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The effect of sovereign debt on Capital inflows to Zambia

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ABSTRACT

Over the last 10 years, many Sub Saharan countries have tapped into the international market to issue sovereign bonds to boost economic growth and attract additional foreign direct investments. Funds obtained have been used for large infrastructure projects and easing of balance of payments to name but a few. Zambia between the years 2011-2015 borrowed heavily on the international market totaling just around US$ 4 billion in Eurobonds to drive jobs and fill gaps in essential infrastructure in the energy and health sectors. Financing of large infrastructure projects had been a main topic for governments in Zambia and the local market did not have the capacity. Upon receiving its sovereign rating, Zambia saw the international bond market as an avenue.

Accessing of the international bond market for African nations had grown noticeably due to eased financial conditions on the global market. Thirteen countries had tapped into the international markets by the end of March 2014 for various reasons which mostly included economic growth. Many market players have kept a close watch on the rising debt levels particularly in sub Saharan Africa to ensure that it does not reach levels similarl to those of HIPC. In 2005, Zambia's debt stood at US$ 5.4 billion which was unsustainable and represented 74% of Zambia's GDP and approximately 208% of export earnings (IHS Global Insights, 2014). Having their debt relieved by the IMF and World Bank in 2006 reduced their debt burden to around 25% of GDP. Following that, the Zambian government in 2012 issued its first Eurobond and borrowed excessively in the years to follow that the debt to GDP ratio reached almost 40%. Coupled with that, Zambia experienced a reduced price in its major export commodity copper and a tumbling exchange rate.

It has become clear that access to international capital markets and high levels of public debt

has made the Zambian economy more susceptible to shocks and leaves them vulnerable and does not achieve desired goals of growth and does not encourage foreign direct investment through capital inflows. This paper examines the effect of capital inflows to Zambia as a result of rising public debt levels. It focuses on the impact of Zambia's sovereign debt on capital inflows for a period of 15 years (between 2000 and 2015). The findings suggest an inverse relationship between sovereign debt and capital inflows. The findings also suggest a positive relationship between a countries international reserves and capital inflows. These relationships were found to be significant which suggests that external debt could influence capital inflows to Zambia.

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GLOSSARY OF TERMS

GDP	GROSS DOMESTIC PRODUCT
IMF	INTERNATIONAL MONETARY FUND
FDI	FOREIGN DIRECT INVESTMENT
OECD	ORGANISATION FOR ECONOMICCO-OPERATION AND DEVELOPMENT
LDC	LEAST DEVELOPED COUNTRIES
UNCTAD	UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT
UNDP	UNITED NATIONS DEVELOPMENT PROGRAM
IFS	INTERNATIONAL FINANCIAL STATISTICS
AfDB	AFRICAN DEVELOPMENT BANK
ACF	AUTOCORRELATIONS FUNCTION
ADF	AUGMENTED DICKEY FULLER
VAR	VECTOR AUTOREGRESSION
DSF	DEBT SUSTAINABILITY FRAMEWORK
PPP	PUBLIC PRIVATE PARTNERSHIP
BOP	BALANCE OF PAYMENT
DF	DICKEY AND FULLER
SBIC	SCHWARTZ BAYESIAN INFORMATION CRITERION
GNP	GROSS NATIONAL PRODUCT
HIPCI	HIGHLY INDEBTED POOR COUNTRIES INITIATIVE

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CHAPTER 1. INTRODUCTION

1.1. Background

A well-functioning capital market has been documented in a plethora of literature to be crucial for efficient allocation of financial resources, alleviation of poverty and increasing domestic savings, stimulating of economic growth, and economic development (Dornbusch, 1998; Reisen and Soto, 2001; Bank of Zambia, 2013; Standley 2010).

Similar to most Sub Saharan African countries, Zambia has implemented financial liberalization reforms aimed at attracting international investors and foreign capital inflows. The aim is to galvanize its domestic economy and reap the aforementioned benefits of a developed and efficient financial market. The reforms Zambia has undertaken include; the abolishment of the interest rate ceiling, development of money and capital markets; implementation of floating exchange rate, and the introduction of the tender system for selling government treasury bills and bonds (Bank of Zambia, 2013). Though still in their infancy, Africa's capital markets have been a channel through which international investors have sought to diversify their investment portfolio.

A government can finance itself through taxation or borrowing. However, due to the limited ability of most Sub-Saharan African countries to raise adequate revenues through taxes and exports and the low domestic saving, they have depended on foreign assistance and loans from international financial institutions to finance various infrastructural needs (Boboye & Ojo, 2012; Amadou, 2015). The efforts to develop the capital markets have seen Zambia and many other African countries increase their ability to raise funds in international debt markets. Furthermore, due to the positive growth prospects in the region, there has been a sudden surge in demand for international sovereign bonds issued by these countries (Amadou, 2015).

The issuance of sovereign bonds has been linked to eliciting the development of well-functioning debt capital markets and consequent policy actions aimed at debt management (Bloommestein & Horman, 2007; Ojah & Odongo, 2015). Shabbir (2012) posits that the failure to utilize debt efficiently and create new employment opportunities ultimately creates a vicious circle of lower revenue base which affects spending capacity and filters into higher debt servicing. Similarly, Ali & Mustafa (2009) find that external debt if not sustainable, imposes higher risk to the economic prosperity and may lead to debt overhang. Additionally, Boyce and Ndikumana (2002) find that capital flight is "debt fuelled" and high levels of external borrowing leads to subsequent reduction of capital inflows. However, there is limited knowledge on relationship between external debt and capital inflows.

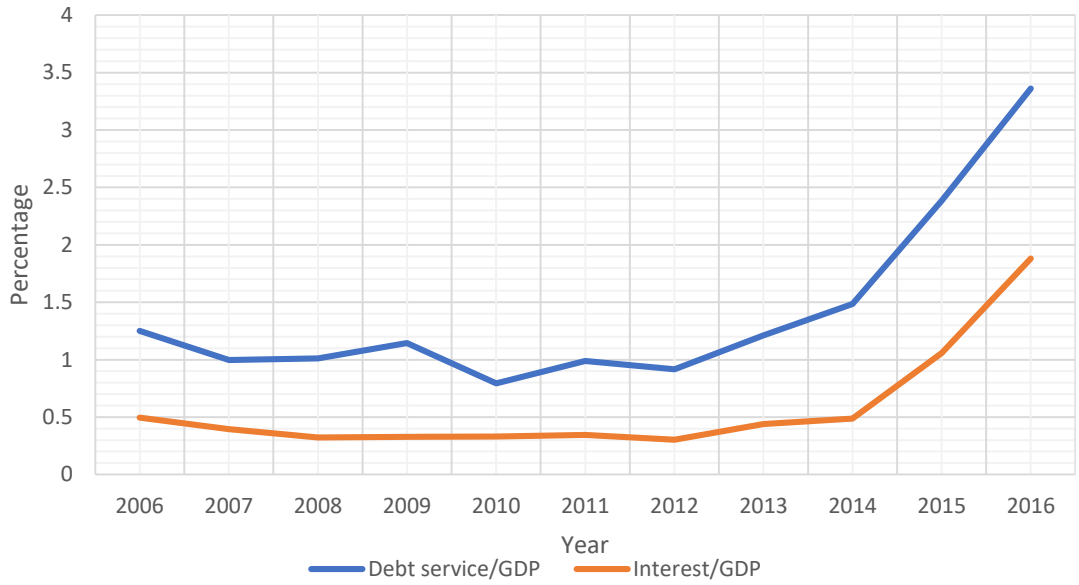
1.2 Debt and Capital Inflow in Zambia

Majorly, a country can secure external funding either through debt issuance or capital inflows. Debt issuance can be public, private or both and private debt can either be publicly guaranteed or not. As in other Sub-Saharan Africa countries, the stock of debt in Zambia has been increasing since 2011. External public and private debt as percent of GDP increased from 15 percent in 2011 to 24 percent in 2014. The increase largely reflects the issuance of Eurobonds in 2012 and 2014 which constituted 3 and 3.6 percent respectively. On the other hand, share of multilateral debt in total debt reduced from 60 percent in 2011 to 27 percent in 2014. However, the share of commercial debt in total debt increased from zero in 2011 to 46 percent in 2014. The huge increase in commercial loans and Sovereign debt increase the probability of the debt distress. The problem is further aggravated by the worsening business environment which reduces the ability of the country to attract capital inflows (IMF, 2015).

Furthermore, substantial decline in copper prices exerts significant pressure on exchange rate, while the government has limited external borrowing capability. Figure 1.1 shows the debt

servicing and interest repayment on external debt as percentage of GDP. The figure indicate that debt service had been 1.5 percent of GDP from 2006 to 2014, however, it doubled between 2014 and 2016. Moreover, interest payment on external debt as percent of GDP tripled between 2014 and 2016. The increase in debt servicing may have adverse effect on the ability of Zambia to attract investment and external debt.

Figure 1.1 Debt service and interest payment on external debt in Zambia.



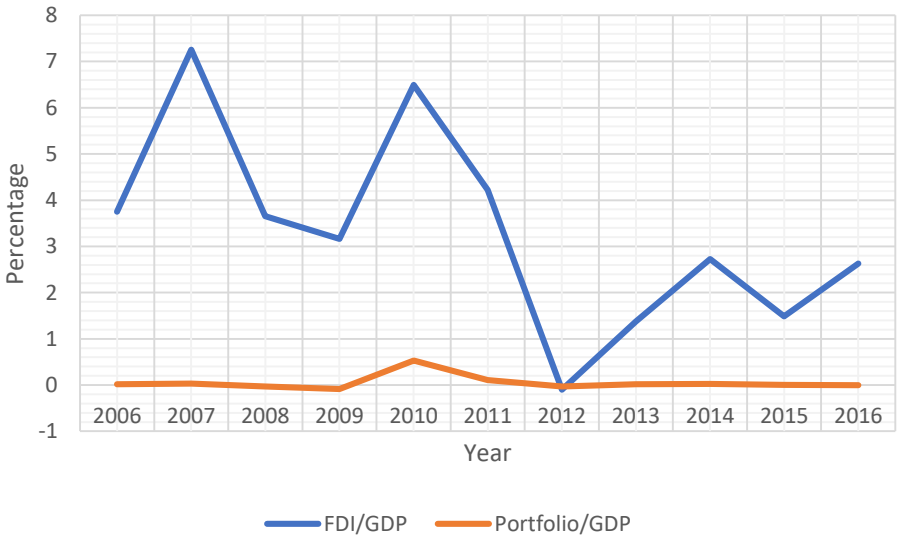
Source: World Development Indicator Database

Capital inflows can be categorized into foreign direct investment, equity portfolio investment, and debt investment. Foreign direct investment (FDI) refers to an investment in a business in terms of controlling ownership in a country by an entity based in another country. The controlling ownership means the foreign entity buys at least 10 percent of the share of a company in the host country. On the other hand, foreign portfolio investment refers to investment made by foreign investors in shares of listed companies in a country. The investment is usually less than 10 percent of the total shares and the investor do not have a long-term interest in the company. The share of foreign direct investment in GDP in Zambia has been

fluctuating between 4 and 7 percent between 2005 and 2016. The share reached 9.42 percent in 2007 but it has been declining since then. Foreign direct investment is an important channel of knowledge and technical transfer, creating employment and supporting the exchange rate.

In contrast to FDI, foreign portfolio investments are subject to sudden reversals which have adverse effects on exchange rate and financial market. Foreign portfolio investments are short term speculative investment and hence are more sensitive to market sentiments than foreign direct investment. In Zambia, as in most Sub-Saharan African countries, foreign portfolio investment net inflows have been fluctuating from negative to positive.

