

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:

29/04/2019.

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.

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Date: 30-04-2019.

DEDICATION

To my mother AAMINA FARAH WARSAME and the loving memory of my late father MOHAMED FARAH ABDILLAHI. I dare, because of you.

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Certainly, I will start by thanking the Almighty and ever living ALLAH (S.W.T), who has been my everything all over my entire life, INDEED, in you, I breathe, I move and have my existence. Secondly, my wonderful mother and best friend AMINA FARAH WARSAME, the one who taught me the true meaning of hard work, commitment and dedication, and the loving memory of my late father who once told me to NEVER STOP LEARNING, LOVING AND DREAMING; Thirdly, FUAD MOHAMED FARAH my eldest brother, the secret behind my success and the success of my family, I owe you an immense debt of gratitude. Man, you have truly suffered for us.

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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

The study aimed at investigating the relationship between the external debt stock and economic growth in Somalia (1991 to 2016). For the fact Somalia has an estimated 5.5 billion dollars outstanding, due to many reasons, but the socio-economic indicators of the country show that it has contributed a little or almost nothing to the overall GDP, and continues to dwindle. This report was guided by two major specific objectives and they were; to find out the long run relationship between the external debt stock and economic growth 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 spanning from 1991 to 2016. Augmented Dickey- Fuller (ADF) and Phillip Perron (PP) tests were carried out on all variables in the study in which all of them were found to be stationary at first difference. Co-integration results of Trace and Maximum Eigen-value showed 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 affects economic growth in the short run, it showed that external debt stock negatively affects the economic growth. This implies that when external debt increases economic growth reduces. Thus, the study concluded that, the problem of high external debt stock is associated with inadequate debt management; borrowing for social and political reasons; poor performance of export sector to increase foreign exchange earnings; and lack of transparent loan cycles to make projects compete for the scarce resources. Based on the above-mentioned results, the study recommends that the government should further promote the rational and proper utilization of resources, while increasing the concessionality of newly acquired debt inflows. To this end, measures should be taken to encourage non-borrowed funds, such as Foreign Direct Investment (FDI), portfolio investment and non-government guaranteed 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

This introductory chapter, consists of the background to the study, Historical perspective, Conceptual perspective, Theoretical perspective, Contextual perspective, problem statement, purpose of the study, research objectives, research questions, hypothesis, scope, Geographical scope, theoretical scope, content scope, time scope, significance of the study and the operational definitions.

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. Many economies including that one of Mexico, despite being an oil exporter, declared in August 1982, that it could not tackle its debt obligations. Ever since, the subject of external debt and its burden has attracted critical importance and have remained in the Centre stage of debt crises debate (Iyoha, 1999).

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. Alarming, for all 54 African countries, the level of external debt stock, external debt as a percentage of GDP and external debt as a percentage of exports of goods, services and primary income, has been on the rise (Afxentiou, 2014). 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).

On average, Africa's external debt stock grew rapidly, by 10.2 percent per year in 2005-2015, compared with 7.8 percent per year in 2006-2009. The annual average growth rate of Africa's external debt stock exceeded 10 percent in eight heavily indebted poor countries and 13 non-heavily indebted poor countries (IMF, 2015). In 2005-2015, the external debt stock grew most rapidly in Mozambique (average by, 30 percent per year), Cameroon (26 percent per year) and Gabon, Nigeria, Rwanda and Seychelles (24 percent per year each). The concessional share of total external debt was less than 50 percent on the average in only seven of the heavily indebted poor countries in Africa, namely Côte d'Ivoire (27 percent), Zambia (39 percent), the Sudan (40 percent), Liberia (40 percent), the Central African Republic (43 percent), Ghana (45 percent) and the Democratic Republic of the Congo (48 percent). In contrast, as at December 2015 this concessional share of total external debt in the period 2011-2013 was less than 50 percent for 11 of 16 non-heavily indebted poor countries. The weighted share of concessional debt in total external debt in Africa fell from 42.4 percent in 2006-2009 to 36.8 percent in 2011-2013 (African Development Bank, 2015).

According to Iyoha, (1999) from 1990-1999 period was regarded as Africa's "Lost Decade" of development opportunities, this is because most of African countries had deteriorated economic conditions. Evidences showed that there was a massive decrease in most of economic performance indicators. In the case of Sub Saharan Africa, the GNP per capita decreased at an average rate of 2.2%, private consumption per capita dropped by 14.8%, export volume dropped sharply while the import volume was reducing at an annual rate of 4.3%, terms of trade dropped by 9.1%. On connecting these stylized facts with the real GDP growth rate in most of SSAs the empirical findings show that, between 1981 and early 1990s the growth rate was at an average of 1.7% which gave about -0.9% in real GDP per capita. Iyoha (1999) pointed out further that, the real GDP performance of SSA remained poorly at negative digits until 1995 only when the growth rate became positive at 1.1% this was the

poorest compared to the performance by other continents such as in East Asia where the GDP growth was at an average of 8.0% with China topping with an average of 9.2% during the period.

For the countries located at Horn of Africa, the situation was not exceptional, for example, in Somalia; the decline in the foreign exchange earning capacity of the economy was aggravated by the notoriously prolonged civil wars. This adversely affected Somalia's ability to service its debt and led to the rapid accumulation of arrears. The urgent need to rehabilitate the war-torn economy forced the government to resort to external financing, which led to a sharp rise in the stock of debt from 1.53 billion dollars in 1991 to 5.35 billion dollars in 2016. By June 1993, the stock of debt outstanding and disbursed stood at US\$3.5 billion dollars. with arrears of US\$253 million, this stock of arrears, which had been reduced from June 1984 level of US\$149.3 million, had caused legal actions against the government from some quarters and greatly jeopardized the government's ability to manage its economic stability effectively (Worldbank, 2008). External debt was estimated at US\$5.3 billion (93 percent of GDP) at end-2014, mainly arrears. Debt data covers most creditors, excludes commercial debt, and shows obligations to: (i) multilaterals (US\$1.5 billion); (ii) Paris Club creditors (US\$2.3 billion); and, (iii) Non-Paris Club creditors (US\$1.5 billion). Based on a preliminary assessment, Somalia lacks the ability to service its debt in the medium term (IMF Article IV, 2015).

Somalia's Gross Domestic Product (GDP) was estimated to be \$5.4 billion in 2013, and then again \$6.2 billion in 2016, with 5% nominal growth. Its GDP per capita was equally low, at \$450; Somalia has a poverty rate of 51%. Private consumption is GDP's key driver, for that reason, the world bank provides data for Somalia from 1960 to 2017. The average value for Somalia during that period was 95.08% with a minimum of 66.98% in 1976 and a maximum of 135.82% in 2017. investment made up only 8% of GDP in 2015, (Federal Government of Somalia, Ministry of Finance, 2016).

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 food-stuffs 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).

Economic activity is estimated to have expanded by 3.7 percent in 2014, driven by growth in agriculture, construction, and telecommunications, because that was the beginning of the recovery stage. Consumer price inflation was 1.3 percent. For 2015, real growth was projected at 2.7 and inflation should remain subdued at about 4percent. With modest progress on the security front and an absence of drought, medium-term annual growth should be about 5 percent. Nevertheless, growth will remain inadequate to redress poverty and gender disparities (IMF Article IV, 2015).

Somalia's economy is highly dependent on imports, which account for more than 2/3 of GDP, while exports comprise just 14%, creating a large trade deficit, mainly financed by remittances and international aid (IMF &World Bank, 2015). Public expenditure has increased significantly, from \$35.1 million in 2012 to \$170.5 million in 2016, driven by year-on-year increases in revenue. An improvement in revenue collection means that domestic revenue grew from \$84.3 million in 2014 to \$112.7 million in 2016, driven by taxes on trade. However, total revenue to GDP accounts for only 2.7% of GDP (FGS, Ministry of Finance,2016).

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 16thfrom 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). 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 is based on the Dual Gap theory developed by Chenery 1966, and Debt Over-Hang theory postulated by Krugman 1988. Dual gap theory is a better explanation of the reason why nations opt for external finance as opposed to domestic financing in financing the sustainable development. As per the theory, developing countries' level of home savings is not satisfactory to back the desired investments to guarantee economic prosperity; since

investment is a function of savings it is rational to necessitate the use of harmonizing external goods and services. Hence, the relationship between home savings and foreign funds gives a guide as to how much a country can borrow from abroad. Also, since most of LDCs are far from their steady state growth any investment injection could lead to have accelerated economic growth. On the other hand, according to Chenery 1966, economic growth can be achieved by borrowing from external institutions and/or countries if the domestic sources are not enough in the process of improving the Gross Domestic Product and hence, economic growth.

