Talknice Saungweme and Shylet Mufandaedza
Great Zimbabwe University, Box 1235, Masvingo, Zimbabwe
E-mail: talknice2009@gmail.com; shymufandaedza02@yahoo.com

ABSTRACT
Economic and sustainable levels of borrowing to finance productive activities in a country will not only enhance growth, but is also a useful and most effective tool for poverty alleviation. Consequently, irresponsible borrowing and poor debt management practices will crowd-out investment and social service expenditures, thus adversely affecting poverty mitigation. To investigate the effects of Zimbabwe’s external indebtedness (private and public) the study used income per capita, external debt service-to-exports and external debt-to-gross domestic product ratios. Other non-monetary explanatory variables were mortality rates and school enrolments. The results of the study shows that external outflows of financial resources in the form of debt repayments deprive the nation of basic service provisions. Government’s responsibility to ensure adequate provision of education, health and infrastructure is greatly compromised. External debt servicing adversely affects short run income per capita and worsens infant mortality rates.

KEY WORDS: External debt, Poverty

1.0 Introduction
The most effective tool to poverty alleviation is sound macroeconomic and social policies. Development centred policies stimulate both private and public investment and hence growth. Economic growth generates wealth, income, goods and services, which when utilized and shared effectively reduce the country’s poverty levels. A boost of a country’s production base would impact positively on the following aggregate variables; national income, employment levels, inflation and social service provision. A strong industrial base also promotes self dependence and thus reduces heavy reliance on external donations and funding.

Budgetary indiscipline and poor debt management are the chief causes of the current debt crisis in Zimbabwe and many other developing countries world over. The resultant debt overhang problem had several implications, which include, among many other things, high debt repayment obligations and loss of international credit worthiness.

1.1 A brief economic review of Zimbabwe
From independence in 1980 to early 1990s, Zimbabwe followed a socialist ideology of running the economy. However, in 1991, Zimbabwe adopted the International Monetary Fund (IMF) and World Bank funded economic structural reform programme (ESAP), which transformed the economy towards capitalism. Only strategic industries and companies were left in the hands of the government while the rest of the economy was private sector driven.

The Zimbabwean economy reached its best of performance stage in 1996/7, with most economic indicators recording their highest levels. During this period 1996/7, unemployment of both human and non-human resources was below 20% while industrial capacity utilization was above 85%. The table below gives a snapshot of some economic variables in 1996:
Table 1: Snapshot of some economic indicators in 1996

<table>
<thead>
<tr>
<th>GDP</th>
<th>BOP</th>
<th>Exports</th>
<th>Gross Official Reserves</th>
<th>Import Cover</th>
<th>Export growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>US$ millions</td>
<td>Months</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8706</td>
<td>3</td>
<td>3090</td>
<td>830</td>
<td>3.6</td>
<td>11.9</td>
</tr>
</tbody>
</table>

*Source: RBZ Annual Statistical and Economic Publications*

In 1998, however, the economy started slowing down, which further worsened in 1999 and 2000. During this aforementioned period, western countries’ governments and international financial institutions cancelled their BOP support to Zimbabwe. External debt arose as a result of cumulatively unsustainable fiscal deficits and increased external borrowings to fund the government’s recurrent expenditures and interest on previous debts.

A decade of economic meltdown, 1998-2008, resulted in soaring imports of consumption and industrial goods, a severe deterioration in the balance of payment (BOP), perpetual unsustainable fiscal deficits and huge accumulation of external debts. As a result, the national economy contracted by 44%; inflation soared to over 66,000%\(^1\), and there were persistent shortages of foreign exchange, local currency, fuel, medicine, food, water and electricity, among other things.

1.2 Overview of Zimbabwe’s external debt, 1980-2011

At the end of fiscal year 2011, Zimbabwe’s external debt stood at US$10.7 billion. Close to 90% of it was owed to multilateral creditors such as the International Monetary Fund (IMF), World Bank, African Development Bank (ADB) and European Investment Bank (EIB). Due to persistent economic hardships, coupled with poor debt management and fiscal indiscipline, the country failed to service its external obligations resulting in huge accumulation of both the principal debt and interest. More so, Zimbabwe is not a low income country, henceforth, it never received any debt relief initiatives offered by multilateral creditors, especially in 1999 and the period 2005-2007.

The diagram below shows an ever growing external debt stock of Zimbabwe, which together with no debt servicing, have plunged the country into serious debt overhang.