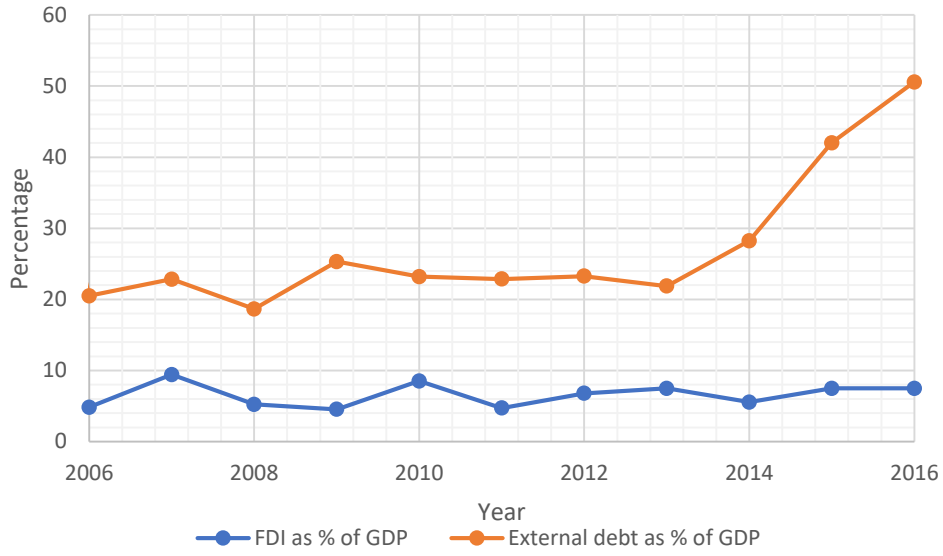
Figure 1.2: Capital inflows in Zambia (2006-2016)



Source: World Development Indicator Database

Figure 1.2 shows that FDI as percentage of GDP has been reducing since 2006. They reached the lowest level in 2012 and increased to 2.6 percent of GDP in 2016. On the other hand, Portfolio investment have been fluctuating around 0 expect for 2010.

Figure 1.3: External Debt to GDP ratio and FDI to GDP ratio in Zambia (2000-2016)



Source: World Development Indicator database

The figure 1.3 shows that the external debt as percentage of GDP have been fluctuating between 19 percent and 25 percent from 2006 to 2013. However, Zambia debt uptake started to increase from 2013, doubling to 51 percent by 2016. On the other hand, FDI as percentage of GDP has been low and generally has been below 10 percent. Between 2006 to 2013, FDI-GDP ratio and external debt-GDP ratio seems to be moving but diverged from 2013. Furthermore, equity portfolio has been around zero, despite the increase on the amount of debt and reform in the financial market. It is therefore, crucial to investigate the relationship between capital inflows and sovereign debt.

1.3 Problem Statement

In many emerging economies, there is heavy reliance on sovereign debt to fund development projects. The reliance on sovereign debts can be advantageous and disadvantageous to governments. On one side, when used prudently and in moderation, it undoubtedly ameliorates welfare and boosts economic performance. On the other side, when it is used irresponsibly and superfluously can be detrimental. Unsustainable and high levels of debt impair the government's ability to deliver essential services to its citizens and effectively plan and

implement various policies (Mweni, 2012). Due to the paucity of resources in the Zambian economy to finance budget deficits, government has persistently had to rely on external and domestic debt to finance its developmental and investment-oriented activities such as energy, infrastructure and agricultural projects over the years. The past five years has seen an upward trend in public debt outstanding [see figure 1.3]. This rising trend can be attributed to a combination of increased growth prospects in the region and Zambia's efforts to open up its financial markets to international investors. The last 5 years has also seen Debt-to-GDP ratio significantly double to over 41% in 2015 which is beyond the sustainable threshold of 40% of the GDP. Currently, the country has three outstanding Eurobonds which amount to close to three billion USD and according to a 2014 report by KPMG, government traded bonds have increased by 268% from 2010. Therefore, this may be a signal to the domestic and international marketsthat debt is becoming unsustainable; implying an increasing risk of default.

Consequently, there has been apprehension among policy makers and investors that the rapid upsurge in public debt has the potential of adversely impacting country's sovereign rating, especially if it's not anchored by proportional growth in size of the economy. It is widely believed that sovereign risk plays a crucial role in international capital flows and cross-border flows to individual firms (Das et.al, 2010). Similarly, Garibaldi et al. (2001), established the crucial role sovereign risk plays on capital flows to transition economies. Further, Reinhart et al., (2003) showed that countries are at jeopardy of losing all access to private capital markets when sovereign ratings fall below a critical threshold. Given that capital inflows play a decisive role in a country's ability to ameliorate the savings gap, promote growth, deepen financial markets, transfer of skills as well as job creation (Ng'ambi, 2015;Ahmad et al., 2012) it is imperative to sustain them.

While debt is necessary for growth, when directing funds to developing countries, investors are influenced by sovereign risk and require a quantifiable sovereign risk-related premia (Cruces, 2007). With the unprecedented increase in debt to GDP ratios in Zambia, it is therefore paramount to understand the relationship between sovereign debt and capital inflows to the country. Furthermore, to encourage investors through sound macroeconomic policies, amended institutional infrastructure and public debt management, to direct and sustain the flow of funds to the economy to reap the aforementioned benefits. The main research issue is concerned with determining how the sovereign debt can be used to encourage capital inflows in the country. It is noted that both capital inflows and sovereign debt can be used to spur economic growth.

1.4 Purpose and Significance of the Research

From the forgoing, there is need to understand the link between increases in sovereign debt and capital inflows in Zambia. The results will enlighten policy formulation to effectively manage public debt, reduce the cost of debt servicing and minimize potential sovereign downgrading. Additionally, the direction of this relationship will help inform policy makers on possible response tools on how to sustain and maintain capital inflows as they are crucial to the Zambian economy. The inference derived from the results of this study can be used to inform government on fiscal and monetary policy modifications, innovative public debt management, various institutional infrastructure upgrades and capital market development.

1.5 Research Objectives and Scope

This thesis investigates the relationship (if any) between sovereign debt and capital inflows in Zambia. It primarily studies the effect of sovereign debt on capital inflows in Zambia. In order, to determine the impact of sovereign debt on capital inflows, the research came up with two main objectives that include the following.

- To investigate the effect of sovereign debt on capital inflows in Zambia.

- To find out if there is a long run relationship between sovereign debt and capital inflows.

1.6 Outline of the Study

The study is divided into five chapters. Chapter one consists of the introduction and background, problem statement, study objectives and study significance. Chapter two reviews the empirical and theoretical literature on the relationship between sovereign debt and capital flows. Chapter three provides the research methodology and describes how the study is to be carried out. Chapter four is devoted to data analysis, presentation and interpretation of the econometric results. Finally chapter five will draw conclusions, and provide policy recommendations and suggestions for further research.

CHAPTER 2. LITERATURE REVIEW

2.1 Introduction

A review of theoretical and empirical literature pertaining to the topic under study helps enrich understanding of the variables under consideration, the relationship between external debt and capital inflows as well articulate conceptual foundations of the research. Additionally, it will provide theories of effects of debt and capital inflows on various macroeconomic variables.

2.2. Theoretical Literature Review

The theoretical literature discuses theories and concepts that are relevant to research studies. The theoretical review provides an insight on a given issue by the description, critical evaluation and summary of the topics that are relevant to the research areas. In this research, the theoretical review will consider the two topics on the sovereign debt and capital inflows.

2.2.1. Costs and Benefits of Capital Flows

As argued by Nguyen et al. (2003), capital inflows refers to the net flow of financial and real capital into a country when there is an increase of purchase of the domestic assets by either foreigners or domestic residents. Ideally, it is the increase in amount of the money that is available from foreign or external sources for the purchase of local capital assets that can include land, buildings and machines among others. Capital inflow is achieved when the funds move from one of the foreign countries to the host country. There are a number of reasons that can necessitate the need of a country to attract capital inflows. Capital inflows are important and play a decisive role in a country's ability to ameliorate the savings gap, promote growth, deepen financial markets, stimulate domestic consumption, transfer of skills as well as job creation (Ng'ambi, 2015;Ahmad et al., 2012). With increased mobility of capital, countries want to maintain and sustain these capital flows to reap the benefits (Rangasamy, 2014).

Lartey (2008) argued that the capital inflows have been both beneficial and problematic posing serious concerns among policymakers because of their potential effects on stability of multiple macroeconomic variables of the recipient country. In majority of the emerging economies, the capital inflows can be volatile as the economy can experience periods of the rapid growth as well as subsequent contraction. In essence, the increased capital inflows can lead to the inflation of the prices of assets as well as a boom in the asset market. This can be offset by the losses due to the declines in equity prices and depreciation in the exchange rate currency.

Exchange rate volatility has been identified through various literature as being the concomitant of capital inflows (Rashid and Husain (2010), Dua and Sen (2006), Combes *et al*. (2012). Rashid and Husain (2010) found that change in capital flow does Granger cause real effective exchange rate instability. Likewise, Dua and Sen (2006) inspect the implications of capital flow levels and their volatility on the Indian rupee. The results show that there is lasting relationship between rupee exchange rate oscillations and level and volatility of capital flows. Combes et al. (2012) terms the outcome of capital flows on real exchange rates as the "transfer problem". The results show a positive correlation exists with the real exchange rate appreciation and capital flows. Other harmful effects on the recipient country's economy associated with international capital flows have been identified by Kim (2000), who observes that a surge in capital inflow tends to cause inflationary pressure and increase current account deficits.

In trying to elucidate on the risks of capital flows to developing countries, Kim (2000) advances that portfolio flows are induced by external factors and are more likely to be put into less productive or even wasteful uses. When there is a massive reversal of these flows to seek short term speculative profits elsewhere, negative effects such as credit crunch and foreign exchange crisis can be observed, which is amplified by weak financial structure and government

supervision. The severity of these capital flow reversal is augmented with higher levels of debt (Rodrick and Velasco, 1999).

Bakardzhieval et al., (2010) asserted that attracting capital and foreign exchange flows is crucial for developing countries but could be detrimental to exports and growth routed through exchange rate appreciation that hampers competiveness. Theory is replete with negative conjectures associated with capital inflows to recipient countries, Mohamed (2010) states that large movements of cross border capital movements have weakened the South African economy. Contrary to the aforesaid negative conjectures, Ferrieria and Laux (2009) examine the portfolio investment flows as determinants of economic growth. From the interpretation of the results, portfolio flows are statistically conducive for growth and the openness to capital markets is most associated with growth in developing countries. It is also generally accepted that private capital flows contribute on a micro level to efficient allocation of resources (Dooley *et al.,* (1994).

Lending credence to this, Reisen and Soto (2001) identify that capital flows boost domestic saving and improve the recipient economy efficiency. Research by, Choi and Baek (2006) show that the volatility of portfolio flows significantly raises the level of reserve holdings in a country. These results imply that monetary authorities would be able to accumulate precautionary reserve balances against increased volatility of capital flows as further capital account liberalization progresses and more frequent international crises occur.

Errunza (1986) has classified the potential benefits emanating from foreign portfolio investments into three major categories, namely; (1) the developmental effect; foreign investors would demand more efficient market regulation, satisfactory listing and disclosure

requirements, protection of minority interest, fair trading and brokerage practices (2) the resource effect; by increasing domestic investor confidence as well as by making available a wider selection of securities initially designed to satisfy foreigners. (3) the welfare effect; LDC security prices and investor welfare would be positive with the removal of capital barriers that liberalize the markets.

2.2.2. Theories on Sovereign Debt and Capital Inflows

Sovereign debt refers to the accumulation of the annual government deficits that are financed by the bonds. It becomes necessary for the government to borrow some amount of money when they have inadequate cash for their expenditures since countries need to smooth their consumptions. Ayaji (1999) suggested that governments often need to smooth their revenue with the increase in the marginal cost by raising the rate of tax. Many people can question the idea of the government to borrow money instead of printing more money. However, history and economic theory indicates that abusing power of printing more money is associated with diverse economic consequences such as hyperinflation. This has been evident in many countries where the government decided to print more money to funds its expenditure. In Germany, the government decided to print unlimited currency to help it pay its World War I resolution payments. Due to this, the country experienced a monthly inflation rate of approximately 29,500 percent during October 1923 (Ayaji 1999). As a result of the negative consequences of printing excess currency, the governments in different countries normally finance their debts through the issuance of bonds in both the domestic and international markets. Furthermore, the government can also finance its expenditure by borrowing from syndicated banks.