Krugman (1988) who is the champion of debt over-hang theory provides an up-front definition of the issue of debt overhang, that is when the repayment capacity of the country is less than the debt itself. In the paper, Krugman shows that the choice between supplementary financing and debt cancellation to be somewhat of a clash. Financing could create for any creditors an option value that is to say that in the event of the country having exceeded expectations the creditors would not have had to write down unnecessarily any claims. On the other-hand from the perspective of the country there could be an inducement distortion as debtors are more probable to be compensated than the country itself, which diverts the scarce funds to now clear the accumulated debts (Krugman, 1988).

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, (Oyejide, Soyede & Kayode, 1985). Gap in home savings to fund productive project sources countries to borrow (Ezeabasili, 2014&Momodu, 2012).

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

The basic reason of external debt in developing countries is to close the "saving-investment" gap (Chenery, 1996). The developing countries faced with current account deficit were encouraged to borrow from developed countries as well as the international community to boost their economic growth. On the other hand, 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, Real GDP growth in Somalia was estimated at 3.7% for 2013, and was projected to decelerate about 2.5% up to 2016, and 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 was the fourth lowest in the world. For the fact that the level of external debt was increasing sharply from 1991-2016 (1.53 billion dollars to 5.35 billion dollars), the growth rate was almost moving the same rate or deteriorating most of the times, for example from 2014-2016 the GDP was between 3.8% to 4.9%, but down from 2015 it was registering a negative growth of -0.8%, while from 2007 up to 2011 it was neither increasing nor decreasing at a rate of 2.6%. Hence, it is a matter of great importance to look in depth the effectiveness and the real contribution of external debt on economic growth of the country since the two are almost moving different directions.

Therefore, this study is going to examine the level of the external debt stock in Somalia and its effects on the economic growth rate of the country for the period 1991-2016.

1.3 Purpose of the study

To investigate the impact of external debt stock on economic growth of Somalia (1991-2016)

1.4 Specific Objectives

- i) To investigate if there is a long-run relationship between External Debt Stock and Economic growth in Somalia 1991-2016
- ii) To determine the short-run effect of External Debt Stock on Economic growth in Somalia 1991-2016

1.5 Research Questions

- i) Is there a long-run relationship between external debt stock and economic growth in Somalia 1991-2016?
- ii) Is there a short-run effect of External Debt Stock on 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 Scope of the study

This gives the coverage of the study in terms of geographical, theoretical, content and time scope

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 study seeks to examine Somalia's external debt and its impact on the economic growth. In order to statistically depict its impact on the economy, a systematic empirical investigation will be performed with a data extending a period of twenty-seven years (i.e.) 1991-2016. 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

Past studies on the significant relationship between external debt stock and economic growth, in the Somali case, is very scanty, despite the importance and the need of economic growth in attracting scarce technology, creating employment and enhancing productivity. 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 EDS² to capture how the foreign debt affects the growth rate of the country in the long run. This is through the use of theories like debt overhang theory postulated by Krugman 1988, which is common in growth models and yet it is often ignored by studies which only focus on the dual gap model.

In brief, the major contribution of this research is statistical investigation of the relationship between external debt stock and economic growth, in the context of Somalia. 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 method involves developing a model from its generalized 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_t-1). In which OLS does not demonstrate. This study also employed CUSUM and CUSUM square to indicate whether parametersestimated are stable during the sample period (1991-2016) and can best explain the variation in the dependent variable.

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, relationship between external debt stock and economic growth in Somalia and the research gaps.

2.1 Theoretical Review

This study was 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 internal source is not sufficient 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). However, the relationship between domestic savings and foreign funds gives a guide as to how a country can borrow from abroad. Also since most of LDCs are far from their steady state growth any investment injection could lead them to have accelerated economic growth.

The dual gap theory of Chenery 1966, postulates that economic growth depends on investment and that investment is a function of savings, less developed nations do not have sufficient savings (due to low per capita income) to match up with the necessary investment to ensure economic growth, they therefore resort to external finance to fill the saving investment gap. The dual gap theory is construed from a national income accounting identity which assumes that excess investment expenditure (Savings-Investment gap) is equivalent to the surplus of imports over exports (Foreign Exchange gap), Mbah & Amassoma, (2014).

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 & Tamaschke, (2015).

The debt overhang theory suggested by Krugman 1988, posits that huge borrowing leads to high indebtedness, debt traps and slows down economic growth. According to him, hoarded foreign debt stock consequences higher tax (tax disincentive) on future output and thus discourages any genuine investor to put his money into the economy for investment. This means that due to large debt stock, potential investors would be discouraged on the expectation that government may finance its debt service obligation by imposing high taxes and this would further retard the growth of the nation.

As showed by Krugman 1988, 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 so 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.

According to both theories debt has a positive direct effect on economic growth, this is because the amount borrowed if used optimally, it is anticipated to increase the productive capacity of the local economy. On the other hand the indirect effect of debts is its effect on investment. The transmission mechanism through which the debt affects growth is its reduction on the resources available for investment by debt servicing. According to debt overhang hypothesis, a certain level of external debt has a direct positive effect to economic growth until a certain point where by an additional debt will have a negative effect to growth(Hameed, A., Ashraf, H., & Chaudhary, M.A., 2013).

2.1.2 Keynesian Theory of Increasing Government Activity

This was an economic theory named after a British Economist, John Maynard Keynes. The theory is grounded on the concept that in order for an economy to grow and be stable, active and inclusive government intervention is obligatory. The Keynesian Economists debate that private sector decisions sometimes lead to inadequate macroeconomic results (I.e.) inflation, monopoly powers and etc. Therefore, monetary policy action by central bank and fiscal policy action by the government are required to take control of the wellbeing of the domestic economy. These actions will balance the forces of demand and supply and the greater welfare of the society.

Keynes stated that during depression, a combination of two approaches must be applied (I.e.) if the economy is to survive; a reduction in interest rate (Monetary Policy), and government investment in infrastructure (Fiscal Policy). Both Keynesians and monetarists believe that both fiscal and monetary policies influence aggregate demand (Galor, 2015). The monetary policy requires the Central Bank to reduce interest rate to commercial banks so that the rate of borrowing can improve and the commercial banks to do the same to their customers so that the velocity of money can improve. Government investment in infrastructure injects fund into the economy by creating business prospects, employment opportunities and demand. But the fact is one of the sources of fund for infrastructural development is external borrowing during fiscal deficit with some degree of risk attached.

This infers that Keynesian theory which considers capital accumulation as a catalyst to fasten economic growth is supportive of external loans as it injects fund and foreign currency into the economy to upsurge economic activities which will result growth and

prosperity. It therefore backs a positive relationship between external debt and economic growth if and only if the foreign funds are managed efficiently and effectively.

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 nonpayment, 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.

In addition to that, investment decisions made under uncertainty which are caused by debt threats are not forward-looking. Hence, short-term, low risk investments will be desired to the long-term, high risk and structural ones. This misallocation of resources diminishes the efficiency and productivity of capital, leading to slowdown of investment and economic growth.

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 investment (Cohen, 1993). 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.

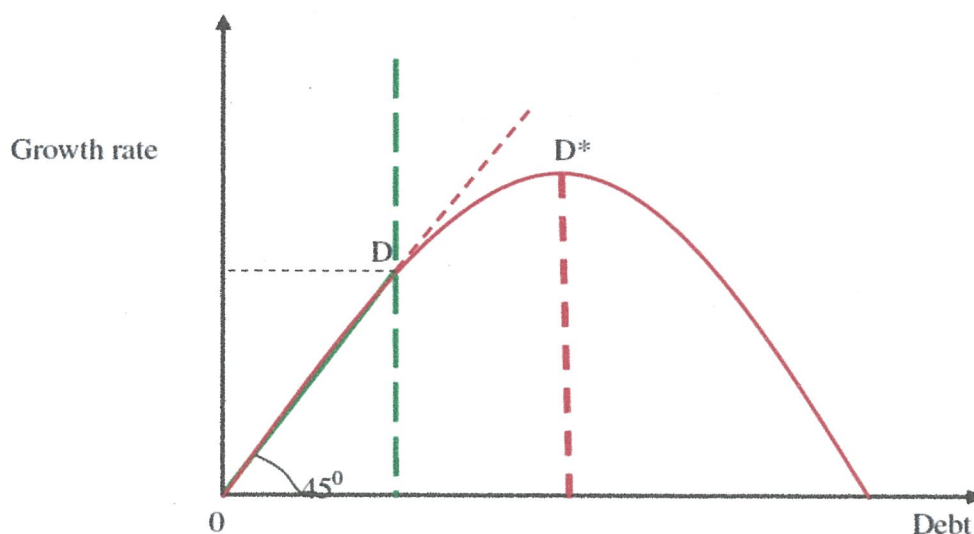
Since HIPC's receive net positive resource transfers, the disincentive effect of a large debt burden might be mitigated and the debt service payments are the main determinants of economic growth. Therefore, a decreasing level of debt service is the crucial determinant of investment and economic growth. 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.

