EFFECTS OF PUBLIC DEBT ON ECONOMIC GROWTH IN SWAZILAND

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ABSTRACT

There is scanty literature analyzing the relationship between public debt (i.e public external debt and domestic debt) and economic growth in Swaziland. This study examines the effect of both public external and domestic debt on economic growth in Swaziland including variables such as; inflation and government expenditure to the model to avoid spuriousness of the results. This study is guided by the neoclassic economic growth theory. Advanced econometric techniques were used to analyse the time series data spanning1988-2013. Ordinary Least Square (OLS) method has been used to determine the nature and extent of each relationship as all variables were found to be normally distributed and stationary at level.

The study found that there is no significant relationship between external debt and economic growth in Swaziland for the period under study, while on the other hand; domestic debt was found to have a significant positive relationship with economic growth at 5 percent level of significance. In view of this, the study recommends that the government of Swaziland should encourage sustainable domestic and external borrowing and utilize the funds in productive economic activities.

Keywords: Economic growth, public domestic debt, public external debt, inflation, government expenditure

1. INTRODUCTION

1.1 Introduction

It is the motive of every economy to attain sustainable economic growth, as it has crucial importance for all economies. Every economy has a responsibility of boosting its economic growth in order to lower its debt burden, especially developing economies like Swaziland. These economies face many different challenges in boosting their economic growth in order to lower their debt burden as compared to developed countries. Most developing countries are characterized by high degree of indebtedness, high inflation figures, high government spending, high unemployment rate, absolute poverty and poor economic performance. Economic growth is an increase in the capacity of an economy to produce goods and services, compared from one period of time to another. According to (Godwin, 2007) economic growth is an increase in real gross domestic product (GDP). That is gross domestic product adjusted for inflation.

Global economic conditions remain sluggish in 2012.Four years after the eruption of the global financial crises; the world economy is still struggling to recover. The Euro zone sovereign-debt crises continued to cloud prospects for the global economy and the region. The highly indebted countries in Europe assisted by multinational partners and other governments were called upon to implement further austerity measures to avoid defaulting on their debts. The International Monetary Fund (IMF) projected that the world economy will drop from 3.9 percent in 2011 to 3.2 percent in 2012 due to weak activity in industrialized countries emanating from an un-abating Euro zone financial crisis. Furthermore, growth slowed noticeably during 2012 in a number of large developing economies, such as Brazil, China and India as exports came under pressure due to weaker global growth. (Central Bank of Swaziland Annual Report 2013)

Growth is robust across most of sub-Saharan Africa countries, with only the bloc of upper-middle income countries grappling with the problem of sluggish economic activity. External current account deficits are large for many low-income countries, as a result emerging economies have to tackle many challenges and use various ways to reduce and sustain their current account deficit, like to cut on public expenditures, increase revenues and expand the opportunities for new investments. Debt burden can be domestic, external or both. This is the amount of debt that a particular country has and it is considered as a burden on its economy and people and a hindrance to their progress. There are both positive and negative possible effects of public debt on the economy. The positive effects of public debt relate to the fact that in resource-starved economies debt financing if done properly leads to higher growth and adds to their capacity to service and repay external and internal debt. The negative effects work through two main channels--i.e., "Debt Overhang" and "Crowding Out" effects.(International Monetary Fund, Regional Economic Outlook report, 2013)

The crowding out hypothesis refers to the assumption that government borrowing reduces private investment. This hypothesis plays a key role in the neoclassical analysis. If a greater portion of foreign capital is used to service external debt, very little will be available for investment and growth. Debt-servicing cost of public debt can crowd out public investment expenditure, by reducing total investment directly and complementary private expenditures indirectly" (Karagol, 2002). However; Sachs (1990) and Kenen (1990) argue that external debt overhang plays an important role in the heavily indebted countries. Debt overhang is the main reason for slowing economic growth in indebted countries. Because of large debt overhang private investments are couraged and the payments of the debt service of some countries are so large such that the prospects for a return to growth paths are dim, even if the governments were to apply hard adjustment programmes. It is argued that a debt overhang creates adverse incentive effects on the economic growth in the long run.

According to Chowdhury (2001), public debt can be classified as the sum of external debt and internal debt. As far as the relationship between external debt and economic growth is concerned, a reasonable level of borrowing is likely to enhance economic growth, through capital accumulation and productivity growth because at early stages of development, countries have small stocks of capital and they have limited investment opportunities. Debt can be classified into two categories i.e. productive debt and dead weight debt. A loan is said to be productive when it is contracted for development purposes e.g for infrastructure, refineries, acquiring factories etc. However, debt undertaken to finance wars and expenses on current expenditures are dead weight debts.

Figure 1.1: Swaziland's graphical presentation of GDP growth rate (GDPgr), Domestic debt (DDr), rate and External debt rate (Edr)
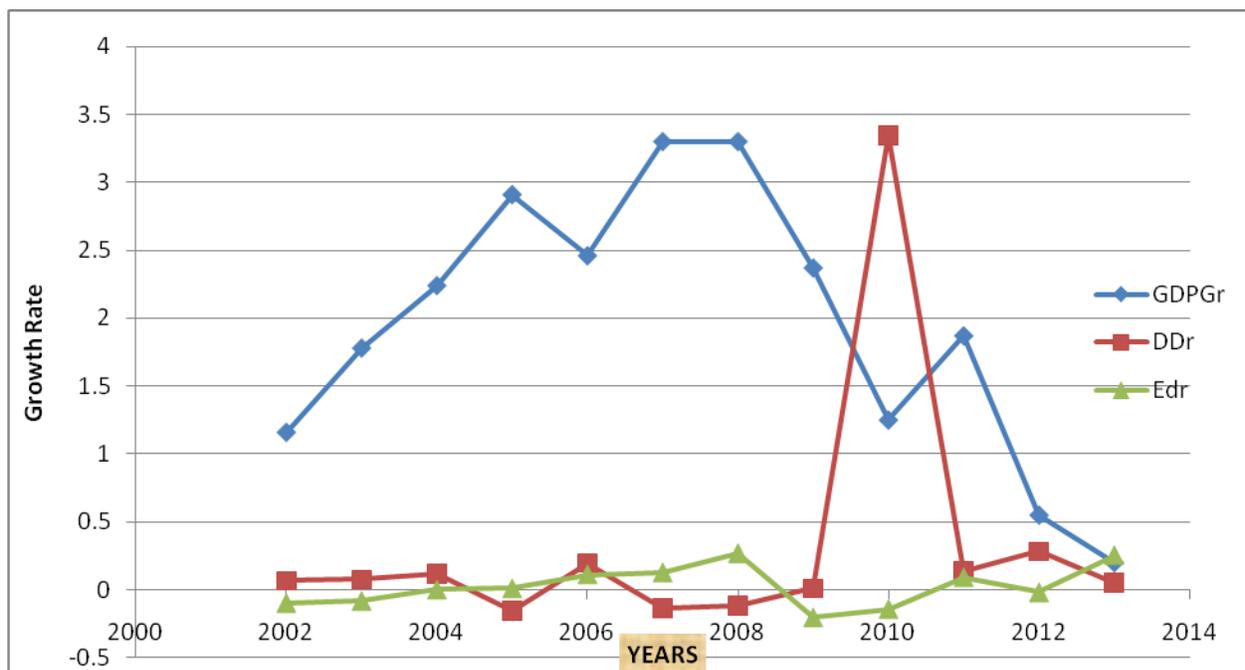
Source: GDPgr data from World Bank data bank and Edr and Ddr data from central bank of Swaziland annual report 2012