There are major differences that exist between sovereign debt and corporate debt since the creditors of the sovereign debt has no ability to force for the repayment of amount of money

lent to the government. This is as opposed to corporate debt where creditors has the power and ability to force the repayment of debts. It is important to note that a seniority structure does not exist in sovereign debt. Besides, there are no international laws that can enforce the repayment of sovereign debt. This implies that the creditors of sovereign debt cannot avoid the risks associated with the reduction of interest rates, compulsory rescheduling and the repudiation.

Many people can also wonder why many governments repay their debt despite the fact that there are no laws that can enforce the repayment of such loans. Although there are no laws that can force countries to pay the sovereign debts, there are various reasons that make countries to pay such loans voluntarily. It is often believed that loss of credibility can make it difficult for the country to obtain loans in the future by issuance of bonds. This is evidently the major reason why many countries makes decision to repay such loans. Ayaji (1999) analyzed the borrowing by the governments of different countries in the international capital markets and explain the risk attributed to the permanent exclusion. In essence, the various risks associated with failure to repay are the main reasons why the government decides to repay the sovereign debts. The countries reputation can be achieved if they repay the loans and this can make it easier for them to obtain loan in the future when they are in dire need such as financial crisis. Furthermore, many creditors can take certain action against the countries who failed to repay their loans. Some of the actions include the ability of the creditors to impose threats such as the direct sanctions and thus also provides an incentive for the countries to pay the sovereign debt.

In other works, Ayaji (1999) suggests that the argument of reputation can be sustained in the model of the inter-temporal barter since majority of the relationships of sovereign debt continues through a negotiation. The arguments are based on the theory of consumption smoothing. Although there exists many incentives that motivates the government to repay the loans, majority of the countries have defaulted a number of times. In addition, the exclusion

period for the defaulted countries from participating in the international markets is approximately 5.7 years and thus some countries can use the short period as a motivating factor to default the payment. Ideally, the threat associated with the loss of credibility in the international capital and financial markets or even the direct sanctions is not sufficient reason to justify why the countries repay their sovereign debts.

2.2.3. Debt Structure

Debt structure is a term that is used to define the characteristics of the sovereign debts such as type, maturity, and the currency composition. In the early 1990s, many of the emerging markets around the globe experienced a rapid growth in the bond markets as it was the primary source of finance. This was as opposed to 1970s when the government primarily relied on loans from banks to finance many of their operations. Although capital markets experienced a rapid growth as the main source of funds for governments, the role of banks as the mediator of capital flow to the emerging economies was still critical in these countries. In countries such as those in Asia, the major source of government funding was argued to be syndicate loans during the 1990s. In essence bank loans and debts remain the major competitors in the international market.

The issue of competition between bonds and banks in the capital market is important for various reasons. Ideally, the sovereign debt composition and how it impacts the restructuring of debts negotiations in case of any financial distress is key to the issuance in recent years. In the past few years, the share of sovereign bonds as well as the greater ownership dispersion of the bonds have made it difficult restructure and renegotiate sovereign debts. Loff and Malinen (2013) in their study provide evidence on the current episodes of the bond restructuring on several countries. He notes that there have been differential restructuring episodes in various countries. Some of the notable restructuring were evident in 1980s and 1990s and known as Brady Plan,

Russia and Ukraine in 1998 to 2000, Pakistan in 1999, Uruguay in 2003, Ecuador in the 2000s and the regular and never ending restructuring in Argentina.

The differential treatment exists in two forms that include the defaulted instruments and government defaults. The defaulted instruments are often restructured on different forms. The second include the governments that have defaulted selectively on certain classes of the claims but not on some claims. For instance, the Brady Deals that helped settle the debt crises during the 1980s restructured banks loans as opposed to international debt. The Ukraine and Russia restructuring involved the bank claims and bilateral official debt. Arguably, the emerging economies often tend to have a large proportion of debt of the foreign countries that are dominated.

2.2.4. External Debt and Economic Growth

Due to the mismatch between government revenue, government expenditure and domestic saving, Zambia, similar to many sub Saharan countries have to rely on external debt to balance the discrepancy. In light of the consented efforts by various governments to improve the welfare and growth prospects of their respective countries, several authors have tried to investigate the nexus between public debt and economic growth but there has been a lack of congruous results. "Endogeneity problem" has been highlighted by some scholars as the problem that affects the literature on debt and growth, the loop of causality can flow both ways making it difficult to assess the likely direction (Lancea, 2013; Loff and Malinen, 2013). Multitude of the literature on the growth- debt nexus has leaned towards the dampening effects of heavy debt burden on capital growth. Nguyen et al. (2003) proffer that the impact of external debt on growth is dependent on the recipient nation's access to international capital markets, hence results will vary.

Hassan and Manman (2013) investigate empirically the relationship between the aforementioned variables in Nigeria. From the findings, external debt has a statistically significant inverse relationship with gross domestic growth, hence adversely affects Nigeria's economic growth. The results show more acquisition of external debt leads to subsequent decrease in growth. That is, the more the acquisition of external debt, the more the economy declines. This is contrary to a priori expectation that external debt impacts positively on the economy, the authors posit that the relationship is positive when the government employs the debt for investment-oriented projects in sectors such as agriculture, infrastructure and power. This is in support of the dominant view that investment is one of the prominent determinants of economic growth (Levine and Renelt, 1992). Similarly, Mweni (2012) advances that the observed relationship is dependent on the purpose of the borrowed funds, the economic growth are enlarged when the inflow of public debt is directed to investment related future government expenditure**.** According to Ayaji (1999) the funds borrowed need to be directed into projects that can yield ample return, the government also needs to direct the funds to develop resource based tradable goods primarily in export industries to subsidize future debt servicing. Germane to this research, Kodongo and Ojah (2015) stress that in order for public debt to deliver its economic development potential, debt management and sustainability sound infrastructural measures should be set in place by government.

Another study by, Al-Refai (2015) examines the connection between debt and economic growth in Jordan during the period 1990-2013. The estimated results reveal that though domestic debt has a positive effect on growth, long term external debt has a negative and significant impact on the economic growth in Jordan. By the same token, Cholifihani (2008) using a co-integration analysis of public debt service and GDP in Indonesia, found that in the long run, increasing

external debt service depresses GDP. Patillo *et al.,* (2002) support the view point that large debt stocks diminish growth through the channel of reduced investments. Higher debt service charges reduce the amount of investment the public sector can make, and hence lower potential economic growth. This detracts from efforts to raise living standards, lower poverty, and service the debt (Jha, 2012).

Kumar and Woo (2010) find an inverse relationship between the long run economic growth of emerging market economies and debt. According to the empirical results, a 10 percentage point increase in the debt-to-GDP ratio is accompanied with a slowdown in annual real per capita GDP growth of around 0.2 percentage points per year, but the impact is slightly less prominent in advanced economies. In the case of Nigeria, Boboye and Ojo (2012) through a regression analysis find that external debt burden leads to a devaluation of the national currency as well as depression in the growth prospects of the economy.

For developed nations, Lancea (2013) provides a comprehensive analysis as to whether public debt has a causal effect on economic growth in a sample of OECD countries. The author opines that correlation does not mean causality. The results show that there is no causal link from public debt and growth and that debt does not have a negative effect on growth in the sample countries. They proffer that for developed countries this does not mean that they can sustain any level of debt.

Lof and Malinen (2014) using panel vector autoregressive model to analyze the effect of debt on 20 developing countries, find no evidence for a robust effect on debt to growth, even for higher levels of sovereign debt. Impulse response result indicates that a shock to debt has no effect to the GDP of these nations in future time periods. On the other hand, GDP is found to

have a statistically negative impact on sovereign debt. This ambiguity in results can be linked to the endogeneity problem; this could also be driven by the fact that it is low economic growth that leads to high levels of debt hence the negative correlation. Similar results are found by Cordella *et.al,* (2010), their main findings show that there is non-linear relationship between debt and growth and depend on country specifics. Additionally, the authors do not find evidence that debt service is detrimental for growth.

The Euro area has been in recent years marred with sovereign debt crises. Baum *et al.*, (2013) investigate the impact of the debt on growth for 12 Euro countries and find in the short-run that the impact of debt on GDP growth is positive and highly statistically significant, but decreases to around zero and loses significance beyond public debt-to-GDP ratios of around 67%. This loss of significance beyond a threshold, is a term Cordella et.al, (2010) coins as "debt irrelevance", where investment and growth does not depend on debt levels. Baum *et al.*, (2013), suggests that reducing the level of debt would provide short term economic stimulus. On the other hand, in case of low debt levels, reducing the debt further would tend to reduce growth in the short run.

2.2.5. The Crowding Out Hypothesis

In theoretical literature, Crowding out of domestic private investment, has been found by most scholars to be the conduit through which a negative relationship between external debt and economic growth is caused, (Blavy, 2006; Elmendorf & Mankiw 1999; Iyoha, 1999; Were, 2001). In economic theory "crowding –out" is when domestic interest rates are pushed up by excess government sector demand for funds, hence making it costly to finance private domestic investment(Were, 2001). Higher public debt leads to interest rates being pushed up, as it is associated by investors with higher sovereign risk premia, which could be translated into higher long-term interest rates. In turn, this may lead to an upsurge in private interest rates and a fall

in private spending growth, both by households and firms, which is likely to dampen output growth (Elmendorf & Mankiw, 1999).

Iyoha (1999) found that high public debt simultaneously causes crowding out and depresses investment in Sub-Saharan countries, thus affecting economic growth. In the same vein, Were (2001) confirms a direct correlation between crowding-out of private investment in Kenya when external debt increases. Results in seminal work by Ogunmuyiwa (2011) using granger causality tests, revealed that causality does not exist between external debt and economic growth in Nigeria. However, regression analysis results lend support to the "crowding-out hypothesis". The results showed that a 1 percent expansion in external debt caused private sector lending to decrease by 0.31 percent in Nigeria from 1990 to 2008.

To test the crowding-out effect hypothesis in Ivory Coast; Harrison & McMillan(2001) empirically investigate the effect of foreign borrowing on long run sector growth in the country. The results show that borrowing has a positive statistically significant relationship to crowding out of the domestic market in those sectors. The firms in the sectors, face higher borrowing costs because of interest rate appreciation and this credit constraint restricts spending and investments in those firms. From the foregoing in the long run it reduces the GDP output of the country and subsequently growth.

In connecting fiscal deficits and macroeconomic performance in developing countries, Easterly & Schimdt-Hebbel, (1993) find that the rise in interest rate is a concomitant of financing of the national deficit through external borrowing. This leads to financial repression and subsequent poor economic performance. This financial repression deters investor's participation in the

capital markets. The authors recommend national savings as a policy implication to avoid the continuous debt spiral and the negative impact it has on developing nation's growth prospects.

2.2.6. Debt Overhang Hypothesis

In Economic theory External debt in itself should not be detrimental if utilized for optimal growth eliciting activities and if cushioned by exports and improved national savings. However many developing nations, Zambia inclusive, have accumulated large amounts of debt stock and debt servicing has perpetuated, aggravatingpoverty and constrained the development of developing economies (Nakatami and Herera, 2007).

The debt-overhang theory is another strand of thinking that tries to unpack the dynamics of external debt burden and its effect on economic growth and capital inflow. Literature is relatively scarce that empirically assess the direct effects of external debt overhang on capital inflow. Cleassens *et al.,* (1996) suggest that investors' perceptions are influenced through a tax disincentive; the large debt stock discourages investments because potential investors assume future returns on investment would be taxed in order to make debt repayments, hence would rather direct the capital to countries with less debt stock. The macroeconomic instability caused by huge external debt stock also filters into investors decisions when directing capital. Bhattacharya *et al., (*2003) suggest that debt- overhang depresses investment and growth through uncertainty. Investors would deter from long term irreversible investment projects and foreign direct investment and prefer to rather direct investments to speedy more speculative portfolio investments.

