ANALYSIS OF THE IMPACT OF FOREIGN AID ON ECONOMIC GROWTH IN COMESA

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ABSTRACT

The Common Market for East and Southern Africa (COMESA) was officially established in 1994. Its primary objective was to help its member states attain sustainable economic growth and development through regional integration and trade. In this regard, the region's specific goals encompassed: (a) comparable and balanced development of human capital, production and market structures in its respective member countries. (b) harmonization of the individual economic and trade policies among its member countries in line with its collective regional growth and development goals. Among the tools for the realisation of these goals, is a coherent and consistent development financing plan for the essential investments across its sectors. Accordingly, focusing on the region's core objective of economic growth, this study empirically investigated how foreign aid, as one of the region's vital development financing resource has influenced economic growth in the respective COMESA countries.

Contrary to the existing literature, this thesis adopted a comprehensive approach that encompassed aggregate and sectoral implications of aid receipts in the region without undermining the role of the factors affecting its utilization as mostly discussed in the literature. From the political economy perspective, recent debates on Africa's inclusive and sustainable growth have focused on structural transformation as a critical priority in transforming its development platform. Based on these debates, the thesis focused on two crucial sectors for comprehensive econometric assessments of direct and indirect effects of sectoral aid on growth. For direct effects of aid on growth, the work chose the agricultural sector, which continues to sustainably support the region's structural transformation process through the provision of at least 50% of the raw materials to the industrial sector. The agricultural sector also supports livelihoods of at least 60% of the region's population. For indirect effects, the thesis selected economic infrastructure as a critical enabler of effective backward and forward linkages between the agricultural sector and the industrial/ service sectors.

This comprehensive assessment was therefore accomplished firstly by assessing the extent to which the received aid volumes in the respective COMESA countries consistently closed their overall and specific sectoral development financing gaps. Trends analysis of aid and economic growth performance showed that foreign aid is the dominant source of foreign capital, accounting for an average of 60 percent of the development financing gaps annually in COMESA countries. Although better growth performances were expected among aid recipients, erratic growth rates below the 7% minimum stipulated in the Sustainable Development Goals are widespread across the countries. Aid volatility and misalignment of

the aid allocations across (within) sectors and among countries compromise the potency of aid in the region. Incidences of foreign aid receipts over and above the estimated external development financing gaps are partially due to the large share of humanitarian assistance in some countries. However, they also imply a lack of systematic assessment of the region's development financing needs, particularly in countries whose public investments were fully covered by domestic resources yet these countries received foreign aid. Furthermore, sectoral prioritization in favour of non-growth enhancing consumption, mostly in the social sectors, may be redundant as far as growth is concerned. In this regard, the thesis recommends a joint donor-recipient country financing needs and COMESA-wide capacities assessments for effective targeting to improve growth outcomes of aid. This approach to development financing will be more effective if accompanied by policies that focus on strengthening domestic institutions and increasing domestic resource mobilization.

Secondly, contending for comparable impacts of aid across the countries in the region for the attainment of unified regional growth and development goals, Chapter 5 assessed how the received aid affected growth in the respective countries using the Pooled Mean Group (PMG) estimator. The thesis found that although aid had a significant positive impact on growth in the short run, its long-term effect was negative. The results show that the long-term impact of grants on growth is positive and significant, while the net effect of loans on growth was negative and significant. In line with the visible adverse effects of corruption on aid utilization in the short run in most countries, the results show that corruption has a net negative impact on the utilization of loans and grant. Accordingly, the short-run effects of loans and grants varied significantly among the countries in the region, potentially reflecting which component of aid is mostly affected by their respective weak institutions. Overall, the results show thart the potency of total foreign aid is equally compromised by corruption in the long term .

Furthermore, Chapter 5 found that domestic savings have a positive effect on growth both in the short and long run. Therefore, the chapter postulates better outcomes from aid if COMESA effectively addresses corruption in all its member countries. This should be complemented with policies and strategies that focus on effectively increasing domestic revenue (savings) to further enhance their growth outcomes complemented with foreign aid. Lastly, rationalisation of the region's exports to enhance their competitiveness remains imperative if the exports are to productively contribute to its regional growth goals.

Thirdly, Chapter 6 analysed the impact of agricultural foreign aid on agricultural productivity and growth in a Panel Vector Autoregressive (PVAR) framework. The chapter finds a significant unidirectional causality from agricultural growth to foreign aid and thus confirming the theoretical dispositions of the developmental role of foreign aid. However, instead of complementing domestic resources in this regard, the results showed that foreign aid in the sector substitutes government financing, which effectively reduces its effectiveness. A mismatch in government resources and aid allocations to a sub-sector erodes the synergy that should typically exist between donor aid and government expenditure in a sector. This mismatch implies that a policy shift towards Result-Based (Aid on Delivery) approaches in aid disbursements will be critical to eliminating fungible resources. Misalignment of aid allocations with the respective sub-sectoral relative importance in the sectoral development goals was further found to undermine the potency of aid in the sector. Accordingly, the thesis contends for a better understanding of the role various sub-sectors play to the overall growth of the agriculture sector. This understanding will be crucial for equitable resource allocation and enhanced aid effectiveness. Moreover, the higher impact of domestic resources compared to foreign aid calls for policies to increase domestic resource mobilization and a broader focus on reducing aid.

Lastly, the thesis assessed the contribution of foreign aid to the region's infrastructure development in Chapter 7. Using the Blundell-Bond (BB) system Generalised Methods of Moments, the paper found that foreign aid has a net negative effect on infrastructure development mainly because of corruption which increases the cost of its loans. Although the results shows that corruption does not affect net utilization of grants, the regional effect of grants on infrastrucutre development negative. Notably, grants have been steadily declining since 2009 (Figure 3). Overall, the chapter shows the potential that loans have in turning around the infrastructure deficit in the region, particularly if corruption is effectively addressed in all the COMESA countries. Thus, the chapter concludes that unless COMESA countries effectively addresses corruption, it cannot adequately close its infrastructure gaps and cannot enhance its growth with foreign aid. With the highlighted positive and significant impact of domestic resources on infrastructure development in its core model, the chapter further recommends the exploring of other avenues of revenue for closing the infrastructure gaps. This examination will be beneficial in fast-tracking infrastructure development and enhance economic growth in the region.

Overall, notwithstanding the comparable short-run positive effects of aid on growth across the countries in the region, the research failed to conclude that foreign aid positively contributes to the region's long- term sustainable growth and development objective. While it marginally enhances productivity and growth of its core growth sector, foreign aid in the region has failed to bring about the desired changes in the growth-enhancing support sectors (economic infrastructure and social sectors). High levels of corruption in some of its member countries, which potentially lead to unnecessary increases in the overall financial costs of its loans, undermines the potency of foreign aid. Similarly, the substitution effect of aid on domestic resources further compromise the performance of foreign aid in the region. In this regard, "aid on delivery" (result based) approaches remain the best policy option to effectively eliminate fungible resources in all countries in the region.

Furthermore, poor alignment of aid to the respective development financing gaps both across (within) sectors and countries is vital in accounting for aid inefficiency in enhancing the region's growth. On the one hand, there is evidence of the lack of systematic assessment on the part of the region's development partners (donors) to properly align aid to the region's development financing gaps as reflected by episodes of aid over and above existing development financing gaps. While the large component of humanitarian aid in some of the countries in the region comprehensively explains this mismatch, it does not provide enough explanation about other countries in the region, including those whose investments were fully covered by domestic resources in the presence of aid receipts. On the other hand, poor sectoral prioritization of the received aid across the countries in favour of non-growth enhancing consumption, mostly in the social sectors, is redundant for the attainment of its growth-enhancing objectives. In this regard, a thorough understanding of the region's development financing needs and capacities to ensure the right targeting and effective utilization of both foreign aid and domestic resources remains imperative. Enhancing domestic resource mobilization will further be beneficial in reducing aid dependency in the region.

DEDICATION

To my son Tamani Banda.

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I would like to sincerely thank my supervisor, Prof. Josue Mbonigaba, for his guidance and support throughout the writing of this thesis. His insights and valuable comments shaped all aspects of this thesis from the abstract to the conclusion. I would like to particularly acknowledge with deep appreciation, the time that he spent on reading this thesis over and over and providing guidance.

Besides the thesis as a product of the Ph.D. studies, four publishable papers were derived from the empirical aspect of the work covered in chapters 4, 5, 6 and 7 respectively. The first paper "External financing and growth in the Common Market for East and Southern Africa" is yet to be submitted to a journal . The second paper "Foreign aid and economic growth in COMESA" was submitted to the "South African Journal of Economics (ISSN: 00382280)" and is currently under review. The third paper, "The Role of Development Foreign aid in Agriculture in the Common Market for Eastern and Southern Africa: A Panel Vector Autoregression Analysis" has been published in the Journal of Agricultural Science (ISSN: 00218596, 14695146). The fourth paper "Foreign aid and Economic Infrastructure in the Common Market for East and Southern Africa" was submitted Journal of the Knowledge Economy (ISSN: 18687873, 18687865).

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Above all, may all the glory be to God for seeing me through.

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LIST OF ABBREVIATIONS

AAA	Accra Agenda for Action
AB-GMM	Allerano and Bond Generalised Methods of Moments
ADF	Augmented Dickey-Fuller
AfDB	African Development Bank
AIC	Akaike Information Criterion
AIDI	African Infrastructure Development Index
ARDL	Autoregressive Distributed lag
AUC	African Union Commission
BB-GMM	Blundell-Bond Generalised Methods of Moments
COMESA	Common Market for East and Southern Africa
CSD	Cross-Section Dependence
DAC	Development Assistance Committee
DRC	Democratic Republic of Congo
ECA	Economic Commission for Africa
ECM	Error Correction Model
ERA	Economic Report on Africa
FAO	Food and Agricultural Organization
FDI	Foreign Direct Investments
FEVD	Forecast Error Variance Decomposition
GBS	General Budget Support
GDP	Gross Domestic Product
GMM	Generalised Methods of Moments
IMF	International Monetary Fund
IPS	Im-Pesaran and Shin
IRF	Impulse Response Function
IV	Instrumental Variables
LDCs	Least Developed Countries
LLC	Levin-Lin-chu
LR	Long Run
LT	Long Term
OA	Official Aid
ODA	Official Development Assistance

OECD	Organization for Economic Cooperation and Development
OOF	Other Official Flows
OLS	Ordinary Least Squares
PDAE	Paris Declaration on Aid Effectiveness
PMG	Pooled Mean Group
PVAR	Panel Vector Autoregression
SDGs	Sustainable Development Goals
SGBS	Sector General Budget Support
ST	Short Term
TSLS	Two Stage Least Squares
SWAPs	Sector Wide Approaches
VMA	Vector Moving Average
WB	World Bank
WDI	World Development Indicators
WGI	World Governance Indicator

CHAPTER 1: INTRODUCTION

Sustained economic growth in comparable fashion among the countries in the Common Market for East and Southern Africa (COMESA)[1] is crucial to achieving their collective regional growth and development goals. Among the tools for the realisation of this trend, is a coherent and consistent development financing plan for the essential investments across the region. In this regard, this thesis empirically investigates how foreign aid as the region's vital development financing resource, has influenced economic growth in the respective COMESA countries. A thorough investigation is accomplished firstly by assessing the extent to which the received foreign aid volumes in COMESA countries consistently closed their overall and specific sectoral development financing gaps. Secondly, the thesis assessed how the received foreign aid affected growth and development goals in the respective countries. Third, the thesis evaluated the effect of foreign aid to the core growth sectors and, lastly, the thesis analysed how foreign aid contributes to the development of the region's economic infrastructure. The thesis noted that key factors that can compromise the effectiveness of foreign aid need to be controlled. Therefore, foreign aid is disaggregated into loans and grants to highlight their relative contribution to the region's economic growth.

1.1 Background

The primary objective of foreign aid is to stimulate economic growth and development of the recipient economies. According to the Gap models, the key objective of foreign aid is accomplished when it supplements domestic capital resources (savings) for the required investments to help attain specific growth levels (Chenery and Strout, 1966; Snowdon, 2009; McGillivray, 2009). It is postulated that with an injection of foreign aid, beneficiary economies would be propelled onto a self-sustaining and satisfactory growth track (Rostow, 1959; Rosenstein-Rodan, 1961; Chenery and Strout, 1966; Equilibria, 1980; Mubarak, 2008). This assumption focuses on just the complementary role of foreign aid to the resources needed for sustainable growth and development in the recipient economies. As such, the assumption is that

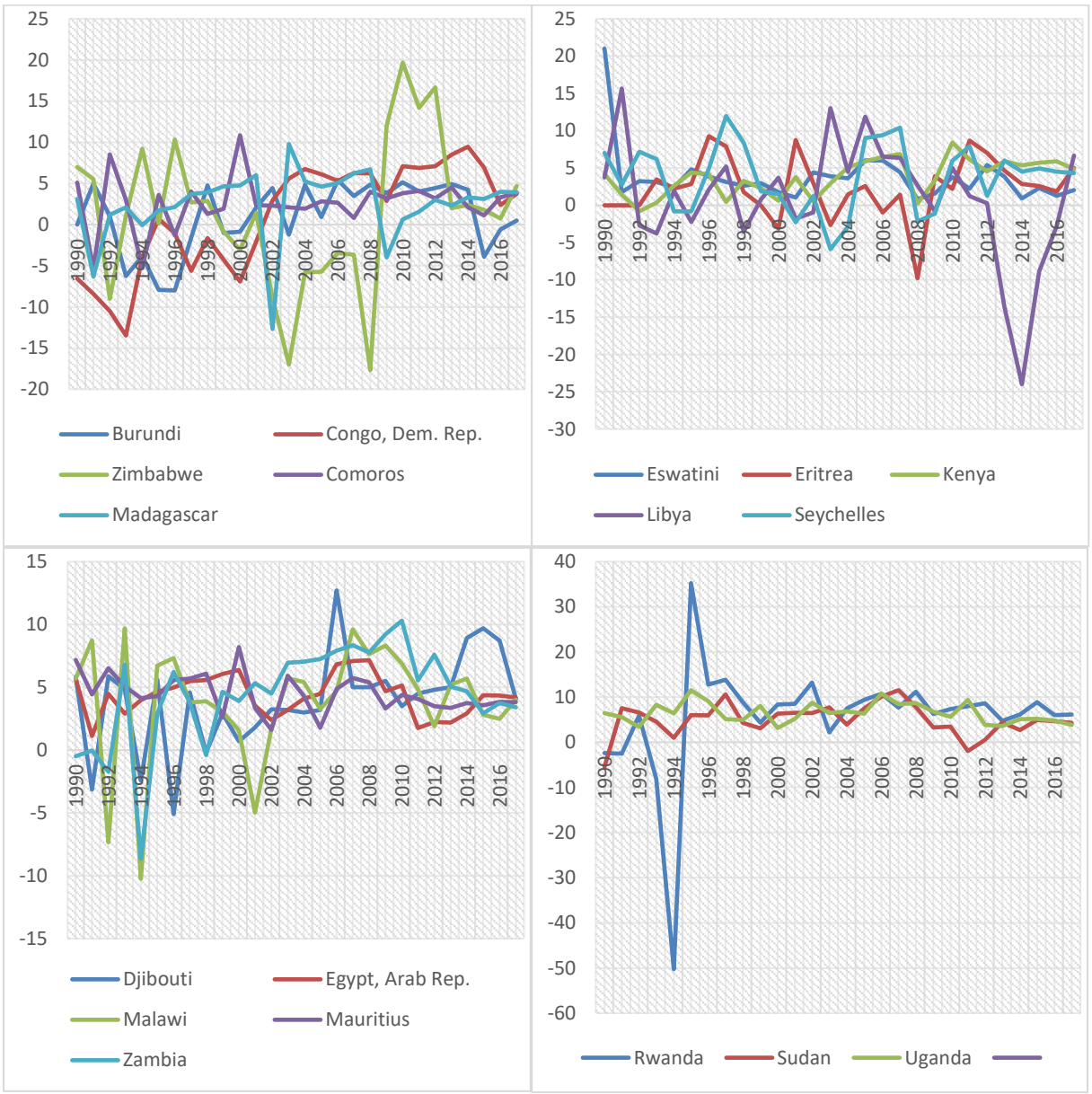
[1] *Currently, COMESA has 21-member states following the admission of Somalia and Tunisia in July 2018. The other member states are: Burundi, Comoros, Democratic Republic of the Congo, Djibouti, Egypt, Eritrea, Eswatini, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Uganda, Zambia, and Zimbabwe*

the recipient economies would exhibit maximum efforts by ensuring the existence of requisite institutions/structures and relevant skills in translating foreign aid resources into the plausible growth outcomes (Chenery and Strout, 1966). Therefore, it is mostly up to the recipient economies to turn the received foreign aid into the desired growth outcomes through, among other things, skills development as well as relevant institutional and policy changes (Chenery and Strout, 1966).

Notably, the consideration of foreign aid as a temporary solution to growth and development financing needs in the gap models has remained farfetched in most foreign aid recipient economies. Most of these economies have neither sustained nor improved their growth levels following decades of foreign aid receipts. These countries have been characterised by elementary production and marketing structures coupled with minimal transformation in their population's skills mix. COMESA countries have exhibited these negative attributes. COMESA was officially established in 1994 to help its member states attain sustainable economic growth and development through regional integration and trade. This objective was to be achieved by focusing on the development of human and natural resources, among other things (COMESA treaty, 1993). While commendable strides have been attained on regional integration such as the signing of the Free Trade Area (FTA) in 2000, the overall economic performance of most economies in the region remains unsatisfactory.

Overall, countries in COMESA have been consistently registering low positive economic growth rates with a few periods of negative growth rates in some countries. Growth in the region has been weak and erratic at an average of about 3.8% over the last three decades (See Figure 1.1; Appendix 1.1A). Production and marketing structures are basic, with inadequate economic infrastructure. Moreover, underdeveloped human capacities have also characterised most of the economies in the region (Muuka et al, 199; Karamuriro, 2015; Woofrey, 2016). In fact, most economies in the region are not on the path to self-sustenance with the possibility of terminating foreign aid in the short to medium term. In the light of the above, it is important to consider whether foreign aid has been effective in augmenting resources to eliminate physical and human capital bottlenecks towards investments enhancement to realise individual and collective sustainable growth and development objective.

Figure 1. 1: Economic growth in COMESA (1990-2017)



Source: WDI and UNCTAD Stats, December 2019.

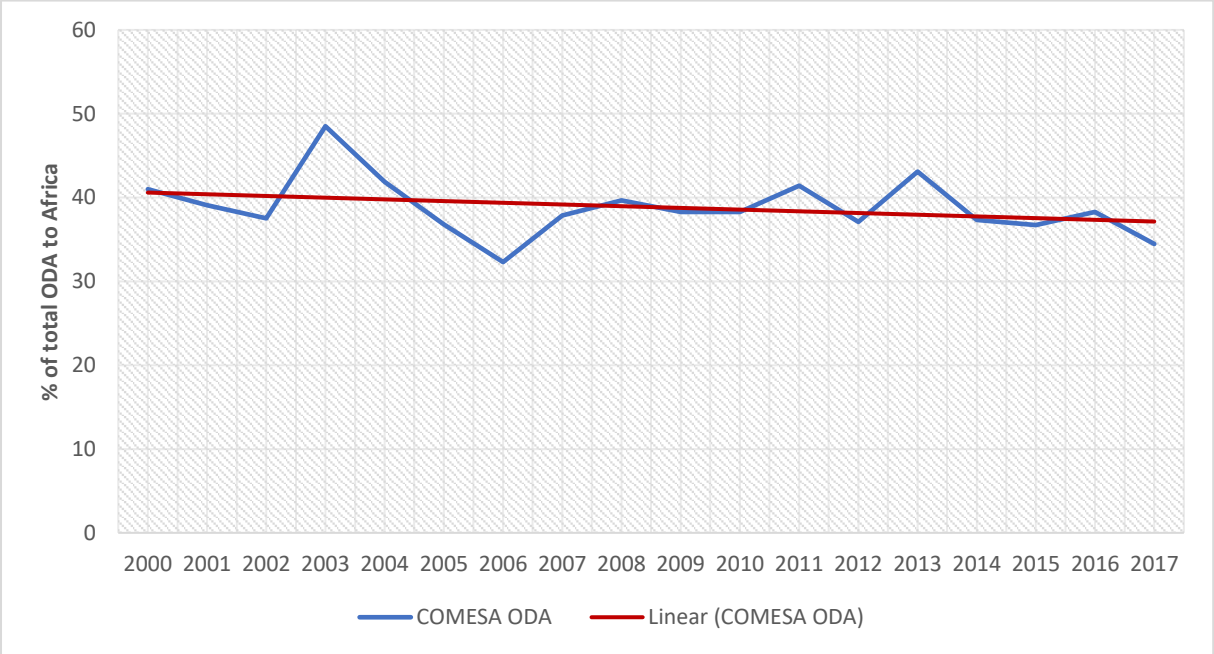
Note: Take note of the different scales on the embedded charts

1.2 Problem Statement and Significance of the Study

Foreign aid to most COMESA states dates back to the early 1950s and 1960s when these countries became politically independent. Before COMESA was formed, individual countries failed to achieve economic growth even with increased foreign aid volumes. This was due to the countries minute individual production structures and markets which resulted in little bargaining power in the international markets (COMESA Brief, 1994). The establishment of COMESA was aimed at addressing this problem. Economic theory postulate that the increased foreign aid inflows alleviated resource bottlenecks and led to an acceleration in the growth and

development of most of COMESA member states (see Chenery and Strout (1966) . Specifically, real foreign aid to COMESA has been steadily increasing at an annual average of about 3.5% since 2005 (Appendix 1.1B). Overall, COMESA is among the primary beneficiaries of foreign aid in Africa. On average, it has been receiving about 39% of the total foreign aid to Africa, with the highest of 49.2% in 2003 and the least of 32.9% in 2006 (Figure 1.2). Despite this increase in foreign aid, for the last three decades, growth in most of these economies has remained very modest at an average of 3.8%. This is indicated in Figure 1.1 above (see also Appendix 1.1A).

Figure 1. 2: **Foreign Aid to COMESA as a percentage of the total Foreign Aid to Africa (2000-2017)**



Source: OECD Database accessed on April 23, 2018

Despite the constant flow of foreign aid to COMESA, the region continues to host 12 (36%) of the 33 African Least Developed Countries (LDCs), and this accounts for 63% of its membership (UNCTAD, 2020). Accordingly, domestic resources and structures in most of the COMESA countries remain far from adequate to meet their individual growth and development needs. With the continued existence of weak institutions, production, and market structures, most of these countries cannot attract foreign capital through markets to augment their domestic resources for growth. Hence, the continued overdependence on foreign aid in the medium to long term precludes the guarantee of advancing the blocs key objective of increased growth.

Thus, these countries are unlikely to meet the 7% minimum SDGs stipulated growth rate (UN-ECOSOC, 2016).

Little research has been conducted to determine why COMESA (both at the regional and country-level) has failed to achieve substantial economic growth despite being the main recipient of foreign aid in the past two decades. For example, Bitew (2014) only sought to establish short and long-term aggregate relationships between foreign aid and economic growth in Ethiopia. Using the cointegration technique, he concluded that foreign aid positively influences growth only in the long term. However, he failed to support the assertion that foreign aid is endogenously determined in the foreign aid-growth model, that is, the conditions that influence the decision on whether donors will disburse foreign aid or not. Similarly, focusing on the indirect impact of foreign aid on economic growth through investment, Ejigu (2015) concluded that foreign only had an effect on the long-term growth of Ethiopia. He dismissed capacity constraints issues for foreign aid effectiveness in Ethiopia as reflected in the positive but insignificant effect of foreign aid on growth in the short run. He concluded that growth in the short term was due to long-term investments that accounted for most of the foreign aid inflows (also see Tadesse, 2011).

Using Autoregressive Distributed lag techniques (ARDL), Odiambo (2009) also concluded that foreign aid had an overall positive impact on growth in Kenya in the long term. This positive relationship was however found to be very weak by Morrissey et al. (2008) because the relatively low levels of grants vis-à-vis loans which adversely affected growth in the country. On the contrary, Mwanamanga (2015) concluded that foreign aid had negative consequences for growth in Malawi because of the misallocation of foreign aid resources. This observation conforms to Msowoya (2013) who found that foreign aid fungibility[2] is persistent in Agriculture, the country's key growth sector.

In Egypt, three studies by Abu Al-foul (2013), Emara et al. (2013) and Ali (2013) produced inconsistent results. Abu Al-foul (2013) did not see any meaningful relationship between foreign aid and growth in Egypt in the long term. However, Emara et al. (2013) rejected the existence of this relationship only in the short run but concluded that foreign aid had a negative impact on growth in the long term. Yet, Ali (2013) found that foreign aid negatively influences

[2] *Foreign aid fungibility is generally defined as a state in which categorical foreign aid in the recipient economy has at least one of the following features (i) substitutes for government financing (ii) is used to reduce domestic taxes (iii) diverted to other unintended sectors.*

growth in Egypt both in the short and long term. Significantly, these three studies used the ARDL technique which addresses possible endogeneity bias of variables in the model. Unlike in Ejigu's study (2013)[3], no test was done in these three studies to justify the treatment of foreign aid as exogenous which could partly explain the inconsistencies in their results.

While all these studies focused on the impact of foreign aid on growth in the various COMESA economies with country-specific conclusions without country heterogeneity bias, their concentration remained on the aggregate foreign aid impact without exploring the possible causes of that outcome. Furthermore, the studies focused on one or two aspects of the possible causes such as policy environment, quality of institutions or recipient economy absorption capacity with very few (if any) delving into in-depth analysis of how different sectors of the economies are rendering foreign aid effective or ineffective. This study differs from previous studies because it carefully assesses the effectiveness of foreign aid from a multidimensional perspective. Moreover, no study has evaluated the implications of foreign aid on collective growth and development aspiration of COMESA as a regional bloc.

Contending for comparable effects of foreign aid across sectors and countries in the region, the study provides insights on the impact of foreign both on sectoral growth outcomes and on country-specific economic growth. The thesis applied appropriate econometric techniques to address specific elements, including the endogeneity of relevant variables. Among the studies that have used the two-gap models to assess the economic growth impact of foreign aid, this study provides the first attempt to assess the consistency of foreign aid inflows as regards financing gaps both across (within) sectors and countries. Therefore, it postulates that received foreign aid volumes below minimum levels for meaningful impact is as redundant for enhanced growth outcomes as are quantities above the existing development financing gaps. Notably, too much foreign aid, above what is necessary to close the current development financing gaps, has a higher potential of creating inefficiencies in the public systems through corruption, among other things. (see Alesina and Dollar, 1998; Rajan & Subramanian, 2011; Easterly, 2014).

Lastly, this study provides valuable policy insights to COMESA. By focusing on foreign aid in both its key growth and support sectors, the study unveils mechanisms through which foreign aid links to various elements of economic growth and the nature of this linkage in the region.

[3] *He used the granger causality test to conclude a one-way causality from foreign aid to growth in Ethiopia. This test has however been criticised for its inability to capture true causality though effective in detecting correlation linkages between variables.*

This, it is envisaged, will effectively inform the future direction of foreign aid as it relates to the region's collective growth and development objectives.

1.3 Objectives of the Study

This study seeks to determine the impact of foreign aid on economic growth in the COMESA economic bloc. Specifically, the study investigates and establishes how foreign aid links with the various aspects of growth in the region. It intends to unveil how foreign aid influences key outputs of the respective sectors to establish both direct and indirect linkages to economic growth. The study intends to answer the following questions:

i) How does the disbursed aid match with the region's foreign capital requirements to effectively provide the needed big push into self-sustaining growth?

ii) What is the aggregate impact of foreign aid on economic growth in the COMESA regional economic bloc and on individual member countries?

iii) What has been the role of foreign aid in the growth and development of the region's productive sectors?

iv) How effective is foreign aid in indirectly stimulating growth through the growth enhancing support sectors?

In answering questions (i) and (ii), the study goes beyond the traditional growth accounting framework of the Harrod-Domar (Harrod, 1939; Domar, 1946) model to test whether foreign aid is effective in enhancing economic growth in developing economies. The study assesses whether foreign aid is key in pushing recipient economies into self-sustaining growth levels through its impact on the core growth sectors. These questions are addressed in chapters 4 and 5 respectively.

Questions (iii) and (iv) are complementary to the first two because they explain the productivity of foreign aid in more concrete terms than just growth rates. Specifically, question (iii) establishes the direct effects of foreign aid on growth in the region by analysing its impact on the growth and development of the core growth sectors. On the assumption that growth support sectors do not directly contribute to a country's GDP but indirectly by effectively supporting productivity of the core growth sectors, question (iv) establishes how foreign aid indirectly promotes growth in the region through its impact on these sectors. The detailed analysis of foreign aid in these sectors provided in chapters 6 and 7 respectively.

Consequently, the study assesses the following null hypotheses in the order of the research questions above:

a) The disbursed foreign aid volumes vis-à-vis resource gaps are irrelevant in its effectiveness.

b) Foreign aid does not affect economic growth.

c) Foreign aid does not affect core growth sectors.

d) Foreign aid does not have any indirect impact on economic growth.

1.4 Organization of the Thesis

This study investigates how foreign aid is linked to economic growth and the nature of this linkage in COMESA. To this end, the thesis has four analytical chapters that are jointly related to these objectives. The thesis also has preliminary chapters and its layout is as follows:

Chapter One provides a brief background and highlights the study objectives. Chapter Two describes different conceptualizations of foreign aid and provides an overview of the political economy of foreign aid. Chapter Three provides a systematic review of the theory and empirics of foreign aid to give comprehensiveness on the literature not covered in specific analytical chapters. Chapter Four focuses on external financing in COMESA with the aim of assessing the extent to which the received foreign aid closes the region's development financing gaps and whether its inflows are consistent. The chapter provides an overview of external financing in the region with emphasis on foreign aid as a core external development financing resource. It discusses key features of foreign aid in terms of trends about its weight in external development financing resources, prioritization across sectors, its volume vis-à-vis developmental needs, and its overall linkage to economic growth. The chapter is premised on the hypothesis that effective foreign aid is signified by a decline in its relative weight in the total foreign capital inflows over time, and its volumes are consistent.

Chapter Five assesses the impact of the total (aggregate) received foreign aid on growth in the region. The chapter argues for comparable growth outcomes from foreign aid in the respective COMESA countries if it is to effectively contribute to their collective regional growth and development goals. Chapter Six provides a detailed assessment of the role of foreign aid in agricultural productivity and growth in the region in a Panel Vector Autoregressive (PVAR) framework. The chapter analyses the nature of the direct linkage between foreign aid and

economic growth through its impact on the region's core growth sector. The chapter focuses on the response path of agricultural productivity and growth to changes in foreign aid. The chapter also highlights how government agricultural financing responds to changes in foreign aid and how sub-sectoral allocations affect its overall effectiveness.

Chapter Seven assesses the indirect impact of foreign aid on growth through economic infrastructure development by using the Blundell-Bond (BB) (1998) system Generalised Methods of Moments (GMM). The chapter highlights the indirect linkage between foreign aid and growth in the region by assessing the role of foreign aid in the region's economic infrastructure development (transport, energy and ICT). The chapter also analyses the effects of corruption on foreign aid utilization in the sector in general and which components (loans or grants) and which sub-sectors (Transport, energy, and ICT) are being adversely affected by such corruption. Lastly, Chapter Eight synthesises the key findings from the four analytical chapters, concludes the thesis, and provides policy recommendations.

CHAPTER 2. DEFINITION AND THE POLITICAL ECONOMY OF FOREIGN AID

The premise that foreign aid has a positive impact on the growth of recipients explains the significant volumes of aid that have been channelled to developing countries over the years. Although empirical evidence is inconclusive particularly in the least developed countries, there is quite a large body of the literature arguing that aid has stimulated growth, structural change and improved social indicators in developing countries (Arndt et al., 2015). It therefore remains imperative to understand the concept of foreign aid, what determines its direction, and whether such determinants have any impact on its potency in stimulating growth. Specifically, whether aid inflows are systematically dependent on certain characteristics of the recipient countries or are largely dependent on donors' interests has remained a contentious issue in the political economy of foreign aid. In this regard, this chapter conceptualizes foreign aid and highlights key features in its allocation process without undermining the perspectives of the recipient economies in such a process.

2.1 Defining and Measuring Foreign Aid

2.1.1 Defining Foreign Aid

There are varying conceptualisations of foreign assistance in the literature. These definitions include all transfers of physical goods and technology, grants, and loans from donors to developing economies (Riddell, 2007). In this study, foreign aid refers only to the Official Development Assistance (ODA) as defined by the Development Assistance Committee (DAC) of the Organization for Economic Cooperation and Development (OECD). OECD defines ODA as the flow of official grants and concessional loans to developing countries with the primary objective of promoting the economic and social development of these economies (F*ü*hrer, 1994; OECD, 2018). By official grants on the one hand, the OECD refers to disbursements in cash or kind from the donor's public official sources (including the state, local governments or the state's executive agencies) to a recipient economy for which there is no repayment required.

On the other hand, concessional loans are provided at concessional rates comprising at least a 25 percent grant component and are calculated at a discount rate of 10 percent (F*ü*hrer, 1994; OECD, 2018). Thus, compared with other commercial loans, ODA concessional loans have lower interest rates and have an extended repayment period. Another key feature of these concessional loans is their ability to be converted (part or whole) into grants. In exceptional cases, upon meeting mutually agreed specific conditions, the debt repayment period is deferred, or the debt interest is reduced, or in the extreme case, it is altogether cancelled and, converted

into a grant. An example in this regard is the Highly Indebted Poor Countries (HIPC) initiative which was launched in 1996 by the World Bank (WB) and the International Monetary Fund (IMF). The main objective of the HIPC initiative was to ensure sustainable debt levels in developing countries. The necessary conditions to benefit from the initiative include tangible outputs on the mutually agreed milestones in the specific pro-poor programmes and policy reforms.

Overall, ODA includes technical cooperation grants such as capacity development, development of nuclear energy for civilian and not military purposes. Notably, ODA excludes grants, loans and credits that are meant for military purposes less 6% of the multilateral peacekeeping expenditures which is recorded as ODA, donations from international civil society organizations, commercial loans[4] and political development programmes as well as Foreign Direct Investments (FDI)[5] (OECD, 2011; Reci, 2014). This definition distinguishes ODA from Official Foreign Aid (OA) and Other Official Flows (OOF) in that ODA refers to foreign aid that only originates from the official public sources to the lower and upper-middle-income countries. While OA refers to ODA channelled to the upper-income economies, and OOF are official loans and grants that do not meet the ODA eligibility as described above (Riddell, 2007).

2.1.2 Foreign Aid Transmission Channels

ODA comprises official bilateral and multilateral flows from donors to developing countries. On the one hand, bilateral aid flows refer to official foreign aid that is transmitted directly from a donor to a recipient developing country. Although largely disbursed through the public sector financing mechanisms, bilateral aid flows are also channelled to the respective developing countries through specific Non-Governmental Organisations (NGOs) or multilateral institutions. On the other hand, multilateral aid flows are those ODA flows that can only be channelled through multilateral institutions such as the IMF and the World Bank to a given country. In this regard, several donors pool their resources together for common development goals of the recipient economies. As such, the key distinguishing feature between the two flows is that while the respective donor of the bilateral foreign aid is identifiable and potentially have an influence on the disbursed foreign aid usage, it is not possible to align specific components of the pooled resources (basket fund) to specific donors under the multilateral channel.

[4] *These are loans whose interest rates are defined by the market forces*

[5] *FDI can be defined as a business with at least 10% ownership by foreign investors.*

Accordingly, donors under the basket fund barely have any influence on what or how their individual contributions are utilised by the recipient economy. These are largely foreign aid resources that are financed directly into the recipient's treasury as General Budget Support (GBS) or Sector Budget Support. While the sector budget is earmarked for specific sector concerns, the GBS do not target specific concerns. Nevertheless, in both cases, allocation and utilisation in specific components (programmes and projects) remains the prerogative of the recipient economy.

Although both bilateral and multilateral aid are believed to ultimately serve the development objective of ODA as defined by DAC above, they each possess salient factors that are key in influencing the disbursement options of the respective donors. Gulrajani (2016) assessed 6 comparable advantages of bilateral and multilateral foreign aid flows that are commonly discussed in empirical literature. Notably, she only found strong evidence on three of these factors as summarized in Table 2.1 below.

Table 2. 1: **Comparative Advantages of Bilateral and Multilateral Aid Channels**

ODA is highly Politicized	This is largely centered on the level of control over the disbursement and utilization of foreign aid by the respective donors. On the one hand, bilateral foreign aid flows carry the flagship of the its respective donor who is seen to potentially have an influence on what and how the received foreign aid is utilized. Therefore, bilateral foreign aid flows are perceived to be more aligned with donors strategic and political interests (Faye and Niehaus, 2012; Qian, 2014). Notably, these motives have been empirically validated to compromise the potency of foreign aid. This is particularly the case when these motives compromise aid utilization by fostering corruption and bad policies, among other things (Radelet, 2006; Sorens, 2009). On the other hand, once foreign aid is pooled into one basket either as BGS or SBS, it loses its donor identity and is perceived to serve the collective growth and development objective of the developing country. In this regard, respective donors in the pooled fund are seen to be less incentivized to pursue the vested

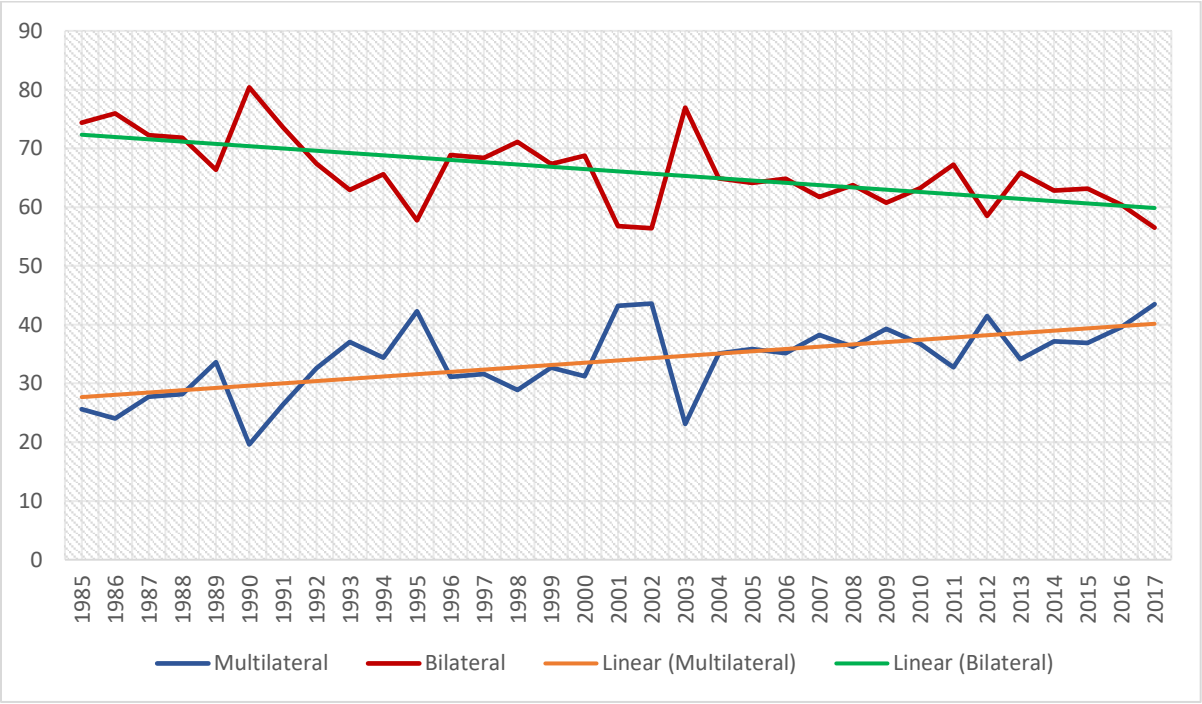
	interests in foreign aid allocation. As such, Gulrajani (2016) finds strong evidence that multilateral foreign aid is more objectively given in line with the development financing need in the recipient economy. This implies that multilateral foreign aid is more effective in enhancing growth than bilateral foreign aid.
Preferences of the aid recipient economies	Due to its flexibility in terms of donor interference in its utilisation, evidence suggest that multilateral foreign aid is generally mostly preferred by recipient economies than bilateral foreign aid. Specifically, empirical research indicates better alignment with domestic strategies and development financing mechanisms as key in enhancing its effective utilisation vis-à-vis bilateral foreign aid flows.
Aid Fragmentation	With several donors pooling their reserves into one basket for a unified cause, multilateral foreign aid is more effective and efficient in addressing the development concerns of developing countries. Specifically, while GBS or SBS provides one big development financing thrust to the recipient economies, bilateral aid flows are seen to be thinly spread across sectors and programmes/projects. On the one hand, regional or sectoral mandates that guide multilateral foreign aid flows are key in controlling multilateral disbursements. On the other hand, the pursuit of visibility by bilateral foreign aid donors is the driving force for them to be potentially spread thinly across sectors and regions. Moreover, the control that the respective bilateral donors have over allocations and utilization can potentially lead to concentration of foreign aid in one sector at the expense of other potentially growth enhancing sectors with more pressing development financing gaps. This would particularly be the case if the sectoral goals are not aligned with the interests of the respective donors, *ceteris paribus.* With increased donor and, hence, aid fragmentation, Gulrajani (2016) finds strong evidence of increased transaction and

	administrative costs with bilateral aid flows vis-à-vis multilateral aid flows. For example, the Tanzanian government had to produce about 2000 reports on aid utilization to her respective donors annually (Gulrajani 2016:14).

Source: Gulrajani N. (2016:10-16)

Despite overwhelming evidence of the advantages of multilateral over bilateral foreign aid, the ultimate decision on the preferred channel remains with the respective donors. Overall, all donors disburse their foreign aid through channels that best address their interests either through multilateral or bilateral channels. In the case of COMESA, at 63% of its total aid since 2000, bilateral foreign aid continues to lead on the foreign aid platform. However, trend lines in Figure 2.1 show that bilateral foreign aid flows to the region have been steadily decreasing over the last three decades.