Cohen (1993) demonstrated the relationship between the actual value of debt and investment as a "Growth-debt Laffer Curve" which shows that as unsettled debt increases beyond an optimal level, the expected repayment falls as well as investments. Krugman (1988) argued that the incentives for domestic firms to invest at home could also be distorted since expected returns from investment projects would be heavily taxed in order to raise revenue for debt-servicing. In anticipation of this undesirable outcome, investors would reduce on big undertakings and consequently jeopardizing long term economic growth rate of the debtor country. The "Debt Laffer curve", is represented by an "inverted U" relationship between the level of debt stock and expected net present value (NPV) of debt service payments.

Figure 2.1: Growth-Debt “Laffer Curve” Relationship



Source: Author's reformulation of Krugman's (1988) Illustration

Debt overhang in this context would imply that a country is to the right of the peak of the curve in Figure 2.1. The upward-sloping part of the curve implies that an increase in the actual value of debt would lead to an increase in the expected debt repayment up to that threshold level. Meanwhile the downward sloping part of the curve indicates that an increase in debt reduces expectations about debt repayment and if debt is to be paid taxes would have to be raised in order to obtain the required revenue. Although the debt overhang model does not display the impacts on economic growth obviously but by implication, large debt stocks lowers growth partly by reducing the incentive and the will to invest. The line OD shows that the slope is increasing but after point D the slope of the curve increases but at a decreasing rate. This indicates that external debt may help to enhance growth and as debt increases beyond some optimal level growth rate will increase at a rate less than the increase in debt. Beyond point D^* , increase in debt stock would negatively affect economic growth. This is because domestic and foreign investors could expect heavy taxes to be levied in future as way of raising revenue to meet debt obligations.

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. Finally, The "Debt Laffer Curve", which depicts the relationship between economic growth and debt accumulation, "posits that larger debt stocks tend to be associated with lower probabilities of debt repayment.

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, 2014), 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. Usually external debt is incurred by a country that undergoes shortages of domestic savings and foreign exchange needed to achieve its developmental and other national economic objectives. But then, if the external debt is not used in income-generating and productive activities, the ability of a debtor nation to recompense the debt is significantly reduced (Strenet, 2016). It is often contended that the excessive debt constitutes an obstacle to sustainable economic growth and poverty reduction programs (Berensmann & Maghyereh, 2015).

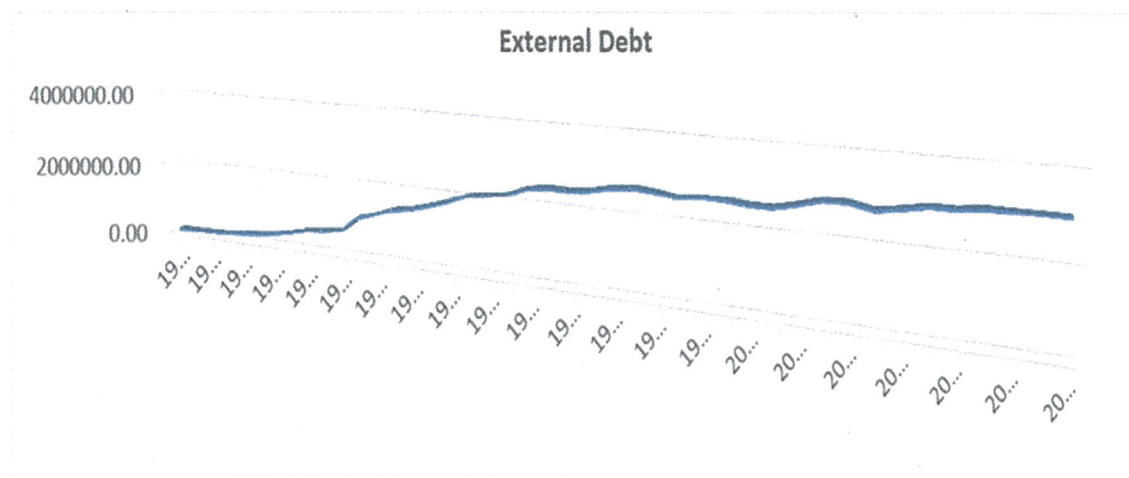
Most of the developing countries have been gathering external debt since their independents in 1960s (Amin & Bello 2016) he also asserted that many developing countries took advantage of plentiful availability of international loans resulting from the oil boom in the early 1970s. The poor capacity of 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. In line with this, according to the World Bank classification of Highly Indebted Economies, the country is one of the severely indebted low-income countries (FGS, MoF, 2016). Somalia's external debt has changed significantly in magnitude, structure and composition over the last quarter of the 20th century. 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 2.2: External Debt Stock of Somalia (1991-2016)



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 is 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 its 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).

Somalia's Gross Domestic Product (GDP) was estimated to be \$4.2 billion for 2014, with 5% nominal growth. Its GDP per capita was equally low, at \$450; Private consumption is GDP's key driver, contributing 132.6% of it; in sharp contrast, investment made up only 8% of GDP in 2015. Somalia's economy is highly dependent on imports, which account for more than 2/3 of GDP, while exports comprise just 14%, creating a large trade deficit, mainly financed by remittances and international debt (World Bank 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.

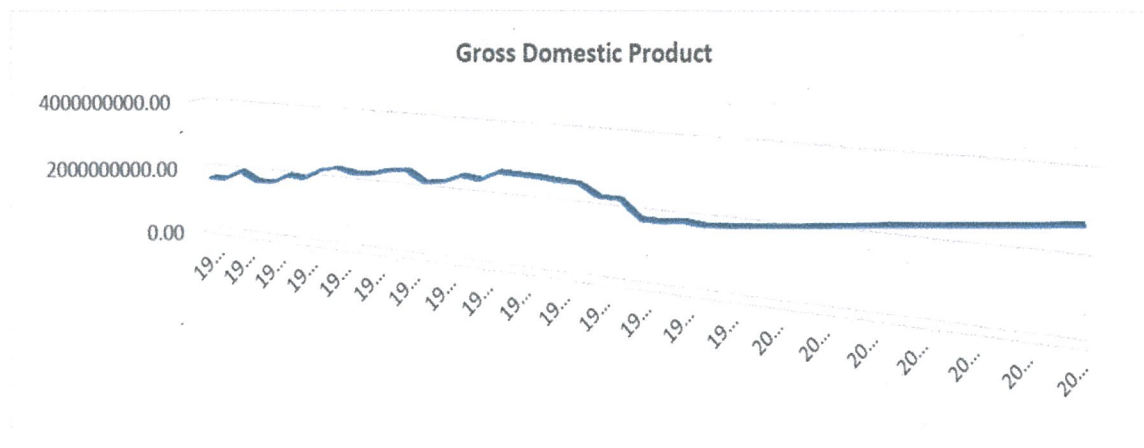
The World Bank reports that Somalia's GDP was \$917.0 million in 1990 and its total population was 10.81 in 2014, and classifies it as a low-income country. The United Nations

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 2.3: Economic Growth of Somalia (1991-2016)



Source: Researcher 2018

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.

2.3 Empirical Review

Theoretical and empirical literature covered in this study supports both relationships (positive and negative) between external debt and GDP growth. (Krugman, 1988) defined debt overhang as a situation in which the accumulation of the debt makes the country's expected repayment capacity on foreign debt fall short of the contractual value of the debt itself and revealed that there is a rate at which accumulated debt stimulates investment and economic prosperity. Similarly, (Borenszten, 2014) showed that the debt overhang Crisis is caused when the debtor country absorbs a large amount of foreign debts than his capacity and then the economy will be hanged by debts and financial obligations. In general, economists deliver statistical supporting evidence that in most instances there is a negative relationship between external debt and economic growth, and this validates the existence of the debt overhang situation.

