THE IMPACT OF EXTERNAL DEBT ON ECONOMIC GROWTH IN ZIMBABWE

By

MAVHINGA Petronella

THESIS

Submitted to
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

MASTER OF DEVELOPMENT POLICY

2015

THE IMPACT OF EXTERNAL DEBT ON ECONOMIC GROWTH IN ZIMBABWE

By

MAVHINGA Petronella

THESIS

Submitted to
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

MASTER OF DEVELOPMENT POLICY

2015

Professor Kye Woo Lee

THE IMPACT OF EXTERNAL DEBT ON ECONOMIC GROWTH IN ZIMBABWE

By

MAVHINGA Petronella

THESIS

Submitted to
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

MASTER OF DEVELOPMENT POLICY

Committee in charge:

Professor Kye Woo LEE, Supervisor

Professor Ja Eun SHIN

Professor Sang Moon HAHM

Approval as of December, 2015

ABSTRACT

THE IMPACT OF EXTERNAL DEBT ON ECONOMIC GROWTH IN ZIMBABWE

By MAVHINGA Petronella

This study investigated the impact of external debt on economic growth in Zimbabwe for the period of 1980-2013 using time series data. External debt is a major source for developing countries to finance its development needs. Using the Vector Error Correction Model (VECM), the study found a significant negative relationship between external debt and economic growth in Zimbabwe. The results indicate the existence of debt overhang effect in Zimbabwe. However due to insignificant relationship between debt service and economic growth, the existence of the crowding out hypothesis could not be confirmed.

Key words: External debt, economic growth, debt overhang, crowding out

ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to everyone who helped me to make this research paper a reality. I would like to thank my committed supervisors, Professor Lee Kye Woo and Professor Shin Jae Un for their advice and guidance in preparing this paper. To all KDI School Professors, I say, *gamsahapnida,* for imparting knowledge and wisdom on me.

I am also grateful to KDI School and KOICA for giving me the great opportunity to study for my masters degree in South Korea. It has been an inspirational and mind opening journey at KDI School learning about the Korean economic development experience.

To my fellow KOICA 2014 Fall colleagues, thank you for sharing this amazing journey in South Korea. I would like to also thank KDI School staff for the support especially the Happy Hour events that kept me going and made me feel at home.

Finally, I want to thank my family for cheering me on during my studies far away from home. This paper is dedicated to my brother Dewa Mavhinga and my late father Mr H. S. Munatsi for their inspiration throughout my life.

May the Lord Bless You All.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

AfDB	African Development Bank Group
GDP	Gross Domestic Product
GNI	Gross National Income
GoZ	Government of Zimbabwe
MoF	Ministry of Finance, Zimbabwe
OECD	Organisation of Economic Co-operation and Development
UN	United Nations
WDI	World Development Indicators
WB	Word Bank

1. INTRODUCTION

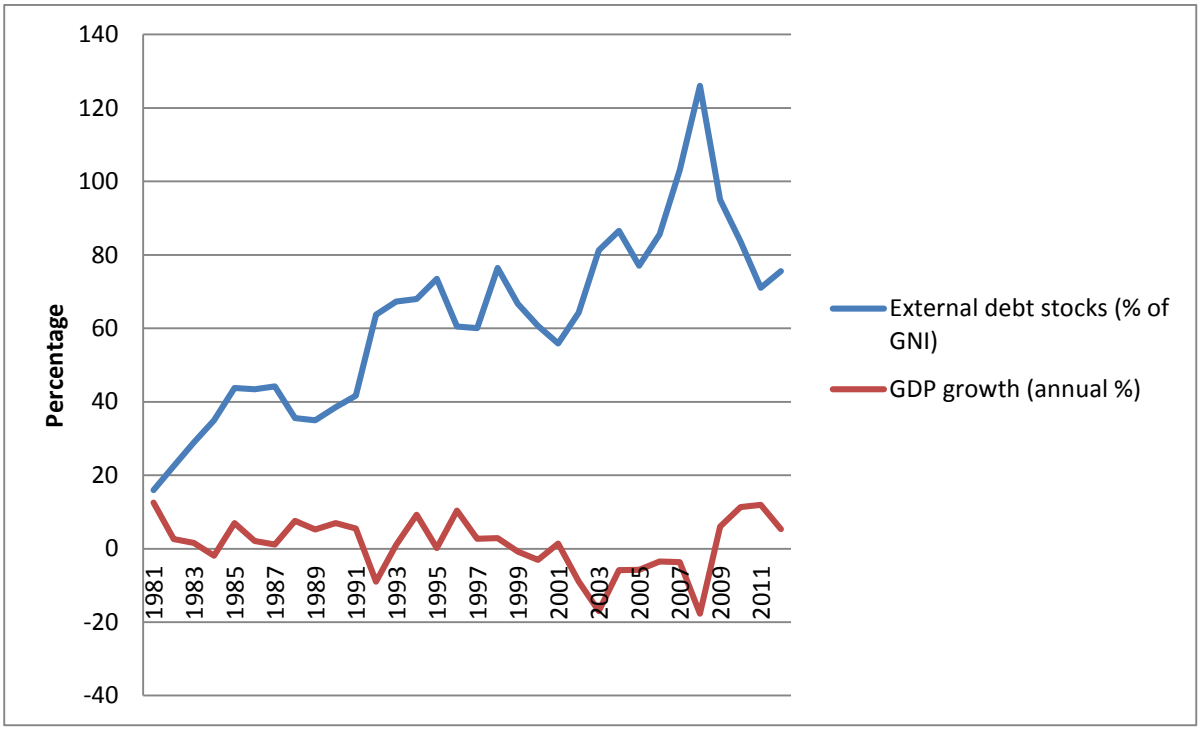
1.1 Statement of the problem

External debt is one of the major sources of financing capital formation in many developing economies. Ayadi and Ayadi (2008) noted that developing countries are characterized by inadequate internal capital formation due to the vicious circle of low domestic savings, low investments, low productivity and low income. Domestic savings are not adequate to finance investments that require huge amounts of money. Thus, to finance this deficit, many developing countries rely on external borrowing developed countries mostly of the Organisation for Economic Co-operation and Development (OECD) which are bilateral sources (government to government) andfrom the multilateral sources i.e., government to International Financial Institutions such as the World Bank, African Development Bank (www.oecd.org). However, the experiences of Latin American countries, with debt overhang crisis in the 1980s (Ezeabasili, Isu & Mojekwu 2011); and the recent debt crisis in Greece has led to concerns about the possibility of adverse consequences of external debt.

