

TRADE OPENNESS AND GOVERNMENT SIZE IN UGANDA

(1986-2017)

By

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DECLARATION

I declared that this thesis is my original work and has not been submitted for any other award of a degree and published at any institution of higher learning.

Mohammed ABBA Mustapha

Date

APPROVAL

I declare that this dissertation has been done by the student under my supervision and is ready for further cross-examination by other examiners.

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DR. IBRAHIM M. TAOFIK

DEDICATION

I dedicated this thesis to my family members, and close friends; they have been very instrumental in my academic pursuit.

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My sincere gratitude is accorded to the Almighty God for the gift of life that He gave me throughout my studies.

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LIST OF ACRONYMS

| | |
|--------|--|
| ADF | Augmented Dickey-Fuller |
| ECM | Error Correlation Model |
| BIS | Business, Innovation and Skills |
| CU | Customs Union |
| EAC | East African Community |
| GDP | Gross Domestic Product |
| GMM | Generalized Methods of Moments |
| IMF | International Monetary Fund |
| IT | Internal Tariffs |
| NTBs | Non-Tariff Barriers |
| OECD | Organization for Economic Co-operation and Development |
| RISDP | Regional Indicative Strategic Development Plan |
| SADC | Southern African Development Cooperation |
| TPR | Trade Policy Review |
| UK | United States |
| ARDL | Autoregressive Distributed Lag |
| ASEAN | Association of Southeast Asian Nations |
| LNCGOV | Ling Capital Expenditure |
| LNRGOV | Ling Recurrent Expenditure |
| LNGOV | Ling Total Government Expenditure |

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ABSTRACT

One of the major issues that have dominated policy making in countries all over the world is the need to remove restrictions to trade and cross border financial transactions and there is high possibility for these countries to be exposed to high external risk caused by turbulence in international market, therefore, this study investigated the relationship between trade openness and government size in Uganda From 1986-2017. The following objectives guided the study: i) to determine the long run relationship between trade openness and government size Uganda ii) to determine the short run relationship between trade openness and government size in Uganda;. iii) To determine the extent of causality between trade openness and government size of Uganda. Time series data for Uganda covering the period from 1986 to 2017 was used for the analysis. The data was obtained from World Development Indicator (WDI). Johannsen co-integration test was used to determine the long-run relationships, while the error correlation model was used to determine the short run dynamic interactions between trade openness and the alternative measures of government size (measured by the ratio of total government expenditure to GDP, capital expenditure as a ratio of GDP, and recurrent expenditure as a ratio of GDP). The pair wise causality test was also used to ascertain whether compensating hypothesis holds for Uganda. The results of the study revealed that there is a positive long and short run relationship between trade openness and government size. Furthermore, the Research found out that there is a positive causal link between trade openness and government size; this implies that the compensating hypothesis holds for Uganda. Empirical evidence reveals that government size measured by percentage share of total government expenditure in GDP and share (percent) of recurrent expenditure in GDP significantly affects trade openness in the long run but percentage share of capital expenditure in GDP as a measure of government size does not impact on trade openness in the long run. The results of the standard causality test corroborate these findings. However, the three measures of government size considered significantly affect trade openness in the short run. The major implication for the study therefore is that compensation hypothesis holds for Uganda. Thus, the study Recommend That, the government needs to continue to expand its expenditure in order to cushion the effect of increase in risk caused by rising trade openness. Therefore the study concludes that government size increases significantly as trade openness expand in Uganda. This study recommends that for Uganda to cushion such effect, government should provide more employment, investments and income to dampen the impact of this risk on the economy. This study contributes to existing literature based on the fact that if the compensation hypothesis holds for Uganda then the government must enhance the expenditure of the three measurements (i.e.) total government expenditure, capital expenditure and re-current expenditure to compensate the external shocks.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter covered the background to the study, problem statement, purpose of the study, objectives of the study, research questions, hypothesis, scope of the study, significance of the study and operational definitions of key terms.

1.1 Background to the Study

This section covered the historical perspective, theoretical perspective, conceptual perspective and the contextual perspective.

1.1.1 Historical Perspective

Since 1945 after the World War II, United States has worked to break down trade barriers across the globe through a wide range of institutions and agreements. Both the United States and its trading partners have derived substantial benefits from greater global economic integration. Many American consumers, firms, and workers are better off because of these efforts. However, in 2016, growth in world trade slowed once again (+1.5% in real terms after+2.5%), reaching its lowest rate since the 2008-2009 crisis (Olawole, 2017). Since 2012, world trade has grown on average by 2.7% a year, compared to 5.9% a year between 1986 and 2011 (Berthier, *et al.*, 2017). It has therefore increased slightly less quickly than world activity over the last five years (+3.0% on average), whereas it was growing almost twice as fast before the crisis. The trade openness ratio, calculated as the ratio of imports and export to economic activity, has thus fallen slightly since 2011, after following an upwards trend over the two decades preceding the recent major crisis (Berthier, *et al.*, 2017). According to Department for Business, Innovation and Skills (BIS) (2013), the trade openness of UK increased from 51.6% to 61.6% between 2003 and 2013, however, fell to 59% in 2014.

In Africa, the Southern African Development Cooperation (SADC) was created to enhance economic growth and development, eradicate poverty and to promote the free movement of goods and services, capital and labour amongst regional members (SADC, 2011). Trade openness has been one of the objectives of SADC as stipulated in the Regional Indicative Strategic Development Plan (RISDP) (Khobaiet *al.*, 2017). Furthermore, the Trade Protocol initiated in the year 2000 also sought to promote trade openness in goods and services in the

region, with the hope that a free trade area would be formed in 2012 to boost intra-SADC trade. Despite the initiatives implemented to boost trade openness in the SADC region, barriers to the movement of goods and services are still present.

Government tends to absorb a sizeable share of society's resources and therefore, they affect economic development and growth in many countries. Throughout history high levels of economic development have been attained with government intervention. Where it did not exist, little wealth was accumulated by productivity economic activity. Openness is an indispensable enabler of growth, job creation and poverty reduction. Trade provides new market opportunities for domestic firms, stronger productivity and innovation through competition. It contributes to poverty reduction, stronger wages, geopolitical benefits derived from deeper economic integration and even on the personal level-increased individual choice and freedom. No country has developed successfully in modern times without harnessing economic openness to international trade, investment, and the movement of people (SADC, 2011).

In East Africa, the main objective of the East African Community (EAC) was to attain economic, social and political integration (Shinyekwa & Othieno, 2013). The Customs Union (CU) protocol highlighted the commitment of Partner States to support export promotion schemes in the community to accelerate development, promote and facilitate export oriented investments, produce export competitive goods, promote export schemes and attract foreign direct investment. The removal of tariffs on intra-regional trade also referred to as Internal Tariffs (IT) and the efforts to reduce Non-Tariff Barriers (NTBs) and improvement in trade facilitation are among the initiatives to boost intra-EAC trade (Shinyekwa, 2015). While this is the intention among the EAC regional economic integrating countries, there is a tendency to trade more with countries outside the regional bloc than among partner states. This is as a result of weak infrastructure; supply side constraints, limited value addition capacity and poor road connectivity that have remained a major impediment to increase in intra-regional trade (Muluvi, 2014).

Since its last Trade Policy Review (TPR) in 1995, Uganda has eliminated all quantitative restrictions; most of the remaining non-tariff restrictions are maintained for moral, health, security or environmental reasons. Tariffs have become Uganda's main trade policy instrument (Jaimovich & Kamuganga, 2010). Uganda has been applying the customs valuation method based on the transaction value since July 2000. The tariff structure has been simplified through

the reduction of the number of bands from five in 1995 to three (zero, 7%, and 15%), and the lowering of maximum ad valorem rates from 60% to 15%. All tariffs are ad valorem, except on fuel. Some 16.4% of all tariff lines are duty free, while 39.3% carry the maximum rate of 15% (Jaimovich & Kamuganga, 2010).

These policy objectives have been pursued through unilateral liberalization, and regional and bilateral trade negotiations, in particular within the African region, as well as through its participation in the multilateral trading system (Jaimovich & Kamuganga, 2010).

As regard the government size measured by government expenditure as a percentage of GDP, Uganda had government spending of 7.51% in 1990, 14.5% in 2000, and was highest in 2002 with 16.79% and dropped to its lowest in 2016 with 7.42%. By 2017, Uganda's government spending stood at 8.05%. Similarly, capital expenditure as a percentage of GDP was 2.7% in 1990, 5.23% in 2000, and was highest in 2002 with 8.98%, and 8.85% in 2016 and its drop drastically to its lowest in 2017 with 2.39%. Furthermore, another measure of government size; recurrent government expenditure as a percentage of GDP stood at 14.3% in 1990, it dropped to its lowest in 2000 with 14.29% and increased to 19.3% in 2002. This figure rose to its highest in 2016 (20.1%) and by 2017, it stood at 14.7%, (Ugandan Bureau of Statistic, 2018).

Theoretically, it is expected that as a country increases its trade volume, government size is also expected to increase in order to help cushion the risks caused by and/ or induced by turbulence in product and commodity markets. This issue has attracted significant discussions but with little empirical evidence. Therefore, this study will consider trade openness and government size of Uganda from 1986-2017. Uganda is selected because of its diversification index and Gross Domestic Product (GDP) revealed that they are more prone to international market turbulence (World Bank, 2017).

1.1.2 Theoretical Perspective

This study adopted the compensation hypothesis theory by Cameron's (1978) and extended by Rodrik (1998).

The theory posits that government consumption as a measure of government size appeared as a risk-reducing role for countries that are exposed to external shocks depending on the extent of the country's exposure to trade (measured as the share of trade in GDP). According to Rodrik

(1998), the correlation holds for most measures of government spending, in low as well as high income samples, and is robust to the inclusion of a wide range of controls. One explanation is that government spending plays a risk reducing role in economies exposed to a significant amount of external risk. In particular, Rodrik (1998) points out that the relationship between openness and government size is strongest when terms of trade risk is highest.

The import function proponents argue that there are three major factors determining a country's demand for imports (Thirlwall & Gibson, 1992; Gumede 2000; Chani et al., 2011). First the capacity of the country to produce and supply the goods itself. This is because some imports are not competitive with domestic goods because the country does not have the physical capacity to produce them; others will be competitive, and the demand for them will partly depend on the ability of domestic producers to supply the substitutes. Second, the price of imports relative to the price of domestic substitutes will affect import demand. Third, the level of expenditure will affect the demand for imports. According to Kasahara and Lapham (2013), the composition of expenditure will also be important to the extent that the import content of different components of expenditure differs. For simplicity, however, it is assumed here that the import content of different items of expenditure is the same, so that income can be used as a proxy for expenditure in the import demand function.

On the other hand, proponents of the Export function argue that the total amount of exports, E , in a nation is mainly affected by two variables, the total foreign absorption and the real exchange rate (Burda, 2005; Carrere & Strauss-Kahn, 2012). $E = E(A^*, \sigma)$ Where A^* and σ are variable functions related to the total foreign absorption and the real exchange rate. According to Washington (2015), in international trade, the importation and exportation of goods are limited by import quotas and mandates from the customs authority. The importing and exporting jurisdictions may impose a tariff (tax) on the goods. In addition, the importation and exportation of goods are subject to trade agreements between the importing and exporting jurisdictions.

Most of this debate has however focused on one aspect of openness (trade openness). In recent times, it has been argued that financial openness may play a role in shaping government size. This is based on the argument that increasing degrees of financial openness may lead to higher mobility of tax factors and leave governments with a reduced ability to maintain larger public

sectors. As argued by Liberati (2007), it is highly important that the net effect of the two opposing forces associated with the effect of openness on government size is determined. First, there is the compensation hypothesis which posits that trade openness leads to an increase in external exposure and larger public expenditure to compensate for increasing external risk.

Ricardo (1817) found the cause of foreign trade in the relative immobility of capital across national frontiers and he explained the commodity composition of world trade by persistent differences in the productivity of labor between nations; by assuming that relative commodity prices vary proportionately with relative labor costs, he showed that free trade will cause each country to export those goods in which it possessed a comparative price advantage and that such trade will result in mutual gain as compared to a state of self-sufficiency.

Ricardian theory made no attempt to explain the underlying productivity differences that give rise to inter country variations in comparative costs, which in turn give rise to international trade. In the modern Heckscher-Ohlin theory, these productivity differences themselves are traced to inter country differences in initial factor endowments, which indeed are made to carry the entire burden of the explanation: the more obvious causes of the commodity composition of foreign trade, such as international differences in the quality of factors, as well as differences in production functions for given products, are deliberately excluded by assumption. The Heckscher-Ohlin theory (1919) culminates in what is now generally known as the Heckscher-Ohlin theorem (HOT) of the pattern of international trade: a country exports those goods whose production is intensive in the country's relatively abundant factor and imports other goods that use intensively the country's relatively scarce factor.