![Figure 1: External Debt Stock](chart.png)

\(^1\) Reserve Bank of Zimbabwe reported inflation figure for 2007.
1.3 A highlight of Poverty Indicators
The following table, Table 2, gives a snapshot of some of the basic poverty measures for Zimbabwe. In the table, all poverty indicators were at their worse position in 2005, a period which coincides with the country’s economic woes. Secondary school enrolment was 72%, infant mortality rate was 66 per 1000, total life span was 44 years and income per capita was $431 \textit{(which translates to $1.15 per day per individual)}. Also pertinent to note in the table is the subsequent improvement in poverty indicators after 2009, when the economy was recovering.

Table 2: A snapshot of Zimbabwe’s poverty indicators and external debt sustainability ratios (1980-2011)

<table>
<thead>
<tr>
<th>Year</th>
<th>Income per capita</th>
<th>External debt per capita</th>
<th>Life Expectancy (total)</th>
<th>Infant Mortality rate</th>
<th>Secondary School enrolment</th>
<th>Nominal external debt-to-GDP</th>
<th>Nominal external debt service-to-exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>896</td>
<td>108</td>
<td>59</td>
<td>67</td>
<td>86</td>
<td>12</td>
<td>50</td>
</tr>
<tr>
<td>1985</td>
<td>622</td>
<td>272</td>
<td>61</td>
<td>53</td>
<td>100</td>
<td>43</td>
<td>193</td>
</tr>
<tr>
<td>1990</td>
<td>814</td>
<td>313</td>
<td>61</td>
<td>53</td>
<td>92</td>
<td>37</td>
<td>163</td>
</tr>
<tr>
<td>1995</td>
<td>583</td>
<td>429</td>
<td>53</td>
<td>58</td>
<td>88</td>
<td>70</td>
<td>183</td>
</tr>
<tr>
<td>2000</td>
<td>506</td>
<td>307</td>
<td>45</td>
<td>63</td>
<td>77</td>
<td>57</td>
<td>150</td>
</tr>
<tr>
<td>2005</td>
<td>431</td>
<td>354</td>
<td>44</td>
<td>55</td>
<td>72</td>
<td>76</td>
<td>226</td>
</tr>
<tr>
<td>2010</td>
<td>536</td>
<td>690</td>
<td>50</td>
<td>45</td>
<td>89</td>
<td>121</td>
<td>255</td>
</tr>
<tr>
<td>2011</td>
<td>684</td>
<td>803</td>
<td>51</td>
<td>43</td>
<td>92</td>
<td>111</td>
<td>225</td>
</tr>
</tbody>
</table>

Source: Central Statistics Office (CSO). World Bank Human Development Indicators Database.

1.4 Objectives of this study
This study seeks to analyse the quantitative effect of external debt on poverty in Zimbabwe. That is the effects of debt variables (external debt service-to-exports, exports-to-external debt stock and external debt stock-to-GDP ratios) on poverty measurement variables (per capita income, primary and secondary school enrolment rates, life expectancy and infant mortality rates).

2.0 Literature Review
2.1 Theoretical Literature Review
The relationship between external debt and poverty can either be direct or indirect. Direct relationship arises from how the externally sourced funds will be used in the recipient country. This takes for instance, the funding of social programs such as health and education. Indirect linkage is explained by the role played by investment, which leads to economic growth and income.
Krugman (1988) and Sachs (1989) postulated that huge external debt stocks lead to debt overhang, which consequently result in lower growth through reduced investment. Both public and private investment will be low as huge amounts of resources will be committed to debt servicing. According to the debt overhang hypothesis by Krugman (1988) and Sachs (1989), et al, the debt burden negatively impacts on liquidity, capital formation and consumption. Another school of thought by Lopes (2002) argued that increases in social spending allocations are fundamental to fighting poverty in less developed countries.

Gong and Zou (2002) postulated that volatility in government spending directly impacts on growth, which then affects poverty through incomes and consumption patterns. In the same vein, Stiglitz (2000) concluded that an average economic annual growth rate of 5% in developing countries is likely to increase household incomes.

2.2 Empirical Literature Review

Previous studies have found income to be the prime measure and determinant of poverty, apart from head count index and per capita gross national product. As such, researchers have classified countries as low income, middle income and high income, with the former as poverty stricken nations. Deaton (1999) postulated that non-poverty indicators such as education enrolments and mortality rates are determined mostly by income. Empirical evidence shows that country indebtedness indirectly affects poverty through investment and crowding-out of social expenditures.