Akram (2014) observes that, like most developing countries of the world, Zimbabwe experiences inadequate domestic savings therefore relies substantially on external borrowed funds to finance its infrastructure development projects such as construction of roads, hospitals, dams, electricity power plants; and other social services provision such as health, education, water and sanitation. Zimbabwe started borrowing externally in the 1980s after political independence and the external debt has grown from US$ 800million to about US$ 7.7 billion in 2012 against a gross domestic product (GDP) of US$ 11.752 billion in 2012 (data.worldbank.org). Figure 1 below shows the trend of external debt stock as a

percentage of Gross National Income (GNI) and the GDP annual growth for Zimbabwe from 1981 to 2012.

Figure 1: External debt stocks (% of GNI) and GDP annual growth



Source: data.wordbank.org

The figure illustrates that Zimbabwe's external debt stock has been rising since 1981 from about 19 percent of GNI to a peak of 126 percent of GNI in 2008, while GDP annual growth has not been rising but has been on a downward trend for the period. The above figure shows that the economy has not been performing well given the level of external debt stock, thus warranting a further investigation of the relationship between external debt and economic growth.

Zimbabwe's debt sustainability thresholds which are based on the Country Performance and Institutional Assessment (CPIA), which measure the country's level of indebtedness in present value (PV) terms, indicates that the debt is unsustainable. The PV of debt to exports is 157 per cent, against a threshold of 100 per cent, while the PV of debt to GDP is 54 per cent against a threshold of 30 per cent, as at end 2013 (Ministry of Finance,

2013 & www.worldbank.org).The existence of external debt is not a problem per se; it is the inability to repay the debt that may impact negatively on the economic development. Of the Zimbabwe's total external debt of US$ 7.7 billion in 2012, an estimated 70 percent is in arrears, which indicated the inability to repay the debt (Ministry of Finance, 2013). Due to arrears, the government of Zimbabwe's credit rating is low and therefore they face difficulties in securing new finances for development which may further impede economic development and is known as credit rationing according to Borensztein (1989).

The aim of this study is to find out whether external debt is promoting or impeding economic growth in Zimbabwe. Previous studies have examined the relationship between external debt and economic growth, however, results are mixed. Pattillo, Poirson and Ricci (2011) found out that external debt had a positive effect on economic growth to a certain threshold for which it turned to be negative beyond the threshold. Using a value at risk approach, Karagol's study (2006) shows a positive relationship between external debt and economic growth in Turkey. On the other hand, Ayadi and Ayadi (2008) found a negative relationship between external debt and economic growth in Nigeria, while Kasidi and Said (2013) findings shows that there is no long run relationship of external debt and economic growth in Tanzania. These studies were done for different countries on a different time span, thus warranting for a comprehensive study on the relationship between external debt and economic growth in Zimbabwe. This study seeks to fill this gap by making use of broad data set spanning from 1981-2013.

1.2 Purpose and Significance of the Study

This study seeks to achieve the following:

- To investigate the relationship between external debt and economic growth (GDP) in Zimbabwe;

- To investigate the impact of external debt on economic growth in Zimbabwe; and
- To investigate the impact of other variables on economic growth.

The results from the relationship on external debt, external debt servicing and economic growth will be used for policy formulation and recommendationsin external borrowing that could aid in economic development or prevent the government from accumulating huge external debt. The results will also provide strategies on the options for external debt reduction or debt relief in the case of results showing a negative impact of external debt on economic growth. Recommendations will also be provide on the utilization of borrowed funds in terms of productive infrastructure sectors to promote economic growth and reduce poverty. In this case, external debt could boost or impede economic growth.

1.3 Research Questions

The following question will form the basis of this investigation:

- What is the effect of external debt on economic growth in Zimbabwe?
- What is the effect of debt service on economic growth in Zimbabwe?
- What is the effect of other key economic variables on economic growth in Zimbabwe?

1.4 Hypothesis

Thestudy hypothesizes the existence of debt overhang effect as following:

Null hypothesis 1: A high level of external debt has a negative effect on economic growth.

Null hypothesis 2: A high level of debt service has a negative effect on economic growth.

2. LITERATURE REVIEW

2.1 External Debt and Economic Growth

Faced with the limitation of domestic savings and finance, governments are compelled to borrow funds abroad from bilateral and multilateral institutions. Governments borrow externally to finance investment projects such as construction of roads, hospitals, dams and electricity power plants. Tanzi and Bleger (1986) noted that infrastructure projects require large amounts of money and that to finance through external debt is justified as long as the expected returns exceed the costs of borrowing. Therefore, borrowed funds should be allocated and utilized efficiently to promote economic growth, so that the debt can be serviced without difficulties.

External debt is usually contracted in foreign currency, and thus, it requires foreign exchange resources for repayment (www.worldbank.org). In the existing literatures, many controversies and divergent opinions prevail on the role played by external debt on the economic growth process. In this regard, some scholars argue that there is a positive causal relationship between external debts and economic growth (Karagol 2006; Ayadi&Ayadi 2008; Burnside & Dollar 2000), while others are of the view that there is a negative relationship (Sen, Kasibhatla& Stewart 2007); in addition, others even argue that there is no relationship between external debt and economic growth (Jayaraman& Lau 2009; Ogunmuyiwa, 2011).