In heavily indebted countries, Sachs and Kenen (1990) established that economic growth is stunted through reduction of investments and capital injection by foreign investors due to external debt overhang. On the other hand, literature has suggested the observed relationship

between external debt, capital inflows and economic growth is dependent on the debt amount. Cohen (1993) finds that the relationship between the face value of debt and investment can be represented as a kind of "Laffer curve": as the outstanding debt increases beyond a threshold level, the expected repayment begins to fall as a consequence of the adverse effects on investment. The high debt levels from "debt overhang" result in loss of economic efficiency through time consuming negotiations of debt rescheduling (Sachs, 1989).

According to Reinhart *et al.,* (2013) some foreign borrowing has an encouraging effect on investment and growth up to a certain threshold level; beyond this level it affects growth negatively. The authors find that a threshold of external debt to GNP of 150 percent is suitable, anything beyond that becomes excessive and growth is retarded. Pattillo *et al.,(*2002) finds strong support for a non linear Laffer- curve between external debt and economic growth. To discover the level of debt for which the marginal impact of debt becomes negative, the authors use a large panel data of 93 developing countries over the period 1969-1998. They find that the average impact of external debt on per capita GDP growth turns negative for net present value of debt level above 160-170 percent of exports and 35-40 percent of GDP.

Cordella *et al.,* (2010) quest to investigate under what circumstances does debt matter for growth and investment in developing countries. They inspect how indebtedness level and quality of institutions and polices also affect growth. They find that countries with sound policies and institutions face debt overhang when net present value of debt rises above 20-25% of GDP, at this level the marginal effect of growth becomes negative. However debt becomes irrelevant when it rises above 70 -80 % of GDP. On the contrary the results point that countries with high levels of debt or and poor quality of institutions of policies investments are not affected by debt levels.

2.2.7. External Debt and Capital Flows

From theoretical investment theory, capital movements can be attributed to choice decisions by individual investors guided by profit maximization based on risk adjusted returns to capital and diversification. Africa's' capital markets have been able to provide this, hence the upsurge of capital inflows witnessed in the recent decade. Research pertaining to this topic is very thin however, preponderance of the research has suggested that a deleterious relationship exists between debt and capital flight.

The Empirical work by Boyce and Ndikumana (2002) investigate the determinants of capital flight from 30 sub-Saharan African countries, including 24 countries classified as severely indebted low-income countries, for the period 1970-1996. The econometric analysis reveals that external borrowing is positively and significantly related to capital flight. The estimates indicate for every dollar of external borrowing in the Sub-Saharan region, approximately 80 cents reverses capital flight in the same year. Their results further lend support the hypothesis that debt overhang has an independent influence on capital flight in subsequent years. There is a bi-directional causality that runs from capital flight and external debt; foreign borrowing can lead to capital flight, at the same time capital flight can lead to more external borrowing. Calvo (1998) postulates that a sudden stop of capital inflows into a country simultaneously results in sovereign debt crisis and decline to credit in the private sector.

To probe deeper into the reason for this relationship, Boyce and Ndikumana (2004) propose three plausible links. (1) *debt-driven capital flight*, where 'capital absconds a country in response to economic circumstances attributable to the external debt itself.(2) *debt-fuelled capital flight,* where funds borrowed abroad are re-exported as private assets (3) *flight-driven external borrowing,* where capital flight drains national foreign exchange resources, forcing the

government to borrow abroad. The authors conclude that Sub Saharan countries experience capital flight that is debt-fuelled.

A supplementary rational to the reason of the apparent inverse relationship is that, higher accumulated external debt can be associated with political uncertainty, which deters both future and current investors hence the hemorrhage in capital inflows (Alsina *et al*., 1989).

To alleviate the detrimental effects of external debt, Edwards (1990) examine how debt –equity swaps can be used as instruments for reducing the debt burden and potentially increasing private capital flows especially in the form of FDI, into the developing countries.

2.2.8. Debt Sustainability

To further probe into the connection between external debt and capital inflows, the question of what is presumed "sustainable public debt" is paramount in the analysis. Sustainable debt is the debt threshold which permits a debtor nation to meet its current and future debt service obligations in full, without recourse to further debt relief or rescheduling, avoiding accumulation of arrears, while allowing an acceptable level of economic growth (UNCTAD/UNDP, 1996). The answer to whether a country's debt is "sustainable" will filter into investor's decision making when directing funds to it.

The solvency of the government is measured by comparing a countries current level of outstanding debt with the trajectory of government expenditure and the expected revenue (Erasmo et al. 2015). Debt/exports ratio; debt/GDP ratio; debt services/ exports; debt/ reserves are indicators utilized by scholars to determine the debt servicing capacity and debt burden sustainability of nations. Debt service/ GDP can be used as a measure to total available

resources in the solvency of the economy to deal with the external debt situation (Ayaji, 1997). Ayaji (1997) however argues that face value of external debt is not a good measure of external debt burden and suggests that a more satisfactory measure is the present value of future debt obligations to exports. However, the calculations are very sensitive to the discount rate utilized in the present value calculations.

The IMF and World Bank utilize a debt sustainability framework (DSF) to identify excess borrowing situations that may threaten macroeconomic stability. In the DSF, a model of key debt ratios based on 20-year projections of macroeconomic variables such as, GDP growth, exports, anticipated borrowing and other key variables are used. External debt sustainability can also be measured by the current account balance because of deficits, as this will need financing through issuance of debt and thereafter subsequently increase the debt burden (IMF, 2000). A study released in 2006 by IMF/World Bank, on debt sustainability in low income countries, conveyed that countries in which debt propagated by more than 7% of GDP consequently suffered debt distress in 61 % of cases compared to the 23% of cases when the debt grew by more than 5 %.

African nations have had a bad reputation of having an albatross of unsustainable debt. Muhanji and Ojah (2011) compute and derive a threshold of debt to GDP of 80% and debt to exports of 60% as the recommendable sustainable external debt in African countries. This is considerably lower than Pattillio et al., (2002) threshold of 160-170 % debt to exports ratio as well as the Highly Indebted Poor Countries Initiative (HIPCI) for debt to exports and debt to GDP of 150% and 250%, respectively. Muhanji and Ojah(2011) suggest that since export revenues are used to pay debt obligations, African countries need to appropriately manage and promote the export and this should be complimented with a stable political environment. The models used to

measure external debt sustainability are based on static models, therefore policy makers should continually compute new thresholds as their economies evolve (Muhanji and Ojah, 2001).

Reinhart *et al.,* (2003) introduce a concept of "debt intolerance" and theorize that it is fundamental when understanding debt sustainability of nations. According to the authors debt intolerant nations have both frail fiscal structures and financial systems. They quantify empirically debt intolerance approximated as the ratio of the long-term average of its external debt (scaled by Gross domestic product or exports) to an index of default risk. Debt-intolerant countries face surprisingly low thresholds for external borrowing, beyond which the risks of default or restructuring become significant. The results they found for 30 middle income countries varied from as high as 179 percent for Jordan and as low as 12 percent for Russia. According to the authors, in order to be sustainable, the public debt of emerging countries should not be more than 25%-30% of GDP.

Shabbir (2009) suggests that exports are important in countries with dense external debt if they intend on sustaining their level of external debt. Mantra and Tromben (2004) identify that a country's capacity to generate foreign exchange and solidity of prevailing exchange rate regimes are vital variables on the appraisal of debt sustainability.

China is one of the largest debt donors to Africa (Reisen, 2007). In inquiring whether this level of debt received from China is sustainable in Angola, Reisen (2007) opine that the onus is on the receiving nation to sustain their debt through prudent exchange rate policies, economic growth and boosted exports. Asher finds that India's debt could be sustainable at a level of 60 percent to 65 percent and could reduce significantly if there is an inflation shock; contrariwise thinning the differential between GDP growth and interest rates could undesirably affect the

sustainability of India's public debt. The debt sustainability and capital market accessibility of developing markets is heavily reliant on sovereign credit ratings. Afonso (2002) finds that default history, level of economic development, inflation rate, external debt, GDP per capital are the variables most relevant to determine a country's credit rating by the two leading credit rating agencies; Standard & Poors and Moodys. In fact, the higher default risk on external debt leads to lower rating and higher government yields thus increasing therefore future financing cost of the government. So external debt sustainability is vital for capital inflows into markets as these ratings inform investors' decision making when directing funds to both developing and developed nations and depending on the ratings, investors will seek a premium which determines capital market return (Afonso, 2002; Cruces, 2007, Reinhart et al., 2003).

2.2.9. Sovereign Debt versus Domestic Debt

In an effort to sterilize enlarged sovereign inflows several countries have increasingly opted to domestic sources when expanding their net borrowing and retiring public external debt. Domestic debt markets in Africa are still in their infancy and their growth trajectory is dependent on the depth of their financial sector (Christensen, 2005). The known creation of a domestic market that allows for funds to be raised through domestic debt issuance, is that it stimulates the development of liquid and deep financial markets that can protect the country from hostile external shocks (Arnone and Presbitero, 2007)

According to Christensen (2005), the choice between foreign and domestic borrowing depends on the interest rate costs maturity structure, risks and ease of access. With sovereign debt comes long dated maturities that are able to meet long-term infrastructural projects however it comes with foreign exchange risk as well as high sovereign indebtedness, which leaves the economy frail. Sullenly, this high level of sovereign indebtedness leaves the debtor nation at the mercy

of foreign nation's terms and conditions. Domestic debt due to their shorter maturities is more ideal to meet government's recurrent expenditures and capital projects (Christensen, 2005). The study by Christensen (2005) examines the features of domestic debt markets in some Sub-Saharan countries and found that domestic debt is more expensive as compared to foreign external borrowing. Domestic debt is also found to be detrimental as it crowds out private investment which adversely affects the growth trajectory of the countries. Furthermore, because the investor base to African markets is less diverse they are not able completely benefit from various debt market options. Due to the lack of investor base African countries have limited capacity to negotiate favorable borrowing terms. In support of domestic debt, Arnone and Presbitero (2007) proffer that domestic debt is critical for debt relief initiatives and comprehensive debt sustainability framework. Additionally, it helps reduce poor countries reliance on external support and external shocks

2.3. Empirical Literature

The empirical literature provides an analysis of the primary sources of data based on the experiences and observation in a given field. In this research empirical literature is important for giving certain information and insights that can help answer the outlined research questions. The empirical studies are important towards providing information regarding the impact of the sovereign debt on capital inflows.

2.3.1. The Impact of Sovereign Debt on the Capital Inflows

Although there are few studies that have been conducted to determine the impact of sovereign debt, many studies have helped develop a link between sovereign debt and the capital inflows. In essence majority of the studies have focused on the impact of capital inflows and sovereign debt on economic growth and failed to determine how the two affect each other. What is known is that sovereign debt and capital inflows both contribute to the economic growth of countries

since they make investment funds available in a country. In many of the emerging markets, the governments have depended much on the capital inflows and foreign debt to finance their operations.

Majority of the early research studies assessed the direct impact that capital flows often have on the emerging countries economic growth rate based on the neoclassical framework. The growth in labor inputs and capital can be used to explain the economic progress of a country. It is no doubt that sovereign debt is a condition that leads to growth in labor and inputs and thus spurs economic growth in many countries. As the labor and inputs grow in a country, it is likely that many economic development initiatives will take place such as infrastructural development and establishment of the investment opportunities. Such condition can act as a catalyst to attract more foreign investors in the country thus facilitate the growth in capital inflows.

A paper by Rodrick and Velasco (1999) empirically link short term debt to capital flows covering 32 emerging countries. The results reveal that large stock of short term debt leads to severe capital flow reversals. This result is seen to be magnified if the debt levels exceed the national reserves. The opposite is true for long term debt stock. The results presented by the authors reveal that long term debt does not lead to severe capital flow reversals.