When looking at figure 1.1 the nation's economic growth rate vis-a-vis the rate at which domestic and external debt is growing at, it clearly shows that the rate of economic growth has adopted a downtrend while on the other hand both external and domestic debt rate is moving upwards. This shows a persistent economic decline since 2008. This might have been the result of the global economic downturn that had affected most developing countries not leaving out developing economies like Swaziland. Failure to understand the effects that may be brought about by the increasing amount of external debt and domestic debt on the nation's economy might result in a state whereby the country's debt will be unsustainable, i.e the nation failing to meet its debt obligations. As a result, the question we should be asking is what would be the long run effect of this debt growth on the economy of the nation? Theory states that a debtor country will face repayment difficulties if it is unable to generate a sufficient increase in output and export earnings to meet its debt obligation. Following this theory many internal and external factors will contribute to that outcome. Domestic factors that are often cited include wrong macroeconomic policies, such as fiscal irresponsibility,

policies that deter savings, such as negative real interest rates which in turn reduce investment and encourage capital flight. Swaziland situation is the combined effect of a number of factors. (Central Bank of Swaziland Annual report 2013).

However, internal and external debt has different effects on economic growth. Traditional theorists consider that in the long run, domestic debt has a negative impact on economic growth. According to (Umaru, Hamidu, and Musa 2013) external debt possess a negative impact on economic growth while domestic debt has a positive impact on economic growth (GDP). A good performance of an economy in terms of per capita growth may therefore be attributed to the level of domestic debt and not on the level of external debt in the country; therefore external debt is seen as inimical to the economic progress of a country. According to (Shabbir, 2013) an increase in external debt stock reduces the fiscal space to service external debt liabilities and thus dampens the economic growth. Moreover, it reduces the level of private fixed capital formation in the country. On the other hand (Burguet & Ruiz, 1998) viewed domestic debt as more expensive in comparison to concessionary external financing as a result; interest load of domestic debt may absorb important government revenues and thus crowd-out pro-poor and growth enhancing expenditures.

1.2 Statement of the Problem

The Government of Swaziland (GOS) has been running its economy on surplus till 1999. Since the year 2000, there has been a notable increase in the level of the GOS debt stock although the country's debt portfolio is still within the standard critical ratios established by the Bretton Woods institutions (IMF and World Bank). Borrowing is justified if it is contracted to finance capital development projects that will address social needs and those that generate future returns by improving the investment climate and increase economic growth. On the other hand, borrowing for consumption purposes is an unsustainable practice. From year 1999 there has been a continuous increase in the total public debt stock of GOS, this has been largely attributable to exorbitant current expenditure figures, which takes more than half of the overall national budget. Total public debt stock increased by 18.4 percent to E6,200 million at the end of March 2013.The increase has also been attributed to unfavourable market conditions such as the deterioration in the terms of trade, and increases in oil prices that have tended not to favour developing countries, as well as the sharp depreciation of the Rand/Lilangeni against major currencies in 2001. Such increases of debt stock levels have resulted in drawn downs on GOS reserves and decline in economic growth.

Government is not only experiencing the increase in public debt, as there is also a drastically decline of economic growth from 2008 to 2013. This must be of great concern as large public debt figures are believed by many researchers to have adverse effects on economic growth. Over the past years the GOS has not been much active in the domestic market, until 2010 when it floated so many different debt instruments in a short period of time. This was after the country has failed to get a letter of comfort from the International Monetary fund (IMF), which was to enable it to have access to budget support loans from external financiers. Since then the GOS changed its debt strategy from 80:20 percent in favour of external loan to 50:50 percent, ie 50 percent external debt and 50 percent domestic debt. External and internal debts are believed to have different effects on economic growth. (Burguet & Ruiz, 1998) viewed domestic debt as more expensive in comparison to concessionary external financing as a result; interest load of domestic debt may absorb important government revenues and thus crowd-out pro-poor and growth enhancing expenditures. However, according to (Umaru, Hamidu, and Musa 2013)external debt possess a negative impact on economic growth while domestic debt has a positive impact on economic growth (GDP). Furthermore, (Singh 1999) found that

in the long run, domestic debt has a negative impact on economic growth. So researchers has found mixed results on this relationship, as a result this study has to fill this gap.

1.3 *Objectives of the study*

General Objectives

The main objective of this research is to study the effect of the overall public debt portfolio on Swaziland's economic growth.

Specific Objectives

The specific objectives of this study are as follows:

1. To examine the effect of domestic debt on economic growth in Swaziland.
2. To ascertain the effect of external debt on Swaziland's economic growth.
3. To investigate the effect of Government expenditure on economic growth in Swaziland
4. To examine the effect of inflation on Swaziland's economic growth.

1.4 *Research Questions*

The study sought answers on the following research questions.

1. Is there any effect of domestic debt on the economic growth of Swaziland?
2. Does external debt affect the economic growth of Swaziland?
3. Does Government expenditure affect economic growth in Swaziland?
4. Is there any effect of inflation on economic growth of Swaziland?

1.5 *Significance of study*

It is a desire of every nation to achieve economic growth and have sustainable levels of debt. Because of this notion, the relationship between economic growth and public debt must be well known and clearly understood. Therefore, this study shall be of immense benefit to government, private investors, future scholars and students of other related disciplines, policy makers, international agencies and society as a whole. First of all, the study would help government and policy makers to know what levels of public debt will deter economic growth and thus adopt policies that will keep the country's debt level in a sustainable level. In other words the study's result will be highly relevant in the formulation and implementation of effective policies.

Secondly, the study will serve as a foundation in guiding students and future scholars who wish to further their research on this topic as they will use this work as their baseline study, and subsequently work on it for better results. Thirdly private investors and the whole society will benefit a lot from this study as they will have information on the country's debt levels such that they will know if the country's debt is sustainable or not. High levels of debt pose as a threat to investors as it is believed that more tax will be imposed in the future to meet the country's debt obligation.