Pattillo et al. (2006) examined the impact of external debt on economic growth using a panel data model and found that external debt impacts economic growth positively up to a threshold and thereafter becomes negative at about 160-170 percent of exports or 35-40 percent of GDP. A similar study by Kasidi and Sai (2013) on Tanzania, found a positive relationship in the short-run but found no long run relationship between external debt and economic growth. Ayadi and Ayadi (2008) analyzes the impact of external debt on economic growth in South Africa and the results shows a positive impact of debt on growth attributing

it to the optimal allocation of the funds and sound macroeconomic policies to promote economic growth. Similarly, Spilioti and Vamvoukas (2015) using 40 years data starting from 1970 taking into account fiscal policy indicators, found a positive relationship between public debt and economic growth in Greece.

However, on the other hand, some empirical studies found a negative impact of external debt on economic growth. Sen, Kasibhatla and Stewart's study (2007) on the impact of external debt and economic growth in Asia and Latin America found that external debt impede economic growth. The negative impact was severe for Latin American countries and moderate for Asian countries. An analysis of external debt and economic growth using an ARDL bound testing approach in Turkey (Genc&Tandogan, 2015) shows a negative but statistically insignificant effect of external debt on economic growth. Ramzan and Ahmad's study (2014) on the impact of external debt and economic growth in Pakistan taking into account macroeconomic policies shows that external debt has a negative impact on economic growth. However, the results also shows that the negative effect can be reduce or reversed if a country has sound macroeconomic policies. Ramzan and Ahmad also found out that bilateral external debt impedes economic growth and not the multilateral external debt.

Several studies found out that there is no relationship between external debt and economic growth. According to Ogunmuyiwa's study (2011), there is no causal relationship between external debt and economic growth. The study found the relationship to be weak and insignificant in Nigeria using time series data from 1970 – 2007. Similarly Jayaraman and Lau (2009) tested the relationship between external debt and economic growth in Pacific island countries and found no long-run causal relationship.

2.2 Debt Overhang Effect

The effect of external debt on economic growth and investment is theorized by debt overhang effect. Debt overhang, according to Borensztein (1989) and Sachs (1989), is a situation where an external debt burden is more than the country's repayment ability. External debt as a percentage of GDPis a measure of ability to pay; and for Zimbabwe, this ratio rose from 41 in 1991 to 126 in 2008 (data.worldbank.org). A high ratio means that a particular country would face difficulties in generating enough income from the foreign exchange earnings to service its external debt obligations.

Borensztein (1989) examined that due to a decline in domestic investment and significant capital outflows,the investment to GDP ratio decrease as external debt increases.Sachs (1989) also stated that the cycle continues as high external debt levels discourage investment which in turn reduces economic growth, thus further reducing the ability to repay the debt.

2.3 Crowding Out Effect

The existence of external debt may be viewed by investors as a catalyst fora future increase in taxes or potential debt-induced crisis, which in turn may discourage private investment (Akram, 2014). Krugman (1988) defined crowding out as a situation where a large part of foreign exchange resources is used to service external debt with a little portion remaining to finance investment and growth. Huge external debt servicing might, therefore, lead to a diversion of limited resources that could be used for public investment. As payments are made by using foreign exchange, most indebted countries transfer domestic resources to buy foreign exchange to repay the debt (Chowdhury, 2001). Another scholar Deshpande (1995) explained that countries raisinga large sum of foreign exchange would face more diversion of limited resources.Such trend will negatively affect the overall economic

performance, which in turn reduces the ability to repay as confirmed in the study by Reinhart, Reinhart and Rogoff (2015). In general, due to a heavy debt service payment and a reduction in government expenditures, growth will be retarded. The ratio of total external debt service to exports of goods and services is a measure of crowding out effect (Akram, 2014). The higher the ratio the greater the debt burden, and as a result, the greater the negative effect on economic growth. Kasidi and Said (2013) also noted that the debt service to exports ratio indicates the portion of exports committed to service of debt obligations.

Burnside and Dollar (2000) on the other hand argue that foreign aid in effective on condition of strong institutions i.e. aid or external debt alone is ineffective unless it has been combined with sound macroeconomic policies and strong institutions.

Given the absence of conclusive evidence on the relationship and impact of external debt on economic growth, the purpose of this study is to analyze this relationship in Zimbabwe by hypothesizing that external debt has a negative impact on economic growth. This study will test the debt overhang and crowding out effect using a time series data regression from 1981 to 2013. Most of previous studies used cross sectional data, however due to different country characteristics there is need for a country specific study and over a period of time. This study therefore seeks to fill this gap by conducting a comprehensive Zimbabwe study on external debt and economic growth. The aim is to investigate whether external debt is promoting or impeding economic growth in Zimbabwe.

3. METHODOLOGY AND DATA

3.1 Methodology

The model of estimation to be used for the study is the Vector Error Correction Model (VECM) for time series data and also as the data has shown not to be stationary after testing using the Augmented Dickey-Fuller Test. However the residuals are stationary which supports the use of the VECM. In line with the VEC Model, a Johansen Co-integration test has to be done to check the long run relationship between variables. The use of VECM incorporates the information about short-run and long run dynamics in the model and also VECM representation has more efficient coefficient estimates than in other methods such as Vector Autoregressive Model (VAR).