Patillo and others (2002) show that for the 93 developing countries, the relationship between debt and growth is nonlinear. They further found out that the impact of external debt on per capita growth is negative for exceptionally unsustainable debts. Were (2001); and Elbadawi and others (1997), in their researches in Kenya and Sub-Saharan African countries, respectively, concluded that debt variables are significant and negatively correlated with growth and investment.

Loko, B., and others (2003) analyzed the impact of external indebtedness on poverty in low-income countries. Their findings were that, external indebtedness has limited but important impact on poverty. In Tanzania according to Oxfam [1998], experience illustrates that the effects of debt go beyond finance to impact on the lives of vulnerable households. Given the limited domestic revenues available to governments in Tanzania, the claims of foreign creditors reached alarming proportions while public sector external debt absorbs over 40 per cent of domestic revenues. According to Oxfam [1998], excessive debt servicing is not the only the problem faced by the Tanzanian government but the added pressures associated with low economic growth, high population growth, aid dependence, and debt mismanagement. The longer-terms costs associated with debt crowding out foreign investment become more difficult to quantify.
3.0 Model Specification
This research will estimate the modified model by Loko, B., and others (2003) to suit the Zimbabwean case. The estimated model will take the following form:

\[ P_L = \phi_0 + \phi_1 \text{Ycp} + \phi_2 \frac{EDS}{Exports} + \phi_3 \frac{ED}{Exports} + \phi_4 \frac{ED}{GDP} + \epsilon, \ldots \]

Where,

- \( P_L \) is a measure of poverty,
- \( \text{Ycp} \) is national income per capita,
- \( EDS \) is external debt service,
- \( ED \) is external debt,
- \( GDP \) is gross domestic product,
- \( \phi_0, \phi_1, \phi_2, \phi_3 \), and \( \phi_4 \) are parameters and \( \epsilon \) is the error term.

In equation 1 above, external debt service variable seek to capture the crowding out effect, especially of social investments, arising due to debt repayments – an outflow of financial resources. The other two external debt variables explain the country’s liquidity and ability to meet external obligations. Two more parallel models of infant mortality and life expectancy will be estimated also in this paper.

3.1 Data Sources
The researcher used data published by formal institutions and Zimbabwe government agents. These include The International Monetary Fund, The World Bank, Reserve Bank of Zimbabwe, National Statistics Agency of Zimbabwe (Zimstat), among others.

4.0 Estimation Results and Interpretation
This paper used the Ordinary Least Squares (OLS) regression\(^2\) method and all econometric estimations and diagnostic tests were done using the Econometric Views Computer Package. Firstly, the estimated model\(^3\) is sufficiently defined given that \( R^2 = 0.994 \), Durbin-Watson [DW] = 1.689, Prob (F-Statistic) = 0.0000 and most t-values are statistically significant. Secondly, all debt variables have an expected negative relationship with income per capita. This means that, external debt repayment adversely affects the welfare of Zimbabwean residents. This is also supported by the notion that all external outflows of financial resources deprive the country of basic supply of critical services. The results of separately run model, proved that the high secondary school drop out after the turn of the new millennium, and especially so, between 2005 and 2008, was an indication of a rise in poverty levels in Zimbabwe. Thirdly, the results also shows that previous income has a positive effect on current income and hence on poverty. Meaning that, in the short run, if the government decides to use all export proceeds and other internal revenues to pay external debts, then incomes per capita will fall and poverty levels will rise.

\(^2\) The estimated basic model was a log-linear multiple regression equation. All data diagnostic tests were for all the variables (See Results 1 in Appendix).

\(^3\) The fitted model will be as follows:

\[ \ln Y = 1.007 ED_{pr} - 0.013 \frac{EDS}{Exports} - 0.034 \frac{ED}{Exports} - 0.996 \frac{ED}{GDP} + 0.025 \text{Y}_{-2} + \mu \]
The parallel results of the estimated infant mortality rate (See Appendix - Result 2) further proved that there is an adverse relationship between poverty and external debt service. The implication is that, when public financial resources are used for debt payment little resources will be available to provide basic services like immunisation programmes, awareness campaigns, hiring of skilled staff, purchase of drugs and acquisition, maintenance and repair of medical equipment and machinery. Also, medical services will be beyond the reach and affordability of most households. More so, the results show that a 1% decrease in per capita income will cause 13.6% increase in infant mortality rate. The results of the estimated life expectancy model needs further research and analysis as they oppose economic theory (See result 3 in Appendix). However, in the model, income per capita and life expectancy are positively correlated. A 1% increase in income per capita is estimated to expand a person’s life span by 0.69%. Economically it is reasonable since the demand for health services, health food, and a decent life style is positively related to income.