Figure 2. 1: Bilateral and Multilateral Foreign Aid Flows to COMESA (1985-2017)



Source: OECD Database accessed on 16th January, 2020

2.1.3 Monitoring of Foreign Aid

Although motives and conditions for giving foreign aid vary among donors (Quian, 2014), the overall objective remains developmental, as highlighted by the DAC definition above. To this

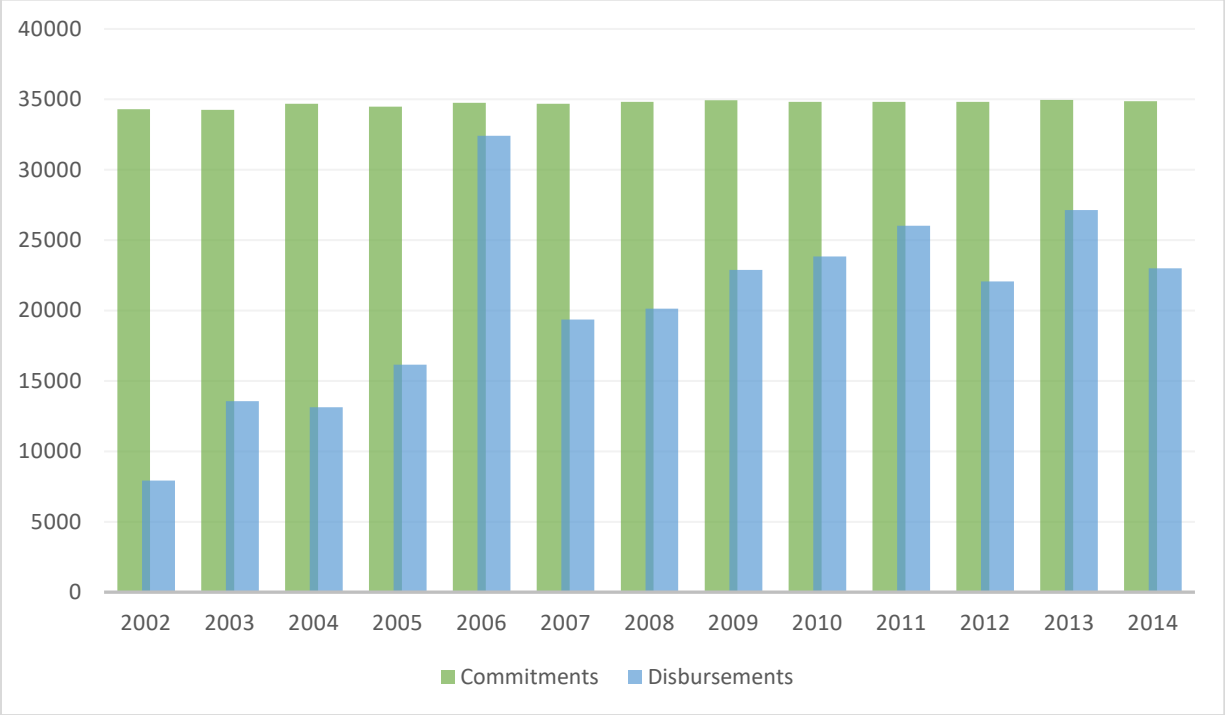
end, it is recognized that its efficiency in attaining this objective lies in how well it is aligned with the development goals of the recipient economies, among other things. Consequently, through the Paris Declaration on Foreign Aid Effectiveness (PDAE) (2005) and the Accra Agenda for Action (AAA) (2008), both donors and recipient economies resolved to ensure that all foreign aid is properly aligned to the development strategies, institutions and procedures of the recipient economies. The PDAE further encourages mutual accountability in both the disbursement and utilisation of foreign aid resources. This commits donors to accede to the development priorities of the recipient economies and ensure an effective use of the existing country systems in disbursing foreign aid. Furthermore, it commits the recipient economies to ensure the existence of strengthened monitoring and evaluation systems, clearly linking their development strategies and budget frameworks and processes. Partly, this enhances accountability as foreign aid disbursements from all donors are supposedly linked to a single funding framework and indicators that are derived from the recipient economy's development strategy. Through these and other goals of the PDAE, mutual accountability in the disbursements and utilisation of foreign aid resources are among the key issues highlighted for its effectiveness. However, it should be noted that this is a non-binding declaration. As such, it binds neither donors nor recipient economies to thoroughly monitor how foreign aid is disbursed, under what conditions, and whether it is utilised efficiently for the intended objectives. Hence, vast empirical evidence skews towards political and strategic interests rather than developmental objectives in giving foreign aid. Evidence also suggests that foreign aid is fungible, a key factor that undermines its efficiency.

2.1.4 Measuring Foreign Aid

In determining the impact of ODA on economic growth, it is imperative to accurately decide whether to use commitments or disbursements as the two flows imply different things. While disbursements reflect the actual transfer of resources to the intended beneficiary economy, commitments represent a firm written obligation by the donor on the indicated amount to the respective intended beneficiary's economy (OECD, 2005). As such, their relative influence on the direction of the results and growth impact is different since not all commitments are translated into disbursements (Roodman, 2004a). While disbursement volumes were somewhat higher than commitments for a few countries in some years, overall, the committed ODA volumes to COMESA have been significantly higher than the actual values received by the member states (Figure 1.4). Consequently, this study will be restricted to foreign aid

disbursement[6] in analysing its impact on various aspects of economic growth to avoid magnifying foreign aid volumes in the beneficiary economies.

Figure 2. 2: ODA Commitments and Disbursements to COMESA (2002-2014; US millions)



Source: OECD Database accessed on 10th December, 2016

In sum, it is unanimously agreed that the working definition of foreign aid greatly influences the outcome of the foreign aid-growth analyses as different types of foreign aid affect the economy differently (Easterly, 2003). Therefore, this study focuses on ODA as defined by the OECD above but only covering net disbursements to fully understand the actual impact of the foreign resources utilised. However, where the impact of the concessional loans is analysed, gross ODA is chosen as net ODA excludes repayments on the concessional loans. In analysing foreign aid utilisation in the region, the study uses total ODA and thus, combining both bilateral and multilateral foreign aid flows.

2.2 The Political Economy of Foreign Aid

Aid is potentially a powerful tool for exerting donor influence on other sovereign states. The Paris Declaration on Aid Effectiveness (PDAE) in 2005 highlighted five principles of aid. The

[6] *Due to data paucity and data requirements (N and T sizes) of the various estimators adopted, some countries were dropped, and the study period was adjusted to the data set requirements in the respective analytical chapters.*

recipient country's ownership of the domestic policies, and donor alignment with national systems of the recipient were some of the principles. The principles of the PDAE were set up to insulate developing countries from excessive donor meddling in their national development agendas (Overton et al., 2012). This section reviews literature on aid allocation to establish whether there is a systematic relationship between foreign aid delivery and its impact on growth outcomes in the recipient countries. It builds on the literature on foreign aid to explain why countries give or receive aid.

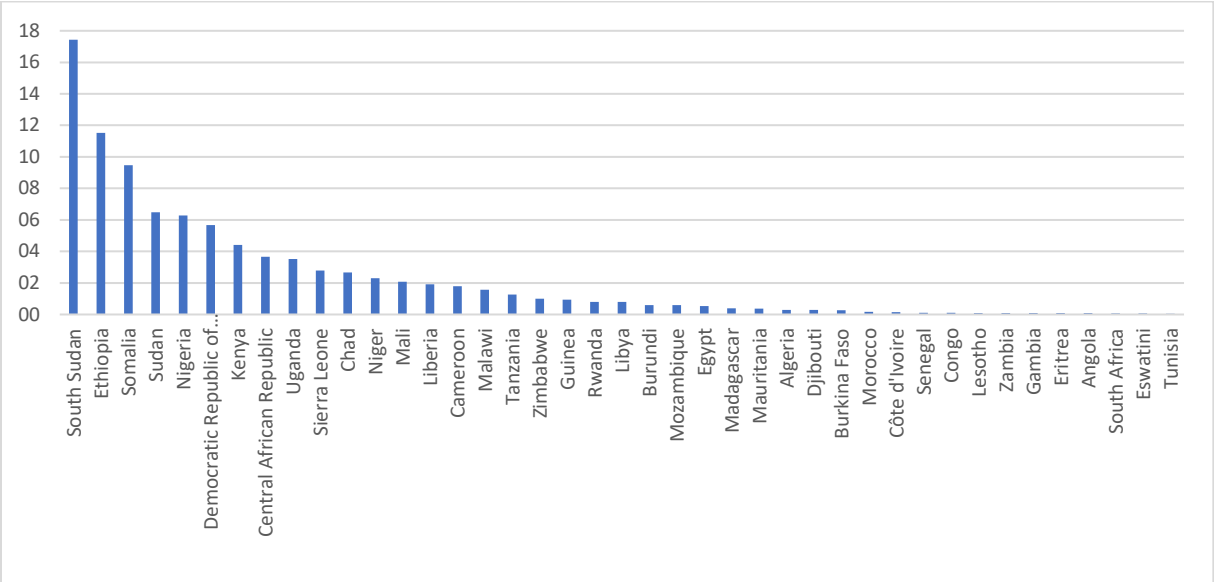
2.2.1 What Determines How Donors Allocate Aid

2.2.1.1 Humanitarian and Development Assistance

Is there a distinction between humanitarian and developmental assistance? Is all aid developmental in nature? DAC's definition of foreign aid given in the above section, highlights critical features of ODA, which is developmental such that its loan component is concessional and discounted below the market value. Humanitarian aid is perhaps the closest one get to neutral, impartial and independent aid, but the debate about these terms is raging (Dany, 2015). Humanitarian aid is a response to natural disasters and other human-induced emergencies including conflicts and wars. In this context, hotspots for these issues become the concentration of efforts by both state and non-state actors including NGOs actively contributing to delivering the emergency response.

According to the OECD Creditor Reporting System Database, the top 5 recipients of humanitarian aid in COMESA (top 7 for Africa) between 2015 and 2017 were South Sudan, Ethiopia, Somalia, Sudan, Nigeria, The Democratic Republic of the Congo, and Kenya, with Central African Republic, Uganda and (Sierra Leone completing the top 10 African recipients of this type of aid (Figure 2.3).

Figure 2. 3: Humanitarian aid receipts, per cent of total humanitarian aid to Africa, average 2015-2017



Source: Author's calculations based on OECD Creditor Reporting System Database

Humanitarian aid typically obtains more in-donor[7] public approval than other forms of aid. The problem with humanitarian aid however is its short-term outlook, being based on relief and rehabilitation interventions in an emergency. Humanitarian foreign aid rarely takes on a long-term perspective like climate change adaptation, or human rights promotion to prevent future conflicts (Hudson and vanHeerde-Hudson, 2012). Although humanitarian aid is low compared to other types of aid, it represents a significant proportion of aid flows to least developing countries (LDCs). However, vulnerability and fragility of countries are usually linked to structural, long-term constraints as is the case among developing countries especially the LDCs facing chronic structural economic problems, poverty and underdevelopment. Hence the failure of humanitarian aid to catalyse long-term development may explain why foreign aid has not been effective in the most vulnerable countries.

The interaction between humanitarian foreign aid and development cooperation is very important for the aid recipients. The triggers for humanitarian crises, for example, are often linked to the development challenges that led to conflicts and wars, hence the long-term solution usually requires more than the transient illusion of eased suffering of the affected populations. There is, therefore, a need for smarter allocation of aid to contribute to economic infrastructure development, strengthening national institutions and systems, capacity and coordination responsibilities of the recipients. In turn, these require donors to flexibly support on-budget aid

modalities that can contribute to nationally led development (OECD, 2015). This view was also outlined in the DAC guidelines on the role of development cooperation in emergencies, particularly on the need to support the effectiveness of the state in the short and the long-term (Bigdon and Korf, 2004), although structural stability is coined in terms of "democratic norms and values" which are hard to attain immediately following a conflict.

Asongu and Nwachukwu (2017) found that aid for social infrastructure, economic infrastructure, and the productive sector had a positive impact on human development of recipient countries but the effect of humanitarian assistance was negative. Although the authors suggest the lack of substitution among humanitarian aid components is the culprit, evidence by itself points to the lack of synergy between humanitarian aid receipts and the development goals of human development. Also, the slow pace at which donors respond to new emergencies suggest that humanitarian aid is not allocated as neutrally and independently as thought, but rather that a significant portion of humanitarian aid is also subject to discretion of the donors which may fall in the category of economic and other strategic interests (Fielding, 2014).

In his study about the politics behind humanitarian support, Büthe et al. (2012) argues that non-state sources of aid allocated by NGOs does not suffer the same dilemmas as state aid and that no systematic prioritization of aid (self-interest) is observed. This confirms that humanitarian consideration for foreign aid divorced from state influence is a less controversial motive for providing aid to poor countries. However, the fact that the larger multinational NGOs also raise resources from private individuals and other influential personalities brings self-interest and strategic choice problems into their aid operations even where they are humanitarian in nature. In the end, there is a thin line between values on which the pure aid framework is founded, and material considerations which determine aid allocation. In the pure aid framework, norms and identities are supposed to drive aid allocation and priorities, based on the needs of the recipient countries (Büthe et al., 2012)

2.2.1.2 Reasons for aid: Political and strategic or development

The quality of institutions may influence the level of aid receipts, although some countries with poor governance structures have also received higher levels of aid. Fragmentation of aid, the proliferation of projects with diverse donor driven agendas, and the impact of donor aid diversion from government budget processes are factors that contribute to weakening state institutions and shrinking of the policy space. That aid creates vested interest may be contested but Bräutigam and Knack (2004) observed that aid can block improvements in governance by

weakening institutions in recipient countries. Aid flows create an incentive for rent-seeking public officials to expand budgetary outlays at the expense of economically productive activities and the efficient allocation of resources by the market (Remmer, 2004). Donors also question whether those who govern recipient countries have development as their central objective, especially in countries with rampant corruption and unwillingness to reform the public sector to match donors' institutional settings (Booth, 2012). By contrast, a developmental state that plans and coordinates aid receipts according to its own development agenda stands a better chance at using aid to improve the quality of its policy and institutional capacities (Bräutigam and Knack, 2004).

Thus, having good policies and keeping corruption in check does not always lead to higher aid inflows. Strategic considerations of donors play a significant role in determining the level of bilateral aid flows. For example, Alesina and Dollar (2000) observed that OECD countries favoured former colonies whereas aid from Nordic countries was statistically linked to poverty levels of recipient countries (Qian, 2015). Faye and Niehaus (2012) linked the strategic choice of donors to political alignment of the recipient's regime, with more aid channelled to countries which are politically aligned. Of interest is their observation that political and strategic interests may affect only the allocation of aid thus dis-aligning the overall impact of the received foreign aid on economic growth from the intent in giving it. Similarly, Burnside and Dollar (2000) observed that donors' political and strategic interests were key in determining bilateral foreign aid flows whose impact on economic growth was contingent on good policies in the recipient economy. However, the influence of donor agendas may also extend to the use of aid (Newman et al., 2016), especially where the sectoral allocation of aid is misaligned with national development strategies (UNCTAD, 2019). Newman et al. (2016) and UNCTAD (2019) warn of the danger that recipients may become spectators rather than lead actors in influencing their development agendas, with key productive sectors including infrastructure receiving low aid resources compared to humanitarian and social sectors.

The principal of country ownership is rooted in this neostructural theory of development which considers intervention in development as the primary responsibility of the state. Accordingly, building state capacity and aligning foreign aid to state functions are the desired response of the donors (Overton et al., 2012). The implication of this statement is two-fold. First, the project-type interventions, which constitute more than two-thirds of aid disbursements to least developed countries (UNCTAD, 2019), are not appropriate for state capacity building. These projects tend to retain donor influence on recipients. Second, foreign aid should predominantly

be disbursed as flows from state to state as intended in the definition of ODA by OECD DAC, rather than through the growing practice of using non-state actors and intermediaries. The challenge to recipients of aid to maintain sovereignty over their national development plans therefore, depends on whether aid supports political and institutional machinery for delivering development.

Focusing on business cycles, Norris et.al (2010) observed that strategic and political interests are not always key in influencing the direction of foreign aid. They concluded that adverse economic shocks largely affect gross bilateral foreign aid flows in both the donor and recipient economies. Analysing bilateral data for 22 donors and more than 100 recipient economies, they noted that foreign aid inflows were higher during times of adverse economic shocks in the recipient economies and/or economic boom in the donor economies and vice-versa. However, their findings did not support the existence of a linear relationship between foreign aid flows and business cycles in both the donor and recipient economies. Significantly, they observed a more than proportionate fall in foreign aid inflows to recipient economies following a recession in the donor economies. Thus, they underscored the fact that while political and strategic interests may be key in determining the flow of foreign aid in most cases, social and economic motives underlie the direction of foreign aid for some donors. This view was underscored by Alesina and Dollar (2000) and Berthèlemy (2005), who observed that motives for giving foreign aid g varies among donors with some focusing on the economic interests and yet others on political and strategic interests. They observed that foreign aid from most Nordic countries is largely influenced by the poverty levels and viability of institutions in the recipient economies. This was contrary to the United States and France where colonial ties and strategic interests were observed to be key determining factors of foreign aid disbursements. Similarly, in their Tobit analysis, Canavire et.al (2005) found that both political and economic issues are key in determining the direction of foreign aid with donor export related self-interests governing most of the bilateral foreign aid flows.

Employing a three-dimensional dataset to account for heterogeneity in donors behaviour, Berthèlemy (2005) also concluded that both donors' self-interests and economic motives play a significant role in the allocation of foreign aid. Noris et.al (2010) also observed that these motives vary with donors, with Switzerland, Ireland and most Nordic countries being highly driven by the economic stance of the recipient economy and on the other hand, France, Japan, US and the United Kingdom being largely influenced by political and self-interests. Overall, Noris et.al concluded that while decisions on foreign aid allocation are motivated by political

and strategic interests, most donors implement their selectivity rules in the allocation of foreign aid based on economic needs and merits of the recipient countries (also see Ridell 2007:97).

Focusing on foreign aid determinants, Sorens (2009) concluded that the motives for giving foreign aid have a significant bearing on how it is utilised and hence its efficiency in stimulating growth. Specifically, he pointed out that political motives for foreign aid allocation have continued to encourage poor fiscal management in most underdeveloped economies as evidenced by continued high foreign aid inflows to countries with a record of high corruption, poor governance and policies. Sorens added that this results in inefficient resources utilisation including foreign aid hence no traceable positive impact of the latter on economic growth. Similarly, Radelet et. Al., (2004) and Radelet (2006) argued that instead of enhancing sustainable economic growth, foreign aid has pushed more economies into deeper debts, perpetrated inefficiencies in the public systems, corruption and bad governance resulting in foreign aid ineffectiveness in stimulating economic growth. However, other authors have put forward different views of foreign aid's interactions with some of these variables. For example, Menard and Weill (2016) does not support the view that foreign aid fosters corruption. Similarly, Akramov (2006) did not find any relationship between foreign aid and governance.

Studies emphasize the relative importance of donors' political, commercial and strategic interests, historical ties as well as economic needs in the recipient economies as some of the key factors determining the direction of foreign. However, studies further highlight that these factors have very little (if any) direct impact on the effectiveness of these resources in influencing the macro-economic variables, particularly growth of the recipient economies (Faye and Niehaus, 2012). Foreign aid only becomes effective if donor motives for giving foreign aid tamper with the quality of institutions and policies in the recipient economy resulting in the reduction of corruption and other inefficiencies/ or promoting the overall efficiency in the economy (Sorens, 2009). Generally, it is contended that macroeconomic performance, policies and the quality of institutions in the recipient economies matters the most in rendering foreign aid effective (Burnside and Dollar, 2000; Norris et.al, 2010). In other words, the impact of foreign aid cannot be solely explained by donor's motives (Lumsdaine, 1993), it is also dependent on its efficient management (Riddell, 2007).

2.2.1.3 The doomed aid effectiveness agenda

Despite the Paris Declaration on Aid Effectiveness of 2005, effectiveness of development cooperation remains questionable. First, as already pointed out, aid affects incentives and institutions in recipient countries, hence, the aid delivery method matters. As a result of the mode of delivery, the preferences of donors are not defined by the likely outcomes of the intervention but by exigencies of aid modalities which are at the donor's disposal. Second, the conflict between domestic policy imperatives and the donor objectives not only create unnecessary waste but also directly affect the efficiency of programmes financed by donor funds. Third, the misalignment between priorities of donors and beneficiaries may also be the result and the cause of the proliferation of free-standing donor project which only tangentially draw objectives from national plans (Booth, 2012).

The proliferation of project type interventions contributes to fragmentation of aid while also diluting country priorities. Booth (2012) argues that the perception that low-income aid recipient country policies are inadequate or not geared to development leads to suboptimal donor arrangements that are specifically designed to bypass national systems and policies. This "cherry picking" behaviour by donors has the effect of undermining sector and national development plans, and entrenching donor agendas over national development priorities. The divergence between donor objectives and national priorities is just one side of the misalignment problem. Duplication of efforts is so rampant that donor coordination by recipients is not an optional transaction cost in the quest for alignment of donor aid with national priorities, and for achieving integrated aid delivery. However, harmonized aid may introduce clustering bias with too few sectors selected by donors; or due to a trade-off as some donors are poorly suited to work collaboratively as they compete for influence and visibility. The general lesson therefore is that there are issues that donors find particularly difficult to cede control to national systems, or systems established by other donors, rendering the entire process of donor harmonization difficult (Welle et al., 2008).

It is not only state agencies that have led to the proliferation of projects. NGOs have also eked out some stake in development cooperation space once occupied only by state agencies. Whereas state actors allocate aid for various motives, private sector or NGOs in development cooperation may represent self-seeking entities that allocate aid as a fundraising strategy. In most extreme cases, it is not uncommon for NGOs to use images of suffering in their fundraising campaigns, although on closer assessment, some of the NGOs are high spenders on administrative and logistics. Further evidence of self-serving behaviour is the large

concentration of NGOs in countries or fields that attract more resources (Büthe et al., 2012), for example, health (HIV and other communicable diseases) and humanitarian emergencies such as refugee camps and migration.

In their defence, NGOs are very effective in their operations. It is also argued by Büthe et al. (2012) that NGOs mostly allocate aid in accordance with humanitarian principles, that is, that aid allocated to recipient countries purely on needs established through the means of economic indicators such as per capita GDP, human development indicators or the share of the population living in poverty. However, Büthe et al.also concluded that NGOs operations have little impact on economic development as their aid allocations do not necessarily take a long-term view such as the development of institutional capacities of recipients or addressing root causes of the humanitarian crises. NGOs are also criticised for lack of accountability, not in the sense of fiscal accountability but performance, due to higher costs of service delivery. In addition, the very essence of aid effectiveness agenda has been destroyed further by the increased fragmentation of aid that comes with many actors including NGOs competing with other NGOs and with state agencies for a stake in development cooperation (UNCTAD, 2019).

2.2.1.4 Instrument of economic sanctions

Economic sanctions are defined as the withdrawal or threat of withdrawal of customary trade or financial relationships (Crawford and Kacarska, 2017). Conditionalities are discouraged in the Paris Declaration on Aid Effectiveness and in international agreements on financing development. The Monterrey Consensus on Financing for Development uses the language of untying aid and the need to remove burdensome restrictions (UN, 2002), but the problem of tied aid persists. In the Addis Ababa Action Agenda, donors again committed to "*align activities with national priorities, including by reducing fragmentation, accelerating the untying of aid, particularly for least developed countries and countries most in need*" (UN, 2015). Aid may be used as an instrument for bargaining by the donor to extract concessions from the recipient country or for leveraging power over international political and economic issues. For example, the European Union concerned with spill-over effects from insecurity in Libya has used aid to minimize these risks (Biondo, 2015).

There are many facets of tied aid, and unlike the commonly held views, tied aid is more than just the procurement restricted aid that must use goods and services from the donor country. Untying aid is a complex process that requires an understanding of the various modalities through which aid is delivered. Requesting recipient countries to comply with donor policies

on procurement, gender, human rights and governance and other specific prescriptions are common in bilateral aid arrangements. In addition, the more restrictive the donor policy measures, the higher the tied components that recipient countries must deal with. On procurement, DAC promotes the use of the Recommendations of the Council for Development Cooperation Action on Managing the Risk of Corruption, which basically calls for putting in place a set of measures including a code of conduct among public officials and donor agency staff; ethics and anti-corruption assistance/advisory services; and training.

The scope of untied aid is very low when one considers the transparency terms in the DAC guidelines. In general, DAC members should notify the recipient country ex-ante for offers of untied aid only when the activities are valued above SDR700,000 (SDR130000 in case of investments for technical cooperation) (OECD, 2019). Other non-DAC donors also place a significant premium on conditionalities, for instance, political thresholds are explicitly outlined in the US Millennium Challenge Account. Considering that donors prefer supporting individual projects whose funding scale is much less than the above cited amounts, the chances of achieving significant progress on untied aid is almost non-existent. Thus, sanctions and conditionalities effectively place donor interests above those of the recipients (Biondo, 2015).

2.2.2 The perspectives of the recipients of aid

2.2.2.1 National development priorities and national systems

The attempts by developing countries to coordinate foreign aid and development assistance stems from the need to achieve coherence and integration with their development plans. Aid coordination is very important to recipients because it is through the exercise of this function that the developing countries can claim some ownership of the activities particularly if their objectives are loosely derived from national development plans (Biondo, 2015). Although aid coordination may not increase the use of recipient's financial management systems and budget procedures, coherence of activities improves results while flexibly allowing donors to support areas in which they are competent.

The drawback with flexible arrangements is that donors may cluster around their favourite sectors, typically the social sector, and neglect other national developmental priorities. Most developing countries have moved towards programmatic budgeting to improve integration among national development plans and sectoral plans and for rationalizing the budgeting process. Yet, the medium-term expenditure frameworks, which are touted by the World Bank

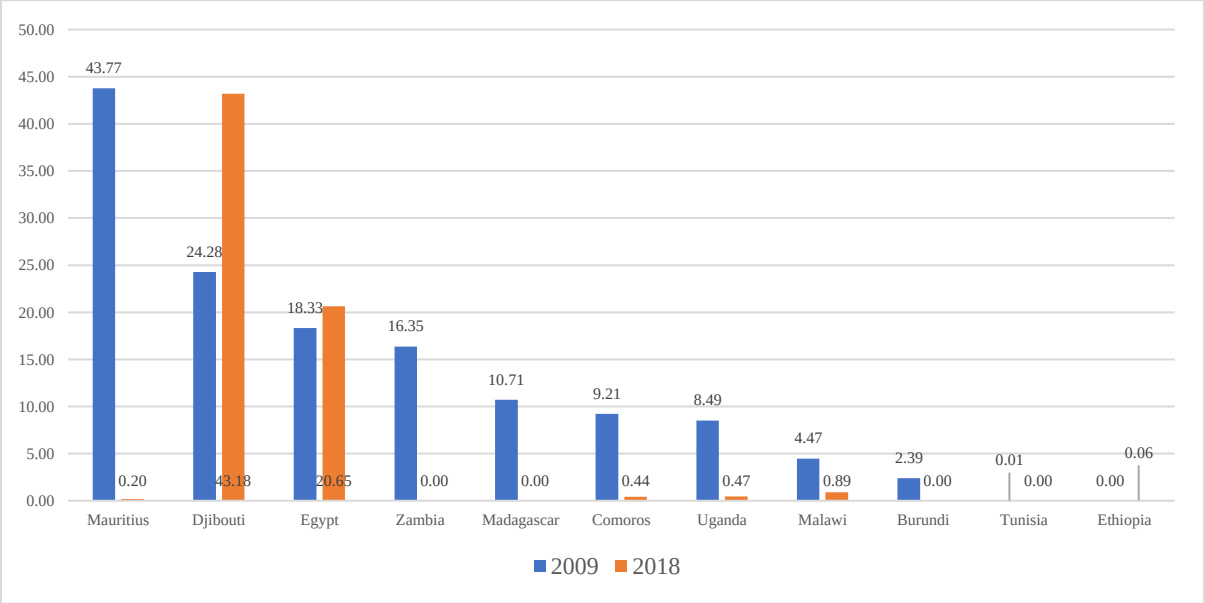
and the International Monetary Fund as the workhorse for achieving coherence between planning and resource budgeting, have not received the envisaged donor support. (OECD, 2015; Booth, 2012). After 2009, there are hardly any country cases where budget support is more than 2 per cent of total aid receipts. In 2018, only Djibouti (43%) and Egypt (21%) received significant direct budget support, reflecting individual circumstances that are unique to them (Figure 2.4)[8,9].

There are other genuine reasons why budget support has not worked in some developing countries. For instance, corruption and fraud, human rights concerns and other governance issues are the main reasons that European Union members give for withdrawing budget support. However, donor perception of recipients also plays a critical role. Specifically, reverse alignment is common, whereby donors expect recipients to comply with the donors' policies and not the other way around- the so called "aid conditionality" is a reverse alignment scenario which aims at imposing policy changes on the recipients' in exchange for aid. The latter does not auger well with states that are pursuing focused national development plans that are well structured, regardless of resource constraints faced.

[8] *In Egypt, the budget support reflects arrears from several years targeting socioeconomic sectors such as health, transport, water and energy in line with some conditionalities imposed on public finance management and also the EU-Egypt partnership priorities. According to the EU, the support will cease in under three years. For details, see:* http://www.europarl.europa.eu/doceo/document/E-8-2019-002033_EN.html
and http://www.europarl.europa.eu/doceo/document/E-8-2019-002033-ASW_EN.pdf

[9] *In Djibouti, the budget support is through the World Bank assisting the country to carry out a systematic diagnostic assessment with the view to diversifying the economy (World Bank Group, 2018).*

Figure 2. 4: Budget support received (% of total ODA from DAC Countries)



Source: Author's calculations based on OECD Creditor Reporting System Database

2.2.2.2 The aid landscape requires active state monitoring

The aid landscape has evolved over the years, with an increased number of actors becoming involved in delivering development cooperation. In the past, aid predominantly consisted of grants and concessional loans from traditional donors (DAC members) and other developed countries (non-DAC donors). The DAC gives aid a distinct characteristic, through negotiated definitions of what official development assistance (ODA) should comprise, its modalities and channels of delivery, as well as its reporting and monitoring. However, as a result of the changing characteristic of ODA, developing countries have found themselves with higher debt obligations as the level of concessionality has declined over the years, while the element of grants has not increased to offset the changes. Therefore, increases in ODA loans by the multilateral donors mainly to finance investments in economic infrastructure and productive sectors are the main reason for the steady increase in ODA gross disbursements to LDCs since 2011. This resulted in a general external debt increase for LDC from $146 billion in 2007 to $313 billion in 2017, thereby raising the risk of reverting back to debt crisis (UNCTAD, 2019).

2.2.2.3 The weak link between public finance and external development assistance

Despite large flows of aid received by some countries, the impact on economic growth and poverty has largely been disappointing. Concessional loans have generally a higher impact on economic development than fungible grants particularly where self-funded or matching guarantees are requested by the donor. A large impact on government investment is gained from

concessional loans than from grant-dominated ODA expenditures which only leads to inflated consumption. Grants may also be damaging to economies of developing countries because of the large component that goes to consumption. For instance, emergency food aid and other social sector foreign aid may not have the same rates of return than investment on infrastructure and capital (Swaroop et al., 1996).

Whether foreign aid receipts would catalyse economic growth is therefore dependent on many factors including how the receipts are utilized. The synergy between domestic resource mobilization and external development funds is underutilized because of the mistrust in the institutions of recipients and the inability by the recipients to plan their development programmes so that aid progressively becomes redundant. Guillaumont and Wagner (2012) argues that foreign aid can become redundant only if it catalyses economic growth including by addressing the structural vulnerabilities of the recipients. However, economic structural reform can only truly begin to take shape if the state has capacities to plan and implement development projects and when its own domestic resource mobilization framework is sound. Also, structural economic vulnerability is not always the only factor conditioning the impact of aid on economic growth as pointed out earlier. Hence, the key to achieving synergetic impact of aid on economic growth is first to boost the domestic resources with which to match aid, and second, to ensure aid is coherently spent within the framework of the national development priorities that are pro-growth.

When foreign aid is disbursed according to the needs of recipients, they do not make any effort to improve their welfare, thereby perpetually remaining foreign aid dependent. This is the argument used by donors to delegate foreign aid delivery to international agencies and other non-state stakeholders to wrestle back some control over outcomes. If the delegated agencies have less aversion to poverty and other social ills, the foreign aid delivered by them will eventually improve welfare of the poor and reverse the social problems (Svensson, 2000). What this entails is that donors may have to invest resources to influence public expenditure policies of recipients of foreign aid, although such influence is pervasive and therefore not suitable. However, efforts to reduce corruption in the use of allocated foreign aid and ensuring that recipient governments undertake structural reforms to alleviate poverty should be encouraged and maintained.

The Addis Ababa Action Agenda for the implementation of the SDGs was expected to refocus attention on resource mobilization for developing countries. The trend in developing countries shows that tax to GDP ratios have increased, indicating a higher domestic resource mobilization

effort. At the same time, public capital and current expenditures have also increased at a rapid pace, requiring vigilance on mitigating the negative consequences of expansionary fiscal policies. However, since tax revenue and ODA fall short of desired public expenditures in most developing countries, there is need to boost the tax potential of developing countries by focusing on solving long standing structural problems of the countries (UNCTAD, 2019). In other words, foreign aid should be purposely directed to productive sectors to boost growth, and endogenously reduce economic vulnerability and foreign aid dependence.

Reform efforts in foreign aid recipient countries can be observed, although the attribution of the development outcomes to foreign aid may be less straightforward (Svensson, 2000). This is an area that fiscal response models exploit to account for the impact of foreign aid on development, considering the fiscal policy decisions of the recipient countries. However, generalizing foreign aid effects on government expenditure would be misleading because the effects are mostly country specific, with additionality and fungibility potentially overstated by many studies (Mosley, 2015; UNCTAD, 2019).

The substitutability or lack of synergy between domestic and external resources can easily give rise to incompatibilities and inefficiency. The mere fact that foreign aid targets a few sectors is problematic because implementation of policies oriented towards growth or structural transformation should be integrated to national public budgets. For instance, public infrastructure investments in sectors such as ICT and transport are supposedly complementary with social sector expenditures such as health and primary education. However, if the composition of aid is biased towards some sectors, it dampens the impact of government expenditure of recipient countries (Chatterjee et al., 2012). The aid-growth relationship is therefore weaker because of the neglect of these and other salient factors that have worked in the past and have tended to be overlooked in recent years.

In a classic article on foreign aid, Grundmann (1978), for example, argued that foreign aid can raise exports from the donors' perspective if it is used to pay for goods and services from the donor to the recipient. The tied bilateral aid arrangements is responsible for 3 to 6 percent of in-donor export contracts, and the figure has steadily grown over the years. While aid is export-generating from the donor's perspective, the recipient faces a loss of market by its local entrepreneurs who cannot compete with transnational companies for the supply of the goods and services. Local entrepreneurs trying to break onto the international market may not access finance from international development banks that are financial backers of in-donor exporters. So, foreign aid-growth relationship works best only if they are rewarding to the neglected

aspects of development such as the development of productive capacities and local private sector.

Originally foreign aid was meant to support BOP constrained countries to meet their international obligations as was the case in the Marshall Plan (Ranaweera, 2003). This was also the thrust of most structural adjustment programmes of the IMF and World Bank, although they focused on macroeconomic targets which the recipients were supposed to adhere to. Quantitative programming of foreign aid is criticised based on the gap model centred around two things: i) public investment and foreign aid are no longer co-determined as it should have been, and this is clear from the many cases in developing countries where public investment and ODA have sharply diverged. Instead, the focus on good policies and institutions overshadows the strides developing countries have made towards improving the economic environment and infrastructure needed for inclusive and sustainable economic growth; and (ii) what constitutes good policies and structural change has never been defined concretely, but foreign aid effectiveness is conditioned on the quality policies and institutions, which in some way brings country ownership back at the heart of development cooperation. Country ownership should at least force a rethink of the institutional frameworks through which foreign aid is channelled to developing countries and its prospects of sustaining economic growth (Tarp, 2006).

CHAPTER 3: THEORY AND EMPIRICS OF FOREIGN AID AND ECONOMIC GROWTH

The main objective of foreign aid remains poverty reduction through the promotion of economic growth and development. However, the extent to which this is fulfilled in developing economies is a contentious issue as underscored by the polarised views in the aid-growth literature. This chapter first reviews key economic theories of foreign aid focusing on the potentials foreign aid has in stimulating economic growth. Secondly, the chapter reviews the empirical literature on the determinants of foreign aid to provide a clear understanding of the extent to which it potentially compromises foreign aid effectiveness in the recipient countries. The chapter also provides a detailed review of empirical literature to determine the extent to which foreign aid has resulted in economic growth or lack of it in the developing economies and why. The chapter focuses on what renders aid effective or ineffective by highlighting contributing factors both from donors and recipient countries. The chapter also highlights salient factors in the methodologies adopted in the reviewed studies to ascertain its possible contribution to divergent views found in aid-growth literature.

3.1 Economic Theories of Foreign Aid

There are two conflicting groups of theories on the role of foreign aid on economic growth. Although theorists converge on the need to focus on inward-looking policies to enhance growth and break the financial dependency chain in foreign aid recipient economies, their views on the role of foreign aid diverge when it comes to their fundamental assumptions on the motives for giving foreign aid. To the dependency theorists, wrong motives for giving foreign aid (political and strategic interests of the donors) crowd out the potential growth-enhancing benefits of foreign aid by perpetuating corruption, among other things. The right motives are assumed by the conventional theorists, but they view inefficient utilisation in the recipient economies as a key factor affecting the potency of foreign aid.

3.1.1 Dependency Theories of Foreign Aid

The dependency theorists argue against foreign aid as they perceive it mainly as a political and economic control tool by the developed economies that traps the recipient countries in underdevelopment and poverty by weakening their attempts towards attaining self-sustaining growth (Moyo, 2009; Matunhu, 2011; Todaro and Smith, 2012:123). Specifically, they view foreign aid as one of the key destroyers of institutions, perpetrator of corruption and bad governance as it benefits the minority elite who serve the political and economic motives of the donors (Radlet et al., 2004). To them, underdevelopment is not just an issue of limited capital

but rather a consequence of social and economic imbalances that have seen the underdeveloped economies being net producers of raw materials for the benefit and further growth of the developed economies. As a result, developing countries remain stuck in the undeveloped state while heavily dependent on the developed world for resources and technology progress (Matunhu, 2011). In this regard, dependency theorists' focus for enhanced growth is on the economic, political, and institutional reforms (inward-looking policies) in the underdeveloped economies to break the political and economic dependency chain rather than an infusion of foreign aid, which they believe barely stimulates economic growth.

While foreign aid might negatively impact growth as portrayed by the dependency theorist views, they are silent on the viable alternate sources of foreign capital to close the financing gaps in developing countries with low savings rates and limited capacity to attract foreign capital through functional markets. In Africa, for example, it is well documented that its effectiveness in capital accumulation is greatly undermined by the region's inability to raise the required finances. Focusing within the region to close the infrastructure financing gap, ECA (2015) noted that the region could only raise 48% of the required capital resources. Since the region is unable to mobilise the 52% through functional markets, foreign aid becomes their only option to augment resources in the short to medium term. As such, dependency theorists' perceptions on foreign aid as an absolute evil to the growth process, poses further threats for these economies to remain underdeveloped unless viable alternative external financing modalities are found. Todaro and Smith (2012) criticises the dependency theorist's stance on foreign aid pointing out that it entails the existence of an unrealistic sustainable development path for closed economies that further limits their access to foreign capital and technology advancement.

3.1.2 Conventional Theories of Foreign Aid

Conventional theorists' advocates for foreign aid only as temporal means to provide a thrust for launching the recipient economies onto a self-sustaining growth path (Rosenstein-Rodan, 1961; Todaro and Smith, 2012). They posit that foreign aid accelerates economic growth in the recipient economies by augmenting domestic savings to achieve the required levels of investment for the desired growth rates. Specifically, they view capital formation as a primary engine for growth yet limited in the developing economies on account of low savings and investment rates. Hence, the need for foreign aid as an additional source of capital to provide a temporal thrust for launching the recipient economies onto a self-sustaining growth path as discussed below:

3.1.2.1 Harrod-Domar Model

The Harrod-Domar model provides pertinent foundation to the foreign aid advocacy theories. The model considers capital formation investment (I=ΔK) as the key pillar for economic growth such that economic growth rate ($\Delta Y/Y = g$), is a function of investment and the productivity of that investment which is given by the capital-output ratio (ΔK/ΔY=υ). The model further assumes that for any tangible investment to occur, the economy must save a significant proportion of its national income (sY) such that in equilibrium, the savings rate (S=sY) is the same as investment (I=ΔK). Thus, in equilibrium we have:

$$S = sY = I = \Delta K = \upsilon \Delta Y \tag{3.1}$$

And from (1) the growth rate will be given by $\frac{\Delta Y}{Y} = \frac{s}{\upsilon}$ (3.2)

which entails that the more an economy saves and productively invest, the more it grows on the assumption of a stable υ over time as well as direct linear relationship between investment and growth. However, in practice, several factors such as changes in technology and policy environment alters υ over time with the corresponding effects on growth (Easterly 2003; Todaro and Smith, 2012). Furthermore, the implicit assumption of excess labour which can be hired as desired does not always hold entailing that focusing on just capital investments whilst ignoring the effects of other factors that are essential in determining growth, might compromise the effectiveness of model. Despite criticism over these assumptions, the model remains the backbone of foreign aid advocacy theories which assume that the main constraint for growth is the inability of poor countries to raise the required capital for the desired levels of growth through domestic savings. Hence, the need for foreign assistance to augment domestic savings.

3.1.2.2 Rostow's Stages of Economic Growth: The Take-Off

Through his stages of economic growth, Rostow highlighted constraints faced by underdeveloped economies as well as the kind of pushing they need in transiting into self-sustaining growth levels. Similar to the H-D model, Rostow emphasized the need to raise both the volume and productivity of investment in various key sectors of the economy. He argued that investment properly supported by efficient institutions and proper technologies is essential in transiting through the take off stage to self-sustaining growth. Whilst reckoning that preconditions for take-off may vary between countries depending on their initial investment levels, he observed that three minimum conditions must be met if a country is to take-off: an

increase in investment to at least 10 per cent of GDP; substantial growth and development of at least one of the core growth sectors such as manufacturing; and an existence of an institutional framework that will effectively support growth linkages between the core growth sectors and other subsectors of the economy.

Influenced by the H-D model, Rostow argued for the need to increase its investment levels to at least 10 per cent of its GDP in the developing economies to accelerate their respective growth levels (Lockwood, 1990; Bowen, 1998). Accordingly, he encouraged the rationalization of public investments to ensure effective support in production and ensuring enhanced market access. For the second and third conditions for taking off, Rostow underscored the fact that different sectors of the economy contribute differently to its growth. As such, equitable prioritisation of the core and growth enhancing supporting sectors while ensuring viable linkages within and among these sectors was deemed crucial in the pursuit of self-sustaining growth. To this end, the economy needs to undergo substantial structural transformation to ensure the existence of requisite human skills, viable institutions and relevant infrastructure to effectively support the core growth sectors. This also ensures that the sector's growth benefits are effectively diffused throughout the economy (Parr, 2001).

Despite its popularity, Rostow's model has been criticised for assuming a linear development path for all countries based on the advanced western countries. To this, critics observe notable variations in the natural resource base, populations and geographical locations of different countries and hence, similar differences are observed in their paths to self-sustaining growth levels. This approach is also heavily criticised by the dependency theorists because most advanced economies thrived on the exploitative relationship that existed with their underdeveloped counterparts to which they argue that a repetition of that trend might not be feasible (Nurkse 1961:243; Ferraro 1996). Furthermore, Todaro and Smith (2012) observed that setting the advanced economies as a benchmark for the growth stages is also not plausible as Rostow ignored critical conditions that were crucial in the effective development success of most advanced economies. These include functioning commodity and money markets which are visibly missing in most undeveloped economies yet somewhat implicitly assumed present in Rostow's model. They however underscored Rostow's assumption of an irreversible development process by asserting that while difficult to launch an economy into the self-sustaining growth path, it is much easier to sustain the desired growth levels once attained. In other words, it is largely not feasible to recess into underdevelopment once the desired self-sustaining growth levels are reached. A good example in this regard is Singapore that has

remained among industrialized economies since taking off from underdevelopment in the mid 1960s.