3.2 Model Specification

Following Pattillo et al. (2011) model, the econometric regression equation for the study is specified as follows;

$$GDP_t = \beta_0 + \beta_1 ExternalDebt_{t-1} + \beta_2 Trade_{t-1} + \beta_3 NaturalResources_{t-1} + \beta_4 Agriculture_{t-1} + \beta_5 EXTFIN_{t-1} + \beta_6 Currency\ Dummy_{t-1} + \mathcal{E}_t \quad (1)$$

where, GDP represent economic growth measured as the real GDP per capita annual growth, and all independent variable are lagged by one year. Model 1 test the debt overhang hypothesis.

$$GDP_t = \beta_0 + \beta_1 DebtService_{t-1} + \beta_2 Trade_{t-1} + \beta_3 NaturalResources_{t-1} + \beta_4 Agriculture_{t-1} + \beta_5 EXTFIN_{t-1} + \beta_6 Currency\ Dummy_{t-1} + \mathcal{E}_t \quad (2)$$

Where, GDP represent economic growth measured as the real GDP per capita annual growth. Model 2 test the crowding out effect, i.e. the effect of debt service on economic growth in Zimbabwe.

3.3 Data

The study will make use of annual time series data for Zimbabwe from 1981 to 2013 in the form of secondary data from the World Bank's database the World Development Indicators (2015). The description of data and sources is shown on Table 1.

Table 1: Data description and Source

Type of variable	Variable	Description	Source
Dependent variable	GDP	GDP per capita growth (annual %). Annual percentage growth rate of GDP per capita based on constant local currency	WDI
Independent variables	External debt	External debt stocks (% of GNI). Total external debt stocks to gross national income	WDI
	Debt Service	Total external debt service as a percentage of exports of goods and services (% of exports)	WDI
	Trade	Trade (% of GDP)-Trade is the sum of exports and imports of goods and services measured as a share of gross domestic product	WDI
	Natural Resources	Total natural resources rents (% of GDP)	WDI
	Agriculture	Agriculture Value Added (% of GDP). Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs	WDI
	EXTFIN	ODA net flows as % of GNI and FDI net flows as % of GDP	WDI
	CDummy	Introduction of multicurrency in 2009	MoF

Summary statistics are shown on Table 2.

Table 2: Summary Statistics

	(1)	(2)	(3)	(4)	(5)
VARIABLES	**N**	**Mean**	**Sd**	**Min**	**Max**
GDP (*annual %*)	34	-0.303	7.007	-17.95	10.37
External Debt*(% of GNI*)	34	61.56	27.44	12.03	143.8
Debt Service(*% of exports)*	34	0.209	0.145	0.417	0.755
Trade*(% of GDP)*	34	68.13	21.15	35.92	110.9
CDummy	34	0.147	0.359	0	1
NaturalResources*(% of GDP)*	34	6.607	3.953	2.653	18.41
Agriculture*(% of GDP)*	34	16.63	3.312	7.414	22.67
EXTFIN	34	79.40	60.44	9.602	272.6

3.4 Definition of Variables and Expected Results

- **GDP-Economic growth**

The GDP as the proxy for economic growthis measured by the growth rate of real GDP per capita as an annual percent. EG is the dependent variable for this study.

- **External Debt**

  External Debt is measured as the total external debt stocks as a percent of the gross national income. This variable is the measure of debt overhang effect and a higher percentage implies high indebtednesswhich results in negative impact on economic growth. Therefore, for this ratio, a negative relationship is expected.

- **Debt Service**

  Debt Service variable is measured as total debt service as a percentage of exports of goods and services. This variable is a measure of crowding out effect. According to World Bank total debt service is the sum of principal repayments and interest actually paid in currency, goods, or services on long-term debt, interest paid on short-term debt, and repayments (WDI, 2015). The Government of Zimbabwe since year 2000 has not been servicing its external debt therefore; the debt service figures are lower than they should be under normal circumstances (Ministry of Zimbabwe, 2013). For this ratio a negative relationship is expected although the figures are lower than as expected if Zimbabwe was servicing all external debt obligations.

- **Trade**

  This variable is measured as the total of exports and imports as a percentage of GDP. Trade has a positive impact on economic growth when it is an export-led industrialized, where a nation build strong and competitive manufacturing industry for exportation of the manufactured goodsChong (1980). However, trade may have negative impact when a country export primary raw material instead of manufactured finished goods (Ali and Abdullah, 2015). This study expects a positive relationship between trade balance and economic growth.

- **Natural Resources**

  Natural resources variable is measured as the total natural resource rents as a percentage of GDP. Total natural resources rents are the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents (WDI, 2015). Zimbabwe is well endowed with natural resources and therefore natural resources are a key economic contributor to economic development (UN). The study expects a positive relation between GDP and natural resources.

- **Agriculture**

  This variable is measured as the agriculture value added as a percent of GDP. Agriculture is a key important sector to Zimbabwe's economy which contributes about 19.8% of GDP (AfDB, 2012) and is also important to the livelihoods of many Zimbabweans who live in the rural areas. Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs (WDI), therefore for the case of Zimbabwe a positive relationship is expected between GDP and agriculture.

- **EXTFIN-External finance**

  This variable EXTFIN is a composition of Official Development Assistance (ODA) and Foreign Direct Investment (FDI) which have been multiplied to get a significant variable. ODA is measured by the net ODA received as a percent of GDP, while FDI is the net FDI inflows as a percent of GDP (WDI). Zimbabwe lack adequate internal financing and therefore relies on ODA and FDI as the other sources of external financing for development projects and other expenditures. The study expects a positive relationship between GDP and EXTFIN.

- **Currency Dummy**

  Zimbabwe experienced hyperinflation period in 2008 with monthly inflation reaching 79 trillion percent (Hanke, 2008). To address the situation, the government of Zimbabwe in 2009 introduced the multicurrency system mainly the use of United States Dollar, the South African Rand and the Botswana Pula. The introduction of the multicurrency system reduced inflation and restored confidence in the business community (Berg and Boreinsztein, 2000). Zimbabwe as a dollarized economy may have boosted the confidence level among international investors and therefore, the

study expects a positive relationship to economic growth after the introduction of the multicurrency system.