5.0 Conclusion and Recommendations
The focus of this paper was to critically analyse the effects of external debt to poverty in Zimbabwe for the period 1980 to 2012. The results of the paper showed that external outflows of financial resources in the form of debt repayments deprive the nation of basic service provisions. Government’s responsibility to ensure adequate provision of education, health and infrastructure is greatly compromised. External debt servicing adversely affects short run income per capita and worsens infant mortality rates. In this respect, the government, were possible, should thrive to effectively use internally generated financial resources. However, when the need to borrow eternally arises, all funds should be put to developmental activities that, not only boost the nation’s production capacity and improve the nation’s welfare, but also generate sufficient funds to recoup initial borrowings.

References


**Appendix**

**Result 1: Estimated model results of income per capita**

Dependent Variable: \( \ln Y \)

Method: Least Squares

Sample(adjusted): 1983 2011

Included observations: 29 after adjusting endpoints

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \ln \text{EDS/Exports} )</td>
<td>-0.012984</td>
<td>0.005623</td>
<td>-2.309139</td>
<td>0.0299</td>
</tr>
<tr>
<td>( \ln \text{ED/Exports} )</td>
<td>-0.033783</td>
<td>0.018508</td>
<td>-1.825358</td>
<td>0.0804</td>
</tr>
<tr>
<td>( \ln \text{ED/GDP} )</td>
<td>-0.996356</td>
<td>0.019308</td>
<td>-51.60220</td>
<td>0.0000</td>
</tr>
<tr>
<td>( \ln \text{Y(2)} )</td>
<td>1.007357</td>
<td>0.028214</td>
<td>35.70424</td>
<td>0.0000</td>
</tr>
<tr>
<td>( \ln Y )</td>
<td>0.025270</td>
<td>0.018016</td>
<td>1.402640</td>
<td>0.1735</td>
</tr>
</tbody>
</table>

R-squared: 0.994339

Adjusted R-squared: 0.993395

S.E. of regression: 0.011726

Log likelihood: 90.52832

Durbin-Watson stat: 1.689485
**Result 2: Estimated results of the Infant Mortality Rate Model.**

Dependent Variable: IMR  
Method: Least Squares  
Sample(adjusted): 1981 2011  
Included observations: 31 after adjusting endpoints

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDS_EXPORTS01</td>
<td>-0.110850</td>
<td>0.037101</td>
<td>-2.987792</td>
<td>0.0059</td>
</tr>
<tr>
<td>EDP      C</td>
<td>0.190991</td>
<td>0.050043</td>
<td>3.816532</td>
<td>0.0007</td>
</tr>
<tr>
<td>YPC</td>
<td>-0.136092</td>
<td>0.177973</td>
<td>-0.764675</td>
<td>0.4511</td>
</tr>
<tr>
<td>YPC(-1)</td>
<td>0.635648</td>
<td>0.171844</td>
<td>3.698970</td>
<td>0.0010</td>
</tr>
</tbody>
</table>

R-squared: -0.580903  
Adjusted R-squared: -0.756559  
S.E. of regression: 0.466165  
Sum squared resid: 21.06956  
Log likelihood: 0.537284

**Result 3: Results of the estimated Life Expectancy Model**

Dependent Variable: LEXP  
Method: Least Squares  
Sample(adjusted): 1981 2011  
Included observations: 31 after adjusting endpoints

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDS_EXPORTS01</td>
<td>0.063648</td>
<td>0.026207</td>
<td>2.428666</td>
<td>0.0224</td>
</tr>
<tr>
<td>EDP      C</td>
<td>-0.474446</td>
<td>0.225840</td>
<td>-2.100803</td>
<td>0.0455</td>
</tr>
<tr>
<td>YPC</td>
<td>0.689722</td>
<td>0.197654</td>
<td>3.489549</td>
<td>0.0017</td>
</tr>
<tr>
<td>ED_GDP01</td>
<td>0.462308</td>
<td>0.171993</td>
<td>2.687937</td>
<td>0.0124</td>
</tr>
<tr>
<td>YPC(-1)</td>
<td>0.045263</td>
<td>0.126005</td>
<td>0.359213</td>
<td>0.7223</td>
</tr>
</tbody>
</table>

R-squared: 0.742177  
Adjusted R-squared: 0.702511  
S.E. of regression: 0.462308  
Sum squared resid: 0.462308  
Log likelihood: 0.462308  
F-statistic: 18.71105  
Prob(F-statistic): 0.000000