1.6 *Scope of study*

The study focus is on ascertaining the impact of public debt and other macroeconomic variables on economic growth in Swaziland. The study relies on time series data for the period between 1988 and 2011 and uses the Ordinary Least Square (OLS) model incorporating External debt, Domestic debt, Government expenditure and inflation. The period of study is chosen due to the availability of data for each of the variables considered in this study. The data was sourced from the Central Bank of Swaziland bulletins and World Bank Development Indicators.

1.7 The Limitations

The study could have used a longer period but it was restricted to 26 years due to non- availability of data for the variables under study beyond the year 1988. Furthermore, there was time limitation and there were no resources allocated to the research project.

2. LITERATURE REVIEW

This chapter covers theoretical literature review on economic growth and the relation it has with the variables under review.

2.1 Theoretical Review

2.1.1   Theories of Economic Growth

There have been divergent views expressed on the sources of economic growth over time. As a result, several theories have been postulated to explain the concept of economic growth. Studies draw several theoretical frameworks and examine factors that are taken from several sources. This section discusses some of the theories including the classical growth theory, Keynesian growth theory and neoclassical growth theory.

2.1.2   Classical Growth Theory

This theory was begun by Adam Smith in 1776. He proposed that output depends on the amount of input (i.elabour, capital and land). Output growth (gY) is determined by the population growth (gL), increase in investment (gK), land growth (gT) and the total labour productivity growth (gF). The main factor of economic growth was the division of labour, which leads to the output growth, technical progress and accumulation. According to Smith, the division of labour is limited by the market dimension. If the division of labour increases more than output, then it increases the market dimension and induces further division of labour and as a result brings about further economic growth. Another factor which stimulates growth according to Smith is Capital accumulation. Therefore, income distribution is one of the most important determinants of the rate of growth of a nation in this model.

This model can be written as follows;

Y=f (L,K,T)

Where Y denotes output, L labour, K capital and T land, such that output is related to labour, capital and land inputs.

2.1.3   Keynesian Growth theory

The Keynesian theory is based on the activity role of money, the Principals of effective demand and on the savings function respectively, the transition of savings to investments and multiplication effect. Harrod begun from the accelerator principle and Dommar started from the multiplication effect but eventually they came to the same conclusion that the rate of growth of output is determined jointly by the national savings ratio and national capital output ratio. In economic theory their theory appears as Harrod - Domar Keynesian theory of growth or simply Harrod-Domar growth model. Their model shows through a mathematical equation, the existence of a direct relationship between savings and the rate of economic growth. This can be written as follows:

Y= f(k,s)

Where Y denotes output, k- national capital output ratio and s- national savings ratio.

2.1.4   Neo-classical growth theory

According to this model, the role of technological change became crucial, even more important than the accumulation of capital. This theory dates back to1956, when Robert Solow put forward a formal model that suggested that the key variable in growth is labor productivity: output per worker, i.e how much an average worker in the economy is able to produce. This model assumes that output (Y) is produced using technology (A), physical capital (K), and labor (L). This relationship can be written as follows:

Y= f (A,K,L).

where Y is aggregate output, A is a number based on the current state of technology, K is a quantitative measure of the size of the stock of manufactured capital, and L the quantity of labor used during that period of time. K, A and L are the only factors of production explicitly included in the model. All factors are needed for the production of output, with the exponents in the equation reflecting their relative contributions. An increase in growth output results from increases in production factors (physical capital and labor) and productivity, which rises as a result of technological change, including changes in organization and practices.

This model has three important predictions. First, increasing capital relative to labour creates economic growth, since people can be more productive given more capital. Second, poor countries with less capital per person will grow faster because each investment in capital will produce a higher return than rich countries with ample capital. Third, because of diminishing returns to capital, economies will eventually reach a point at which any increase in capital will no longer create economic growth. This point is called "steady state". An increase in government expenditure means that there has been an increase in government acquisition of goods and services for current or future use. However, this increase is justified if it emanated from an improvement in health services and education, as they are believed to be the most important investments in human capital. This study will tend to adopt this theory. Considering the fact that if public debt is borrowed for financing education, health and development investments, it is considered to be productive and expected to positively contribute to economic growth through improved capital, labour and technology. This will result to an increase in government spending.

So instead of having the function **Y=f (A,K,L)** now the function will be written as:

RGDPgr= f (DD,ED,GE,INF)

Where RGDPgr is real gross domestic product growth rate, DD is domestic debt, ED is external debt, GE is government expenditure and INF is inflation.

2.1.5   Theories of public debt and economic growth

2.1.5.5   *Traditional (Keynessian) theory of public debt*

In the traditionalist theorist view, an increase in government debt is a burden on the economy. And an increase in government spending is an expansionary fiscal shock to the economy which is shown in figure 2.1. An increase in government spending results to contraction of public debt if the country's revenue fail to meet the spending which in turn results to an increase in demand of goods and services, this is due to the fact that there will be more money in the economy chasing few goods and services. The increased demand for goods and services, in view of sticky prices in the short run, will raise output and