The use of VECM requires a series of tests to be conducted on the data which include the Augmented Dickey-Fuller Test, residuals test, Johansen test for co-integration, vector error correction test and the Lagrange multiplier test.

3.5 The Augmented Dickey-Fuller (ADF) Test for Stationarity

This study employed the ADF test to check whether the variables are stationary or not before conducting the regression test.

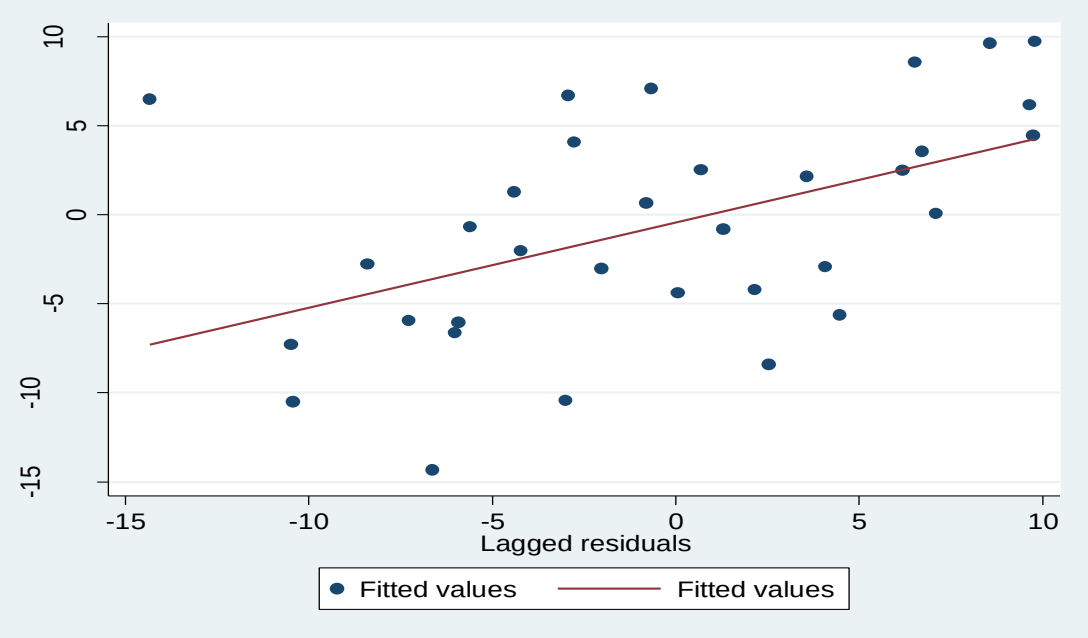
Table 3: ADF test

Variable	Levels	1st Difference	Level of Significance	Order of Integration
GDP	-3.447		5%	I (0)
External Debt	-2.147	-4.751	1%	I (1)
Debt Service	-1.061	-6.481	1%	I(2)
Trade	-2.498	-4.233	1%	I (1)
NaturalResources	-1.792	-5.445	1%	I(1)
Agriculture	-3.046		5%	I(0)
EXTFIN	-2.113	-3.912	1%	I(1)
Residuals	**-3.266**		**5%**	**I(0)**

From table 3 above, all variable have unit roots while 2 variables were stationary and the other variables were stationary at after first differenced at I(1). As most of the variables

are not stationary, that justifies the use of the VEC Model for this study. To show the long run relationship among variables, the residuals have to be stationary as shown from the table 3 above and figure 2 below.

Figure 2: Residuals test graph



3.6 The Johansen test for co-integration

The Johansen test for co-integration is employed in this study to test the co-integration among variables so as to use the VEC Model. The results of the Johansen Co-integration test show that there are three co-integration equations in the model which means there is a long run relationship among variables.

Table 4: Johansen test for co-integration

Johansen tests for cointegration

Trend: constant — Number of obs = 32

Sample: 1982 - 2013 — Lags = 2

maximum rank	parms	LL	eigenvalue	trace statistic	5% critical value
0	56	-555.54229	.	176.9195	124.24
1	69	-526.19668	0.84024	118.2283	94.15
2	80	-505.7012	0.72223	77.2373	68.52
3	89	-490.27302	0.61874	46.3810*	47.21
4	96	-480.95547	0.44141	27.7459	29.68
5	101	-472.8234	0.39846	11.4817	15.41
6	104	-468.1713	0.25230	2.1775	3.76
7	105	-467.08253	0.06578		

***** *denotes the rejection of the hypothesis at 5% significance level*

The Johansen test shows that there are 3 co-integrating equations; therefore it justifies the use of the Vector Error Correction Model to determine the short run and long run relationships among variables.

4. EMPIRICAL FINDINGS

The study employed the Vector Error Correction Model as the regression methodology to test the impact of external debt and other control variables on economic growth. Table 5 below show the VECM regression results for this study.

Table 5: VECM regression results

Dependent Variable: GDP-Economic Growth

Variables	**(1)**	**(2)**
L._ce1	-1.124***	-0.965***
	(0.381)	(0.218)
L._ce2	-0.00678	3.984
	(0.133)	(6.106)
L._ce3	-0.157**	-0.0840
	(0.0742)	(0.0548)
GDP_{t-1}	-0.144	0.0846
	(0.283)	(0.227)
External $Debt_{t-1}$	-0.389**	
	(0.169)	
Debt Service		-18.39
		(11.22)
$Trade_{t-1}$	0.455***	0.448***
	(0.128)	(0.129)
$EXTFIN_{t-1}$	0.00883	-0.0211
	(0.0279)	(0.0239)
$Agriculture_{t-1}$	0.433	-0.0134
	(0.522)	(0.476)
Natural $Resources_{t-1}$	-3.132***	-2.834***
	(0.705)	(0.782)
$CurrencyDummy_{t-1}$	-47.37***	-25.72*
	(14.97)	(13.85)
Constant	0.472	-0.670
	(1.224)	(1.031)
Observations	32	32
R-Squared	0.7878	0.5739
AIC	36.20456	33.31328
SBIC	40.28114	38.39755
Jarque-Bera (Prob> chi2)	0.89373	