3.1.2.3 The Big Push Theory

Like Rostow's preconditions for take-off stage, Rosenstein-Rodan (1961) also observed the need for a significant increase in the investment rate for the growth of underdeveloped economies. They argued for a big industrial investment thrust for developing countries to move to self-sustaining growth levels. Whilst discouraging piece-meal-approach (bit-by-bit) to industrial investments as a significant waste of development resources, they contended for huge simultaneous investments in complementary industries for self-sustaining high growth outcomes. They asserted that with positive spill over effects on job creation and income levels, investments effectively create the needed domestic demand to sustain manufacturing growth. Furthermore, through increased job creation, such investments expand the tax base and thus, effectively relieve the fiscal burden for the much-needed social overhead capital to further support the manufacturing sector's growth (Murphy et.al., 1989; Wang, 2015). They argued for a balanced growth processes that requires viable linkages between and among different sectors of the economy for better growth outcomes. This view is in line with Nurkse (1953 and 1961) who equally argued for a balanced growth process where various complementary sectors would grow simultaneously and effectively balance out each other's growth needs.

Reckoning the limitation of domestic resources in providing the needed investment thrust for sustained growth in their model, Rosenstein-Rodan underscored the need for foreign aid in pushing underdeveloped economies to self-sustaining growth levels. In this regard, they emphasised that foreign aid is a temporal solution for raising capital investments necessary for transiting into self-sustaining growth (Rosenstein-Rodan, 1961). Like Rostow, they also viewed domestic institutions and capacities as crucial in bringing about growth and development and as such, they deemed foreign aid as just a stimulus and not a permanent solution for accelerating economic growth. While emphasizing that economies might not need foreign aid inflows once the self-sustaining levels are attained, they argued for the need of continued capital imports and foreign private investments to continue augmenting domestic savings in sustaining the attained desired growth levels.

The big push theory managed to identify market imperfection as one of the key constraints in the growth of developing economies with substantial coordinated industrial investment as the

most plausible solution. However, the theory heavily neglected the impact of the external markets in the maximisation of the economies of scale. Their focus was on the forward and backward linkages in the domestic industries in creating domestic demand spill overs between sectors, among other things. However, they overlooked the importance of rationalising domestic industries for exports in further increasing capital investments and enhancing industrialization.

3.1.2.4 The Two-Gap Model

Building on the H-D growth model, Chenery and Strout (1966) observed that two main resource gaps constrain investments for the desired growth of developing economies. These are the savings and the trade (foreign exchange) gaps. According to Chenery and Strout, the savings gap is mainly characterised by low savings rates in the developing countries in addition to limited human skills to support productive investments for the desired growth rates. The trade (foreign exchange) gap is characterised by insufficient forex earnings. They further postulated that these limitations do not only constrain an economy's financial ability to productive investment, but further undermines its effective and efficient utilization of other relevant internal human and natural resources for enhanced productivity. Emphasizing the need for necessary structural changes for enhanced human skills, relevant and efficient institutions among other things, they claimed that an injection of foreign aid can effectively relieve an economy of these two gaps with the consequent potential of maximisation of other factors of production and hence, accelerate growth. They associated the existing gaps to both market imperfections and institutional structural anomalies such that domestic policies for structural transformation remain key in determining the effectiveness of both domestic and foreign resource as the economy transitions through different phases of growth (Jepma, 1992; Bowen 1998). They also emphasized that foreign aid is just a temporal relief of the existing growth constraints[10] aimed at providing each recipient economy with an incentive for maximum effort for self-sustained growth (Chenery and Strout, 1966).

Specifically, their model assumes that an economy essentially goes through three phases to self-sustaining growth in which at least one of the gaps is a significant growth binding constraint. Hence, their conclusion that the total amount of foreign aid required by an economy in this transition is basically determined by the cumulative magnitude of the gaps in each phase

[10] *This view was also put forward by Rosenstein-Rodan in the Big Push Theory above*

(Chenery and Strout, 1966). The first phase revolves around the H-D model where growth is a function of investment and the productivity of that investment. However, the low rates of savings and hence investments coupled with limited human capacity to enhance investment productivity are the main constraints facing the economy for the targeted growth rate. During this phase, they assumed that the trade gap is not binding, and so foreign aid will be required mainly to close the savings gap.

During the second phase, they assert that while savings might still be lower than investments, the economy is largely constrained to acquire productive imports (intermediate and investment goods). Thus, both the savings and trade gaps are binding although foreign aid is mostly necessary to finance these imports (fill the trade gap) while structural transformation continues to enhance skills, among other things. Finally, in the third phase, the savings-investment gap will no longer be binding though structural changes are still under way and the trade gap is still evident and hence the continued need of foreign aid. By the end of this phase, the economy will no longer need foreign aid as both gaps will have been cleared and all the necessary structural changes would have been completed. It is assumed that beyond this phase, growth is on a self-sustaining basis as the economy can adjust to existing market conditions (Bowen 1998). However, it should be noted that beyond this phase, they observed that the economy will still need other foreign inflows of capital such as foreign Direct Investment (FDI) and other forms of foreign private investments to help in sustaining the desired growth rates (Also see Rosenstein-Rodan, 1961).

3.1.2.5 The Three-Gap model

The three-gap model is essentially an extension of the two-gap model to include the fiscal gap, also popularly known as the inflation gap as it is deemed binding within specific inflation levels (Bacha, 1990). Augmenting the 2-gap model, it contends that while the savings and trade gaps are binding either jointly or independently in the development transition period, government's fiscal limitations in financing the necessary public investments to support a given level of output is an equally growth binding constraint in this process. According to Bacha (1990), public investments in relevant economic infrastructure and industries are key in determining the kind of investments private investors will be willing to make. In other words, they assumed that through viable public investments, respective governments hold the key to profitable private investments that are necessary to enhance its growth (Bacha, 1990). However, increased fiscal deficits greatly affects the implementation as well as the quality of such growth stimulating

public investments. Depending on its mode of financing, fiscal deficits tend to crowd out private investments through increased inflation and/or interest rates (Iqbal, 1995).

Overall, the gap models assume that with the necessary structural adjustments and capacity development, the total amount of foreign aid required to effectively propel an economy into a self-sustaining growth track will be given by the accumulation of the savings, trade and fiscal gap throughout the transition period. While presenting the most comprehensive theoretical framework for foreign aid advocacy, Easterly (2003) observed that the application of the gap analysis in most economies is largely flawed on theoretical grounds. Partly, this is from its simplistic assumption of a linear[11] and stable relationship between investment and growth which does not hold when other models such as the Solow model are utilised. Similarly, he observed that the incremental capital output ratio (ICOR) does not always reflect the quality of investment as assumed in the gap model as well as in the H-D model. To this, he asserted that there are a lot more factors that do influence the ICOR such as the quality of institutions and technology (also see Todaro and Smith, 2012). He further observed that the implicit assumption that foreign aid will only finance investment might also flaw the model's applicability as this assumes the economy is only financially constrained but has vibrant institutions to boost investments (Also see Boone, 1996; Burnside and Dollar, 2000). However, he concluded that despite so many critics over these models, they have remained dominant models in the foreign aid effectiveness analysis as no new plausible model has emerged to replace them.

Lastly, these theories assume that the volume of foreign aid in-flows to underdevelopment economies fully covers these gaps which raises the question of its effectiveness considering that most of the recipient economies have remained underdeveloped following decades of foreign aid. If foreign aid was sufficiently large or sustained at higher levels to effectively close the binding gaps, then most recipient economies would have reached the self-sustaining growth levels as portrayed by all the above foreign aid proponent theories. Noteworthy with conventional theories/models, is their emphasis on structural transformation as a requisite for effective utilization of both domestic and foreign resources for growth. These structural changes cover both policies, institutional and human capacities *inter allia* for productive investments and hence, their emphasis of foreign aid as a temporal solution to incentivise recipient economies in pushing themselves into self-sustaining growth levels. Therefore, the volume of

[11] *Most empirical studies take care of this weakness by including a squared foreign aid term (see Hadjimichael et.al (1995), Lensik and White (1999) and Durbarry et.al (1998) and Hansern and tarp (2001) among others*

foreign aid received in relation to the existing growth and development financing gaps is as essential as is the proper utilization of that aid to effectively stimulate economic growth.

3.2 Empirical Evidence on the Role of Foreign Aid

Like the theory of foreign aid, empirical evidence is equally mixed on the role of foreign aid on economic growth, particularly at the macro level. Generally, those who find a positive impact of aid on growth argue that it is not just about the received volumes of foreign aid that are key for its effectiveness, but how efficiently it is utilised. The kind of policies the recipient government puts in place, the type of institutions and bureaucracies are all key for its effectiveness (Burnside and Dollar 200). On the other hand, the negative impact of foreign aid on growth is because it is highly fungible such that instead of funding productive investments, it is mostly diverted to unproductive public consumption (Arrellano et. Al., 2005). Furthermore, dependency theorists argue that foreign aid breeds corruption, bureaucratic failures and poor institutions (Alesina and Dollar, 1998; Rajan and Subramanian, 2007: Djankov et.al., 2008) and only benefits a few elites in the poor countries (Easterly, 2014). This perpetuates poverty for the majority of the population and overall national aid dependence (Boone, 1996; Easterly 2003 and Moyo, 2009). So far, this chapter has reviewed studies that show factors that render foreign aid either effective or ineffective in achieving its core growth and development objective. In following sections, the chapter discusses salient factors behind the inconsistent macro foreign aid-growth outcomes

3.2.1 Positive Impact of Foreign Aid on Economic Growth

Burnside and Dollar (2000) provide one of the most influential pro-aid studies in the aid-growth literature. Focusing on aid utilisation, they concluded that its potency in enhancing growth lies with the policy environment in the recipient economy as it is key in determining the quality and quantity of investments as well as resource utilisation. As such, the higher the policy distortions in an economy, the less effective are both domestic and foreign aid in building the social overhead capital needed for productive private investments and hence overall growth. Similar observations are made for countries with poor quality of institutions and governance such that the higher the level of corruption *inter alia,* the higher the cost of development projects for example, and the less effective aid is in stimulating growth (Wane, 2004; Ojong et. el,. 2017). This generally hinges on aid as a highly fungible resource such that the probability of its misallocation becomes higher with the quality of institutions, governance and policies.

Burnside and Dollar (2000) found a positive and significant relationship between bilateral foreign aid flows and government consumption which partly entails that most of the aid to the developing economies do not end up in productive investments. Moreover, Dollar and Easterly (1999) also observed that unless countries have growth enhancing policies in place, expecting aid to move them into self-sustaining growth levels remains unrealistic. Accordingly, it is further contended that targeting aid to countries with bad policies and institutions remains fruitless in stimulating growth (Guillaumont and Chauvet, 2001; Chauvet and Guillaumont, 2003). However, Burnside and Dollar (2000) observed that the quality of policies and in particular, good policy environment was not among the factors determining the direction of aid. Poor targeting in aid allocation is one of the factors resulting in aid ineffectiveness. Poor growth in economies crippled with bad policies and institutions do not only signify lack of domestic capital for productive investments with the necessity of a big push as postulated by aid proponent theorists. It also entails poor prioritization of resources with little (if any) impact on growth.

Despite the provision of key insights as to why foreign aid is ineffective in most cases, Burnside and Dollar's (2000) study's is flawed on several fronts in the methodology adopted with very few criticisms on conceptual issues. These include variable omission bias which according to Lensik and White (1999) resulted in the negative but insignificant initial GDP variables entailing among other things, that the data used was not supporting the underlying growth theory; no conditional growth convergence in their sample of countries. Similar conclusions were also reached by Hansen and Tarp (2001:554) who equally found that the initial income variable in the Burnside and Dollar (2000) study was never significant. Moreover, Karras (2006:19) concluded that a negative and significant initial income levels in these models signifies income converges among the countries in the sample. Precisely, it entails that the higher the income levels of a country in the initial period, the lower the speed of its growth rate vis-à-vis the growth rate of a country with very low income in the initial period.

Hansen and Tarp (2001) further noted that the model missed out country specific effects which in their view could be correlated with the policy variables and/or initial income levels. They argued that the aid endogeneity regression was invalid because of variable omission bias rendering the estimates inconsistent. On the other hand, Easterly (2003) criticised the study on the definition of aid which only covered grants. Using the DAC's definition of foreign aid which covers both grants and concessional loans, he found that the aid-policy interactive variable in

the Burnside and Dollar study was not significant. Hence, their conclusion that a good policy environment is not a key factor for aid effectiveness in stimulating economic growth. Similar results were also found by Guillaumont and Chauvet (2001), Gomanee et al. (2005), and Karras (2006). The study further utilised 4-year data aggregates[12] which according to Easterly, mostly capture effects of business cycles and hence, not useful to informing long-term policy on aid effects.

Utilising common cross-country growth specifications augmentations, Hansen and Tarp (2001) also concluded that foreign aid stimulates economic growth. However, unlike Burnside and Dollar, they observed that this was not dependent on good policy environment. Using similar data set as in Burnside and Dollar (2000) study, they reviewed specifications in the works of Hadjimichael et.al (1995), Lensik and White (1999) and Durbarry et.al (1998) and noted that all except Burnside and Dollar had a squared aid term as one of the regressors to capture either absorptive capacity issues, Dutch disease[13] and capacity constraints or institutional destruction and influx of inappropriate technology. Nevertheless, they noted that all these different justifications of the squared aid term still entailed how policy affects aid effectiveness as in the Burnside and Dollar study. They observed that the aid squared term was essentially capturing issues related to macroeconomic governance in the first two studies while in the Durbarry et.al (1998) it was covering issues related to exchange rate management and/or fiscal policy. Using both specifications (aid squared term and aid-policy interactive term) in the Burnside and Dollar framework, they failed to support their assertion of aligning effective foreign aid to good policy environment but did support the existence of diminishing returns to foreign aid as concluded in the other three studies. However, from the different theoretical justifications of these different variables, they asserted that unless included initially in the model, the interactive and squared terms may enter the reduced form equation as proxies for each other. Hence, the observation that the aid-policy interactive variable in the Burnside and Dollar study, might have effectively masked several underlying variables including the existence of diminishing returns to aid. And they made similar observations for the foreign aid squared term in the other three studies. They justified this through their simple derivation of the two variables by assuming that the Burnside

[12] Due to trade data paucity, most studies aggregate the data as done by Burnside and Dollar. Other studies include Chauvet and Guillaumont (2003) who used 5-year aggregates and Durbarry et.al. (1998) who used 6-year time aggregates.

[13] Growth of one sector dampening growth in another sector

and Dollar policy index is a stochastic variable which can be decomposed into two components as below:

$$Policy = \tau aid + (\frac{policy}{aid}) \quad (1)$$

Where τ is the regression coefficient, aid is the component of the policy index that is perfectly correlated with aid and the residual (policy/aid) is the component of the index that is assumed not to be correlated with aid. From (1), they derived the aid –policy interactive term as in (2) below:

$$aid * policy = \tau aid^2 + aid * \left(\frac{policy}{aid}\right) \quad (2)$$

The above derivation implies that the aid policy interactive term might end up being significant even in circumstances where aid squared term is. Following the same derivation with aid as a function of policy, they also argued that aid squared term could end up being positive in situations where the interactive term really mattered. However, from their extensive literature reviews and their own estimates, they noted that the aid squared term was highly statistically superior to the aid-policy interactive term which was not robust.

Focusing on the time dimension constraint as one of the main weaknesses in the Burnside and Dollar study as well as most cross-country studies, Karras (2006) ran a dynamic panel regression for 71 countries over 1960 to 1997 period to capture the true long-term relationship between aid and growth. He concluded that foreign aid positively stimulates economic growth even in a bad policy environment. On the same note, results from several studies also suggest that ignoring the long-term dimension of aid impact on growth as done by most cross-country studies generally provides a misleading picture of the actual impact of aid. These include Moreira (2005) who used the Generalised Method of Moments (GMM) estimator to take care of the endogeneity issues in the model and discovered that the magnitude of the short run and overall impact of foreign aid on growth was different. Using the ARDL methodology, Ojiambo (2009) supported the existence of a positive impact of foreign aid on growth in Kenya only in the long term. Similar conclusions were also drawn by Tadesse (2011), Bitew (2014) and Ejigu (2015) using cointegration analysis on Ethiopian data. To this end, Moreira (2005) asserted that while taking care of country heterogeneity, non-linearity in aid growth relationship as well as endogeneity issues, it is imperative not to ignore the importance of the time dimension as all these are key in capturing different underlying dynamics for unveiling key features of the aid-growth relationship (Also see Alvi et al., 2008).

Further expounding on the debate of good policies as a hinge for foreign aid effectiveness, Lensik and White (2000b) noted that Burnside and Dollar's results were just an issue of interpretation in line with their own aid conceptualization and focus of the study. Specifically, they observed that the Burnside and Dollar equation:

$$g = \beta_1 + \beta_2 A + \beta_3 P + \beta_4 AP + \beta_5 X + \varepsilon \quad (3)$$

Where g is the GDP growth rate, A is foreign aid, P is the policy index and X is a vector of structural factors that affect growth. They noted that (3) can be Re-written as:

$$g = \beta_1 + (\beta_2 + \beta_4 P)A + \beta_3 P + \beta_5 X + \varepsilon \quad (4)$$

Or as

$$g = \beta_1 + \beta_2 A + (\beta_3 + \beta_4 A)P + \beta_5 X + \varepsilon \quad (5)$$

Where in Burnside and Dollar's study β_2 was not significant and β_4 was positive and significant with the consequent conclusion that aid is effective in stimulating growth in a good policy environment. In this regard, when they expressed (3) as (5), they interpreted that policies are more effective when supported by foreign aid and concluded that Burnside and Dollar's interpretation of (3) could have been misplaced. Chuvet and Guillaumont (2003) also found that foreign aid is positively significant in influencing policy and hence concluded that Burnside and Dollar's findings were misleading as they did not consider the possible impact of aid on domestic policies.

Overall, Lensik and White (2000b) observed that just as with most cross-country growth regressions, Burnside and Dollar's results were not robust due to their sensitivity to data and model specification. Similar observations were also made by Hansen and Tarp (2000) as well as Lensik and White (1999). Furthermore, Easterly (2003) pointed out that Burnside and Dollar's results were sensitive to the definition of foreign aid. Specifically, Lensik and White (2000b) noted that when low income countries dataset was utilised, none of the policy variables in the Burnside and Dollar's results were significant although the aid-policy interactive term was significant, and the aid term was also significantly negative. This was contrary to their conclusions from the sample that included middle income countries. To this end, they further supported the interpretation of (3) as in (5) where aid is essential for effectiveness of policies in poor countries.

Cognisant of the fact that aid affects growth through various channels, Lensik and White (2000b) further contended that a system of equations should be utilised to thoroughly analyse its effects on growth and not just a single equation as is done in most cross-country growth studies thereby leaving out a lot of useful information in the analysis. This assertion is well underscored by Hansen and Tarp (2001). They argued that estimates of aid effectiveness are highly sensitive to the choice of both control variables and the estimator as reflected in the negative impact of aid on growth when they controlled for investment and human capital in their model. Roodman (2007:275) also concluded that while potentially beneficial in enhancing growth, foreign aid might not be a critical determinant of economic growth.

3.2.2 Negative Impact of Foreign Aid on Economic Growth

While recent debate on positive aid impact has been centred on how policy issues affects volume and productivity of investments, critics of foreign aid mostly explore various other channels through which aid impacts economic growth including exchange rate volatility, governance, inflation and investments. However, emphasis has been on government expenditure whose spill over effects are manifested in these other various channels that mostly render foreign aid inefficient in enhancing economic growth. Boone (1996) concluded that foreign aid is largely ineffective in enhancing economic growth and other variables deemed relevant in boosting economic growth. In his study, he observed that three quarters of the foreign aid was used to fund unproductive public consumption[14] and consequently could not trace any positive relationship between foreign aid and economic growth. Similarly, Rajan and Subramanian (2008) did not find the existence of any systematic relationship between foreign aid and economic growth regardless of the quality of institutions and policies, *inter alia*.

Similarly, Bass (2011) also failed to support the assertion that foreign aid enhances growth as it was ineffective in creating a conducive environment for its efficient and effective utilization. This points to possible adverse effects of foreign aid on macroeconomic variables such as exchange rates and inflation which consequently crowd out private investments. Therefore, Rajan and Subramanian (2011) noted how imperative it is for governments to rationally

[14] *Despite different outcomes with the Burnside and Dollar (2000) study, the observation was the same but possibly different channels through which government consumption affects economic growth and other relevant variables were explored. However, even Burnside and Dollar hinted on the great potential unproductive public investments have in hurting the economies hence the conclusion that foreign aid will only be effective in a good policy environment.*

prioritize foreign resource to ensure enhanced productivity across sectors in the economy with requisite improvements in public infrastructure.

Analyzing these possible channels through which foreign aid possibly hurts developing economies, Rajan & Subramanian (2011) exploited cross-country and cross-industry variations in a panel of 32 aid recipient economies. They observed that foreign aid is mostly unproductive in most economies due to its dampening effect on exports through exchange rate appreciation and sometimes inflation as it drives up prices mostly in the non-traded goods sector. Similarly, Munemo et al. (2007) found that beyond certain thresholds, foreign aid receipts are counterproductive to export performance. This coils back to Boone (1996) and Burnside and Dollar's (2000) findings about aid funding unproductive investments which could be inflationary. While Burnside and Dollar (2000) observed that poor targeting of aid to economies with bad policies was an issue, Rajan and Subramanian (2005; 2011), and Moreira (2005) added that issues of absorption capacities are hardly taken care of in determining the direction of aid. They contended that if aid inflows are much higher than the existing capacity to efficiently utilise; the probability of its adverse effects to manifest on other macroeconomic indicators such as exchange rates and inflation becomes equally higher. Consequently, Rajan and Subramanian (2011) proposed gradual increases of aid inflows to poor countries to give room for both human and institutional capacity development to effectively utilise higher volumes of aid. However, Clemens et al (2012) noted that the positive effects of foreign aid on growth were significantly diminishing with increased aid volumes which partly entails that beyond certain threshold, additional foreign aid to recipient economies becomes unnecessary. Hence the need for proper alignment of foreign aid disbursements with development financing gaps in the recipient economies, among other things.

Like Burnside and Dollar's (2000) study, Boone's study (1996) was among the first prominent studies on the macroeconomic analysis of foreign aid inspired by modern economic theory that focused on finding out why it was seemingly not producing the expected results. However, his study's methodology has also been criticised due to its linear treatment of the aid and growth relationship. Critics argue that this ignores the impact of diminishing returns to aid as well as absorptive capacities of the recipient economies (Hadjimichael et al., 1995). Furthermore, Hansen and Tarp (2001) and Bass (2011) argued that Boone's results were not robust as they were sensitive to sample changes.

While Hansen and Tarp argued that Boone's choice of endogenous variables might have compromised his estimates, Clemes et al (2011) argued that their instruments for aid could also have led to biased results. This argument was extended to the instruments used by Rajan and Subramanian (2011); Boone (2000); as well as Burnside and Dollar (2000). They argued that basing the strength of the instruments on population size as was done in the later three studies could have only been viable on variables with a proven direct impact on growth. They confirmed this by re-running the three regressions with 2-stage OLS, and all the concerned instruments were no longer potent on the second stage. In the case of Hansen and Tarp (2001), they caution the dependency on lagged aid variables as instruments for endogeneity due to its potential impact on the current growth values and hence leading to a biased aid coefficient. Similarly, Roodman (2007) also cautioned the use of lagged aid variables as they could lead to biased results due to reverse causation especially in countries where growth performance determines the volumes of aid inflows.

Furthermore, Clemens et al. (2011) questioned the aggregation of aid in these studies without considering their possible growth impact time frame nor intended purpose in the recipient economy. This followed the observation that more aid proportions do fund unproductive investments (Boone, 1996; Rajan and Subramanian, 2011) because for most poor economies, not all aid inflows are meant to fill in the growth and development resource gaps. Large amounts of aid are intended for public consumption through disaster relief or food aid for instance and these would hardly enhance growth (Also see Alesina and Dollar, 2000; Radelet et al., 2004).

While most of the studies discussed above focused on inherent factors in the recipient economies as key for effective utilisation of foreign aid, other studies suggest that foreign aid does not enhance growth due to the wrong motives of donors. For example, Sorens (2009) concluded that the motives for giving foreign aid have a significant bearing on how it is utilised and hence its efficiency in stimulating growth. He pointed out that political motives for aid allocation have continued to encourage poor fiscal management in most underdeveloped economies. This is seen in the continued high aid inflows to countries with a record of high corruption, poor governance and policies. Sorens argues that this results in inefficient resources utilisation including foreign aid hence no traceable positive impact of the latter on economic growth.

Similarly, instead of being seen to enhance sustainable economic growth, foreign aid is condemned for pushing more economies into deeper debts, perpetrating inefficiencies in the public systems, enhancing corruption and bad governance (Radelet, 2006; Radelet et.al., 2004;

Djankov, et al., 2008; Moyo, 2009; Asongu, 2012). These writers view foreign aid as an evil in itself as it destroys the same factors such as quality of institutions that are meant to enhance its potency in stimulating growth. Nevertheless, these findings and conclusions are far from being unanimous. For example, Akramov (2006) and Menard and Weill (2016) do not to support the assertion that foreign aid is counterproductive to the quality of institutions and governance.

3.2.3 Chapter Summary and Conclusion

Despite variations in the focus of the various studies, it is clear that enhanced potency of foreign aid is a joint effort by the donors and recipients. While donors are expected to align foreign aid disbursements with growth and development financing gaps in the recipient economies, respective recipient governments should ensure efficient and effective use of the aid. Diversions from one or both principles compromise the effectiveness of foreign aid in achieving its development objective. However, despite seemingly exhaustive research in this regard, very little has been done in assessing how the extent to which the received foreign aid closes the growth and development financing gaps influences its growth enhancing objectives. Therefore, this thesis contends for the possibility of aid beneficiary economies to remain financially constrained for growth enhancing investments amidst foreign aid inflows. The thesis assumes that foreign aid receipts below (above) what is required to effectively close growth and development financing gaps equally constrains its effective utilisation just as is the case with poor policies and bad governance for instance.

Depending on the focus of the study, different methodologies have been adopted in the analysis of the foreign aid-growth relationship and different conclusions have been drawn as highlighted above. To a large extent, most of the differences in the conclusions drawn at the macro level are influenced by how foreign aid is defined in a study (Easterly, 2003). Furthermore, while most studies reviewed centre on the gap models in believing that foreign aid is meant to augment domestic resources for the required investments, their conclusions are largely influenced by their methodology and specifically, on their regression specifications (Tan, 2006; Lensik and White, 2000b; Hansen and Tarp, 2001). Pertinent differences are observed in the treatment of foreign aid endogeneity and hence, the choice of its instruments. Foreign aid is assumed to be endogenous in some studies such as by Gomanee et al (2005), Moreira (2005) and Clemens et al (2011). However, it is exogenously determined in some studies for example by Boone (1996), Faye & Niehaus (2012) and Quian (2014) that political and strategic interests of the donors are more important in determining the direction of foreign aid.

Due to this lack of consensus, caution should be taken about factors that influence the performance of foreign aid including policies, institutional and human resource capacities and governance in the recipient economies. The above discussion shows that there is no consensus on the relationship between foreign aid and specific factors such as policies and governance in different studies. For example, while Burnside and Dollar (2000) concluded that foreign aid will only be effective if complemented by good policies, Hansen and Tarp (2001; 2008), Lensik and White (2000b) and Chuvet and Guillaumont (2003) concluded otherwise. Similarly, the assertion by Alesina and Dollar (1998), Djankov et al. (2008), Busse and Gröning (2009) and Asongu (2012) that foreign aid breeds corruption, bureaucratic failures and poor institutions is not supported by Akramov (2006) as well as Menard and Weill (2016).

CHAPTER 4: EXTERNAL FINANCING AND GROWTH IN THE COMMON MARKET FOR EAST AND SOUTHERN AFRICA

4.1 Introduction

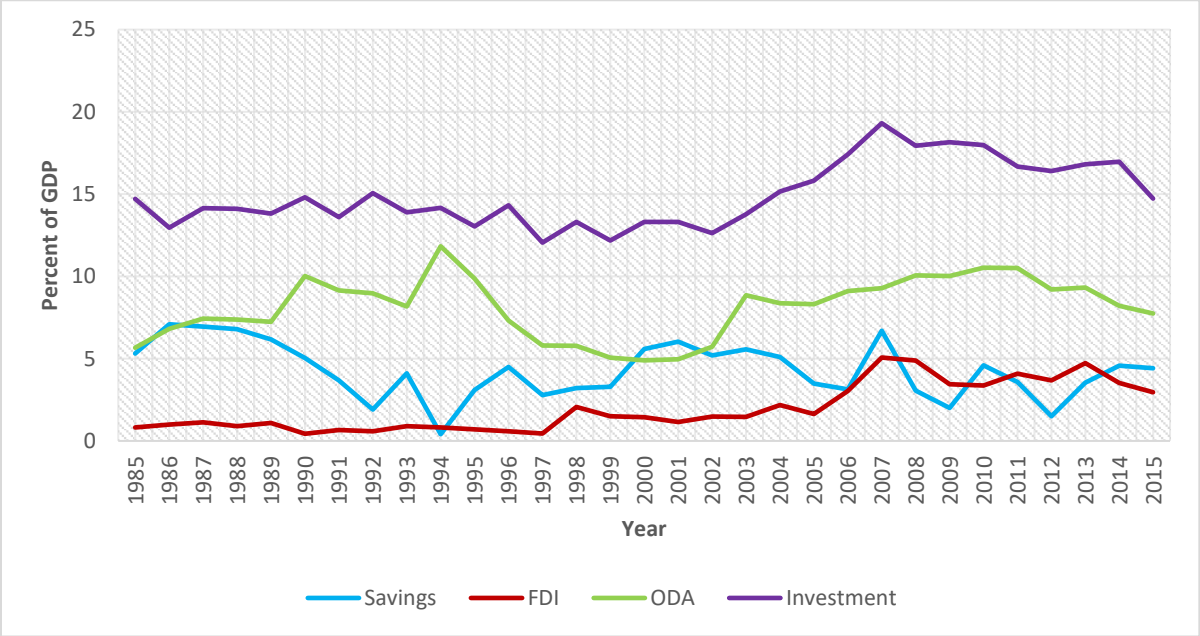
To achieve better outcomes from foreign capital[15], the gap theory emphasizes the need for enhanced human skills, relevant and efficient institutions and supportive economic infrastructure to enhance viable synergies between and among sectors (Bacha, 1990). Theory emphasizes capital accumulation in setting the pace for growth and acknowledges that a balanced growth process which partly entails simultaneous growth of complementing sectors remains imperative for sustainable and inclusive growth as it allows for efficient exploitation of a country's comparative advantage through effective rationalization of its factors of production (Rosestein-Rodan, 1961; Chenery and Strout, 1966; Bacha, 1990; Parr, 2001). In their initial development stages (mostly in the late 1950s and early 1960s, as Common Market for Eastern and Southern Africa (COMESA) countries gained independence), each country was expected to prioritize development of its core growth sectors without neglecting the important roles played by various sub-sectors in support of these key growth sectors and hence, overall growth of the economy. Equitable resource allocation to their respective core growth and supporting sectors was expected to unleash a balanced growth process to create an enabling solid base for a self-sustaining inclusive growth process. This would have effectively opened their markets and allowed for a gradual replacement of foreign aid with higher domestic savings and market-related inflows of foreign capital such as FDI (Rosentein-Rodan 1961; Chenery and Strout, 1966; and Cauas, 1973). However, foreign aid continues to be a principal source of development financing in the region as both FDI and savings have remained persistently low and hardly covering their current investment needs (Figure 4.1).

Against this backdrop, this chapter evaluates the extent to which foreign aid consistently closed the region's development financing gaps. This encompass an assessment of both sectoral aid allocations vis-à-vis growth as well as how foreign aid has been fairing against other sources of foreign capital over the last four decades. The chapter relies on trends analysis using Stata and excel which have been complemented by an Impulse Response Function (IRF) to explain the underlying patterns of the key variables. Consistent with theoretical predictions of foreign

[15] *Foreign capital in this study will refer to Official Development Assistance (ODA), Foreign Direct Investment (FDI) and Other Official Flows (OOF).*

aid as the main source of foreign capital during the initial stages of transitioning from underdevelopment onto a self-sustaining growth path, the chapter focuses on economic development financing gaps and growth patterns vis-a-vis foreign aid inflows. The hypothesis is that effective foreign aid is signified by a decline in its relative weight in total foreign capital inflows over time, and its volumes are consistent with the existing development financing gaps.

Figure 4. 1: Investment, Savings, FDI and ODA in COMESA, 1985-2015



Source: Authors calculations based on WDI and OECD database assessed on April 23, 2018

Note: This excludes Egypt, Libya, Mauritius and Seychelles whose savings rates have been at least 20% on average

The rest of the chapter is organized as follows: the next section provides theoretical foundations of foreign aid as it relates to the key aspects of focus; Section 3 provides the methodology and data sources; Section 4 highlights the relative weight of foreign aid in the region's total foreign development financing inflows. Having established in Section 4 that foreign aid is currently the only key source of foreign capital in most COMESA countries, Section 5 evaluates the extent to which foreign aid fills the growth and development resource gaps in the region. Cognizant of the heterogeneity of sectors in influencing growth outcomes, Section 6 evaluates how prioritization of foreign aid supported the region's growth. The emphasis is on whether the consistency of the volumes supported the growth of the key sectors and generated viable backward and forward linkages with other sub-sectors for a balanced growth process. Furthermore, the section also looks at which form of foreign aid (loans or grants) was more potent in this regard. Section 7 examines the impact of foreign aid on the overall economic growth of the countries focusing on whether its allocation was in tandem with the growth and development resource needs proxied by their growth rates. It also examines whether the current

growth outcomes are due to foreign aid the region has been receiving. Lastly, Section 8 concludes the study and analyses policy implications of the findings from the study.

4.2 Methodology

In assessing external financing in COMESA, the article relies on the statistical analysis of the trends, means, and variance of foreign aid, GDP, FDI, other official flows and Savings of COMESA from 1985 to 2015 in Stata and excel. This is complemented by an Impulse Response Function (IRF) (Appendix 4.1) which provides insights on how growth in the region responds to changes in foreign aid in the specific sectors over time. Cognizant of the inconsistencies in the foreign aid-growth literature because of foreign aid's endogeneity, the IRF is chosen as its estimation is done in a Panel Vector Autoregressive (PVAR) framework that fully accounts for endogenous variables for consistent estimates. By holding effects of all other variables in the model constant, an IRF gives a unique response path of growth to the changes of the individual sectoral foreign aid considered. Accordingly, the estimated PVAR in this study is specified as:

$$X_{it} = \beta_0 + \beta_1 X_{i,t-1} + \alpha_i + \varepsilon_{it} \quad (2.1)$$

where Y_{it} is a four-variable vector: lngdp, lngbs, lnprodn, lnsocial. gbs is the foreign aid to the region through the General Budget Support (GBS), prodn is the total foreign aid to the production sectors and social represents total foreign aid to the social sectors. As consistency of the IRF requires stability of its estimated model, the eigenvalue stability test is provided in Appendix 4.4.2

4.3 Data Description and Sources

A panel for all COMESA member countries was constructed for the years 1985 to 2015. The variables of interest were Foreign aid (ODA), FDI, OOF, Savings and GDP as described in the table below.

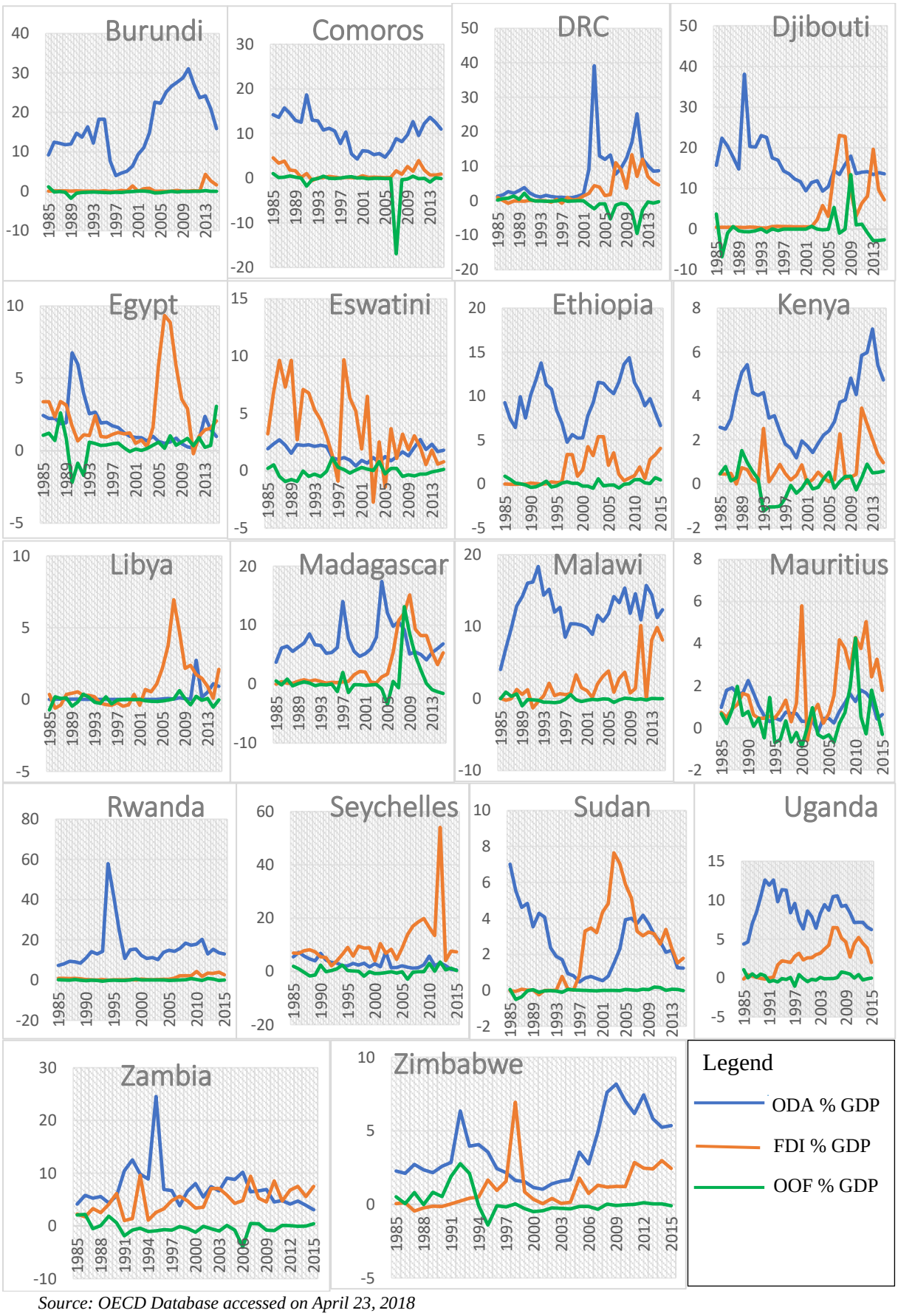
Table 4. 1 : Data Description and Sources

Variable	Description	Data Source
Foreign Aid	Foreign aid as defined by the OECD-DAC (Chapter 1) was disaggregated into sectors. The sectors of interest were the Social (education and health), production (agriculture and manufacturing), Economic Infrastructure, General Budget Support and humanitarian foreign aid	OECD database: https://stats.oecd.org/qwids
GDP	Gross Domestic Product	World Development Indicators (WDI): http://databank.worldbank.org/data/home.aspx UNCTAD database and the AfDB Socio-Economic database
FDI	Covered net inflows of Foreign Direct Investments as a percentage of GDP	World Development Indicators: http://databank.worldbank.org/data/home.aspx and UNCTAD database: https://unctadstat.unctad.org
OOF	Other Official Flows as defined by OECD-DAC	OECD database: https://stats.oecd.org/qwids
Savings	Gross domestic savings	WDI and the African Development Bank (AfDB) socio-economic database (http://dataportal.opendataforafrica.org/).

4.4 External financing in COMESA

Although the sources of external financing for growth and development are broad including FDI and remittances, at the onset, most of these sources are very negligible relative to GDP of COMESA member countries. In this regard, this chapter focused on ODA, FDI and other official flows as defined by Development Assistance Committee (DAC) and are jointly referred to as foreign capital (footnote 15). While their importance in augmenting domestic resources for growth is acknowledged by both practitioners and policy makers, the respective roles of these distinct foreign capital sources during the various stages of development varies greatly.

Figure 4. 2: ODA, FDI and OOF in COMESA (1985-2015)



Source: OECD Database accessed on April 23, 2018

Generally, foreign aid should be used as a temporal gap filler in the quest for growth and development, while FDI and domestic savings should be sought both in the underdeveloped state and post foreign aid periods. This is based on the understanding that foreign aid receipts in the initial stages of development are prioritized to lay an effective foundation for self-sustaining and inclusive growth. Thus, over time, other sources of foreign capital are expected to be more prominent in augmenting domestic savings in sustaining the desired growth levels attained or to achieve even higher levels. On the contrary, COMESA circumstances have defied these expectations as foreign aid has remained a predominant source of foreign financing, with other official flows being negligible (Figure 4.2).

Except for Seychelles, COMESA countries have not been able to attract substantial volumes of FDI since 2004 (Figure 4.2). On average, FDI to most countries in the region has been less than 2% of GDP and barely reaching 5% of GDP in others. Specifically, FDI to Burundi, Comoros, the Democratic Republic of the Congo (DRC), Kenya, Malawi, Rwanda and Zimbabwe has been less than 2% of their GDPs on average over the last four-decades. On the other hand, FDI to Egypt, Ethiopia, Madagascar, Sudan, Swaziland and Zambia has been between 2.5% and 5% of their GDPs. Only Seychelles has had FDI averaging about 15% of GDP since 2001 with the highest at 54% of GDP in 2012, notably much higher than its total foreign aid inflows of about 2.1% of GDP on average during the same period.