employment. As the marginal propensity to consume is higher than the marginal propensity to save, the increase in private savings falls short of the government de-saving. Real interest rate would rise in the economy encouraging capital inflow from abroad.
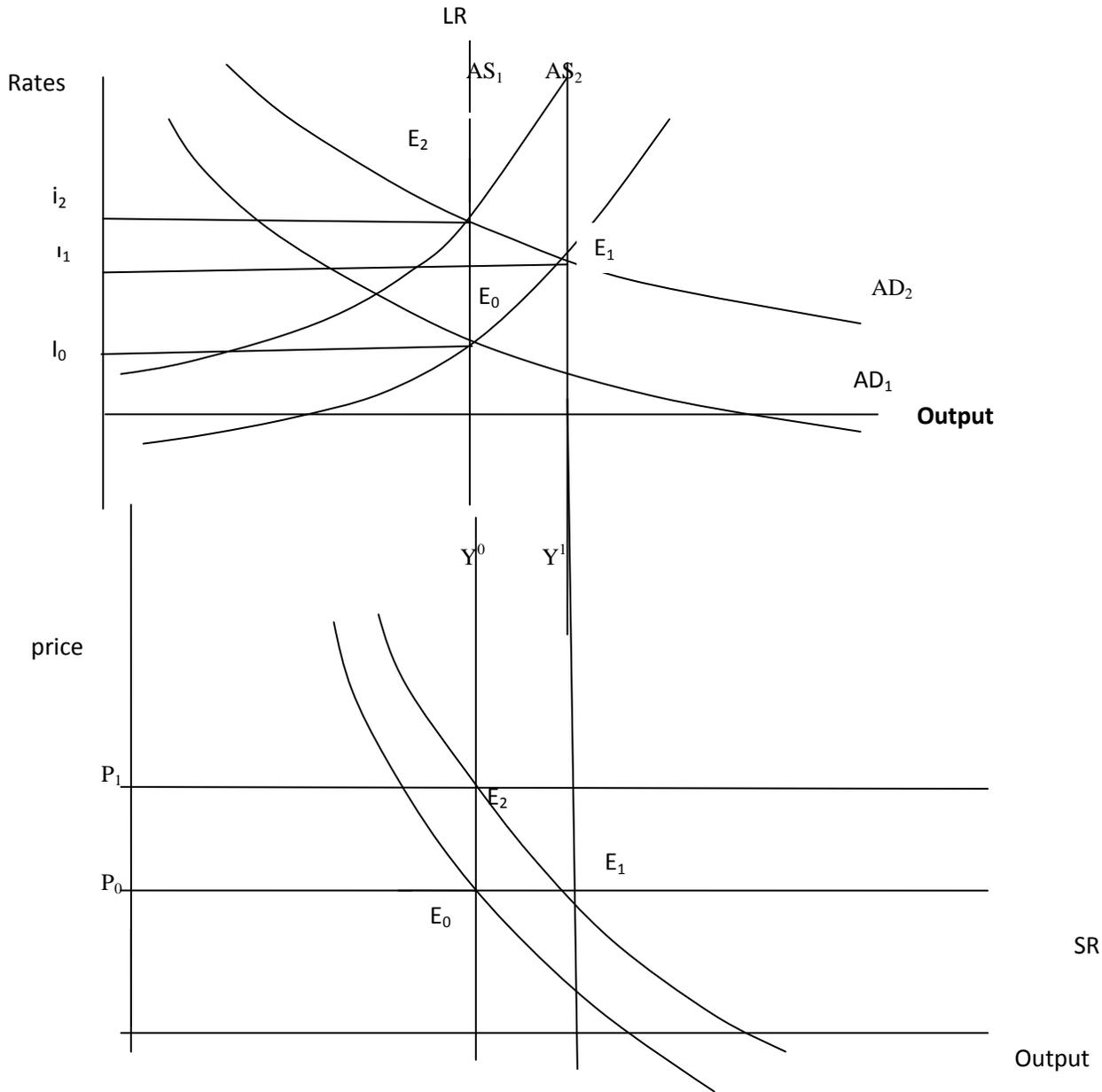
When looking at figure 2.1, interest rates rose from i_0 to i_1 and commodity prices remain constant in the short run. An increase in capital inflows implies that more foreign direct investment will be experienced in the economy; as a result investment level will rise. An increase in investment level will result to an increase in savings, which will result to an in increase in aggregate demand (output).

On the other hand, in the long run output remains constant as it has to adjust back to its natural rate of output. Prices will increase in the long run as figure 2.1 shows that prices will increase from P_0 to P_1. Interest rate will increase even further from i_1 to i_2, as a result these high interest rate would discourage investment and thus crowd out private investment. Therefore, the overall impact when considering the long run period, would be smaller total output and eventually lower consumption and reduced economic welfare. This is also referred to as the burden of public debt.

2.1.5.2 Ricardo Theory of public debt

Among the not so many theories on public debt there is the Ricardo theory of public debt. In his Principles, Ricardo premised the treatment of public debts by a statement that the ordinary and extra-ordinary expenditures of the State were chiefly payments made to sustain unproductive labourers and he pointed out that any saving from the expenses of the Government would "be added to the income if not to the capital of the contributors. So convinced was Ricardo of the wastefulness of public expenditure that, in a letter to McCulloch in 1816, he showed great concern lest his writings should be construed as giving encouragement to ministers to be profuse in the public expenditure''.

Ricardo's theory of public loans then was based on an emphasis of the fact that the primary burden to the community was derived from the wasteful nature of public expenditure itself rather than from the methods adopted to finance such expenditure. Regarding the question of financing public expenditure his view was that the requisite funds would ultimately have to be drawn from the liquid resources of the community and that "in point of economy" it would make no great difference whether such funds were raised by taxes or by loans.

According to Ricardo payments of interest on public debt involved a transfer of wealth from one pocket to another within the community. Those who received the transferred wealth might either " employ it productively " or " squander it unproductively "; whether in actual fact they would employ it more productively or less productively than those from whom the wealth was transferred Ricardo did not know; nor did he think that a government could arrive at a true decision on such a question. It appeared to him unprofitable to speculate at length as to which of these possibilities was the more likely to be true; accordingly, though he showed his awareness of the possibility of deviations one way or the other from his hypothesis and though he would no doubt have been willing to learn from experience, he treated the problem of public debts on the assumption that the different sets of individuals concerned would use the interest payments in an equally profitable manner.

2.1.5.3 Theory of Government expenditure and economic growth

Government expenditure is government acquisition of goods and services for current or future use (Shim, 2003). The relationship between government spending and economic growth is very important for developing countries most of which have experienced increasing levels of public expenditure over time. Everything else held constant, government consumption will increase GDP since it contributes to current demand. However, there is also a negative effect since increased public expenditure needs to be financed. Financing public expenditure is done through taxes or by borrowing.

Mitchell, (2005) notes that policy makers are divided as to whether government spending helps or hinders economic growth. advocates for increased Government spending argue that government programs provide valuable " public goods" such as education health facilities and infrastructure. They also claim that an increase in government can bolster economic growth by putting money into people 's pockets.

Proponents of smaller government expenditure have the opposite view. They explain that higher government spending undermines economic growth by transferring additional resources from the productive sector of the economy to government, which uses them less efficiently. This is called the crowding out effect on private sector investment. On the other hand, public expenditure might also have a positive effect onto interest rates, which in turn can decrease investment.

Mitchell (2005) conducted a study aimed at investigating the impact of government spending on economic performance in the United States of America. He concluded that a large and growing government is not conducive to better economic performance. He also noted that indeed, that there are circumstances in which lower levels of government spending would enhance economic growth and other circumstances in which higher levels of government spending would be desirable. It is assumed that if government spending is zero, presumably there will be very little economic performance. He further noted that economist will generally agree that government spending becomes a burden at some point, either because government spending becomes too large or because outlays are misallocated. However, Studies such as (Barro 2003), (Easterly and Levin 2001) indicate that the relationship between government spending and economic growth is negative.

2.1.5.4 *Theory of Inflation and economic growth*

Inflation might be brought about by government borrowing. When government brings more money into the economy, demand for goods and services will go up. To meet this demand prices of goods and service has to go up to equilibrate the market. Moreover, inflation and economic growth are two of the most important and most closely watched macroeconomic variables. High inflation rate is a very common phenomenon in most developing countries, Swaziland inclusive. The evidence suggests that mild inflation, between 5% and 8%, is positively beneficial to growth. After that, the effects of high inflation can be seriously damaging (Thirlwall, 1994).