Empirical literature on the relationship between external debt and economic growth also turnout to be controversial as some findings indicate that it promotes growth meanwhile someconcludes otherwise. External debt could lead to economic growth if the acquisition of

Foreign loans augment physical capital and human capital stock through public investment in infrastructure, education and health.

Krumma, (1985) determined the impact of external debt on Gross Domestic Production in 19 Transitional economies adopting the panel autoregressive distributed lag (ARDL) model. It was found that external debt has positive impact on GDP growth, also openness of the economy has a positive impact in the long run, while external debt to export ratio has a negative impact on growth rate of the transitional economies in the short run.

Ihimodu, (1985) studied the impact of external debt stock on economic growth in Nigeria. The variance decomposition and impulse response from Vector Auto-Regression (VAR) was the econometric technique he labored to test whether or not Ratio of External debt to Exports and other economic control variables stimulate economic growth. Based on the two-stage data processing, the result revealed a weak causation between external debt and economic growth in the Nigerian context. This implies that external debt could not be used to predict improvements or slowdowns in economic growth in Nigeria.

Cohen (1990), regressed investment as a percent of GDP on many variables including the debt to export ratio and found out that the debt to export ratio had a negative effect on investment and therefore economic growth. This is similar to the empirical conclusions of Sachs (1989) and Krugman (1989). But some researchers argue that debt burden reduces economic growth due to the negative impact on the productivity of labour. Geiger (1990) studied the effect of debt burden on capital flows and GNP growth rate using data from nine highly indebted Latin American countries for the period 1974 to 1986. The debt burden was measured by the ratio of debt service to GDP. The findings from the OLS and distributed lag model regressions highlighted that there was a significant negative relationship between debt and economic growth. The reduction in labour and capital productivity was the main channel of the negative effect of debt on economic growth. Similarly, Greene et al. (1991) and Savvides (1992) concluded that external debt reduces private investment and consequently low economic growth.

Warner (1992) used pooled panel regression with data spanning from 1961 to 1989 and debt crisis dummy variable was included to capture the impact of external debt on heavily indebted countries' economic growth. The findings shows that the coefficient for debt crises was positive and significant rather than the negative sign predicted by some studies. Warner

(1992) argued that the debt crisis did not depress investment as the borrowed funds were used in public investments and thus encouraging economic growth. But the pooled OLS regressions used have weakness since the method ignores country specific effects and this study used a more robust dynamic GMM estimation.

Chowdhury (1994) examined the cause-effect relationship between external debts and decline in economic growth. Logarithmic transformed time series data on GNP were used in the regression and causality test was carried out. The result indicates that there was a positive relationship between economic growth and external debt in Bangladesh, Indonesia and South Korea for the period 1970-1988. Similarly, Amoateng et al. (1996) used Granger Causality test to determine the relationship between external debt and GDP growth rates of 35 developing countries with data ranging from 1971 to 1990 and the findings indicate that there was positive causality between foreign debt and GDP growth rate. Hansen (2001) also scrutinized the influence of external borrowing on growth and investment and the findings shows that external debt positively influenced investment and GDP per capita growth rates. Hansen (2001) concluded that the impact was through investment and this implies that if external loans were put in productive venture, the increased investment will lead to further growth. This corroborated the findings of Khan and Kumar (1997) whose finding showed that public investment expenditures funded from external debt have positive and significant effect on economic growth.

Ayadi and Ayadi (2008) examined the impact of the huge external debt, with its servicing requirements on economic growth of the Nigerian and South African economies. The Neoclassical growth model which incorporates external debt, debt indicators, and some macroeconomic variables was employed and analyzed using both Ordinary Least Square (OLS) and Generalized Least Square (GLS) techniques of estimation. Their findings revealed that debt and its servicing requirement has a negative impact on the economic growth of Nigeria and South Africa.

Malik (2010) investigated if there can be any relationship between external debt and Gross Domestic Production in Pakistan for the period of 1972-2005, using time series econometric technique. He found that external debt is negatively and significantly related to economic growth. He also found that debt servicing has significant and negative impact on GDP growth.

In the empirical study by Alam, & Taib, (2012), on the impact of external debt on sustainable economic growth in Nigeria for the period of 1980-2010, using the ordinary least Square regression method, the study found that a 12.3 percent change in economic growth is as a result of external debt and prime lending rate in Nigeria. It therefore recommends that the government should through an act of its political will address the fundamental causes of external debt and also ensure adequate utilization of borrowed funds to develop the different sectors of the economy so as to enhance the economic growth of the nation.

Ayyoub, Chaudhry, & Yaqub, (2012) studied the long-run and short-run relationship between external debt stocks and macroeconomic performance of Pakistan. They applied time-series econometric techniques with annual data series for the entire period of 1988-2008. The co-integration approach was employed to investigate the long-run relationship; and vector error correction method (VECM) to investigate the short term dynamics. They found that there was a significant long-rung and short-run relationship between external debt and macroeconomics variables performance.

Sulaiman and Azeez (2012) investigated the effect of external debt stock on economic growth in Ghana using GDP as the dependent variable while ratio of external debt to export, inflation and exchange rate were used as the independent variables. Annual time series data covering the period of 1970 to 2010 were used, which were analyzed using the ordinary least squares, ADF, unit root test, Johansen co-integration test and Vector Error correction model (VECM). Results from the study showed that external debt has a positive impact on the Nigerian economy in the long run. They therefore recommended that external borrowing should be obtained for economic growth reasons rather than social and political motives.

Babu (2014) estimated the effect of external debt as a share of GDP in economic growth in East Africa Community (EAC). Using annual data from 1970-2010, the study employs a panel fixed-effects model which was based on the Solow growth model augmented for debt. The findings suggest a negative significant effect of external debt on GDP per capita growth rate. Reduction of external debt burden was therefore recommended to promote rapid economic growth.

Ejigayehu (2013) also analyzed the effect of external debt on the economic growth of eight selected heavily indebted African countries (Benin, Ethiopia, Mali, Madagascar, Mozambique, Senegal, Tanzania and Uganda) through the debt overhang and debt crowding out effect

with ratio of external debt to gross national income as a proxy for debt overhang and debt service export ratio as a proxy for debt crowding out. Panel data covering the period 1991-2010 was used. The empirical investigation was carried out on a cross-sectional regression model with tests for stationarity using Augmented Dickey Fuller tests, heteroskedasticity and ordinary regression. The concluding result from estimation showed that external debt affects economic growth through debt crowding out rather than debt overhang.

Safdari and Mehrizi (2014) researched the effect of external debt on economic growth in Iran for the period of 1974-2007, by detecting the balance and long term relation of five variables: GDP, Private investment, Public Investment, external debt and Imports. They used the Vector autoregressive model (VAR) in their econometric analysis and the result of the research showed that external debt and imports had a negative effect on gross domestic product, but variables of private and public investments had positive effects on economic growth.

In an attempt to ascertain the impact of external debt on economic growth of Nigeria, Nwannebuike (2016) adopted the Ex-post facto research design. Data were analyzed using Ordinary Least Square method and diagnostic tests were performed using Augmented Dick Fuller Unit Root Test, Co-integration and Error Correction Model. The result of the study revealed that External Debt is positively related to GDP in the short run but a negative relationship at long run. Also a negative relationship was established between debt service stock and GDP while Exchange Rate had a positive relationship with GDP. The study recommended that the Debt Management authorities should warrant that loans are utilized for purposes for which they were acquired and borrowed also a limit for debts should be set for states and federal governments based on well-defined criteria.

More recently, in a research study done on the relationship between debt and economic growth for the period 1982-1999 in low-income countries (LICs), Chowdhury (2004) discovered similar negative impacts on per capita real GDP growth, both in the HIPC sub sample (35 eligible countries) and in 24 other non-HIPC countries. Obviously, these findings are consistent with the debt overhang and crowding-out effect theories. Chowdhury (1994) suggests the need for thorough extension of the research to all indebted countries, on the grounds that large foreign debt sustains poverty and backwardness.

From the foregone empirical studies, it is evident that the literature on external debt and economic growth is replete with its divergent results. Divergence observed in these results suggests differences in theoretical and methodological approaches employed and the different contexts studied. The kind of the relationship between external debt stock and economic growth in the Somali context is subject to empirical investigation, such enquiry is what this study is set to achieve and to find out if this study will corroborate any of the above outcomes.