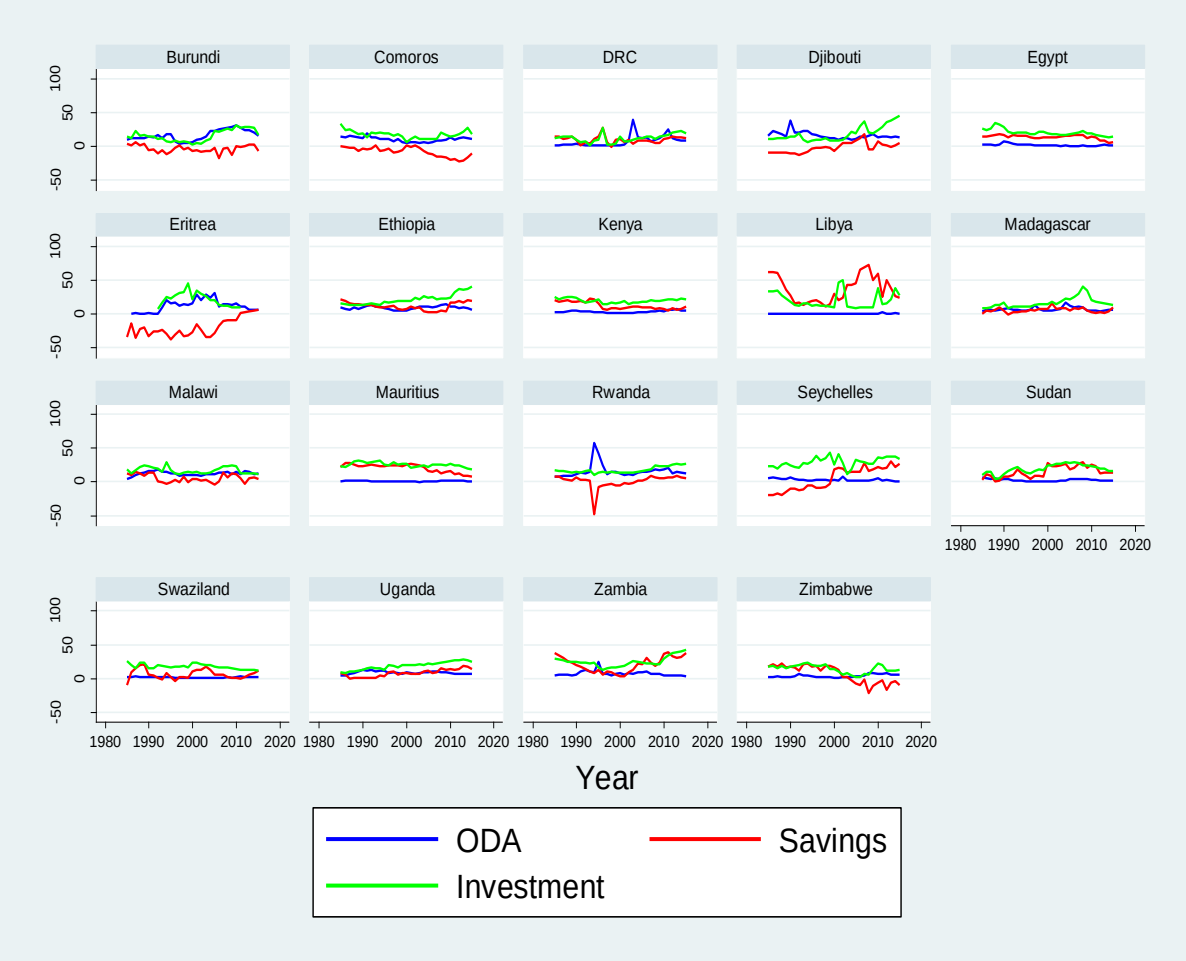
Overall, the figure shows sustained and increasing volumes of foreign aid to these countries relative to sluggish FDI growth for over four decades. In this regard, understanding salient common factors that affect the two sources of foreign capital remains imperative for enhancing the potency of foreign aid in the region increasing FDI inflows. Apart from consistency of foreign aid volumes, its potency in achieving its development objectives largely depends on where and what it is used for (Boone 1996, Rajan and Subramanian 2011). Among other things, this calls for a good balance in aligning foreign aid flows with institutional and human capacities for its effective utilization. Rajan and Subramanian (2011) argued that injecting development foreign aid to LDCs over and above what they need to close their development financing gaps or can effectively utilize, is potentially damaging to the institutions and governance of the recipient economies. Reckoning that these are key in determining both foreign aid effectiveness (Burnside and Dollar, 2000) and the direction of FDI inflows (Alesina and Dollar, 1998; Alesina and Weder 2002; Faye and Niehaus, 2012), foreign aid, if not properly matched to the development financing gaps of the recipient economy, has the potential

to deter FDI inflows *inter alia*. Instead of enhancing economic growth in LDCs, foreign aid perpetuates foreign aid dependency and underdevelopment by effectively compromising their chances of relying on functional markets for foreign capital to enhance growth or to sustain the attained growth levels (see Boone, 1996; Easterly 2003 and Moyo, 2009). However, both ODA and FDI have been very low in some countries such as Egypt, Mauritius, Libya, Sudan and Swaziland. It will therefore be misleading to make this conclusion without further analysis on the impact of foreign aid on FDI in COMESA (see Karakaplan et.al 2005:21).

4.5 ODA and development financing gaps in COMESA

The importance of foreign capital to COMESA member states cannot be overemphasized as their savings rates are below what is required for their current levels of investments (figure 4.3) and let alone, to achieve higher GDP growth levels of at least 7% to achieve SDGs (SDG 8). While foreign aid is the main source of foreign capital in most COMESA countries, it is evident from the previous section (Figure 4.2) that it has been the most prominent source of development finance in only 5 of the COMESA countries (Burundi, Comoros, DRC, Djibouti, Malawi and Rwanda) over the last four decades. The rest of the countries saved more than what they received in foreign aid albeit at low levels excluding Libya, Mauritius, Egypt and Zambia. Libya registered an average savings of about 57% of GDP between 2003 and 2010 before dropping to approximately 23% of GDP between 2011 and 2015 (Figure 4.3). Mauritius has maintained positive but diminishing savings trend throughout the period with the highest average of 25% of GDP over the period 2003-2010 and the lowest average of 9.8% over the period 2011-2015. Egypt and Sudan registered an average saving of 15% and 21.5% of GDP, respectively, since 2000. Similarly, Zambia has been saving about 29% of its GDP since 2004 notably as ODA steadily declined while FDI was rising. Relatively low savings rates varying between 0.8% and 8.8% on average are noted for Zimbabwe, Djibouti, Malawi, Rwanda, Swaziland, Madagascar and Kenya. The average saving rates varied between 10% and 18% for Ethiopia, Seychelles, Sudan and Uganda. Some countries, notably Burundi and Comoros have been spending more than they could save as reflected by their average negative savings rates of -4% and -10.5% of GDP, respectively, since 1995. In other words, these countries are deficit spending as they are not able to generate any savings because their general consumption rate is basically higher than what they could generate and save.

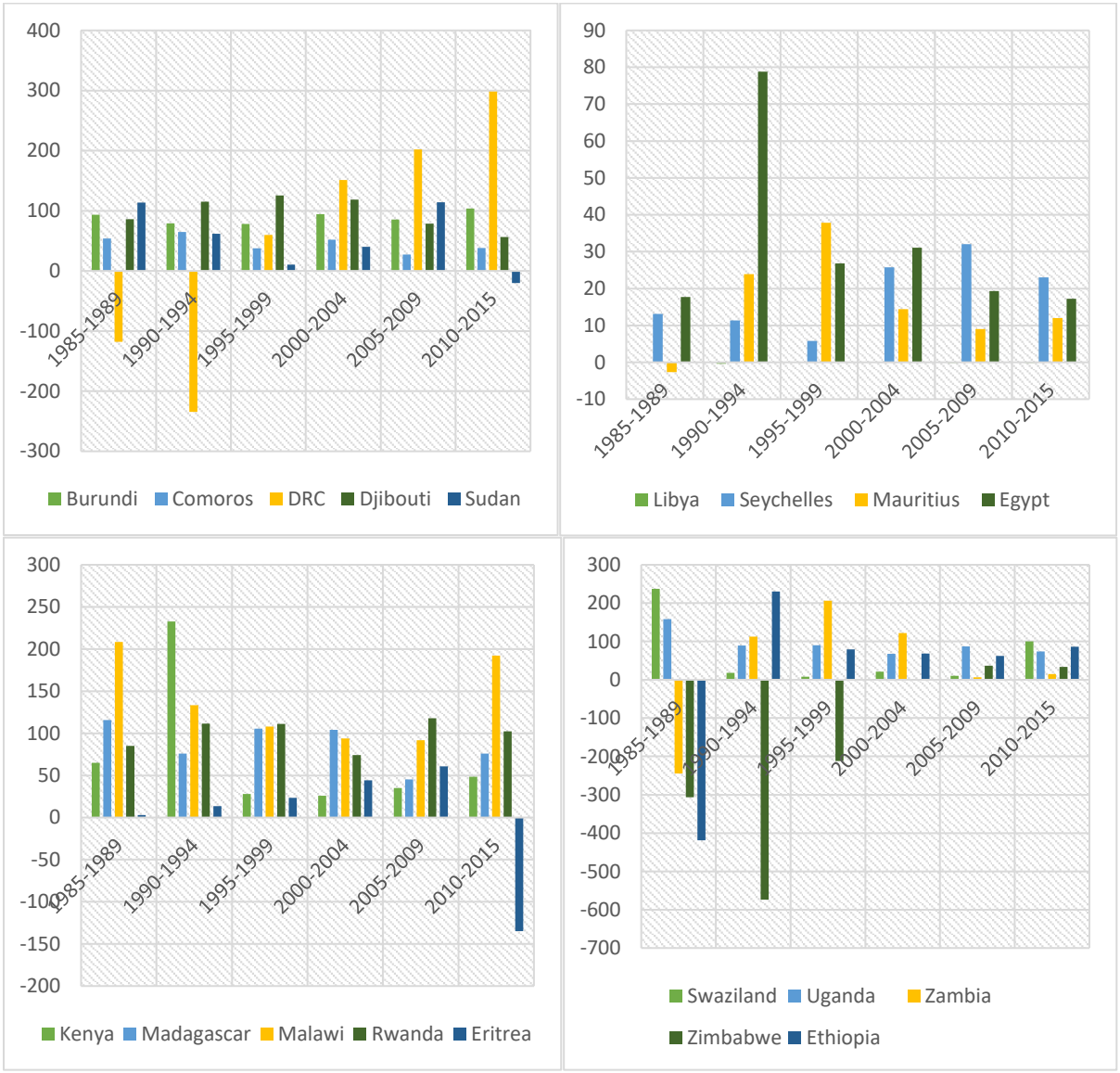
Figure 4. 3: Investments, Savings and ODA in COMESA (1985-2015)



Source: OECD Database and WDI accessed on 20th January 2018.

Low savings vis-à-vis investments in most of the COMESA countries suggest huge financing gaps to support growth-enhancing investment. In addition to sustained foreign aid inflows to the region for over three decades, Figure 4.4 further shows that the volume of foreign aid received in the region over the last four decades has been substantial covering an annual average of about 63% of its development financing gaps since 1990, at current growth rates. Except for Libya, Seychelles, Mauritius and Egypt, Figure 4.4 shows that foreign aid has been covering at least 60% of the financing gaps in COMESA countries with episodes of foreign aid over and above what was required to fully close their financing gaps at current growth rates. There are a few episodes (years) where substantial foreign aid inflows are observed in some periods for countries including Eritrea and Zimbabwe although their investment financing needs were fully covered by their respective domestic savings (Figure, 4.4). These trends imply that other factors other than the actual volumes of received foreign aid vis-à-vis development financing gaps account for its inefficiency in stimulating growth, *ceteris paribus*.

Figure 4. 4: ODA Received as Percentage of Development Financing Gaps: 5-year Aggregates (1985-2015 Current growth rates)



Source: Authors calculations from OECD Data and WDI, 2018.

Note: i) The development financing gap was simply calculated as the difference between gross capital formation (investment) and savings.

ii) Take note of the different scales on the embedded charts

ii) The negative values in the charts reflects years in which the respective countries had no financing gap (their investments were fully covered by domestic savings) but they still received Foreign aid beyond their current investment levels by the reflected negative value in absolute terms.

In line with the ODA growth and development objective, higher investment levels and possibly growth, would therefore be expected from most COMESA countries especially in years of more foreign aid than required to close their development financing gaps. On the contrary, Figure 4.3 shows years of more foreign aid and lower investments in some of these countries including the DRC (2002-2005; 2010 and 2011), Burundi from 1993 to 2010, Rwanda 1994 to 1999 and

Malawi between 2012 and 2015. Except for Malawi, 20 - 40% of the foreign aid to these countries was earmarked for humanitarian relief (Appendix 4.3) in those years and was not expected to translate directly into growth (Alesina and Dollar, 2000; Radelet et al., 2004 and Canavire-Bacarreza et al., 2005). In the case of Malawi, development foreign aid exceeded its investment levels in some years either reflecting the low quality of its institutions in supporting the effective utilization of its resources or simply failure to absorb foreign aid support. According to Msowoya (2013) and Mwanamanga (2015), foreign aid misallocation as a key consequent of poor quality of institutions in Malawi greatly undermines utilization and potency of foreign aid in stimulating growth.

On the one hand, Msowoya (2013) found foreign aid to be highly fungible in its core growth sector (agriculture) as the government substituted its agricultural financing with foreign aid with the fungible resources funding non-growth enhancing activities. On the other hand, Mwanamanga (2015) found that government consumption expenditure increases with foreign aid entailing that a good proportion of the development foreign aid that Malawi receives does not end up being productively invested as potentially reflected by the lower investment levels vis-à-vis foreign aid receipts in Figure 4.3. Overall, while higher foreign aid inflows vis-à-vis investment levels in Burundi, the DRC and Rwanda in the highlighted years clearly suggest that foreign aid inflows were not necessarily to support their growth, foreign aid to Malawi was potentially disbursed in line with its growth enhancing purpose but its efficiency was chocked by poor institutions and/or policies (Msowoya, 2013; Mwanamanga, 2015).

Figure 4.3 further shows consistently higher savings rates vis-à-vis current investment levels and ODA inflows in Libya. Equal savings and investment levels are observed in Mauritius, Madagascar, Egypt and Kenya in some years. While this partly signifies the potential of some COMESA countries in building a sustainable base for inclusive and sustainable growth from own resources, it equally reflects that foreign aid inflows to these countries during these years did not effectively contribute to productive investments in the respective countries. In the Malawian case, foreign aid in the respective years potentially financed non-growth enhancing government consumption. Furthermore, growth enhancing effects of increased public consumption through humanitarian assistance as in the case of Rwanda and Burundi remains contested (Alesina and Dollar, 2000; Radelet et al., 2004). While the case of foreign aid funding government consumption potentially reflects weak domestic institutions in the recipient countries, it is also possibly an effect of ODA inflows that were too low in relation to the

existing development financing gaps in the following countries (Libya less than 1% in all the periods and an average of 1.2% in Mauritius, 4,5% in Egypt, 6.9 for 5 period except the 1990-1994 in Kenya) for tangible benefits/investments. Lastly, with equal ODA and investment levels, Figure 4.3 highlights potential foreign aid fungibility in countries such as Comoros, Zimbabwe, Uganda and Swaziland. Specifically, following the theoretical disposition of aid augmenting domestic resources for growth, zero government investment financing contribution in the respective periods entails that foreign aid was useful in freeing up domestic financing for other relevant public (government) consumption. Depending on the relevance of such expenditure lines to their growth objectives, the fungible resources could be significant or redundant in enhancing their overall growth.

In sum, Figure 4.3 and Figure 4.4 show that despite visible development financing gaps in most countries in COMESA, there is some level of unwarranted foreign aid dependency in some countries in the region as either their current growth levels are essentially without foreign aid or their net investments did not increase with the full amount of foreign aid received. This also shows that without chocking foreign aid with weak domestic institutions and policies for example, higher levels of investments and growth, could have been attained with the current levels of savings and foreign aid. For instance, holding all other factors such as corruption and absorption capacity constant, more foreign aid to countries like Egypt, Libya, Mauritius and Kenya could have potentially increased their investments and growth levels. Furthermore, with foreign aid over and above the development financing gap, Figure 4.4 indicates poor development financing needs assessment by the donors and/or that foreign aid to some countries in the region is largely driven by political and strategic interests of the donors. Concurrently, assessing it with Appendix 4.3, it shows that not all foreign aid in the region is intended to enhance growth as most of it to countries such as Sudan, Zimbabwe, Burundi, Eritrea, Ethiopia and DRC was disbursed for humanitarian relief.

4.6 Sectoral Allocations and Economic Growth

Ideally, economic growth is driven by productivity of the production and service sectors which are broadly categorized into (i) primary sectors which are essentially concerned with the extraction of raw materials and production of food and these broadly encompass agriculture and mining; (ii) secondary sectors which are mostly the manufacturing whose key role is to transform the raw materials from the primary sectors into high value added products; and (iii) tertiary (service) sectors whose main role is to provide tangible services including banking and tourism. Accordingly, the nature of growth and development of the primary sectors has a direct

bearing on the subsequent growth and development of the secondary and service sectors as they all depend on the primary sectors for food and most importantly raw materials and labour (Lewis, 1952). However, this only remains effective with viable markets, reliable energy and transportation services as well as with higher productivity of labour which is largely a function of functional education and health sectors. In other words, vibrant support sectors (social and economic) are required for higher productivity of the primary and secondary sectors such that overall, sustainable and inclusive growth and development depends on the effectiveness of the distinct roles played by both the key and sub-sectors in the economy (Odusanya et.al., 2011).

In this regard, theory postulates good balance in resource allocation while ensuring viable synergies among various sectors for an inclusive and self-sustaining growth process (Rostow, 1959, Rosenstein-Rodan, 1961). This should be guided by both the role played by the sector in the growth process and its development financing gaps. Potentially guided by these factors, foreign aid in COMESA is largely skewed towards the social sectors accounting for an annual average of 37.4% and followed by humanitarian and economic infrastructure at 16.4% and 12% on average respectively. Production sectors and general Budget Support (GBS)[16] have each been getting an average of about 7% since 2002 (Appendix 4.1). Notwithstanding the sector's relative role in growth and financing gaps, empirical evidence postulates utilization of foreign aid by the recipient economy as a key variable for its effectiveness (Burnside and Dollar, 2000; Boone 1996; Ojong et. al,. 2017). An annual average of about 28% of the foreign aid in the social sectors was being utilized for government and civil society consumption which however declined to an annual average of 17.1% from 2011 as population and reproductive health programmes gained prominence in the allocations with an average of 27.5%. This is currently being trailed by health and education foreign aid expenditure at an average of 24% and 23% respectively which focuses on consumptions and not productive investments (Appendix 4.2).

Similar trends in most COMESA countries quantifies the above trends as the most plausible representation of the region's aggregate sectoral allocations without outlier biases. In most countries including Comoros, Djibouti, Eritrea, Kenya, Malawi, Rwanda and Swaziland, more than 50% of their foreign aid was allocated to the social sector (Figure 4.5) particularly education, health or general government budget support, humanitarian support, government and civil society sub-sectors. In the latter sub-sector, it is generally contended that resources are

16 These are foreign aid resources that are not earmarked for any specific sector or projects and their allocations depend on the priorities of the recipient government.

largely used in funding government or civil society consumption (Chauvet and Guillaumont, 2003). From the disbursement trends, this chapter observes that even in the education and health sectors, less than 10% of the foreign aid was invested in education and/or health facilities and training. For instance, in Comoros, the education sub-sector was getting more than 50% annually on average of the social sector foreign aid allocation between 2002 and 2010 and yet only about 5% was invested into education facilities and training. Similar trends are observed for Djibouti and Burundi where the resources to the leading social sub-sector generally funds recurrent transactions other than fixed investments.[17]

Only Seychelles and Egypt prioritized economic infrastructure and production sectors, respectively. Until 2009, Seychelles foreign aid disbursements were evenly balanced between production and social sectors, respectively receiving approximately 34% and 36% of its foreign aid. Allocation to the economic infrastructure increased from 0.1% in 2010 to about 23% in 2011 and remained on the rise. In contrast, there was a decline in the production sector from 5% in 2010 to 0.36% in 2012 and continued volatility in the social sector foreign aid allocations (Figure 4.5). Consistent with foreign aid disbursements to the production sector, manufacturing value added steadily grew to 16.4% of GDP by 2003 but fell sharply to 7.7% in 2004 before slightly improving in 2005 to 8.7%. Manufacturing has since continued to grow sluggishly as foreign aid allocation to the sector also faltered[18]. While it is tempting to link the performance of the manufacturing sector to foreign aid inflows which was seemingly balanced across the key sectors, this did not eventually translate to the overall growth of the economy. The country's GDP growth has been so erratic with some years of negative growth rates and some years as high as 10% which do not seem to be in tandem with foreign aid inflows. Seychelles was highly indebted during the period under review, hence its mixed fortunes.

From 2007 until 2012, about 40% of the foreign aid to Egypt was used in the economic infrastructure sector. Allocation to the production sectors increased from 9% of total foreign aid receipts in 2011 to 22% in 2012. Subsequently, allocations to the economic infrastructure and social sectors fell sharply from about 49% and 17% in 2012 to 9% and 6% in 2013, respectively (Figure 4.5). During the same period, humanitarian aid increased sharply from USD 0.63 million in 2011 to USD 26.92 million in 2012 while allocations to cross cutting factors such as gender, picked from USD 78.5 million in 2012 to USD 552.7 million in 2013

17 Authors Calculations based WDI 2018.

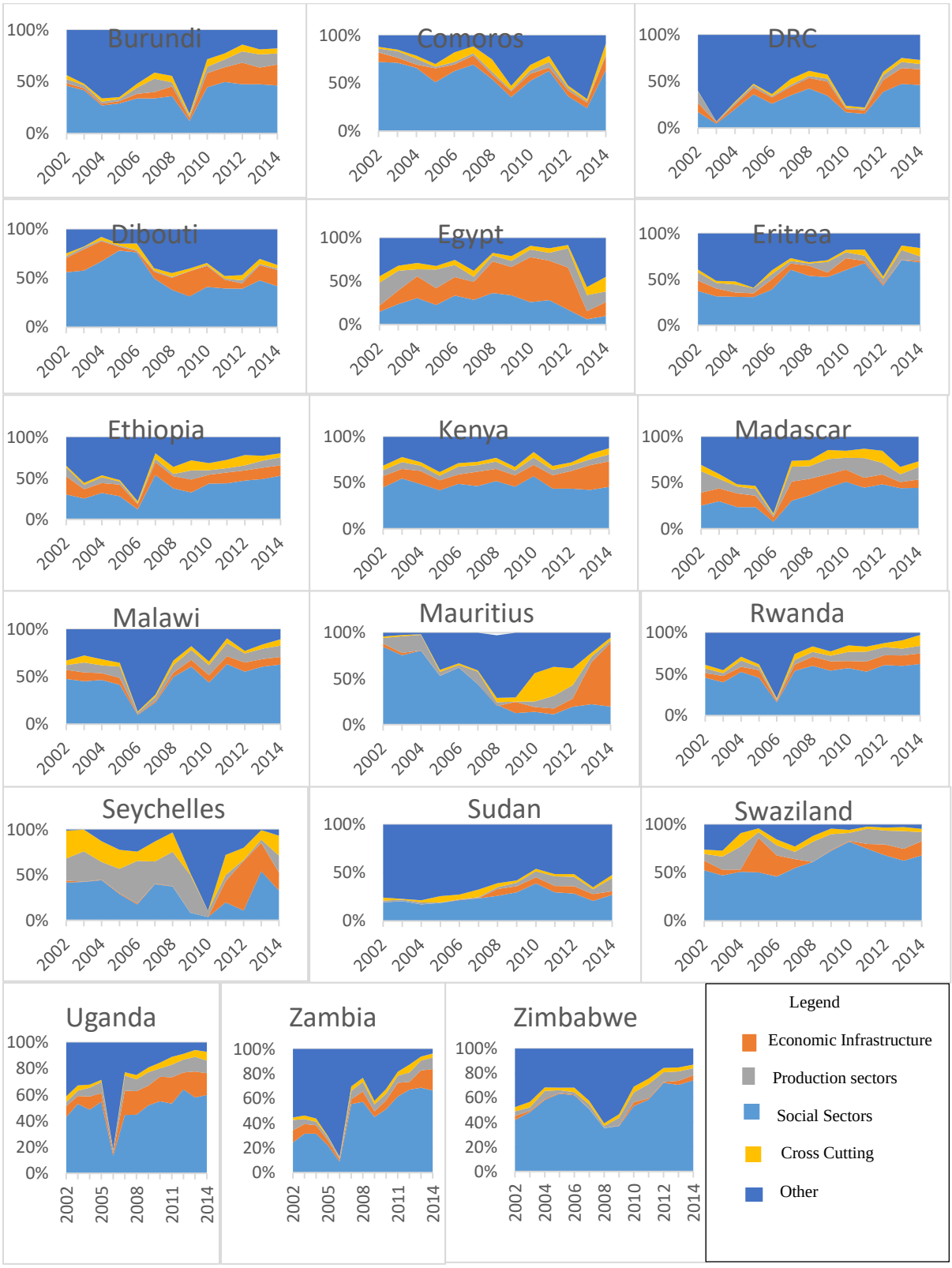
18 Author's calculations based on WDI 2018.

(OECD database, 2018). Despite the prioritization of foreign aid allocation to economic infrastructure and production sectors during the period 2007-2013, the growth of these sectors remained stable and did not significantly change compared with the years during which these sectors were not being prioritized. It is also evident that relative to economic size, foreign aid to Egypt is not significant even when measured against contribution to GDP of the priority sectors. This is consistent with the empirical findings of Emara et al. (2013) who found that low levels of foreign aid to Egypt (about 3.3% of GDP on average) had insignificant impact on the growth of its sectors and on overall GDP.

Apart from being one of the countries in the region that has been receiving the lowest amount of foreign aid at an average of about 3.3% of its GDP since 1995, the concessional loan component to Egypt has been steadily increasing since 2007 from about 15% of its total foreign aid receipts to 74% in 2015[19]. During this period, the allocation to the economic infrastructure sector also steadily increased from about 20% in 2007 to 51% in 2010 before dropping sharply to about 10% in 2015. Similar trends have been observed for Mauritius whose share of foreign aid to economic infrastructure started to increase while its general government budget support significantly shrunk (Figure 4.5). During this period, its concessionary loan component remarkably increased from 19% of its total foreign aid to 55.8% in 2015.

[19] *Author's calculations based on OECD database, 2018.*

Figure 4. 5: ODA disbursement to COMESA by country and sector (2002-2014)



Source: OECD Database for ODA accessed on 10 December 2017
Note: Humanitarian aid and / or General Budget Support cover more than 65% of the other

In line with foreign aid fungibility concept, the trend in Egypt indicates that the bigger the loan component in foreign aid, the higher the motivation for viable investment in the core growth

sectors. However, Seychelles presents contrary trends, with approximately 91% of its foreign aid resources being grants, most of it has been funding projects in the economic infrastructure and production sectors since 2010. This is also in contrast to the grant usage trends in other COMESA countries. Accounting for more than 80% of their respective total foreign aid receipts, grants are mostly spent on general government budget support or humanitarian support. As such, while loans might motivate efficient foreign aid utilization as they are programme specific, foreign aid fungibility (not using foreign aid for its intended usage by donors) incidences are likely to be higher with grants, particularly if received through general government budget support. Nevertheless, loans might also be prone to abuse if the country's checks and balances (governance and policies) are weak as highlighted by Burnside and Dollar (2000).

Table 4. 2: Volatility of foreign aid received by country (1985-2015)

Country	Variance of Foreign aid
Burundi	61.22
Comoros	13.38
DRC	70.77
Djibouti	30.79
Egypt	2.24
Ethiopia	6.72
Kenya	2.34
Libya	0.29
Madagascar	8.90
Malawi	9.01
Mauritius	0.39
Rwanda	100.46
Seychelles	3.63
Sudan	2.92
Swaziland	0.41
Uganda	4.57
Zambia	15.53
Zimbabwe	4.60
Regional total	45.71

Source: Authors Calculation based on OECD Database

Through the five pillars[20] of the Paris Declaration on foreign aid effectiveness, both developing and developed countries resolved to ensure that there is efficiency in the allocation and utilization of foreign aid. Donors are committed to align their support to the development strategies and goals of the recipient countries. This could partly be achieved through direct support of the projects in the various sectors from the development strategies or through increased general government budget support allocation where the recipient country is expected to reallocate in accordance with its development needs. The latter leaves foreign aid highly fungible and prone to abuse by most recipient governments which might also be exacerbated by absorption capacity issues if not considered in the allocation (Moreira 2005; Rajan and Subramanian, 2011). However, through the managing for results pillar of the Paris Declaration, the use of foreign aid resources in unproductive investments is supposed to be reduced as among other things, it calls for results-oriented reporting and assessment frameworks for the foreign aid resource usage. While weak systems may have greatly affected implementation of such key initiatives and hence, effectiveness of foreign aid in the region, fragmentation and volatility of foreign aid (Table 1) could have potentially harmed its effective utilization. Effective planning on highly volatile resources is an impossible feat.

Overall, foreign aid allocation to the whole region is volatile and significantly skewed towards either the social sector or general government budget support/humanitarian support that falls into consumption and not investment category. Humanitarian foreign aid does not directly translate into sectoral growth but as established by literature, if the right components are funded, social sector allocations may also contribute significantly to the country's overall growth through improved technology and human skills. However, foreign aid to the social sectors in the region mostly funded consumption (remuneration in the education and health sectors) and very little was devoted to investments in infrastructure and developing human capacities (Figure 4.5). Consequently, in COMESA, funding particular components in the social sector could still be critical for improving human capital to effectively enhance the performance of the lead productive sub-sectors and hence, overall growth of the economy. However, this assumes that human capacities are major development constraints in the region, which clearly is not the case as overall, social sector prioritization does not seem to support the region's growth. The Impulse Response Function (IRF) in Appendix 4.4 shows that a unit increase of ODA in the sector has a marginal and unsustainable positive increase in growth lasting only one period before causing

[20] *Pillars of the Paris Declaration: Ownership, Alignment, Harmonisation, Managing for results, Mutual accountability.*

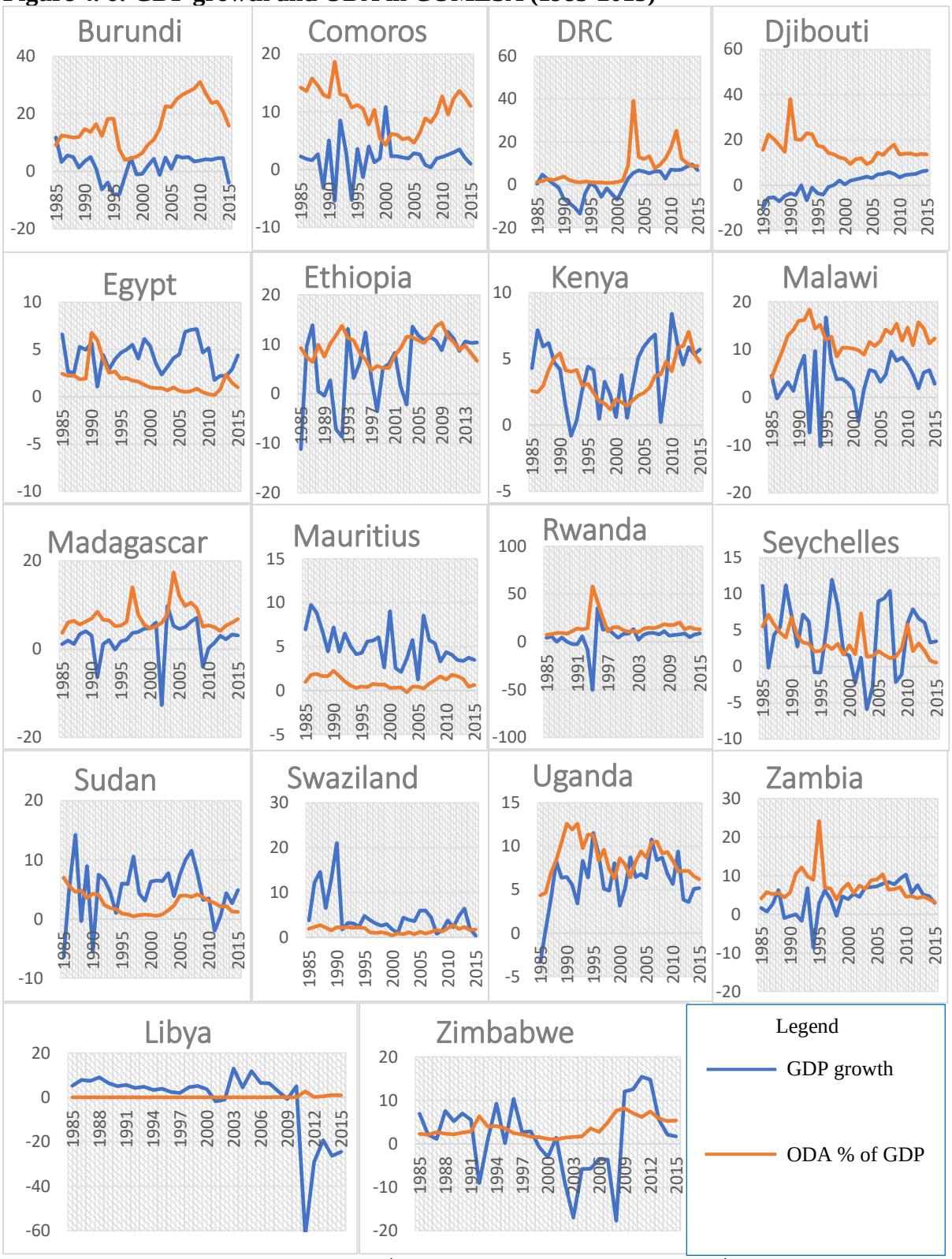
a negative decreasing trend for the next three periods. A similar trend is observed for GBS while allocations to the production sectors have a sustainable positive impact on the region's growth (Appendix 4.4).

4.7 Foreign aid and economic growth Trends

Over the last three decades, most of the economies in COMESA have remained relatively small with erratic growth rates averaging 3.8% (Appendix 1.1A). While episodes of negative growth rates were evident in some countries in the 1990s and early 2000s, all countries in COMESA (with the exception Zimbabwe) have been consistently registering positive albeit sluggish growth rates since 2005. It should be noted however that countries with similar growth rate patterns in the region have attracted foreign aid at different rates and volumes. For example, with GDP growing at an average of 3.8%, ODA to Burundi was approximately 30% of its GDP and for similar growth rate, Malawi and Rwanda received foreign aid approximately equal to 22% of their GDP while Kenya received an equivalent of 6% of its GDP for the same growth rates. This partly suggests that Kenya faced a lower development financing gap or that it is more efficient in its development resource utilization compared to the other countries. This also potentially shows the enormous potential that COMESA countries have in raising their own domestic resources for growth.

While recognizing heterogeneity in their resource base and hence resource gaps, COMESA as an economic community has provided member countries with an opportunity to effectively exploit their comparative advantage and grow without overdependence on foreign aid. In effect, it is not just about how much they receive in foreign aid, but their respective efforts in raising domestic savings and ensuring that together, these resources are efficiently deployed. Countries that have been receiving more foreign aid typically had low savings and no motivation to augment them with external capital inflows from competitive markets (Figure 4.3). Coupled with volatile foreign aid inflows, most of these countries have remained in their underdeveloped state. Only a few countries in the region including Seychelles, Mauritius, Egypt and Libya succeeded in investing significantly in economic infrastructure and realized better growth rates with limited volumes of foreign aid.

Figure 4. 6: GDP growth and ODA in COMESA (1985-2015)



Source: OECD Database for ODA accessed on 10th December, 2017 and WDI accessed on 28th Dec, 2016

Note: Take note of the different scales for the respective embedded charts

From a development perspective, foreign aid is expected to be allocated to countries that really need it (Riddell, 2007). Consistency in foreign aid flows in tandem with development financing

gaps is expected to effectively meet the growth and development needs of the recipient countries. The evidence, based on GDP growth and foreign aid trends in COMESA shows that a completely different criterion is used to allocate foreign aid, with volatile volumes and notably more foreign aid directed to countries that are already relatively better off in terms of their saving rates and economic growth. Further, higher foreign aid volumes were disbursed to countries in an economic boom and significantly decreased during economic slumps. This is particularly the case for Burundi, Madagascar and Sudan. In exceptional cases, more foreign aid flowed during recessions in Seychelles and for some years to Zimbabwe. Also, notable contrasts are the very low foreign aid volumes to some countries with equally very low growth rates such as Madagascar (2.5% on average) while other countries such as Rwanda and Djibouti received higher volumes of foreign aid as they grew rapidly. Regardless of the criteria donors are using to determine the direction of foreign aid, there is likely to be little or no correlation between foreign aid and economic growth in a cross-country empirical study based on COMESA data as depicted in Figure 4.6. and appendix 1.1B.

The total volume of foreign aid to most countries in the region has continued to grow over the years. This is contrary to the theory that views foreign aid as a temporary solution meant to jumpstart underdeveloped countries onto a self-sustaining growth path (Rosenstein-Rodan, 1961). Except for DRC and Djibouti where foreign aid volumes have been steadily decreasing with economic growth, foreign aid has continued to grow in most countries regardless of the growth trends. In contrast, for Uganda and Zambia, foreign aid volumes have steadily declined since 2006 and 2004 respectively, although economic growth has also been slowing down. This implies that the decline in foreign aid volumes to DRC and Djibouti may not have been due to improvements in economic performance, but rather some other dynamics. Therefore, as equally established in Section 5, it can be concluded that economic financing gaps were not the only criterion in foreign disbursement to the region by foreign donors.

Furthermore, the direct relationship between foreign aid and economic growth is relatively weak in most countries as trends analysis showed that an increase in foreign aid was not reciprocated by an increase in growth. A large component of humanitarian foreign aid in some countries (Appendix 4.3) crowds out the potential positive effect of foreign aid on growth as these are jointly assessed or it could be that foreign aid has been effective in stimulating growth but with a time lag (Moreira, 2005 and Bitew, 2014). Foreign aid could have been effective but with diminishing returns because of not being supported by relevant human skills and viable sectoral prioritization. While these relationships can be established econometrically, this

chapter offers insights into what could be obtained by a rigorous study. However, for some countries, growth remained erratic despite consistently increasing foreign aid. For example, Rajan and Subramanian (2011) found that foreign aid did not have any impact on economic growth. In the case of COMESA, except for Egypt, Libya, Mauritius and Seychelles, countries have been dependent on foreign aid for over four decades without substantial improvements in their growth and development outcomes.

4.8 Chapter Summary and Conclusion

This chapter assessed economic performance of COMESA members in relation to external financing receipts. It established that ODA remains a key source of foreign capital to the region except for a few countries, notably Seychelles and Swaziland, that have enjoyed relatively better FDI inflows. Furthermore, for countries such as Burundi, Comoros, Djibouti, Malawi and Rwanda, foreign aid is an indispensable source of financing for development as evidenced by their low savings rates relative to ODA. The paper indicated that on average, foreign aid has been covering at least 60% of the financing gaps in most COMESA countries with episodes of foreign aid over and above what was required to fully close their financing gaps at current growth rates. There are few years where substantial foreign aid inflows are observed for countries such as Eritrea and Zimbabwe although their investment financing needs were fully covered by their respective domestic savings. These trends typically imply that foreign aid ineffectiveness in the region is not a function of how much is received vis-à-vis development financing gaps but rather a function of factors that mostly compromise its utilisation.

Although foreign aid has failed to unlock the full potential of core growth sectors through viable investments in the sector and/or development of economic infrastructure and human capital, it continues to anchor the social sector particularly education, health, and humanitarian assistance directly or indirectly through general government budget support. Nevertheless, foreign aid in the social sector largely funds recurrent consumption, as less than 10% is invested in education and/or health facilities and training in most COMESA countries. Up to 17% of the total social sector allocation is streamlined for government and civil society consumption at the regional level. Therefore, foreign aid allocations to the sector are not effective in enhancing the region's growth (Appendix 4.4).

Failure by countries to productively invest foreign aid as reflected by either years of more foreign aid than investments or equal domestic savings and investment rates partly suggests that systemic domestic policy and institutional constraints have a bigger role to play than

development finance in influencing economic growth. It also indicates that the direction of foreign aid in the region is not a product of systematic assessment of the financing gaps as well as institutional and human capacities to effectively utilize the received foreign aid. In the current format of support to the region, foreign aid could be more effective if both COMESA governments and their respective development partners (donors) take full responsibility in addressing these relevant issues. This should include equitable prioritization of foreign aid within and across sectors vis-à-vis their distinctive roles and financing gaps in enhancing sustainable and inclusive growth by the respective governments. Donors can also address foreign aid volatility which cripples effective development planning.

While this process would entail gradual increases of subsequent foreign aid to some countries according to their financing gaps as well as institutional and human capacities to effectively utilize foreign aid receipts, gradual decreases of foreign aid to some countries in the region will inevitably ensue. Nevertheless, it is necessary to note that no amount of foreign aid can propel these countries into a higher-income group if a self-sustaining base for inclusive development is not established. As such, COMESA countries should deliberately put in place strategies and policies that encourage productivity-enhancing structural transformation through the strengthening of public institutions and capacity building in support of equitable resource allocation (both foreign aid and domestic resources) for inclusive and sustainable growth. Focus should remain on the countries' comparative advantages in ensuring rationalization of the existing and development of new industries, building human capital and upgrading the economic infrastructure including viable value chains. As emphasized by economic theory of foreign aid, these measures would further enhance effectiveness of subsequent foreign aid receipts and eventually break the countries' overreliance on foreign aid.

Lastly, the concept of foreign aid (ODA) as defined by the DAC, needs to be rethought to exclude humanitarian assistance in its development financing definition. This would be useful in improving the efficacy of foreign aid in the aid-growth empirical analysis especially for the countries where the proportion of humanitarian assistance in total ODA is high.

CHAPTER 5: FOREIGN AID AND ECONOMIC GROWTH IN COMESA

5.1 Introduction

The role of foreign aid in stimulating economic growth has been extensively analysed with polarised conclusions at the macro level. Pertinent issues discussed in empirical literature include: (i) Structural and institutional arrangements in the recipient economies whose focus for its effectiveness is on its utilisation. This strand postulates that optimal utilisation of the received foreign aid is the responsibility of the recipient economies. In this regard, domestic institutions and policies remain key in determining foreign aid effects on growth (Burnside and Dollar, 2000; Collier and Dehn, 2001; Alvi et. Al., 2008; Dreher et al., 2017). (ii) Determinants of foreign aid whose focus is largely on how they indirectly compromise the potency of Foreign aid in stimulating economic growth of the recipient countries. On the one hand, foreign aid is assumed to be a primary function of growth and development financing gaps in the recipient countries such that unless foreign aid is given and utilised in this regard, it remains trivia in stimulating growth (Gomanee et al., 2005; Moreira 2005 and Clemens et al., 2012). On the other hand, foreign aid is perceived as a primary function of the political and strategic interests of the donors (Boone, 1996; Qian, 2014). Although there is little evidence to support the assertion of a direct negative impact of such foreign aid on growth, vast literature points to its indirect negative effects on growth through increased unproductive public consumption, among other things (Moreira, 2005; Rajan and Subramanian, 2011).