Inflation can lead to uncertainty about the future profitability of investment projects leading to more conservative investment strategies than would be the case, ultimately leading to more conservative investment strategies that would be otherwise be the case, ultimately leading to lower levels of investment and economic growth. Inflation could be perceived as an indicator of macroeconomic instability. In both cases De Gregoria (1993) found evidence of a negative relationship between inflation and economic growth. (Barro,1996; Easterly and Levine,1993) however Bruno and Easterly (2001) were unable to find a long run relationship between inflation and economic growth.

2.2 *Empirical Evidence*

2.2.1   Public Debt and economic growth

Public debt is the domestic and external debt obligation of a nation. This is debt that is borrowed to finance the economy's budget deficit.Panizza and Presbitero (2013) made a survey about the recent literature on the links between public debt and economic growth in advanced economies. They found out that theoretical models yield ambiguous results. Their reading of the empirical literature is that there is no paper that can make a strong case for a causal relationship going from debt to economic growth. They also found out that the presence of thresholds and, more in general, of a non-monotone relationship between debt and growth is not robust to small changes in data coverage and empirical techniques.

Egert (2012) contributed to this literature by putting a variant of the Reinhart-Rogoff dataset to a formal econometric testing by first using the thresholds proposed by Reinhart and Rogoff (2010) and then

identifying the thresholds endogenously on the basis of the testing procedure proposed by Hansen (1999) for the period 1790 to 2009 and 1946 to 2009. The Author then embed the growth-debt relationship in a general multivariate growth framework and combine it with Bayesian model averaging to gauge the impact of model uncertainty on the presence of threshold effects for 1960 to 2010. The author found some evidence in favour of a negative nonlinear relationship between debt and growth. The study also shows that nonlinear effects are likely to kick in at much lower levels of public debt (between 20% and 60% of GDP). These results, based on bivariate regressions on secular time series, are largely confirmed on a shorter dataset (1960-2010) when using a multivariate growth framework that accounts for traditional drivers of long-term economic growth and model uncertainty.

Cecchetti, Mohanty, and Zampolli (2011) carried a study on the real effect of debt in 2011; the study used a new dataset that included the level of government debt, non-financial corporate and household debt in 18 OECD countries from 1980 to 2010. They found out that advanced countries with high debt must act quickly and decisively to address their looming fiscal problems. The longer they wait, the bigger the negative impact will be on growth, and the harder it will be to adjust. Researchers in the likes of Panizza and Presbitero (2013), Cecchetti, Mohanty, and Zampolli (2011) and Egert (2012) have found out that there is a negative relationship between public debt and economic growth.

2.2.2 External debt and economic growth

External debt is the external debt obligation of the country. Shabbir (2013) explored the long run relationship between external debt and economic growth in developing economies, by using a sample of 70 developing countries over a period of 1976-2011. The study found that an increase in external debt stock reduces the fiscal space to service external debt liabilities and thus dampens the economic growth. Moreover, it reduces the level of private fixed capital formation in the country. Exploring the role of investment towards economic growth, the study found that both the foreign direct investment and the fixed capital formation help these economies to grow, while openness contributes to the welfare of the developing economies.

External debt is the portion of a country's debt that was borrowed from foreign lenders including commercial banks, governments or international financial institutions. These loans, including interest, must usually be paid in the currency in which the loan was made. In order to earn the needed currency, the borrowing country may sell and export goods to the lender's country. Umaru, Hamidu, and Musa (2013)investigated the impact of external debt, and domestic debt on economic growth in Nigeria between the period from 1970 to 2010 through the application of the Ordinary Least Square (OLS) method to establish a simple relationship between the variables under study.The results of OLS revealed that external debt possessed a negative impact on economic growth while domestic debt has impacted positively on economic growth (GDP).

A good performance of an economy in terms of per capita growth may therefore be attributed to the level of domestic debt and not on the level of external debt in the country; therefore external debt is seen as inimical to the economic progress of a country. The paper found that domestic debt if properly managed can lead to high growth level.

Aminu and Anono (2012) conducted a study on external debt and economic growth relationship in Nigeria and found that external debt impacted positively on the growth of the economy within the period under review. And that external debt does not cause GDP, but the flow of causation runs from GDP to external debt. Ogunmuyiwa (2011) examined whether external debt actually promotes economic growth in

countries using Nigeria as a case study. Time series data from 1970-2007 was fitted into a regression equation using various econometric techniques such as Augmented Dickey Fuller (ADF) test, Granger causality test, Johansen co-integration test and Vector Error Correction Method (VECM). Empirical results reveal that causality does not exist between external debt and economic growth as causation between debt and growth was also found to be weak and insignificant in Nigeria.

2.2.3   Domestic Debt and economic growth

Domestic debt is the internal debt obligation of a country. This is in form of T-bonds and T-bills and other instrument. Maana, Owin, and Mutai (2008) analysed the development in public domestic debt in Kenya and its impact on the economy for the period 1996 to 2007. The study found out that the composition of Kenya's public debt has shifted in favour of domestic debt while considerable progress has been made in extending the maturity profile of the debt, and diversification of the investor base towards institutional investors and individuals. The significant rise in domestic debt during the period resulted in higher domestic interest payments which present a significant burden to the budget. However, due to a considerable level of financial development in Kenya, the study found no evidence that the growth in domestic debt crowds-out private sector lending in Kenya. The study also examined the effect of domestic debt on real output by using a modified Barro growth regression. The results indicate that domestic debt expansion had a positive but not significant effect on economic growth during the period.

Singh (1999) investigated the relationlship between domestic debt and economic growth. The traditional view considers that in the long run, domestic debt has a negative impact on economic growth while the Ricardian equivalence hypothesis implies the neutrality of domestic debt to growth. In India, domestic debt has been incurred mainly on the coinsideration that it shall be used for investment purposes. The issue was empirically examined using the cointegration test and the Granger causality test for India over the period 1959-95. Cointegration and the Granger causality tests supported the Ricardian equivalence hypothesis between domestic debt and growth.