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, which is an approximation of how much last years' shock in GDP adjust back to the long run equilibrium in the current year. 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 include 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, the researcher wants to discover the type of relationship between the external debt stock and economic growth in Somalia and the extent of correlation from 1991-2016.

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 study employed Ex-Post Facto quantitative research design to empirically examine the effect of external debt stock on economic growth in Somalia this hypothesis was established, (H_0): There is no significant relationship between external debt stock and economic growth in Somalia (1991-2016). The data collected were also subjected to this test namely Unit Root test, and they were then investigated if there is any Co-integration. The Augmented Dickey Fuller (ADF) and Phillip Perron (PP) unit root tests were used to ascertain the stationarity of the data. And lastly Error Correction Model (ECM) was estimated to capture the short run effect of external debt stock on economic growth.

3.2 Theoretical Framework

The debt overhang hypothesis is the theoretical perspective used to explain the negative effect of external debts on economic growth. Krugman (1988), Sachs (1989), Alesina and Tebellini (1989) defined debt-overhang as a situation in which large debt stock create expectations that debt would be serviced through heavy and perhaps distortionary taxes. This implies that if a country's debt level is expected to exceed its repayment ability, the expected costs of debt-service will discourage domestic and foreign investment resulting into lower economic growth. Clements et al. (2003), also pointed out that debt overhang leads to uncertainty about government policies in order to meet its fiscal obligations. As a result, potential investors would prefer to wait as they study government actions in the presence of huge debt obligations. This could make new investments to be concentrated in short term projects with assured and quick returns rather than to risky long-term projects necessary for long term economic growth.

Derivation of The Two-Gap Model

In-line with Chenery, & Stout (1966), we start with the basic macroeconomic identity where aggregate Output is equal to Aggregate Expenditure. Thus, assuming that there is no government sector;

$$Y = C + I + (X - M) \quad (1)$$

Where:

Y: Economic Growth

C: Consumption

I: Investment

E: Exports

M: Imports

Now;

Sources of Resources Used in the Economy ($Y + M$) = Uses of Resources in the Economy

Expenditure Targets ($C + I + X$)

$$\text{Hence; } Y + M = C + I + X \quad (2)$$

Subtracting C from both sides we get;

$$Y - C + M = I + X \quad (3)$$

$$\text{Since; } Y - C = S \quad (4)$$

Then;

$$S + M \text{ (Leakages)} = I + X \text{ (Injections)} \quad (5)$$

This relationship can be re-stated as follows;

$$I - S \text{ (Savings Gap)} = M - X \text{ (Foreign Exchange Gap)} \quad (6)$$

Therefore, the above scenario rests on the premise that domestic investment can be financed by domestic saving as well as through inflows of capital. Using the above relationship, the following scenarios may arise; S may be too small to permit the amount of I that the country would otherwise have the capability to undertake. Therefore, Savings-Gap would exist. On the other-hand, x may be too small to permit the m required to make full use of the resources of the economy. Therefore, a Foreign Exchange (Trade) Gap would exist.

The above equations show that the domestic resource gap ($S - I$), is equal to foreign exchange gap ($X - M$). An excess of import over export implies an excess of resources used

by an economy over resources generated by it. This further implies that the need for foreign borrowing is determined overtime by the rate of investment in relation to domestic savings.

The two gaps of the model refer to the savings gap and the foreign exchange gap (often measured Rosenstein-Rodan, 1961). The savings gap is simply the difference between the investment required to grow at a certain rate and the domestic savings forthcoming. Using the Harrod-Domar model, the savings gap is obtained as:

$$(g^* - sv)K \quad (7)$$

where g^* is the desired rate of growth of the country, S is the savings rate, V is the reciprocal of the capital-output ratio and K is the capital stock in the country. Thus, suppose the value of capital stock is \$500 million; the required growth rate of output is 6%; the savings rate is 12% and the capital output ratio is 3, then foreign debt of \$10 million will close the savings gap.

3.3 Model Specification

The main aim of this study was to examine the Impact of External Debt on Economic Growth in Somalia. The model is adopted from a simple open macroeconomic debt growth model employed by (Boboye and Ojo, 2012). The starting point is the traditional production function which may be written as follows:

$$Y_t = f(K_t, L_t) \quad (8)$$

Where;

Y : Gross Domestic Product/Total Output,

K : Capital stock

L : Labour

t : time

to express equation (8) into standard form of Cobb-Douglas production function, it yields;

$$Y = AL^\beta K^\alpha \quad (9)$$

Where:

Y : Gross Domestic Product/Total Output

L: Labor input

K: Capital

A: total factor productivity

β and α : are the output elasticities of capital and labor, respectively.

Taking the natural logarithm of equation (9) yields the following form;

$$\ln Y = \ln A + \beta \ln L + \alpha \ln K \quad (10)$$

Taking the first difference of equation (10), we get;

$$\Delta \ln Y_t = \Delta A + \Delta \ln L + \Delta \ln K \quad (11)$$

From equation (8), K can be disaggregated into public capital and private capital.

Therefore;

$$K_t = f(Kg_t, Kp_t) \quad (12)$$

Thus, the effectiveness of private capital declines as soon as the values of certain public capital projects increase, then public capital constitutes a substitute of private capital. However, the country has been struggling with civil wars and conflicts the amount of public capital obtained through the local revenue and taxes are not enough to finance public investments in the country, and it becomes necessary for the government to look for other measures to fill the gap and that is where the external debt comes in to balance the equation. Therefore, External Debt Stock (EDS) becomes a complement of public capital (Kg_t), and it is through that channel were the government is empowered to do its main obligation of public investments by borrowing foreign capital to supplement the domestic revenue and hence improving the over-all economic growth of the country.

By Substituting equation (12) into equation (10), we get an augmented production function

which is expressed below as:

$$\ln Y = \ln A + \beta \ln L_t + \alpha_1 \ln Kg_t + \alpha_2 \ln kp_t \quad (13)$$

But, as we discussed above external debt stock (EDS) is a complement of public capital (Kg_t), since it is one of the sources government can enhance public investment and growth.

Therefore, equation (13), when external debt is included can be re-written as:

$$Y_t = f(EDS, A, Kg_t, Kp_t, L) \quad (14)$$

However, as emphasized by Ayadi & Ayadi, (2015) and Elbadawi, (1996) there are other factors associated with economic growth such as education, fiscal and monetary policy, exchange rate inflation, foreign direct investment, population growth and among others. Therefore, in this study the following variables are included in the specified functional form of the model; inflation (INF) to determine the stability of the local currency, population growth (POP_N), and foreign direct investment (FDI) to examine how accumulated foreign debts impact the investment decisions of genuine investors as a results of high tax obligations caused by the increased arrears. The functional form of the model can be re-stated as;

$$GDP_t = F(Kg_t, Kp_t, L_t, EDSGDPR_t, POPN_t, INF_t, FDIGDPR_t) \quad (15)$$

Where;

GDP: Gross Domestic Product

Kg_t, Kp_t : represents the initially disaggregated capital (K)

L: total labor force

EDSGDPR: External Debt Stock expressed as ratio to Gross Domestic Product

FDIGDPR: Foreign Direct Investment expressed as ratio to Gross Domestic Product

POP_N: Rate of Population growth

INF: Inflation rate and it is meant to capture macroeconomic stability.

t: time bound

In what follows, we imitate Patillo, Poirson and Ricci (2002) and Baraki (2005) by fitting a quadratic term (EDS^2) to capture the debt overhang hypothesis. We employ economic growth and debt stock as our dependent and independent variables respectively, and we utilize the same control variables already identified above. Researchers have basically tested the debt overhang hypothesis by running a growth regression on the debt stock and selected control variables. The control variables have usually included foreign direct,

inflation, exchange rate and population growth. See Iyoha (1997), and Iyoha (2000). Accordingly, we specify the following function with the quadratic term inclusive for estimation:

$$GDP_t = F(Kg_t, Kp_t, L_t, EDSGDPR_t, POPN_t, INF_t, FDIGDPR_t, EDS^2_t) \quad (16)$$

EDS^2 is quadratic term to explain the existence of debt overhang hypothesis, and all the other variables are as already defined.