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1t means current year, and t-1 is previous year

Table 6: Lagrange-multiplier test

lag	chi2	df	Prob> chi2
1	40.0862	49	0.81412
2	54.9028	49	0.26088

H0: no autocorrelation at lag order

4.1 Long Run Results

The VECM regression results in table 5 show the model explains 79 percent of variations as indicated by the R-Squared result. The model results show that there is a long run relationship between economic growth (GDP) and external debt. The Lagrange multiplier test results shown on table 6 indicated that the model does not suffer from autocorrelation.

4.2 Short Run Results

The VECM results show the short run relationship between economic growth and external debt including other control variables i.e. the current economic growth is affected by previous year's level of external debt. The model used one lag for all independent variables to determine the current level of economic growth.

-*External debt*: The results from model (1) show that external debt has a statistically significant negative relationship with economic growth (GDP) at 5 percent. It implies that, everything hold constant, a one percentage point increase in external debt results in a 39 percent decrease in economic growth (GDP). Therefore it shows that external debt has a

negative impact on economic growth in Zimbabwe which confirms the existence of debt overhang.

-*Debt service:* From model (2) results, there is insignificant relationship between debt service and economic growth which indicate that the existence of crowding out effect cannot be confirmed in Zimbabwe. The result should be read taking into account into account that the Government of Zimbabwe has not been servicing external debt since year 2000 (Ministry of Finance, 2013).

-*Trade*: The findings indicates that trade is positive and statistically significant at 1 percent in the model, which implies that a 1 percentage point increase in trade leads to 46 percent increase in economic growth. This positive coefficient was as expected for the study.

-*Natural resources*: The results show that natural resources have negative impact on GDP, however this negative relationship was not expected for this study. This may be explained by the theory of natural resource curse, which states that the discovery of natural resources impact negatively on the entire economy as it increase local prices and the economy may miss out on other export led growth by concentrating only on natural resources (Sachs and Warner, 2001). Having abundant natural resources also promotes corruption and capital outflow as people take money from these resources for their personal use rather than investing in important infrastructure.

-*Introduction of multiple currency system*: The introduction of multicurrency systemCurrency Dummy in 2009 indicates a negative relationship with economic growth. This result also was not as expected in this study. This negative result may be explained through the lack of lender of last resort role of the central bank (Berg and Boreinsztein, 2000). The central bank of Zimbabwe cannot provide short term finances to banks in times of liquidity crisis which may hamper growth as investments for companies decline.

Agriculture: The findings show that agriculture is statistically insignificant in the model, i.e. it does not promote or harm economic growth in the case of Zimbabwe. Agriculture is the main livelihood activity for the larger population of Zimbabwe which lives in the rural areas. Hence, this insignificant result may imply that there is little value addition in the agriculture sector in Zimbabwe or that the agriculture produce are exported as primary products.

EXTFIN: ODA and FDI (EXTFIN) combined together have found to bealso statistically insignificant in the model, which implies that is they do not promote or harm economic growth in Zimbabwe. The possible explanation for this result may be that EXFIN in Zimbabwe is being used for humanitarian and social services projects which do not contribute significantly to economic development.

The VECM results indicate accepting *null hypothesis 1* that there is negative relationship between external debt and economic growth in Zimbabwe. This confirms the existence of debt overhang in Zimbabwe. On the other hand, the second model shows an insignificant relationship between debt service and economic growth, therefore the existence of crowding out hypothesis could not be confirmed.

5. CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Summary of the Study

The purpose of the study was to determine and analyze the relationship and impact of external debt on economic growth (GDP) in Zimbabwe. The study used the VEC Model methodology in STATA software, using annual time series data from 1980-2013 from World Bank. The data was tested for stationarity, co-integration, and autocorrelation before being tested using the VECM methodology.

The study found a negative and statistically significant relationship between external debt and economic growth in Zimbabwe. This implies that, based on the results, this study concludes that there exist the debt overhang effects in Zimbabwe i.e. external debt is negatively impacting economic growth. In the long run, the accumulation of external debt leads to decline in economic growth, holding everything constant.

5.2 Policy Recommendations

External debt has shown to be detrimental to economic growth in Zimbabwe as shown by the results which implies that the Government of Zimbabwe have to find ways to reduce the size of the external debt. Zimbabwe can negotiate for a debt relief program with its creditors or phase out the use of external debt. To finance its projects and expenditures, Zimbabwe should develop and promote its domestic financial market so as to avoid relying substantially on external borrowing.

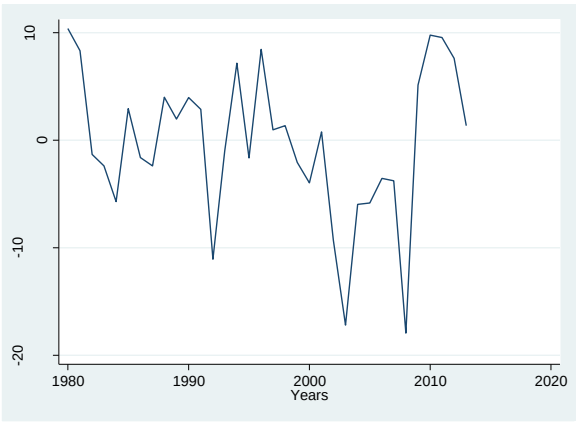
The Government of Zimbabwe should also improve the macroeconomic policies and strengthen institutions as they have shown to be key in the use of funds to promote economic growth (Burnside & Dollar 2000).

