EXTERNAL DEBT STOCK AND ECONOMIC GROWTH
IN SOMALIA (1991-2016)

BY

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DECLARATION

I ABDISAMAD MOHAMED FARAH hereby declare that "This research dissertation is my original work and has not been presented for a degree or any other academic award in any university or institution of learning".

Signed .......................... Date:.................................
APPROVAL
This research dissertation entitled “External Debt Stock and Economic Growth in Somalia (1991-2016)” is hereby approved by Kampala International University, under the authority of my supervision, as a creditable study of research topic and has been presented in a satisfactory manner to warrant its acceptance as prerequisite to the degree for which it was submitted.

Approved by University Supervisor

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Signature: ........................................................................................................

Date:........................................................................................................
DEDICATION

"I don’t want to have to carry fire-woods in my entire life. But at the moment I have no choice because we are so poor. All of us children carry woods to help our mother and father buys food for us, but I would prefer to go to school just like other kids and later become a medical doctor to help the needy people in the world”. Said by a young Somali girl whose home was demolished by floods, with a voice heavy with pain and sorrow. That is the right response. What can be more important? I dedicate this research dissertation to her and to the millions of African children whom their dreams were shattered by the traps of poverty, corruption and civil wars. You will never walk alone.
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LIST OF ACRONYMS/ ABBREVIATIONS

ADF African Development Fund
ARDL Auto-Regressive Distributed Lag
BCC British Chambers of Commerce
CS-DRMS Commonwealth Secretariat Debt Recording and Management System
ECT Error Correct Term
FGS Federal Government of Somalia
HIPC Heavily Indebted Poor Countries
HDI Human Development Index
IMF International Monetary Fund
IDA International Development Association
LDCs Least Developed Countries
LICs Low Income Countries
OLS Ordinary Least Countries
SSAC Sub Saharan African Countries
UN-DESA United Nations Department of Economic and Social Affairs
UNCTAD United Nations Conference on Trade and Development
UNDP United Nations Development Program
VAR Vector Auto-Regressive model
VECM Vector Error Correction Model
ABSTRACT

For the fact Somalia has an projected 5.5 billion dollars unresolved, due to many reasons, but the socio-economic pointers of the country show that it has donated a little or almost nothing to the complete GDP, and continues to decrease. This report was guided by two major specific objectives and they were; to find out the long run bond between the external debt stock and economic development in Somalia (1991-2016), to determine if there is a short run effect of external debt stock on economic growth in Somalia (1991-2016). The study was carried out using secondary data spanned from 1991 to 2016. Augmented Dickey-Fuller (ADF) and Phillip Perron (PP) quizzes were conducted on all variables in the study in which all of them were seemed to be stationary in first difference. Co-integration outcomes of Trace and Maximum Eigen-value presented that there is a long run relationship between external debt stock and economic growth in Somalia for the period 1991-2016. An Error Correction Model (ECM) encompassing all the variables was developed to help assess how external debt stock impact economic growth in the short run, it displayed that external debt stock negatively touches the economic growth. This indicates that when external debt increases economic growth diminishes. Therefore, the study decided that, the problem of high external debt stock is related with insufficient debt organization; borrowing for social and political reasons; poor presentation of export sector to increase foreign exchange pays; and lack of transparent loan sequences to make projects contest for the uncommon resources. Based on the aforementioned results, the study indorses that the government should extra promote the balanced and proper operation of resources, while cumulative the concessionality of newly learnt debt inflows. To this end, events should be taken to inspire non-borrowed funds, such as Foreign Direct Investment (FDI), portfolio investment and non-government certain private debts. Finally, in order to mitigate the crowding out effect of external debt, Somalia should strive to benefit from additional debt reduction schemes, and vigorous pursuit of an export expansion policy. This study contributes that complete avoidance of external debt as a means of financing budget deficits is not the case. As a matter of fact, given the low level of economic growth in Somalia caused by the low levels of income and the generally high incidence of poverty, the country has few prospects to source sufficient resources for development internally. This provides a sound argument for a conscious and carefully planned schedule of acquisition, deployment and retirement of foreign loans contracted for development projects.
CHAPTER ONE
INTRODUCTION

1.1 Background to the Study
1.1.1 Historical Perspective

Globally, during the three decades beginning in the 1950s, widening in the savings-investment gap was considered normal. Countries were not bothered to borrow from overseas to build an economy which is conducive to foreign investors. Unfortunately, in the process, little consideration was given to the negative side of the current account deficit which amplified the foreign indebtedness of these countries.

In Africa, 2011-2013, the annual average external debt stock of Africa stood at $443 billion (22.0 percent of GDP) compared with $303 billion (24.2 percent of GDP) in 2006-2009. However, these broad trends in absolute terms do not reveal the rapid rise of external debt levels in several African countries in recent years. As at December 2015, 30 African countries had qualified for debt relief under the Heavily Indebted Poor Countries Initiative and Multilateral Debt Relief Initiative. Three other countries (Eritrea, Somalia and Sudan) were potentially eligible (IMF & World Bank, 2015).

In 2011-2013, external debts to GDP ratios were less than 40 percent in most African countries. For comparative purposes, external debt to GDP in the same period averaged 14.5 percent in East Asia and the Pacific, 22.6 percent in South Asia and 23.7 percent in Latin America and the Caribbean respectively. In the same period, external debt stock amounted to $132 billion (19.5 percent of GDP) among heavily indebted poor countries, compared with $311 billion (31.3 per cent of GDP) among non-heavily indebted poor countries. Seychelles, a non-heavily indebted poor country, is an outlier in Africa, with an external debt-GDP ratio exceeding 200 percent. With regard to external debt stock as a percentage of exports of goods, services and primary income, in the same period, the ratios ranged from 7.2 percent in Algeria, a non-heavily indebted poor country, to 596.8 percent in Sao Tome, a heavily indebted poor country (IMF & World Bank, 2015).

The 2014 current account deficit was estimated at US$644 million (11.3 percent of GDP). Trade consists mostly of exports of livestock to Gulf Cooperation Council countries and imports of foodstuffs from neighboring countries and the Indian subcontinent. The trade and income deficits were US$2,663 million and US$450 million, respectively, partially
covered by remittances of US$1,333 million and other transfers of US$1,137 million. The deficit was financed by foreign direct investment of US$434 million, especially in telecommunications, electricity, and hotels, and donor capital transfers of US$150 million (IMF Article IV, 2015).

In current dollar terms, Somalia’s economy is larger than the economies of the Central African Republic, Djibouti, Burundi, Eritrea, and Malawi. Out of 46 Sub-Saharan African countries, Somalia’s economy ranks 16th from bottom in terms of size. Total GDP estimates imply a per capita GDP of $435, making Somalia the fifth-poorest country in the world (after Malawi, Burundi, the Central African Republic, and Niger). Somalia’s per capita income is 20-40 percent higher than GDP per capita, because massive inflows of remittances allow households to top up own-generated income (used to measure GDP per capita). The recent estimate of Somaliland’s GDP by the World Bank put it at $1.6 billion in 2012. Estimates by the authorities in Puntland estimate its GDP at $1.3 billion in 2010, (African Development Bank, 2015).

1.1.2 Theoretical Perspective
This study will be based on the Dual Gap theory advanced by Chenery 1966, and Debt Over-Hang theory suggested by Krugman 1988. Dual gap theory is a better clarification of the aim why nations opt for external finance as opposite to domestic financing in backing the sustainable development.

Apart from the above explained two theories in which this study will lean on, there are other theories such as Keynesian theory of increasing government activity, uncertainty theory of external debt, liquidity constraint theory and debt laffer curve theory; that can also depict the relationship between the external debt and economic growth thoroughly. These theories are explained under theoretical review in chapter two.

1.1.3 Conceptual Perspective
Individual wants are voracious and the means or resources available for the fulfillment of those wants are limited in their supply (Olukunmi, 2007). Both in country and household levels, the above statement is applicable. To encounter human wants amidst limited resources, nations might route to foreign supplementary. And that creates debt. External Debt is the cumulative of all dues against the state seized by the Global institutions like the IMF & World Bank or by foreign countries, whether interest attached or the reverse,
Economic growth refers to a steady physical increase in a country’s productivity capacity which is identifiable by a sustained increase in a country’s real output of goods and services or real national income overtime (Oyejide et al, 1985). Of more importance is the growth of the ratio of GDP to population (GDP per capita, which is also called per capita income). An increase in growth caused by more efficient use of inputs (such as labor, physical capital, energy or materials) is referred to as intensive growth. Economic growth caused only by increase in the amount of inputs available for use (increased population, new territory) is called extensive growth. In economics, "economic growth" or "economic growth theory" typically refers to growth of potential output, i.e., production at "full employment". The former is primarily the study of how countries can advance their economies. The latter is the study of the economic development process particularly in low-income countries (Galor, 2015).