Overall, regardless of the key focus of the study, the above two strands directly or indirectly converge on utilisation as the primary factor for enhanced (or lack of it) potency of the received foreign aid. This chapter contributes to the first strand, which directly emphasizes on optimal utilisation of the received foreign aid for enhanced growth outcomes. The chapter focuses on the aggregate impact of foreign aid to COMESA by controlling factors that potentially compromises the effective utilisation of such aid. Notably, the bloc has remained one of the key beneficiaries of foreign aid in Africa for over three decades. In most countries in the region, foreign aid has been at least 10% percent of their GDPs on average annually since 1985 (Figure 4.6). Burundi, Malawi, and Rwanda received foreign aid, which was more than 20% of their GDP in some years. Only a few countries, Mauritius and Egypt, received an annual average of less than 2% of their GDPs (Figure 4.6). In view of the theoretical disposition of foreign aid as a key temporal enabler of economic growth in developing countries, most countries in the region would have been on the path to graduate from the Least Developed Country (LDC) status

following decades of foreign aid. However, most economies have remained relatively small, barely attaining the stipulated Sustainable Development Goals (SDGs) minimum annual growth rate of 7% (Figure 4.6). Despite the fact that the vast literature on the role of foreign aid on economic growth, very little has been done to establish why foreign aid is not stimulating the desired growth outcomes in the region.

Khomba and Trew (2016) found that foreign aid does not stimulate sustained growth despite its positive impact on incomes in Malawi. Focusing on Ethiopia, Tadesse (2011), Bitew (2014), and Ejigu (2015) found that foreign aid has a positive effect on growth only in the long term. These results are similar to Odiambo's (2009), who also found that foreign aid has a positive effect on growth only in the long term in Kenya. Highlighting the relative effects of loans and grants, Morrisey et al. (2008) found that the relative positive effects of foreign aid on growth in Kenya were being weakened by the poor performance of the country's loans. While these and other studies for the region are essential for country-specific foreign aid policy inferencing, they lack the rigor to effectively inform relevant policies in pursuit of the collective regional objectives.

This chapter closes this gap by providing the first assessment of the aggregate impact of foreign aid on growth at the COMESA bloc level. To effectively contribute to the collective regional growth outcomes in this regard, the study contends for comparable growth outcomes from foreign aid in the respective member countries. Accordingly, the study adopts the hardly utilised Pooled Mean Group (PMG) estimator in the foreign aid-growth literature. The study diverts from the common trend of assessing total foreign aid impact by focusing on the relative effects of loans and grants on the region's growth. It also examines how the quality of institutions in the respective COMESA countries have been affecting utilisation of their total foreign aid. The chapter argues that while the quality of institutions and/or policies are empirically validated to determine the potency of total foreign aid, they potentially have differential effects on the respective foreign aid components (loans and grants) as the administration of the two components varies significantly within and across countries in the region. Notably, while some conditions for loans and grants qualifications are common, factors such as repayment obligations that only hold for loans are bound to influence their utilization in various ways.

The rest of the chapter is organised as follows: the next section provides the methodology, and Section 5.3 describes the data and provides data sources. Section 5.4 gives a thorough discussion of the results, and a chapter summary is given in Section 5.

5.2 Methodology

One of the most contentious issues in the foreign aid-growth dynamic panels is the treatment of foreign aid as an endogenous variable. This is complicated by the addition of the lagged dependent variable as a regressor as it is correlated to the error term (Hansern and Tarp, 2001:556). Relevant instrumental variable (IV) techniques such as the Allerano and Bond (AB) (1991) or Blundell-Bond (BB) (1998) and Generalised Methods of Moments (GMM) estimators have been adopted to address endogeneity in dynamic panels. The GMM estimator uses lagged values of foreign aid as instruments for handling its endogeneity. However, Clemens et al. (2012) and Roodman (2007) caution against over-reliance on such instruments due to the possibility of a correlation between such values with both past and current values of foreign aid. This results in a biased overall foreign aid coefficient. Furthermore, GMM estimators produce biased estimates in panels with long time periods or of similar magnitude with N as they constrain both short run and long coefficients to be homogenous (Pesaran et al., 1999). Easterly (2003) contends that most foreign aid-growth studies (including Burnside and Dollar, 2000) fail to establish the long-term effect of foreign aid on growth as their short-time dimension captures cyclical economic impacts.

Due to the homogenous assumption of both short-run (SR) and long-run (LR) parameters in these estimators, it is not possible to fully understand country-specific foreign aid-growth dynamics in the panel model. Therefore, it is impossible to draw country-specific policy inferences in the panel sample. If the focus of the analysis is to establish both short run and long-run effects of foreign aid on growth, it is imperative to explore other estimators such as the Pooled Mean Group (PMG) by Pesaran et al. (1999) that fully takes care of individual country heterogeneity by allowing variation in their short-run parameters and error variances while restricting their long-run coefficients to be homogenous. Though hardly exploited in the foreign aid-growth empirical literature, these estimators provide better estimates for dynamic panels with large T and thus a possibility of reliable long-term inferences in dynamic panels, unlike most estimators.

Nevertheless, only the IVs/GMMs are unanimously agreed to perform better than any other estimators in the presence of endogenous variables (Sisay, 2015) only for panels with short T and long N. As such, most estimators in the aid-growth dynamic panels might produce biased estimates if foreign aid is really endogenous. Despite different outcomes of the different macro foreign aid -growth studies with equally divergent views on the role of policies, institutions,

and governance, there is consensus on the choice of estimators for short and long T panel data sets. To establish both the short-run and long-run impact of foreign aid on growth in the region, the chapter opts for the rarely used Pooled Mean Group (PMG) estimator. Easterly (2003) and Clemens et. al. (2012) argue that this estimator takes care of the time dimension, which most cross-country studies such as the one by Burnside and Dollar (2000) failed to address.

5.2.1 Model Specification

The H-D growth model essentially presumes the economic growth rate as a function of the national savings rate and the capital-output ratio. In its basic form, it is written as:

$$g = \frac{s}{c} \tag{5.1}$$

Where g the real gross domestic product (GDP) growth rate, s is the national savings rate given as s = $\frac{S}{GDP}$ where S are the national savings and GDP is the real GDP as a proxy for national output; c is the capital-output ratio given as $c = \frac{\Delta K}{\Delta GDP} = \frac{K}{GDP}$ where ΔK is the change in capital stock, and ΔGDP is the change in GDP.

But the change in capital over time (ΔK) is given by the actual investment I such that in equilibrium it is equal to the savings rate

$$\Delta K = I = c\Delta GDP = S = sGDP \tag{5.2}$$

Thus, the more an economy can save and invest out of a given GDP, the more that economy grows at the rate determined by the productivity of the investment (c) (Todaro and Smith, 2012). As such, we can rewrite equation (5.1) as:

$$g = \frac{I}{GDP} * \frac{1}{c} \tag{5.3}$$

However, it should be noted that for most developing countries such as those in COMESA, equation (5.2) does not really hold as the domestic savings (S) are not enough to finance required investment and importation of the required capital goods and technology to enhance investment productivity for the desired economic growth rates. Hence the need for foreign capital to augment domestic savings (Easterly, 2003; Gomane et al., 2005). Thus, the investment component in equation (5.2) becomes:

$$\frac{I}{GDP} = \frac{S}{GDP} + \frac{FC}{GDP} \tag{5.4}$$

Where FC is the total foreign resources, including foreign direct investment (FDI), foreign aid (ODA), and other foreign inflows. Following Chenery and Strout (1966), Cauas (1973) and Bacha (1990) gap models, the study includes the other two constraints (the trade and fiscal/inflation gaps). These constraints limit economies from attaining the desired investment

levels for self-sustained growth such that substituting (5.4) into (5.3) and relaxing the abundant labour force assumption to account for the requisite growth-enhancing human skills, the long-run growth relationship in (1) becomes:

$g_{it} = \theta_{0i} + \theta_{1i}LG_{it} + \theta_{2i}\pi_{it} + \theta_{3i}G_{it} + \theta_{4i}ODA_{it} + \theta_{5i}FDI_{it} + \theta_{6i}S_{it} + \theta_{7i}X_{it} + \upsilon_{it}$ (5.5)

i= 1, 2, …, N; t=1, 2, ..., T

Where the number of countries i= 1, 2,…, N; the number of time periods t= 1,2, …, T; g is the natural log (ln) of the real GDP in United States Dollars (USD), π is the inflation rate, G is the ln of government consumption, ODA represents the ln of net foreign, S is the ln of the domestic savings, X is the ln of exports, ε_{it} is the idiosyncratic error term.

Unlike most studies such as Moreira (2005), who used total population growth to capture the growth of labor force, LG in this study is the log of the population within the 15 to 64 year age bracket to capture only the productive population. The addition of labour in the equation (5.5) relaxes the assumption of the abundant labour force in the Harrod-Domar model, where the availability and productivity of capital are the only constraints for economic growth. Following the gap models where exports are expected to grow faster than imports especially during the second phase of an economy's transition into self-sustaining growth, X will only capture exports and not terms of trade as is done in most studies that have used a similar model (see Hansen and Tarp, 2000). Among other things, this variable is expected to capture a country's ability to finance its development imports. It is also expected to capture how much it is taking advantage of its preferential trade including the Free Trade Area (FTA) within the block and other preferences beyond COMESA as it strives to reduce its trade gap (exports growth catching up with the growth of imports) through market interactions (Chenery and Strout, 1966:690). Government expenditure in (5.5) includes all public expenditures made in a fiscal year. To assess institutional effects on foreign aid utilization, equation (5.5) will be re-run after adding a foreign aid*corruption interactive variable. Furthermore, equation (5.5) will be re-run after using disaggregated foreign aid data based on type (loans and grants) to assess their respective impact on growth in the region.

Due to the inconsistencies in the foreign aid-growth relationship, it is not possible to determine the sign of θ_4 *a priori*. This is essentially in line with the H-D model, which states that unless the resources in an economy are productively invested, they can hardly stimulate growth. In the same regard, determining the sign of θ_6 *a priori* would be misleading unless the social-political environment, such as policies in an economy, are conducive for highly productive investments from savings. Literature shows that economies need to properly balance up their investments in

the various sectors and prioritise on their core growth sectors whilst ensuring good synergies across the sectors for any investment to have a meaningful impact on growth (Rosenstein-Rodan, 1961; Wang, 2015). Lastly, as postulated by the gap theory that inflation and government consumption are effective growth constraints only at higher levels where they potentially crowd-out private investments, the sign for θ_2 and θ_3 cannot be determined *a priori*. However, a positive sign is expected for θ_7 which, according to the gap theory, is a source of forex earnings for development imports.

5.2.2 The Pooled Mean Group (PMG) Estimation Technique

The PMG estimator remains among the best estimators in heterogeneous dynamic panels with a long-time dimension. With its weak homogeneity assumptions that allow for free variation in the SR parameters and error variances, it is possible to draw reliable country-specific policy inferences from the dynamic panel model without losing its focus on the long-term relationship of the variables of interest.

Assuming that all variables in equation (5.5) are I (1) and cointegrated such that the error term is an I (0) for all i, then the following Autoregressive Distributed Lag Model (ARDL) (1,1,1,1,1,1,1,1,1) holds for equation (5.5):

$$g_{it} = \mu_i + \lambda g_{it-1} + \beta_{10i} LG_{it} + \beta_{11i} LG_{it-1} + \beta_{20i}\pi_{it} + \beta_{21i}\pi_{it-1} + \beta_{30i} G_{it} + \beta_{31i} G_{it-1} + \beta_{40i} ODA_{it-1} + \beta_{41i} ODA_{it-2} + \beta_{50i} FDI_{it} + \beta_{51i} FDI_{it-1} + \beta_{60i} S_{it} + \beta_{61i} S_{it-1} + \beta_{70i} X_{it} + \beta_{71i} X_{it-1} + \varepsilon_{it} \quad (5.6)$$

Which can be parameterized into an Error Correction Model (ECM) as below

$$\Delta g_{it} = \Phi_i \left[g_{i,t-1} - \theta_{0i} - \theta_{1i} LG_{it} - \theta_{2i}\pi_{it} - \theta_{3i} G_{it} - \theta_{4i} ODA_{it} - \theta_{5i} FDI_{it} - \theta_{6i} S_{it} - \theta_{7i} X_{it} \right] - \beta_{11i}\Delta LG_{it} - \beta_{21i}\Delta\pi_{it} - \beta_{31i}\Delta G_{it} - \beta_{41i}\Delta ODA_{it} - \beta_{51i}\Delta FDI_{it} - \beta_{61i}\Delta S_{it} - \beta_{71i}\Delta X_{it} - \varepsilon_{it} \quad (5.7)$$

where: $\theta_{0i} = \frac{\mu_i}{1-\lambda}$; $\theta_{1i} = \frac{\beta_{10i}+\beta_{11i}}{1-\lambda}$; $\theta_{2i} = \frac{\beta_{20i}+\beta_{21i}}{1-\lambda}$; $\theta_{3i} = \frac{\beta_{30i}+\beta_{31i}}{1-\lambda}$; $\theta_{4i} = \frac{\beta_{40i}+\beta_{41i}}{1-\lambda}$

$\theta_{5i} = \frac{\beta_{50i}+\beta_{51i}}{1-\lambda}$; $\theta_{6i} = \frac{\beta_{60i}+\beta_{61i}}{1-\lambda}$; $\theta_{7i} = \frac{\beta_{70i}+\beta_{71i}}{1-\lambda}$; $\theta_{8i} = \frac{\beta_{80i}+\beta_{81i}}{1-\lambda}$; $\Phi_i = -(1-\lambda)$

Φ_i is the error correction term, which is expected to be negative if (5.7) is to hold as it entails the existence of a long-run equilibrium. The θ_s are the long-run parameters which are constrained to be homogenous across countries in the PMG methodology and the $\beta_s$are the short-run parameters, which, together with the error correction term, are left to freely vary

across countries. This specification allows for a special ARDL case in which the estimates have been proved to "remain consistent and asymptotically normal for both stationary and non-stationary I(1) regressors" (Asteriou, 2009). However, the appropriate lag length of the respective estimated equations will be determined using the Akaike Information Criterion (AIC).

5.3 Data and Challenges

The main variables in this chapter are i) GDP growth as a proxy of the level of development of the respective COMESA countries, ii) Corruption defined as the extent to which public power is perceived to be utilised for private gains is proxied by the corruption index (corr) from the Worldwide Governance Indicators (WGI) by the World Bank (WB). The index values vary between -2.5 and 2.5, with the higher values reflecting perceived lower incidences of corruption (WGI, 2018). iii) ODA defined as the flow of official grants and concessional loans to developing countries with the main objective of enhancing the economic and social development of the recipient economies (OECD, 2018). This mainly comprises grants which have been covering an annual average of about 80% of the total foreign aid since 2002 at the regional level (Appendix 5.1). At the country level, grants are the predominant sources of foreign capital in 11 of the 19 COMESA countries, including Burundi, Comoros, DRC, Djibouti, Malawi, and Rwanda. The summary statistics for these variables are presented in Appendix 5.2.

The study uses secondary data mainly from the World Bank Development Indicators, UN database, the Organisation for Economic Co-operation and Development (OECD) database, the COMESA database, the AFDB African Infrastructure Database, and the UNCTAD database[21] covering the 1985-2015 period. These sources were specifically chosen to ensure that the study utilises only highly credible data. Eritrea was dropped from the sample because of data paucity between 1985 and 1995, as this was the period it was still under Ethiopia. This period also included part of its transitioning to political independence. The dataset had less than 3 percent

[21] *http://databank.worldbank.org/data/home.aspx*
http://data.un.org
https://stats.oecd.org/qwids
http://comstat.comesa.int/
http://infrastructureafrica.opendataforafrica.org
https://unctadstat.unctad.org/EN)

gaps. These were filled through the extrapolation command in Stata, as it was not possible to perform some of the necessary tests on unbalanced panels.

5.4 Results and Discussions

5.4.1 Preliminary data diagnostic

5.4.1.1 Cross Section Dependence

The use of panel datasets with long time dimensions complicates its analysis for most estimators due to its emphasis on the need for independence of the panels (Im, Pesaran, and Shin, 2003). To ensure that the estimates in this study are not biased due to this concern, the Pesaran cross-section dependence (CSD) test is used for possible correlations of the residuals across countries. With a p-value of 0.3082, the study does not reject the null hypothesis of the independent panels in its sample.

5.4.1.2 Heterogeneous Panel Unit Root Tests

Based on the Dickey-Fuller procedure, Im-Pesaran and Shin (IPS) (2003) developed a unit root test that allows for panel heterogeneity specifically by relaxing the assumption of a common autoregressive parameter as assumed by most unit root tests such as the Levin-Lin-chu (LLC) and the Breitung Tests. This is because several country-specific factors weaken the potency of such an assumption. As such, they fit the specified Dickey-Fuller equation separately into each panel and then average the t-statistics from the various regressions. The test works for both balanced and unbalanced panels provided there are no gaps within the panel under the null hypothesis and that all panels contain a unit root against the alternative and that panels in the sample have stationary series. While the test allows for heterogeneous panel specifications both with serially correlated and uncorrelated standard errors, its demeaned version further allows for robust statistics where the various standard errors contain common time-specific components (Hassan et al., 2014). This approach is further simplified by the Fisher-Augmented Dickey-Fuller (ADF) unit root test that runs different tests on each panel and then combines their respective p-values to determine whether the panel is stationary. It is worth noting that both tests assume the individual unit root process of the respective panels as they maintain heterogeneity of the panels in their analysis.

Except for the exports, government expenditure, and population in the IPS test, the null hypothesis of the presence of unit root in all panels was rejected for all the other variables in first differences, as indicated in Table 1. The Fisher-ADF test strongly rejected the unit root hypothesis at 1% for all the variables excluding exports and government expenditure. Under

IPS, the conclusion of the presence of at least one panel with stationary series was made only for the population on its demeaned first differences. However, the demeaned first differences (with a drift) of exports and government expenditure are stationary under the Fisher-ADF. Augmenting the unit root test results in Table 5.1 by the AIC for the maximum lag selection, the study concludes that the sample has both stationary and non-stationary variables that are integrated of order 1.

Table 5. 1: IPS Unit and Fisher-ADF Root Tests Result

	IPS		Fisher-ADF	
Variable	levels	1st difference	Levels	1st Difference
Δ lnGDP	-10.9875***		419.9551***	
lnODA	-2.0364**		63.4961***	
lnExports	3.7560	-0.6294	33.8230	107.150***
lnFDI	-8.3892 ***		295.3136 ***	
lnSavings	-4.0419 ***		179.4485***	
lngovt Expenditure	2.1844	-1.1824	38.8768	127.9430***
Inflation	-7.4682***		183.2750***	
ln Population	2.6570	-2.3792***	276.6500***	

*Note i) ***, **, and * indicate the rejection of the null hypothesis of unit root at 1%, 5% and 10% respectively*
iii) Since the study is covering all COMESA member states, it assumed a finite N for the Fisher-ADF and therefore, only reported on the χ2 ρ. However, it should be noted that all the four tests under the fisher-ADF failed to accept the null hypothesis of a unit root in all the panels at 1%.

5.4.1.3 Panel Cointegration Tests

Having established the independence of the panels in the sample as well as the order of integration of the variables, the study adopted the Westerlund (2007) panel cointegration test to ascertain the existence of long-run cointegrating relationships amongst the panels in the sample. Based on an ECM in which all variables are I(1), the test allows for complete heterogeneity of the panels and assesses the existence of long-run relationships among the variables using four tests (Ga, Gt, Pa, Pt). (i) The Ga and Gt assess the null hypothesis of no cointegration relationship in all the panels against the alternative hypothesis of the existence of a cointegrating relationship in at least one panel. (ii) The Pa and Pt assess the same null hypothesis as the Ga and Gt but against the alternative hypothesis of the existence of cointegration relationships in all the panels.

Since the main variables of interest are GDP growth and foreign aid (ODA), the study first established the existence of a long-run relationship between these variables. As shown in Table

5.2, all tests failed to accept the null hypothesis of no cointegration at 1%. Similar tests were conducted between GDP growth and all the variables in the sample with similar conclusions (results not reported in this study). On the other hand, considering the simple P-values of the cointegration test between GDP growth and the rest of the variables, only the Ga test confirmed the null of no cointegration in all the panels. However, with the robust P-values, the study concludes that a long-run relationship exists between all its variables.

Table 5. 2: Westerlund panel cointegration tests between Δ lnGDP and lnODA

Statistic	Value	Z-value	P-value
Gt	-3.139	-8.821	0.000
Ga	-17.660	-12.926	0.000
Pt	-13.092	-9.361	0.000
Pa	-19.349	-26.849	0.000

Note: For all the tests between GDP growth and all the variables in the sample, The AIC optimal lag length of 1 was utilised. No difference in the significance and magnitude of the values was observed whether the leads lag of 1 was utilised or not and similarly if the Bartlett kernel window option of 2 was considered.

Table 5. 3: Westerlund panel cointegration tests between Δ ln GDP, lnODA, lnExports lnFDI, Inflation and lnSavings

Statistic	Value	Z-value	P-value	Robust P-value
Gt	-2.812	-2.560	0.005	0.002
Ga	-9.654	1.144	0.874	0.012
Pt	-13.707	-4.684	0.000	0.000
Pa	-11.384	-1.789	0.037	0.002

Note: The Robust P-values were obtained by bootstrapping using 500 replications. Apart from slight changes in the magnitude of the statistics, signs, and significance of the tests were not affected by altering the covariates in the tests. Thus, similar results were obtained using different combinations of the regressors since not all of them could be included in one regression as the test was only accepting a maximum of 5 variables.

5.4.2 Empirical Results and Discussion

The PMG results in Table 5.4 shows that the null hypothesis of the absence of a long-run equilibrium cannot be rejected both at the economic bloc level and for individual COMESA member states as reflected by the negative and significant signs of the respective error correction terms. At the regional level, the results in Table 5.4 shows that ODA positively stimulates growth only in the short run (SR) reflecting the possibility of diminishing returns to foreign aid at the regional level. Thus, the more foreign aid the region has been receiving over

the years, the less has been its marginal effect on its overall growth. As evident in empirical literature, this could be due to low human and institutional capacities of the recipient economies to effectively absorb high volumes of foreign aid (Hansen and Tarp, 2001; Lensik and White, 2000a). This could also be an effect of poor targeting of foreign aid resources by the donors where the recipient economies in the region were receiving more than what they needed to effectively close their growth and development financing gaps (Guillaumont and Chauvet, 2001). Foreign aid in the region is potentially being redirected to other non-growth enhancing programmes. Furthermore, overreliance on foreign aid as a key source of development financing without effectively augmenting it with requisite human capacities as well as relevant production and market infrastructure over time effectively leads to a decline in the per unit returns of foreign aid over time.

At the country level, the results show that the relative impact of ODA is similar among the countries in the region. Table 5.4 shows that a one-unit change in the change of ODA has about 1% change in the change of the growth rate in most countries. A few exceptions are shown for Mauritius, Djibouti and Comoros where the impact is relatively higher. Table 5.4 further shows that at the regional level, savings have a significant and positive impact on growth with its unit change being associated with about 0.004% change in the change of the region's growth rate. The short run effects are however different across the countries in the region with coefficients ranging between -0.02 and 0.09. Notably, the positive impact of domestic savings is higher in countries with better savings rates such as Egypt, Mauritius and Libya (see figure 4.3).

Table 5. 4: Effect of Total Foreign aid on Economic Growth

	ect	lnODA	lnExports	lnFDI	lngov	ln ppln	Inflation	lnSavings
LR		-1.67719***	-0.00306	0.00002	-0.00598	0.02011*	0.00002***	0.0044**
SR								
COMESA	-0.85762***	1.44989***	0.06423***	0.00255	0.09090***	-0.38011	-0.00034	0.00963
Burundi	-0.72379***	1.21606**	0.02104	0.00072	0.0179	0.77679	-0.00143**	0.00003
Comoros	-1.20592***	2.00927***	0.05181	-0.00032	0.03389	1.0163	-0.00250**	0.00065**
Djibouti	-1.48991**	2.54812**	0.06138	0.01233	0.05515	-0.53916*	-0.00013	-0.00024
DRC	-0.46859***	0.81859**	0.01103	0.00029	0.01174	-6.39807**	0.00004**	-0.00031
Egypt	-0.56814**	0.95381**	0.04347***	0.00042***	0.08643***	-0.2785	-0.00073**	0.05463**
Eswatini	-0.93306***	1.56531***	0.09212**	0.00023	0.02974	2.68964***	0.00026	-0.00039
Ethiopia	-0.81595***	1.40326***	0.09602	-0.00006	0.18227***	-3.74706	-0.00108**	-0.00103
Kenya	-0.48035***	0.81040***	0.02382	-0.00252	0.04596	-0.02234**	-0.001	0.00524
Libya	-1.16849***	1.93635***	0.0692	0.00008	0.57721***	-1.73977	0.00051**	0.09125
Madagascar	-0.72679***	1.24181***	0.19081***	-0.00034	-0.01527	-3.18259	-0.00076**	0.00132***
Malawi	-1.25184***	2.13113***	0.11061**	-0.00007	-0.07807**	-0.29757	0.00019	-0.00049
Mauritius	-1.38361**	2.32591	0.02799	-0.00028	0.04146	1.21476	0.00165**	0.05446***
Rwanda	-0.91196***	1.54275***	0.06999	0.03472**	0.20986***	0.83977*	-0.00002	0.00167**
Seychelles	-0.62580***	1.05687***	0.04423	-0.00088	0.17775***	-0.24994	-0.00075	-0.00413***
Sudan	-0.94799***	1.60398***	0.06012***	0.0003*	0.10677***	0.90146	-0.00051***	-0.02095***
Uganda	-0.76018***	1.26308***	0.05364***	-0.00007	0.07301***	1.32093	-0.00013	0.0001
Zambia	-0.63522***	1.09624***	0.02662	0.01549*	-0.0204	-0.31639	0.00052***	-0.00628
Zimbabwe	-0.33965***	0.57515***	0.10216	-0.01387	0.10083***	1.16981	0.00040	-0.00225

*Note: ***, ** and * indicate significance at 1%, 5% and 10% respectively*

Consistent in all the three models at the regional level is the unexpected negative but significant (in some models insignificant) coefficient of exports in the long run. This result is well supported by the theory of the 'paradox of plenty' which contends for a concentration of a country's exports on few commodities in line with its comparative advantage without any value addition such that the net effect of exports on growth is negative (Kartikasari, 2017). Accordingly, with the high concentration of the region's exports on a limited number of products, including tobacco, diamonds, uranium, copper, and cotton with very little (if any value addition), its regional trade balance has remained negative and has been worsening since 2011 (Appendix 5.3). The region's exports are falling below its imports such that low export earnings, as postulated by the gap theories continue to hold as a binding constraint for enhanced growth and development at the regional level.

While the coefficient for the active population has the expected positive impact on the region-s aggregate growth, its impact across the countries in the region is not consistent. The active population group contributes positively to the GDP growth in countries such as Eswatini, Rwanda, Comoros, Mauritius, and Uganda. However, the unexpected negative impact holds for countries such as Burundi, Madagascar, and Ethiopia. These results imply a low productivity of labour in most countries in the region to effectively contribute to its GDP growth rates.

The gap theories contend that inflation and government consumption significantly constrain growth only at high levels. Consistent with this line of thought, an inverse relationship between inflation (or government consumption) and GDP is expected mainly if they are beyond the expected thresholds. Further, Gokal and Hanif showed that this causality from inflation to growth is generally weak as the trends from most countries support a strong unidirectional causality from growth to inflation. Thus, notwithstanding the possible constraint on growth beyond certain thresholds, their study shows that the higher the GDP (economic size) of a country, the higher the consumer prices (inflation). In this regard, the consistently positive impact of inflation on growth in all three models shows that regional inflation levels are within the thresholds, not constrain growth. Further, consistent with Gokal and Hanif (2004), the results on inflation highlights the fact that COMESA is largely comprised of small economies. However, consistent with the gap models, consistently negative albeit insignificant only in the core model shows that high government consumption rates in most countries are a constraint to the region's growth.

Notwithstanding slight changes in the magnitude of the coefficients and levels of significance for some variables, the results of model 2 presented in Table 5.5 shows a significant variation on the effect of ODA on growth across countries when controlled for corruption. While no significant relationship could be established between the ODA-corruption interacted variable for most countries in the short run, the variable is significantly positive only for 6 of the 19 countries in the region. The 6 countries with better short-run outcomes of corruption effect on foreign aid utilisation are Rwanda, Swaziland, Mauritius, Kenya, Djibouti, and Zambia. Notably, Figure 7.3 shows that these are among the few countries in the region that have been successfully reducing corruption levels in recent years. However, with corruption levels still high in most countries in the bloc, the net effect of corruption on the region's growth remains negative as foreign aid increases. Specifically, the results indicate that in the long run, the marginal effect of a unit change in corruption has a decreasing effect on the change in growth

as foreign aid increases. However, the magnitude of the ODA-corruption coefficient (0.0026) reveals the potential for better growth outcomes from foreign aid if corruption is effectively addressed in all countries in the region.

Worth noting are the varying impacts of loans and grants both at the bloc and country levels. At the bloc level, an annual average of 81% of the total foreign aid is received through grants to the respective countries of which at least 30% on average, is largely for consumption through humanitarian assistance and/or associated with increased fiduciary risks[22] through General Budget Support (GBS) (Appendix 4.4). On the one hand, humanitarian foreign aid has been empirically proven not to have any growth-enhancing effect (Chauvet and Guillaumont, 2003). On the other hand, GBS has mixed outcomes function on programmes/activities that it finances (Leiderer, 2012). Depending on what the remaining 70% of the grants finances in the region, a positive or negative significant effect on growth could ensue. The results in Table 5.6 shows that grants have an overall positive effect on growth in the long run. As highlighted above, mixed short-run outcomes are observed at the country level. The table shows that grants have negative and significant short-run effects on growth in Ethiopia, Egypt, Libya, and Zimbabwe (Table 5.6). These could be accounted for by several factors such as corruption (Appendix 5.5) and the intent (humanitarian assistance) for which most of the foreign aid was disbursed in some periods in countries such as Burundi and DRC. The table further indicates that for most countries, grants have positive and albeit insignificant short-run effects on their growth.

[22] *The risk that the received foreign aid will end up financing unintended programmes with the worst scenario being benefiting the elite through corruption for example or the risk that the received foreign aid will free up government resources for the benefit of the elite inter alia.*

Table 5. 5: Effect of Total Foreign aid on Economic Growth: Controlled for Corruption

	EC	lnODA	ODA*corr	lnExports	lnFDI	lngov	ln ppln	Inflation	lnSavings
LR		-0.04658**	-0.00259*	-0.00737	0.00019	-0.01364**	0.02422*	0.00276***	0.00043**
SR									
COMESA	-0.88984****	0.05537***	0.00322***	0.05920***	0.00258	0.09630***	-0.67497	-0.00039*	0.00907
Burundi	-0.72542***	0.04054*	0.00201	0.02217	0.00073	0.01405	0.7178	-0.00147**	0.00004
Comoros	-1.21687**	0.04918	0.00318	0.05472*	-0.00032	0.0413	1.00219	-0.00247**	0.00064
Djibouti	-0.38467**	0.05018***	0.00664***	0.01197	0.00048**	0.015	-6.53635**	-0.00042*	-0.00035
DRC	-1.46651***	0.12815***	0.00272	0.06993	0.013	0.06787*	-0.48867	-0.00007	-0.00023
Egypt	-0.59945***	0.02989**	-0.00188	0.02211	0.00041***	0.10833***	0.3464	-0.00105***	0.05011***
Eswatini	-0.97557***	0.04432*	0.00003	0.07628*	0.00016	0.03952	3.05531***	0.00041	-0.0004
Ethiopia	-0.79127***	0.07834***	0.00201	0.09225	-0.00014	0.19582***	-4.10411	-0.00111*	-0.00052
Kenya	-0.36599***	0.02464***	0.00631***	-0.00787	-0.00349**	0.05083	1.86021*	-0.00125***	0.00458
Libya	-1.15946***	0.03233	0.0059	0.06915	0.00006	0.58934*	-2.8466	0.00062	0.09010**
Madagascar	-0.74083***	0.06468***	0.00022	0.19132**	-0.00056	-0.00093	-2.35826	-0.00057*	0.00141**
Malawi	-1.43872***	0.12601***	0.00948	0.11136**	-0.0005	-0.07246**	0.22285	-0.0003	-0.00063*
Mauritius	-1.38006***	0.07037**	0.00374*	0.02058	-0.00034	0.03306	0.29685	0.00148*	0.04970**
Rwanda	-0.94861***	0.03043	0.00451*	0.07285	0.03385***	0.20777**	0.73328	-0.00031	0.00176
Seychelles	-0.68541*	0.03437	-0.00398	0.03558	-0.0001	0.19855***	-0.12	-0.00074	-0.00394***
Sudan	-0.97477***	0.06556***	0.0024	0.06352**	-0.00003*	0.10783***	-0.13989	-0.00053*	-0.02141***
Uganda	-0.88179***	0.04594*	0.00204	0.04937***	-0.00045	0.06065***	0.17979	0.00002	0.00022
Zambia	-1.05603***	0.06819**	0.01115***	0.0155	0.01797**	-0.02878	-4.21361**	0.00028	-0.00516
Zimbabwe	-0.22561**	0.01361	0.00143	0.09491	-0.01432	0.10561***	0.24332	0.00005	-0.00272

*Note: ***, ** and * indicate significance at 1%, 5% and 10% respectively*

Although a significant long-run inverse relationship between loans and growth can be traced at the regional level, positive short-run impacts of loans are observed in countries such as Comoros, Kenya, Mauritius, Rwanda, Sudan, Swaziland, and Uganda. While potentially attracting better utilisation than grants as they are programme specific and have a repayment obligation, researchers contend that loans are also equally prone to abuse if the country's checks and balances (governance and policies) are weak (Burnside and Dollar, 2000). In that case, loans could be diverted to other non-growth enhancing projects and/or inflated cost of the growth-enhancing projects. This is seen in COMESA (Appendix 5.5), wherein the long term, both the loan and grant components of ODA are subject to abuse in the region through corruption. However, the relative impact of corruption on the utilization of foreign aid is much higher on loans than it is on grants. Thus notwithstanding the potential impact of corruption on the utilization of grants in some countries, the grant component depicts relatively better utilization in the presence of corruption than loans. This is well underscored by the overall net positive impact of grants on growth when controlled for corruption, while the coefficient of the loan component remains negative and significant. Accordingly, the overall positive long-term effect of grants on growth leaves the negative effect of loans as the key foreign aid component responsible for its overall negative effect on growth in the region.

Table 5. 6: Effect of Loans and Grants on Economic Growth

	EC	lnGrants	lnLoans	lnExports	lnFDI	lngov	ln ppln	Inflation	lnSavings
LR		0.00690***	-5.23857***	-0.00308***	0.00011	-0.00982*	0.01317	0.00001	0.00055**
SR									
COMESA	-0.86093***	-0.00526	4.51737***	0.06160***	0.00315	0.08644***	0.34463	-0.00044**	0.0096
Burundi	-0.77062***	0.01016	4.04669*	0.01792	0.00074	0.00411	0.77250*	-0.00145**	0.00008*
Comoros	-1.15432***	0.01967**	6.04266**	0.06634***	-0.00072	0.07946*	4.57932**	-0.00261**	0.00055
Djibouti	-1.36353***	0.03932**	2.16224***	0.02163	0.00793	0.04837	-0.63676**	-0.00089	-0.00044
DRC	-0.25393***	0.012	1.32774**	0.03888**	-0.00019	0.03553*	0.13421	-0.00009	-0.00039***
Egypt	-0.62012***	-0.00253***	3.23918	0.05007***	0.00047***	0.06897***	-1.62829***	-0.00066**	0.04576
Eswatini	-1.02074***	0.01453	5.36829***	0.08128*	0.00034	0.05688	2.9221	0.00041	-0.00042
Ethiopia	-0.86080***	-0.03891*	4.54243***	0.11222**	0.00035	0.15953**	-5.0447	-0.00073	0.00021**
Kenya	-0.49238***	0.02014	2.58103***	0.00928	-0.00246	0.02313	-0.20256	-0.00109***	0.00352***
Libya	-1.18989***	-0.01899**	6.25507	0.06874	0.00023	0.51725***	0.58286	-0.00108	0.10251
Madagascar	-0.71234***	0.0049	3.74711	0.18487***	-0.00045	-0.00511	-0.4918	-0.00070*	0.00134***
Malawi	-1.14341***	-0.01353	5.97978***	0.10553	0.00014	-0.07985**	-0.41714	0.00026	-0.00041
Mauritius	-1.38414***	0.00523	7.25483	0.0177	-0.00034	0.04587	1.03891***	0.00163*	0.05515***
Rwanda	-0.96658***	-0.0246	5.09657***	0.05476	0.03434***	0.17074***	0.87526	-0.00063**	0.00159**
Seychelles	-0.68472***	-0.00064	3.59378***	0.04072	-0.00067	0.16672***	-0.28073	-0.00035	-0.00406
Sudan	-0.95441***	-0.00111	5.00741**	0.05759***	-0.00003	0.11524***	-0.22170***	-0.00054**	-0.02222
Uganda	-0.78610***	0.00186	4.10094***	0.04751***	-0.00026	0.07210***	0.75312	-0.00011**	-0.00001
Zambia	-0.60917***	-0.00914	3.198363***	0.05947*	0.01609*	-0.01199	0.96711	0.0006	-0.00884
Zimbabwe	-0.52947***	-0.11303**	2.76852***	0.0743	0.00124	0.08904***	2.5017	0.00002	-0.00113

*Note: ***, ** and * indicate significance at 1%, 5% and 10% respectively*

In sum, the results from the three models consistently confirm an inverse long-run relationship between foreign aid and economic growth in the region, suggesting that the marginal incremental effect of foreign aid on growth has been going down with increases in foreign aid over time. Notwithstanding the reduction in corruption levels in some countries, corruption levels in most countries in the region are still high (Figure 7.3). As such, the results indicate that the overall potency of foreign aid is still compromised by corruption in the long term. Appendix 5.5 shows that the potency of both loans and grants is compromised by corruption, although the impact is much higher on loans. Moreover, the short-run effects of corruption on the utilisation of both loans and grants are evident both at the regional and country-level though insignificant in some countries. Overall, loans have a significant inverse relationship with growth in the long term, while grants are more productive in enhancing the region's economic growth.

Furthermore, results in the three tables consistently indicate that savings in the region have a positive LR effect on growth. This indicates the great potential that the region has in effectively turning its growth and development trajectory using domestic resources. Lastly, the results

consistently show an inverse LR relationship between its exports and growth, which is largely explained by its limited export base with little (if any) value addition in line with the 'paradox of plenty.' The trade balance in Appendix 5.3 indicates that the region's exports have been lagging behind its imports resulting in a sharp slump in its trade balance since 2011. Among other things, this trend implies that the region is not reaping enough from its exports to effectively support its growth needs, hence the negative long term impact of exports on its aggregate growth.

5.5 Chapter Summary and Conclusion

Focusing on the role of institutions and corruption in the utilization of foreign aid, the chapter assessed the impact of total ODA on economic growth in COMESA. The chapter postulates comparable effects of foreign aid across the countries in the region if it is to effectively contribute to its inclusive and sustained growth collective goals. Accordingly, the chapter adopted the PMG estimator, which, among other things, allows for heterogeneity of countries and produces short-run country-specific estimates. The results show consistent positive short-run effects of foreign aid across the countries in the region, albeit insignificant in a few countries. This implies that foreign aid has the potential to effectively contribute to the regional collective growth goals, *ceteris paribus.* In line with the positive short-run impact of foreign aid on growth across COMESA countries, its aggregate regional impact is equally positive. However, the results further indicate that the short-run positive impact is not sustainable, as shown by the negative and significant sign of its long-term coefficient. This result reflects diminishing returns to foreign aid as its positive impact gets eroded with increases in foreign aid receipts over time. Overall, the results show that foreign aid in the region does not have an optimal impact on growth as its potency is compromised by corruption.

Specifically, a negative and significant LR coefficient of the aid*corruption variable indicates that the marginal impact of corruption on the change growth as foreign aid increased is negative. This was supported by the general decline in corruption levels in the region since 2007. However, the chapter found that the decline in corruption was not consistent across the countries in the region, and as such, its negative impacts on the utilisation of both loans and grants are still visible in some countries, albeit insignificant in some of the countries. Nevertheless, the chapter established that the potency of both loans and grants is compromised by corruption in the long term. The chapter results show that there can be better growth outcomes from foreign aid if corruption is effectively addressed in all countries in the region.

Notwithstanding comparable effects of total ODA in the region, loans and grants have significant varying impacts both at the country and the regional level. While grants have a positive impact on growth, albeit insignificant in the short run at the regional level, loans have a net negative impact on economic growth in the long run. At the country level, the chapter found that the utilization of loans and grants varies across countries in the region with equally varying impacts on their respective growth outcomes. Worth noting are the varying positive (negative) impacts of loans and grants in countries such as Rwanda, Swaziland, and Djibouti (Appendix 5.5), which effectively entails that there are potentially different factors that affect the potency of these two components of foreign aid. At the regional level, corruption is clearly a factor that compromises the potency of both loans and grants in the long run. However, at the country level, results indicate that while loans might not be compromised by corruption in one country, grants are. In the case of Rwanda, Appendix 5.5 shows that while the impact of corruption on the utilisation of its grants is negative and significant, corruption does not compromise the potency of loans in the short run. However, this is different in countries like Djibouti, where it is the loan component that is prone to abuse in the short run. As such, it remains imperative for COMESA to effectively address corruption to ensure that both loans and grants have comparable positive impacts across its countries if the region is to achieve better growth outcomes from foreign aid.

Lastly, while exports have a negative effect on growth in the LR, savings are growth-enhancing in the long term. These results entail the great potential that the region has in effectively turning its growth and development trajectory with increased domestic resources and rationalisation of its exports. In this regard, encouraging strategies that focus on increasing domestic revenue, development of its production and market structure to effectively rationalise its exports remains best policy options both in augmenting future aid inflows for enhanced potency and launch themselves on to a self-sustaining growth path with a diminishing need for foreign aid over time.