1.1.3 Conceptual Perspective

Trade openness is defined as the ratio of trade (sum of export and import) to gross domestic product (GDP) (Ellahi, Mehmood, Ahmad & Khattak, 2011). On the other hand, trade openness defined by Seni (2015) as a measure of economic policies that either invite or restrict trade between countries. Furthermore, Keho (2017) defined trade openness as the outward or inward orientation of a given country's economy; where outward orientation refers to economies that take significant advantage of the opportunities to trade with other countries, while inward orientation refers to economics that overlook taking or are unable to take advantage of the

opportunities to trade with other countries. In this study, trade openness was operationalized as ratio of sum of imports and exports on GDP.

Pigka-Balanika (2016) specifically define trade openness as low international trade cost which is an abstraction of transport cost, tariffs, subsidies taxes and non-tariffs barriers. On the one hand, Fuji (2017) argues that trade openness can be attained by implementing policies that lower the biases against the exports sector, for instance subsidizing exports or encouraging exports schemes, while on the other hand, Sanusi (2008), supports that trade openness could be synonymous with the idea of neutrality, the indifference between earning a unit of foreign exchange by exporting and saving a unit of foreign exchange through import substitution.

Government size is the ratio of government expenditure to total output in terms of gross domestic product (Ram, 2009). In other words, it is general government final consumption expenditure (formerly general government consumption) and includes all government current expenditures for purchases of goods and services (including compensation of employees). It also includes most expenditure on national defense and security, but excludes government military expenditures that are part of government capital formation. This study operationalized government size in terms of government expenditure.

Uganda's economic freedom score is 59.7, making its economy the 95th freest in the 2019 Index. Its overall score has decreased by 2.3 points because of a sharp drop in fiscal health and lower scores for trade freedom, government integrity, and government spending. Uganda is ranked 8th among 47 countries in the Sub-Saharan Africa region, and its overall score is above the regional average but below the world average.

Although the government pressed ahead in 2018 with externally financed construction of energy-related, roadway, and other public-works infrastructure projects, its management of such large-scale endeavors has been poor. The strong commitment to economic liberalization that made Uganda one of Africa's most rapidly developing countries during the 1980s has diminished noticeably. Bureaucracy and expensive business licensing requirements discourage development of the private sector. A weak and inefficient judicial system and pervasive corruption are serious impediments to sustainable development

1.1.4 Contextual Perspective

Since its last Trade Policy Review (TPR) in 1995, Uganda has eliminated all quantitative restrictions; most of the remaining non-tariff restrictions are maintained for moral, health, security or environmental reasons. Tariffs have become Uganda's main trade policy instrument (Jaimovich & Kamuganga, 2010). Uganda has been applying the customs valuation method based on the transaction value since July 2000. The tariff structure has been simplified through the reduction of the number of bands from five in 1995 to three (zero, 7%, and 15%), and the lowering of maximum ad valorem rates from 60% to 15%. All tariffs are ad valorem, except on fuel. Some 16.4% of all tariff lines are duty free, while 39.3% carry the maximum rate of 15% (Jaimovich & Kamuganga, 2010).

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As regard the government size of the East African countries measured by government expenditure as a percentage of GDP, Uganda had government spending of 7.51% in 1990, 14.5% in 2000, and was highest in 2002 with 16.79% and dropped to its lowest in 2016 with 7.42%. By 2017, Uganda's government spending stood at 8.05%.

The top individual income tax rate is 40 percent, and the top corporate tax rate is 30 percent. Other taxes include value-added and property taxes. The overall tax burden equals 12.9 percent

of total domestic income. Over the past three years, government spending has amounted to 19.4 percent of the country's output (GDP), and budget deficits have averaged 4.2 percent of GDP. Public debt is equivalent to 39.0 percent of GDP (index of Ugandan economic freedom, 2019).

Theoretically, it is expected that as a country increases its trade volume, government size is also expected to increase in order to help cushion the risks caused by and/ or induced by turbulence in product and commodity markets. This issue has attracted significant discussions but with little empirical evidence. Therefore, this study will reconsider trade openness and government size of Uganda from 1986-2017. Uganda was selected because its diversification index and Gross Domestic Product (GDP) revealed that they are more prone to international market turbulence.

The average value of trade openness for Uganda during that period from 1960 to 2016 was 10.79 percent with a minimum of 6.97 percent in 1989 and a maximum of 16.79 percent in 2002. According to World Bank (2017), an observation of the trends of government size of Uganda measured by government consumption as a % GDP revealed 9.01% in 1986, 11.76% in 1996, 14.1% in 2006 and 7.52% in 2016.

1.2 Problem Statement

One of the major issues that have dominated policy making in countries all over the world is the need to remove restrictions to trade and cross border financial transactions (Olawole & Adebayo, 2017). The attention these has received is based on the conventional wisdom that trade is good for growth and unrestricted capital inflows can help put a country on a more sustainable path to economic growth and development. As evident over the last three decades, most reform policies in countries, especially developing countries have been targeted at financial and trade openness. Another major issue that has been receiving attention in recent times is the trend of more open economies having a larger government size (Aregbeyen& Ibrahim, 2014).

In Africa, there is increasing demand for countries to diversify their economy in order to take advantage of its export potential and enjoy gains of trade such as: market expansion for local goods; receipts of foreign exchange; creation of employment; and generate sustainable inclusive growth to alleviate poverty (Ibrahim, 2015). The export stances of most countries in Africa suggest that there is need for countries to increase their trade volume and pursue an export promotion policy. However, as countries increasingly promote an export-oriented policy, there is

high possibility for these countries to be exposed to high external risk caused by turbulence in international market. In order for African countries to cushion such effect, government would have to provide more employment and income to dampen the impact of this risk on the economy (Ibrahim, 2015).

In East Africa, casual observations indicated that the government size has increased in response to the extensive trade openness. This connection has attracted significant discussions but without empirical evidence. Yet empirical evidence on trade openness and government size abound in the literature for the developed countries and few developing countries (Ibrahim 2015; Olawole & Adebayo, 2017). Hence to solve the above problems, there was need to enrich the discussions on trade openness and government size interconnection in Uganda.

The average value of trade openness for Uganda during that period from 1960 to 2016 was 10.79% percent with a minimum of 6.97 percent in 1989 and a maximum of 16.79% percent in 2002. According to World Bank (2017), an observation of the trends of government size of Uganda, measured by government consumption as a % GDP revealed 9.01% in 1986, 11.76% in 1996, 14.1% in 2006 and 7.52% in 2016. Consequently, in 1986 government consumption as a percentage of GDP revealed 18.32% in 1986, 15.18% in 1996, 14.35% in 2006 and 13.29% in 2016 and by 2017, it stood at 14.7%, (World Bank, 2017).

For instance in Uganda, trade openness was 26.26% in 1990, 32.75% in 2000, 45.75% in 2010 and 47.22 in 2016. The explanation for this is that increasing degree of openness means more exposure to external risk, as such, a larger public sector will be demanded to compensate for external risk and for the increased level of inequality associated with openness. These in turn results in larger demands for government transfers (social security, pensions, unemployment insurance) which mitigate external risk (Ibrahim, 2015).

As stated earlier, the theoretical expectation is that as a country increases its trade volume, government size is also projected to increase in order to help the government cushion the negative effect caused by the turbulence in the markets. This issue has attracted significant discussions but with little empirical evidence. Thus, the study unraveled the link between government size and trade openness in Uganda.

1.3 Purpose of the Study

To investigate the relationship between trade openness and government size in Uganda for the period 1986-2017.

1.4 Specific Objectives of the Study

1. To determine the long run relationship between trade openness and government size in Uganda from 1986-2017.
2. To determine the short run relationship between trade openness and government size of Uganda from 1986-2017.
3. To determine whether causal relationship exist between trade openness and government size of Uganda from 1986-2017.

1.5 Research Questions

1. What is the long run relationship between trade openness and government size in Uganda from 1986-2017?
2. What is the short run relationship between trade openness and government size in Uganda from 1986-2017?
3. What is the nature of causal relationship between trade openness and government size of Uganda from 1986-2017?

1.6 Hypothesis

1. H_{01} : There is no significant long run relationship between trade openness and government size in Uganda from 1986-2017.
2. H_{02} : There is no significant short run relationship between trade openness and government size in Uganda from 1986-2017.
3. H_{03} : There is no significant causal relationship between trade openness and government size of Uganda from 1986-2017.

1.7 Scope

1.7.1 Geographical Scope

This Study was conducted in Uganda, Uganda as a country lies across the equator right in the heart of Africa in east Africa. The country is bordered by (DRC) Democratic Republic of Congo in the west, South Sudan in the north, Kenya in the east, Rwanda in the south west, Tanzania in the south and Sudan in the north making Uganda a land locked country in east Africa. Uganda is roughly the size of England covering a total area of 236,040sq km, with a population of about 42 million people. The economy of Uganda is 6.6% year on year in the fourth quarter of 2018, after a downwardly revised to 6.2% growth in the previous period. Unemployment rate in Uganda increased to 2.10% from 1991 until 2017, reaching on all time high of 3.50% in 2002 and a record low of 0.94% in 1991 and lastly the annual inflation rate in Uganda rose to 3.5% in April 2019 from 3.0% previous month, hitting its highest level since September.

1.7.2 Content Scope

The study was limited to causal relationship between trade openness and government size of Uganda; the short and long run relationship between trade openness and government size in Uganda; and if the compensating hypothesis holds for Uganda. The relative impact of the economic crisis on international trade can be seen in a comparison of exports and imports as a percentage of gross domestic product (GDP) between 2008 and 2009. GDP was severely affected in many countries, but international trade suffered even more. After widespread increases in the trade-to-GDP ratio between 2000 and 2008, all OECD countries (except Iceland and Ireland) and the BRIICS (Brazil, the Russian Federation, India, Indonesia, China, South Africa) saw a drop in this ratio between 2008 and 2009, mostly owing to significant drops in trade in goods. In many countries it fell below the ratio recorded at the beginning of the decade.

Uganda's economic freedom score is 59.7, making its economy the 95th freest in the 2019 Index. Its overall score has decreased by 2.3 points because of a sharp drop in fiscal health and lower scores for trade freedom, government integrity, and government spending. Uganda is ranked 8th among 47 countries in the Sub-Saharan Africa region, and its overall score is above the regional average but below the world average.

Although the government pressed ahead in 2018 with externally financed construction of energy-related, roadway, and other public-works infrastructure projects, its management of such large-scale endeavors has been poor. The strong commitment to economic liberalization that made Uganda one of Africa's most rapidly developing countries during the 1980s has diminished noticeably. Bureaucracy and expensive business licensing requirements discourage development of the private sector. A weak and inefficient judicial system and pervasive corruption are serious impediments to sustainable development

1.7.3 Time Scope

The study covered a period from 1986-2017. This period was instrumental in demonstrating the trends in trade openness and government size of Uganda.

1.8 Significance of the Study

Past studies on the significant relationship between trade openness and government size in Uganda is very scanty despite the importance and the need of trade openness in attracting investment, creating employment and enhancing productivity. This dissertation contributes to fill this research gap by investigating the long run relationship of trade openness and government expenditure in Uganda. The findings of this research will be of great use to stakeholders in the economy in various ways. Firstly, the findings of the study will provide investors with a highlight of the areas they should be focused in when investing hence engage in activities which have prospects of increasing growth in Africa.

Empirical studies testing the validity of this hypothesis range from country-specific (time series) to cross-country (cross-sectional) analysis. The submission of these studies has been mixed. For example; the cross-country study by Rodrik (1998) which was the first investigation of this issue, reveal a positive causal link between trade openness and government size. Cross-country study by Alesina and Wacziarg (1998); Garen & Trask (2005); Benarroch & Pandey (2009) and Ram (2009) all point to a negative association between openness and government size. Further, country-specific studies like Molana, Montagna & Violato (2004) and Aydogus and Topcu (2013) also found a negative link between openness and government size.

However, country-specific studies like Khalid (2005); Shahbaz, Rehman & Amir (2010); and Aregbeyen& Ibrahim (2014) for Saudi Arabia, Pakistan and Nigeria respectively, found a

positive nexus between trade openness and government size. The findings of these studies shed a doubt on the result of the country studies that largely found a negative relationship between trade openness and government size. Possibly, a country-specific study in some of the countries used in the cross-country studies would give an explanation on the exact relationship between these two variables (trade openness and government size).

Thus, the error correction model was used to capture the speed of adjustments of trade openness and government size in the models. This is because to immediately restore equilibrium may not be possible due to the lags and adjustment process used to capture changes in any of the factors affecting trade openness and government size overtime.

