertation, BUSE).

Ndubuisi, P. (2017). Analysis of the Impact of External Debt on Economic Growth in an Emerging Economy: Evidence from Nigeria. *African Research Review*, 11(4), 156-173.

Nyarota, S., Kavila, W., Mupunga, N. & Ngundu, T. (2015). An empirical assessment of binding constraints to Zimbabwe's growth dynamics. Reserve Bank of Zimbabwe.

Pattillo, C. A., Poirson, H. & Ricci, L. A. (2002). External debt and growth (No. 2002-2069). International Monetary Fund.

Poirson, M. H., Ricci, M. L. A. & Pattillo, M. C. A. (2004). What are the channels through which external debt affects growth? (No. 4-15). International Monetary Fund.

Reinhart, C. M. & Rogoff, K. S. (2010). Growth in a Time of Debt. *American Economic Review*, 100(2), 573-78.

Sachs, J. D. (1989). Conditionality, debt relief, and the developing country debt crisis. *In Developing Country Debt and Economic Performance*, (1), 255-296.

Saint-Paul, G. (1992). Fiscal policy in an endogenous growth model. *The Quarterly Journal of Economics*, 107(4), 1243-1259.

Saungweme, T. & Mufandaedza, S. (2013). An empirical analysis of the effects of external debt on poverty in Zimbabwe: 1980–2011. *International Journal of Economics and Research*, 4(6), 20-27.

Schclarek, A. (2004). Debt and economic growth in developing and industrial countries. Lund University Department of Economics Working Paper, 34.

Senadza, B., Fiagbe, A. K. & Quartey, P. (2017). The Effect of External Debt on Economic Growth in Sub-Saharan Africa, *International Journal of Business and Economic Sciences Applied Research* (IJBESAR), 11(1), 61-69.

Shabbir, S. (2013). Does external debt affect economic growth: Evidence from developing countries (No. 63). State Bank of Pakistan, Research Department.

Shkolnyk, I. & Koilo, V. (2018). The Relationship between External Debt and Economic Growth: Empirical Evidence from Ukraine and Other Emerging Economies. *Innovations*, 15(1), 387-400.

Spilioti, S. & Vamvoukas, G. (2015). The impact of government debt on economic growth: An empirical investigation of the Greek market. *The Journal of Economic Asymmetries*, 12(1), 34-40.

Smyth, D. J. & Hsing, Y. (1995). In search of an optimal debt ratio for economic growth. *Contemporary Economic Policy*, 13(4), 51-59.

Warner, A. M. (1992). Did the debt crisis cause the investment crisis? *The quarterly journal of economics*, 107(4), 1161-1186.

Were, M. (2001). The impact of external debt on economic growth in Kenya: An empirical assessment (No. 2001/116). WIDER Discussion Papers//World Institute for Development Economics (UNU-WIDER).

Woo, J. & Kumar, M. S. (2015). Public debt and growth. *Economica*, 82(328), 705-739.