An empirical study by Chipalkatti & Rishi (2001) investigated the relationship between external debt and capital flight in India and discovered that high levels of external debt have been linked to capital flight in India. The results show a contemporaneous bi-directional causality between debt and capital flight. The authors aver a policy recommendation for the Indian government to reduce debt in an effort to curb future capital flight. Ajayi (1995) in the same vein, investigated the link between capital flight and external debt in Nigeria. The results show that there is a significant negative relationship between the two variables. Furthermore, Ajayi (1997) carried out an analysis of external debt and capital flight in severely indebted low income

economies in Sub Saharan countries from 1980 – 1993. The study results reveal that there is a significant direct correlation between increase in external debt and capital flight and that the countries with the most significant capital flight are the most highly indebted. Further linking this relationship, results found in the paper show that economic growth is inversely related to both high levels of external debt and capital flight. Rapid accumulation of debt can also be accompanied by increasing capital flight if the private sector fears imminent devaluation and/or increases in taxes to service the debt (Oks and Wijnbergen, 1995).

Dooley *et al.,* (1994) posit that a reduction in outstanding debt repayment is linked to country credit worthiness and heightened investor assurance which in turn, increases the flow of capital into markets. However the authors draw a conclusion, that the interest rate differential is the dominant factor that investors consider when they direct their funds to capital markets rather than the level of debt.

According to Hassan and Manman (2013), capital inflows can be divided into three main categories that include the foreign private investment, the foreign aid and other foreign inflows. In the study, Hassan and Manman (2013) used cross section data from thirty four countries between the 1950s and used the cross section data from 51 countries during the 1990s. Their findings were that all the three capital flows that is foreign private investment, foreign aid and other foreign inflows had statistically significant positive impact on the level of economic growth as well as the effect of foreign aid on the growth of the economy. Notably, the effect of the foreign aid on the growth of economies was found to be stronger than the other types of capital flows identified. Apart from the three variables, the study also considered the level of education, the rate of exports, and size of the manufacturing industry which all were found to be insignificant towards promoting economic growth on the selected countries.

Another study also considered the impact of foreign capital on the growth of economies for the selected poor countries. In their study, Hassan and Manman (2013) criticized other previous studies for failure to incorporate and differentiate the effects of the two types of foreign capital that include the direct balance of payment and the structure of the economy. In essence, they argue that the foreign inflow has an impact of reducing the exports, alter the capital output as well as affect the distribution of income. In his study, Nguyen et al. (2003) performed Ordinary Least Square (OLS) regression analysis for a period of five years that started from 1955 to 1970 on a selected sample of 188 countries. He also included several subsamples using specified explanatory variables that included net flow of foreign direct investment, net flow of foreign aid and other long term flows. The main dependent variable in the study was the gross domestic product (GDP). The result of the study confirmed that domestic savings and foreign aid have a favorable impact on economic growth of nations. Furthermore, the result of the study indicated that the stock of foreign direct investment has the potential to retard economic growth.

2.4. Conclusion

From the literature it is apparent that most studies have predominantly focused on the effect of external debt on growth in African countries or developed nations. This could be due to the fact that Africa's capital markets are still in their infancy. Consequently data on capital inflows is very thin and these fledgling capital markets have not yet fully flourished hence the benefits have not yet been passed on to African nations. Due to limited literature relating to this topic, this study will fill this gap and analyze the effect of sovereign debt on capital inflows into Zambia's economy. This paper will make use of quarterly time series data that spans from January 2000 to September 2015 and econometrically assess what interaction can be witnessed between capital inflows and external debt. The methodology is explained further in chapter 3.

CHAPTER 3. RESEARCH METHODOLOGY

3.1. Research Approach and Strategy

This chapter explains the study methodology that is adopted and informed by the literature review in Chapter 2. Research will be quantitative, meaning it will make use of numerical analysis to achieve the research objective. Quantitative research produces reliable and quantifiable data that that can be generalized to a larger population. This form of analysis allows the researcher to test particular hypotheses as opposed to qualitative research which is explanatory in nature. In this particular research, where we seek answers to specific research questions, testing for relationships will require a regression model.

3.2 Data Collection, Frequency and Choice of Data

Data collected is quarterly time series data that spans from January 2000 to September 2015. The data is collected from various data bases, such as African Development bank (AfDB) online, International Financial Statistics (IFS) online database, International Monetary Fund-Issuing International Sovereign, and the World Bank database. To obtain the study results, E-views 9 statistical package is utilized because it is relatively easier to execute with time series data.

3.3 Variable Selection

The selected variables are informed by the literature, as suggested determinants of capital inflows. The variables include- copper price; Zambia is known for being endowed with large copper deposits furthermore based on literature higher commodity prices are expected to enhance the flow of investment capital; Interest rate serves as a proxy for investor's ability to borrow in the local market; GDP serves as a standard size of the economy, from economic theory a large GDP can have a material impact on the welfare of investors and thereby increasing capital flow; Real exchange rate as a proxy for macroeconomic stability that is,

increased capital inflows lead to an appreciation of the local currency; international reserves are linked to higher gross inflows and linked to financial stability, Sovereign debt; is linked to negative investor perceptions and capital flight.

The table 1 below shows the relationship to be observed between the aforementioned independent variables and the dependent variable which in the study is capital inflows. Capital inflows are proxied by FDI, portfolio investment and debt investment.

TABLE 1: SPECIFIED VARIABLES AND THEIR EXPECTED SIGNS

Variable	Coefficient	Expected sign
International reserves	$intReserves_{i,t}$	+
Copper	$copper_{i,t}$	-
Sovereign debt	$sovereigndebti,t$	-
Capital Flow	Capitalflow $_{i,t}$	
Gross Domestic Product	$gdp_{i,t}$	+
Real exchange rate	$RealEx_{i,t}$	+
Interest rate	$lnintrest_{i,t}$	-

Where; (+) is positive relationship and (–) is a negative relationship

3.4. Justification of the Variables Selected for the Study

In order to select the variables for the study different factors were considered to justify their inclusion in the study. The selected number of variables are deemed to play a critical role towards influencing the impact of sovereign debt on the capital inflows. The first variable included for the study was copper. The choice of copper was based on the fact that Zambia is

one of the largest producer of copper deposits thus it earns high capital inflows as a result of exporting copper to the foreign market. This implies that copper production and export can have significant impact on the capital inflows in the country. The interest rate is chosen for the study as it determines the prices of debt such as sovereign debts. As a result, interest rate plays a critical role in determining the prices of bonds as well as the ability of the foreign and domestic investors to borrow in the country. The level of GDP is another variable that is selected for the study. In essence GDP plays a critical role in determining the level of income in the country thus its affects the purchasing power of consumers and investors on bonds. Country with high GDP levels can be able to purchase large amount of bonds and borrow from various financial institutions that affects the bond market and capital inflows. The next variable is real exchange rate which is used as a proxy for macroeconomic stability. Real exchange can be used to determine either the appreciation or depreciation of the foreign currency thus determines the amount of foreign exchange in a country. The other variable is the international reserves which is related to a higher gross inflow and linked to financial stability. The capital flow is another variable that is used as it determines the amount of money available for investment. The last variable is sovereign debt which provides an important factor that can have a significant link with capital inflows in the economy of Zambia. In fact, over the previous decades, Zambia has been active on capital markets by borrowing large amounts of money from the international lenders through sovereign bond.

3.5. Model Specification

A multiple regression is specified to determine the relationship between sovereign debt and capital flows, as well as other variables. The macroeconomic indicators used comprise of the level of net international reserves, real effective exchange rate, inflation, GDP, copper prices, interest rate, and sovereign debt. The empirical model for the study is expressed in functional

form as follows:

$$LnCapFlow_t = f(lnGDP_t, lnIntReserves_t, lnInterest_t, lnCopper_t, lnRealEx_t, lnSovDebt_t) \quad (3.1)$$

The econometric model to be estimated to achieve the first research objective is given by equation 3.2.

$$LnCapFlow_t = \alpha_t + lnGDP_t + lnIntReserves_t + lnInterest_t + lnCopper_t + lnRealEx_t + lnSovDebt_t + \varepsilon_t \quad (3.2)$$

Where

- ln = natural logarithm of the variable as explained above
- et= error term
- CapFlow_t = capital inflows (FDI, portfolio investment, debt investment)
- gdp i,t = Gross domestic product at time t
- $intReservesi,t$ = international reserves at time t
- $RealExi,t$ = real exchange rate at time t
- $copperi,t$= copper prices at time t
- $lnintresti,t$ = interest rate at time t
- $sovereigndebti,t$ = Sovereign debt at time t

Each variable is converted to log returns, calculated by the first difference of natural logarithm as depicted below,

Rt=log [xt/(xt-1)]*100

Where, Rt refers to the return of the variable for example Gross Domestic product (GDP) at period t. xt refers to the value of the variable at period t. xt -1 refers to the value of the variable at the previous t-1 time.

3.6 Limitations

Difficulties in obtaining relevant data on some of the variables in certain time periods were observed. Accessing secondary data on Zambia proved difficult and sometimes impossible. It may seem also, that the data obtained may be insufficient in explaining certain complex issues in the research. Finding papers written on the direct effect of sovereign debt on capital inflows proved difficult not only for Zambia but for any country for that matter. Where papers existed, they did not comprehensively describe the relationship between the two. Papers did not observe particularly the impact of capital inflows arising from sovereign debt.

The aim of this thesis is to determine the effect, if any, that sovereign debt may have on capital inflows by observing various relationships with variables listed above. The above variables are used to measure economic growth and are relevant in measuring capital inflows. However, the endogenous growth theory proposes that economic growth results primarily from endogenous and not external forces. The theory holds that investments in innovation, human capital and a knowledge based economy are critical contributors to economic growth. The endogenous growth model focuses on other factors besides debt to GDP ratio such as a country's institutional quality and trade openness, positive externalities and spillover effects that contribute or lead to economic growth or development. Thus this research paper will ignore variables that may be included in endogenous growth models such as labor.

CHAPTER 4. RESEARCH FINDINGS, ANALYSIS AND DISCUSSION

4.1 Introduction

Using various models detailed in chapter three, the fourth chapter intends to outline, examine and interpret the results. In addition to this, results that will be obtained from the econometric methods to be employed in this chapter intend to investigate and answer the following research statements and questions: To investigate the relationship between sovereign debt and capital inflows into Zambia, Is the level of external debt a significant determinant of capital inflows in Zambia? If so, is this observed across all the different forms of capital flows? To empirically establish the dynamic relationship that can be observed between capital inflows and external debt.

This research incorporates quarterly data extending from the year 2000 to the year 2015. The data is collected from International Financial Statistics (IFS) online database, International Monetary Fund-Issuing International Sovereign, and the World Bank database to mention but a few. Collected data is transformed into log returns, calculated by the first difference of natural logarithm computed as

as Rt=log [xt/xt-1]*100. Where xt refers to the value of the variable at period t.

4.2 Description of Data

Before evaluating the empirical impact of sovereign debt, the summary statistics provided in table 4.1 below serves as preliminary analysis to glance at some basic characteristics of the data. The table 4.1 displays the summary statistics for the variables for the period 2000q1:2015q4. “Std.Dev” denotes standard deviation, ** and *** indicate statistical significance at 5% and 1% , respectively. The Jarque-Bera tests significantly reject the null hypothesis of normality for all variables, therefore confirming the non-normal distribution of

the financial variables. The kurtosis for the Sample: 2000Q1 – 2015Q4

Table 4.1: Descriptive Statistics

Variable	Ln_copper prices	Ln_GDP	Ln_capital Inflows	Ln_Interest rate	Ln_reserves	Ln_Sovereign debt	Ln_Exchange rate
Mean	8.3856	21.807	16.9650	2.7518	6.7816	20.2543	1.5324
Median	8.6911	22.014	17.0292	2.6839	6.9628	20.3728	1.5573
Max	9.1744	22.687	17.7892	3.8398	8.2462	21.6787	2.4575
Min	7.2605	20.590	16.0193	1.4709	4.4506	19.1898	0.9986
Std. Dev.	0.6388	0.7292	0.4543	0.5470	1.0732	0.7905	0.2457
Skewness	-0.582	-.427	-0.264	0.2890	-0.427	0.1802	0.8039
Kurtosis	1.7390	1.6285	2.3764	2.5038	2.0540	1.8254	5.3801
Jarque-Bera	7.8537	6.9638	1.7851	1.5474	4.3316	4.0256	21.9994
Prob.	0.0197	0.0307	0.4096	0.4613	0.1147	0.1336	0.0000
Obs.	64	64	64	64	64	64	64

Source: Author (2018)

4.3 Pre-Estimation Test

4.3.1 Unit root test

When non-stationary data is regressed it can lead to results that “look good” when they actually are valueless (Brooks, 2002). The importance of the unit root test, is to test for sta

and avoid the aforementioned problem termed –spurious regression. The Augmented dickey fuller test for unit root was employed and the results for both dependent and independent variable are presented in *table 4.2 below.* The table shows that most of the variables are non-stationary and need to be differenced to make them stationary.