1.9 Operational Definition of Key Terms

Trade Openness is the sum of imports and exports normalized by GDP. Mishra (2007) and Lane and Milesi-Ferretti (2008) stated that bilateral equity investment is strongly correlated with underlying patterns of trade. Investors are better able to attain accounting and regulatory information on foreign markets through trade and thereby invest in foreign assets.

Imports: refers to foreign goods and services bought by the residents of a country. An import can also be good brought into a jurisdiction, especially across a national border, from an external source. The country bringing in the good is called an importer. An import in the receiving country is an export from the sending country. Importation and exportation are the defining financial transactions of international trade (Steven, 2003).

International trade, the importation and exportation of goods are limited by import quotas and mandates from the customs authority. The importing and exporting jurisdictions may impose a tariff (tax) on the goods. In addition, the importation and exportation of goods are subject to trade agreements between the importing and exporting jurisdictions.

Exports:

An export in international trade is a good or service produced in one country that is bought by someone in another country. The seller of such goods and services is an exporter; the foreign

buyer is an importer. Export of goods often requires involvement of customs authorities. An export's reverse counterpart is an import (Joshi, 2005).

Export also Refers to taking goods and services to another country for sale. An export in international trade is a good or service produced in one country that is bought by someone in another country. The seller of such goods and services is an exporter; the foreign buyer is an importer. Export of goods often requires involvement of customs authorities. An export's reverse counterpart is an import.

Government Size: Lane (2000) proposed “State general decision making and its outcomes” as the most general definition for government. According to them, “Government is the institution that imparts direction to its society by various means of collective decision making and exercises the state’s authority on a daily basis.” In so far the latter definition gives the impression of government as a unitary, centrally organized decision body, it is inadequate. Many modern states exhibit a federalist state order where decision making is, at least in certain areas, highly decentralized among regional units. And even in formally unitary states, semi-public agencies, publicly owned companies or regional administrations

Government Expenditure:

Government spending or expenditure includes all government consumption, investment, and transfer payments. In national income accounting the acquisition by governments of goods and services for current use, to directly satisfy the individual or collective needs of the community, is classed as government final consumption expenditure. Government acquisition of goods and services intended to create future benefits, such as infrastructure investment or research spending, is classed as government investment (government gross capital formation). These two types of government spending, on final consumption and on gross capital formation, together constitute one of the major components of gross domestic product. (Robert & Vittorio 1994)

Government size refers to government consumer expenditure. Government spending or expenditure includes all government consumption, investment, and transfer payments. In national income accounting the acquisition by governments of goods and services for current use, to directly satisfy the individual or collective needs of the community, is classed as government final consumption expenditure.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Reviewed literatures from different authors, scholars and publications as regard the topic of the study are presented in this section. The chapter was subdivided into theoretical review, conceptual review and review of Related Studies.

2.1 Theoretical Review

Globalization seems to be the vehicle of economic growth and development. It is widely acknowledged in economic and international trade theories that trade openness is synonymous to moving towards globalization which eventually would be translated into economic welfare of the nation that has liberalized its trade barriers (Yang & Sobolevski, 2016). Thus, trade openness is ought to have a positive impact on economic growth. However, there had also been instances where trade openness led to opposite impact making the economy worse-off compared to pre-trade stages. A possible reason behind this could be the fact that liberalizing barriers and opening up could actually reduce government size whereby the economy would be adversely affected. Thus, theoretical frameworks have been established to portray the causal relationship between trade openness and government size (Rosales & Herreros, 2013).

2.1.1. Compensation Hypothesis

The compensation hypothesis as proposed by Cameron (1978) marks the first theoretical link on the relationship between trade openness and government size. This hypothesis suggests that there is a positive causal relationship running from trade openness to government size. This assertion is adduced from the fact that as a country becomes increasingly open to bilateral and multilateral trade, there is likelihood of greater exposure to external risk, thus informing the need to increase the size of government to serve as a source of social insurance to the citizenry. According to this hypothesis an increase in trade openness is compensated by an increase in government spending in order to counter for the adverse impacts generated from this liberalization. Thus, this hypothesis advocates for a positive relationship between these two important macroeconomic variables. The logical reasoning behind this statement is the fact that globalization via trade

openness spawns some negative externalities on the economy in the form of rising income inequality and economic insecurity. Thus, the citizens would expect the government to undertake redistribution policies and compensate for the risks associated with globalization. This provides political incentives for the government to engage in public expenditures and as a result a rise in the degree of trade openness is matched with an increase in size of the government. This hypothesis was later on revisited and acknowledged in studies by Ruggie (1982) and Alesina and Wacziarg (1998). Rodrick (1996), in similarity with the hypothesis put forward by Cameron (1978), stated that a positive relationship between trade openness and government size is ought to exist because open economies are more prone to external shock which calls for greater stabilization policies from the government in the form of public expenditure programs. Results of many empirical studies like those by Khalid (2005) for Saudi Arabia, Shahbaz *et al.*, (2010) for Pakistan, and Ibrahim and Arebeyen (2014) for Nigeria have found validity of the compensation hypothesis.

2.1.2: Import Function

Economic theory would suggest three major factors determining a country's demand for imports. First, is the capacity of the country to produce and supply the goods itself. Some imports are not competitive with domestic goods because the country does not have the physical capacity to produce them; others will be competitive, and the demand for them will partly depend on the ability of domestic producers to supply the substitutes. Second, the price of imports relative to the price of domestic substitutes will affect import demand. Third, the level of expenditure will affect the demand for imports. The composition of expenditure will also be important to the extent that the import content of different components of expenditure differs. For simplicity, however, and for the purposes of later chapters, it is assumed here that the import content of different items of expenditure is the same, so that income can be used as a proxy for expenditure in the import demand function. We stress again, however, that for income-determination analysis it is very important to recognize that there may be different import coefficients attached to different components of expenditure, and to relate imports to expenditure in deriving the foreign-trade multiplier. In addition to these three main factors, stock-building will also affect the demand for imports, as well as a host of non-quantifiable factors (Carrere & Strauss-Kahn, 2012).

2.1.3: Export Function

Proponents of the Export function argue that the total amount of exports, E , in a nation is mainly affected by two variables, the total foreign absorption and the real exchange rate (Burda, 2005; Carrere & Strauss-Kahn, 2012). $E = E(A^*, \sigma)$ Where A^* and σ are variable functions related to the total foreign absorption and the real exchange rate. According to Washington (2015), in international trade, the importation and exportation of goods are limited by import quotas and mandates from the customs authority. The importing and exporting jurisdictions may impose a tariff (tax) on the goods. In addition, the importation and exportation of goods are subject to trade agreements between the importing and exporting jurisdictions.

Most of this debate has however focused on one aspect of openness (trade openness). In recent times, it has been argued that financial openness may play a role in shaping government size. This is based on the argument that increasing degrees of financial openness may lead to higher mobility of tax factors and leave governments with a reduced ability to maintain larger public sectors. As argued by Liberati (2007), it is highly important that the net effect of the two opposing forces associated with the effect of openness on government size is determined. First, there is the compensation hypothesis which posits that trade openness leads to an increase in external exposure and larger public expenditure to compensate for increasing external risk.

2.1.4: Hecher-Ohlin Theory

According to Ricardo (1817) and other classical economists, international trade is based on differences in comparative costs. It is important to note that Heckscher (1919) and Ohlin (1933) agreed with this fundamental proposition and only elaborated this by explaining the factors which cause differences in comparative costs of commodities between different regions or countries. Ricardo and others who followed him explained differences in comparative costs as arising from differences in skill and efficiency of labour alone.

This is not a satisfactory explanation of differences in comparative costs. Ohlin pointed out more significant factors, namely, differences in factor endowments of the nations and difference in

factor proportions of producing different commodities, which account for differences in comparative costs and hence from the ultimate basis of inter-regional or international trade.

Thus, Heckscher-Ohlin theory (1919 and 1933) does not contradict and supplant the comparative cost theory but supplements it by offering sufficiently satisfactory explanation of what causes differences in comparative costs. The new theory propounded by Heckscher and Ohlin went deeper into the underlying forces which cause differences in comparative costs.

They explained that it is differences in factor endowments of different countries and different factor-proportions needed for producing different commodities that account for difference in comparative costs. This new theory is therefore-called Heckscher-Ohlin theory of international trade.

Since there is wide agreement among modern economists about the explanation of international trade offered by Heckscher and Ohlin this theory is also called modern theory of international trade. Further, since this theory is based on general equilibrium analysis of price determination, this is also known as General Equilibrium Theory of International Trade. It is worthwhile to note that, contrary to the viewpoint of classical economists, Ohlin asserts that there does not exist any basic difference between the domestic (inter-regional) trade and international trade. Indeed, according to him, international trade is only a special case of inter-regional trade.

Thus, Ohlin asserts that it is not the cost of transport which distinguishes international trade from domestic trade, for transport cost is present in the domestic inter-regional trade. Trade because currencies of different countries are related to each other through foreign exchange rates which determine the value or purchasing power of different currencies.

The theoretical effects of economic openness on the size of public sectors may be summarized by two main positions (Schulze & Ursprung, 1999). On the one hand, the *Compensation hypothesis* has recently gained much interest. According to it, larger public sectors would be *demande*d in more open economies to compensate for external risk and for the increased level of economic inequality associated to openness. On the other hand, an *efficiency hypothesis* has developed (also known as *conventional wisdom*), which highlights that smaller public sectors would be *supplie*d by national governments when economic openness entails an

increased mobility of production factors. In the same way as in the theory of fiscal federalism local governments may be “too small” within national boundaries to apply certain kinds of taxes and to develop certain kinds of public expenditures (Oates, 1972), national states may become “too small” in an international context to take advantage from the full array of taxes and expenditures. As suggested by the literature on tax competition, mobility may cause a downward pressure on tax revenues and lead to an ultimate downward pressure on public expenditures.

The net effect of the opposite forces of the *compensation hypothesis* and of the *efficiency hypothesis* is therefore rather uncertain from a theoretical point of view and it is basically a matter for empirical investigation. Now, with regard to the compensation hypothesis, the prevailing literature has highlighted that *citizens* would demand more *public expenditures* in response to increased *trade openness* (e.g. Ruggie 1982; Garrett 1998b; Rodrik 1998). However, the basic tenet of the efficiency hypothesis, is that *governments* may collect less *taxes* and can hardly run budget deficits in response to an increase of *capital openness*. The reason is that mobile capital may easily disapprove of unpalatable tax policies or lax budget policies by moving abroad. This would ultimately lead to a tighter expenditure policy.

According to some authors, this line of causality is supported by the fact that some of the most important welfare reforms have occurred at the same time in which capital Openness in many countries has increased (Gould 1996; Myøset 1996; Page 1997; Moses 2000; Swank 2002). What does the empirical evidence suggest? In a pioneering paper on the expansion of the public economy, Cameron (1978) found a positive association between trade openness and the size of the public sector, but no attempt was made to include capital openness in the analysis presumably because capital flows, in the most industrialised countries, were heavily controlled for. For example, the United States fully liberalised capital markets in 1974 and they were one of the first countries to go through this process.

Rodrik (1998) has thoroughly re-established the positive association between trade Openness and the size of the public sector, justifying it by the need of social insurance Against additional external risk and extending the empirical evidence to more than a

Hundred countries among developed and developing countries. However, also in this case, no attempt has been made to control for capital openness. More recently, Sanz and Liberati (2006) have investigated the effects of the openness of the economy, including the averaged *stock* of inward and outward foreign direct investments as a proxy for capital openness. Their main finding is that openness would be positively associated to the share of health and social security expenditures in total government expenditures and negatively associated to education, housing, transport and communication shares of public expenditures (challenging Rodrik's findings for subcategories of expenditures). Extending the Rodrik's argument, the authors argue that countries with greater amounts of stocks of FDI would experience more risk in total employment, as multinationals may change location easier than "national" companies (See also Tanzi 2000; White 2003). Increased openness affects income inequalities within developing countries by affecting factor price ratios, asset inequalities, spatial inequalities, gender inequalities and the amount of income redistribution. Most time series studies find that greater openness has increased the relative demand for skilled labor but most cross-country studies find that greater openness has had little impact on overall income inequality.

2.2 Conceptual Review

2.2.1 Trade Openness

Openness to trade is measured as the trade-to-GDP ratio (Rodrik, 1998). It weighs the combined importance of exports and imports of goods and services in an economy, giving an indication of the dependence of domestic producers on foreign demand and of domestic consumers on foreign supply. There is a concave relationship between trade openness and per capita income: as incomes rise, countries tend to trade more, but at a decreasing rate.