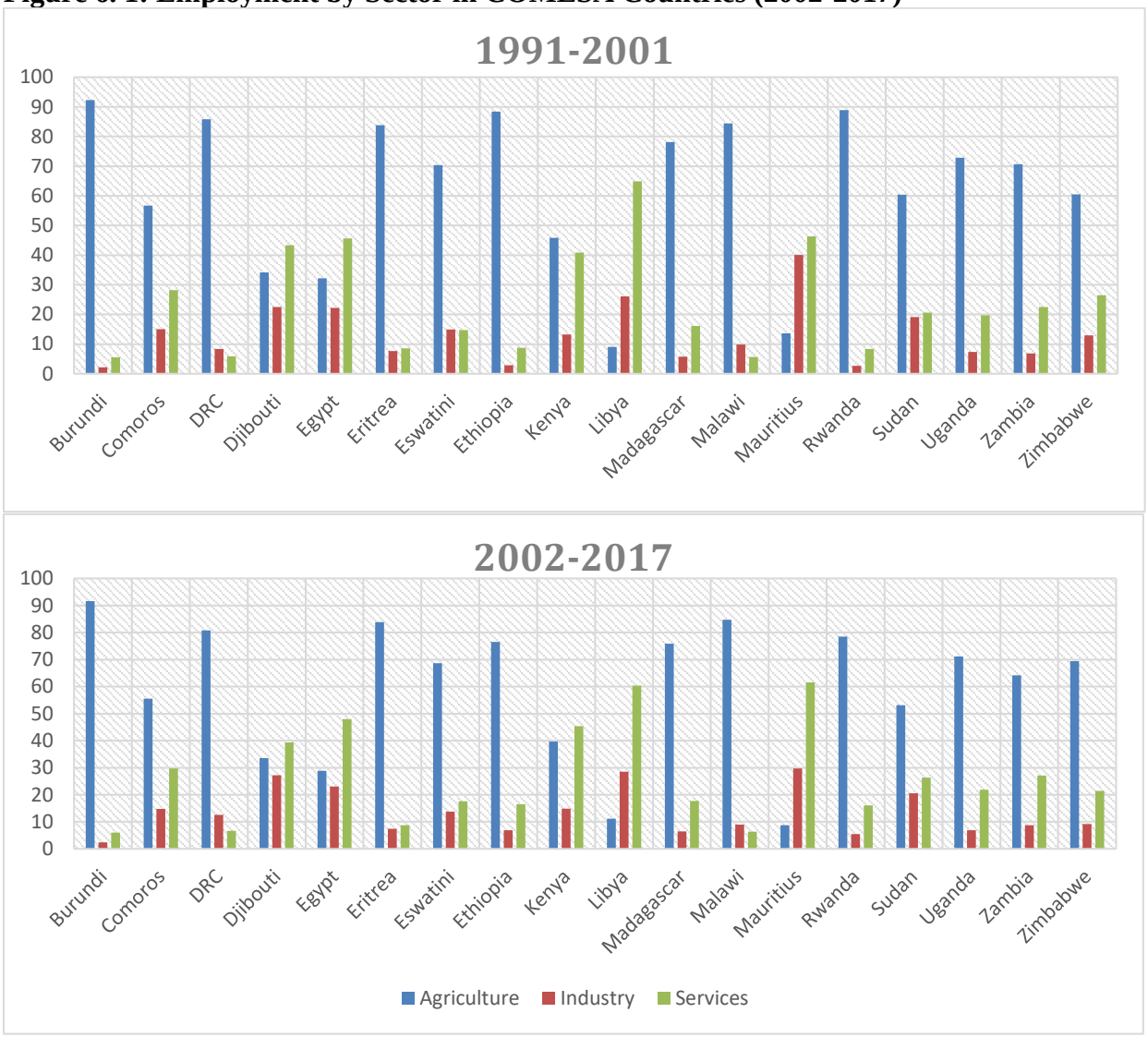
CHAPTER 6:

THE ROLE OF DEVELOPMENT AID IN AGRICULTURE: A PANEL VECTOR AUTOREGRESSION ANALYSIS

6.1 Introduction

Agriculture remains a hinge for sustainable and inclusive growth for most developing countries, mainly due to its economic importance in facilitating industrial growth and economic structural transformation, food security, sustaining livelihoods, and hence, poverty reduction in most of the poor population. FAO (2018) highlights that at least 75% of the world's extreme poor depend on agriculture for their livelihoods. Overall, research shows agriculture as the largest employing sector accounting for up to 81% of total employment in most developing countries and as much as 50% of their respective export earnings (Kaya et al., 2008). The Common Market for East and Southern Africa (COMESA) is not exempt from these trends as the sector is indispensable in its growth and development agenda. Agriculture remains key in sustaining livelihoods in most COMESA countries covering between 70% and 92% of the total employment in Burundi, DRC, Eritrea, Eswatini, Ethiopia, Madagascar, Malawi, Rwanda, Uganda, Zambia and Zimbabwe and less than 20% only in Libya and Mauritius (Figure 6.1). Furthermore, the sector is vital for COMESA's industrial development and export revenue, covering at least 50% of the raw materials in its industrial sector and accounting for about 65% of its foreign exchange earnings (Karugia et al., 2012).

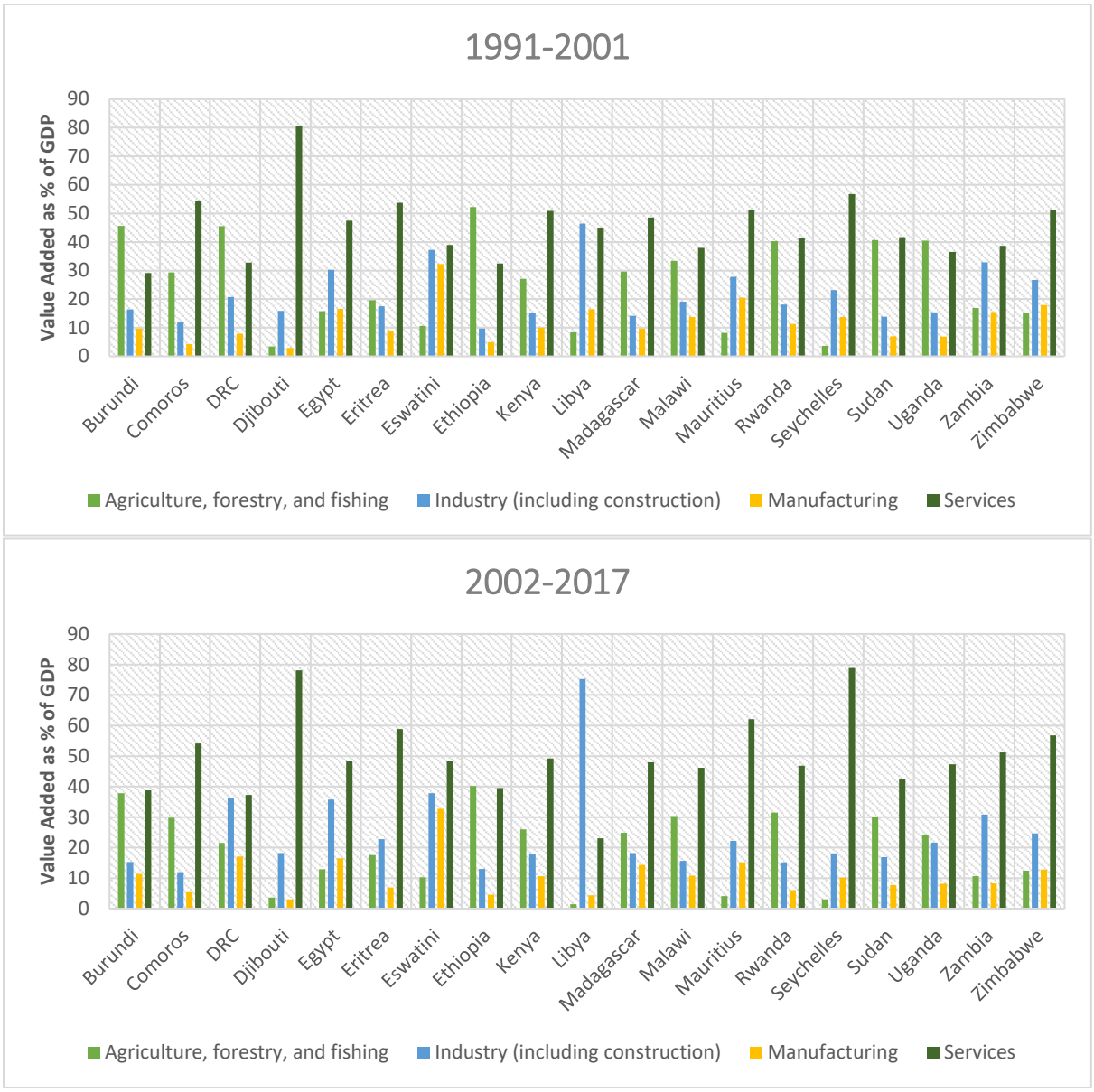
Figure 6. 1: Employment by Sector in COMESA Countries (2002-2017)



Source: Author's Calculations from WDI accessed on March 19, 2019

Despite this central role in the region's trade, industrial development, and sustainability of livelihoods, agriculture's productivity has been persistently low (WDI, 2019). Its contribution to GDP has been steadily declining over the years in all COMESA countries whose economies largely depend on agriculture. Between 19991 and 2001, agriculture accounted for 52% of GDP on average in Ethiopia, about 45% in the DRC and Burundi, and about 40% in Rwanda, Sudan, and Uganda. When compared with the 2002 and 2017 period, this has gone down by about 53% in DRC, 40% in Uganda, about 23% in Ethiopia and Rwanda and by 26% in Sudan. The share of the service sector in GDP has continued to increase steadily (Figure 6.2). Similar trends are observed in the other countries, including Kenya, Madagascar, Malawi, Zambia, and Zimbabwe, whose share in GDP ranges between 16% and 33% on average (Figure 6.2).

Figure 6. 2: Share of Agriculture in GDP in COMESA Countries (1991-2017)



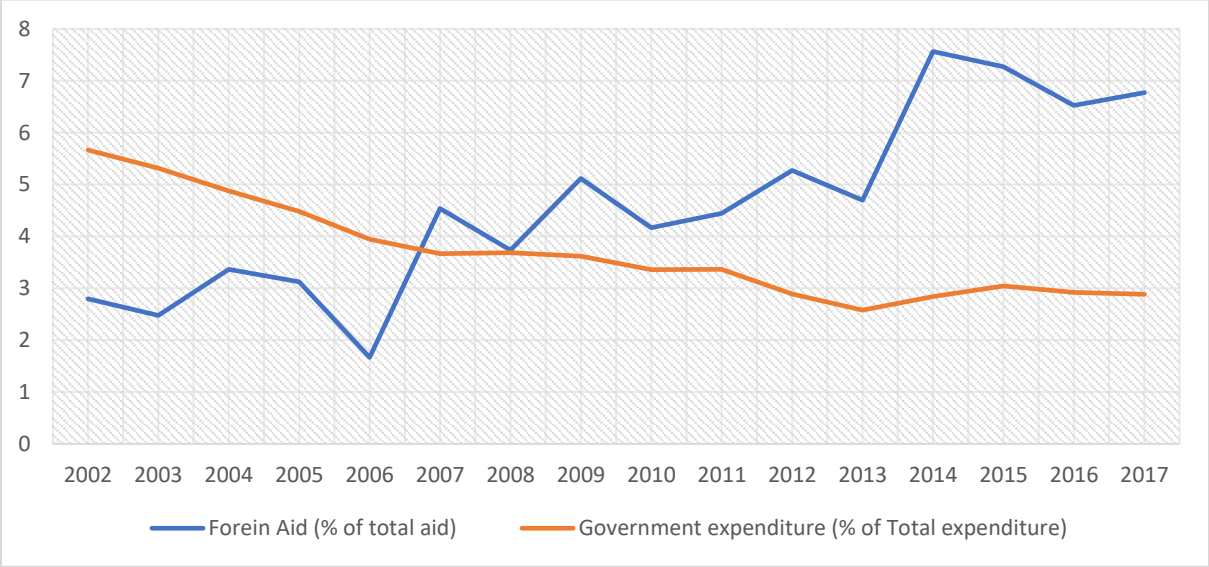
Source: Author's Calculations from WDI and COMSAT data accessed on March 19, 2019

Although diminishing agricultural share in GDP is not necessarily a bad outcome as it potentially entails desired structural transformation[23] for enhanced growth, it is worth noting that its diminishing influence in GDP is largely being reciprocated by the development and hence, increasing share of services in GDP in most countries. However, contrary to theoretical disposition of a successful structural transformation which entails an invariable decreasing share of agriculture in both GDP and employment as economies develop and industrialize

[23] *Simply defined as a change in the sectoral composition of output and labour in GDP largely identified by a declining share of agriculture in GDP and employment as the industrial and service sectors gain prominence in this regard.*

(Mellor, 1961; Soubbotian, 2004; Tran and Doan, 2010), agriculture has remained the dominant employer in the region covering between 50%-90% of the active labour force in 13 of the 19 COMESA countries (Figures 6.1 and 6.2). As such, persistent low agricultural productivity in the region entails continued low incomes and high poverty levels on the one hand; dwindling export earnings and overreliance on food imports and food aid on the other hand, as their ability to compete on the world market continues to falter (FAO, 2002). Furthermore, it also indicates a slow pace of industrialisation (sluggish growth of the industrial sector (Figure 6.2) due to expensive imported raw materials as the agricultural sector continues to fall short in meeting the industrial sector's demand for raw materials (Karugia et al., 2012). Therefore, boosting the sector's productivity remains imperative for a balanced, sustainable, and inclusive growth process of most COMESA countries. Considering the Sustainable Development Goals (SDGs), this remains key in enhancing (or undermining) the region's ability to achieve SDG1[24] (see Kaya et al., 2008; Christiaensen et al., 2010); as well as SDGs 2[25] and 8[26] (see AfDB, 2016:8).

Figure 6. 3: Agriculture Foreign Aid and Government Expenditure in COMESA (2002-2017)



Source: Author's Calculations from ReSAKSS, 2019, and OECD Stats accessed on 13th March 2019.

[24] *SDG 1 commits to end poverty in all its forms everywhere. Specifically, it commits to eliminate extreme poverty through SDG1.1 and to "reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimension according to national definitions."*

[25] *SGD 2 commits to "end hunger, achieve food security and improved nutrition and promote sustainable agriculture."*

[26] *SGD 8 focuses on "promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all."*

While climate variability and climate change shocks are notably having a significant toll on agricultural productivity in most developing countries, recent research highlights the decline in agricultural investment as key in depressing its productivity and growth (Islam 2011; Alibi, 2014; Ssozi et al., 2017). Recognising this setback vis-à-vis the central role of the sector in its development, African governments, through the 2003 and 2014 Maputo and Malabo Declarations respectively, committed to allocating at least 10% of their budgets to agriculture. However, most countries in COMESA have not been able to live up to their commitment as their allocations to the sector continue to be below this threshold. Out of the 19 COMESA countries included in this study, only Malawi and Ethiopia have consistently met this target at an annual average of 10.2% and 15.4% respectively between 2003 and 2008; and then at an annual average of about 18.9% and 11.9% respectively between 2008 and 2014. For the rest of the countries, it ranged from the lowest of 0.85% in Djibouti to the highest of 8.9% in Zambia between 2003 and 2014, with most of them falling below the annual average of 4% (ReSAKSS, 2019). Consequently, COMESA, as a region, has not met this target since its initial declaration in 2003. Overall, its commitments barely reached 5% between 2000 and 2005; and they have continued to decline to less than 4% on average since 2006 (Figure 6.3).

Similarly, foreign aid to the sector has been persistently low at around 5% of the total foreign aid on average at the regional level since 2002. Only Eswatini, Libya, Madagascar, Malawi, and Rwanda allocated more than 6% of their total foreign aid annually to agriculture since 2002 (OECD Stats, 2019). Nevertheless, contrary to the decreasing trend in government expenditure at the regional level, Figure 6.3 highlights that foreign aid to the sector has been increasing, albeit volatile since 2006. This raises several issues for the region, such as (i) the effect of foreign aid in the region's agricultural growth and development and (ii) the effect of the prioritisation of foreign aid in the agricultural subsectors in enhancing productivity and growth in the sector.

Against this backdrop, this chapter provides the first assessment of the impact of foreign aid on agriculture in COMESA in a Panel Vector Autoregressive (PVAR) framework, which avoids endogeneity instrumentation bias that crowds most foreign aid-growth literature. Covering the period 2008-2017, the focus is on the response path of agricultural productivity and growth to changes in foreign aid; and on the relative role of foreign aid in its sub-sectors. Accordingly, the study intends to unveil pertinent issues behind the current performance of agricultural foreign aid in the region and highlight key future foreign aid investment components for the

effective transformation of the sector in the region in its pursuit of sustainable and inclusive growth.

The rest of the chapter is organised as follows: the next section provides a brief literature review on the role of agriculture in the growth and development of least developed countries and how foreign aid has contributed and/or is expected to contribute to this process. Section 6.3 describes the methodology, and the description of the data used in this chapter is provided in Section 6.4. The results of the econometric analysis are discussed in Section 6.5, and the final section summarises the chapter.

6.2 Literature review

6.2.1 Agriculture and Economic Growth

Agriculture remains central in economic growth and development due to its rich resource base and viable linkages with other core growth sectors of the economy. This perspective dates to the mid-1950s with the dualist theorists who postulated industrialization of Least Developed Countries (LDCs) as an impossible fit without the support of the agricultural sector mainly through the provision of labour and raw materials to the industrial and service sectors (Lewis 1954; Fei and Ranis, 1961). Firstly, they perceived the migration of labour from the agriculture sector to support the productivity and growth of the industrial sector with higher incomes/wages in the industrial sector as the main migration drive. Secondly, they visualised increased agricultural productivity and growth as key in meeting the industrial sector's growing demand for raw materials as well as for the food demand[27] of the sector's growing population (Fei and Ranis, 1961).

Notably, in the dualist model, the growth of the agricultural sector was not a consequence of re-investments from industrial profits but rather a function of labour migration to the industrial sector, which among other things, enhanced agricultural labour productivity over time. However, critics noted that their failure to reckon the importance of reinvesting in agriculture potentially compromises the industrialization of the economy as it effectively limits its ability to support industrial growth and development. As such, Rosenstein-Rodan (1943) and Nurkse (1961) argued for a balanced growth process that encompasses the simultaneous growth of such

[27] *Meeting food demand of the growing population was deemed essential in curbing food price inflation with its dampening effect on the wages, industrial profits and thus, counterproductive to the overall economic growth and development process.*

complementing sectors. Going beyond industrial growth benefits as emphasized by the dualist theorists, they highlighted that the spill-over effects of a balanced growth process on job creation and incomes would be more effective both in expanding the tax base to relieve the fiscal constraint for relevant socio-economic overhead capital; and most importantly, in creating domestic demand for the growing sectors as the incomes/wages in both sectors simultaneously rise. However, despite several criticisms against dualist theorists, such as high unemployment levels in the urban sectors following labour migration (Hossein, 2012), dualist theorists provided a pertinent foundation to the subsequent understanding of agricultural growth and development as essential components of inclusive and sustainable economic growth.

Subsequently, several studies have been done in the last 2 decades that advocate for agricultural-led economic growth in most LDCs to ensure that the resultant growth process is inclusive and self-sustaining. These include Kaya et al. (2008), who noted that unless economic growth is largely driven by agricultural growth, inclusive growth remains an illusion, especially in countries whose population is largely poor and primarily engaged in agriculture for their livelihoods. Furthermore, Mellor (2001); Rosegrant and Hazell (2001); Christiaensen et al. (2010) contended that agriculture is significantly more effective in ensuring that the poor participate, contribute and benefit from economic growth and development. On the flipside, Ogundipe et al. (2017) found that growth in other sectors (industry and services) does not have a significant influence on the livelihoods of most of the rural poor, notwithstanding their important roles in the overall growth of GDP. Their findings were in line with those of the World Bank (2008), which concluded that the non-agricultural sector-led growth potentially perpetuates the rural-urban income gap as it leaves out most of the poor rural dwellers. In most of these studies, the emphasis has been on the subsistence nature of agriculture in LDCs such that the sector's growth and development have lasting effects on the incomes and livelihoods *inter alia* of the rural farm population. Furthermore, focusing on its linkages with other sectors of the economy, empirical literature further highlights its role in the self-sustaining growth process of LDCs by enhancing their export earnings and overall national incomes (Johnston and Mellor, 1961; UNDP and Odusola, 2017).

The 2030 Agenda for Sustainable development further underscores the importance of enhancing agricultural growth in LDCs for an inclusive, equitable, and sustainable growth process. With at least 10% of the global population currently in extreme poverty and highly dependent on agriculture for livelihoods and food (Castañeda et al., 2018; FAO, 2018), it reckons agricultural growth as key in ensuring that the poorest of the poor participate in

generating sustainable economic growth and fully share its benefits (SDG 2.3). Accordingly, among other things, commits to double agricultural productivity and incomes of small-scale subsistence farmers. In meeting this development stride, recent research highlights the need for increased investments in the various components of the sector, including land and water resource management to unlock irrigation potential, agricultural research and extension services to enhance adoption of modern technologies and improved inputs; as well as plant/post-harvest loss control (Alibi, 2014; Mellor, 2017).

6.2.2 Role of foreign Aid in Agricultural Productivity and Growth

As highlighted in Section 1, most developing countries remain financially constrained to meet the financing needs of their agricultural sectors, notwithstanding the sector's indispensable role for the developing countries' inclusive and sustainable growth process. This is further quantified through failure by most African LDCs to meet the 2003 Maputo and 2014 Malabo agricultural development investment targets (Alibi, 2014). Therefore, the gap theory advocates foreign aid as the most viable temporal means of augmenting domestic resources in the respective LDCs for the desired growth outcomes in these LDCs (Chenery and Strout, 1966). Despite several positive outcomes confirming this significant role of foreign aid in the agricultural sector growth (Kaya et al., 2008; Akpokodge and Omojimite (2008); Alibi, 2014; Verter, 2017; Ssozi et, al., 2018), a few studies such as that by Ighadaro and Nwaogwugwu, (2013) have concluded otherwise. Among other things, these contradictions highlight the potential of misleading results on the developmental role of foreign aid, mainly owing to the choice of estimators. Largely, this follows inconsistencies on the causal relationship between foreign aid and growth in the empirical models. Backed by theoretical propositions that economic growth and development objectives determine the direction of foreign aid flows, foreign aid has been endogenously treated in several foreign aid-growth studies (Gomanee et al. (2005); Moreira (2005) and Clemens et al. (2011). However, foreign aid is among the exogenous variables in another strand of research which believes that the expected developmental role of foreign aid is of minimal importance in determining its allocations which are largely a function of the donors' political and strategic interests (Boone,1996; Faye & Niehaus, 2012; and Quian, 2014). In other words, different assumptions on foreign aid endogeneity lead to the adoption of different estimators, which potentially leads to different conclusions, especially if wrong assumptions are made *ceteris paribus*.

For instance, Akpokodge and Omojimite (2008) adopted the two-stage least square (2SLS) estimator, which provides consistent estimates in the presence of endogeneity. They found a positive influence of foreign aid on agricultural growth in Nigeria, although they failed to ascertain the theoretical propositions that the level of savings (development financing gaps) determines the direction of foreign aid. On the one hand, Ighadaro and Nwaogwugwu (2013) equally assumed endogeneity in their model but opted for the Autoregressive Distributed Lag (ARDL) and Error Correction Model (ECM) which produces reliable long-run estimates regardless of the inclusion of endogenous variables in the model (Inder, 1993; Morrissey et al., 2006:316; Nkoro and Uko, 2016;78). However, their study failed to support the findings that foreign aid has a positive influence on agriculture in Nigeria. On the contrary, Verter (2017) confirmed the positive effect of foreign aid on agricultural growth in Nigeria despite failing to support the assertion of foreign aid endogeneity in his model. These and other studies with conflicting results on the same countries potentially misinform foreign aid policy. As such, the choice of estimators must be carefully done with robustness checks conducted where necessary for effective policy inferencing.

6.3 Methodology

Guided by the neoclassical growth model, the agricultural sector's production function can be broadly specified as $Y = AF(K, L, N)$ where Y is an agricultural value-added, A is total factor productivity (technology), K is capital, L is labour, and N is land. By efficiently financing any of these factors of production, foreign aid can be instrumental in enhancing agricultural productivity and growth. As highlighted above, getting reliable estimates on the impact of foreign aid in the sector through the development of these factors of production depends on the choice of an estimator. This study reckons the potential of foreign aid endogeneity on the assumption that development resource gaps, as reflected by low savings and growth rates in the recipient economies, determine the direction of foreign aid. Thus, the study employs the Panel Vector Autoregression (PVAR)[28] method, which reckons all its variables as endogenous and

[28] *The study adopts Stata pvar estimator which estimates the PVAR model by fitting independent regressions for each dependent variable and uses their respective lags and those of the rest of the variables as instruments for endogeneity. The estimator runs on Generalised Methods of Moments (GMM) and we have opted for forward-mean differencing which eliminates fixed effects without generating biased estimates from unbalanced panels as is potentially done by the first-differencing method utilised by most estimators (Love and Zicchino, 2006; Hayakawa, 2009).*

uses their lagged values as instruments for endogeneity. While noting the importance of accounting for dynamic interdependencies in a panel setting, PVAR also allows for individual heterogeneity in its sample. This technique is specifically preferred because it takes care of foreign aid endogeneity in the model and allows for the impulse response Functions (IRF)[29] and forecast error variance decomposition (FEVD)[30] analyses. These provide a chance to study the response of agricultural productivity and growth to a change in foreign aid, which is not possible with most estimators.

Assuming a first-order VAR, this study estimates the following PVAR model:

$$Y_{it} = \beta_0 + \beta_1 Y_{i,t-1} + \alpha_i + \varepsilon_{it} \quad (6.1)$$

where Y_{it} is a four-variable vector: ΔlnAgriVA or lnagriVA/W, lnODAagri, lnODArural, and lngov. ΔlnAgriVA is the change in the natural log (ln) of agricultural value-added as a proxy of agricultural growth, AgriVA/W[31] is the agricultural value-added per worker as a proxy of agricultural productivity, ODAagri is the total ODA to the agricultural sector, ODArural is the total ODA for rural development, and govagri is the total public expenditure in the agricultural sector. α_i is fixed effects variable capturing individual heterogeneity in the model. ε_{it} is the idiosyncratic error term.

Although the above specification will give the response paths of each of the variables to the shock in the other variables, this analysis is on the responses of agricultural growth and productivity to the impulses in agricultural foreign aid. As highlighted above, the study assumes that the level of development in the sector determines its foreign aid allocations, which in turn are meant to enhance its productivity and growth. Similar assumptions of reverse causality are also made for agricultural productivity/growth with government expenditure/rural development foreign aid. It postulates that with high levels of agricultural productivity and growth, the amount of investment needed from these three financing sources to sustain the attained levels will not be as high as what is needed to trigger its development process.

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[29] IRFs show the response path of one variable to a one-time shock in another variable if all other shocks in the PVAR system are held at zero.

[30] FEVD measures the magnitude of variation in one variable explained by the shocks imposed in another variable within a specific forecast horizon.

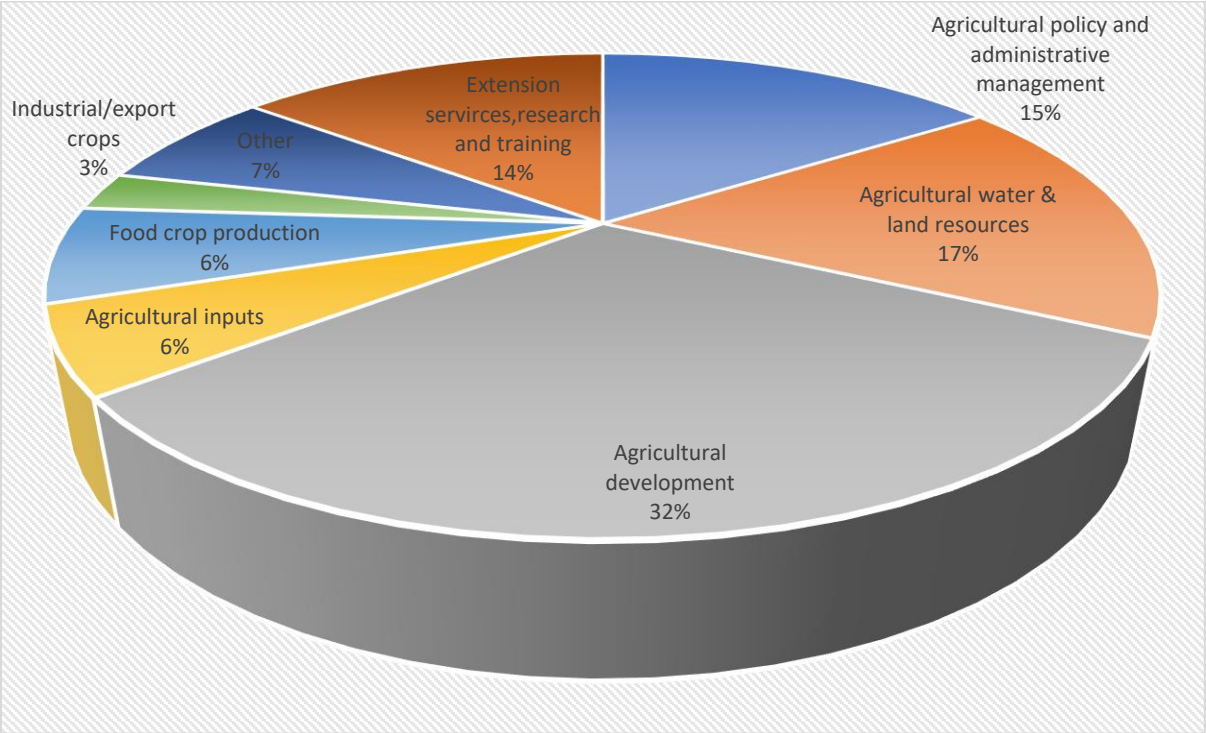
[31] We reckon the limitation of this proxy which is not fully encompassing all inputs in the model as it is mainly capturing labour productivity. As highlighted by Karugia et. al (2011), the Total Factor Productivity (TPF) measure which considers all inputs would be ideal but empirically very limited due to data paucity.

Worth noting is the relative impact of the agricultural sub-sectors to its productivity and growth (Alibi, 2014; Ssozi et al., 2018). Agricultural foreign aid in COMESA is largely skewed towards agricultural development, which accounts for an annual average of 32% of the total foreign aid in the sector. This is followed by investments for land and water resource management, which accounts for an annual average of 17% of the total foreign aid to the sector. Agricultural policy and administrative management come third with 15%, and an annual average of 14% of its total allocation is spent on agricultural research, training, and extension services (Figure 6.4). While focusing on the overall responses of agricultural growth and development to changes in foreign aid is important in highlighting the relative impact of foreign aid in the sector, assessing how sub-sectoral prioritisation has been affecting productivity in the region is equally imperative in enhancing the potency of future allocations. Therefore, equation 2 below is estimated using the Allerano-Bond Generalised Methods of Moments (A-B GMM) estimator, which also relies on lagged regressors as instruments for endogeneity.

$$lng_{it} = \beta_0 + \beta_1 lng_{i,t-1} + \beta_2 lnODArural_{it} + \beta_3 lngov_{it} + \sum_{j=1}^{k} \beta_j X_{j,i,t} + \alpha_i + \varepsilon_{1t} \qquad (6.2)$$

where g is the agricultural value-added growth rate or agricultural value-added per worker, X is a vector of ODA in the agricultural sub-sectors, and the rest of the variables are as defined above. Following inconsistencies in the foreign aid-growth literature, the signs of the foreign aid variables cannot be determined a priori. However, the study expects government expenditure to have a positive impact on agriculture productivity and growth, notwithstanding the fact that factors such as corruption that affects foreign aid potency in the sector, potentially have a similar impact on government resources.

Figure 6. 4: Aggregate Composition of Foreign aid in the agricultural Sector in COMESA (2002-2017



With most of the resources to the sector disbursed either through the Sector Wide Approaches or Sector General Budget support (SGBS), understanding how institutional quality in the region has contributed to foreign aid potency in the sector is imperative. These resources mostly cover grants which account for a regional annual average of 67% since 2002. Coupled with their SGBS disbursement modality and no repayment obligation, grants are generally perceived prone to abuse by the respective recipient governments (see footnote 37). Therefore, this chapter also assesses the relative impact of these forms of foreign aid (loans and grants) in the sector whilst focusing on how institutional quality influences the direction of their impact on the sector's productivity and growth. Proxied by the corruption index from the World Governance Indicators (WGI), the chapter estimates the equation below:

$$lng_{it} = \beta_0 + \beta_1 lng_{i,t-1} + \beta_2 lnODArural_{it} + \beta_3 lngov_{it} + \beta_4 lnODA * corr_{it} + \beta_5 corr_{it} + \alpha_i + \varepsilon_{1t} \quad (6.3)$$

where corr is the corruption index interacted with total agricultural ODA. ODA in equation 3 will be further disaggregated into loans and grants to assess how they are affected by corruption. The rest of the variables are as defined above. The chapter expects negative signs of the respective foreign aid components interacted with the corruption index with higher levels of corruption in the region.

6.4 Data Description and sources

The chapter utilised secondary data for COMESA countries[32] mainly from the World Development Indicators (WDI), the Organisation for Economic Co-operation and Development (OECD) database, ReSAKSS database, COMESA database; and the African Development Bank (AfDB) socio-economic database[33].

The chapter covered the period from 2008 to 2017, and its key variables are: i) ODA as the flow of official grants and concessional loans to developing countries with the main objective of promoting the economic and social development of the recipient economies (OECD, 2018). The focus was on ODA flows to the agricultural sector in the respective COMESA countries. Apart from considering its aggregate flows in terms of the total foreign aid to the sector and its disaggregation according to type (loans and grants), the chapter also looked at its flows to the sub-components in the sector. Some sub-components with related/similar functions were aggregated into other components due to their low shares in the total foreign aid to the sector. There is also a large share of grants covering up to an annual average of 75% in most countries between 2002 and 2017. Specifically, seven[34] of the COMESA countries registered zero values for loans throughout the period under study. Zero values were also observed for rural development foreign aid and in the agricultural subsectors. To secure all relevant data points, all the zero values were replaced by an arbitrarily small value of 0.001, and a log transformation of all the foreign aid values was utilised in the study.

ii) Agriculture value added as a proxy for growth in the agriculture sector and Agriculture value added per worker as a measure of productivity in the sector (ReSAKSS, 2019). iii) Country score on control of corruption as the extent to which public power is utilised for private gains. The index values vary between -2.5 and 2.5, with the higher values reflecting lower incidences of corruption (WGI, 2018). For the period under examination, this index was interacted with various components of foreign aid on the assumption that higher corruption levels in a recipient economy compromise foreign aid potency in infrastructure development.

Overall, data paucity was not a significant issue in this study, as only about 1.2% missing values spread across a few countries on their government expenditure were noted in the sample. As

---

[32] *With 100% agriculture value added and agriculture value added per worker missing values for Djibouti and Libya, the two countries were dropped from the sample.*

[33] *http://databank.worldbank.org/data/home.aspx; https://stats.oecd.org/qwids; www.resakss.org, http://comstat.comesa.int/; http://dataportal.opendataforafrica.org*

[34] *Comoros, Djibouti, Eritrea, Libya, Mauritius, Seychelles and Zimbabwe.*

such, all the estimations were done considering these gaps. However, different values form different data sources for the same data points made dataset choice ambiguous as all data sources that the study utilised are highly credible.

6.5 Results and Discussion

This section presents and discusses the econometric findings of this chapter. For the first part of the section that analyses the impact of aid on both agricultural productivity and growth, two models were run, respectively. The second part of the section analyses the sub-sectoral impacts of foreign aid in the sector. Lastly, the third part assesses the role of institutions in aid utilisation focusing on corruption.

6.5.1 Effect of Aggregate Foreign aid (Loans + Grants) and Government Expenditure on Agricultural Productivity and growth

6.5.1.1 Model Selection

The choice of an optimal lag order is a critical component of any VAR estimation to avert undermining the credibility of estimates due to factors such as loss of degrees of freedom with the inclusion of too many lags or functional misspecification bias if fewer lags than necessary are considered. To this end, the study adopted the commonly used moment and model selection criterion (MMSC) for GMM models by Andrews and Lu (2001). Their MMSC is consistent and is based on Hansen's (1982) *J* statistic of over-identifying restrictions and are analogous to the widely used Bayesian information criteria (BIC), the Akaike information criteria (AIC), the Hannan-Quinn information criteria (HQIC) model selection criteria, and they are referred to as the Modified BIC (MBIC), Modified AIC (MAIC) and Modified QIC (MQIC) respectively.

Table 6. 1: Lag-order selection statistics for PVAR (Model 1)

lag	CD	J	J pvalue	MBIC	MAIC	MQIC
1	.9999961	52.66837	.2982595	-160.5789	-43.33163	-90.49176
2	.9999942	24.10959	.8404218	-118.0552	-39.89041	-71.33049
3	.9999982	7.84554	.9533321	-63.23688	-24.15446	-39.8745

Table 6. 2: Lag-order selection statistics for PVAR (Model 2)

lag	CD	J	J pvalue	MBIC	MAIC	MQIC
1	.9999973	48.87191	.4378344	-164.3754	-47.12809	-94.28822
2	.9999958	21.71527	.9147953	-120.4496	-42.28473	-73.72482
3	.9999983	6.475497	.9820975	-64.60692	-25.5245	-41.24455

MBIC, MAIC, and MQIC result in Tables 6.1 and 6.2 support the choice of the first order PVAR for both models to be estimated (the first model is with agriculture value-added and the second with agriculture value added per worker and henceforth referred to as model 1 and model 2 respectively). This choice is equally supported by the panel unit results in Appendix 6.1, which confirms stationarity of all these variables in levels for both Im-Pesaran and Shin (IPS) and Fisher-Augmented Dickey-Fuller (ADF) unit root tests.

6.5.1.2 pvar Estimation

Guided by the model selection criterion in Tables 6.1 and 6.2, the first order PVARs ere run using the forward mean differencing method to remove the country-specific fixed effects (see footnote 28). Typically, pvar estimation drops all observations with missing data, which entails the loss of data points, and this notably grows with the number of lags included as instruments (Abrigo and Love, 2016). This meant potentially inconsistent estimates from the model that has missing values and used lags 1 to 4 as instruments. Thus, the estimation utilised the pvar-gmmstyle option in Stata, which minimizes such loss of data points through the replacement of all missing observations with zeros instead of dropping them.

The focus of this section is on the IFRs and FEVD that isolate the impacts of exogenous shocks in each variable on the other variables in the estimated PVAR system. To this end, the study opted for orthogonalized IRFs and their implied FEVDs, which requires that each IRF provides a response path of one variable while holding exogenous shocks in all the other variables in the system constant. It was assumed that agricultural growth and productivity have a direct effect on agricultural foreign aid, ODA for rural development and government expenditure in models 1 and 2 respectively; and that these three variables affected growth and productivity in their respective models only with a lag. In other words, the specification in this study assumes that

the level of growth and development determines the direction of both foreign aid and domestic financing in the sector.

The meaningful IRFs and FEVD are conditioned on the stability of the estimated pvars. Specifically, it is postulated that unless the estimated PVAR is stable in that it is invertible with a finite-order vector moving-average (VMA) representation, no meaningful causal relationships can be deduced from its associated IRF (Love and Zicchino, 2005). In this regard, the stata pvarstable command was utilised to assess the stability of both models prior to the IRF and FEVD computations in each model using pvarirf and pvarfevd commands, respectively.

Since the focus of the study is on how agricultural productivity and growth responds to the foreign aid-related investments, the explanation of results will be limited to how agricultural productivity and growth responds to the foreign aid-related investments in its core sector and other closely related subsectors, especially rural development. Only relevant highlights for other relationships in the PVAR models will be mentioned. However, the results of all relationships will be provided. First to be presented and explained are results for model 1, which will encompass the pvar estimates and all its necessary post estimation results (including stability, IRFs, and FEVD). This is followed by a presentation and discussion of results from model 2 before drawing unified conclusions from the 2 models.

6.5.1.3 Model 1

Table 6.3 indicates that agricultural growth has a large positive effect on the volumes of both agricultural and rural development foreign aid in COMESA, although such an effect on government expenditure appears to be temporal as reflected by the insignificance of the agricultural value-added coefficient on government expenditure. On the other hand, the table shows a marginal and unstable positive influence of agricultural ODA on the sectors' growth while government expenditure has a stable positive influence. On the contrary, ODA for rural development has a diminishing effect on agricultural growth in the region. Overall, the causality relationships deduced from Table 6.3 are simplified in Annex 6.2a, which highlights bidirectional causality among all the variables in this model except for a unidirectional causality from agricultural growth to agricultural ODA/ government agricultural expenditure.

Table 6. 3: pvar estimates

Response of	Response to			
	ln agva	ln ODA	ln rural	ln govt
ln agva	0.9013493***	0.0005505	-0.0044996***	0.0714011***
ln ODA	1.149937***	0.2361272***	-0.0325818***	0.6499424***
ln rural	2.197866**	-.6218708***	0.3948086***	-1.693382***
ln govt	0.4247529	-0.0866411***	0.0336059***	0.4557958***

*Note: i) ***, ** and * indicate the rejection of the null hypothesis of unit root at 1%, 5% and 10% respectively*

With all the eigenvalues below 1, the stability test result table and graph below highlights that the estimated PVAR above is stable and that its estimates can be informatively used in computing both IRF and FEVD.