Table 4.2: ADF Unit Root Test Results

Variable	Form of test	Test Statistic	Conclusion
Ln_copper Prices	Intercept only	-1.4033	Non-Stationary
	Trend and intercept	-0.0415	
Ln_sovereign debt	Intercept only	0.0495	Non-stationary
	Trend and intercept	-3.4217*	Stationary
Ln_GDP	Intercept only	-1.8313	
	Trend and intercept	--0.7602	Non-Stationary
Ln_capital inflows	Intercept only	-1.0962	Non-Stationary
	Trend and intercept	-0.2575	
Ln_Reserves	Intercept only	-1.9217	Non-Stationary
	Trend and Intercept	-3.7168**	Stationary
Ln_exchange rate	Intercept only	0.7687	Non-Stationary
	Trend and Intercept	-0.3274	
Ln_interest rates	Intercept only	-1.7603	Non- Stationary
	Trend and intercept	-1.4455	
ADF Asymptotic Critical Value	Intercept Only	1% level	-3.503879
		5% level	-2.893589
		10% level	-2.583931
ADF Asymptotic Critical Values	Trend and intercept	1% level	-4.062040
		5% level	-3.459950
		10% level	-3.156109

Source: Author (2018)

Note: ***stationary at 1%; ** stationary at 5%; * stationary at 10% levels of significance.

For ADF trend and intercept criteria, foreign reserves and sovereign debt are significant while all other variables are non-stationary. Therefore, the variables should be differenced to make them stationary. At first difference all variables are stationary except GDP which is integrated of order 2.

4.4 Co-integration test

To test for co-integration, Engle-Granger test was used, and the results are shown in table 4.8. The null hypothesis of the test is that, series are not co-integrated.

Table 4.8: Engle-Granger Co-integration test

Dependent Variable	Tau-statistic	Prob.	z-statistic	Prob.
Capital inflows	-1.6330	0.7092	-5.4676	0.6831
Sovereign debt	0.2311	0.9933	0.4434	0.9928

Source: Author (2018)

The tau and z-statistic fail to reject the null hypothesis of co-integration. The evidence clearly suggest that capital inflows and sovereign debt are not co-integrated and hence they do not have a long run relationship.

4.5 Regression results

Regression analysis serves as the ground work analysis in trying to unpack the effect that can be observed between capital inflows and sovereign debt. The ordinary least squares results are presented in the table below.

TABLE 4.3: ORDINARY LEAST SQUARES ESTIMATION

Dependent variable: Capital Inflows

Explanatory variable	**Coefficient**	**Standard error[1]**
Constant	36.0391	12.7312***
Reserves	-0.1469	0.2367
Copper prices	-0.6590	0.4222
GDP	-0.8785	0.7799
Exchange rate	0.0044	0.3285
Interest rate	-0.3528	0.1442**
Sovereign debt	0.5167	0.1525***
Adjusted R-squared	**0.6433**	
F-statistic**	**17.23*****	
Durbin-Watson	**0.6255**	
Number of Observation	**64**	

Source: Author (2018)

Notes: * and ** denote 10 % and 5% level of significance, respectively. GDP stands for Gross Domestic Product.

Standard errors remedied for auto-correlation and heteroskedasticity with Newey-West.

The adjusted r^2 value shows that 64.33 % of variation in capital flows can be explained by the model which is an indication of a moderate fit. Copper prices and real exchange rate have the theoretically expected sign. The coefficients of copper prices, GDP, reserves, and real exchange rate are not significant at 10 percent. Sovereign debt has a significant positive effect on capital inflows. The coefficient of sovereign debt is significant at 1 percent and suggests that 1 % increase in sovereign debt increases capital inflows by 0.5167. Though the sign of the coefficient differs from the theoretically expected sign, it can be argued that increase in sovereign debt at low levels of debt in a country can increase the confidence of the investor on the overall performance of the economy. Increased investor confidence can increase the investment in the economy.

Interest rates and capital inflows have an inverse relationship, this could be seen as a signaling effect of the cost of doing business locally, and increase of interest rates deters investors, causing a reduction in capital inflows into Zambia. The coefficient is significant at 5 percent and suggest that 1 percent increase in interest rates reduces capital inflows by 0.3528 percent.

4.5.1 Test for Multicollinearity

Multicollinearity between the regressors leads to inaccurate OLS estimates as it inflates coefficients of standard errors. Correlation between regressors can be used test for multicollinearity. Variables are considered to suffer from multicollinearity if they have a correlation of more than 0.8. However, the study used variance inflation factor (VIF) method to test for multicollinearity. Any variable with a VIF of more than 10 is considered to suffer from multicollinearity.

Table 4.4: Test for multicollinearity

Variable	VIF
Ln GDP	68.43
Ln reserves	23.68
Ln Copper prices	21.98
Ln sovereign debt	15.68
Ln interest rate	5.72
Ln exchange rate	4.63

Source: Author (2018)

As table 4.4 shows, the regression model suffers from multicollinearity and the standard errors are inflated making it hard to reject the null hypothesis in the regression model.

4.5.2 Autocorrelation Test-Breusch-Godfrey Langrage Multiplier Test

Serial correlation is present if the residuals of one period are related to residuals in the previous period. Breusch-Godfrey serial correlation LM test was used. The null hypothesis of the test is that the series have no serial correlation. If the p-value is greater than 5 %, the null hypothesis is not rejected. The test is shown in table 4.5.

Table 4.5: Serial Correlation Test

F-statistics	58.3525	Prob. F(2, 54)	0.0000
Obs*R-Squared	43.7545	Prob. Chi-square(2)	0.0000

Source: Author (2018)

Since the p-value is less than 5 percent, the null hypothesis of no serial correlation is rejected. There is presence of serial correlation and the regression model is estimated with HAC (Newey-West) standard errors.

4.5.3 Heteroskedasticity Test-Breusch-Pagan Langrage Multiplier Test

Heteroscedasticity in a regression model imply that the variance of the error term is not constant. Breusch-Pagan-Godfrey test for heteroscedasticity is used. The null hypothesis of the model is variance is constant. It is rejected if the p-value is greater than 5 %.

Table 4.6: Heteroskedasticity test

F-statistic	0.9849	Prob. F(7,56)	0.4515
Obs*R-squared	7.0156	Prob. Chi-square(7)	0.4273
Scaled explained SS	7.8800	Prob. Chi-square(7)	0.3433

Source: Author (2018)

Since the p-value are greater than 5 %, the null hypothesis of a constant variance is not rejected.

4.6 Variance Decomposition Results

The variance decomposition magnifies the proportion of movements in one variable that are due to errors in own shocks and to each other variables in the system. The variance decomposition of sovereign debt and FDI show that sovereign debt explains more of the movements in FDI from 15.30 to about 18.37 in the 10^{th} period. In line with the previous findings that the levels of debt filter into investors decision making. The innovations of the forms of the capital flows can be explained by movements in sovereign debt.

TABLE 5A: VARIANCE DECOMPOSITION ON SOVEREIGN DEBT AND FOREIGN DIRECT INVESTMENT

	LNSOVERIGN_DEB		
Period	S.E.	T	LN_FDI
1	0.298861	100.0000	0.000000
2	0.336685	99.70458	0.295424
3	0.340049	98.15955	1.840449
4	0.346712	94.45691	5.543094
5	0.348188	93.81847	6.181531
6	0.349180	93.66825	6.331748
7	0.349919	93.31628	6.683724
8	0.349999	93.31314	6.686856
9	0.350227	93.23621	6.763794
10	0.350295	93.20015	6.799854

	LNSOVERIGN_DEB		
Period	S.E.	T	LN_FDI
1	0.424252	15.30465	84.69535
2	0.499175	11.15358	88.84642
3	0.520472	17.39291	82.60709
4	0.550027	17.62939	82.37061
5	0.553596	17.68423	82.31577
6	0.559469	18.35813	81.64187
7	0.562871	18.20089	81.79911
8	0.563351	18.34000	81.66000
9	0.564608	18.38254	81.61746
10	0.564878	18.36627	81.63373

TABLE 5B: VARIANCE DECOMPOSITION ON CAPITAL FLOWS AND SOVEREIGN DEBT

Period	S.E.	LN_CAPITAL_FLOWS	LNSOVERIGN_DEBT
1	0.421188	100.0000	0.000000
2	0.506452	94.54151	5.458487
3	0.524711	90.51908	9.480915
4	0.556887	91.55472	8.445275
5	0.562686	90.83399	9.166009
6	0.567970	90.61176	9.388244
7	0.572660	90.74103	9.258974
8	0.573196	90.57510	9.424904
9	0.574542	90.59460	9.405400
10	0.575093	90.59094	9.409064

Period	S.E.	LN_CAPITAL_FLOWS	LNSOVERIGN_DEBT
1	0.298755	13.33137	86.66863
2	0.336406	15.37307	84.62693
3	0.339681	15.84687	84.15313
4	0.346797	18.92898	81.07102
5	0.348609	19.28351	80.71649
6	0.349520	19.53601	80.46399
7	0.350471	19.96857	80.03143
8	0.350589	19.96293	80.03707
9	0.350831	20.06188	79.93812
10	0.350950	20.11128	79.88872

TABLE 5C: VARIANCE DECOMPOSITION ON SOVEREIGN DEBT AND PORTFOLIO FLOWS

Period	S.E.	LNSOVERIGN_DEBT	LN_PORTFOLIO_FLOWS
1	0.266813	100.0000	0.000000
2	0.286804	96.75872	3.241281
3	0.300685	89.33468	10.66532
4	0.316492	86.33370	13.66630
5	0.324471	85.48921	14.51079
6	0.326788	85.38449	14.61551
7	0.327190	85.37142	14.62858
8	0.327229	85.37159	14.62841
9	0.327230	85.37151	14.62849
10	0.327230	85.37151	14.62849

Period	S.E.	LNSOVERIGN_DEBT	LN_PORTFOLIO_FLOWS
1	1.439344	0.176636	99.82336
2	1.823327	27.86758	72.13242
3	2.037096	31.73180	68.26820
4	2.111846	35.42494	64.57506
5	2.127679	35.82610	64.17390
6	2.130395	35.97379	64.02621
7	2.130602	35.97486	64.02514
8	2.130618	35.97580	64.02420
9	2.130624	35.97570	64.02430
10	2.130624	35.97573	64.02427

CHAPTER 5. DATA ANALYSIS, RESEARCH CONCLUSIONS AND POLICY RECOMMENDATIONS

5.1. Data Analysis Methods

5.1.1Unit Root Tests

Unit root tests ensure that the data is stationary to avoid spurious results in the estimations. When a series is non-stationary it exhibits a trend. The standard OLS regression procedures on non-stationary data can lead to false conclusions and wrong inferences, therefore the trending feature of data needs to be removed to avoid this problem. The shortcoming of most macroeconomic variables, are that they are non-stationary (Brooks, 2002). The relevance of unit root tests for this research is to avoid the aforementioned "false results" in the regression model, as this will lead to wrong inferences and defeat the purpose of the research.