2.3 Conceptual Framework
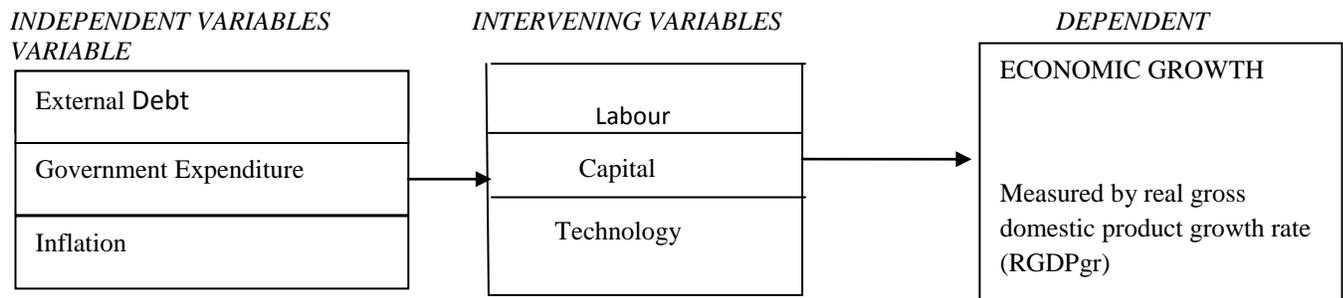
2.4 Research gap

Literature on the effects of domestic and external debt on the economy of Swaziland, and Africa in general, is scanty as most studies have largely focused on developed countries. Furthermore, most studies on public debt and economic growth have typically focused on external debt and tend to forget about domestic debt. This study aims at filling this gap by using the most recent data to analyse the impact of external and domestic debt on Swaziland's economy. Most Studies have concentrated much on either of them but not all. In addition to that most studies have failed to incorporate the fact that there are other macroeconomic variables that are brought about by debt increase, which affect economic growth. This

study aims at filling this gap by adding government expenditure and inflation as extra macroeconomic variables to the model.

3.   RESEARCH METHODOLOGY

3.1   *Introduction*

This chapter discusses the research methodology that was used in the study. It encompasses the research design, target population, data collection technique, model specification, data analysis and presentation of results, ethical consideration and limitations of study.

3.2   *Research Design*

Creswell (2003) defines a research design as the scheme, outline or plan that is used to generate answers to research problems. It is an arrangement of conditions for collection and analysis of data in a manner that is relevant to the purpose of the research. The method of study adopted in this study is casual relationship research design. According to Cooper & Schindler (2006), the concern in a casual analysis is on how one variable affects or is responsible for changes in another variable. Further, Dooley (2007) notes that a research design is the structure of the research; it is the glue that holds all the elements in a research project together. The research will use secondary data which in this context will be suitable in explaining the relationship between the variables included in the model. The neoclassic economic growth theory or Robert Solow growth model informs the study.

3.3   *Target Population*

The study focused on time series data for five macroeconomic variables for the period from 1988 to 2012. . Mugenda and Mugenda (2003), explain that the target population should have some observable characteristics, to which the researcher intends to generalize the results of the study.

3.4   *Research Methodology*

Data Source:

The study used annually time series data from 1988-2013 which translates to 26 observations. Data for public external debt, public domestic debt, inflation and government expenditure was obtained from the Central Bank of Swaziland (2013). While data for real gross domestic product was obtained from World Bank economic indicators website.

3.5   *Preliminary data analysis*

Before subjection of the data to a regression analysis, a descriptive statistics test was conducted to provide a general view of the distribution and behavior of the variables in use. This entails showing trends of the variables in form of tables, graphs, and charts. Residual test for normality of the data series was conducted and the Jacque Bera coefficient and its p-value were observed for significance. Since the study employed time series data, the test for stationarity and the order of integration was necessary as a result Kwiattkowski-Phillips-Schmidt-Shin Statics - (KPSS) tests was employed.

3.6   *Model specification*

After adoption of the Solow growth model, the following equation was derived;

RGDPgr =f (LNExD, LNDoD, LNGE, INF)……………………………………Equation 3.1

Every variable in this function was tested for stationarity. All the variables were found to be integrated at level I(0), then the regression model was ran as follows:

$$\textbf{RGDPgr}_t = \beta_0 + \beta_1 \textbf{LNExD}_t + \beta_2 \textbf{LNDoD}_t + \beta_3 \textbf{LNGE}_t + \beta_4 \textbf{INF}_t + \varepsilon_t \dots\dots\dots\dots\dots\textbf{Equation3.2}$$

Where,

RGDPgr_t = Real Gross Domestic Product growth rate at time t

LNExD_t = Natural log of External Debt at time t

LNDoD_t = Natural log of Domestic Debt at time t

LNGE_t = Natural Log of Government Expenditure at time t

INF_t = Inflation at time t

t = time

ε_t = the error term assumed to be normally and independently distributed with mean zero and constant variance.

β_0 = captures all other explanatory variables which affect growth, but are not captured in the model

$\beta_1, \beta_2, \beta_3, \beta_4$, are the coefficients of economic growth with respect to LNExD, LNDoD, LNGE and INF respectively.

Since all the variables were found to be integrated at level I(0), the model specified above was used to do the analysis of the study.

Model assumptions

Ordinary Least Square and time series models are solely based on the assumptions of normality, linearity, homoscedasticity, no multicolinearity and stationarity. Time series linear models assume that the underlying time series data is stationary. Regression of non-stationary time series data is likely to give spurious results (Demirbas, 1999).KPSS test is used to test for stationarity.

4. EMPIRICAL RESULTS AND DISCUSSION

4.1 Introduction

This section covers the empirical analysis of the sampled secondary data for the variables under consideration in this study. The data was tested for, normality, stationarity for the variables and the residual, correlations, autocorrelation, and cointegration. This was followed by the regression analysis and granger causality tests for the same sample covering the period 1988-2013

4.2 Descriptive Statistics and normality test

When analyzing time series data the initial step is to investigate whether the variables under study are normal distributed. To test for normality of the variables, descriptive statistics were checked putting keen interest on the Jargue-Bera probability. The concern of the researcher was on the measures of central tendency that comprises of the mean, median, and the mode as well as the measures of variability or

dispersion that comprises of standard deviation (or variance), the minimum and maximum variables, kurtosis, skewness and also the Jargue-Bera statistics. When using the Jargue-Bera test a null hypothesis of normal distribution was tested against the alternative hypothesis of non-normal distribution. For normal distribution the JB statistic is expected to be statistically indifferent from zero thus:

H_0: JB = 0 (normally distributed)

H_1: JB ≠ 0 (not normally distributed)

Rejection of the null for any of the variables would imply that the variable is not normally distributed and a logarithmic transformation is necessary.