1.1.4 Contextual Perspective
Somalia is classified by the United Nations as a less developed country. Despite experiencing two decades of civil war, the country has maintained an informal economy, based mainly on livestock, remittance/money transfers from abroad, and telecommunications. Due to a dearth of formal government statistics and the recent civil war, it is difficult to gauge the size or growth of the economy. For 1994, the British Chambers of Commerce (BCC) estimated the GDP at purchasing power parity (PPP) to be $3.3 billion. In 2001, it was estimated to be $4.1 billion.

By 2009, the BCC estimated that the purchasing power parity (PPP) GDP had grown to $5.731 billion, with a projected real growth rate of 2.6%. In 2014, the International Monetary Fund estimated economic activity to have expanded by 3.7 percent primarily driven by growth in the primary sector and secondary sector. According to a 2007 British Chambers of Commerce report, the private sector has experienced growth, particularly in the service sector. Unlike the pre-civil war period when most services and the industrial sector were government-run, there has been substantial, albeit unmeasured, private investment in commercial activities; this has been largely financed by the Somali diaspora, and includes trade and marketing, money transfer services, transportation, communications, fishery equipment, airlines, telecommunications, education, health, construction and hotels. The World Bank reports that Somalia's GDP was $917.0 million in 1990. The United Nations Statistics Division reports a GDP figure of $2.316 billion in 2005 and $1.071 billion in 2010.
compared to $1.306 billion for 2012, and its total population was 10.81 in 2014, and classifies it as a low-income country.

According to the Central Bank of Somalia, sometime in the 2000s the country's GDP per capita according to the World Bank was $226, a slight reduction in real terms from 1990. The 2012 Human Development Report estimates per capita GDP to be $284, compared with an average across sub-Saharan Africa of $1,300 per capita. This GDP per capita figure is the fourth lowest in the world. About 43% of the population lives on less than 1 US dollar a day, with about 24% of those found in urban areas and 54% living in rural areas (World Bank, 2015).

Somalia’s economy is growing again. While accurate data is difficult to attain, it is generally agreed that the economy stagnated during the conflict. Since 2008, however, the best estimates are that growth has returned. The economy grew by 3.7 percent in real terms in 2014, according to IMF (2015). The main sources of growth were in the areas of agriculture, construction and telecommunications. Looking forward, growth is expected to continue. The IMF expects the economy to grow by 2.7 percent 2015 and then hover close to 4 percent in 2016 and 2017. Based on the research described above, this would suggest that the likelihood of increased conflict is reducing.

In 1984, the real growth rate of GDP was approximately 2.3%. Net Growth of cattle socks was below the 1983 rate; in fact, it even fell by 1.1%. Agricultural production improved thanks to good weather conditions, and reached the record growth rate of 10.6%. The production of maize, sorghum and rice, this exceeded the level reached in 1983, whilst the production of sugar cane fell because of lack of energy sources. Economic activity in the manufacturing sector fell by 3% due to the irregular supply of crude oil, technical problems caused a considerable decline in output of refined petrol, whilst, sugar production stagnated as a result of the lack of skilled labor, spare parts and raw materials (World Bank, 2015).

Approximately in 1989, Somalia’s external debt was valued at US$1,774 million, almost twice the value of GDP or nearly 30 times the value of merchandise exports. Of the total debt unsettled, 47 percent was due to multilateral institutions. Somalia’s economic performance worsened rapidly in late 1987 and early 1988 which was the time when the preliminary faces of the civil war were taking shape. The government, after a major reform in December 1987, showed little capacity in clearing with those foreign creditors. Financial policies had drastically fallen apart, the exchange rate became gradually naive, and foreign aid almost ceased. In May 1988, with arrears of SDR27 million (US$33 million; 54 percent of quota)
and no projections for a covenant on an economic program in sight, the executive board of the International Monetary Fund (IMF) declared Somalia unqualified to use Fund resources. The undrawn balance of International Development Association (IDA) credits with the World Bank was also frozen which is up now non-functioning (World Bank, 2015).

From 1990 to 2006, as a consequence of substantial arrears on past debt-servicing obligations, the lack of a fully functioning central government, and the unsound security situation, Somalia neither borrowed nor paid its foreign debt and obligations to at least relief the economy to recover and become home-sustained. Somalia’s total foreign debt at the end of 2004 (public and publicly guaranteed) was estimated at US$3.2 billion, of which probably $2.5 billion was an amount overdue. In which, 40% was owed to joint creditors like IMF & World Bank, 46% to Paris Club bilateral creditors, and 14% to non-Paris Club bilateral and commercial creditors. Furthermore, The Net Present Value (NPV) of the overall debt stock is estimated US$2.9 billion.

1.2 Problem Statement
Galor, 2015 affirmed that countries borrow for two comprehensive reasons; macroeconomic reasons (Savings-Investment gap) or to finance the transitory balance of payments deficits (Imports > Exports) aimed at enhancing economic growth and lessen poverty.

In 2015 Somalia owed an estimated $5.3 billion to multilateral and bilateral creditors. It owes $1.5 billion (28 percent) to international financial institutions, mainly the World Bank, the IMF, and the Arab Monetary Fund. Of this amount, $1.2 billion is accumulated arrears. Somalia also owes $3.8 billion to bilateral creditors accrued during the Cold War era, mainly the United States and the Russian Federation; $2.3 billion to Paris Club members (mainly the United States, the United Kingdom, the Russian Federation, France, Italy, and Japan); and $1.5 billion to non-Paris Club countries (including the United Arab Emirates, Saudi Arabia, and China) (FGS, Ministry of Finance, 2016).

With all that amount of foreign debt still unsettled, the economic indicators of the country seem to be alarming, the debt repayment shifted the attention away from the social sector (i.e.) health sector, boosting education system and etc, to now compensating the accumulated debt. Arrears to external creditors have blocked access to international financial resources to finance reconstruction and reformulation of the economy (FGS, Ministry of Finance, Debt Management Unit, 2015).
1.3 Drive of the study
To investigate the impact of external debt stock on economic growth of Somalia (1991-2016)

1.4 Specific Objectives
i) To examine if there is a long-run relationship between External Debt Stock and Economic growth in Somalia 1991-2016

1.5 Research Questions
i) Is there a long-run connection between external debt stock and economic growth in Somalia 1991-2016?

1.6 Hypothesis
H₀₁: There is no significant long-run relationship between external debt stock and economic growth in Somalia 1991-2016
H₀₂: There is no significant short-run relationship between external debt stock and economic growth in Somalia 1991-2016

1.7.1 Geographical scope
This study was conducted in Somalia by using a time series data of 1991-2016; this is because this horn of African country which is my motherland was experiencing a severe increase in the level of external debt for the last three decades.

1.7.2 Content scope
This study examined external debt stock as an independent variable and economic growth as the dependent variable since the two are to some extent interlinked.

1.7.3 Time Scope
This time span was chosen to cover the period in which the central government of Somalia collapsed, and also marks the beginning of a three-decade civil wars and conflicts which hindered every socio-economic activity, including debt management and control.

1.8 Significances of the Study
This dissertation contributes to fill this research gap by investigating the long-run relationship of external debt to economic growth in Somalia. Empirical evidence of this relationship has important implications for economic growth and investment, formulation of external debt policies and development of the debt management authorities in Somalia. It will, for instance, reveal the magnitude and nature of impact which external debt exert on foreign investment, thereby guide the government borrowing policies, and foreign investors in making direct investment decisions. It will also enrich the existing literature on external debt and economic growth in developing economies and provide reference on the relationship for future studies.

This study is different from Past studies, in a way that those past ones were not embodied on the Somali territory at all; they were just talking about this issue according to the other nations which is not satisfactory because countries differ. This study is also different from past ones in that it reflects the problem of the debt overhang which was designated as EDS\textsuperscript{2} to capture how the foreign debt affects the growth rate of the country in the long run. Due to prolonged wars and civil unrest the issue of foreign debt accumulation had previously received a little attention which has paved the way a burden of 5.3 billion worth debt in which there is no way this war-torn country can withstand. Another contribution of this study is the application of debt overhang theory and two-gap-model, using data for this country.

Methodologically, this study employs The Error Correction Model (ECM) to capture the short and long run impact of external debt on Gross Domestic Product, in which past studies hardly used. The technique involves developing a model from its widespread form (over parameterized) to a specific form (parsimonious). This model was preferred upon the other models like Ordinary Least Squares (OLS) because in this method the researcher was able to determine the speed of adjustment to equilibrium after a shock (ECT\textsubscript{t-1}). In which OLS does not demonstrate.
CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

The study reviews the literature from various scholars on the major variables of the study which includes; theoretical Review, the level of external debt stock in Somalia, the level of economic growth in Somalia, association between external debt stock and economic growth in Somalia and the research gaps.

2.1 Theoretical Review

This study will be guided by two theories; theory of dual gap developed by Hollis Chenery in 1966, and debt over-hang theory of Krugman in 1988, since they provide a good theoretical framework for this research in relation to external debt and economic growth of any country.