2.2.2 Exports and Government Expenditure

The term export in international trade means the sending of goods or services produced in one country to another country (Nyasulu, 2013). The seller of such goods and services is referred to as an exporter; the foreign buyer is referred to as an importer. Kahya (2011) explains that export of goods often requires involvement of customs authorities. An export's reverse counterpart is an import. Mazenda (2016) asserts that exporting has two distinct advantages. First, it avoids the often substantial cost of establishing manufacturing operations in the host country. Second, exporting may help a company achieve experience curve effects and location economies.

Internationalization advantages are the benefits of retaining a core competence within the company and threading it through the value chain rather than to license, outsource, or sell it (Yifru, 2015).

Otinga (2009) investigated the impact of international trade on Kenya's economic growth by specifically examining the role of exports vis-a-vis other components of the GDP over a span of about twenty two years. The impact of imports on economic growth was also examined. The study adopted a linear model to examine the impact of both public and private investment, government expenditure, foreign aid, imports and exports to the GDP. Overall, the results showed that growth in real exports caused real GDP growth. Moreover, it was found out that: Government expenditure and Foreign aid were positively correlated with the GDP and statistically significant; Public investments though statistically significant, were found to be negatively correlated to the GDP; and Private investments were found to be negatively correlated to the GDP and statistically insignificant. In broad terms, the results of this study were supportive of the Export Led Growth Strategy which postulates that exports lead to economic growth.

2.2.3 Imports and Government Expenditure

An import is a good brought into a jurisdiction, especially across a national border, from an external source (Antunes, 2012). An import in the receiving country is an export from the sending country. Importation and exportation are the defining financial transactions of international trade. In international trade, the importation and exportation of goods are limited by import quotas and mandates from the customs authority. The importing and exporting jurisdictions may impose a tariff (tax) on the goods. In addition, the importation and exportation of goods are subject to trade agreements between the importing and exporting jurisdictions (Yıldırım, 2012).

Khaguli (2013) investigated the factors affecting trade facilitation at the border points of East Africa and their impact on trade facilitation. The goal of the study was ultimately to answer the question as to whether facilitation can reduce costs of doing business and if trade facilitation leads to economic growth of East African countries. The paper utilized the Gravity Model to establish the relationship between variables. The model was run using a fixed effect and a

random effect. Horseman test was later on conducted to determine between the fixed effect and random model which was suitable. Secondary data was sourced from World Bank data base and CEPII, International Monetary Fund (IMF) year book. Empirical results indicated that the border points in East Africa play an important part in trade facilitation if impediments to trade are addressed. The 8 border points in the study exhibited cross cutting non-tariff barriers which impacted negatively on trade facilitation and increased costs of doing business. Trade facilitation led to enhanced trade flows and economic growth. Recommendations made were that governments should invest in trade facilitation initiatives for economic growth of East African Countries among others.

2.2.4 Government Size

The most commonly used indicators of government size are expenditure measures derived from national accounts. Often simply total government expenditure is used to signify the size of the public sector. This might be appropriate in some instances, depending on the aim of the study, but here a more disaggregated view is in order. Several components of total government expenditure do not directly reflect economic activity by the state. This study will therefore use the financial indicator of government expenditure.

The major parts of overall government spending can be classified into capital formation, subsidies, social transfers, military expenditure, interest payments, and civilian consumption expenditure (Sriyana, 2016). On the whole, it seemed that a focus on civilian consumption expenditure is most appropriate. Social transfers and interest payments do not claim any economic resources; they are just redistributions (Kim, Wu & Lin, 2018). This is also true for subsidies, but they can be seen as a device of governments to influence economic activity indirectly. Nevertheless, like in the case of capital expenditure, it is not clear how governments with different ideological positions relate to this component. Anyway, the underestimation of economic activity due to the neglect of capital spending and subsidies is small, since these components constitute only minor parts of overall outlays (Aydin *et al.*, 2016). Military spending will also be excluded on theoretical grounds, since it has been argued that the international security environment rather than ideological factors is its main driving force (Dudzevičiūtė, *et al.*, 2018).

Overall, ideology is most likely to show its effect on civilian consumption expenditure, which measures the direct economic involvement of government as a producer and purchaser of non-military goods and services. Besides traditional state functions like public safety and administration, it mainly includes spending on education, health care, child care, and other welfare provisions by the state, which is seen as a major domain of left parties. Thus, using civilian consumption expenditure in the analysis allows for a more powerful test of the partisan hypothesis. Furthermore, it avoids a problem associated with total government expenditure in percent of gross domestic product (GDP) as a measure of government size, which is not a “real” ratio measure and overstates the size of the public sector (Esener & İpek, 2018). Only government consumption expenditure is included in the calculation of society’s total economic output.

2.3 Empirical Review

In a pioneering paper on the expansion of the public economy, Cameron (1978) found a positive association between trade openness and the size of the public sector for a sample of 18 OECD countries. His explanation was a mixture of economic, sociological and political characteristics, where the degree of industrial concentration, the density of unionization, the scope of collective bargaining and the strength of labour confederations played the most prominent role. The most likely joint effect of these factors, he argued, is that labour confederations may exchange moderate wage setting for increased public transfers. Ultimately, the public sector is seen as a risk-reducing tool, mitigating the adverse effects of trade openness on citizens’ income.

Quinn (1997) also finds evidence that capital liberalisation is associated to larger government spending. In the same vein, Bretschger & Hettich (2002) provide evidence that both capital openness and trade openness may positively affect the level of social welfare expenditures, supporting the compensation hypothesis and extending it to capital openness.

Rodrik (1997) & Grubert (2000) found a negative relation between the Openness of the economy and the level of income taxes. Garrett (1999) provides evidence that the negative relation between openness and government size can be extended to changes of the corresponding variables. Bretschger & Hettich (2002) have also found that trade and capital openness are negatively associated to the corporate tax rate and positively associated to labour taxes, supporting the theory that the tax burden shifts towards less mobile tax bases in open economies.

No significant relation with the corporate tax rates is instead shown in Swank (2002) & Slemrod (2004).

Finally, Garen & Trask (2005) show that less open countries may have larger public sectors as measured by non-budgetary indicators. As it stands, therefore, the empirical literature on the relationship between capital Openness and government size is not conclusive, as different studies support a positive Relation, the absence of any relation or a negative relation. In what follows, we add to the existing empirical literature, by showing: a) that levels of capital openness are negatively associated to government size; b) that levels of trade openness are not positively associated to government size; c) that these associations hold both in levels and in changes of the corresponding variables.

On the other hand, Iversen & Cusack (2000) show that neither trade nor capital Openness have any effect on government transfers and government consumption. The Importance of capital openness (variously measured) for social welfare effort, has also Been recently investigated by Swank (2002), again with no evidence of any relation.² Recently, Dreher (2003) has provided for further empirical evidence that globalization = does not affect taxes and social policy in OECD countries. In particular, he shows that Globalization does not shift the tax burden from mobile capital to immobile labour and (relatively) immobile consumption. This follows a series of empirical papers from the political science literature where no consensus emerges on the possibility that the openness of the economy has reduced either capital or corporate income taxes or both (Garrett 1996; Swank 1998; Garrett 1998a, 1998b; Hallerberg & Basinger 1998).

Rodrik (1998) has thoroughly re-established the positive association between trade openness and the size of the public sector, extending empirical evidence to more than a hundred countries among developed and developing countries. One possible explanation is that government expenditures provide social insurance against external risk. As trade openness increases external risk, citizens will demand more redistribution through additional public expenditures. However, in the Rodrik's contribution, to some extent unexpectedly, no attempt is made to control for the different degree of financial openness among countries. Furthermore, whether trade openness

enlarges *central* or *local* governments is not an addressed issue, as the main focus, as in Cameron, is some kind of general government size.

On the other hand, Sanz and Velázquez (2003) investigated the effects of the openness of the economy, including the averaged stock of inward and outward foreign direct investments as a proxy for financial openness. Their main finding was that openness was positively associated with the share of health and social security expenditures in total government expenditures (therefore supporting Rodrik's findings) and negatively related to education, housing, transport and communication shares of public expenditures (implicitly challenging Rodrik's findings for sub-categories of expenditures). Analogously to Rodrik (1998), the authors argue that countries with greater amounts of stocks of FDI experience more risk in total employment, as multinationals may change location easier than "national" companies.

Furthermore, a study by Liberati (2006) investigated the relationship between trade openness, financial openness and government size in a cross-sectional time-series context. It was shown that financial openness was significantly and negatively related to government size in line with the conventional wisdom that capital mobility may undermine the ability of governments to tax and to spend. More importantly, the compensation hypothesis originally proposed by Rodrik (1998) and Cameron (1978) was not in general supported by the data. Finally, the possibility that financial openness may affect the distribution of public expenditures across government levels (central and local) was also investigated and supported by the data. A possible explanation of this latter finding was proposed, one in which central governments strategically shift public expenditures to local governments in order to avoid to cut them directly.

Swee-Hui Kuehet *al.*, (2009) used the Autoregressive Distributed Lag [ARDL] bounds testing Approach to examine the relationship between trade openness and government expenditure for the Association of Southeast Asian Nations [ASEAN] countries namely Indonesia, Malaysia, Philippines and Thailand from 1974-2006. The reported results indicated a significant positive long-run linkage between government expenditure and trade openness for the four countries. Benarroch & Pandey (2008) also examined whether there exists a positive association between trade openness and government consumption using cross-country and panel regressions. This was achieved by testing for causality between external risk and government size using the Granger causality test for panel data based on the dynamic panel estimation model of Arellano

and Bond (1991). The results indicated that larger government size leads to lower openness. In other words, a negative association between trade openness and government size.

In the study by Kimakova (2009), both trade and financial openness were associated with a larger government size, thus, providing evidence in support of the compensation hypothesis, but rejecting the validity of the efficiency hypothesis while on the contrary, the study by Katumba (2013), found that both trade and financial openness were negatively and significantly related to government size giving credence to the validity of the efficiency hypothesis but rejecting the validity of the compensation hypothesis which is also in line with the findings by Liberati (2007), Benarroch & Pandey (2012) and Dixit (2014). On the contrary, In Nigeria, very few studies have been carried out in this area, the study by Aregbeyen and Ibrahim (2014) investigated the subject matter using the bounds testing approach to co-integration within an ARDL framework. Empirical results reported that government size measured by percentage share of total government expenditure in GDP and share of recurrent expenditure in GDP significantly affects trade openness in the long run but percentage share of capital expenditure in GDP as a measure of government size does not impact on trade openness in the long run. This conforms to the empirical results obtained by Nwaka & Onifade (2015).

Furthermore, the study by Islam (2004) investigated the link between government size and economic openness for six member countries of the Organizations for Economic Co-operation and Development (OECD) namely: Australia, Canada, England, Norway, Sweden, and the United State of America. The empirical results support the submission of Rodrik (1998) for the USA and Canada but negative for the other four countries. Garen & Trask (2005) in their study used non-budgetary measures to proxy government size and showed a positive but not very robust relationship between openness and government size.

A study by Benarroch & Pandey (2012) examined the causal relationship between trade openness and government size using both aggregate and disaggregated government expenditure data, including data on social security. The results indicated that examining the relationship separately for functional categories of government expenditures and based on differences in incomes across countries provided important details on the relationship between the two

variables not found elsewhere in the literature. The causality tests provided little or no support for a causal relationship between openness and aggregate or disaggregated government expenditure. Similar results were obtained when a sample was split into low income versus high income countries. The only evidence of a robust, statistically significant, positive causal relationship was found between openness and education expenditures in low income countries. In no case was there a positive causal relationship between social security and openness.

An investigation of causality and co-integration between government size and trade openness was executed by Aydogus& Topco (2013). They pooled annual time series Turkish data ranging from the year 1974 to 2011 using a residual based co-integration approach. They aimed to test the compensation hypothesis and investigate whether or not a long run relationship exists between the two concerned variables. They used ZA unit root test proposed by Zivot and Andrews (1992) followed by the co-integration test put forward by Engle and Granger (1987) and finally Granger causality test was tapped throughout the study. According to the results obtained, there was no evidence for long-run relationship but uni-directional causality was found to run from government size to trade openness. Thus, the compensation hypothesis was rejected with regard to results obtained from Turkey's perspective.

However, Liberati (2013) closely examined the tri-variate nexus between trade openness, financial openness and government size using a cross-sectional time series framework. The results showed that trade openness and financial openness, in general, were negatively correlated to government size which implied clear disagreement to the validity of the compensation hypothesis proposed in seminal papers by Rodrik (1998) & Cameron (1978). He incorporated data from 16 European countries between 1970 and 2001 and performed across-sectional analysis due to Unavailability of data at certain periods in context of certain countries. A multi-variate random and fixed effect models have been used where government size was held to be the dependent variable while trade openness, foreign direct investment and portfolio investment were considered to be the independent variables. Panel regression techniques were mainly applied all throughout the study. Prais-Winsten panel corrected standard error estimator was applied for the panel data. Finally, Granger causality test was chosen to be applied in order to comment on the nature of causality between trade openness and size of governments.