According to Asteriou and Hall (2007) stationary series must exhibit

- Mean reversion in that it fluctuates between the bands of the long-run mean
- Theoretical correlogram will die out as the lag-length increases

Informal analysis is one of the approaches a unit root test can be performed. This compromise of graphical displays that involve a visual plot or inspection of the correlograms by looking autocorrelations functions (ACF).

The paper used the Augmented Dickey Fuller (ADF) an extension of the Dickey and Fuller (DF). This augmented version includes added lagged terms of the dependent variable to get rid of autocorrelation. Gujarati (2003) avers that introducing additional lags of the dependent variable into the equation increases the terms and in turn reduces correlation in error terms. Brooks (2002) in favor of the ADF discredits the DF and argues that the latter has critical values that are greater and can result to a rejection of the null hypothesis even if correct.

The hypothesis being tested with this model is whether the series is non stationary i.e.

containing a unit root. The null hypothesis of the unit root H_0: =0, against the alternative hypothesis H_1: <0 , of no unit root. This meant that the rejection of the null hypothesis implied that the series is stationary. Conversely if the null hypothesis was not rejected, a conclusion that the series had a unit root that could be drawn, meaning that it is non stationary.

The data generating process was as follows:

$\Delta Yt=\phi Yt-1+\Sigma\alpha iki=1\Delta Yt-1+\varepsilon t$ (3.3)

Where $\Delta Yt-1$ are the lags of the dependent variable, and εt is error term, k wass the augmented lag length of the dependent variable, which was determined through e- views 9, where the lagged variables would be dropped until the last lag is significant

To induce stationary to a non-stationary series, the variable, *yt* should have been differenced *d* number of times before it became stationary, this is also known as being integrated of the order of *d.*

Once the variables in the model had been tested for unit root and stationary induced, regressions and other econometric tests were carried out without running into spurious regression.

5.1.2 Co-integration Analysis

Since there was existence of unit roots in the variables of interest, Engle-Granger co-integration methodology was been used to determine if there is a long run relationship between sovereign debt and capital inflows. Co-integration analysis establishes whether two variables move together in the long run even if they diverge in the short run (McCoy, 1997). The Johansen co-integration methodology start with a Vector Auto Regression (VAR) of order p:

$$X_t = A_0 + A_1X_{t-1} + A_2X_{t-2}+\ldots+A_pX_{t-p} + \varepsilon_t \quad (3.4)$$

Where A_0 is n x 1 vector of constant terms, $A_1, A_2,\ldots, A_p$ are n x n matrices of coefficients, X_t is a n x 1 vector of endogenous variables and ε_t is a vector of serially uncorrelated error terms with a constant variance and zero mean. X_t= (GDP, international reserves, sovereign debt, interest rates, copper prices, real exchange rate, inflation). Equation (3.6) can be rewritten as:

$$\Delta X_t = A_0 + \Pi X_{t-1} + \sum_{i=1}^{p-1} \tau_i \Delta X_{t-1} + \varepsilon_t \quad (3.7)$$

Where $\Pi = \sum A_i - I$ and $\tau_i = -\sum_{j=i+1}^{p} A_j$. If the coefficients of the matrix Π reduced rank r<n, then there exists n by r matrices of α and β, such that $\Pi = \alpha\beta'$. r is the number of co-integration relationship and Johansen suggest two likelihood ratio tests to test the significance of co-integration relationships in a VAR(p) model. The tests are trace statistics and maximum Eigen value. Therefore, to achieve the second objective, the Engle Granger Co-integration test was used to test whether capital inflows and sovereign debt have a short run or long run relationship.

5.1.3 Variance Decomposition

Variance decomposition just like impulse response was useful to assess how shocks to the dependent variable reverberate through time. It involved explaining how much of the forecast error in the dependent variable (Capital inflows) was explained by innovations of the explanatory variable (Sovereign debt) and itself (Brooks, 2002). Impulse response functions analysis and variance decomposition analysis was used to achieve the first objective.

5.2 Policy Recommendations

5.2.1Borrowing Instruments

It is important also to understand what financing options governments may have at their disposal. In determining different financing options, it is important for a country to know its capacity and financial constraints to eliminate gaps. Concessional financing remains the best

option for nations from a cost and risk standpoint. Sub Saharan countries continue to find this level of financing difficult to acquire. However, numerous financing options exist, public – private partnerships (PPPs), domestic bonds and syndicated loans. Policy makers need to make decisions on which form of debt and in what combinations lessen the risk of reducing capital inflows into the country. Careful planning and consideration must be taken to fully understand the repercussions of each additional finance obtained internationally. Foreign direct investment (FDI) monitors the economic indicators such as debt to GDP ratios and it needs to know that the economy will be able to absorb any shocks that may occur to increased debt. Given that Zambia after obtaining a sovereign rating started issuing bonds on the international capital market in 2012, it is assumed that policy makers weighed considerably the benefit of the bonds as opposed to alternative forms of financing.

In making policy recommendations to this type of debt that has significantly increased Zambia's debt, we make observations on the financial characteristic of this type of instrument that could help reduce the debt in the future.

1. Mitigation of currency mismatches between currency of government revenues and currency of international bond should be done to the greatest extent possible. Though currency swaps do exist, US dollar denominated bonds have dominated as they give access to much more liquid and deeper markets than most currencies. Besides, first time issuers normally use the major currencies of US dollar, euro and yen. Issuing of local currency bonds to tap international savings is becoming more and more popular as people in the diaspora may be looking to invest back home especially with shifting political landscapes in the western world that may not favor foreigners.

2. Information disclosure and legal agreements are a critical part of acquiring debt on the international market. Potential issuers of international bonds must be well prepared and well in advance. Careful consideration must be taken with the advice of financial and legal experts on terms and conditions of the bond and even more critical, the law to govern the bond and in which jurisdiction these instruments must be issued. Institutional capacity and legal framework must exist to monitor, support and service the instrument. Modalities of the issuance of the bond must be clearly stated and the type of bond to be issued i.e. private placement against a public offering. Understanding the above, the issuer should be cognizant of the implications of information disclosure and transparency to different players in the market.

3. Repayment structure and debt profile should be well-thought-out. All things being equal, a longer maturity period is more beneficial because it reduces rollover risk and as such maturity date should be an important consideration. However, first time issuers may prefer short maturities in order to showcase their ability to pay. It is important also to understand the type of bond to be issued i.e. amortizing, sinking or bullet. A smooth debt service profile is achieved in countries with consolidated market presence and higher public debt levels when an amortized bond is used. Although it is the most commonly traded, a bullet bond creates bumps in the debt service profile. Combining a sinking fund with a bullet repayment i.e. the issuing country sets up a fund that is built over time to reduce the rollover risk at maturity provides what is known as a midway approach.

. 5.2.2 Magnitude of External Borrowing

Key to all of this is the size of the instrument. The issuer needs to understand the impact on debt sustainability that the newly acquired debt may have. As a result of this, a cost benefit analysis must be undertaken on associated investment plans. Additionally, the size of the bond must avoid exceeding the actual funding cost of planned programs as this increases the carrying cost. However, the amount must be large enough to cover unexpected costs that may arise from planned projects in order to avoid liquidity gaps later.

Medium term fiscal objectives should match the term and size of the bond to be issued. An adequate debt management strategy should be in place including building the capacity for asset management are essential in the issuance of a bond. Assessment of the bond should be in a developed strategy framework that focuses on the medium term for debt management and advice on issuance of the bond should be based on the same. Investor relations plans should be included as part of enhancing internal human capacity in decreasing costs and monitoring pricing from transactions in the secondary market. Internal uplifting of capacity may provide addition sound advice on interest rate level assessment for example, by complimenting already existing technical advice from bond issuance advisors.

As eluded to above, bonds issued on the international capital markets may not be the best financing option available to governments. Governments must make special considerations in finding alternative funding possibilities for big public capital projects. Carry cost mitigation matching funding requirements must be a key component in issuing of bonds and where this is not possible, this may not be the most efficient form of financing. Governments should provide adequate training, review internal capacity and obtain adequate technical assistance before bond issuance. Finally, Countries can build capacity by concentrating on the following areas:

- Identifying carry costs and debt servicing problems by performing reserve adequacy tests.
- Construction of a macroeconomic framework that incorporates the dimensions of the bond issuance.
- Improved capacity to be able to monitor risks arising from the bond issuance such as liquidity, interest rate and currency mismatches.
- Debt management strategy looking at the medium term should be formulated and implemented and must be consistent in trying to maintain debt sustainability.

Other ideas widely discussed are that of borrowing from nations with excess savings, strengthening the institutions of PPPs and establishing a sovereign wealth fund. This way, countries expand their financing options and reduce risk to debt sustainability.

5.2.3 Debt Sustainability

Debt to GDP ratio will depend on the characteristic of debt. Exercises on debt sustainability must be performed that look at public finances and focus on level of indebtedness to public revenues. Typically, public sector borrowing leans more toward public expenditure, discounting the market rate of return. Although there is no written rule on the amount of adequate debt, the policy position should be that of stabilizing the debt to GDP ratio or declining it. The easiest form of reducing this ratio is that GDP should grow faster than debt by the government's deliberate action to stimulate the economy.

Debt management should provide a scenario where debt servicing should not result in a reduction in output as this will cause the debt to GDP ratio to deteriorate. Domestic policies should be able to develop stable and robust economic growth to trigger industries to generate sufficient export earnings by effectively participating in the global markets. It is not uncommon for governments to provide sovereign guarantees on the basis of their available resources and

as such, a deliberate policy decision to guard natural resources must be taken. The success of potential debt reduction actions will depend on future available resources.

In cases like Zambia, where the debt stock is already high, a policy recommendation would be to restructure the debt in order to reduce pressure on interest payments. If interest payment rate is higher than the rate of growth of GDP, then the debt to GDP ratio is likely to soar. Frameworks for foreseeable and steady debt renegotiations must be established. Mechanisms proposed by multilateral institutions such as the IMF on standstills and restructuring should be adopted that reduce legal threats and punitive measures on non-payment of debt.

All the above recommendations only work where there is a deliberate attempt by governments to put in place strong institutions. The recommendations listed above help in reducing the debt ratio as we have seen in our test results that increased sovereign debt reduces capital flows. As such, a desirable scenario is to have a smaller amount of sovereign debt and the recommendations above could help mitigate problems of high debt ratios that may deter capital inflows into the country.

5.3 Research Conclusion

This paper sought to understand the effect of sovereign debt to capital inflows to Zambia. It utilized data on major economic indicators such as GDP, interest rates in the domestic market, exchange rate of the local currency to a unit of a US dollar, Zambia's foreign reserves and finally copper prices which is critical to Zambia's economy. The research attempted to answer the following questions and statements and the responses are listed below;

To investigate the relationship between sovereign debt and capital inflows into Zambia

Various papers researched during the course of writing this paper have shown an inverse relationship between sovereign debt and capital inflows in Zambia. However, in the short run,

our results show that there is a positive relationship between the two. Capital inflows in countries in mostly recorded by FDIs and investors into a country's bonds. Research has shown that the level of a country's debt especially in developing countries serves as an indicator to investors and the higher debt; the less likely they are to invest.

To empirically establish the dynamic relationship that can be observed between capital inflows and external debt. If there is a long run relationship that can be identified between the two variables.

The co-integration results suggest that there is no long run relationship between sovereign debt and capital inflows. Therefore, the two variables are not co-integrated.

Is the level of external debt a significant determinant of capital inflows in Zambia? If so, is this observed across all the different forms of capital flows? (Portfolio /Equity Flows; Foreign Direct Investment, (FDI); Debt/Bond Investment)

Yes. From our variance decomposition results, we can see that innovations in forms of capital inflows are explained by external debt becoming more significant from period 1 to period 10. This is observed in different forms of capital flows that the test was run on, that is, portfolio flows and foreign direct investment.