To finance its activities a country has a number of options of raising the funds, it can make use of the internal sources such as taxes and fees or it can borrow if the interior source is not adequate to finance the budget deficit. According to the dual Gap theory it explains the reason why any nation should consult with external sources as opposed to domestic financing in achieving the sustainable development (Krugman, 1988).

Dual gap theory has been criticized on two grounds. The theory is criticized either because of its assumed adjustment mechanism or because of its assumptions which have endangered the idea of two separate types of constraints, or both. It is attempted to meet the first criticism by relaxing the assumption regarding saving has been mentioned in this connection. But such modifications do not destroy the existence of the two gaps Metwally & Tamashke,(2015).

As showed by Krugman1988, under his theory, developing countries must give the issue of foreign debts a much interest and attention, since debt overhang has an impact on foreign investment, and therefore economic growth. However, the cause and effect is not a simple matter to establish. Clearly, debt overhang has a considerable effect on the rate of investment, provoking reductions on the greater the overhang.

The theory of debt overhang attentions on the adverse results of external debt on investment in physical capital. First, when external debt reaches a high level, investors lower their expectations on investment returns with the possibility of progressively more distorted taxes
by the government for debt repayment. In this way, high debt discourages domestic and foreign investment incentive and also slows down physical capital accumulation. With the debt-overhang theory, potential private investors prefer to wait for the change of circumstances. Moreover, the investment is more likely to be directed into channels with quick returns rather than into long-run beneficial ones. Thus debt-overhang hinders productivity growth both with low incentive for improvement and resource misallocation (Emenike, 2015).

In most cases the very heavily indebted poor countries, external debt overhang is a major factor in depressing economic growth (Iyoha, 1999). It discourages economic prosperity because these countries lose their attraction to private investors through a very high taxation. Moreover, the repayment of the debts consumes much of the indebted country’s revenue that the possibility to get back to growth paths is weakened. As indicated (Pattilo, C., Poirson, H. & Ricci, L. 2002), even if strong back-up programmes are designed by governments of indebted countries, adverse and negative incentive effects are still experienced on economic progress, because the biggest source of economic growth which is foreign direct investment is jeopardized.

2.1.3 Uncertainty Theory of External Debt

It is generally believed that a large debt burden increases the uncertainty about how much of the outstanding will be actually repaid. The third channel through which a large external debt could affect the economic growth concerns the uncertainty about future aid and resources inflows and about debt service payments, together with their effect on macroeconomic stability. Dangers of non-payment, postponement and defaults are likely to decrease the possibility of future inflows and future lending, while the access to capital markets depend on the perceived sustainability (Chowdary, 1994). This generates an uncertain environment, in which also the government policies and reforms depend on conditional lending and on rescheduling. The outcome is a situation in which the local and foreign investors are likely to be cautious and press the “Waiting” button, because no one can rely on an economy which was blinded by foreign debt obligations in which the last and biggest burden will rest on the shoulders of the investors.

2.1.4 The Liquidity Constraint Theory

The negative impact of debt on growth applies not only through the effect of the stock of debt, but also via the flows of debt payment, which are likely to discourage foreign
The rationale behind the negative impact of debt payment on investment is that, if the debt obligations are expected to be met, the service payment could affect investment decisions, depending on the efficiency of the rescheduling strategy, on the other hand if the debtor country is not expected to pay its debt as a result of unknown rescheduling rule, then investments should not be crowded out. Cohen (1993) presents a theory in which for a country whose nominal debt is so large those creditors cannot commit their rescheduling strategy to follow a given rule, the crowding out effect is proportional to the amount of resources that creditors are able to “tax away” and not to the stock debt. The service of debt is shown to be proportional to the cost of debt repudiation and it crowds out investments for a factor that is equal to the inter-temporal elasticity of substitution.

Since HIPC’s receive net positive resource transfers, the disincentive effect of a large debt burden might be mitigated and the debt service payments are the main determinants of economic growth. Therefore, a decreasing level of debt service is the crucial determinant of investment and economic growth. Cohen calls for more additionality, because his theory shows that both investment and growth are significantly explained by the debt service.

### 2.1.5 Debt Laffer curve theory

This was first introduced by Sachs (1989), he introduced the concept of debt Laffer curve through the theory of debt overhang and the logic behind it was perfected by Krugman (1989), according to these theory external debt could have positive impact on investment and growth (Upward Sloping) but if a country borrows too much and surpass a certain endogenous threshold of the level of debt then it may result to negative impact on economic growth (Downward Sloping). According to Elbadawi et al., (1996) debt Laffer curve also shows that there is an extent at which debt accumulation stimulates growth because as the graph goes upward there will be a point in which taking an extra debt will just diminish the growth of economy.

To encapsulate the implications of the above-explained debt theories we say that a pertinent question to be asked in connection with the issue of debt-growth is whether large amounts of accumulated debt would necessarily lead to lower growth. In this respect, the debt-overhang theory provides a ready answer, demonstrating that if domestic and foreign investors perceive a country’s developing debt to exceed its ability to repay, they will be discouraged from further investment. But on the other hand this theory comes up short to explain thoroughly that shortage of savings is the major determinant of investments and
that is where the issue of external debt now comes in to balance the equation and that is what dual gap theory argues in bridging that gap. However, Keynesian theory of increasing government activity asserts that it is paramount for the governments to intervene the free market economy in such a way that macroeconomic imbalances like inflation and unemployment are addressed, but in doing so the government has to do that by using some parts of its revenue which will in turn cause a budget deficit and force governments to seek help from abroad in form of debts. Nevertheless, uncertainty theory of external debt unlike other theories contends that it is the uncertainty caused by the accumulated debt that diminishes the investment level because the investor is unsure how the prevailing economic situation will be in the unforeseen future. Lastly but not the least, liquidity constraint theory is all about the debt service obligation that can cause crowding out effect on the investment level.

2.2 Conceptual Review
Iyoha, (1999) argues that incurring external debt is not really bad, but the problem arises from mismanagement of such funds. In his view, borrowing is unavoidable because external borrowing is a first order condition for bridging the domestic gap; while the second order condition is that such funds should be invested in viable projects whose rate of return is higher than that of the interest rate on the loan. Furthermore, he asserts that external debt has to be properly managed to serve as an engine for growth and the resources it yields should be prudently and efficiently utilized.

In an attempt to hasten their economic growth, third world economies often lean on external resources of capital to supplement the lack of domestic capital and to fill the savings-investment gap (Afxentiou, 2014). According to the (World Bank, 2016), foreign capital transfer can be in numerous forms such as investment pours into equity markets either as collectives or holdings, direct investment by foreign organizations and individuals, debts of an official purpose whether from individual countries or interest groups, private debt such as by way of bonds, commercial banks or other interested parties, official grants (aid) or official loans external debts, official loans and private debts are part of foreign capital transfer as well.

Even though external debt has been the primary source of foreign capital for economic growth and development in Africa, a report published by the World Bank in 2008 revealed that 50% of the Sub-Saharan population was still living below the poverty line in 2005.
Considering the amount of External Debt the African countries have received from external sources, this raises an important question on the effectiveness of External Debt as a means to attain sustainable economic growth and development (Fosu, 2015). Studies have shown that the more external debt the African countries have received over the years, the more debt-dependent they have become leaving many of those countries in a “debt trap” curbing long-run economic growth (UNCTAD, 2015). According to UNCTAD Statistics, during the period 1974-2009, average annual overseas development debt received (as a percentage of GDP) by the 33 African countries under study exceeded 10% (around 10.46%). During the same period, average annual long-term external debt (as a percentage of GDP) was almost 64% for those 33 African countries.

Gross Domestic Product (GDP) which is the most accurate measurement of economic growth was first developed by Simon Kuznets for US congress report in 1934, who immediately said not to use it to measure for welfare. After the Britain Woods Conference in 1994, GDP became the main tool for measuring the country’s economy. GDP per capita income is an indicator of country’s standard of living and is not a measure of personal income. Under economic theory, GDP per capita exactly equals the gross domestic income (GDI) per capita (Olukunmi, 2007).

Keynes defined GDP as the monetary value of all finished goods and services produced in the domestic economy, stated in prices of a given year. According to (Al-Bartlett, 2014), gross domestic product (GDP) means an increase in the average rate of output produce per person usually measured on a person usually measured on a per annum basic. It is also the rate of change in national output or in a given period. Economic growth is the increase of per capita gross domestic (GDP) or other measure of aggregate income. It is often measured as the rate of change in real GDP. This definition means that gross domestic product is the nation’s expenditure of all goods and services produced during the year at market prices.

Consumption, investment, government spending and net export are the four sectors of gross domestic product. Gross domestic product (GDP) is intended to measure how much an economy produces in a given period such as quarter, or a year. According to (Easterly, 2013) gross domestic product is an aggregate of the market value of the many goods and services produced in the economy. According to him, gross domestic product is a measure of a quantity of goods and services produced by an economy. According to (Berensmann,
GDP is typically seen by the governments and economists as an economic health indicator of the country.