Furthermore, Ibrahim (2015) examined the causal link between trade openness and government size for the five largest economies in Africa taking into account the role of compensation hypothesis in an economy. The study used time series data for five countries covering the period 1970 to 2010. The data was obtained from Penn table and World development indicator (WDI). The causality test adopted for this study was based on the ECM framework. This was done for each of the five countries selected. Empirical evidence showed a positive causal link between trade openness and government size for Nigeria and Algeria. In the case of South Africa negative causality was found while there was no causality for Angola and Egypt. The study recommended the need to consider the sustainability of growth due to increasing demand for African countries to diversify their economy in order to take advantage of its export potential and enjoy the gains.

Sabra (2016) examined the interconnected relationships between government size, country size, openness and economic growth. The study employed three models, that is, 2SLS technique and the third model is using generalized methods of moments (GMM) system analysis to examine these relationships in eight selected MENA countries. The panel data was for the period from 1977-2013 sourced from the World Development Indicators of the World Bank. The results proved literature proposed hypotheses for the selected region and period, and show that government share to GDP exceeds the optimal size. Moreover, more growth could be realized through more integration in the world economy. The study recommended the need to convert government expenditure to investment and infrastructure instead of social transfer and current expenditure.

Oyeleke & Akinlo (2016) precisely examined the relationship between trade openness and government expenditure, a proxy for government size, in context of the African nation, Nigeria. They tapped annual time series Nigerian data from 1980 up to 2013 in order to test this association using a Bound test co-integration approach. The multi-variate model in this study was put forward using Auto Regressive Distributed Lag (ARDL) approach by Pesaran *et al.*, (1996). Augmented Dickey Fuller (ADF) and Kwiatkowski, Phillips, Schmidt and Shin (1992) (KPSS) tests were used to test the data set for stationary and their results conformed the absence of unit root. It is to be noted that in this paper government expenditure was disintegrated into capital and recurrent expenditures. Bound test results revealed that there was negative and

significant relationship between government expenditure and trade openness which once again was in contradiction to the compensation hypothesis.

Turan & Karakas (2016) examined the effect of trade openness and per capita GDP on the size of government for Turkey and South Korea by means of ARDL approach to co-integration. The study used different proxies to measure the size of government because not all measures of government size were appropriate to be employed in the estimates. Among the four different measures of government size of Korea (Turkey), only one for each country had a co-integrating relationship with openness and per capita GDP. Long run coefficients suggested that per capita GDP had a positive and significant effect on the government sizes for Turkey and Korea, implying the validity of the Wagner's law. However, while openness had a negative effect on government size for Turkey, it had a positive effect for Korea. The results clearly highlighted the importance of choosing an appropriate proxy for government size to reach robust and consistent results.

Olawole & Adebayo (2017) in their study investigated the relationship among financial openness, trade openness and government size in Nigeria. The study employed the autoregressive distributed lag (ARDL) approach to co-integration to investigate the relationship among the variables. Empirical estimates revealed that financial openness is significantly and negatively related to government size in line with the conventional wisdom that capital mobility may undermine the ability of governments to tax and raise revenue to finance government expenditure which is termed as the efficiency hypothesis. In addition, a positive relationship was reported between trade openness and government size which implies that there is evidence to support compensation hypothesis. The findings of the study suggest that openness has made the country highly vulnerable to external risk and there is need for the government to increase government expenditure and most especially, devote more funds to social welfare expenditure. This will help cushion the negative effects openness and its associated risks have on the country's citizens.

A study by Gaalya *et al.*, (2017) sought to establish the effects of trade openness on different categories of taxes in East African Countries. A panel data co-integration technique that uses the Fully Modified Ordinally Least Squares and Dynamic Ordinally Least Squares were employed. The data were annual cross country panels of East Africa countries covering the period 1994-

2012. The data were obtained from the IMF's International Finance Statistics, the African Development Bank's African Economic Outlook and the World Bank's World Development Indicators. The study found that the average tariff rate used as a measure for trade openness positively influenced total tax, indirect tax and trade tax while the average tariff rate squared was negative, illustrating a "Laffer effect" for the three tax categories. The relationship between trade openness and direct taxes was found to be insignificant. The policy implication was that governments of EAC countries should asymmetrically implement trade openness policies, particularly lowering the tariff rate to help in improving tax performance.

Celikoz *et al.* (2017) detected unidirectional granger-causality from trade openness to economic growth in the short run. On the other hand, Eren and Umal (2019) examined the granger-causal relationships between trade openness and economic growth in turkey for a longer time period- from 1960-2016-using Engle-Granger and Gregory-Hasen Cointegration test and Toda-Yamamoto Granger causality tests. Their findings showed no evidence in favor of a long-run relationship but indicated unidirectional causality from economic growth to trade openness.

At the disaggregate level, there is some evidence that at least in the 1980 period there might be a positive Granger causal relationship from exports originating from the manufacturing sector to real economic growth in turkey. Aslan & Topcu (2018) review the evidence at the disaggregate level.

Karis & Ayla (2018) using Cointegration and Granger-causality tests to find out a unidirectional Granger-causal link from trade openness to foreign direct investment in turkey for the year 1980-2016 period and conclude that trade openness act as a stimulant in terms of foreign direct investment flows.

Erkisi (2018) used quarterly data from 1998Q1 TO 2018Q1 to examine the the contributions of export, import, and foreign direct investment to real GDP growth in Turkey. The variance decomposition analysis indicates that real GDP is mostly explained by its own history (75%). Import has a 20% contribution and the contribution of exports and foreign direct investments are 5% each. These findings also indicate that trade openness overall has a much larger effect on real GDP growth than foreign direct investment. Overall, it can be said that trade openness serves as

a (de facto) proxy for other variables that are associated with outward-orientation; hence FDI does not have much significant individual explanatory power on economic growth.

Using the Autoregressive Distributed Lag (ARDL) bounds testing approach to co-integration, SweeKueh, Chin-Hong & Chiew-Meu (2008) examined the association between trade openness and government expenditure for the Association of Southeast Asian Nations (ASEAN) countries namely: Indonesia, Malaysia, Philippines and Thailand between 1974 and 2006. Their results suggested a positively significant long-run link between government expenditure and trade openness for all the sampled countries.

2.4 Research Gap

There are several studies that were conducted within regarding on trade openness and government size, but those studies do not disaggregate government size in to three different measurement namely total government expenditure, recurrent government expenditure and capital government expenditure but in this study the researcher will consider government expenditure as a perfect measurement of government size, Benarroch & Pandey (2012) and Aydogus & Topcu, (2013);. Methodologically, most of the past researches in this area which was conducted in Uganda were embarking on ARDL to investigate the nature of the relationship between trade openness and government size in Uganda but in this study ECM will be employed to determine the speed of adjustment after macroeconomic shocks or disequilibrium, Shahbaz, Rehman and Amir (2010).

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter comprises the practical procedure which was 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 followed Johansen (1988) and Johansen and Juselius (1990) co-integration technique. The technique establishes the long run relationship between the variables. The first task is to make sure that the data is integrated of the same order. The study adopted an ex-post- facto research design that used quantitative techniques to analyze secondary data scientifically to critically investigate the research objectives, secondary data was obtained from World Development indicators. The series were also tested for stationarity using the Augmented Dickey Fuller (ADF) and Phillip Perron (PP) tests, Also inferences were drawn by fitting the Johansen co integration model and testing for long run relationship, Error correction model was also used to determine the short run relationship and pair wise causality test was employed to ascertain if compensation hypothesis hold for Uganda.

3.1 Estimation Method

From the literature survey above, the relationship between trade openness and government size can either be unidirectional or bi-directional. Thus, the functional form is expressed as:

$$TOP = f(GOV) \tag{3.1}$$

Where: TOP is trade openness (the sum of exports and imports on Gross Domestic Product – GDP) and GOV is measured as the share (percent) of government expenditure in GDP. Augmenting equation (1) by including GDP per capita as control variable gives:

$$TOP = f(GOV, PGDP) \tag{3.2}$$

Disaggregating total government expenditure into recurrent and capital expenditures gives us two additional measurement of government size. Therefore, we have two other possible functional forms on the relationship between trade openness and government size thus:

$$TOP = f(RGOV, PGDP) \quad (3.3)$$

$$TOP = f(CGOV, PGDP) \quad (3.4)$$

Where: RGOV and CGOV represent the share (percent) of recurrent and capital expenditure in GDP, respectively and PGDP is GDP per capita and it is meant to capture the level of standard of living in the economy.

3.2 Sources of Data

Time series data of thirty one years (1986-2017) was used for the study, the study also employed secondary data with respect to the annual data that covered the period of 1986-2017. World Bank tables and United Nations statistics division common data base. The variables that were used are Total Government expenditure, Recurrent Government expenditure and Total capital expenditure. the data was sourced from the World Development Indicators (WDI).

TABLE 3.1: Operational Definition of Key Terms

| Variables | Definitions |
|------------------------|--|
| TRADE OPENNESS | Refers to the ratio of trade to gross domestic product (GDP) it can also be refers to as an inward and out ward orientation of a given country's economy. |
| IMPORT | Refers to foreign goods and services bought by the residents of a country. An import can also be good brought in to a jurisdiction, especially across a national border from an external source. |
| EXPORT | Refers to taking goods and services to another country for sale. An export in international trade is a good or services produced in one country that is bought by someone in another country. |
| GOVERNMENT SIZE | Refers to the ratio of government expenditure to the total output of the economy in term of GDP. The government is primarily defined by its size, measured by the budget or number of employees either in absolute terms |

| | |
|-------------------------------|---|
| | or relative to the overall national economy. |
| GOVERNMENT EXPENDITURE | Refers to government consumer expenditure. Government spending or expenditure includes all government consumption, investment, and transfer payments. In national income accounting the acquisition by government of goods and services for current use, to directly satisfy the individual or collective needs of the community, is classed as government final consumption expenditure. |

3.3 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 trade openness as well as the other test which precede co-integration analysis. The researcher before achieving the objectives, performed several diagnostic checks 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 test, the variables were then subjected Error correlation Model (ECM) to see if there is a short-term equilibrium between the variables.

3.3.1 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 New bold (1974), argued they are characterized by a high R^2 and a low Durbin-Watson (dw) statistic, t-and F-statistics that appear to be significant, but the results derive no any economic sense (Verbeek, 2000). The results “looks good” because the least-squares estimates are not consistent and the customary test of statistical inference do not hold (Enders, 1995).

The 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;

$$\Delta y_t = \alpha_0 + \lambda_t + \delta y_{t-1} + \sum_{j=1}^l \phi_j \Delta y_{t-j} + \varepsilon_t \quad (3.5)$$

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.

3.3.2. Co integration Test

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 variable in equation (7) 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-integrating equation is specified as:

$$y_t = \alpha + A_1 y_{t-1} + \dots + A_p y_{t-p} + \varepsilon_t \quad (3.6)$$

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 (6) can be rewritten as:

$$\Delta y_t = \Pi y_{t-1} + \sum_{i=1}^p T_i \Delta_{t-i} + \varepsilon_t \quad (3.7)$$

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 cointegrating vectors.

Johansen (1988) derives two test statistics for testing the cointegrating rank. The first is the maximum eigenvalue test while the second is the trace statistic.

If the variables in equation (1, 3 and 4) turn out to be cointegrated, the Error Correction Modeling (ECM) approach is adopted to reveal the short and long run effect of government size on trade openness.

3.3.3 Error Correction Model

If the evidence of co-integration is observed between trade openness and government size, it would imply that there exists a long-term equilibrium relationship between them, so error correlation model would be estimated to evaluate the short run properties of the co-integrated series because we are interested in univariate analysis. The error correction model was used to capture the speed of adjustments of trade openness and government size in the models. This is because to immediately restore equilibrium may not be possible due to the lags and adjustment process used to capture changes in any of the factors affecting trade openness and government size overtime.

As suggested by Engle-Granger (1982) representation theorem that if two or more series are cointegrated then they will be efficiently represented by an error correction mechanism. The Error Correction Model is used in this study to capture the short and long run impact of budget trade openness on government size. The method involves developing a model from its generalized form (over parameterized) to a specific form (parsimonious) using the Hendry modelling approaches. In addition, if the variables in equation (2, 3 and 4) have stochastic trends and follow a common long-term equilibrium association, then the variables are said to be cointegrated. Co integration is a test for equilibrium between non-stationary variables integrated of the same order. The Error Correction Model (ECM) takes the form:

$$\Delta Y_t = a_0 + \sum_{i=1}^j \alpha_{1i} \Delta Y_{t-i} + \sum_{i=1}^j \alpha_{2i} \Delta X_{it-i} + \alpha_3 ect_{t-1} + u_t \quad (3.8)$$

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.