From equation (16), the final estimable equation with the constant in its log-linear form is given as:

$$Yg_t = \alpha_0 + \alpha_1 \ln Kg_t + \alpha_2 \ln Kp_t + \alpha_3 \ln L_t + \alpha_4 \ln EDSGDPR_t + \alpha_5 \ln POPN_t + \alpha_6 \ln INF_t + \alpha_7 \ln FDIGDPR_t + \alpha_8 \ln EDS^2_t + \Sigma \quad (17)$$

3.3 Sources of Data

Time series data of twenty-seven years (1991-2016) was used in the study. External Debt Stock and Population Growth were acquired from UN-data (www.un.org/popin/data.html), while Foreign Direct Investment, Gross Domestic Product and Inflation were acquired from the World Development Indicators (<http://data.worldbank.org.wdi>). The variables that were used are Gross Domestic Product (GDP), External Debt Stock (EDS), Population growth Rate (POPN), Inflation (INF) and Foreign Direct Investment (FDI).

Table 3:1 Description of Variables and Measurements

Variable	Descriptions	Unit of measurements	Sources
FDI	Foreign Direct Investment	FDI/GDP ratio	World Development Indicators (WDI)
GDP	Gross Domestic Product	Growth rates	World development indicators (WDI) & United Nations Statistical Division
POPN	Population growth	Growth rates	UN-Data
EDS	External Debt Stock	EDS/GDP ratio	UN-Data
INF	Inflation rate	Percentages	World Development Indicators (WDI)

Source: Researcher 2019

Table 3:2 Operational Definitions of Key Terms

Variables	Definitions
Gross Domestic Product	The aggregate monetary value of all final goods and services produced annually within the boundaries of a country.
Economic growth	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.
External Debt Stock	Is the cumulative of all dues against the country owed to the International institutions, and /or foreign countries, whether interest levied or not less. Or, it is the money borrowed by a country from foreign lenders, in which the nature on this debt must be paid in the currency in which the loan was acquired.
Foreign Direct Investment	Is any investment which is profit motive made by a foreign company or individual in one country for business interests in another country, in the form of either establishing business operations or acquiring business assets in the that country, such as sense of ownership or regulating interest in a foreign company.
Population growth	Population growth is the rate at which the number of individuals in a population increases in a given time period, expressed as a function of the initial population. To determine whether there was population growth this formula is used (birth rate + immigration) – (death rate + 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.

Source: Researcher 2019

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. This is done by using unit root tests to examine the stationarity of data sets. Thus, the variables are subjected to the Augmented Dickey-Fuller (ADF) and Phillip Perron (PP) unit root tests.

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 if 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 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 results in spurious regression and as Granger and Newbold (1974), argued they are characterized by a high R^2 and a low Durbin-Watson (d_w) 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 series were also tested for stationarity using the Augmented Dickey Fuller (ADF)and Phillip Perron (PP) tests. The reason for this test is the fact that macroeconomic variables are desired when they are stationary and on the contrary, regression on the series yields spurious results. The ADF and PP statistics is computed using formula below;

$$\Delta y_t = \alpha_0 + \lambda_t + \delta y_{t-1} + \sum_{j=1}^l \phi_j \Delta y_{t-j} + \varepsilon_t, \dots \dots \dots .18$$

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. if the variables in equation (17) have stochastic trends and follow a common long-term equilibrium association, then the variables are said to be co-integrated. Co-integration is a test for equilibrium between non-stationary variables integrated of the same order. The Johansen's co-integration procedure (1990) is adopted for this study because it involves the use of a well-established, likelihood ratio statistics. The equation for testing co-integration using Johansen's procedure is as below;

$$y_t = a + A_1 Y_{t-1} + \dots + A_p Y_{t-p} + \varepsilon_t \quad (19)$$

Where; y_t is k-dimensional vector of non-stationary variables, and ε_t is a vector of white noise residuals. By using the first difference operator Δ equation (19) can be rewritten as

$$\Delta y_t = \Pi y_{t-1} + \sum_{i=1}^p T_i \Delta y_{t-i} + \varepsilon_t \quad (20)$$

The rank of matrix Π determines the number of linear combinations of y_t that are stationary processes. If the rank of the matrix is r , Π can be factored as $\alpha\beta'$, where the elements of α are the adjustment parameters in the error-correction model, and β contains the co integrating vectors. Johansen derives two test statistics for testing the co-integrating rank. The first is the maximum eigenvalue test while the second is the trace statistic.

If the variables in equation (7) turn out to be co-integrated, the error correction modeling approach is adopted to reveal the short and long run effect of external debt on economic growth.

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 its 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:

$$\Delta Y_t = \alpha_0 + \sum_{i=1}^j \alpha_{1i} \Delta Y_{t-i} + \sum_{i=1}^j \alpha_{2i} \Delta X_{it-i} + \alpha_3 ect_{t-1} + u_t \quad (21)$$

Where the long run properties are derived from the proportionality between y_t and X_{it} . The above specification relates the short run change in the dependent variable Δy_t to the short run change in the explanatory variables X_{it} . This is called the impact effect (α_{2i}) but ties the change to the long run impact through a feed-back mechanism.

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. E-Views were used to analyze the data with respect to the specific objectives. Objective one and objective two, the researcher also 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.

In addition, the co-integration techniques are discussed to in an attempt to find out the long run relationship between external debt stock on economic growth in Somalia (1991-2016). 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

Statistic	LNGDP	LNFDI	LNEDS	LNINFL	LNPOPN	EDS²
Mean	1.025	4.975	1.698	1.506	0.821	4.143
Median	1.183	4.373	1.764	1.513	1.069	3.114
Maximum	1.827	9.912	6.300	3.508	1.264	39.692
Minimum	-0.248	1.899	0.167	-3.912	-0.867	0.027
Std. Dev.	0.661	2.051	1.143	1.461	0.614	7.456
Skewness	-0.566	0.608	2.368	-1.897	-1.913	4.378
Kurtosis	2.032	2.538	11.252	8.353	5.180	21.510
Jarque-Bera	2.406	1.835	98.088	46.655	21.016	454.265
Probability	0.300	0.399	0.000	0.000	0.000	0.000
Sum	26.653	129.355	44.162	39.180	21.348	107.727
Sum Sq. Dev.	10.953	105.183	32.713	53.433	9.445	1390.080
Observations	26	26	26	26	26	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 is 4.143 the highest being 39.692 and the least at 0.027. The standard deviation from the mean external debt squared was 7.456.

Symmetry of the distribution of the series around the mean is measured by skewness. For a distribution to be considered Symmetric it should have a zero skewness value. Thus, by observing the row of skewness from the above table all variables seem to have symmetric distribution because their values are not far from zero.

The row under kurtosis in the above table, measures flatness and peakedness of the distribution measured by kurtosis of a series. For a distribution to be considered normal it should have a kurtosis value of 3 and hence all our variable under study have digits that are kurtosis and that are 3 and above.

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 4.2.

Table 4.2: Test for normality

Statistic	LNGDP	LNFDI	LNEDS	LNINFL	LNPOP	EDS ²
Skewness	-0.566	0.608	2.368	-1.897	-1.913	4.378
Kurtosis	2.032	2.538	11.252	8.353	5.180	21.510
Jarque-Bera	2.406	1.835	98.088	46.655	21.016	454.265
Probability	0.300	0.399	0.000	0.000	0.000	0.000
Sum	26.653	129.355	44.162	39.180	21.348	107.727
Sum Sq. Dev.	10.953	105.183	32.713	53.433	9.445	1390.080
Observations	26	26	26	26	26	26

Source: Output from EViews7

Normality test results in Table 4.2 show that Inflation (INF), External Debt Stock (EDS), Population Growth (POP) and EDS² 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 Test for Stationarity

The variables were tested for stationarity using the Augmented Dickey Fuller (ADF) and Phillip Perron (PP) statistics. Results of the tests for stationarity are presented in the Tables 4.3 and 4.4.

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 5 lags were used for the ADF and PP tests (as determined automatically by E-views 7 statistical package).