Table 6. 4: Stability Test for Model 1

```
. pvarstable,graph

   Eigenvalue stability condition
```

Eigenvalue		
Real	Imaginary	Modulus
.9384124	0	.9384124
.4419752	-.3245973	.5483662
.4419752	.3245973	.5483662
.1657182	0	.1657182

```
   All the eigenvalues lie inside the unit circle.
   pVAR satisfies stability condition.
```

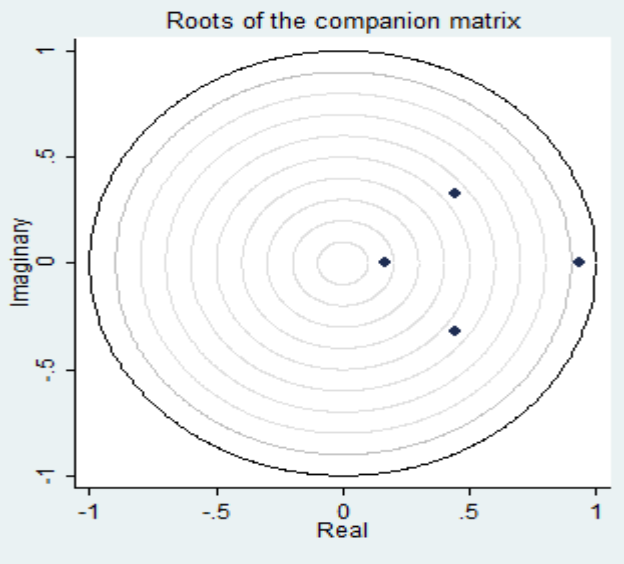
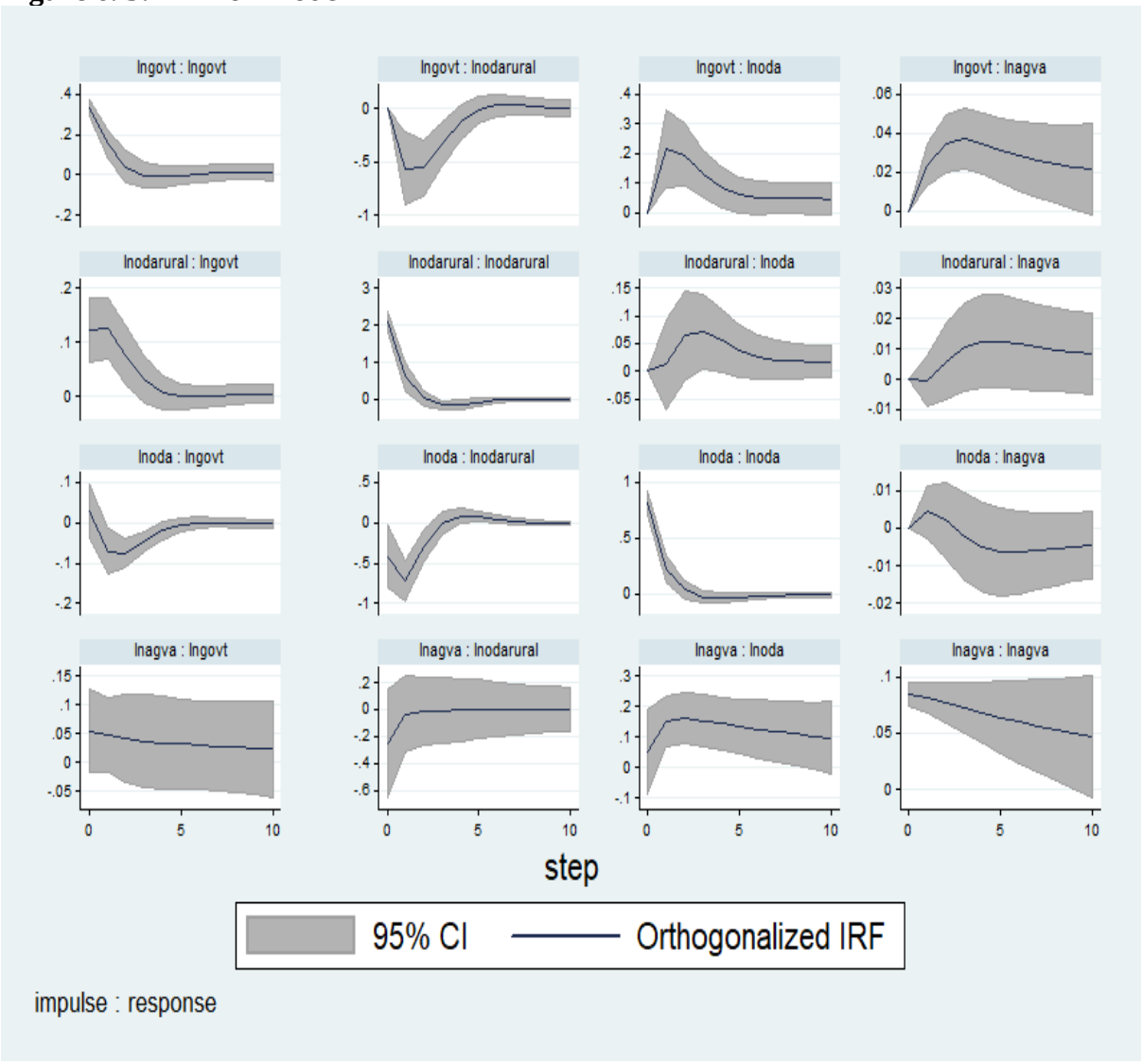


Figure 6.5 shows a marginal and unsustainable response of agricultural growth to exogenous positive shocks in agricultural ODA. Specifically, a one standard deviation increase in agricultural foreign aid results in a marginal positive change in agricultural growth for only about a year and turns into a negative trend with the minimum reached around year 5. This is quantified by the FEVD in Table 6.6, which shows that a shock in agricultural foreign aid accounts for less than 1% of the variation in agricultural growth. On the contrary, growth initially decreases marginally following a positive shock in rural development foreign aid in the

first year but steadily increases and remains positive from year two until full absorption of the shock around year 5. However, a positive reaction of growth to a change in government expenditure is more persistent and decreases smoothly from around year 4. Nevertheless, the impact of a shock in rural development foreign aid on growth in the sector is equally very low at about 1% from year 5.

Figure 6.5 also shows that exogenous changes in growth have large and sustained positive impacts on both agricultural and rural development foreign aid such that a drop in agricultural value added is matched by an increase in foreign aid which, however, steadily declines for agricultural foreign aid and remains relatively stable for rural development foreign aid after about two years. On the other hand, government expenditure shows a steady marginal decline until around year 4, although it is positive throughout the 10-year period under consideration.

Figure 6. 5: IRF for Model 1



Notably, the substitution effect of agricultural foreign aid on government expenditure, which reflects foreign aid fungibility, is persistent in the region. With an increased injection of foreign aid, the government's agricultural budget shrinks substantially, with its minimum reached around year 2.

Table 6. 5: FEVD

Response variable and Forecast horizon	Impulse variable			
	lnagva	lnoda	lnodarural	lngovt
lnagva				
0	0	0	0	0
1	1	0	0	0
2	.9598156	.0012828	.0000287	.0388728
3	.9155445	.0010595	.0015143	.0818816
4	.8835111	.0009612	.0050999	.1104278
5	.8636046	.0015605	.0088099	.1260249
6	.8519826	.0023988	.0116213	.1339973
7	.8451862	.003112	.0134927	.1382091
8	.8409575	.0036154	.0147056	.1407216
9	.8380505	.0039527	.0155236	.1424732
10	.835856	.0041854	.0161155	.1438432
lnoda				
0	0	0	0	0
1	.0037949	.9962051	0	0
2	.0330211	.9075888	.0001754	.0592148
3	.0611399	.8351099	.0049867	.0987636
4	.0845118	.7924398	.0103597	.1126886
5	.1040106	.766556	.0132649	.1161686
6	.1204647	.7483042	.0143852	.1168459
7	.1344069	.7337525	.0147649	.1170756
8	.1462395	.7214085	.0149128	.1174392
9	.1563049	.7106996	.0150101	.1179855
10	.1648984	.7013806	.0151096	.1186114
lnodarural				
0	0	0	0	0
1	.0136471	.0372976	.9490553	0
2	.0110377	.1173745	.8177561	.0538316
3	.0103554	.1234497	.7657314	.1004634
4	.010144	.1208433	.7530454	.1159672
5	.0100774	.1212467	.750879	.1177969
6	.0100585	.1220256	.750315	.117601
7	.0100546	.1222717	.7500134	.1176604
8	.010055	.1222867	.7498854	.1177729
9	.0100564	.1222789	.7498489	.1178158
10	.0100578	.1222797	.7498403	.1178222
lngovt				
0	0	0	0	0
1	.0228773	.0059728	.1179054	.8532444
2	.0299594	.0338332	.1783493	.7578582
3	.0368838	.0602614	.1957088	.707146
4	.0432289	.0696059	.196631	.6905342
5	.04885	.0709431	.1952879	.6849191
6	.0537816	.0706811	.1942519	.6812854
7	.0580985	.0703377	.1933062	.6782576
8	.0618727	.0700021	.1923918	.6757334
9	.0651709	.0696865	.1915841	.6735585
10	.0680544	.0694172	.1909031	.6716253

Despite the turn-around in the third year, government financing response to an increase in foreign aid remains negative. Contrary to the theoretical dispositions of foreign aid complementing domestic resources for growth and development, such a trend potentially maintains/widens the existing financing gaps as effectively, net allocations to the sector do not increase by the full amount of foreign aid. This undermines the potency of agricultural foreign aid in achieving its development objectives in the region. Overall, Table 6.5 highlights that up to about 7% of the variation in government spending in agriculture is explained by a single shock in ODA, which in turn accounts for up to 14% of the variation in agricultural growth.

Similarly, Figure 6.5 shows that agricultural foreign aid equally substitutes for foreign aid for rural development and explains up to 12% variation in foreign aid for rural development within 2 years. Although the response of foreign aid to both these resources is significantly complementary, it is rendered redundant because, with such positive response, the volume of rural development aid and government financing drops, leaving agricultural foreign aid as the key development resource in the sector. As highlighted above, this compromises the potency of agricultural foreign aid despite the significant potential it has in stimulating growth in the sector (see Table 6.3 and Figure 6.5)

6.5.1.4 Model 2

Although government expenditure, agricultural and rural development foreign aid do not seem to have a meaningful influence on agricultural productivity, Table 6.6 shows that their direction is largely influenced by agricultural productivity. Specifically, a shock in productivity explains up to 37% of the variations in agricultural foreign aid, 10% of the changes in foreign aid for rural development, and as high as 57% of the variation in government expenditure (Table 6.8). These causality relationships are further simplified in Appendix 6.2b, which shows that neither agricultural or rural development foreign aid nor government expenditure granger causes agricultural productivity, although the opposite holds in the region. Substantiating this trend, the IRF in Figure 6.6 shows a marginal negative decline in productivity lasting only one period following innovations in rural development foreign aid. Although it stabilises after one period, the response of productivity to a shock in rural development foreign aid remains negative. On the contrary, it marginally increases in the first year and maintains a marginal positive response in the other periods' sequel to an increase in foreign agricultural foreign aid. Furthermore, the IRF in Figure 6.6 shows that labour productivity in the sector relatively remains the same with

improvements in government expenditure. None of these investments meaningfully influence variations in agricultural productivity. While a meagre 0.05% of the variation in agricultural productivity is explained by changes in government financing, only up to 0.3% of its changes are independently accounted for by agricultural and rural development from year 7 (Table 6.8).

Table 6. 6: pvar Estimates for Model 2

Response of	**Response to**			
	ln agvaw	ln ODA	ln rural	ln govt
ln agvapw	0.9551537***	0.0042087	-0.0025198	-0.0011339
ln ODA	1.886656***	0.169764**	-0.0391102***	0.3077811*
ln rural	6.000835***	-0.5385328***	0.0617454	-1.102866***
ln govt	1.394757***	-0.0826128***	-0.0156767*	0.4602662***

*Note: ***, ** and * indicate the rejection of the null hypothesis of unit root at 1%, 5%, and 10% respectively*

Table 6. 7: **Stability Test for Model 2**

```
. pvarstable,graph

   Eigenvalue stability condition

        Eigenvalue
     Real       Imaginary      Modulus

   .9606007             0     .9606007
    .358883     -.0900397     .3700056
    .358883      .0900397     .3700056
  -.0314375             0     .0314375

   All the eigenvalues lie inside the unit circle.
   pVAR satisfies stability condition.
```

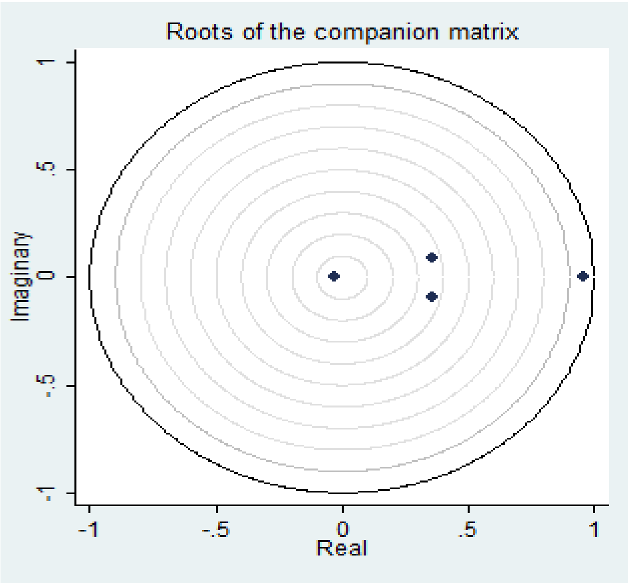


Table 6.7 confirms the reliability of the causality relationships in model 2. With all eigenvalues below one, the table quantifies by the stability estimated PVAR for model 2.

Figure 6. 6: IRF for Model 2

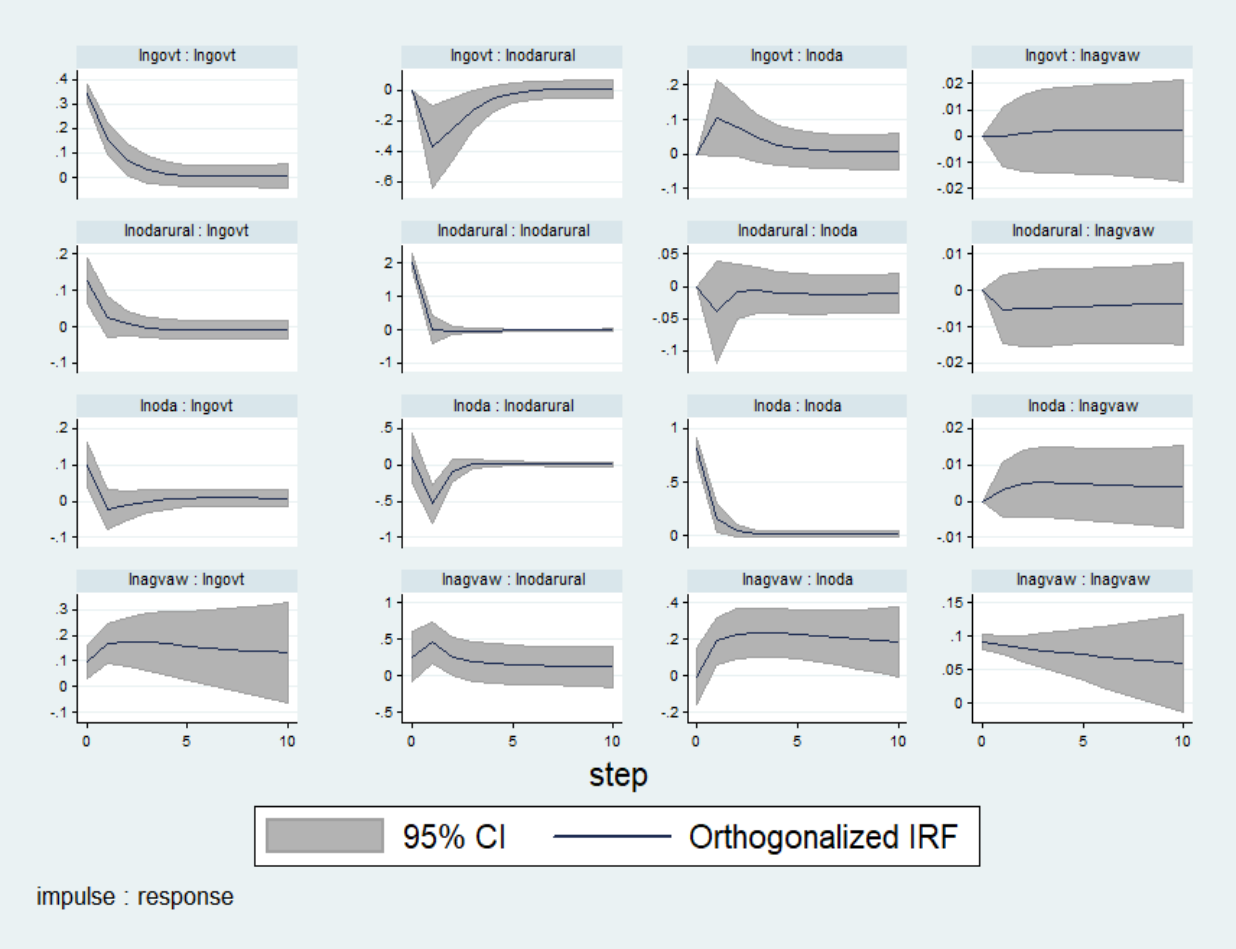


Figure 6.6 further qualifies the presence of foreign aid fungibility in the region signified by the substitution effect of agricultural foreign aid on government expenditure in the sector. Specifically, a one standard deviation increase in agricultural foreign aid is reciprocated by a sharp decline in government financing lasting about a year before marginally picking in year two and fully absorbing the shock by the end of year two. This trend is well quantified in Table 6.8, where about 6% of the variation in government spending is explained by a shock in agricultural foreign aid, but such an impact starts faltering in year 2 covering about 5% in year 2 and continues to drop to about 3% from year 5. Similarly, agricultural foreign aid has a significant diminishing effect on foreign aid for rural development. The IRF in Figure 6.6 highlights a sharp decline in foreign aid for rural development following a unit positive shock in agricultural foreign aid. Unlike the response in government financing, rural development foreign aid significantly drops but bounces back to the original level within two periods following a positive shock in agricultural foreign aid (Figure 6.6)

Table 6. 8: FEVD for Model 2

Response variable and Forecast horizon	Impulse variable			
	lnagvaw	lnoda	lnodarural	lngovt
lnagvaw				
0	0	0	0	0
1	1	0	0	0
2	.9976876	.0005885	.0017145	9.50e-06
3	.9960812	.0015121	.0023685	.0000382
4	.9950779	.0021154	.002675	.0001317
5	.9944384	.0024852	.0028357	.0002406
6	.9940093	.0027224	.002931	.0003374
7	.9937052	.0028851	.0029939	.0004158
8	.9934797	.0030037	.003039	.0004776
9	.9933062	.0030941	.0030732	.0005265
10	.9931687	.0031654	.0031001	.0005657
lnoda				
0	0	0	0	0
1	.0000176	.9999824	0	0
2	.0501972	.9323835	.0021902	.0152292
3	.1128637	.8628094	.0020994	.0222276
4	.1714329	.8033184	.0020098	.0232389
5	.2213219	.7541571	.0019852	.0225359
6	.262912	.7135245	.0020096	.0215539
7	.2976497	.6796642	.0020558	.0206303
8	.3269174	.6511534	.0021066	.0198227
9	.3518167	.6269023	.0021546	.0191264
10	.3731899	.6060866	.0021977	.0185258
lnodarural				
0	0	0	0	0
1	.0168472	.002079	.9810739	0
2	.0588138	.062539	.8487826	.0298646
3	.0707688	.0619976	.824867	.0423666
4	.077385	.0613348	.8159657	.0453146
5	.0823561	.0610577	.8109233	.0456628
6	.0866129	.0608341	.8070284	.0455247
7	.0904344	.0606155	.8036145	.0453357
8	.0939185	.0604055	.8005159	.04516
9	.0971094	.0602087	.7976805	.0450014
10	.1000354	.0600265	.7950811	.044857
lngovt				
0	0	0	0	0
1	.0615986	.0642314	.1041995	.7699705
2	.1822767	.0498338	.0801761	.6877134
3	.2819315	.0430319	.0686783	.6063583
4	.3588619	.0382207	.0610095	.5419079
5	.417318	.0347695	.0554995	.492413
6	.4625136	.0322313	.0513414	.4539136
7	.4982973	.030284	.0480831	.4233356
8	.5272443	.0287336	.0454582	.3985639
9	.5510806	.027466	.0433001	.3781534
10	.5709957	.0264099	.0414979	.3610966

Overall, pvar estimates and their associated post estimates confirm theoretical propositions for giving foreign aid that is guided by the need to stimulate growth and development. However, instead of complementing domestic resources in this regard, both models confirm that foreign aid fungibility exists in the sector as foreign aid significantly substitutes government financing in the sector. In other words, government reduces or increases its financing in the sector following an increase or reduction in foreign aid. Among other things, this has significantly contributed to the marginal and unsustainable impact of agricultural foreign aid on agricultural

productivity and growth as net expenditure in the sector and does not effectively increase by the full amount of the disbursed foreign aid. At the centre of this trend are the foreign aid disbursement modalities followed by respective donors, particularly those that limit donor participation in their utilisation.

Guided by the Paris Declaration on foreign aid effectiveness (PD)[35], Sector Wide Approaches (SWAPs) or Sector General Budget Support (SGBS) are the most commonly adopted foreign aid disbursement modalities for the sector in the region. These are part of the commonly adopted Programme Based Approaches, which involve the pooling of resources from different donors in the sector into one basket for a shared goal through the recipient government's treasury. Despite earmarking these resources for a specific sector (agriculture in this case), these resources are not project-specific, entailing the recipient government's flexibility in their usage. In most cases, these resources have no conditions except in a few instances where donors require their disbursements to meet specific policy measures. Notwithstanding the benefits of these approaches over project foreign aid, for example[36], (SGBS are highly criticised for increased fiduciary risks[37] as the usage liberty given to the recipient government makes them highly fungible (Leiderer, 2012).

On the other hand, there are Result Based, or Foreign aid on Delivery (AoD) approaches, which are also a form of budget support as they are not earmarked for specific projects but are conditioned on the delivery of donor-recipient country mutually agreed specific outcomes that are independently verified. AoD conditions incentivise recipient economies to restrict domestic and foreign aid expenditure on the prioritised investments by focusing on directly linking financing with outputs/ outcomes. As such, these approaches are advocated to avert fiduciary risk associated with SWAPs and SGBS. However, research highlights that AoD does not completely deal with foreign aid fungibility, especially in the presence of information asymmetry, particularly where government financing is private to the foreign aid recipient

[35] *Founded on 5 key principles: Ownership, Alignment, Harmonisation, Managing for results, Mutual accountability.*

[36] *Among the benefits of project support include increased funding predictability and hence, manageable development planning; and reduction in transaction costs for the recipient government through unified funding and reporting modalities*

[37] *The risk that the received foreign aid will end up financing unintended programmed with the worst scenario being benefiting the elite through corruption for example or the risk that the received foreign aid will free up government resources for the benefit of the elite inter alia.*

governments. Lederer (2012) shows that recipient governments can opt to declare less resources than what they could comfortably contribute towards the agreed development objectives and redirect these domestic resources to other uses. In which case, foreign aid will continue to substitute for domestic financing, although the degree of such risk is greatly minimised with these approaches vis-à-vis SWAPs, SGBs, and project foreign aid.

Lastly, the results show that foreign aid for rural development has a diminishing effect on agricultural growth in the region. Despite the declining trend and being persistently below agricultural foreign aid (Figure 6.3), this section shows that the impact of government financing in agriculture is much higher and significant vis-à-vis foreign. It accounts for up to 14% of the variations in agricultural growth, while foreign aid explains only 0.4% of its variations.

6.5.2 Foreign aid allocation in the agricultural sub-sectors

Having established the response path of agricultural growth and productivity to foreign aid in Section 6.5.1, this section has assessed the relative contribution of agricultural sub-sectoral foreign aid to the sector's productivity and growth. For consistency and comparability of the estimates, the study has continued with the GMM estimation of a first-order PVAR. From the onset of this section, it is worth noting that all the respective variables in both models have similar signs despite their relative differences in the magnitude of their impact and level of significance on growth and productivity.

Table 6. 9: Effect of agricultural Sub-sectoral allocations on productivity and growth

Variable	Dependent variable and Coefficient	
	Growth (lnagva)	Productivity (lnagvaw)
ln agva L1	0.7850813 ***	
ln agvaw L1		0.624225***
ln ODA rural for rural development	-0.0100372***	-0.0099768***
ln govt	0.0242848*	0.0194927*
ln policy and administrative management	0.0023374**	0.0024595**
ln agricultural development	-0.0055903*	-0.0058914*
ln water and land resources management	0.0053435**	0.0064901**
ln inputs	0.0002923	0.0008679
ln food crop production	0.0005316	0.000735
ln industrial crops/export crops production	-0.0003048	-0.0017288
ln extension, research and training	0.0045107**	0.0031608*
lnother	-.0019143	-0.0012196

*Note: *** indicates significance at 1%, ** indicates significance at 5%, and * indicates significance at 10%*

Confirming Table 6.3 pvar estimates, the A-B GMM estimates in Table 6.9 also shows a significant diminishing effect of ODA for rural development on both agricultural productivity and growth. Similarly, it also highlights that increases in government agricultural financing significantly contribute to positive growth outcomes in the sector. With a marginal effect of foreign aid on the sector's growth established in Section 6.1, Table 6.9 indicates a positive but insignificant contribution of foreign aid in 3 of the sub-sectors, including inputs, food crop production, while an insignificant negative impact is observed from industrial crop production. Despite being the main recipient of agricultural foreign aid, agricultural development sub-sector shows a significant but negative impact on the sector's growth. Significant and positive impacts are observed from water and land resource management, policy and administrative management, extension, research, and training. These results suggest that the allocation of agricultural foreign aid in its subsectors is not beneficial in maximising its growth-enhancing benefits.

Firstly, a diminishing effect of agricultural development on the region's growth on the one hand, and incremental benefits on growth from land and water resource management; policy as well as extension services and research, on the other hand, suggest evidence of misalignment of the ODA with the relative importance of the various agricultural sub-sectors. Notably, 32% of the total foreign aid earmarked for agricultural development annually represents at least double the allocations in each of the other three sectors. In this regard, at least a positive impact on growth could have justified such an allocation otherwise equitably realigning foreign aid to enhance the sector's productivity and growth through increased productive irrigation and enhanced extension systems, for instance, could have been more useful in relation to the sector's sustainable growth.

Secondly, the results highlight insignificant albeit marginal positive effects of foreign aid on growth in all the subsectors that have been receiving an annual average of not more than 6% of the total agricultural foreign aid (inputs (6%), food crops (6%) and export/industrial crop production (3%)). Realising that total agricultural foreign aid has been covering an annual average of only about 5.5% of the total foreign aid in the region from 2008, the above-average annual allocations to these sub-sectors are quantifiably very low for tangible benefits. However, the relative importance of these sub-sectors in the region's inclusive growth process cannot be overemphasized. While foreign aid for inputs and food crop production is essential for the sector's growth both through increased food security and incomes of the large population of subsistence farmers, foreign aid for industrial/export crop production is key for the region's

industrial development and enhanced export earnings (karugia et al., 2012). In this regard, heavily skewing foreign aid allocation towards agricultural development, which has a diminishing effect on the sector's growth at the expense of other potentially beneficial sectors, further suggest evidence of potential misalignment of resources in the sector.

6.5.3 Effect of Corruption on Agricultural Foreign Aid

Corruption has the expected negative sign and is significant in all the four equations run. However, different signs are obtained when interacted with the foreign aid variables in the models implying its impact on the two components of foreign aid is different. Specifically, the results in Table 6.10 shows that a marginal impact of the change in corruption is positive on both agricultural productivity and growth, and the volume of grants increases. On the other hand, its impact in the sector is negative, with an increase in loans, although such an effect cannot be statistically confirmed at conventional levels. This implies that corruption in the sector potentially compromises the potency of loans only and not grants. With at least 7 of the 17 COMESA countries included in this study without the loan component and covering an annual average of only 33% at the regional level for the entire period under study, the net effect of corruption on foreign aid utilisation at the regional level is the same as that on grants. Thus, overall, the net effect of corruption in the sector is positive, although it is still potentially compromising the utilisation of loans.

Table 6. 10: Effect of Corruption on Foreign Aid Effectiveness

Variable	Dependent variable and Coefficient			
	Growth (lnagva)		Productivity (lnagvaw)	
ln agva L1	0.8143056***	0.7939259***		
ln agvaw L1			0.7214283 ***	0.7055868***
ln ODA rural development	-0.0025456	-0.0008762	-.0009575	0.0013584
ln govt	0.0240179	0.0193645	0.0235367	0.0157984
corruption	-0.6645133***	-0.7392032***	-0.6620188***	-0.7849348***
ln oda*corr		0.0348795**		0.0365559***
ln grants*corr	0.0357256**		0.0356677***	
lnloans*corr	-0.0061975		-0.008202	

**** indicates significance at 1%, ** indicates significance at 5%, and * indicates significance at 10%*

6.6 Chapter Summary and Conclusion

The chapter sought to unveil the impact of agricultural foreign aid on agricultural productivity and growth in a PVAR framework. Using the IRFs and FEVD, the focus was on the response path of agricultural productivity and growth to the relative exogenous shocks in foreign aid. The study further assessed how prioritization of foreign aid in the sector affects its potency in enhancing productivity and growth. The study finds a unidirectional causality from agricultural productivity (growth) to foreign aid and thus confirming the theoretical dispositions of the developmental role of foreign aid. However, instead of complementing domestic resources in this regard, the results indicate that foreign aid substitutes the government's agricultural financing in the region and thus effectively compromising the potency of foreign aid by the substituted amount. However, a positive and significant coefficient of the grants (total foreign aid) *corruption interactive variable shows that corruption is not compromising foreign aid utilisation in the sector, although such negative effects cannot be completely overruled on the utilisation of loans. As such, corruption in the few countries with the concessional loan component potentially increases the fiducial risk associated with the GBS or sectoral support approaches that are commonly used in the region.

Furthermore, the results suggest that the allocation of agricultural foreign aid in its subsectors is not beneficial in maximising its growth-enhancing benefits. The chapter found that foreign aid in the sector is heavily skewed towards agricultural development, which has a diminishing effect on the sector's growth at the expense of other growth-enhancing sub-sectors, including extension, research, and training as well as water and land resource management. Lastly, the results indicate that foreign aid for rural development has a diminishing effect on both agricultural productivity and growth in the region. Despite the declining trend and being persistently below agricultural foreign aid, the chapter found that the impact of government financing in agriculture is much higher and significant vis-à-vis foreign aid. It accounts for up to 14% of the variations in agricultural growth, while foreign aid explains only 0.4% of its variations.

Overall, the chapter observed that the key developmental role of agriculture is achieved through its backward and forward linkages with other relevant sectors in the economy. This is accomplished through its increased productivity and growth to effectively meet the growing demand of raw materials, labour and income as the economy advances. Among other things, this process demands significant investments to transform the sector and enhance its growth. Despite the low levels of foreign aid allocated to the sector in this regard, marginal impacts of

foreign aid on the growth outcomes have been observed mainly owing to foreign aid fungibility and misalignment of foreign aid in its sub-sectors with its growth and development objectives. While misalignment is largely a function of domestic priorities, foreign aid fungibility is potentially seen to be an effect of foreign aid delivery modalities that do not enforce accountability with AoD approaches bearing a very minimal risk of fungibility occurrences vis-à-vis SWAPs, SGBS or project foreign aid. Significantly, the risk of foreign aid fungibility potentially increases with high levels of corruption.

Therefore, a comprehensive revision of aid on delivery modalities in the agricultural sector is necessary in the region. Focusing on eliminating fungible resources, COMESA and its development partners should enhance accountability and potency of foreign aid receipts first by adopting Aid on Delivery (AoD) approaches. As shown in Section 6.1, future allocations of foreign aid under AoD approaches are strictly a function of a recipient country's achievement of mutually agreed outcomes (Stefan Leiderer, 2012:4). Among other things, this will effectively discourage recipient governments to reduce their counterpart funding as that would mean a mismatch of the planned resources vis-à-vis expected outputs and hence, compromise their ability to deliver on the agreed outcomes. Secondly, COMESA should focus on eliminating corruption in all its member countries to further minimise the risk of misdirecting both foreign aid and domestic resources to non-growth enhancing activities. These should be properly supported by the equitable alignment of the received resources with the sectoral goals.

Moreover, a thorough understanding of the relative roles of the various agricultural sub-sectors by COMESA remains imperative in guiding its resource allocation for enhanced efficiency in attaining its sectoral development goals. Focus in the respective sub-sectors should be on components with relatively higher positive impacts on productivity and growth. There should be a shift of resource allocation bias from agricultural development to land and resource management to encourage the region's exploitation of its untapped irrigation potential. Funding should be availed to industrial/export crops to encourage diversification of its export base and agro-based industrial growth. COMESA member states should also increase allocations for research, training, and extension services to ensure its adoption of high yielding inputs and advanced agricultural related technologies. The higher impact of domestic resources on agricultural productivity and growth further suggests the need to cut foreign aid dependency and focus on inward-looking policies for growth. Policies and strategies that focus on increasing domestic revenue would be beneficial in this regard for a self-sustaining growth process.

CHAPTER 7: FOREIGN AID AND ECONOMIC INFRASTRUCTURE

7.1 Introduction

The importance of physical capital accumulation in the neoclassical production function and hence, economic growth can never be overemphasized. Broadly covering a wide range of direct and indirect tangible means of production,, including factories, schools, and roads, economic infrastructure continues to be one of the core components of capital accumulation. Broadly perceived as the stock and quality of transport, energy, information, communication and technology (ICT), water and sanitation infrastructure; economic infrastructure remains key in enhancing productivity and competitiveness of a country through effective reduction of production and transaction costs. These reductions in costs are partly through capital deepening and eased access to trade information because of reductions in asymmetries and other market imperfections that are caused by compact and extensive ICT systems. Furthermore, there is easy connectivity and accessibility of markets, the enhanced attraction of viable FDI, and supply value chains both at the country and regional levels through a reliable and efficient transport network as well as energy supply.

While it is widely agreed among practitioners and policymakers that good infrastructure sets the pace of economic growth and development, it is equally clear that its development pace must be accelerated particularly in the initial stages of a country's development if it is to effectively meet infrastructure demands as the economy grows (Kim, 2006; Garsous, 2012). This is particularly from the understanding that infrastructure provides a solid foundation for efficient production and distribution. As such, the need to further increase the stock of infrastructure in advanced economies is not as urgent as in the developing countries as the value addition of such investments will be very minimal[38]. In contrast, its contribution to the developing countries is significant vis-à-vis its contribution to the developing countries. Proponents of foreign aid advocate a good balance in the prioritization of foreign aid receipts across sectors to ensure that infrastructure needs are catered for throughout the development process. (see Rosentein-Rodan 1961; Chenery and Strout, 1966 and Cauas, 1973). In other words, for effective growth and development thrust from foreign aid, the focus should be on the core growth sectors without neglecting the indispensable role of key support sectors such as economic infrastructure. Specifically, Murphy et al. (1989) and Wang (2015) advocated

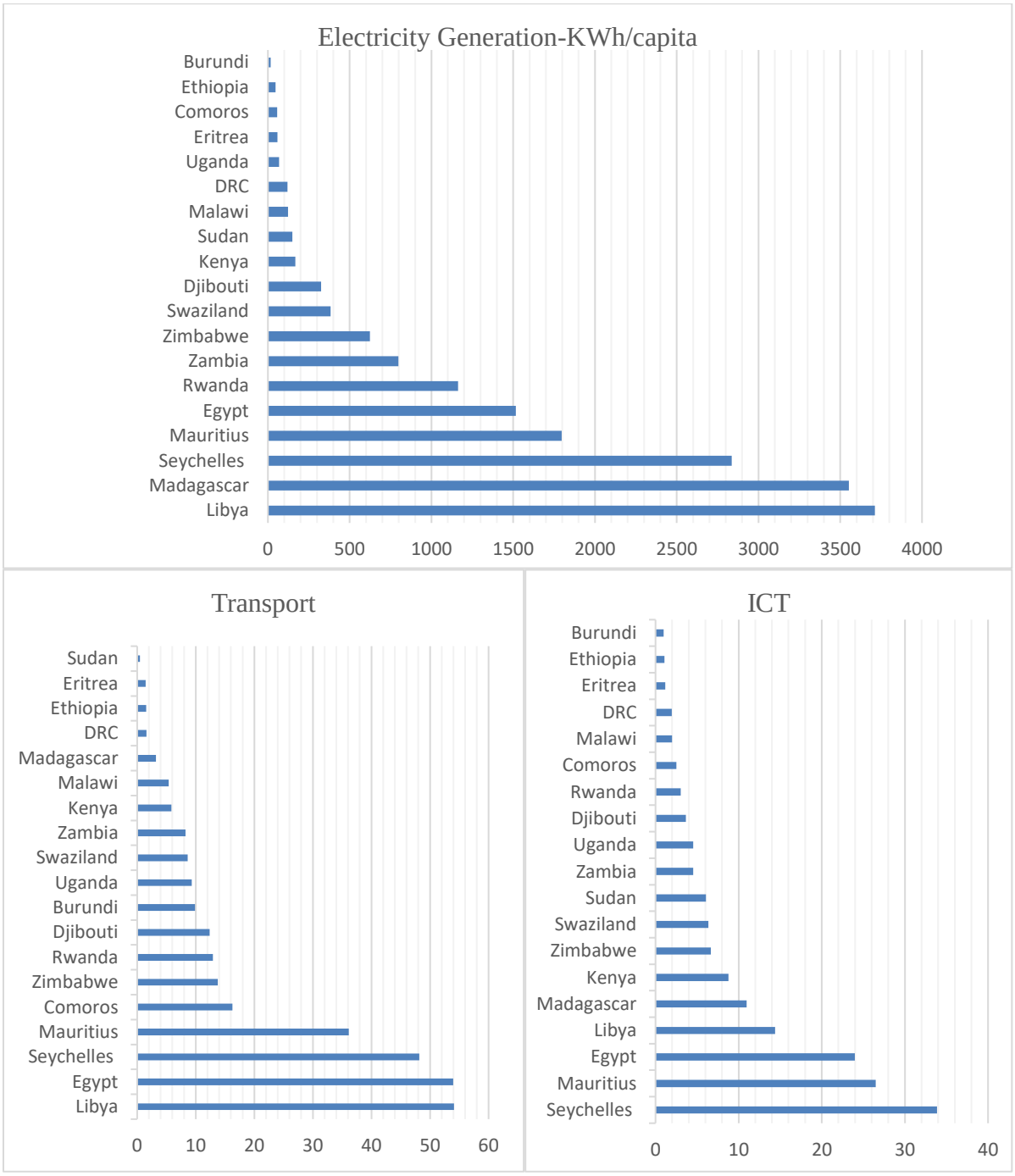
[38] *However, this does not negate the need for continuous maintenance and improvement of existing infrastructure.*

economic infrastructure development as key in bringing about the desired growth outcomes from the investments made in the core growth sectors.

However, infrastructure bottlenecks remain among the key culprits affecting its intra-regional trade, investments, and hence, overall growth both from the supply and demand sides in COMESA (Muuka et al. 1998; ECA 2004; Ancharaz et al., 2010; Mlambo and Mlambo, 2018). These mainly consist of poor and inadequate transport, power, and communication infrastructure that heavily compromises COMESA countries' ability to timely produce and access markets. Ultimately, these infrastructure setbacks have significantly increased their overall production costs and dampened their growth and development levels. This situation prevails in spite of decades of foreign aid to the region receiving an annual average of about 39% of the total aid to Africa since 2002 (Figure 1.2)

Empirical research reveals that transport costs are generally higher by about 35% in landlocked countries than those on the coast, covering up to 70% of their export value (ECA 2004; ECA 2010). This is mainly because of their remoteness from the main world markets, which, coupled with poor transport infrastructure and systems within their countries and neighbours particularly in developing countries, has a huge negative impact on their overall transportation costs. With 50% of its membership being landlocked, this means that COMESA is loaded with an eminent task of ensuring that it has the most efficient and effective transportation system if it is to fairly compete on the international markets and efficiently enhance its intra-regional trade. However, due to budgetary constraints, COMESA has not been able to effectively address this challenge. A lot still needs to be done to develop a well-integrated multimodal transport system that effectively connects its different member states to its regional and international markets. Notwithstanding regional efforts to cover some of its infrastructure gaps in recent years, missing links are still persistent on key points within and among different modes in the region as well as in individual member states, including those that are open to the sea. Except for Egypt, Libya, Seychelles, and Mauritius, transport infrastructure gaps are evident in COMESA countries as partly reflected by the consistent low scores on the road transport infrastructure index over the last decade (figure 7.1). These gaps render inter-modal transfer of goods unfeasible in some instances and hence, very expensive to timely transfer of goods both within the region and to international markets.

Figure 7. 1: Infrastructure Composite Index (2000-2015 Average Scores)



Source: Author's Calculations from the African Infrastructure Development Index (AIDI)[39], 2013; 2016

[39] *Developed by the African Development Bank, the AIDI is a composite index covering four main components: transport (roads), water and sanitation, ICT and electricity. These are aggregates of 9 key indicators: total paved roads (km/10,000 inhabitants) and total road network in km (per km2 of exploitable land area) for roads; net generation (KWh/capita) for electricity; total Phone Subscriptions (per 100 inhabitants), number of Internet Users (per 100 inhabitants), fixed (wired) Broadband Internet Subscribers (per 100 inhabitants) and International Internet Bandwidth (Mbps). It takes values between 0-100 for ICT, transport and water and sanitation.*

Whilst transport infrastructure is one major constraint, energy and ICT sectors are equally underdeveloped in the region (Figure 7.1). Coupled with intermittent supply, the low per capita energy generation of less than 200kwh, on average in 9 of the 18 COMESA countries, cannot effectively support their growth-enhancing structural transformation. Using per capita consumption as a proxy for both direct and indirect costs of energy, ECA (2006) noted that energy costs were generally higher in countries with lower energy per capita consumption. Thus, high energy costs and unreliable energy supply in the region further inhibit competitiveness as these significantly limit manufacturing and commodity processing capacities, among other things. Consequently, most countries have remained reliant on a few ranges of primary agricultural products for exports and growth (UNCTADstats). Similarly, underdeveloped ICT infrastructure in most countries further undermines competitiveness through increased transaction costs relative to other regions with well-developed ICT services. With good ICT infrastructure, transaction costs are further reduced through a reduction in the costs of obtaining relevant information that enables businesses to make timely decisions (ECA, 2010).

While infrastructure bottlenecks are a function of several factors, including inefficient institutions, it is evident that its underdevelopment and/or lack of it in COMESA remains a key hurdle for its growth and development. The empirical literature on infrastructure and growth has focused on how good quality and quantity of infrastructure matters in stimulating growth with very little on its financing modalities. This chapter addresses the later focusing on ODA as the main source of development financing in COMESA. The chapter emphasises the potency of different forms of foreign aid (loans and grants) in the development of key aspects of economic infrastructure in the region.

The rest of the chapter is organised as follows: the next section examines empirical evidence justifying infrastructure investments to enhance growth. Section 7.3 reviews the theoretical foundations of ODA as it relates to infrastructure development financing. Section 7.4 presents the methodology and data. Finally, Section 7.5 discusses the results and highlights policy implications from the key findings of this study.

7.2 Literature Review

7.2.1 Economic Infrastructure and Economic Growth

Recent debates on Africa's inclusive and sustainable growth focus on structural transformation as a key priority in transforming its development platform (Lopes et al., 2017). This requires deliberate efforts by African governments to develop and implement policies that cover their productivity gaps through the reallocation of labour and rationalisation of industries based on their comparative advantage. Underpinning such a transition includes the prioritisation of economic infrastructure development as a key enabler of productivity, inclusive, and sustainable economic growth (AIDI, 2013). Infrastructure is key in facilitating movements of factors of production, enhancing competitiveness and access to markets, stimulating FDI, and enhancing total factor productivity through its positive impact on the quality of labour, production and distribution costs as well as the advancement of technology. While this positive role in enhancing productivity and growth is undisputed by both practitioners and academicians, empirical findings on the magnitude and direction of this relationship is not unanimous. These emanate from the methodologies (estimators) used (see Esfahan and Ramirez, 2003:443) as well as from the quality and quantity of the infrastructure component considered in the analysis. Overall, research has shown that lack of relevant economic infrastructure is prohibitive to growth (see Aschauer, 1989; Munnell, 1990; Schwartz, 1994; ECA, 2010; sojood et al., 2012) and generally, various infrastructure components impact economic growth rates in different ways.

In his seminal work, Aschauer (1989) argues that infrastructure greatly influences growth. Using both ordinary least squares (OLS) and two-stage least squares (TSLS) estimation methods on the G7 countries data between 1966 and 1985, he found high output elasticity of public infrastructure (0.39). Similar results were reported by Holtz-Eakin (1988), Munnell (1990), Munnell (1992) as well as Easterly and Rebelo (1993) with coefficients ranging from 0.34 to 0.66. Recent studies with similar conclusions include Nedozi et al. (2014), who contended that infrastructure development remains indispensable in Nigeria's growth and development. Using simultaneous equations to analyse the effect of infrastructure on growth in Nigeria, they alluded to the fact that infrastructure serves as a key input in the production process without undermining its indirect impact on growth through its effects on the overall

costs, quality of labour and technology[40]. Therefore, various economic infrastructure components can be used as part of inputs in the production process or to facilitate linkages between different components in the production and market chain. For instance, a reliable energy supply is a key input in the manufacturing process and the advancement of value chains in the production process. While efficient transport infrastructure, on the other hand, is key in enhancing the development of value chains through eased connectivity and reduced transportation costs between relevant industries in the production chain and markets. Moreover, transport infrastructure is equally crucial in facilitating movements of labour to the relevant production centres. Thus, growth-enhancing structural transformation and hence inclusive growth will require balanced investments in the various components of the economic infrastructure as they each play a distinctive role in covering productivity gaps facing most developing countries.