3.3.4 Pair Wise Granger Causality Test

From equations (2, 3 and 4), the estimable trade openness error correction model is given as:

$$\Delta Top_t = \alpha_0 + \sum_{i=1}^j \alpha_{1i} \Delta Top_{t-1} + \sum_{i=1}^j \alpha_{2i} \Delta gov_{t-1} + \sum_{i=1}^j \alpha_{3i} \Delta pgdp_{t-1} + \alpha_4 ect_{t-1} + u_t \quad (3.9)$$

$$\Delta Top_t = \beta_0 + \sum_{i=1}^m \beta_{1i} \Delta Top_{t-1} + \sum_{i=1}^m \beta_{2i} \Delta rgov_{t-1} + \sum_{i=1}^m \beta_{3i} \Delta pgdp_{t-1} + \beta_4 ect_{t-1} + \Sigma_t \quad (3.10)$$

$$\Delta Top_t = \delta_0 + \sum_{i=1}^n \delta_{1i} \Delta Top_{t-1} + \sum_{i=1}^n \delta_{2i} \Delta cgov_{t-1} + \sum_{i=1}^n \delta_{3i} \Delta pgdp_{t-1} + \delta_4 ect_{t-1} + \varpi_t \quad (3.11)$$

where; j, n, and m = lag length for the Unrestricted Error-Correction Model (UECM)

ect_{t-1} = the error correction term lagged for one period

α_4, β_4 and δ_4 = the coefficients for measuring speed of adjustment in equation 3.8, 3.9 and 3.10 respectively. Other variables are as defined earlier.

In agreement with the argument in the literature that it might be important to determine the direction of causality between government size and trade openness, and following on the lead by Benarroch & Pandey (2012); and Aydogus and Topcu, (2013), a standard pair wise causality technique would be conducted to determine the direction of causality between the various measures of government size and trade openness.

3.3.5 Ethical Considerations

The following strategies will be adapted to ensure the moral justification of the investigation.

Ascriptions of Authorships: The researcher will accurately attribute to the sources of information in an effort to celebrate the works of past scholars or researchers. This will ensure no plagiarism occurs.

Scientific Adjudication: The researcher will work according to generally acceptable norms of research.

CHAPTER FOUR
DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 Introduction

In the previous chapter, methods of analyzing the causality of trade openness and government size, as well as the long-run and short run relationships between trade openness and government size in Uganda have been discussed. E-Views were used to analyze the data with respect to the specific objectives.

4.1 Descriptive Statistics

Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. Together with simple graphics analysis, they form the basis of virtually every quantitative analysis of data.

Table 4.1: Descriptive Statistics

| STATISTIC | LNCGOV | LNGOV | LNRGOV | LNTOP | LNGDP |
|------------------|---------------|--------------|---------------|--------------|--------------|
| Mean | 2.915 | 2.378868 | 2.068799 | 3.603220 | 2.754839 |
| Median | 3.002 | 2.413948 | 2.084988 | 3.568405 | 2.900000 |
| Maximum | 3.344 | 2.820903 | 2.618931 | 4.029948 | 6.700000 |
| Minimum | 2.133 | 1.941902 | 1.575397 | 3.215109 | -2.600000 |
| Std. Dev. | 0.328 | 0.255692 | 0.329781 | 0.243936 | 2.256965 |
| Skewness | -0.723 | -0.014592 | -0.037076 | 0.120896 | -0.521569 |
| Kurtosis | 2.623 | 1.724444 | 1.718123 | 1.787395 | 2.922683 |
| Jarque-Bera | 2.884 | 2.102698 | 2.129579 | 1.974796 | 1.413230 |
| Probability | 0.236 | 0.349466 | 0.344800 | 0.372545 | 0.493311 |
| Sum | 90.37718 | 73.74491 | 64.13276 | 111.6998 | 85.40000 |
| Sum Sq. Dev. | 3.242357 | 1.961353 | 3.262667 | 1.785143 | 152.8186 |
| Observations | 31 | 31 | 31 | 31 | 31 |

Source: Author's Computation

Where;

LNCGOV: Capital Expenditure as a ratio of GDP

LNGOV: Total Government Expenditure as a ratio of GD

LNRGOV: Recurrent Expenditure as a ratio of GDP

LNTOP: Trade openness

LMPGDP: Per Capita Gross Domestic Product

The results presented in table 4.1 revealed that mean values for capital expenditure, government expenditure and recurrent expenditure for Uganda were averagely within the same range. The same average range was evidenced in median values. Furthermore, the maximum and the minimum values for capital expenditure, government expenditure and recurrent expenditure for Uganda were averagely within the same range. The standard deviation which indicates the dispersions of the actual data from their mean reported low standard deviation for Uganda for capital expenditure, government expenditure and recurrent expenditure.

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 zeroskewness 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.

4.1.2 Unit Root Test Results (ADF and PP Tests)

This section involves testing for the stationarity of the individual variables using Augmented Dickey-Fuller and Phillip Perron test. Table 4.2 indicates the unit root test results performed in this study-following both the ADF and PP tests. A maximum number of 11lags were used for the ADF and PP tests (as determined automatically by E-views 7 statistical package).

Table 4.2: Stationarity Test Results

| Augmented Dickey Fuller (ADF) Levels | | | Phillip-Perron(PP) Levels | | |
|---|-----------------|---------------------------|---|-----------------|---------------------------|
| Variables | Constant | Constant and Trend | Variable | Constant | Constant and Trend |
| LNTOP | -1.996 | -1.737 | LNTOP | -1.994 | -1.324 |
| LNCGOV | -0.427 | -2.023 | LNCGOV | -0.427 | -1.895 |
| LNGOV | -3.350 | -0.955 | LNGOV | 4.017 | -0.644 |
| LNRGOV | -2.439 | -0.711 | LNRGOV | -2.187 | -0.532 |
| LNPGDP | -1.930 | -1.204 | LNPGDP | -0.890 | -1.871 |
| Augmented Dickey Fuller (ADF) First Difference | | | Phillip-Perron (PP) First Difference | | |
| Variables | Constant | Constant and Trend | Variable | Constant | Constant and Trend |
| LNTOP | -3.860* | -4.307* | LNTOP | -4.338* | -4.9048 |
| LNCGVO | -4.490* | -4.697* | LNCGOV | -6.401* | -6.498* |
| LNGOV | -2.981* | -4.394* | LNGOV | -2.901* | -4.992* |
| LNRGOV | -3.682* | -4.659* | LNRGOV | -3.674* | -4.769* |
| LNPGDP | -3.708* | -3.964* | LNPGDP | -3.708* | -4.035* |

Source: Author's Computation

Where;

LNCGOV: Capital Expenditure as a ratio of GDP

LNGOV: Total Government Expenditure as a ratio of GDP

LNRGOV: Recurrent Expenditure as a ratio of GDP

LNTOP: Trade Openness;

LNPGDP: Per capita Gross Domestic Product.

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 its linear combination would be stationary that is, integrated of order zero (0). In this scenario, all the variables are non-stationary at I(1) this implies that we can only regress the variables only if they are only co-integrated.

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.

4.2 The Long run Relationship between Trade Openness and Government Size (OBJECTIVE 1)

4.2.1 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; LNTOP, LNGOV, LNCGOV, LNRGOV and LNGDP 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 out co-integration analysis, it is pertinent to determine the optimal lag length of the Vector Autoregressive (VAR) model.

Table 4.3: VAR Lag Order Selection Criteria

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|-----|-----------|-----------|-----------|-----------|-----------|-----------|
| 0 | -353.4244 | NA | 16410.86 | 23.89496 | 24.12849 | 23.96967 |
| 1 | -270.6595 | 132.4238* | 358.4924* | 20.04397* | 21.44516* | 20.49222* |

Source: Author's Computation

* 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 4.3 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 4.4: Unrestricted Co-Integration Rank Test (Trace Statistics) of Equation 1 in the study (I.e. TOP= f(GOV)).

| Hypothesized No. of CE(s) | Eigenvalue | Trace Statistic | 0.05Critical Value | Prob.** |
|---------------------------|------------|-----------------|--------------------|---------|
| None * | 0.625462 | 44.19541 | 24.27596 | 0.0001 |
| At most 1* | 0.382178 | 14.73354 | 12.32090 | 0.0193 |
| At most 2 | 0.009518 | 0.286906 | 4.129906 | 0.6532 |

Source: Author's Computation

Table 4.4.1: Unrestricted Co-Integration Rank Test (Maximum Eigenvalue) of Equation 1 in the study (I.e. TOP= f(GOV))

| Hypothesized No. of CE(s) | Eigenvalue | Max-Eigen Statistic | Critical Value | Prob.** |
|------------------------------|------------|------------------------|----------------|---------|
| None * | 0.625462 | 29.46187 | 17.79730 | 0.0006 |
| At most 1* | 0.382178 | 14.44663 | 11.22480 | 0.0131 |
| At most 2 | 0.009518 | 0.286906 | 4.129906 | 0.6532 |

Source: Author's computation

Results from table 4.4 and 4.4.1 of trace and maximum eigen value, respectively, indicate that there are two Co-integrating equation in the model (i.e. LNTOP, LNGOV and LNGDP), which implies that there is a presence of long-run relationship between trade openness and government expenditure (i.e. Government size). These findings of the maximum Eigenvalue confirm the results got from the first trace rank test hence by observing the p-value for both tables which are significant at 5% Therefore, we reject the null hypothesis that there is a no Co-integration among these variables and we conclude that there is a long run relationship between trade openness and government size (i.e. Government Expenditure), and compensating hypothesis holds for Uganda.

Table 4.5: Unrestricted Co-Integration Rank Test (Trace Statistics) in Equation 2 in the study (I.e. TOP= f(RGOV))

| Hypothesized No. of CE(s) | Eigenvalue | Trace Statistic | 5% Critical Value | Prob |
|------------------------------|------------|-----------------|----------------------|--------|
| None * | 0.572716 | 25.50918 | 17.79730 | 0.0029 |
| At most 1 | 0.178074 | 5.883143 | 11.22480 | 0.3632 |
| At most 2 | 0.017392 | 0.526364 | 4.129906 | 0.5308 |

Source: Author's Computation

Table 4.5.1: Unrestricted Co-Integration Rank Test (Maximum Eigenvalue) for Equation 2 in the study (I.e. TOP= f(RGOV))

| Hypothesized No. of CE(s) | Eigenvalue | Max-Eigen Statistic | 5% Critical Value | Prob |
|---------------------------|------------|---------------------|-------------------|--------|
| None * | 0.572716 | 31.91868 | 24.27596 | 0.0045 |
| At most 1 | 0.178074 | 6.409507 | 12.32090 | 0.3879 |
| At most 2 | 0.017392 | 0.526364 | 4.129906 | 0.5308 |

SOURCE: Author's Computation

Results from table 4.5 and 4.5.1 of trace and maximum eigen value, respectively, indicate that there is a one Co-integrating equation (i.e. LNTOP, LNRGOV) which implies that there is a presence of long-run relationship between trade openness and recurrent expenditure (i.e. Government Size). These findings of the maximum eigen confirm the results got from the first trace rank test hence by observing the p-value for both tables which are significant at 5%, Therefore, we reject the null hypothesis that there is no Co-integration among these variables and we conclude that there is a long run relationship between trade openness and recurrent expenditure (i.e. Government Size), and compensating hypothesis holds for Uganda.

Table 4.6: Unrestricted Co-Integration Rank Test (Trace Statistics) for Equation 3 in the study (I.e. TOP= f(CGOV))

| Hypothesized No. of CE(s) | Eigenvalue | Trace Statistic | 0.05 Critical Value | Prob.** |
|---------------------------|------------|-----------------|---------------------|---------|
| None * | 0.591292 | 43.49539 | 24.27596 | 0.0001 |
| At most 1* | 0.425442 | 16.65277 | 12.32090 | 0.0089 |
| At most 2 | 0.000937 | 0.028137 | 4.129906 | 0.8909 |

Source: Authors Computation

Table 4.6.1: Unrestricted Co-Integration Rank Test (Maximum Eigenvalue) for Equation 3 in the study (I.e. TOP= f(CGOV))

| Hypothesized No. of CE(s) | Eigenvalue | Max-Eigen Statistic | 0.05 Critical Value | Prob.** |
|----------------------------------|-------------------|----------------------------|----------------------------|----------------|
| None * | 0.591292 | 26.84262 | 17.79730 | 0.0017 |
| At most 1* | 0.425442 | 16.62464 | 11.22480 | 0.0052 |
| At most 2 | 0.000937 | 0.028137 | 4.129906 | 0.8909 |

Source: Author's Computation

Results from table 4.6 and 4.6.1 of trace and maximum eigen value, respectively, indicate that there are two Co-integrating equations in the model (LNTOP, LNCGOV and LNGDP), which implies that there is a presence of long-run relationship between trade openness and capital expenditure (i.e. Government Size). These findings of the maximum eigen confirm the results got from the first trace rank test hence by observing the p-value for both tables which are significant at 5%, Therefore, we reject the null hypothesis that there is a no Co-integration among these variables and we conclude that there is a long run relationship between trade openness and capital expenditure (i.e. Government Size), and compensating hypothesis holds for Uganda. Therefore, we shall now employ ECM to evaluate short run properties of the co-integrated series.