2.2.1 The Trend of external debt stock in Somalia from 1991-2016

Foreign borrowing is an important source of finance which is mainly used to complement the domestic sources of funds that are not sufficient for supporting development and other economic needs of the country.

Most of the developing countries have been gathering external debt since their independents in 1960s (Amin & Bello 2016) he also asserted that many developing countries took advantage of plentiful availability of international loans resulting from the oil boom in the early 1970s. The poor capacity of domestic savings, high Balance of Payment deficit, sharp deteriorations in the terms of trade, the oil price shocks of 1973-74 and 1978-79; a gradual rise in public expenditure by African governments attached to high corruption rates following increases in commodity price during the early 1970s, recession in the industrialized nations and rises in real interest rate are the main reasons why developing countries have been importing capital to augment domestic resources (Leta & Suma, 2012).

Somalia’s external debt burden is extremely high and would probably be assessed as unsustainable by the HIPC Initiative (for which the country is eligible). There has not been a HIPC DSA in recent years, but the 2016 estimates of the net present value (NPV) of the debt are: GDP ratio, 79%; exports ratio, 571%; and revenue ratio, 3.915%. Almost all the external debt is in arrears with a large part (between one third and one half) being penalty interest on accumulated principal and interest in arrears. For years, Somalia has not been paying any debt service, and the stock of arrears has been increasing at a rate of about 3% a year. No information is available on arrears to commercial creditors and the search for information on claimants through specialized channels has not yet commenced (IMF, 2015).

With the assistance of IMF consultants, the Federal Government of Somalia has been reaching out, since early 2014, to creditors to provide loan data, including agreements, arrears position and (penalty) interest applicable on arrears. In the absence of any debt data held by FGS, this data has been used to reconstruct the loan database within the Commonwealth Secretariat Debt Recording and Management System (CS-DRMS), the computerized debt management system that the FGS has adopted (FGS, MoF, 2016). For a country to access the HIPC debt relief Initiative (at the Decision Point), it is required that debt data be fully reconciled, loan by loan, with creditors. As Somalia debt data is
being reconstructed from detailed creditor data, this reconciliation process is to be undertaken by IMF and World Bank staff close to the HIPC should then be relatively simple. All 170 loan instruments from Multilateral Debt data have been inserted into the CS-DRMS. The total debt owed to multilateral creditors is about USD 1.5 billion, of which USD 1.3 billion is in arrears. Nine out of 10 Paris Club (PC) creditors have also responded positively with requests to provide data, and this information is being inserted into the CS-DRMS. The outstanding debt to PC creditors is about USD 2.3 billion, all of which is in arrears. For non-Paris Club creditors, only three out of the ten identified creditors have responded with data. So far, no commercial claims have been established (IMF, 2015).

Somalia’s external debt is not simply unsustainable; even the most generous debt relief would not bring the country within reach of meeting its responsibility within the context of global poverty-reduction goals. IMF estimates that the external debt was $5.3 billion in 2014, which is equivalent to more than 90 per cent of estimated GDP (IMF, 2015). Most of that debt was in arrears, and as long as that remains the case, Somalia will not be eligible for financial assistance from IMF. The debt burden indicators do meet the requirements for assistance under the Heavily Indebted Poor Countries Initiative, but Somalia has not yet satisfied the remaining criteria that would give it access to such support.

**Figure 2.1: External Debt Stock of Somalia (1991-2016)**

![External Debt Stock of Somalia (1991-2016)](image)

**Source: Researcher 2018**

Somalia owes external debt of approximately five billion dollars, and as shown in figure 2.2, between 2005 and 2012, the rate of external debt increased radically as a matter of survival and to fund the developmental projects that will in the long run contribute the GDP. According to the figure 2.2, it is evident that the level of external debt stock in Somalia was
following in an increasing rate over the period under study (1991-2016), mainly due to the lack of repayment capacity and lack of central government to manage and control the level of foreign debt incurred by the country. However in 1995 the level of foreign debt was gradually increasing with a rate of 62 million dollars, in attempts to extinguish fresh civil unrest and chaos which started three years earlier in 1991, there was an enormous external debt following in to the country mainly from the World Bank and the Paris club members.

### 2.2.2 The Trend of economic growth in Somalia from 1991-2016

Somalia’s GDP in 2013 was estimated at about $5.4 billion. In current dollar terms, Somalia’s economy is larger than the economies of the Central African Republic, Djibouti, Burundi, Eritrea, and Malawi. Out of 46 Sub-Saharan African countries, Somalia’s economy ranks 16th from bottom in terms of size. Total GDP estimate simply a per capita GDP of $435, making Somalia the fifth-poorest country in the world (after Malawi, Burundi, the Central African Republic, and Niger). Somalia’s per capita income is 20-40 percent higher than GDP per capita, because massive inflows of remittances allow households to top up own-generated income (used to measure GDP per capita) (IMF, 2015).

According to the IMF, real 2017 GDP growth is projected to decelerate to about 2.5%, with Inflation forecast at 1-2%. The slower growth rate in 2017 will be a consequence of lower agriculture output due to a weaker rainy season. However, construction, telecommunications and service sectors are projected to continue to register decent growth. The external current account deficit projected to remain large though remittances and grants are likely to cover this deficit. The Somali Shilling (SOS)/USD exchange rate is expected to remain around 22, 200 to 23, 000, the range within which it has been since January 2015.

The recent estimate of Somaliland’s GDP by the World Bank put it at $4.6 billion in 2012. Estimates by the authorities in Puntland estimate it GDP at $1.3 billion in 2010. Somalia’s GDP is dominated by private consumption and imports. Household consumption, financed by remittances, was equivalent to more than 100 percent of Somalia’s nominal GDP in 2014, with food and beverages accounting for about 60 percent of the total. Nonfood goods (cleaning products, medication, paper and paper products, office supplies, and other nondurables) accounted for about 34 percent of the total consumption. Net investments accounted for only 8 percent of GDP. Exports were equivalent to about 14 percent of GDP, while imports accounted for more than two-thirds of GDP. The large trade
deficit was financed mainly by remittances and international aid (World Development Indicators, 2015).

Real GDP growth in Somalia, estimated at 3.7% for 2016, is projected to decelerate to about 2.5% in 2017 because of lower agricultural output but will recover to about 3.5-4.5% in 2018-9.

According to the African Development Bank (2013), Somalia is "characterized by a severe lack of basic economic and social statistics". This situation has been exacerbated by the civil war and institutional collapse, although even prior to Somalia's state failure, data was often unreliable.

The World Bank reports that Somalia's GDP was $917.0 million in 1990 and its total population was 10.81 in 2014, and classifies it as a low-income country. The United Nations Statistics Division reports a GDP figure of $1.306 billion for 2012, compared to $2.316 billion in 2005 and $1.071 billion in 2010.

According to World Bank, sometime in the 2000s the country's GDP per capita according to the World Bank was $226, a slight reduction in real terms from 1990. The 2012 Human Development Report estimates per capita GDP to be $284, compared with an average across sub-Saharan Africa of $1,300 per capita. This GDP per capita figure is the fourth lowest in the world. About 43% of the population lives on less than 1 US dollar a day, with about 24% of those found in urban areas and 54% living in rural areas.

According to the United Nations Development Programme (UNDP) Somalia, as of 2012 the country had some of the lowest development indicators in the world, and a "strikingly low" Human Development Index (HDI) value of 0.285. This would rank amongst the lowest in the world if comparable data were available, and when adjusted for the significant inequality that exists in Somalia, its HDI is even lower. The UNDP notes that "inequalities across different social groups, a major driver of conflict, have been widening". The UN has classified Somalia as a least developed country since its Committee for Development Policy began categorizing states in this way in 1971.

Figure 2.2: Economic Growth of Somalia (1991-2016)
GDP describes a country’s economic growth and simply indicates overall growth in one graph. As shown in figure 2.3 Somalia’s economic growth was healthy in 1990-1990, with annual increase in GDP. After the collapse of the state, the country faces a massive decline in the growth rate, but between early 2001 and 2012, a long-run recovery occurred.

According to the figure 2.3, there is a general moderate ups and downs in the level of Real Gross Domestic Product in Somalia over the period under study, from period 1991 to 1995, there was a times in which the RGDP was increasing and at times it was decreasing the reason being there was an ongoing economic growth in the domestic economy until the central government of Somalia had started to collapse in 1991 and majority of the productive units was affected by the statelessness and civil war. However, from 2000 to 2010 the international community was seriously considering how to revive the economic wellbeing of the country by introducing debt repayment schemes, deploying foreign peacekeeping forces, offering interest free loans and grants, etc. Then in 2010 to 2011 the economy was registering a constant RGDP because of an ongoing presidential election which was held in neighboring Djibouti. But again from 2012 to 2015 there was a moderate increase in the GDP of the nation because of the journey of peace-building and reviving of Somalia was bearing his first fruits, African Mission in Somalia (AMISOM) was taking over the security of the country, the international actors were now willing to stand by the economic revival and the productive sectors of the country like agriculture sector and industrial sector and they were coming back to life after three decades of destruction, and beyond 2015 there was a constant growth of the Gross Domestic Product.