Table 4.1 Descriptive Statistics

	INF	LNDOD	LNEXD	LNGE	RGDPGR
Mean	8.00	2.26	3.18	3.46	3.62
Median	8.21	2.00	3.35	3.50	2.75
Maximum	14.20	3.50	3.57	4.18	14.60
Minimum	3.40	1.41	2.73	2.55	0.20
Std. Dev.	3.62	0.65	0.30	0.47	3.40
Skewness	0.07	0.45	-0.35	-0.32	2.15
Kurtosis	1.76	2.05	1.41	2.07	7.06
Jarque-Bera	1.70	1.85	3.27	1.40	37.93
Probability	0.43	0.40	0.19	0.50	0.00
Sum	246.90	58.85	82.64	89.84	94.22
Sum Sq. Dev.	327.45	10.49	2.27	5.43	288.30
Observations	26	26	26	26	26

Table 4.1 presents the results of descriptive statistics of all the variables for the period 1988-2013. Table 4.1 shows that the distribution JB probabilities for LNEXD is 0.19, LNDOD is 0.40, LNGE is 0.5, RGDPgr is 0.00 and INF is 0.38 (for a normal distribution, probability should be greater than 0.1). Therefore all the explanatory variables which are LNEXD, LNDOD, LNGE, and INF are normally distributed whereas the dependant variable which is RGDPgr (probability=0.00) is not normally distributed. Therefore we conclude that all the independent variables (i.e LNEXD,LNDOD,LNGE, and INF) in our study are normally distributed since they all have JB probabilities that are greater than 0.1. Moreover a histogram of residuals was used to provide a graphical presentation of the behavior of the random variables for estimation. Figure 4.1 shows that the residuals are normal distributed with Jargue-Bera coefficient of 1.89 and a probability value of 0.389 thus the study failed to reject H_0 and concluded that the data is normal distributed.

4.3   Stationarity

The importance of the concept of stationarity arises from the fact that virtually all the entire body of statistical estimation theory is based on asymptotic convergence theorems i.e., the weak law of large numbers, which assume that all data series are stationary. In real life, however, non-stationarity is extremely common in macroeconomic time series data. Treating non stationary series as if they were stationary will bias the Ordinary Least Squares (OLS) and thus result in misleading economic analysis. For example, the model will systematically fail to predict outcomes and can also lead to the problem of spurious (misleading) regressions where R-squared is approximating unity, t and F-statistics look significant and valid.

For that reason, when estimating a model that includes time series variables, there is a need to make sure that all time series variables in the model are stationary or they are cointegrated, which means that they are integrated of the same order and error term or residual is stationary, in which case the model defines a long run equilibrium relationship among the cointegrated variables. Therefore, a cointegration test generally takes two steps. The first step is to conduct a unit root test on each variable to find the order of integration. If all variables are integrated of the same order, the second step is to estimate the model, also called a "cointegrating equation," and test whether the residual of the model is stationary. If the time series data is non-stationary and y_t is differenced d times before it became stationary, then it is said to be integrated of order d. We write $y_t \sim I(d)$. So if $y_t \sim I(0)$ then $\Delta dy_t \sim I(0)$.

An I(0) series is a time series that is stationary at level. An I(1) series contains one unit root and is a time series that is stationery at first difference. If the variables in the regression model are non-stationary, that is, not integrated of the same order, then, the analysis will call for the error correction model to be run. But if stationary, that is, integrated of the same order, then, OLS analysis have to be undertaken.

Table 4.2 Unit Root Test

KPSS Unit root for sample period 1988-2013					
At Level with intercept					
Variable	**KPSS:t-statistic**	**1%**	**5%**	**10%**	**Remarks**
INF	**0.572514**	**0.739**	**0.463**	**0.347**	**stationary I(0)**
LNDOD	**0.708928**	**0.739**	**0.463**	**0.347**	**stationary I(0)**
LNEXD	**0.688184**	**0.739**	**0.463**	**0.347**	**stationary I(0)**
LNGE	**0.717442**	**0.739**	**0.463**	**0.347**	**stationary I(0)**
RGDPgr	**0.531991**	**0.739**	**0.463**	**0.347**	**stationary I(0)**

According to figure 4.2, all the variables are integrated at order zero i.eI(0). This means that the variables in this series are all stationery at 1% significant level with intercept and no trend and this is shown in appendix ii. This allowed the researcher to do away with the error correction model and instead use the OLS model to run the regression analysis.

4.4   Cointegration

Since the variables were all stationary, there was no need for co-integration test.

4.5   Autocorrelation and Heteroscedasticity

The variables were assumed to be having no autocorrelation as well as heteroscedasticity because all variables were found to be integrated at the same order I(0), this meant that the variables have constant moments, thus constant mean, variance and covariance.

Table 4.3 Autocorrelation

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.63526	Prob. F(2,20)	0.5402
Obs*R-squared	1.551657	Prob. Chi-Square(2)	0.4603

Since chi-square probability is greater than the levels of significant it means that there is no autocorrelation.

4.6   Multicollinearity (correlation) Analysis

The correlation analysis is a statistical technique employed to analyze the relationship between the dependent variable and independent variable. It shows the direction of growth given by the sign attached to coefficient (the negative shows inverse relationship and the positive shows a direct relationship). The test also shows the growth rate of the independent variables when the dependent variable is assumed to grow at one percent. The analysis tests for possible degrees of multicollinearity.

Table 4.4 Correlation matrix

	RGDPGR	LNDOD	LNEXD	LNGE	INF
RGDPGR	1				
LNDOD	0.524019	1			
LNEXD	-0.606081	0.791066	1		
LNGE	-0.672617	0.800003	0.790582	1	
INF	0.595202	-0.522066	-0.72446	-0.671184	1

The correlation matrix shows that all the variables are not higly correlated in relation to RGDPR (for high correlation, the coefficients are above 0.8). It is evident that LNEXD,LNGE and GDP are

inversely correlated (note the negative sign) while LNDOD and INF are directly correlated (note the positive sign) to GDP. This outcome gave the researcher the green light to run the OLS model.

4.7   Testing the OLS Model and Intepretation of Results

The tests determines the impact independent variables have on the dependent variable by analysing the results of the model. In this study, the test will determine the impact of the natural logarithms of, external debt (EXD), domestic debt (DOD), government expenditure(GE), and inflation(INF) on economic growth (RGDPgr).

4.8 Table 4.5 OLS Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17.7952	9.449465	1.883196	0.0736
INF	0.104885	1.176673	1.959366	0.0559
LNDOD	3.308524	1.503206	2.200978	0.0391
LNEXD	7.485537	4.543426	1.647554	0.1143
LNGE	-13.44237	3.455178	-3.8905	0.0008
R-squared	0.661041	Mean dependent var		3.623846
Adjusted R-squared	0.596477	S.D. dependent var		3.395866
S.E. of regression	2.157171	Akaike info criterion		4.546514
Sum squared resid	97.72112	Schwarz criterion		4.788455
Log likelihood	-54.10468	Hannan-Quinn criter.		4.616184
F-statistic	10.23859	Durbin-Watson stat		1.964625
Prob(F-statistic)	0.000093			

An examination of the econometric result shows that the overall fit was 60 percent. This means that 60 percent of the change in economic growth is well explained by the independent variables.