Table 4.3: Stationarity Test Results Using Both Augmented Dickey Fuller (ADF) and Phillip Perron (PP) Tests

Augmented Dickey Fuller (ADF) Levels			Phillip-Perron (PP) Levels		
Variables	Constant	Constant and Trend	Variable	Constant	Constant and Trend
LNEDS	-1.116	-1.594	LNEDS	-1.648	-1.986
LNGDP	-1.942	-1.326	LNGDP	-1.724	-1.615
LNFDI	-1.712	-0.345	LNFDI	-1.925	-1.516
LNPOP	-1.121	-1.221	LNPOP	-0.188	-2.013
LNINF	-1.014	-1.268	LNINF	-1.124	-1.206
LNEDS ²	-1.382	-1.890	LNEDS ²	-1.014	-1.610
Augmented Dickey Fuller (ADF) First Difference			Phillip-Perron (PP) First Difference		
Variables	Constant	Constant and Trend	Variable	Constant	Constant and Trend
LNEDS	-4.231*	-5.212*	LNEDS	-8.974*	-8.774*
LNGDP	-5.255*	-5.992*	LNGDP	-5.260*	-6.128*
LNFDI	-5.365*	-5.216*	LNFDI	-7.964*	-7.850*
LNPOP	-4.405*	-5.527*	LNPOP	-3.532*	-4.161*
LNINF	-8.639*	-8.524*	LNINF	-9.914*	993Q*
LNEDS ²	-5.494*	-5.378*	LNEDS ²	-9.718*	-9.511*

Source: Output from EViews7

(*) indicate significant at 5% level

Where;

EDS: External Debt Stock

GDP: Gross Domestic Product

FDI: Foreign Direct Investment

POP: Population Growth

INF: Inflation

EDS²: is meant to capture the debt overhang effect

The null hypothesis (H_0) 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 nonstationary at $I(1)$ this implies that we can only regress the variables only if they are only co-integrated.

Having known that all of our variables were non-stationary at levels but become stationary at first difference, it implies that they are qualified for Co-integration to determine the long run relationship, and Error Correction Model (ECM) for short run relationship between the variables in the study

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, LNINFL, LNEDES 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. To carry auto-co-integration analysis, it is pertinent to determine the optimal lag length of the Vector Autoregressive (VAR) model in equation (17) using various information criteria.

Table 4.4: VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-218.3431	NA	2.510405	17.94745	18.23998	18.02859
1	-142.0709	109.8320*	0.109766*	14.72567*	16.77338*	15.29362*

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)

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

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 (17) 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, it is decided that we reject the null hypothesis of no co-integration at 0.05 level of significance. It is therefore concluded that there is a significantly long run relationship between the variables in the model.

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

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

Source: Output from EViews7
(*) 5% level of significance

The results from Maximum Eigenvalue of 4.6. indicate that there is a Co-integration among External Debt Stock, Gross Domestic Product, inflation, population growth rate and foreign direct investment. These findings confirm the results got from the first trace rank test hence by observing the p-values from the above table we reject the null hypothesis that there is a no Co-integration among these variables thus we conclude that there is a long run relationship between External Debt Stock and Economic Growth in Somalia (1991-2016). Therefore, we shall now employ ECM to evaluate short run properties of the co-integrated series.

4.2.1 Normalized Cointegrating Coefficients (Standard Error in Parentheses)

LNGDP	LNEDS	LNFDI	LNINF	LNPOPN	LNEDS²	C
	-1.579642	-0.618129	-0.836631	-2.061502	-0.005503	7.771898
	-5.974214	-8.023481	-7.773213	-11.42106	-0.129239	13.15197
	(0.26441)	(0.07704)	(0.10763)	(0.18050)	(0.04258)	(0.59093)

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 the Table 4.7.

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

Dependent Variable: DGDP

Included observations: 24 after adjustments

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

4.4 Parsimonious Model

After the formulation of the Error Correction Model, there was need to reduce the short run model components. This was done by expunging variables whose absolute values of the t-statistic were less than one and the insignificant ones from the Error Correction Model. Results of reduced model (parsimonious) are presented in Table 4.8.

Table 4.8 Parsimonious model

Dependent Variable: DGDP

Included observations: 24 after adjustments

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

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 over-parametrized 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.

4.3.1 Results of the ECM Estimation

The results of the parsimonious ECM model are presented in Table 4.8. The results reveal that change in one percent value of External Debt Stock (EDS) has a negative (-0.110631), and significant (0.0587) impact on economic growth in the short-term in Somalia. This implies that one percent increase in External Debt Stock (EDS), leads to -0.110631 decrease in economic growth (GDP) in the short-term. The negative sign, as postulated by the theory, is to depress the level of investment. This implies that substantial portions and new borrowings are used to service the high debt service requirements instead of investing in productive projects. Large debt service obligations use up foreign exchange and capital as they are transferred to lenders to repay interest and principal funds. This result corroborates the findings of Melbourne (1997), Pattillo et al. (2002), Clements et al. (2003). Cohen (1993) asserted that the adverse effect of debt on growth is caused not only through the impact of stock debt, but also via the flow of service payments, which are likely to crowd out investment. However, the negative relationship between total external debt and growth in this study may be due to these funds not being utilized in productive investments or spent on the lengthy civil wars and conflicts in the country; and this result also concurs with the findings of Fosu (1999) who used the augmented production function, finding a negative correlation between debt and economic growth, in Sub-Saharan Africa during 1980-1990.

On the other-hand, changes in one percent value of Foreign Direct Investment (FDI) has a negative and significant impact on economic growth reason being the persistent increase in EDS diminished the foreign investor's confidence to inject capital into the domestic economy which will lower the overall foreign capital in the economy and will in-turn decrease economic growth of the country, the security deterioration and the political instability of the country might also reduce the level of FDI at a level it cannot contribute the overall GDP. This result was in line with Mbanga and Sikod (2001) using data for Cameroon, found that there exists a crowding out effects on Foreign Direct Investment, arising from high levels of foreign debt that will make the government to impose high taxes on the foreign investors hence discouraging any genuine investor to come on board and invest the local economy. However, changes in one-period lagged value of inflation rate have negative and significant effect on economic growth. This indicates that fluctuations and instabilities in prices impact negatively on economic growth in Somalia. This result is similar to Many studies like Cohen (1993), Were (2001), Ahmed et al. (2007, among others reported negative and significant impact of inflation on economic growth.

The results also show that in one-period lagged value of population growth have strong and significant at 1 % level of significance with negative sign. This indicates that growth rate of population decreases growth of investment through discouraging domestic saving. That means the larger the population the smaller the share of income allocated to savings and hence investment. This is in line with Chowdury's (1994) findings. Population growth lowers the average human capital and the steady-state capital-labour ratio for a given investment, and thereby lowers steady-state economic growth in the neoclassical growth framework. The empirical works by Kormendi and Meguire (1985); Mankiw et al. (1992); Kelley and Schmidt (1995) and Bloom, Sachs (1998) record a negative and statistically significant effect of population growth on economic growth.

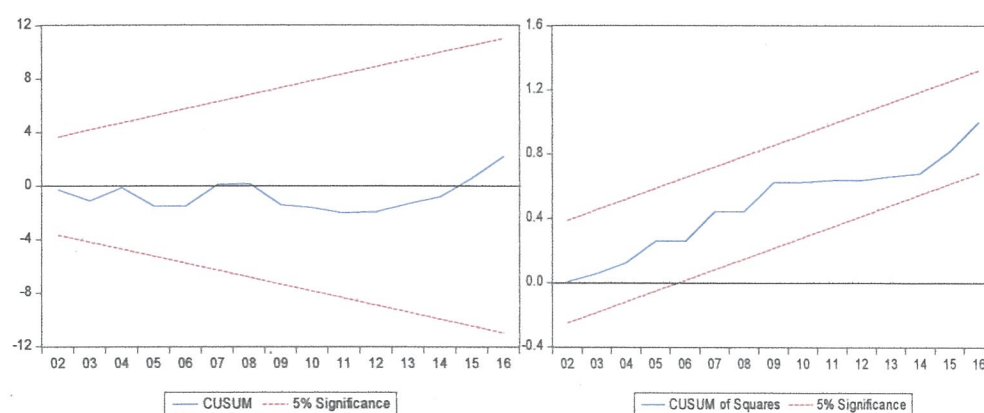
The result of EDS² which was meant to capture the debt overhang effect does not offer a confirmation to support the debt overhang argument by Krugman (1988) and Sachs (1989) which was the most commonly used argument to establish a negative relationship, as mentioned in the literature review chapter two. These authors argued that debt overhang is the main reason to reduce investment and slow economic growth in developing countries. As stated in table 4.8 before the external debt stock squared to economic growth shows evidence of significant effect on growth (0.0122) and does not have the correct sign (negative). This concluded that debt overhang effect might not hold in Somalia. This result is in line with the findings of the study by Oks and Wijnbergen (1995) test the debt overhang hypothesis for Mexico and conclude that it does not exist. Cohen (1993) rejected the debt overhang theory, arguing instead, that the important debt problem is crowding out of investment caused by debt service payments in 81 developing countries over the period 1965-1987. In addition Oks and Wijnbergen (1995) test the debt overhang hypothesis for Mexico and conclude that it does not exist. Borensztein (1990), using data for the Philippines have suggested that the debt overhang effect is expected to be strong when considering private investment and private debt. This hypothesis could not be tested in this study due to the unavailability of the requisite data.