Source: Researcher 2018
2.4 Research Gaps
The bulk of the studies in this area tested only a few explanatory variables whilst trying to create a statistically significant relationship between debt, growth and investment. Nonetheless, when statistical tests are carried out the relationship between debt and growth, economic theory does not give us a satisfactory specification of which variables must be held constant. This study aims to investigate the same growth and external debt drama facing Somalia from the stand point that hardly any thorough research study has yet been undertaken on the role of external debt in this country’s economy.

As indicated earlier, past attempts hardly reflected to show the speed of adjustments to the equilibrium after a shock. Contrarily, this study will employ Error Correction Model to determine both short run, long run and the speed of adjustment (ECT$_{t-1}$).

The past studies on the problem of external debts in Somalia did not dig deeper on the causes and effects of external debt in Somalia which can be drawn to both internal and external aspects. Internal Factors are mainly overly expansionary fiscal policies and highly distorted economic policies. The external factors included deterioration of terms of trade leading to BOP deficits, prolonged civil unrest and terrorism, which tended to shoot the level of external debts up. In addition to these factors, drought conditions have also contributed to the external debt burden.

There are literature gaps on external debt stock and economic growth research studies, the previous studies despite existence are not particularly anchored on the Somali territory as most are outside of Somalia. This study explored the literature gaps and added a value on the existing literature by exploring the significance of the relationship between external debt stock and Gross Domestic Production in Somalia. More over most studies used previous data and didn’t include the latest data on the topic; therefore, this study will provide an update to previously conducted studies and add a value on it. Implicitly, the relationship between any two variables is not the same among economies (Malik, 2010). Researchers found out that there is a positive relationship in some countries, while there is a negative relationship in others (Iyoha, 1999). Therefore, for the fact that there was hardly any recent research studies about the problem of external debt in Somalia.
CHAPTER THREE
METHODOLOGY

3.0 Introduction
This chapter comprises the practical procedures which were used in carrying out this study. It gives details of the research design adopted, data sources, research technique, specification of the model, units of measurement, operational definitions of key terms and the limitations of the study.

3.1 Research Design
The data set were also endangered to these tests namely Unit Root test, and they were then examined if there is any Co-integration. The Augmented Dickey Fuller (ADF) and Phillip Perron (PP) unit root tests were used to determine the stationarity of the data. And lastly Error Correction Model (ECM) was projected.

3.2 Model Specification

\[ GDP_t = F(K_t + L_t + EDS_t + EDS^2_t + POPN_t + INF_t + FDI_t) \]

From equation (7), the estimable GDP growth error correction model is given as:

\[ \Delta GDP_1 = a_0 + \sum_{i=1}^{j} a_{1i} \Delta GDP_{t-1} + \sum_{i=1}^{j} a_{2i} \Delta K_{t-1} + \sum_{i=1}^{j} a_{3i} \Delta L_{t-1} + \sum_{i=1}^{j} a_{4i} \Delta EDS_{t-1} \]
\[ + \sum_{j=1}^{j} a_{5j} EDS^2_{t-1} + \sum_{i=1}^{j} a_{6i} \Delta POPN_{t-1} + \sum_{i=1}^{j} a_{7i} \Delta INF_{t-1} + \sum_{i=1}^{j} a_{8i} \Delta FDI_{t-1} + a_{ect_{t-1}} + u_t \]

...... 9
Table 3: 1: Description of Variables and Measurements

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Unit of measurement</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>Foreign Direct Investment</td>
<td>FDI/GDP ratio</td>
<td>World Development Indicators (WDI)</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
<td>Growth rates</td>
<td>World development indicators (WDI) &amp; United Nations Statistical Division</td>
</tr>
<tr>
<td>POPN</td>
<td>Population growth</td>
<td>Growth rates</td>
<td>UN-data and World Development Indicators</td>
</tr>
<tr>
<td>EDS</td>
<td>External Debt Stock</td>
<td>EDS/GDP ratio</td>
<td>World development indicators (WDI)</td>
</tr>
<tr>
<td>INF</td>
<td>Inflation rate</td>
<td>Percentages</td>
<td>World Development Indicators (WDI)</td>
</tr>
</tbody>
</table>

Table 3: 2: Operational Definitions of Key Terms

<table>
<thead>
<tr>
<th>Variables</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Domestic Product</td>
<td>The aggregate monetary value of all final goods and services produced annually within the boundaries of a country.</td>
</tr>
<tr>
<td>Economic growth</td>
<td>May be defined as a long-term rise in capacity to supply increasingly diverse economic goods to its population, this growing capacity based on advancing technology and the institutional and ideological adjustments that it demands.</td>
</tr>
<tr>
<td>External Debt Stock</td>
<td>Is the cumulative of all dues against the country owed to the International institutions, and/or foreign countries, whether interest levied or not less.</td>
</tr>
<tr>
<td>Foreign Direct Investment</td>
<td>Is any investment which is profit motive made by a foreign company or individual in one country for business interests in another country.</td>
</tr>
<tr>
<td>Population growth</td>
<td>Population growth is the rate at which the number of individuals in a population increases in a given time period, expressed as a</td>
</tr>
</tbody>
</table>
function of the initial population. To determine whether there was population growth, this formula is used: \((\text{birth rate} + \text{immigration}) - (\text{death rate} + \text{emigration})\).

| Inflation | Inflation is the rate at which the general level of prices for goods and services is changing with respect to the foreign currencies; and consequently, the purchasing power of currency is deteriorating. Or it is a persistent increase of the general prices of the economy. |

**3.4 Research Technique**

The study followed Johansen (1988) and Johansen and Juselius (1990) Co-integration technique. The technique establishes the long-run relationship between variables. The first task is to make sure that the data is integrated of the same order.

**3.5 Data Analysis**

The data was analyzed using E-VIEWS 7 to perform the co-integration method in order to establish if the above variables significantly affect economic growth as well as the other tests which precede co-integration analysis. The researcher before achieving the objectives, performed several diagnostic checks and tests such as test for normality to see if the variables under study are normal, and testing for stationarity to see whether they are stationary, and for the purpose to find out the statistical behavior of all the variables. After performing those preliminary statistical tests, the variables were then subjected to Error Correction Model (ECM) to see if there is a short-term equilibrium relationship between the variables.

**3.5.1 Testing for Stationarity**

The assumptions of the Classical regression model necessitate that both the dependent and independent variables be stationary and the errors have a zero mean and finite variance. Non-stationary variables result in spurious regression and as Granger and Newbold (1974), argued they are characterized by a high \(R^2\) and a low Durbin-Watson \((dw)\) statistic, \(t\)-and \(F\)-statistics that appear to be significant, but the results derive no any economic sense (Verbeek, 2000). The results “looks good” because the least-squares
estimates are not consistent and the customary test of statistical inference do not hold
(Enders, 1995).

The ADF and PP statistics is computed using formula below;

\[ \Delta y_t = \alpha + \lambda_t + \delta y_{t-1} + \sum_{j=1}^{l} \phi_j \Delta y_{t-j} + \epsilon_t \]

Where

\( l \), is the lag length

The ADF statistic tests the null hypothesis that the series are non-stationary against the
alternative that the series are stationary. Where the absolute value of the calculated ADF
statistic is greater than the tabulated one, the null hypothesis is rejected and an inference
drawn that the series is stationary at a given level of significance. The series which were
found to be non-stationary were differenced to make them stationary.

3.5.2 Co-integration
The variables used in the study were tested for co-integration in order to establish if there
existed a long run relationship between the series. The equation for testing co-integration
using Johansen's procedure is as below;

\[ y_t = \alpha + A_t Y_{t-1} + \ldots + A_{\rho} Y_{t-\rho} + \epsilon_t \]

Where; \( y \) is k-dimensional vector of non-stationary variables, and \( \epsilon_t \) is a vector of white
noise residuals. By using the first difference operator \( \Delta \) equation (11) can be rewritten as

\[ \Delta y_t = \Gamma y_{t-1} + \sum_{i=1}^{\rho} T_i \Delta y_{t-i} + \epsilon_t \]

The rank of matrix \( \Pi \) determines the number of linear combinations of \( y \) that are stationary
processes. If the rank of the matrix is \( r \), it can be factored as \( \alpha \beta \), where the elements of \( \alpha \) are
the adjustment parameters in the error-correction model, and \( \beta \) contains the co-integrating
vectors. Johansen derives two test statistics for testing the co-integrating rank.
3.6 Error Correction Model Specification

If evidence of co-integration is observed between external debt stock and economic growth, it would imply that there exists a long-term equilibrium relationship between them, so Error Correction Model would be estimated to evaluate the short run properties of the Co-integrated series because we are interested in univariate analysis. ECM leads to better understanding of the short-term interaction between different stationary series. It describes a system in which each variable is a function of its own lag, and the lag of the other variable in the system.