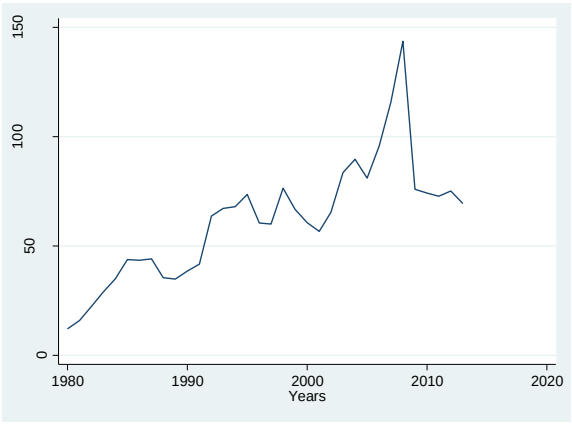
5.3 Suggested Areas for Further Study

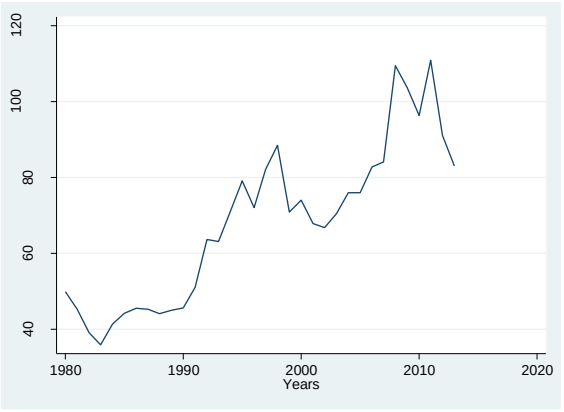
The study results shows that natural resources and introduction of multicurrency have negative impact on economic growth. This area needs further studies to ascertain how each variable responds to economic growth using other methodologies. These are some limitations for this study due to inadequate availability of data, on the use of the borrowed funds i.e. to check in which economic sectors funds were used.

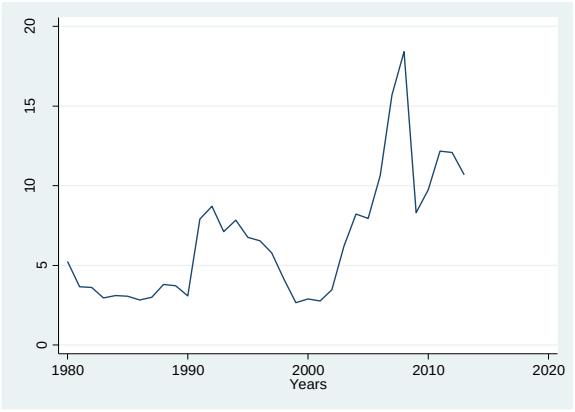
APPENDICES

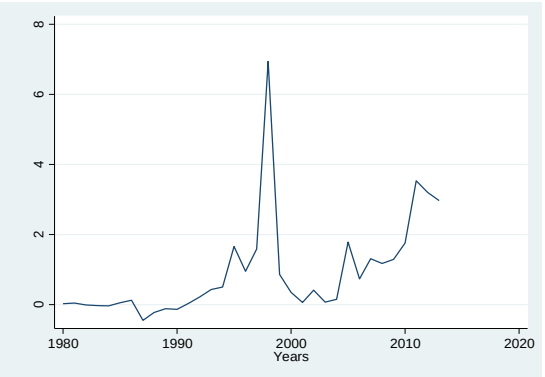
Appendix A: Graphs for the Variables Used in the Study

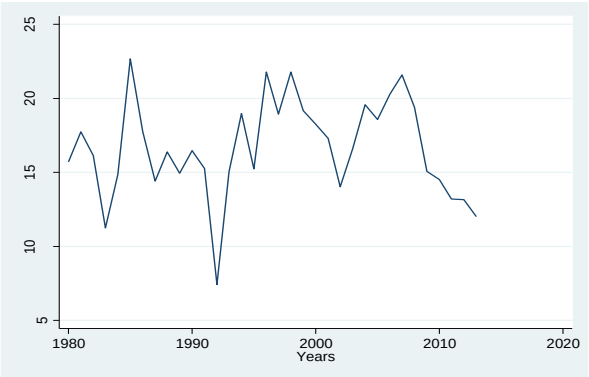


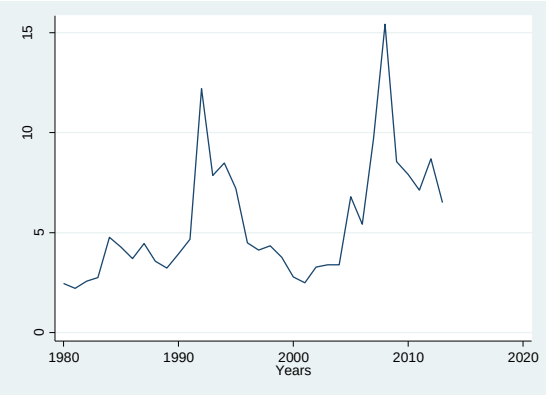


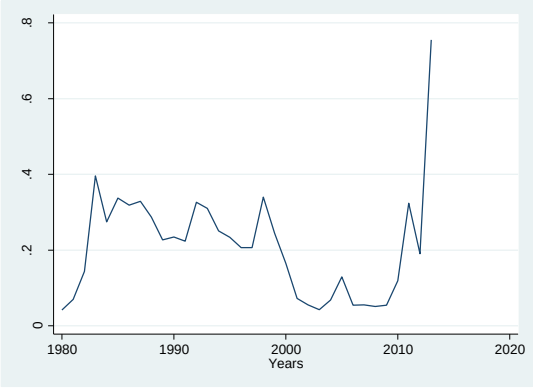









0
5
10
15
1980
1990
2000
2010
2020
Years


0
.2
.4
.6
.8
1980
1990
2000
2010
2020
Years

REFERENCES

Akram, N. (2014). Is public debt hindering economic growth of the Philippines? *International Journal of Social Sciences*, 42(3), 202-221.