4.3 The Short Run Relationship between Trade Openness and Government Size in Uganda (OBJECTIVE 2)

The second objective of this study was to determine the short run relationship between trade openness and government size in Uganda. The researcher employed Error Correction Model (ECM) to investigate if there is short run effect between trade openness and government size in Uganda.

Table 4.6 Short run relationship Model for Equation 1 in the Study (I.e. TOP= f(GOV))

| Dependent Variable: D(LNTOP) | | | | |
|---|-------------|------------|-------------|----------|
| Included observations: 30 after adjustments | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | -0.0102 | 0.0749 | -0.1361 | 0.8928 |
| D(LNTOP(-1)) | 0.2705 | 0.2057 | 1.3150 | 0.2004 |
| D(LNGOV) | 0.3386 | 0.1290 | 2.6251 | 0.0341 |
| D(LNPGDP) | -0.5902 | 0.2432 | -2.4266 | 0.0228 |
| ECT(-1) | (-0.0391) | 0.0150 | (-2.6025) | (0.0153) |
| R-squared | 0.7566 | | | |
| Adjusted R-squared | 0.7397 | | | |
| F-statistic | 5.2532 | | | |
| Prob(F-statistic) | 0.0032 | | | |
| Durbin-Watson stat | 1.8049 | | | |

SOURCE: Author's Computation*Note: variables were significant at the 10%, 5% and 1% levels*

Mathematical Model: $D(LNTOP) = 0.102 + 0.3386D(LNGOV) - 0.5902D(LNPGDP) - 0.0391ECT(-1)$

In Table 4.6 the results revealed that change in one percent value of Government Expenditure (LNGOV) has a positive (0.3386), and significant (0.0341) short run impact on Trade Openness (LNTOP) in the short-term in Uganda. This implies that one percent increase in Government Expenditure, leads to 33.86% increase in trade openness in the short-term. The positive sign is to explain that when the government increases the expenditure of infrastructural investment, then that will encourage the level of trade openness and performance in the domestic economy. This implies that substantial portions of government expenditure are used to improve the level of trade openness in the country. This result corroborates the findings of Swee-Hui Kueh *et al.*, (2008) who used Autoregressive Distributed Lag (ARDL) bounds testing Approach to examine the relationship between trade openness and government expenditure for the Association of Southeast Asian Nations (ASEAN) countries namely Indonesia, Malaysia, Philippines and

Thailand from 1974-2006. The reported results indicated significant positive long-run linkage between government expenditure and trade openness for the four countries.

The value of the Error Correction Model (ect_{-1}) at lag one shows -0.0391, meaning that 0.39% of disequilibrium errors are corrected. Furthermore, the R^2 , adjusted R^2 , Durbin-Watson and F-Statistics of the short run effect of openness on government size are in the right magnitude. The short run estimates also show that the co-efficient of the adjusted R^2 is approximately 73.9%, it implies that the explanatory variables in the model explain a higher variation in dependent variable. This implies that the regression equation has a goodness of fit because approximately 73% of changes in trade openness are explained by all the explanatory variables. The Durbin-Watson (1.8049) shows that the problem of serial correlation is absent in the model.

Table 4.7: Short-Run Relationship Model for Equation 2 In the Study (I.e. TOP= $f(RGOV)$)

| Dependent Variable: D(LN TOP) | | | | |
|---|-------------|------------|-------------|--------|
| Included observations: 30 after adjustments | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | -0.003316 | 0.046098 | -0.071939 | 0.9432 |
| D(LN TOP (-1)) | 0.177136 | 0.173627 | 1.020206 | 0.3174 |
| D(LN $RGOV$ (-1)) | 0.283265 | 0.130297 | (2.826278) | 0.0122 |
| D(LN $PGDP$) | -0.654681 | 0.254597 | (-2.571440) | 0.0165 |
| ECT(-1) | -0.321722 | 0.149284 | -2.155103 | 0.0410 |
| R-squared | 0.734116 | | | |
| Adjusted R-squared | 0.703574 | | | |
| F-statistic | 4.794665 | | | |
| Prob(F-statistic) | 0.005213 | | | |
| Durbin-Watson stat | 1.963652 | | | |

SOURCE: Author's Computation

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

Mathematical Model: $D(LN\mathit{TOP}) - 0.003316 + 0.283265D(LN\mathit{RGOV}(-1)) - 0.654681D(LN\mathit{PGDP}) - 0.321722ECT(-1)$

On the other-hand in Table 4.7, one period lagged value of recurrent expenditure (LNRGOV) has a positive (0.0205) and significant (0.0122), short run impact on trade openness, which implies that one percent increase in recurrent expenditure enhance trade openness by 28.3%. Reason being if managed and spent well for economic purpose the persistent increase in expenditure of recurrent expenses by the government which in this case is a measurement of the government size increases the trade openness within the country and will in-turn improve economic growth of the country. The value the feedback mechanism of the Error Correction Model (*ect-1*) at lag one shows -0.3217, which is fairly low speed of adjustment to equilibrium after a shock. This implies that 32% of disequilibrium errors are corrected in the next period. Furthermore, the R², adjusted is approximately 70%, it implies that the independent variable which is the re-current expenditure explain a higher variation of the trade openness. This implies that the regression equation has a goodness of fit because approximately 70% of changes in trade openness are explained by all the explanatory variables. The Durbin-Watson (1.9636) shows that the problem of serial correlation is absent in the model.

Table 4.8: Short-Run Relationship Model For Equation 3 In The Study (I.e. TOP=f(CGOV))

| Dependent Variable: D(LNTOP) | | | | |
|---|-------------|------------|-------------|--------|
| Included observations: 30 after adjustments | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | -0.013080 | 0.058461 | -0.223735 | 0.8248 |
| D(LNTOP(-1)) | 0.169078 | 0.175928 | 0.961066 | 0.3457 |
| D(LNCGOV(-1)) | 0.254601 | 0.110310 | 2.308238 | 0.0447 |
| D(LNPGDP) | -0.630425 | 0.241211 | -2.613585 | 0.0150 |
| ECT(-1) | -0.036001 | 0.014781 | -2.435604 | 0.0223 |
| R-squared | 0.766607 | | | |
| Adjusted R-squared | 0.749664 | | | |
| F-statistic | 5.251808 | | | |
| Prob(F-statistic) | 0.003277 | | | |
| Durbin-Watson stat | 1.854227 | | | |

SOURCE: Author's Computation

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

Mathematical Model: $D(LNTOP) = 0.013080 + 0.254601D(LNCGOV(-1)) - 0.0630425D(LNPGDP) - 0.036001ECT(-1)$

In Table 4.8 it is showing that one period lagged value of capital expenditure (i.e. Government Size) exerts a positive (0.2546), and significant (0.0447) short-run impact on trade openness, implying that one percent increase in capital expenditure causes 25.4% increase in trade openness in Uganda. The results further reveal that the estimated lagged error correction term ECT(-1) is negative and significant. The feedback coefficient is -0.0360 suggesting a very low speed of adjustment to equilibrium after a shock. Approximately, 3.6% of the disequilibria from the previous year's shock in trade openness converge or adjust back to the long run equilibrium in the current year. This implies that the regression equation has a goodness of fit because approximately 77% of changes in trade openness are explained by all the explanatory variables. The Durbin-Watson (1.8542) shows that the problem of serial correlation is absent in the model.

In summary, the above-mentioned result corroborates the findings of Aregbeyen & Ibrahim (2014), who by Using the bounds testing approach to co integration within an ARDL framework, Aregbeyen & Ibrahim (2014) investigated the nexus between trade openness and government size by disaggregating government expenditure into total government expenditure as a share of GDP; recurrent expenditure as a share of GDP; and capital expenditure as a share of GDP. Their result revealed that total government expenditure in GDP and recurrent expenditure as share (percent) of GDP had positive and significant relationship with trade openness in the long run but capital expenditure as percentage share of GDP does not. The standard causality test result supports these findings. They concluded that compensation hypothesis holds for Nigeria.

These results are also in conformity with Khalid (2005), who made use of Vector Error Correction Model (VECM), to examine the long-and-short run relationship between trade openness and government size in the Kingdom of Saudi-Arabia. He found the existence of a positive and significant long-run relationship between the variables while a Uni-directional causal link that runs from government size to trade openness was observed. Utilizing the Fully

Modified Ordinary Least Square (FMOLS) and Error Correction Mechanism (ECM), Shahbaz, Rehman & Amir (2010) analyzed the existence of a long-and short-run nexus between trade openness and government size in Pakistan between 1971 and 2006. The results of this study are inconsonance with the findings of Rodrik (1998) and Khalid (2005).

Table 4.9: Pair wise Granger Causality Tests for Equation 1 In The Study (I.e. TOP= f (GOV) (Objective Three)

| Null Hypothesis: | Obs | F-Statistic | Prob. |
|------------------------------------|------------|--------------------|--------------|
| lnGOV does not Granger Cause lnTOP | 30 | 1.21716 | 0.3130 |
| lnTOP does not Granger Cause lnGOV | | 7.05232 | 0.0352 |

Source: Author's Computation

The results of the causality test presented in table 4.9 showed that there is a positive and significant Uni-directional causal relationship running from trade openness to government expenditure (Government size) in Uganda. This supports the notion that compensation hypothesis depicted by the Error Correction Model and Co integration results holds for Uganda.

Table 4.10: Pair wise Granger Causality Tests For Equation 2 In The Study (I.e. TOP= f (RGOV))

| Null Hypothesis: | Obs | F-Statistic | Prob. |
|-------------------------------------|------------|--------------------|--------------|
| lnRGOV does not Granger Cause lnTOP | 31 | 1.17104 | 0.2884 |
| lnTOP does not Granger Cause lnRGOV | | 6.30971 | 0.0373 |

Source: Author's Computation

The results of the causality test presented in table 4.10 showed that there is a positive and significant Uni-directional causal relationship running from trade openness to government size (Re current Expenditures) in Uganda. This supports the concept that compensation hypothesis depicted by the Error Correction Model and Co integration results holds for Uganda.

Table 4.11: Pair wise Granger Causality Tests For Equation 3 In The Study (I.e. TOP= f (CGOV))

| Null Hypothesis: | Obs | F-Statistic | Prob. |
|-------------------------------------|------------|--------------------|--------------|
| lnCGOV does not Granger Cause lnTOP | 31 | 0.79620 | 0.3798 |
| lnTOP does not Granger Cause lnCGOV | | 1.23188 | 0.2489 |

Source: Author's computation

The results of the causality test presented in table 4.11 showed that there is no causal relationship between trade openness and capital expenditure in Uganda. This result disagrees with the impression of compensation hypothesis.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.0 Introduction

This chapter discusses the Findings in the preceding chapter, concludes and gives recommendations in accordance to the objectives of the study.

5.1 Discussion of the findings

5.1.1 The Long Run Relationship between Trade Openness and Government Size in Uganda

The First objective of this study was to determine the long run relationship between trade openness and government size in Uganda. The study revealed that there was a presence of long-term relationship between trade openness and government size(i.e. government expenditure, capital expenditures and recurrent expenditure) in Uganda. This therefore rejected the null hypothesis that there was no significant long run relationship between trade openness and government size in Uganda and upheld the alternative hypothesis. In the same vein, the compensation hypothesis was accepted for Uganda. This implies that trade openness increase a country's exposure to external shocks (even if it is due to natural openness or to trade policy). This study disagrees with the findings of Aregbeyen and Ibrahim (2014); Nwaka & Onifade (2015); SweeKueh *et al.*, (2008) who investigated the subject matter using the bounds testing approach to co-integration within an ARDL framework and government size measured by percentage share of total government expenditure in GDP and share of recurrent expenditure in GDP significantly affects trade openness in the long run but percentage share of capital expenditure in GDP as a measure of government size does not impact on trade openness in the long run.