The Error Correction Model is used in this study to capture the short and long run impact of External debt stock on economic growth. The method involves developing a model from it Generalized form (over parameterized) to a specific form (parsimonious) using the Hendry Modeling approach. It was also adopted in that it accounts for the speed of adjustment to equilibrium after a shock (ECT_{t-1}).

The Error Correction Model (ECM) takes the form:

\[ \Delta Y_t = \alpha_0 + \sum_{i=1}^{f} \alpha_{1i} \Delta Y_{t-i} + \sum_{i=1}^{f} \alpha_{2i} \Delta X_{t-i} + \alpha_3 ect_{t-1} + u_t \]
CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION OF RESULTS

4.0 Introduction
In the previous chapter, methods of analyzing the economic growths, as well as the long-run relationships between external debt stock and economic growth have been discussed. The researcher performed some preliminary test such as normality test and stationary test variables over time. Also the researcher purely used co-integration analysis since he was interested to find out the magnitude and direction of the relationship. Furthermore, econometric techniques that are discussed in the previous chapter are employed in this chapter and the results are discussed in detail.

The initial part of this chapter deals with descriptive summary of the data. This can be used to evaluate the scores of each variable for more advanced statistical analysis and the data can easily be understood in the form of tables and graphs.

In the next sub-sections of the chapter unit root tests are performed using the Augmented Dickey Fuller (ADF) and Phillip Perron (PP) tests. The results of these stationarity tests will then lead to the testing of long-run relationship between the variables understudy. The long-run relationship is captured using Johansen co-integration tests.
4.1 Data preliminary testing
Before using the data in the analysis, several diagnostic checks and tests were conducted to find out the statistical behavior of all the variables. This is important since for data to be used in any analysis, its integrity and reliability should be ascertained as well as finding out if the data is normally distributed.

4.1.1 Descriptive Summary

Table 4.1: The Summary Statistics for the Series of the Data Set

<table>
<thead>
<tr>
<th>Statistic</th>
<th>LNGDP</th>
<th>LNFDI</th>
<th>LNEDS</th>
<th>LNINFL</th>
<th>LNPOPN</th>
<th>EDS²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1.025</td>
<td>4.975</td>
<td>1.698</td>
<td>1.506</td>
<td>0.821</td>
<td>4.143</td>
</tr>
<tr>
<td>Median</td>
<td>1.173</td>
<td>4.373</td>
<td>1.764</td>
<td>2.546</td>
<td>1.069</td>
<td>3.114</td>
</tr>
<tr>
<td>Maximum</td>
<td>1.564</td>
<td>9.912</td>
<td>4.300</td>
<td>3.508</td>
<td>1.264</td>
<td>29.763</td>
</tr>
<tr>
<td>Minimum</td>
<td>-0.248</td>
<td>0.344</td>
<td>0.167</td>
<td>-3.912</td>
<td>-0.867</td>
<td>0.027</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.661</td>
<td>2.051</td>
<td>1.143</td>
<td>1.461</td>
<td>0.614</td>
<td>7.456</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.566</td>
<td>0.608</td>
<td>2.765</td>
<td>-1.897</td>
<td>-1.913</td>
<td>4.378</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>2.032</td>
<td>2.538</td>
<td>1.252</td>
<td>8.353</td>
<td>5.180</td>
<td>21.510</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>3.000</td>
<td>1.835</td>
<td>98.088</td>
<td>46.655</td>
<td>21.016</td>
<td>454.265</td>
</tr>
<tr>
<td>Probability</td>
<td>0.300</td>
<td>0.399</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Sum Sq. Dev.</td>
<td>10.953</td>
<td>105.183</td>
<td>32.713</td>
<td>53.433</td>
<td>9.445</td>
<td>1390.080</td>
</tr>
</tbody>
</table>

Observations 26

Source: Output from EViews7

Where;

GDP is the Gross Domestic Product;
EDS is the External Debt Stock;
FDI is the Foreign Direct Investment;
POPN is the Population growth Rate;
INF is the Inflation rate
EDS² is meant to capture the debt overhang effect
The mean Gross Domestic Product in the study period was 1.025 percent but this was somehow low due to the fact that the country was and still experiencing a severe unrest and civil war. Maximum registered growth was 1.827 percent and the lowest was -0.248 percent, probably due to the prolonged civil wars and conflicts. The standard deviation of growth rate from the mean was 0.6619 percent. The inflow of Foreign Direct Investment in Somalia from 1991 to 2016 was 4.975 million dollars on average with the highest inflow recorded being 9.912 and the least 1.899 million dollars. The standard deviation from the mean of Foreign Direct Investment was 2.051 million dollars. The mean Population Growth in the study period was 0.821 with the highest estimate at 1.264 and the least at -0.867. The standard deviation from the mean Population Growth in the period was 0.614. The mean External Debt Stock was 1.698. This is low, perhaps due to debt servicing programs and debt relief due to the HIPC initiative, with the highest being 6.300 and lowest 0.167, the standard deviation from the mean external debt stock was 1.143. The mean Inflation rate in the study period was 1.506 with the highest estimate at 3.508256 and least at -3.912. The standard deviation from the Inflation rate in the period was 1.461. The mean External Debt Stock squared in the study period is4.143 the highest being39.692 and the least at0.027. The standard deviation from the mean external debt squared was 7.456.

The descriptive summary table in Table 4.1 shows that inflation, External Debt Stock, Population Growth and EDS\(^2\) were normal at 5% level of significance but economic growth and Foreign Direct Investment were not normal since their Jarque-Bera statistics are greater than 0.05, the level of significance. So we fail to reject the null hypotheses that they are normal. Therefore; we shall log the variables prior to their use in the subsequent tests are used.

### 4.1.2 Test for Normality

The variables used in the model were tested for normality to ascertain if the spurious results in the model above were due to non-normality of the variables. This was tested using Jarque-Bera statistic and the results are presented in the Table 4.1.2.

<table>
<thead>
<tr>
<th>Statistic</th>
<th>LNGDP</th>
<th>LNFDI</th>
<th>LNEDS</th>
<th>LNINFL</th>
<th>LNOPPN</th>
<th>EDS(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skewness</td>
<td>-0.566</td>
<td>0.608</td>
<td>2.368</td>
<td>-1.897</td>
<td>-1.913</td>
<td>4.378</td>
</tr>
</tbody>
</table>
Normality test results in Table 4.2 show that Inflation (INF), External Debt Stock (EDS), Population Growth (POPN) and EDS$^2$ were normal at 5% level of significance but Gross Domestic Product (GDP) and Foreign Direct Investment (FDI) were not normal since their Jarque-Bera probabilities are greater than 0.05, the level of significance. We fail to reject the null hypotheses that they are normal. Therefore; we shall log the variables prior to their use in the subsequent tests.

4.1.3 Unit Root Test Results using both the ADF and PP tests

This section involves testing for the stationarity of the individual variables using Augmented Dickey-Fuller and Phillip Perron test. Table 4.3 indicates the unit root test results performed in this study-following both the ADF and PP tests. A maximum number of 5lags were used for the ADF and PP tests (as determined automatically by E-views 7 statistical package).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Augmented Dickey Fuller (ADF)</th>
<th>Phillip-Perron (PP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LNEDS</td>
<td>-1.116</td>
<td>LNEDS -1.648</td>
</tr>
<tr>
<td>LNGDP</td>
<td>-1.942</td>
<td>LNGDP -1.724</td>
</tr>
<tr>
<td>LNFDI</td>
<td>-1.712</td>
<td>LNFDI -1.925</td>
</tr>
<tr>
<td>LNPOPN</td>
<td>-1.121</td>
<td>LNPOPN -0.188</td>
</tr>
<tr>
<td>LNINF</td>
<td>-1.014</td>
<td>LNINF -1.124</td>
</tr>
<tr>
<td>LNEDS$^2$</td>
<td>-1.382</td>
<td>LNEDS$^2$ -1.014</td>
</tr>
</tbody>
</table>

Source: Output from EViews7
### First Difference

<table>
<thead>
<tr>
<th>Variables</th>
<th>Constant</th>
<th>Constant and Trend</th>
<th>Variable</th>
<th>Constant</th>
<th>Constant and Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>LNEDS</td>
<td>-4.231*</td>
<td>-5.212*</td>
<td>LNEDS</td>
<td>-8.974*</td>
<td>-8.774*</td>
</tr>
<tr>
<td>LNGDP</td>
<td>-5.255*</td>
<td>-5.992*</td>
<td>LNGDP</td>
<td>-5.260*</td>
<td>-6.128*</td>
</tr>
<tr>
<td>LNFDI</td>
<td>-5.365*</td>
<td>-5.216*</td>
<td>LNFDI</td>
<td>-7.964*</td>
<td>-7.850*</td>
</tr>
<tr>
<td>LNPOPN</td>
<td>-4.405*</td>
<td>-5.527*</td>
<td>LNPOPN</td>
<td>-3.532*</td>
<td>-4.161*</td>
</tr>
<tr>
<td>LNINF</td>
<td>-8.639*</td>
<td>-8.524*</td>
<td>LNINF</td>
<td>-9.914*</td>
<td>993Q*</td>
</tr>
<tr>
<td>LNEDS^2</td>
<td>-5.494*</td>
<td>-5.378*</td>
<td>LNEDS^2</td>
<td>-9.718*</td>
<td>-9.511*</td>
</tr>
</tbody>
</table>