The results further reveal that the estimated lagged error correction term ECT(-1) is negative and significant at 5 percent level. This supports the co-integration test results presented in Table 4.6. The feedback coefficient is -0.283 suggesting a fairly low speed of adjustment to equilibrium after a shock. Approximately, 28 percent of the disequilibria from the previous year's shock in Gross Domestic Product converge or adjust back to the long run equilibrium in the current year.

4.4 CUSUM & CUSUM Square Parameter Stability Test

CUSUM & CUSUM square parameter stability test is used to detect the instability of the variables and the coefficients. This test is most commonly employed in time series data after the Error Correction Model is conducted, to reveal the existence of any structural breakpoint.

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

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Summary and Conclusions

The aim of this study was to investigate the long-run relationship 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 Summary of Findings

The purpose of the study was to assess the relationship between external debt stock 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. A simple open macroeconomic debt growth model employed by (Boboye and Ojo, 2012), was adopted for the study. Population growth, Inflation and Foreign Direct Investment were added to Gross Domestic Product and external debt variables used in the model adopted.

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 EDS^2 , (Which was meant to capture the debt overhang effect) was found to be not having the theoretical implications in explaining Gross Domestic Product of Somalia between 1991 and 2016. The coefficient was positive and statistically significant. 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 2010th 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.

The major objective of this study was to test if there is a long run relationship between external debt stock and economic growth in Somalia (*Objective 1*). Before testing for this long run relationship between the two variables, there was need to establish if the 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 all of our variables were 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. Attempts to confirm the results of the trace tests using the Maximum Eigenvalue test also confirmed that there was a long run relationship between external debt stock and economic growth in Somalia.

Another finding is that we examined the short-run relationship between external debt stock and economic growth in Somalia (*Objective 2*) given the time series data. The outcome of the results revealed that external debt stock has negative and significant impact on economic growth in Somalia. 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 debt on growth will likely be negative.

5.2 Conclusion

The study explored the long-term relationship of external debt stock on economic growth in Somalia for the data spanned 1991-2016. The study employed co-integration model to examine long-term relationship between the variables, which has its advantage of application to level series. The results of the co-integration model confirm presence of long-term relationship between external debt stock and economic growth in Somalia. The study also examined the short-run relationship on the variables under study using Error Correction Model of external debt stock and economic growth variables. The results of ECM showed that there is a negative and significant short-term relationship between external debt stock and economic growth in Somalia 1991-2016.

The conclusion therefore is that growth in external debt stock has negative impact on economic growth. Hence, debt management authorities need to formulate proactive policies to control unsustainable growth in external debt as it discourages economic growth and foreign direct investments in Somalia.

5.3 Study Recommendations

Based on the above findings, the following recommendations are proposed:

Firstly, external debts of Somalia should be borrowed solely for economic reasons and not for personal and extravagant reasons. This is to dodge accumulation of foreign debt stock overtime and prevent a confusion of the motive behind external debt.

Secondly, the concerned authorities who are accountable for managing Somalia's external debt such as the Somali federal government and the regional leaders should effectively keep track of the debt repayment obligations and it should not be permitted 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 through project identification, appraisal and approval, loan negotiations and contracting, loan disbursements, project implementation monitoring and evaluation as well

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.

5.6 Suggestions for Further Research

This study was not able to trace data on the purposes for which external loans were borrowed by Somalia. This was due to aggregation of data from WDI (2008). It is recommended that future studies could focus on the use of externally acquired loans and establishing the impact of such loans on economic growth in Somalia. For instance one can study the impact of externally borrowed funds meant for industrial sector on economic growth. This would bring out the clear impact of borrowed funds on economic growth using some sort of disaggregation.

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APPENDICES

APPENDIXI: DATA USED IN THE STUDY

Year	GDP	FDI	EDS	INF	POPN	EDS ²
1991	0.78	-192.3	3.14	33.39	0.79	9859600
1992	0.81	-74.07	3.02	24.39	0.44	9120400
1993	1.05	1904.8	2.381	18.5	0.42	5669161
1994	1.33	751.87	1.967	16.88	0.85	3869089
1995	1.14	877.19	2.349	13.51	1.59	5517801
1996	1.26	1031.7	2.098	10.51	2.43	4401604
1997	1.43	769.23	1.791	15.2	3.11	3207681
1998	2.01	19.9	1.311	2.01	3.5	1718721
1999	2.22	-364.86	1.182	9.4	3.54	1397124
2000	2.58	104.65	9.996	1.75	3.34	999200.2
2001	3.12	12.82	8.269	0.63	3.1	683763.6
2002	3.44	40.69	7.86.9	1.96	2.94	619211.6
2003	3.09	-275.08	9.24.9	3.13	2.85	855440
2004	3.22	-1487.5	8.909	3.12	2.84	793702.8
2005	3.59	6.685	7.71.6	13.53	2.9	595366.6
2006	3.31	29	8.631	4.92	2.96	744941.6
2007	3.91	36.06	7.583	11.37	2.99	575018.9
2008	4.47	19.46	6.645	-0.02	3	441560.3
2009	4.33	24.94	5.448	3.95	2.98	296807
2010	5.59	20.03	544.7	5.09	2.95	296698.1
2011	5.14	19.84	5.94	4.19	2.92	352836
2012	5.32	20.175	5.741	2.39	2.89	329590.8
2013	5.88	75.85	5.196	5.1	2.89	269984.2
2014	5.79	74.95	5.045	2.14	2.9	254520.3
2015	6.22	82.95	8.521	4.14	2.95	726074.4
2016	5.80	5102.188	6.125	3.4425	2.907	375248.1

Source: World Development Indicators & UN-Data 2017

APPENDIX II: LOGGED DATA SERIES

Year	LNGDP	LNFDI	LNEDS	LNINF	LNPOP	LNEDS ²
1991	-0.24846	5.259057	1.144223	3.508256	-0.23572	1.309246
1992	-0.21072	4.305011	1.105257	3.194173	-0.82098	1.221593
1993	0.04879	7.552132	0.867521	2.917771	-0.8675	0.752592
1994	0.285179	6.622563	0.67651	2.826129	-0.16252	0.457665
1995	0.131028	6.776724	0.85399	2.60343	0.463734	0.729298
1996	0.231112	6.938963	0.740985	2.352327	0.887891	0.549058
1997	0.357674	6.64539	0.582774	2.721295	1.134623	0.339626
1998	0.698135	2.99072	0.27079	0.698135	1.252763	0.073327
1999	0.797507	5.899514	0.167208	2.24071	1.264127	0.027958
2000	0.947789	4.650621	2.302185	0.559616	1.205971	5.300056
2001	1.137833	2.551006	2.112514	-0.46204	1.131402	4.462714
2002	1.235471	3.705982	2.062931	0.672944	1.07841	4.255684
2003	1.128171	5.617062	2.224515	1.141033	1.047319	4.948469
2004	1.169381	7.304852	2.187062	1.137833	1.043804	4.78324
2005	1.278152	1.899866	2.043296	2.604909	1.064711	4.175059
2006	1.196948	3.367296	2.15536	1.593309	1.085189	4.645578
2007	1.363537	3.585184	2.025909	2.430978	1.095273	4.104307
2008	1.497388	2.968361	1.893865	-3.91202	1.098612	3.586723
2009	1.465568	3.216473	1.695249	1.373716	1.091923	2.873868
2010	1.720979	2.997231	6.300235	1.627278	1.081805	39.69296
2011	1.637053	2.9877	1.781709	1.432701	1.071584	3.174487
2012	1.671473	9.912199	1.747633	0.871293	1.061257	3.054223
2013	1.771557	4.328758	1.647889	1.629241	1.061257	2.715538
2014	1.756132	4.316821	1.618398	0.760806	1.064711	2.619211
2015	1.82777	4.418238	2.142534	1.420696	1.081805	4.590451
2016	1.758203	8.537425	1.812379	1.236053	1.067122	3.284717