Ayadi, F.S., &Ayadi, F. O. (2008). The impact of external debt on economic growth: a comparative study of Nigeria and South Africa. *Journal of Sustainable Development in Africa*, 10(3), 234-264.

Berg, A. &Borennsztein, E. (2000).The pros and cons of full dollarization.International Monetary Fund, WP 00/50.

Boboye, A.L., &Ojo, O.M. (2012).Effect of external debt on economic growth and development of Nigeria.*International Journal of Business and Social Science*, 3(12), 297-304.

Borensztein, E. (1989). Debt overhang, credit rationing and investment.International Monetary Fund, WP 89/74.

Burnside, C. & Dollar, D. (2000).Aid, policies and growth.*American Economic Review*, 90(4), 847-868

Chowdhury, A.R. (2001). External debt and growth in developing countries: A sensitivity and causal analysis. *World Institute for Development Economics, DP*, 95.

Daud, S.N.M. &Podivinsky, J.M. (2012).Revisiting the role of external debt in economic growth of developing countries.*Journal of Business Economic and Management*, 13(5), 968-993.

Deshpande, A. (1995). The debt overhang and the disincentive to invest.*Journal of Development Economics*, 52, 169-187.

Ezeabasili, V.N., Isu, H.O. &Mojekwu, J.N. (2011). Nigeria's external debt and economic growth: an error correction approach. *International Journal of Business and Management*, 6(5), 156-170.

Genc, M.C. and Tandogan, D. (2015). The impact of external debt on economic growth in Turkey: and ARDL bounds testing approach. *Paradoks Economics, Sociology and Policy Journal*, 11(1), 65-87.

Gong, L., Li, H., & Wang, D. (2012).Health investment, physical capital accumulation and economic growth.*China Economic Review*, 23, 1104-1119.

Greenidge, K., Drakes, L., &Craigwell, R. (2010).The external public debt in the Caribbean Community.*Journal of Policy Modeling*, 32, 418-431.

Hanke, S.H. (2008). R.I.P. Zimbabwe dollar. CATO Institute: Washington

Jayaraman, T. K., & Lau, E. (2009). Does external debt lead to economic growth in Pacific island countries? *Journal of Policy Modeling*, 31, 272-288.

Karagol, E. (2006). The relationship between external debt, defence expenditures and GNP revisited: the case of Turkey, *Defence and Peace Economics*, 17(1), 47-57.

Kasidi, F., and Said, M.A. (2013). Impact of External Debt on Economic Growth: A Case Study of Tanzania. *Advances in Management & Applied Economics*, 3(4), 59-82.

Krugman, P. (1988). Financing vs. forgiving.*National Bureau of Economic Research.WP*, 2486.

Ministry of Finance and Economic Development, (2013).*The2014National Budget Statement.* Ministry of Finance and Economic Development: Harare

Moyen, N. (2007). How big is the debt overhang problem? *Journal of Economic Dynamics & Control*, 31, 433-472.

Moyo, D. (2009). *Dead aid: why aid is not working and how there is a better way for Africa*. Vancouver: Douglas &Mcintyre.

OECD, (2011).*Investment: In better policies for development*. OECD

Ogunmuyiwa, M.S. (2010). Does external debt promote economic growth in Nigeria? *Current Research Journal of Economic Theory* 3(1), 29-35

Pattillo, C., Poirson, H., & Ricci, L.A. (2011).External Debt and Growth.*Review of Economics and Institutions*,2(3), Article 2.

Qayyum, U., Din, M., &Haider, A. (2014). Foreign aid, external debt and governance.*Economic Modelling*, 37, 41-52.

Ramza, M. & Ahmad, E. (2014). External debt growth nexus: Role of macroeconomic policies. *Economic Modelling*, 38, 204-210.

Sachs, J.D. (1989). Developing countries debt and economic performance.*The International Financial System*, 1, 255-296.

Sachs, J.D. & Warner, A.M. (2001).The curse of natural resources.*European Economic Review*, 45, 827-838.

Simon, J. L. (1996). *The ultimate resource*. New Jersey: Princeton University

Spiliot, 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, 34-40.

Szkorupova, Z. (2014). A causal relationship between foreign direct investment, economic growth and exports for Slovakia.*Procedia Economics and Finance*, 15, 123-128.

Tanzi, V. &Blejer, M.I. (1986).Public debt and fiscal policy in developing countries.*International Monetary Fund. WP*, 86,5.

Todaro, M. P.& Smith, S. C. (2011). *Economic development*. Boston: Pearson Addison Wesley.

Young, A. (1995). The tyranny of numbers: Confronting the statistical realities of the East Asian growth experience. *Quarterly Journal of Economics,* 110(3), 641-680.

Online sources

AfDB, (n.d).From stagnation to economic recovery.Retrieved 22 September 2015.http://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/3.%20Zimbabwe%20Report_Chapter%201.pdf

OECD (n.d).Official development assistance- coverage.Retrieved 20 June 2015.http://www.oecd.org/dac/stats/officialdevelopmentassistancedefinitionandcoverage.htm

United Nations (n.d).Zimbabwe United Nations development assistance framework.Retrived September 22, 2015.http://www.zw.one.un.org/togetherwedeliver/zundaf/4-sound-management-and-use-environment-natural-resources-and-land-promote

World Bank (n.d).World Development Indicators.[External debt stock].Retrieved 6 June 2015.http://databank.worldbank.org/data/views/variableSelection/selectvariables.aspx?source=world-development-indicators#s_e