**Source:** Output from EViews7

(*) indicate significant at 5% level

Where;

EDS: External Debt Stock  
GDP: Gross Domestic Product  
FDI: Foreign Direct Investment  
POPN: Population Growth  
INF: Inflation  
EDS^2: is meant to capture the debt overhang effect

The null hypothesis (H₀) for the ADF and PP tests is that all the series have a unit root. The results indicate that all the variables are not stationary at levels when constant and trend is included in the ADF and PP tests. Since the series are not stationary at levels, the variables were differenced at once before they became integrated of order one I(1) when constant or constant and trend are included in the ADF and PP tests. The order of integration of a time series determines if it is linear combination would be stationary that is, integrated of order zero (0). In this scenario, all the variables are non-stationary at I(1) this implies that we can only regress the variables only if they are only co-integrated.

### 4.2 Co-Integration Test Results

The Johansen (1991) procedure is used to determine the number of co-integrating relations in a vector of variables that are integrated of the same order. Given the result of the unit root tests above; the number of co-integrating vectors are tested on the variables; LNGDP, LNFDI, LNINF, LNEDS and LNPOPN using Maximum Eigen value and Trace Statistics. Given
that all variables become stationary at their first order, it became the most desirable case in order to continue with the Johansen’s approach of co-integration test.

Table 4.4: VAR Lag Order Selection Criteria

<table>
<thead>
<tr>
<th>Lag</th>
<th>LogL</th>
<th>LR</th>
<th>FPE</th>
<th>AIC</th>
<th>SC</th>
<th>HQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>-218.3431</td>
<td>NA</td>
<td>2.510405</td>
<td>17.94745</td>
<td>18.23998</td>
<td>18.02859</td>
</tr>
<tr>
<td>1</td>
<td>-142.0709</td>
<td>109.8320*</td>
<td>0.109766*</td>
<td>14.72567*</td>
<td>16.77338*</td>
<td>15.29362*</td>
</tr>
</tbody>
</table>

*Source: Output from EViews7*

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

The results of the lag selection criteria presented in Table 4.5 reveal that all the five different information criteria namely: Akaike Information Criterion (AIC), Schwarz Information Criterion (SIC), Hannan-Quinn Information Criterion (HQ), Final Prediction Error (FPE) and Sequential modified LR test statistic (LR) considered suggest 1 as the optimal lag length.

Table 4.5: Showing Co-Integration results of the variables under study

Unrestricted Co-integration Rank Test (Trace)

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Trace Statistic</th>
<th>0.05 Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0.908788</td>
<td>148.5017</td>
<td>69.81889</td>
<td>0.0000</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.871879</td>
<td>91.03209</td>
<td>47.85613</td>
<td>0.0000</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.568574</td>
<td>41.71736</td>
<td>29.79707</td>
<td>0.0014</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.461882</td>
<td>21.54155</td>
<td>15.49471</td>
<td>0.0054</td>
</tr>
<tr>
<td>At most 4</td>
<td>0.242618</td>
<td>6.669287</td>
<td>3.841466</td>
<td>0.0098</td>
</tr>
</tbody>
</table>

*Source: Output from EViews7*
The findings of Table 4.5 above from the Unrestricted Co-integration trace rank test using one (1) as the maximum lag length of the VAR model in equation (7) shows that there are 4 Co-integrating equations therefore there is co-integration among External Debt Stock, Foreign Direct Investment, Inflation, Population and Gross Domestic Product. Comparing the p-value at none and the p-value at most 4.

**Table 4.6: Unrestricted Co-Integration Rank Test (Maximum Eigenvalue)**

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Max-Eigen Statistic</th>
<th>0.05 critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0.908788</td>
<td>57.46957</td>
<td>33.87687</td>
<td>0.0000</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.871879</td>
<td>49.31473</td>
<td>27.58434</td>
<td>0.0000</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.568574</td>
<td>20.17581</td>
<td>21.13162</td>
<td>0.0676</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.461882</td>
<td>14.87227</td>
<td>14.26460</td>
<td>0.0400</td>
</tr>
<tr>
<td>At most 4</td>
<td>0.242618</td>
<td>6.669287</td>
<td>3.841466</td>
<td>0.0098</td>
</tr>
</tbody>
</table>

*Source: Output from EViews7

(*) 5% level of significance*
4.3 Error Correction Model

After confirming that the variables are co-integrated, an Error Correction Model which is constructed by including in the model, the lagged terms of the variables and the Error Correction Term was generated. The error correction model shows the short run relationship between variables and its results are presented in Table 4.7.

Table 4.7 Short run relationship Model (Over-Parameterized Model)

Dependent Variable: DGDP

Included observations: 24 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-Statistic</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.006731</td>
<td>0.210265</td>
<td>0.8373</td>
</tr>
<tr>
<td>D(GDP(-1))</td>
<td>1.038918</td>
<td>3.006245</td>
<td>0.0119</td>
</tr>
<tr>
<td>D(EDS)</td>
<td>-0.109852</td>
<td>-1.844994</td>
<td>0.0921</td>
</tr>
<tr>
<td>D(EDS(-1))</td>
<td>0.016474</td>
<td>0.275339</td>
<td>0.7882</td>
</tr>
<tr>
<td>D(FDI)</td>
<td>-0.027426</td>
<td>-2.994137</td>
<td>0.0122</td>
</tr>
<tr>
<td>D(FDI(-1))</td>
<td>0.005756</td>
<td>0.654597</td>
<td>0.5262</td>
</tr>
<tr>
<td>D(INF)</td>
<td>-0.032754</td>
<td>-2.518490</td>
<td>0.0286</td>
</tr>
<tr>
<td>D(INF(-1))</td>
<td>-0.003704</td>
<td>-0.231416</td>
<td>0.8212</td>
</tr>
<tr>
<td>D(POPN)</td>
<td>0.053928</td>
<td>0.439764</td>
<td>0.6686</td>
</tr>
<tr>
<td>D(POPN(-1))</td>
<td>-0.254744</td>
<td>-2.628923</td>
<td>0.0235</td>
</tr>
<tr>
<td>D(EDS2)</td>
<td>0.019519</td>
<td>2.447242</td>
<td>0.0324</td>
</tr>
<tr>
<td>D(EDS2(-1))</td>
<td>-0.005902</td>
<td>-0.685461</td>
<td>0.5072</td>
</tr>
<tr>
<td>ECT(-1)</td>
<td>-0.490177</td>
<td>-4.014324</td>
<td>0.0020</td>
</tr>
</tbody>
</table>

| R2           | 0.799256    |
| Adj R2       | 0.580263    |
| Durbin Watson | 1.631443    |
| F-statistic  | 3.649688    |
| Prob (F-statistic) | 0.020044 |

Note: variables were significant at the 10%, 5% and 1% levels

Source: Output from EViews7

Table 4.7 reveals that approximately 79% of the variation in Gross Domestic Product is explained by the External Debt Stock, Foreign Direct Investment, Inflation Rate and
Population Growth. The probability of the F statistic(0.020044) is significant which implies that the model is well specified.

**Table 4.8 Parsimonious Model**  
**Dependent Variable: DGDP**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-Statistic</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.028425</td>
<td>1.003615</td>
<td>0.3305</td>
</tr>
<tr>
<td>D(GDP(-1))</td>
<td>0.805108</td>
<td>3.014937</td>
<td>0.0082</td>
</tr>
<tr>
<td>D(EDS)</td>
<td>-0.110631</td>
<td>-2.035283</td>
<td>0.0587</td>
</tr>
<tr>
<td>D(FDI)</td>
<td>-0.023768</td>
<td>-3.605969</td>
<td>0.0024</td>
</tr>
<tr>
<td>D(INF)</td>
<td>-0.029604</td>
<td>-3.050986</td>
<td>0.0076</td>
</tr>
<tr>
<td>D(POPN(-1))</td>
<td>-0.215325</td>
<td>-3.001975</td>
<td>0.0084</td>
</tr>
<tr>
<td>D(EDS2)</td>
<td>0.020589</td>
<td>2.826278</td>
<td>0.0122</td>
</tr>
<tr>
<td>ECT(-1)</td>
<td>-0.283265</td>
<td>-2.801165</td>
<td>0.0156</td>
</tr>
<tr>
<td>R2</td>
<td>0.707577</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adj R2</td>
<td>0.579642</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durbin Watson</td>
<td>1.850765</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>5.530753</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob (F-statistic)</td>
<td>0.002244</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Source: Output from EViews7*

Results in table 4.8 show that the value of R-squared reduces from approximately 79% to 70%. However, all the predictors in this model are statistically significant unlike in the Error Correction Model where both Significant and Insignificant variables are included. The reduction in the R-squared value is due to the elimination of variables and their components which are not statistically significant in the Error Correction Model yet there is a portion they contribute to the variation in Gross Domestic Product.