Results on effects of inflation on economic growth

Table 4.5 shows that inflation is an important determinant of economic growth at 10% significance level (p-value =0.0559 < 0.1). Since the coefficient of inflation is positive, it means that it has a direct relationship with economic growth. This implies that a change in inflation has a potential of spurring economic growth in Swaziland. A unit increase of inflation in Swaziland which is within the single digit range might bring about 0.1 percent change in economic growth. This is in contrary with studies carried by (De Gregoria, 1993) and (Barro,1996; Easterly and Levine,1993) which showed that inflation has an inverse relationship with economic growth, However, the study is in line with (Thirlwall, 1994) who suggested that mild inflation, between 5% and 8%, is positively beneficial to growth. After that, the effects of high inflation can be seriously damaging. In accordance to this study inflation levels with a mean of 9.0 is not harmful to the economy of Swaziland because it does not retard economic

growth. This is because Swaziland has not yet experienced high levels of inflation that might be harmful to the economy as it has tried to keep a single digit figure of inflation.

Results on effects domestic debt on economic growth

Domestic debt is an important determinant of economic growth at 5% significance level (p-value =0.0391 < 0.05). It has a positive coefficient which means that it has a direct relationship with economic growth. This implies that an increase in change of domestic debt will spur economic growth in Swaziland. This study is in line with a study done by (Maana, Owin, and Mutai, 2008). However, the Ricardian equivalence hypothesis implies the neutrality of domestic debt to growth which was supported by (Sigh,1999). For the country to have a positive relationship between domestic debt and economic growth, it is because at the beginning of the year 2010, discount rates were at 8.15 percent dropping gradually to a low rate of 6.97 percent in December 2011 before marginally recovering to 6.98 percent in March 2012. This trend was in line with regional developments in interest rates as Central Banks lowered rates to counter the effects of economic slowdown. By so doing the central bank made sure that government borrowing does not crowd out private investments, in order to spur economic growth. On the other hand this implies that the private sector has idle money and government must continue borrowing these funds in order to stimulate economic growth in Swaziland.

Results on effects of external Debt on economic growth

Although external debt has a positive coefficient, it is not an important determinant of economic growth at 10% significance level (P-value=0.1143 > 0.1). This implies that it has negligible or very small impacts on economic growth. This might be that most external loans had been contracted to build roads and health facilities, which will take some time for the country to realize the benefits while on the other hand these loans are paid over a long period of time which doesn't put much pressure on the economy as some of these loans are still on grace period.

Results on effects of government expenditure on economic growth

Government expenditure is an important determinant of economic growth at 5% significance level (p-value = 0.0008< 0.05). It has a negative coefficient which means that it has an inverse relationship with economic growth. This implies that an increase in change of government expenditure brings about 13.44 percent decrease in economic growth, which means that government spending in Swaziland retard the economic development of the country. This is because about 80 percent of government spending is mostly directed to recurrent spending which is considered to be unproductive. For 2010/11fiscal year, the budget deficit was estimated to be 13 percent of GDP. This position was highly unsustainable which resulted in the increase of public debt and at the same time it led to a run down on the country's foreign reserves, a development that had serious implications on the country's economy. The study concurs with studies that were undertaken by (Barro 2003) and, (Easterly and Levin 2001) which indicated that the relationship between government spending and economic growth is negative.

5. CONCLUSION, SUMMARY AND POLICY RECOMMENDATIONS

5.1 Introduction

This chapter consists of the summary of the major findings, conclusion and policy recommendation.

5.2 Summary of findings

The study was designed to show how domestic debt, external debt, inflation and government expenditure affect economic growth in Swaziland. The results show a positive relationship between domestic debt, external debt and inflation, while on the other hand government expenditure is negatively related to economic growth. This means that a significant portion of government expenditure has been directed to non growth oriented investments and ineffectively utilized, while on the other hand public debt and inflation has a positive impact to the economy.

5.3   Conclusion

The first objective of the study was to measure the effect of domestic debt on economic growth in Swaziland. The findings revealed that domestic debt is an important determinant of economic growth such that an increase in change of domestic debt will spur economic growth of the nation. This means that domestic debt has a positive impact on Swaziland economic growth.

The second objective of this study was to ascertain the effect of external debt on Swaziland's economic growth. The analysis revealed that the impact of external debt was indeed very little and as a result external debt was found not to be an important determinant of economic growth in Swaziland. This means that external debt levels of Swaziland are too low for the country to feel their impact on the economy.

The third objective of the study was to investigate the effect of Government expenditure on economic growth in Swaziland. The results showed that government expenditure is an important determinant of economic growth in Swaziland. Government spending has a negative impact on Swaziland's economy. This means that a big portion of the nation's spending is directed to unproductive and growth retarding activities (i.e recurrent spending). An increase in change of government expenditure brings about 13.44 percent shrink on economic growth in Swaziland.

The last objective of the study was to determine the effect of inflation on Swaziland's economic growth. The analysis showed that inflation has a positive impact on economic growth of the country. Inflation around the mean of 8.0 does not retard the growth of the country's economy, as it is the country's policy to keep single digit inflation.

5.4   Recommendation

Following the conclusions drawn above from the study, it is recommended that the government of the beautiful kingdom of Swaziland should put in place policies that aim at ensuring a sustained low inflation level that should be pursued in order to sustain its economic growth. It is necessary for the nation to manage its inflation to a single digit as per the country's inflation policy because such inflation does not retard the nation's economic growth. On the other hand government domestic borrowing can be increased to finance growth enhancing investments, because this study has proved that an increase in change of domestic borrowing will result in an improvement of the nation's economy. The nation still has a space to borrow if that borrowing will be directed to growth spurring projects. Policies guiding the use of public

funds must be in place to make sure that government spending is mainly directed to activities that will enhance economic growth. Government must direct it's spending to productive sectors that will boost the economy such as education, health, agriculture, rural development and infrastructure development.

5.5   Suggestion for further research

Further research needs to be conducted to determine other macroeconomic variables which determine economic growth in Swaziland. Further research could be undertaken to examine how Government domestic borrowing influence government expenditure. Another area for further research that could be carried out is to determine the threshold level of inflation beyond which it begins to adversely affect GDP growth. Lastly, for further research a study could be carried to determine the maximum level of domestic debt in Swaziland that can still spur economic growth.

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Appendix 1: Histogram of Residuals

Series: Residuals	
Sample 1988 2013	
Observations 26	
Mean	5.55e-16
Median	-0.066119
Maximum	4.830637
Minimum	-3.543898
Std. Dev.	1.977080
Skewness	0.657829
Kurtosis	3.106947
Jarque-Bera	1.887596
Probability	0.389147