Zambia like most countries would find it difficult to finance all its economic development by internally produced resources due to the fact that most developing countries export unbeneficed primary goods compared to the more pricey imports that lead to a subsequent current account deficit . The compounded effect of low savings and low foreign exchange from imported goods leads to the need of external finance to sustain the domestic economy. This colossal accumulation of sovereign debt witnessed in developing countries has dragged along its fair

share of difficulties such as managing its debt ratio and furthermore other economic implications that has restricted governments to deliver much needed economic growth and development. External debt has positives to it as it can allow for large capital projects and infrastructure to be built. The positive impact of external debt however, is not felt in Zambia due to funds not being channeled to the real productive sector, mismanagement and mismatching of funds. If channeled to the real sectors it can catapult the economic growth trajectory and continue to attract the much needed capital inflows.

5.3 RECOMMENDATIONS FOR FUTURE RESEARCH

This paper focused primarily on Zambia. The topic can be extended to look at the effect on sovereign debt on capital inflows to Sub Saharan Africa. This is because sovereign bonds have become a popular method of financing for governments in the region. As noted above, this research paper ignored the economic growth indicators like labour which can be included in future models. However, further research can be done to understand if there is a point at which capital inflows would seize as a result of a country's sovereign debt.

Also, the paper did not include the effect of exports, a key indicator of balance of payments (BOP), as it is believed that exports cancel out sovereign debt. In addition, inflation was not considered which may explain an interesting dynamic on the relationship with capital inflows. A non-significant relationship was also observed between copper prices and capital flows. Further analysis can be undertaken on the region to measure the relationship between capital inflows and a country's major resource as it has been observed that a country's available future resources are critical in the debt/GDP ratio. Finally, an auto-regression analysis must be performed to understand the long run relationship between sovereign debt and capital inflows.

REFERENCES

1. Adams, S. (2009). Can foreign direct investment (FDI) help to promote growth in Africa? *African Journal of Business Management*, *3*(5), 178.
2. Afonso, A. (2003). Understanding the determinants of sovereign debt ratings: Evidence for the two leading agencies. *Journal of Economics and Finance, 27*(1), 56-74.
3. Ahmed, F., Arezki, R. and Funke, N. (2005). The composition of capital flows: Is South Africa different? *IMF Working Paper*, March.
4. Ajayi, Ibi S. (1995). Capital flight and external debt in Nigeria, *African Economic Research Consortium, Research Paper* 35.
5. Ajayi, M. S. I. (1997). An analysis of external debt and capital flight in the severely indebted low income countries in Sub-Saharan Africa. *International Monetary Fund.*
6. Akinlo, A. E. (2004). Foreign direct investment and growth in Nigeria: An empirical investigation. *Journal of Policy modeling*, *26*(5), 627-639.
7. Alesina, Alberto, and Guido Tabellini (1989). External debt, capital flight and political risk. *Journal of International Economics* 27(3-4): 199-220.
8. Al-Refai, M. F. (2015). Debt and economic growth in developing countries: Jordan as a case study. *International Journal of Economics and Finance*, *7*(3), 134.
9. Andrianaivo, M. and Yartey, C. 2010. Understanding the growth of African financial markets. *African Development Review* 22, 394-418.
10. Asher, M. G. (2012). Public debt sustainability and fiscal management in India. *Public Debt Sustainability in Developing Asia*, *139*

11. Asiedu, E. (2002). On the determinants of foreign direct investment to developing countries: is Africa different? *World development*, *30*(1), 107-119.
12. Bakardzhieva, D., Naceur, B.S & Kamar, B. (2010). The impact of capital and foreign exchange flows on the competitiveness of developing countries. *IMF Working Paper WP/10/154.*
13. Baum, A., Checherita-Westphal, C., & Rother, P. (2013). Debt and growth: New evidence for the euro area. *Journal of International Money and Finance*, *32*, 809-821.
14. Blalock, G., & Gertler, P. J. (2004). Firm capabilities and technology adoption: Evidence from foreign direct investment in Indonesia. *Unpublished Paper*.
15. Blavy, R. (2006). Public debt and productivity: The difficult quest for growth in Jamaica. *IMF Working Paper No. 06/235.*
16. Boboye, A. L. & Ojo, M. O. (2012). Effect of external debt on economic growth and development in Nigeria. *International Journal of Business and Social Science, 3 (12): 297-304*
17. Borensztein, E., De Gregorio, J., & Lee, J. W. (1998). How does foreign direct investment affect economic growth? *Journal of international Economics*, *45*(1), 115-135.
18. Calvo, G. (1998). Capital flows and capital market crises: The simple economics of sudden stops. *Journal of Applied Economics, 1, 35–54.*
19. Centre for Development Economics, Department of Economics, Delhi School of Economics. *Working Paper No. 144.*
20. Chipalkatti N., Rishi, M. (2001). External debt and capital flight in the Indian economy.
21. Choi, C. and Baek, S-G. (2006). Portfolio flow volatility and demand for international reserves. *Seoul Journal of Economics* 19(2), pp. 199 – 214.

22. Cholifihani, M. (2008). A co-integration analysis of public debt service and GDP in Indonesia. *Journal of Management and social sciences*, *4*(2), 68-81.
23. Christensen, J. (2005). Domestic debt markets in Sub-Saharan Africa. *IMF Economic Review*, *52*(3), 518-538.
24. Cleassens, Stijn; Detragiache, E., Kanbur, R. and Wickham, P. (1996). Analytical aspects of the debt problems of heavily indebted countries. *World Bank Policy Research Working Paper* number 1618
25. Combes, J.L., Kinda, T. and Plane, P. (2012). Capital flows, exchange rate flexibility, and the real exchange rate. *Journal of Macroeconomics*, 34(4), 1034-1043.
26. Cordella, T., Ricci, L. A., & Ruiz-Arranz, M. (2010). Debt overhang or debt irrelevance? *IMF Staff Papers*, *57*(1), 1-24.
27. Cruces, Juan, (2007). Statistical properties of sovereign credit ratings. *Emerging Markets Review 7 (1):* pp. 27–51. Oxford Development Studies 29: 31-44.
28. Dani Rodrik and Andrés Velasco. (1999). Short-term capital flows. *NBER Working Paper No.* 7364
29. Demirguc-Kunt and Levine, R. (1996). Stock market development and financial intermediaries: Stylized facts. *World Bank Economic Review* 10, 291-321.
30. D'Erasmo, P., Mendoza, E. G., & Zhang, J. (2015). What is a sustainable public debt? *Working Paper No. w21574*. National Bureau of Economic Research
31. Dua, P. and Sen, P. (2006). Capital flow volatility and exchange rates: the case of India.
32. Edwards, S. (1990). Capital flows, foreign direct investment, and debt-equity swaps in developing countries. *NBER Working Paper* No. 3497.
33. Errunza, V. R. (1986). On benefits of tapping foreign portfolio investments: an Indian perspective. *Economic and Political Weekly* 21(8), February 22, pp. M17 – M19.
34. Ferreira, M. A. and Laux, P. A. (2009). Portfolio flows, volatility and growth. *Journal*

of International Money and Finance 28(2), pp. 271 – 292.

35. Framework for Low-Income Countries: Post-Debt Relief, SM/06/364, available at http://www.imf.org/external/np/pp/eng/2006/110606.pdf
36. Hermes, N., & Lensink, R. (2003). Foreign direct investment, financial development and economic growth. *The Journal of Development Studies*, *40*(1), 142-163.
37. Iyoha, M. (1999). External debt and economic growth in Sub-Saharan African countries: An econometric study. *African Economic Research Consortium*.
38. Kim, Y. (2000). Causes of capital flows in developing countries. *Journal of International Money and Finance* 19(2), pp. 235–253.
39. Kumar, M., & Woo, J. (2010). Public debt and growth. *IMF working papers*, 1-47.
40. Lartey, E.K.K, (2008). Capital inflows, Dutch disease effects, and monetary policy in a small open economy. *Review of International Economics*, 16(5), 971–989
41. Levine, R and Zervos, S. (1996). Stock market development and long-run growth. *World Bank Economic Review* 10(2), pp. 323 – 339.
42. Levine, R. and Zervos, S. (1998). Stock markets, banks and economic growth. *American Economic Review* 88, 537-558.
43. Levine, R., Renelt, D. (1992). A sensitivity analysis of cross-country growth regressions. *American Economic Review* 82, 942–963.
44. Lof, M., & Malinen, T. (2014). Does sovereign debt weaken economic growth? A panel VAR analysis. *Economics Letters*, *122*(3), 403-407.
45. Markusen, J. R., & Venables, A. J. (1999). Foreign direct investment as a catalyst for industrial development. *European economic review*, *43*(2), 335-356.
46. Martner Fanta, R., & Tromben, V. (2004). Public debt sustainability. *CEPAL Review*.
47. Michael P. Dooley Eduardo Fernandez-Arias Kenneth M. Kletzer (1994). Recent private capital inflows to developing countries: is the debt crisis history? *Working per*

No. 4792

48. Muhanji, S., & Ojah, K. (2011). Management and sustainability of external debt: A focus on the emerging economies of Africa. *Review of Development Finance*, *1*(3), 184-206.
49. Mweni.R. (2012). A critical review of external debt and economic growth in Kenya. http://erepo.usiu.ac.ke/bitstream/handle/11732/340/Mweni%20A%20Critical%20Review%20of%20External%20Debt%20and%20Economic%20Growth%20in%20Kenya.pdf?sequence=1 [accessed 26 May 2016]
50. Naceur, S., Ghazouani, S. and Omran, M. (2007). The determinants of stock market development in the Middle-East and North African region. *Managerial Finance* 33, 477-489.
51. Nakatani, P., & Herrera, R. (2007). The South has already repaid its external debt to the North: but the North denies its debt to the South. *Monthly Review*, *59*(2), 31.
52. Ndikumana, L., and J.K. Boyce. 2003. Public debts and private assets: Explaining capital flight from sub-Saharan African countries. *World Development 31*, no. 1: 107–30.
53. Nguyen, T. Q., Clements, M. B. J., & Bhattacharya, M. R. (2003). External debt, public investment, and growth in low-income countries (No. 3-249). *International Monetary Fund.*
54. Odhiambo, N. M. (2009). Financial deepening and poverty reduction in Zambia: an empirical investigation. *International Journal of Social Economics*, *37*(1), 41-53.
55. Ojah, K., & Kodongo, O. (2015). Financial markets development in Africa. *The Oxford Handbook of Africa and Economics: Volume 2: Policies and Practices*, 401.
56. Oks, D., & Van Wijnbergen, S. (1995). Mexico after the debt crisis: is growth sustainable? *Journal of Development Economics*, *47*(1), 155-178.

57. Pattillo, C., Poirson, H. & Ricci, L. (2011). External debt and growth. *Review of Economics and Institutions* 2(3).

58. Prayag, C., Du Toit, D., Kenmuir, K., Morrison, A., & Tembo, C. (2010). Do frontier market equities have a role to play in a diversified international equity portfolio? *The African Finance Journal*, *12*(Conference Issue), 75-97.

59. Rangasamy, L. (2014). Capital Flows: The South African experience. *South African Journal of Economics,* 82(4), 551-566.

60. Rashid, A. and F. Husain (2010). Capital inflows, inflation and exchange rate volatility: an investigation for linear and nonlinear causal linkages. *Working Papers & Research Reports,* 2010.

61. Reinhart, C., K. Rogoff and M. Savastano (2003): Debt intolerance, *NBER Working Paper*, No. 9908, Cambridge, Massachusetts, National Bureau of Economic Research.

62. Reinhart, Carmen M., Kenneth S. Rogoff, and Miguel A Savastano. 2003. Debt intolerance. *Brookings Papers on Economic Activity* 34 (1): pp. 1–70.

63. Reisen, H. (2007). Is China actually helping improve debt sustainability in Africa? *G24 policy brief*, (9), 1-14

65. Reisen, H., and Soto, M. (2001). Which types of capital inflows foster developing-country growth? *International finance*, 4(1), 1-14.

66. Ricardo Martner and Varinia Tromben (2004), Applying the debt sustainability. *International Monetary Fund and World Bank*, 2006, “

67. Singh, A. (1999). Should Africa promote stock market capitalism? *Journal of International Development*, *11*(3), 343.