The research hypothesis of this study was that there is no significant long-run relationship between External Debt Stock and Economic growth in Somalia (1991 to 2016). Looking at the findings of the model between the two variables, the F- value of 5.530753 and its corresponding p-value of 0.002244, which is less than 0.05 makes us to reject the null hypothesis above and conclude that there is significant long-run relationship between external debt stock and economic growth in Somalia 1991-2016.
4.4 CUSUM & CUSUM Square Parameter Stability Test

Figure 4.1: CUSUM and CUSUM Square Parameter Stability Tests

The CUSUM &CUSUM square figure above indicate that the parameters estimated are stable during the sample period (1991-2016) and can best explain the variation in the dependent variable (GDP).

CHAPTER FIVE
DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Discussions and Conclusions
The goal of this study was to explore the long-term association between external debt stock and economic growth in Somalia for a period of 1991 to 2016. Since this study involved time series data, there was need for stationarity tests to be carried out and since it involved a long run relationship analysis, Co-integration using Johansen test was also required. Finally, Error Correction Model was used to establish the impact of external debt stock on economic growth.
5.1 Discussion of Findings
The drive of the study was to evaluate the relationship between external debt and economic growth in Somalia (1991-2016). The study was prompted by the discrepancies in the findings by various researchers on the above relationship hence the need for a clarification. The study was conducted using data obtained from; World Bank tables and the United Nations Statistics Division Common Database.

Foreign direct investment (FDI), Inflation rate (INF), Population growth (POPN) were all found to be negatively and significantly impact the level of Gross Domestic Product in Somalia. On the other hand, External Debt Stock (EDS) as per the findings negatively and significantly affect Gross Domestic Product. External Debt Stock Squared EDS², was found to be not having both the theoretical and statistical implications in explaining Gross Domestic Product of Somalia between 1991 and 2016. The coefficient was positive and statistically insignificant. Empirical support for the debt overhang hypothesis is achieved if the debt ratio has a negative and significant effect on investment equation, and investment has a positive and significant effect on growth equation. Thus, from the result above it is concluded that there is no sign of the theoretically hypothesized debt overhang affecting investment, and that positivity can imply that in the long future external debt does not solely depress the economic growth this is perhaps due to the various debt relief initiatives implemented during the 2010\textsuperscript{th} and the inability to pay the debt. but there are other strong factors like political instability which fuel the economic down-turn of the country. However, the total debt stock is found to have a negative relationship with economic growth in the period under study. It could be because the loans are not used for productive purposes and investors anticipate a higher future tax to finance the foreign debt service payments. Inflation rate of the country was another variable this study was interested to see macroeconomic stability of the economy and as indicated in ECM results above it is evident from the coefficient that it has a negative effect on the economic growth of the country since it diminishes the value of the local currency which will in-turn reduce the level of Foreign Direct Investment. These findings are also consistent with Kinoshita (2002), Yogesh (2012) among others.

Before testing for this long run relationship between the two variables, there was need to establish if our variables were non-stationary at level and if after first difference, they become stationary since this is mandatory for Co-integration to take place. From the previous analysis chapter, the findings revealed that only GDP was found to be non-stationary at level but became stationary when differentiated once, qualifying our variables
for Co-integration and these findings are in line with Engel and Granger (1987) and Cheung and Lai (1993), who proposed that for Co-integration test to take place, the series should be non-stationary at level but become stationary after being differentiated once. However, after the Johansen trace test were run, we established that there is a long run relationship between these two variables.

Another finding is that we examined the short-term relationship between external debt stock and economic growth in Somalia (Objective 2) given the time series data. These findings conform to the findings of Pattillo et al., (2002) in their study that when a developing country opens up to foreign debt and start borrowing the impact of that debton growth will likely be negative.

5.3 Policy Recommendations
Even though the results from the findings shows that external debt has negative relationship with economic growth still there is a need to control the volume of external debt because the country with the highly indebted is not attractive to foreign investors. This is due to the fact that the higher the growth of external debt the more burden to service the debt. External financing must be made as a supplement and not as the replace of domestic saving in the long run.

The results of this research have revealed that external debt stock has a negative effect on economic growth of this country. A negative relationship between the variables means that when one of them is raising the other one is decreasing in the country. Thus, combined, the results of the study have a number of policy implications.

Firstly, external debts of Somalia should be borrowed solely for economic reasons and not for personal and extravagant reasons.

Secondly, the respective authorities who are responsible for handling Somalia’s external debt such as the Somali federal government and the regional leaders should efficiently keep track of the debt repayment requirements and it should not be allowable to pass a maximum limit so as to avoid debt accumulation.

Thirdly the Somali government should encourage exportation of domestic products by improving the local production of the nation, so that a more foreign currency will enter the country in return and the need for external help can now be limited.
Fourthly, the government of Somalia should launch transparent loan schemes to cover the activities, so that the different projects should compete for the scarce resources available instead of borrowing from outside.

Lastly but not least there is a need for the government to increase the possibility of easy data accessibility so as to help students, researchers and other interested groups to be able to use them in a more advanced level to come up with more advanced findings like this one, for the betterment of our country.

However, most importantly political instability and civil unrest is the main reason why debt accumulation is taking shape because if the domestic peace is built and strengthened, than the economy can attract foreign investors and borrowing from outside can now be forgone.

5.4 Contributions to Knowledge
This study contributes that prudence is required in the conduct of the fiscal policy of Somalia to achieve the objective of economic growth and stabilization. This prudence must however not be construed as a complete avoidance of external debt as a means of financing budget deficits. As a matter of fact, given the low level of economic growth in Somalia caused by the low level of income and the generally high incidence of poverty, the country has few prospects to source sufficient resources for development internally. This provides a sound argument for a conscious and carefully planned schedule of acquisition, deployment and retirement of foreign loans contracted for developmental purposes. This study also contributes that the traditional dichotomy between external and economic growth does not make much sense in a world characterized by open capital accounts and trade openness, although the recent switch to external borrowing has some positive implications for the developing economies but they should not be too complacent. And on the other hand as proposed by IMF 2006 the creation of the Debt Management and Financial Analysis System (DMFAS) to keep track of the nation’s debt profile is paramount.

5.5 Limitations of the Study
It is important to deliberate the sources and the nature of the data because the success of any statistical analysis eventually relies on the availability of appropriate and accurate data. The study was conducted by using secondary data from internationally recognized sources. The availability of published data for all variables involved in the study was a pivotal factor in the choice of a time period. On the other hand, the results of this study may have been exaggerated by the quality of the data available, and it should be acknowledged that, Somalia has been in a state of conflicts and civil wars for almost three decades which
destroyed the national statistics house and the availability of data in general. In other words, most publications conveyed different figures in the same period for the same variable. For example, data gained from Somalia ministry of finance is not consistent with the data from the World Bank (World Debt Tables) or Global Development Finance. And some important variables were missing as a result; the researcher overcame this difficulty in obtaining quality data by consulting more than one source in this research.

According to African Development Bank 2013, “Somalia is still characterized by a severe lack of basic economic and social statistics”, and there is also severe lack of skilled staff to collect, process analyze and interpret the kind of information needed. As at September 2013, the central bureau of statistics had nine core staff, only three of whom had a university degree. It also did not have a permanent office. So all those challenges were to some extent hindering the accessibility of valid data, in which the researcher consulted many sources so that it does not affect the expected results.
REFERENCES


Borensztein, E. (1990). Debt overhang, debt reduction and investment the case of the Philippines *international monetary fund working paper*, 90 (77), 325-335


APPENDIXI: DATA USED IN THE STUDY

<table>
<thead>
<tr>
<th>Year</th>
<th>GDP</th>
<th>FDI</th>
<th>EDS</th>
<th>INF</th>
<th>POPN</th>
<th>EDS²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>0.78</td>
<td>-192.3</td>
<td>3.14</td>
<td>33.39</td>
<td>0.79</td>
<td>9859600</td>
</tr>
<tr>
<td>1992</td>
<td>0.81</td>
<td>-74.07</td>
<td>3.02</td>
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Source: World Development Indicators & UN-Data 2017
APPENDIX II: LOGGED DATA SERIES

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Where;
GDP is the Gross Domestic Product;
EDS is the External Debt Stock;
FDI is the Foreign Direct Investment;
POPN is the Population growth;
INF is the Inflation rate
EDS\textsuperscript{2} is meant to capture the debt overhang effect