5.1.2 The Short Run Relationship between Trade Openness and Government Size in Uganda

The second objective of this study was to determine the short run relationship between trade openness and government size in Uganda. The study revealed that trade openness positively affects government size for Uganda. This implies that as government size for Uganda is increasing due to trade openness, the government size for Uganda increases. However, the study also revealed that the positive effect of trade openness for Uganda respectively is significant thus

rejecting the null hypothesis that there is no significant relationship between trade openness and government size in Uganda. In addition, it implies that the compensation hypothesis holds for Uganda in a short run.

However, since trade openness positively affect the government size of Uganda, it implies that the Ugandan government benefits from trade openness in terms of lower prices due to removal of tariff barriers which leads to a decrease in consumer prices, increased competition because firms will tend to compete with the abroad thereby increasing efficiency and cut costs and also act as an incentive for an economy to shift resources into industries where they have comparative advantage thereby enabling specialization. Indeed due to trade openness, many Uganda businesses have been able to thrive and operate successfully in the Ugandan market, among which include: Uganda Breweries Ltd, Equity Bank Ltd, and etc.

Thus, the finding of this study is in line with that of Rodrik (1998); Cameron (1978); Ibrahim (2015), Olawole& Adebayo (2017), Kimakova (2009), Bennaroch & Pandey (2012), Dixit (2014), Liberati (2013), & Katumba (2013). For instance, Rodrik (1998) indicates that positive relationship between openness and government size is not affected by the inclusion of other control variables, and prevails for both low and high income level countries. In addition, Cameron (1978) explained that more open economies have a higher industrial concentration, which causes higher collective bargaining such as labor union and federation. This tends to foster the government transfers such as pensions, employment insurance, social security and job training, which reduce the external shocks and risks.

Furthermore, Ibrahim (2015) found a positive link between trade openness and government size for Nigeria and Algeria. In the same vein, Ibrahim (2015) found negative causality for South Africa such like for Uganda in the current study. In addition, this study agrees with the findings of Olawole and Adebayo (2017) that investigated the relationship among financial openness, trade openness and government size in Nigeria and found a positive relationship between trade openness and government size which implied that there was evidence to support compensation hypothesis.

Moreover, the study agrees with Wagner's hypothesis that when the income level in a country rises, more public service is demanded and supplied resulting in an increase in the size of

government or public sector relative to the economy over time. Some explanations are put forward in order to explain the channels through which an increasing income level or economic growth can exert an effect on the government size. For example, Henrekson (1993), based on Wagner's views, summarizes three main reasons in explaining the increase in government size: a well-functioning economy needs more protective and administrative public services as a country develops, a growing income leads to an increase in the income elastic government expenditures, and, finally, economic development and technological progress cause a government to be more involved in the economy on efficiency grounds.

5.1.3 The Extent of Causality between Trade Openness and Government Size of Uganda

The Third objective of this study was to determine the extent of causality between trade openness and government size of Uganda. The study revealed a positive uni-directional causal relationship between trade openness and government size (i.e. government expenditure, recurrent expenditure) for Uganda, thus upholding the compensation hypothesis. Thus, the rejected null hypothesis that there was no significant long run relationship between trade openness and government size in Uganda and upheld the alternative hypothesis. But there is no causal relationship of capital expenditure and trade openness. Therefore, this study is in line with other studies since several studies have found that openness to trade is broadly correlated with the size of the public sector thus upholding the compensation hypothesis (Cameron 1978; Rodrik 1998; Liberati 2007; Bennaroch & Pandey 2012; Dixit 2014, Ibrahim 2015; Sabra 2016). One explanation given for this relationship is that integration into world markets increases specialization within an economy. Increased specialization, in turn, implies less diversification and hence greater exposure to the risks arising from volatility in the global economy. To hedge against these risks, states that are open to world markets increase public expenditures to compensate losers and expand the size of the non-exposed public sector. Leaving aside the rather questionable argument that greater trade openness will generate more (rather than less) volatility in incomes in all instances, "race-to-the bottom" arguments challenge the tenability of this relationship into the future, particularly in an era of global capital markets that might put pressure on governments to lower tax rates in order to be a more hospitable locale for international investors who might finance export industries.

The study concludes that the compensation hypothesis holds in Uganda. Accordingly, government needs to continue to expand its expenditure in order to cushion the effect of increase in risk caused by rising trade openness.

5.2 Conclusion

Objective One: There is a presence of long run relationship between trade openness and government size in a long run for Uganda thus accepting the compensation hypothesis.

Objective Two: There is a positive short run relationship between trade openness and government size for Uganda in a short run thus upholding the compensation hypothesis.

Objective Three: There is a positive causal relationship between trade openness and government size (re current and government expenditure) for Uganda. Thus, accepting the compensation hypothesis.

5.3 Recommendations

Objective one: The governments of Uganda should focus on the capital goods instead of consumable items, Increased investment in the domestic economy would not only remove the deficiency of capita stock but would also provide jobs opportunities for the growing labour force. The fruits of the trade openness to increase the productivity of human capital have not been achieved in developing countries due to less groomed and less skilled workers. The investment in human capital is the dire need of the time for the developing countries to enjoy more beneficial effects of trade openness.

Objective two: In addition, the government should invest both in physical and human capital. Therefore, the countries ministry of works and housing should focus on developmental projects and infrastructures' which would generate employment opportunities and boost the non formal sectors by creating more opportunities to access low interest loans through the central bank or ministry of commerce and industry to encourage local industries for the growing labour force, governments should also lower tax rates in order to be a more hospitable locale for international investors who might finance export industries.

The employment opportunities could be created using domestic sources as well as encouraging foreign direct investment. In normal circumstances, foreign direct investment brings employment opportunities to the host countries.

Objective three: Furthermore, Uganda government should increase government expenditure and most especially, devote more funds to social welfare expenditure. This will help cushion the negative effects on trade openness and its associated risks on the country's citizens.

5.4 Contribution to Knowledge

This study has probed the relationship between trade openness and government size in Uganda utilizing a time series data spanned from 1986-2017. And the major finding of the research objectives was revealing that there is an existence of compensation hypothesis in Uganda, in regard to that, this study contributes the fact that if the compensation hypothesis holds for Uganda then the government must enhance the expenditure of the three measurements (i.e.) total government expenditure, capital expenditure and recurrent expenditure to compensate the external shocks.

5.5 Limitation of the Study

It is important to deliberate the sources and the nature of the data because the success of any statistical analysis eventually relies on the availability of appropriate and accurate data. The research is conducted using secondary data from internationally recognized sources. The availability of published data for all the variables involved in the study was a pivotal factor in the choice of a time period. On the other hand, the results of the study may have been exaggerated by the quality of the data available, and it should be acknowledge that, it has become difficult for me to access some of this data from Ugandan bureau of statistics due to some technical issues unknown to me and some important variables were missing as a result, the researcher overcome this difficulty in obtaining quality data by consulting more than one source in this research. 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.

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APPENDIX I: RESEARCH BUDGET

| Item | Unit | Unit cost (Ugsh) | Total (Ugsh) |
|-------------------------|------------------------------|-------------------------|---------------------|
| Printing proposal books | 8 copies, and 41 pages @ | 150/= per page | 50,000 |
| Printing thesis | 10 copies, each copy=75pages | 150/= per page | 126,000 |
| Data analysis | | | 600,000 |
| Miscellaneous | | | 400,000 |
| Total | | | 1,050,000/= |

APPENDIX II: TIMEFRAME

| | 2018 | | | 2019 | | | | | |
|--------------------------|------|-----|-----|------|-----|-----|-------|-----|------|
| Activities | Oct | Nov | Dec | Jan | Feb | Mar | April | May | June |
| Conceptual note | | | | | | | | | |
| Proposal writing | | | | | | | | | |
| Proposal hearing | | | | | | | | | |
| Field data collection | | | | | | | | | |
| Data analysis | | | | | | | | | |
| Thesis writing | | | | | | | | | |
| Working progress hearing | | | | | | | | | |
| Viva voce | | | | | | | | | |
| Graduation | | | | | | | | | |

APPENDIX III: MACRO ECONOMIC DATA

| Year | GDP US\$ billion | TEXP billion | TCEXP | TREXP |
|------|------------------|--------------|------------|------------|
| 1986 | 5.002 | 754 | 63.709 | 84.686 |
| 1987 | 8.065 | 832.32 | 80.884 | 79.677 |
| 1988 | 8.355 | 852.42 | 91.993 | 90.143 |
| 1989 | 6.774 | 872.15 | 97.122 | 103.498 |
| 1990 | 5.525 | 900.52 | 114.402 | 93.762 |
| 1991 | 2.89 | 925.02 | 140.334 | 87.331 |
| 1992 | 2.809 | 951.61 | 151.667 | 72.855 |
| 1993 | 3.75 | 1004.32 | 153.108 | 84.724 |
| 1994 | 5.182 | 1123.21 | 164.898 | 90.351 |
| 1995 | 6.461 | 1240.5 | 153.97086 | 103.87947 |
| 1996 | 6.854 | 1253.2 | 252.795504 | 100.456512 |
| 1997 | 7.197 | 1262.16 | 229.435 | 64.66 |
| 1998 | 7.331 | 1424.15 | 234.229 | 69.968 |
| 1999 | 6.764 | 1674.32 | 327.312 | 82.644 |
| 2000 | 6.852 | 1942.42 | 378.441 | 97.528 |
| 2001 | 6.922 | 2229.24 | 430.287 | 107.716 |
| 2002 | 7.443 | 2538.46 | 513.2004 | 143.879 |
| 2003 | 7.708 | 2819.88 | 591.723 | 151.399 |
| 2004 | 9.497 | 3034.46 | 611.291 | 175.24 |
| 2005 | 11.007 | 3210.67 | 717.745 | 197.488 |
| 2006 | 12.325 | 3531.25 | 746.153 | 206.613 |
| 2007 | 15.2 | 3993.67 | 881.802 | 246.649 |
| 2008 | 18.188 | 4993.26 | 1146.951 | 365.856 |
| 2009 | 18.579 | 5754.54 | 1438.462 | 453.687 |
| 2010 | 20.212 | 8290.09 | 2118.117 | 667.02 |
| 2011 | 21.108 | 9140.2 | 2509.624 | 874.26 |
| 2012 | 24.62 | 10164.58 | 2774.625 | 1165.165 |
| 2013 | 25.596 | 11125.92 | 3154.198 | 1526.587 |
| 2014 | 27.519 | 12256.29 | 3343.638 | 1422.097 |
| 2015 | 24.74 | 14444.73 | 3555.714 | 1804.435 |
| 2016 | 24.995 | 18470.8 | 4713.748 | 2378.854 |
| 2017 | 27.556 | 19804.39 | 3691.8245 | 1782.99325 |

SOURCE: WORLD DEVELOPMENT INDICATOR (WDI)

APPENDIX IV: MACRO ECONOMICS DATA

| Year | Export in US\$ billions | Import in US\$ billions |
|------|-------------------------|-------------------------|
| 1986 | 19.751 | 10.844 |
| 1987 | 23.952 | 11.057 |
| 1988 | 22.9622 | 13.9943 |
| 1989 | 30.6114 | 13.1958 |
| 1990 | 38.0518 | 13.7025 |
| 1991 | 32.6443 | 19.0541 |
| 1992 | 33.1998 | 21.9596 |
| 1993 | 31.7392 | 19.4996 |
| 1994 | 31.685 | 17.8684 |
| 1995 | 35.6058 | 19.5333 |
| 1996 | 44.285 | 22.2748 |
| 1997 | 44.0254 | 25.5254 |
| 1998 | 33.9248 | 25.1535 |
| 1999 | 41.9774 | 20.1655 |
| 2000 | 67.0901 | 19.0775 |
| 2001 | 59.7539 | 20.0524 |
| 2002 | 53.2446 | 18.8118 |
| 2003 | 68.34391 | 17.27944 |
| 2004 | 92.09946 | 22.25633 |
| 2005 | 127.1691 | 31.6408 |
| 2006 | 150.7582 | 38.6584 |
| 2007 | 165.6515 | 48.485 |
| 2008 | 242.5787 | 64.8799 |
| 2009 | 111.6023 | 49.857 |
| 2010 | 149.8931 | 54.22579 |
| 2011 | 191.4701 | 64.80889 |
| 2012 | 180.7525 | 81.72673 |
| 2013 | 152.6883 | 84.73044 |
| 2014 | 132.3701 | 82.53277 |
| 2015 | 66.2408 | 72.87756 |
| 2016 | 77.56005 | 71.06025 |
| 2017 | 107.2148125 | 77.800255 |

SOURCE: WORLD DEVELOPMENT INDICATOR (WDI)