While high returns of infrastructure on growth are evident in most empirical studies, research also shows significant disparities in the magnitude of this impact on growth. Eakin and Schwartz (1994) and Esfahani and Ramirez (2003) confirm the positive impact of infrastructure on growth but note that the magnitude of their positive effects is significantly different. Eakin and Schwartz do not support the assertion of high growth outcomes from infrastructure investments. Nevertheless, they both found that the extent of this impact was largely contingent on the country's institutional and policy context. This means that the poor the quality of institutions (e.g., rampant corruption) and infrastructure policy *inter alia*, the higher the financial and economic cost of infrastructure and the longer it takes to fully translate these costs into benefits with a possibility of negative returns from such investments (also see Tanzi and Davoodi, 2002). These observations are in line with Barro's (1990) theoretical expositions, which suggest a negative impact of infrastructure investment on growth if the cost of that investment falls below its benefits. While failure to account for this as well as other channels through which infrastructure indirectly impacts growth holds for disparities in a number of studies (see Ramirez and Esfahani, 1999; Esfahani and Ramirez, 2003), significant diversions in infrastructure-growth outcomes are also seen to emanate from the estimators adopted and the level of development of the infrastructure component(s) being considered in the analysis.

40 Similar observations were made by Pesaran et. al., 2000; Calderón and Serven, 2004; Babatunde et. al., 2012; Birhanu, 2017.

The contentious issue surrounding the choice of estimators concerns the possible endogeneity of infrastructure in the model. Generally, bi-directional causality between infrastructure and growth is seen in most empirical studies (see Pesaran et al., 2000; Babatunde et al., 2012; Garsous, 2012; Badalyan et al., 2014). This strand of literature indicates that the quality and quantity of infrastructure remain key in determining the direction of economic growth. It also shows that the country's level of growth and development determines the quality and quantity of infrastructure needed to either sustain the attained growth levels or to further enhance its growth. Utilising viable instruments to control for infrastructure endogeneity in their model, Fedderke and Bogetic (2006) confirmed that infrastructure was endogenous in most growth models being widely estimated, resulting in spurious and hence inconsistent results in most empirical studies.

Lastly, the level of development of the infrastructure component being considered also influences the direction and magnitude of its impact on growth. For instance, Sojoodi et al. (2012) confirmed a positive impact of transport and telecommunications infrastructure but did not ascertain the existence of a positive impact of energy on per capita output in Iran. As indicated earlier, the notion of energy as one of the key components in industrial production is widely accepted, but the quality and quantity of its infrastructure remain essential in determining its efficiency and reliability in the production and distribution process and hence, growth. This underscored by AIDI, (2013) and (2016) observed that though very key to Africa's growth and development, energy infrastructure's slow development remains among the key setbacks for its growth. Similarly, AfDB et al. (2010) pointed out missed opportunities of up to 40% in productivity gains by African firms and the consequent losses of at least 2% in annual growth due to inadequate and underdeveloped infrastructure. In other words, underdeveloped components of economic infrastructure can hardly have tangible effects on growth as they inhibit productive utilisation of both physical and human capital (see ECA, 2010).

Overall, the role of infrastructure in stimulating growth is widely understood among practitioners and policymakers. While there is wide documentation of this aspect of infrastructure and growth as discussed above, very little has been done to analyse the relative contribution of the various sources of infrastructure financing to effectively guide its development policy. Hence, this study, which among other things, contributes to the reduction of this gap in the literature by focusing on how foreign aid can contribute to infrastructure development to enhance the sector's potency in stimulating economic growth.

7.2.2 Role of Foreign Aid in Economic Infrastructure Development: Theory and Evidence

Underpinning most infrastructure-growth analyses is the neoclassical growth model which takes the form

$$Y = f(K, AL) \tag{7.1}$$

Where Y is the national output, K is the stock of capital which is generally perceived as a stock and quality of both direct and indirect means of production including schools, hospitals, factories, transport, ICT and market infrastructure, L is the labour force, and A is the productivity of labour. Assuming Cobb-Douglas technology with constant returns to scale, we get

$$Y = K^{\alpha}(AL)^{\alpha-1}, 0 < \alpha > 1 \tag{7.2}$$

such that we can rewrite (1) as ${}_{\gamma}Y = f({}_{\gamma}K, {}_{\gamma}L)$. Expressing output in units of labour we get $y = f(k)$ such that the more a country invests, the more it grows. Given that the change in the capital-labour ratio over time is $k = \frac{K}{AL}$ then,$y = k^{\alpha}$, assuming the productivity of labour is constant. Therefore, the change of capital over time will be given by actual investment (proxied by savings less what is spent on replacing capital and invested in the labour force).

$$\Delta k = sf(k) - G - (\delta + n)k \tag{7.3}$$

Where $sf(k)$ is the national savings, δ is the depreciation rate, G is the government investment on labour and n is the growth rate of labour. This shows that a country needs to save more to efficiently finance its requisite investments for inclusive and sustainable growth (see Todaro and Smith, 2012). However, gap theories stipulate that $sf(k)$ in developing countries is hardly enough to finance the requisite investments for the desired growth levels. Furthermore, the developing country's ability to augment these savings through competitive markets is largely impaired by their underdeveloped production and market structures. To this end, foreign aid is advocated as the most viable temporal means for closing the infrastructure financing gap in developing countries without which, moving on to a self-sustaining growth path will be virtually impossible for most countries. This perspective equally anchors Rostow's Stages of economic growth, where foreign aid provides the thrust that developing countries need to launch onto a self-sustaining growth path. Similarly, in the Big Push theory, Rosestein-Rodan (1961) shows how foreign aid could significantly increase investment rates for the growth of underdeveloped countries. Underlying all these theories is the belief that developing countries

are unable to raise the required savings for the much-needed infrastructure for sustainable growth and development.

The above theoretical observations are well underscored by ECA (2015). While emphasizing on utilizing domestic resources in closing the infrastructure deficit, the study emphasises the role of foreign aid as a temporary measure in Africa's structural transformation for sustainable and inclusive growth. With an annual infrastructure deficit of US$ 93 billion, the study found that the region could potentially mobilise only 48% (US$45 billion) annually. Qualifying the 52% percent of the annual infrastructure deficit in foreign aid as the resources to give the region the push it needs in its development transitioning, the study contends that foreign aid will be instrumental in closing this infrastructure financing gap only in two decades. However, in line with the findings of Burnside and Dollar (2000), this temporal need of foreign aid was dependent on the region's sound revenue reforms and policies. In this regard, receiving the requisite annual 52% to close the infrastructure financing gap in the next two decades could potentially lead to more problems for the region including increased debt burden and continued foreign aid dependency. These problems will particularly manifest if the region does not do its part in ensuring that the received aid is effectively utilised and other avenues for increasing its revenue for further development of its infrastructure are explored

Barañano et al. (2014) found that the net effect on foreign aid on infrastructure development is largely a function of the structural characteristics and policies inherent in the recipient economies. These findings concur with Burniside and Dollar (2000), who contended that recipient policies and institutions are key in rendering foreign aid effective or ineffective as they determine its allocative efficiency and optimal utilisation of the received resources in the respective sectors. Similar conclusions were also drawn by JBC (2008) and Djajic´ (2009), who confirmed that the level of institutional and policy distortions in a recipient economy determine the net effect of foreign aid on infrastructure development.

Overall, although very scanty, empirical evidence agrees with the theory that foreign aid has the potential to enhance infrastructure development in aid recipient economies provided their policies and institutions are in support of this development course. As such, it remains important to account for these factors in the analysis of the impact of foreign aid on infrastructure. In the case of dynamic modelling as in the present study, most foreign aid-growth studies show the importance of relevant methodologies as these equally undermine the results by providing spurious regressors.

7.3 Methodology

Detailed analyses of dynamic panel data models are largely undermined by correlation concerns that ensue the addition of the lagged depended on variable as a regressor. This is exacerbated by the existence of endogenous variables in foreign aid panel analysis (Gomanee et al., 2005; Moreira, 2005; Clemens et al., 2011) as they are both potentially correlated with the unobserved individual effect. Therefore, an appropriate choice of estimators remains crucial in averting spurious estimates for policy inferencing. Consequently, this chapter adopts the Blundell-Bond (BB) (1998) system GMM estimator, which is among the few estimators with reliable estimates for a dynamic panel in the presence of endogenous variables (Statistik, 2015). Other competing estimators include the Difference in Difference (DID) estimator and the Instrumental Variable (IV) estimator. While finding viable instruments for the IV estimator is a formidable task, the DID estimator relies on strict exogeneity of the variables, which is not guaranteed in the presented study.

The Blundell-Bond (BB) (1998) estimator works by first differencing the estimated equation to remove the effects of time-invariant omitted variables to ensure that the resulting first differenced instrument variables are not correlated with the model's fixed effects. It then jointly estimates the original level and the first differenced equations as a system by combining lagged levels and lagged differences of both the dependent variable and regressors in the two equations as instruments for endogeneity. The estimator works by first differencing the estimated equation to remove the effects of time-invariant omitted variables to ensure that the resulting first differenced instrument variables are not correlated with the model's fixed effects. It then jointly estimates the original level and the first differenced equations as a system by combining lagged levels and lagged differences of both the dependent variable and regressors in the two equations as instruments for endogeneity.

Grounded on the neoclassical growth model in Section 2.2, the general model in this chapter is specified as

$$lng_{i,t} = \rho lng_{i,t-1} + \beta_0 ODA_{i,t} + \sum_{j=1}^{k} \beta_j x_{j,i,t} + \varepsilon_i + \mu_{i,t} \quad (6.4)$$

Where g is the infrastructure development index, ODA is foreign aid to the economic infrastructure sector. X is a vector of k specific factors influencing the sector's outcomes, and these are public and private expenditure in the sector which are expected to have a similar impact on the sector's outcome as foreign aid, inflation that implicitly affects the cost of

infrastructure projects, corruption and institutional bureaucracies which potentially compromise the quality and delivery of infrastructure projects contracts. The latter will be proxied by the corruption index (corr) from the Worldwide Governance Indicators (WGI) by the World Bank (WB). Gross domestic savings (Sav) will be used as a proxy for public and private expenditure on economic infrastructure as for most of the countries in the region, and such expenditure data is missing. The choice of this proxy is justified by the theory, which postulates that the higher the saving rates in an economy, the better its capacity to invest in infrastructure projects to enhance its overall productivity and growth (Todaro and Smith, 2012). ε captures country-specific attributes that do have an impact on infrastructure development, and μ is the white noise error term. Accordingly, the study will estimate equation 5 below:

$$lng_{it} = \beta_0 + \beta_1 lng_{i,t-1} + \beta_2 lnODA_{i,t} + \beta_3 inf_{i,t} + \beta_4 Sav_{i,t} + \beta_5 GDP_{i,t} + \varepsilon_i + \mu_{it} \qquad (7.5)$$

Where inf is the inflation rate, Sav is the gross domestic savings, GDP is the real gross domestic product, and the rest of the variables are as defined above.

With the region receiving an annual average of about 55% of its economic infrastructure from foreign aid in the form of loans during the period being examined (Figure 7.2), ODA is further disaggregated into loans and grants to find out which form of foreign aid is more productive in developing economic infrastructure in the region. This is expected to reveal whether the current composition of foreign aid in the sector is beneficial in enhancing its growth and development objectives. If loans motivate prudent utilisation as recipient economies are obliged to pay back with interest (concessional rate), the higher component of loans in the economic infrastructure foreign aid is expected to boost the overall potency of foreign aid in the sector *ceteris paribus*. However, the study recognizes that just like with grants, other factors such as corruption might compromise the potency of loans and as such, having a higher loan component vis-à-vis grants will equally compromise the overall potency of infrastructure foreign aid (see Section 7.2.1 par 3). Accordingly, the foreign aid components in (7.5) will be interacted with the corruption index as in equation 7.6 below to ascertain the extent to which corruption compromises the potency of the different types of foreign aid, and hence, its overall potency in the sector.

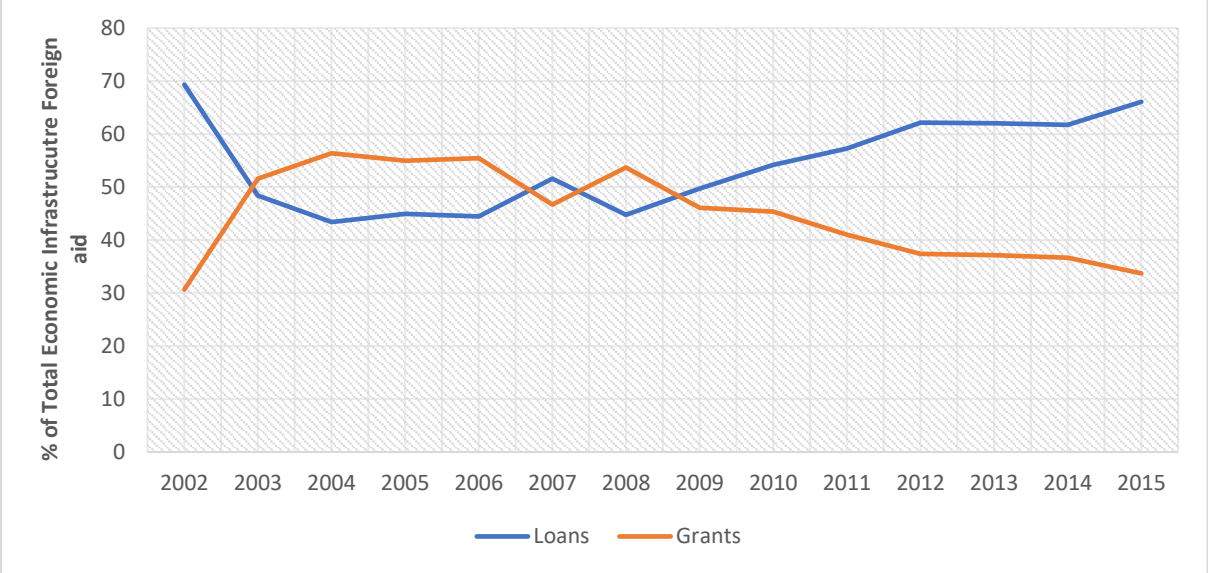
$$lng_{it} = \beta_0 + \beta_1 lng_{i,t-1} + \beta_2 corr_{i,t} + \beta_3 inf_{i,t} + \beta_4 Sav_{i,t} + \beta_5 GDP_{i,t} + \beta_6 lnODA_{i,t} * corr_{it} + \varepsilon_i + \mu_{it} \qquad (7.6)$$

Where corr is the corruption index, and the rest of the variables are as defined above.

In line with the inconsistencies in the foreign aid-growth literature, the sign of the β_2 (total infrastructure foreign aid, loans, or grants) in the above equation 7.5 cannot be determined a

priori. However, we expect β_6 in equation 6 to be negative as poor quality of institutions and governance (corruption) chokes off good investments (Burnside and Dollar, 2000; Tanzi and Davoodi, 2002). It is postulated that there will be a decrease in economic infrastructure foreign aid inflows and thus a decrease in foreign aid-financed infrastructure investments with high levels of corruption and weak institutions. Thus, β_2 in equation 6 is expected to be negative. Cognisant that most of the factors that affect prudent utilisation of foreign aid have a similar impact on domestic resources (savings), the sign of β_4 cannot be equally determined a priori. In other words, just like with foreign aid, a country's ability to productively invest its savings is equally crowded by policy and institutional quality (Burnside and Dollar, 2000). A negative sign is expected for β_3 as higher levels of inflation are expected to erode the purchasing power and thus increase the overall cost of the infrastructure project. Guided by empirical evidence, which suggests that the lower the level of growth (income) and hence development, the higher the importance of economic infrastructure in growth and development (Kim, 2006; Garsous, 2012), a positive sign is expected for β_5 in COMESA countries.

Figure 7. 2: Composition of Economic Infrastructure Foreign Aid in COMESA (2002-2015)



Source: OECD Database accessed on October 18, 2018

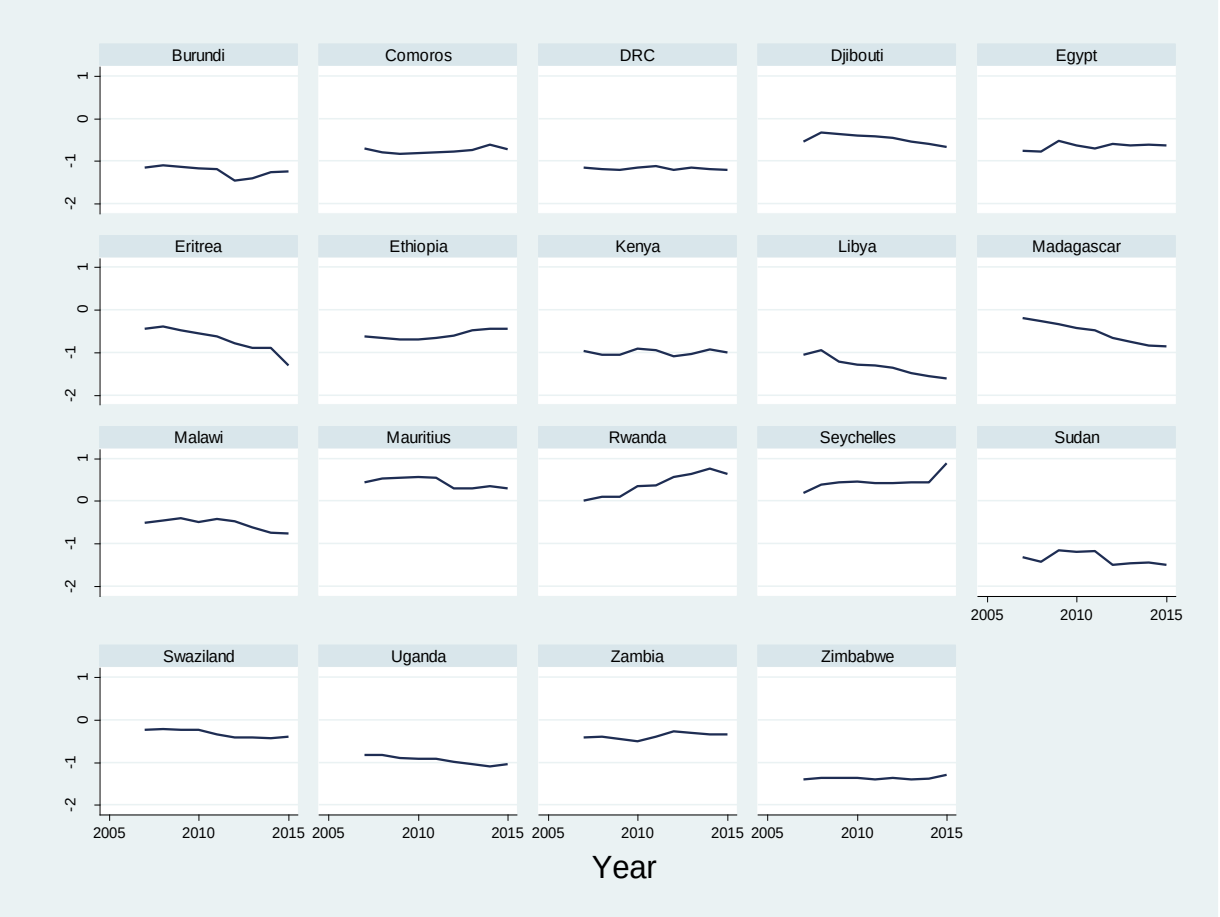
7.4 Data

Key variables in this chapter are i) AIDI which shows the level of economic infrastructure development per capita across Africa with higher values of the index representing better quality and quantity of infrastructure per capita (AfDB, 2013); ii) ODA as the flow of official grants

and concessional loans to developing countries with the main objective of promoting the economic and social development of the recipient economies (OECD, 2018); iii) Corruption as the extent to which public power is perceived to be utilised for private gains. The index values vary between -2.5 and 2.5, with the higher values reflecting perceived lower incidences of corruption (WGI, 2018).

Figure 7.3 shows evidence of corruption in all the COMESA countries, although the perceived levels vary significantly. The countries are rated on a scale of 4 with corruption index scores between -2.5 to -1 representing very high levels of corruption; -0.99 to 0 high levels of corruption; 0.1 to 0.99 low levels of corruption; 1 to 2.5 very low levels of corruption. Since 2006 Burundi, DRC and Libya have very high levels of corruption. Figure 7.3 further shows that very high levels of corruption have been persistent in Sudan and Zimbabwe for the entire period under study. There are also persistent high levels of corruption in all the other countries, with the exception of Mauritius, Rwanda, and Seychelles. While commendable improvements are visible in Rwanda in the three periods considered in Figure 7.3, corruption is perceived to have been increasing in countries such as Burundi, Eritrea, Libya, Madagascar, Sudan, and Uganda. However, the figure shows that on aggregate, corruption levels have been going down in the region. The respective annual scores from the countries in the region were interacted with the various annual corresponding components of foreign aid on the assumption that higher corruption levels in a recipient economy compromise foreign aid potency in infrastructure development.

Figure 7. 3: Control of Corruption Scores (2002-2015)

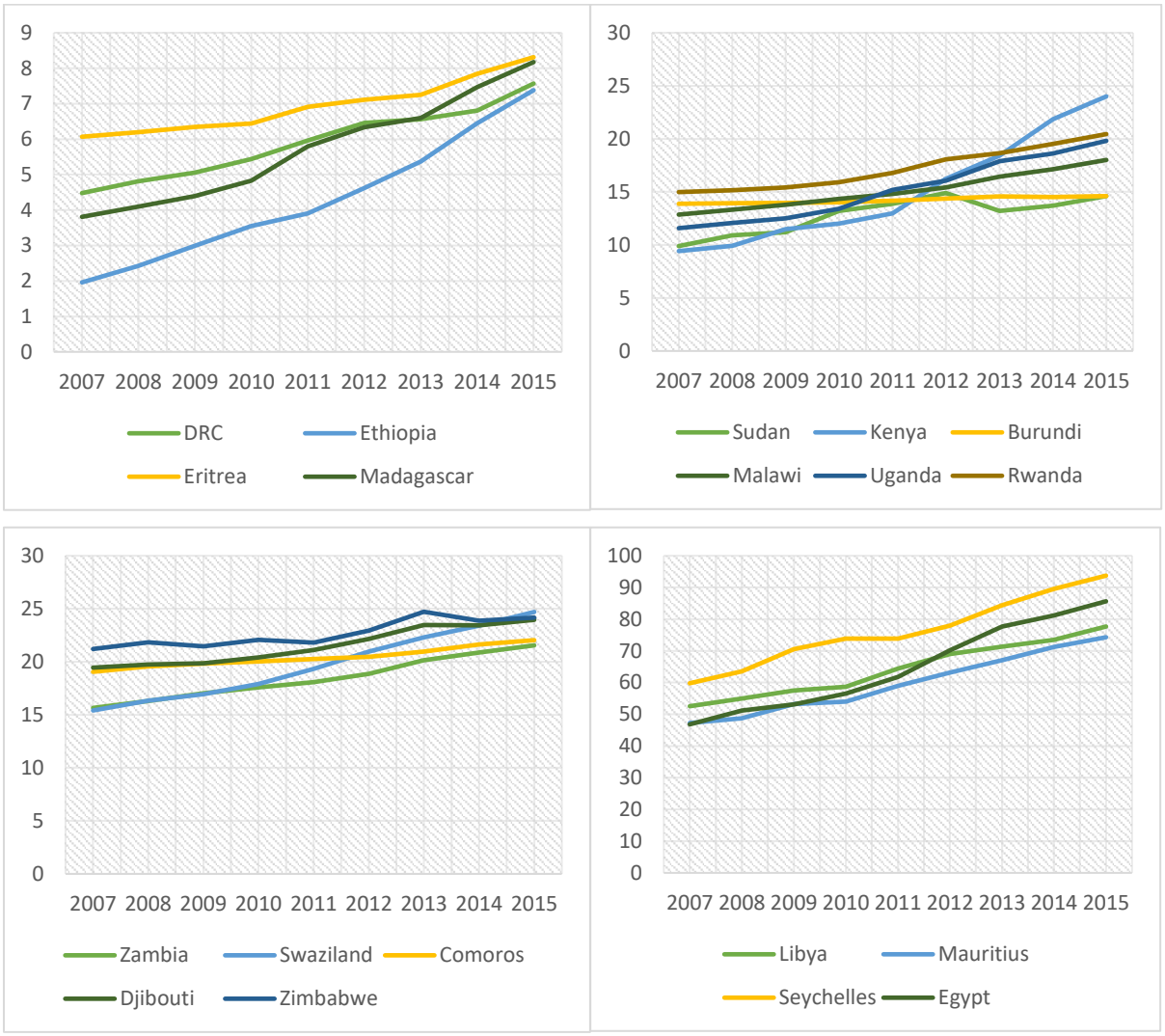


Source: Author's calculations from the World Governance Indicators, 2019.

Note: The index ranges from -2.5 to 2.5 with higher values indicating low levels of corruption. The trend shows a decrease in corruption levels in the respective COMESA countries.

Apart from assessing the aggregate impact of foreign aid on infrastructure development in the region, ODA was further disaggregated into loans and grants to understand their relative impact in the region's infrastructure development. During the earlier years of the study (2003-2006), Figure 7.2 shows that grants dominated the economic infrastructure foreign aid covering an annual average of about 55%, which slightly went down to about 47% in 2007 before rising to about 54% in 2008. The trend took a persistent downward trend from 2009 as loans gained prominence vis-à-vis grants rising to an annual average of 59% of the sector's total foreign aid in the 2009-2015 period from an annual average of about 46% in the 2003-2008 period. Pursuing this trend, the disaggregation of ODA in the analysis remains imperative in understanding whether this foreign aid mix in the sector is beneficial for its growth and development.

Figure 7. 4: AIDI Annual Scores for COMESA Countries (2007-2015)



Source: Author's calculations from the African Infrastructure Database, 2019.

Note: There are different scales on the embedded charts.

Generally, economic infrastructure captures transport, electricity generation, ICT, and water and sanitation. However, this chapter noted that while the infrastructure index (AIDI)[41] totally covered this, OECD foreign aid to economic infrastructure data does not include water and sanitation as it is covered under the social sector. As such, economic infrastructure in this study is treated as defined by the OECD database while minding the potential of underreporting foreign aid impact on the index, which includes water and sanitation. Except for Burundi, where its infrastructure index score has been somewhat constant at around 15, Figure 6.5 indicates improvements in the per capita infrastructure quality and growth across the region. However, the growth of such improvements for most countries has been very low except for Ethiopia

[41] *For the methodology on generating the AIDI, see AIDI 2011:2*

where it has been growing at an annual average of about 18%. While very low scores and hence infrastructure development are evident in most of the countries in the region as shown in Figure 6.5, a few countries such as Egypt, Libya, Mauritius, and Seychelles have maintained good infrastructure with scores above 50 and have also maintained a steady increasing trend since 2013. Other countries with promising infrastructure development in the region are Ethiopia, Kenya, and Madagascar.

Covering the period 2007 to 2015, the main data sources are the World Development Indicators (WDI), the Organisation for Economic Co-operation and Development (OECD) database, The World Governance Indicators, the African Development Bank (AfDB) socio-economic database, the AFDB African Infrastructure Database, the African Infrastructure Development Index (AIDI) 2011, 2013 and 2016 publications and the COMESA database.[42] These sources were specifically chosen to ensure that the analysis only utilises highly credible data. The shorter period was preferred to ensure robust estimates from the GMM estimator.

7.5 Results and Discussion

7.5.1 Preliminary Tests

To get consistent estimates from the GMM estimator, the data must meet several minimum conditions, including that the number of cross-section units in the panel be greater than its time dimension and that the error terms are independent across panels. Secondly, the right number of lags should be adopted in the analysis. Therefore, the study adopted the Imm-Pesaran-Shin (IPS) and Levin-Lin-Chu (LLC) unit root test and confirmed that all variables were stationary in levels (Appendix 7.1), so that the GMM estimation of the level equation had the same level of integration for all its variables.

7.5.2 Empirical Results and Discussion

Having noted differences in the definition of economic infrastructure by the AIDI and OECD database, the model was run with and without adding foreign aid for water and sanitation. Apart

[42] *http://databank.worldbank.org/data/home.aspx*
https://stats.oecd.org/qwids
www.govindicators.org
http://dataportal.opendataforafrica.org/
http://infrastructureafrica.opendataforafrica.org
http://comstat.comesa.int/

from minor differences in the magnitude of the coefficients, no differences were observed in their sign. Thus, the chapter only reports results that define economic infrastructure from the OECD perspective. All estimations were done using xtabond2 routine in Stata with the robust option. Overall, the Hansen test confirms the validity of the instruments used in all the models, and with statistically insignificant AR (2) across the models, we also fail to conclude that the models suffered from second-order serial autocorrelation.

The System GMM results in Table 7.1 show that apart from the foreign aid*corruption coefficient, all variables for model 1 have a priori expected signs. ODA coefficient is negative and significant at 5%, indicating that the potency of foreign aid in supporting infrastructure development in the region is highly compromised such that its net effect on infrastructure development is negative. A percentage increase in ODA is associated with a 0.072% decline on average in the per capita infrastructure development *ceteris paribus*. On the contrary, a positive and significant savings coefficient shows a positive influence that domestic savings have on infrastructure development in the region. This contradicts the assumption that similar factors such as institutional quality (corruption) and policies have similar effects on the utilisation and thus the potency of both domestic savings and foreign aid in stimulating growth.

Table 7. 1: Effect of Total ODA on Economic Infrastructure

Variable	**Coefficient**
lnAIDI_1	0.6011539***
lnODA	-0.0722641**
Inflation	-0.0086445
Real GDP	0.00301*
Savings	0.0064628**
Constant	2.406168**
Number of Observations	152
Number of Groups	19
Number of Instruments	13
GMM instruments lag (s)	1
AR(1) [p-value]	0.205
AR(2) [p-value]	0.486
Hansen-test [p-value]	0.155

*Note: *** indicates significance at 1%, ** indicates significance at 5%, and * indicates significance at 10%*

While GDP has a positive and significant impact on the region's infrastructure development, inflation is not significant despite having the right a priori expected to sign. Lastly, the table

shows that the lagged infrastructure development index is positive and significant. This indicates that the current level of infrastructure development in COMESA countries has an impact on the direction of their future investment plans.

Table 7.2 shows results on the assessment of the impact of the quality of institutions/ governance that have been proxied by the control of corruption in the region. While foreign aid has an inverse relationship with the infrastructure development index in the table but the coefficient for its interaction with corruption has a significant and positive effect on infrastructure development in the region. Table 7.2 shows that a marginal effect of a change in the control of corruption has an increasing effect on infrastructure development of about 0.06% on average, given an increase in economic infrastructure foreign aid *ceteris paribus*. This result is better explained by the corruption and economic infrastructure development trends in Figures 7.3 and 7.4. Notwithstanding the relatively high levels of corruption in most countries in the region, Figure 7.4 shows tremendous progress in infrastructure development in Ethiopia, Kenya, Seychelles, Egypt, Mauritius, Rwanda, and Zambia. In all these countries, there is a reciprocatively significant decline in corruption levels over the years, as shown in Figure 7.3. On the contrary, the table further shows stagnation or sluggish progress in infrastructure development in some countries, including Burundi, Malawi, Sudan, and Djibouti, where corruption levels have been increasing. However, Figure 7.3 shows that, on average, corruption has been decreasing at the regional level over the years. Thus, the positive and significant coefficient of the foreign aid-corruption interacted variable in Table 7.2 implies that the general decrease in corruption levels in COMESA countries have positive outcomes on foreign aid utilisation.

The results are consistent with several empirical studies. For example, Akramov (2006) found that the potency of foreign aid is compromised by high levels of corruption. Disaggregating countries in his sample according to the corruption/governance levels, he confirmed an insignificant relationship between high levels of corruption/poor governance with foreign aid in the economic infrastructure sector. He, however found foreign aid in the economic infrastructure sector to be significant and positive for countries with low and medium levels of corruption. Akramov's findings are in line with Tanzi and Davoodi's (2002) who notes that apart from unnecessarily increasing the financial costs of infrastructure projects, high levels of corruption also lead to increased social costs due to the inefficient skewness of good infrastructure to areas associated with the political elite (either region where they come from or

where the respective infrastructure investments will necessitate their gains in political mileage). Among other things, they contend that this has seen an increase in the number of "white elephant projects," unnecessarily large projects in terms of budget (effectively poor-quality projects) being implemented, and/or very little (if any) usage of sound economic and financial assessments in determining the viability of public infrastructure investments. Tanzi and Davoodi argue for better utilisation of foreign aid with low levels of corruption (better governance) as reflected by the outcome of this study.

Table 7. 2: Effect of ODA on Economic Infrastructure (Controlled for Corruption)

Variable	Sectoral corruption effects	Sub-sectoral corruption effects
AIDI_1	0.6535643*	0.6208173**
lnODA	-.1135052*	
lnODA*corruption	0.0580861 ***	
corruption		0.1918199
lntransport* corruption		0.0034408*
lnICT* corruption		-0.0487853**
lnenergy* corruption		-.0014452
Inflation	-.0150788	-.0058188
Real GDP	0.000609**	0.00287*
Savings	0.0018109	0.0085316*
Constant	3.625775**	1.28425
Number of Observations	152	152
Number of Groups	19	19
Number of Instruments	12	16
GMM instruments lag (s)	1	1
AR(1) [p-value]	0.231	0.127
AR(2) [p-value]	0.231	0.134
Hansen-test [p-value]	0.576	0.161

*Note: *** indicates significance at 1%, ** indicates significance at 5%, and * indicates significance at 10%*

Notwithstanding the overall positive impact of improvements of corruption on the potency of foreign aid in the region indicated in Table 7.2, the overall negative impact of foreign aid on the region's infrastructure development indicates a potential that corruption is still minimally affecting foreign aid utilisation. While this holds for some countries, including Sudan, as shown above, the aggregate effect of such occurrences is still seen at the regional level when the respective infrastructure components are considered. This is clearly seen in the ICT subsector, where the marginal effect of a change in corruption reduces ICT infrastructure development by about 0.05% on average as foreign aid to the sub-sector increases ceteris paribus. Furthermore, the table continues to show that the general decline in corruption in the region is retaining

positive outcomes on foreign aid potency in the transport sub-sector, although its effects in the energy sub-sector are not significant, albeit potentially negative.

Table 7. 3: Effect of ODA (Loans and Grants) on Economic Infrastructure

Variable	**Coefficient**
AIDI_1	0.5480592**
lngrants	-0.1638836**
lnloans	0.024403
Inflation	-.0159639*
Real GDP	0.000341*
Savings	.0034852
Constant	3.776748 **
Number of Observations	152
Number of Groups	19
Number of Instruments	15
AR(1) [p-value]	0.132
AR(2) [p-value]	0.475
Sargan-test [p-value]	0.209
Hansen-test [p-value]	0.416

*Note: *** indicates significance at 1%, ** indicates significance at 5%, and * indicates significance at 10%*

Substantiating the negative impact of foreign aid on infrastructure development, Table 7.3 shows that both foreign aid components hardly contribute effectively to the overall development of the sector. While loans are insignificant, grants have a significant negative impact on the region's infrastructure development. The table shows that a percentage increase in grants is associated with a 0.16% decline on average in infrastructure development ceteris paribus.

Interacting these foreign aid components with corruption, Table 7.4 shows that corruption affects the two components differently as their respective coefficient are significant. While loans potentially have a higher potency than grants due to repayment obligations, the negative and significant coefficient indicates they are more prone to abuse vis-à-vis grants in the region. Consistent with the findings of Moyo (2009), increased levels of corruption in the region have an increasing effect on the overall costs of loans. In this regard, Moyo (2009) contends that in the presence of corruption, loans do more harm than good to most recipient governments by increasing their debt burden and hence, perpetuating foreign aid dependency. Table 7.4 indicates that the marginal impact of a change in the control of corruption suppresses infrastructure development in the region by about 0.014% as concessional loans increases, *ceteris paribus*. Taken independently, the result disproves the idea that a substantial reduction in the region's corruption levels, as shown above, has a positive and significant effect on the

overall foreign aid utilisation in the region. However, the positive changes in the control of corruption are positively reflected in the utilisation of grants. Table 7.4 shows that a change in control of corruption is associated with a 0.04% increase in infrastructure development on average as grants in the region increases, *ceteris paribus*. With the overall negative effect of grants on infrastructure development, these results mainly imply the existence of other factors and not corruption, that are currently compromising the potency of this foreign aid component.

Table 7. 4: Effect of ODA (Loans and Grants) on Economic Infrastructure (Controlled for Corruption)

Variable	**Short Run Coefficient**
AIDI_1	1.001103 ***
lngrantscorr	0.0394111*
lnloanscorr	-.0137093**
corruption	-0.5597604*
Inflation	-.001882
RealGDP	-0.014554
Constant	0.3516959
Number of Observations	152
Number of Groups	19
Number of Instruments	16
Gmm instruments lags	1
AR(1) [p-value]	0.155
AR(2) [p-value]	0.489
Hansen-test [p-value]	0.134

*Note: *** indicates significance at 1%, ** indicates significance at 5%, and * indicates significance at 10%*

Overall, the results indicate that foreign aid is not effective in developing infrastructure in the region such that as foreign aid increases, the change in the level and/or quality of infrastructure development is less than the percentage increase in ODA. The results further indicate that this is a joint impact of both loans and grants. On the one hand, despite covering an annual average of 55% throughout the period under study, they are not significant in influencing the direction of infrastructure development. On the other hand, grants have a diminishing effect on infrastructure development, and its net effect is the same as that of the overall ODA. Interacting these foreign aid variables with corruption to ascertain the impact of the quality of institutions on their potency, the results reveal a negative impact of corruption on the potency of loans, while a positive and significant relationship is observed between corruption and grants in the

sector. With recent substantial improvements in corruption, particularly in countries that are currently leading in infrastructure development in the region, these results imply positive returns on net foreign aid utilisation following their efforts in successfully fighting corruption. However, with an overall negative and significant effect of corruption on infrastructure development following increases in concessional loans, this means that more efforts should be placed on disentangling loans from corruption effects in the COMESA bloc. As indicated in Table 7.2 above, the overall net effect of corruption on the potency of foreign aid in some of the subsectors (ICT) is negative.

The lagged AIDI variable is positive and highly significant in all the models. With a coefficient range of 0.54 – 1.0, the results in Tables 6.1- 6.4 imply that the current quality and quantity of various components of the economic infrastructure are a strong predictor of a future infrastructure development path in a country. In other words, the higher the infrastructure gap in a country, the higher its demand for new infrastructure development. Furthermore, the level of development as proxied by real GDP positively influences the demand for infrastructure development in the region. This is consistent with the vast literature on infrastructure development and growth, which postulates high new infrastructure development needs for developing than advanced economies as additional infrastructure is seen to have minimal impact on the growth of advanced (developed) economies.

Despite having a positive sign, the coefficient for savings is only significant in the core results model presented in Table 7.1. Thus, the region still has the potential to do more in terms of infrastructure development from its own domestic resources and reduce its over-reliance on foreign aid. Lastly, current levels of inflation are not having any significant effect on infrastructure development, and this is consistent in all the models.

7.6 Chapter Summary and Conclusion

Although the role of viable infrastructure in growth and development remains undisputable in economic circles, infrastructure gaps remain high in COMESA. These include poor and inadequate transport, power, and communication infrastructure that greatly undermines the region's growth potential. With significant budgetary constraints to develop the sector as reflected by the low savings in most of the COMESA countries, foreign aid has remained a prominent source of foreign capital to close the infrastructure financing gap. This chapter, therefore, sought to unveil the extent to which foreign aid in the sector has been useful in this regard. The assessment was controlled for corruption, which is both theoretically and

empirically seen as a depressor of infrastructure development as it increases the overall costs of such investments (Tanzi and Davvodi, 2006; Moyo 2009, Ojong & Ejar, 2017).

Overall, the chapter found that the aggregate impact of foreign aid in the sector's development is negative, owing to the performance of both loans and grants in the sector. On the one hand, there was an insignificant relationship between its loans and infrastructure development, although loans have been accounting for an annual average of about 59% of the sector's total foreign aid since 2009. On the other hand, grants have a negative impact on the sector's development. Notwithstanding these results, corruption has a negative impact only on loans indicating that there are potentially other factors that are undermining the potency of grants in the region as its net impact on infrastructure development is negative. There is, therefore, a need to improve the performance of infrastructure loans to increase their value returns and minimize the probability of their becoming conduits of corruption.

Except for Rwanda, Mauritius and Seychelles that have low levels of corruption with scores of 0.09, 0.39 and 0.39 respectively, the chapter found that corruption in the rest of the COMESA countries is high with scores of between -1.11 and -1.34 in Burundi, Zimbabwe, and DRC and for the rest of the countries, the scores were between -0.41 and -0.91. These reflect low levels of transparency and accountability in the public system. Empirical evidence shows that low levels of transparency and accountability in the public system negatively affects the administration of most infrastructure projects (Elhiraika, 2015). However, a general decline in corruption from 2007 was observed for all countries in the region that have been leading in infrastructure development such as Ethiopia, Kenya, Seychelles, Egypt, Mauritius, Rwanda, and Zambia. Consequently, the net regional effect of corruption on foreign aid utilisation is currently positive, although traces of its negative influence remain evident in the ICT sector.

Unless corruption is collectively and effectively addressed in all the countries in the region, imbalances in infrastructure development will remain evident at the regional level. Good progress in closing the infrastructure gap will only be feasible in the few countries that are effectively addressing corruption. While this has no significant issues at the respective country levels, infrastructure gaps in the other countries with high corruption will remain a hurdle for the collective attainment of regional trade, integration, and economic growth objectives. As highlighted in Section 1, with the current levels of infrastructure development in the region, intermodal transfer of goods is virtually unfeasible in some instances, and coupled with poor transport networks in some countries, transaction (transport) costs are very high and counterproductive to the collective regional goals. Furthermore, collective involvement in the

regional development of viable value chains will remain compromised as production, energy, and ICT infrastructure remain underdeveloped in some of the countries. This will remain the region's status quo if the current spatial infrastructure development persists because of unchecked corruption in some countries.

Although the study failed to ascertain a positive relationship between grants and infrastructure development, the insignificant relationship between grants and corruption provides optimism for effectively using this mode of foreign aid delivery for infrastructure development. A joint COMESA and donor partners study should be undertaken to assess the grants delivery and utilisation process and to understand the salient factors that are currently constraining the potency of the components of the grant. Further, the highlighted positive and significant impact of domestic resources on infrastructure development in the core model provides evidence for the need to enhance the synergy between ODA and domestic resources, while exploring other avenues of generating revenue to fast-tracking infrastructure development and enhancing economic growth in the region.

CHAPTER 8: CONCLUSION AND POLICY RECOMMENDATIONS

8.1 Summary of Results

COMESA was officially established in 1994 with the primary objective of helping its member states attain sustainable economic growth and development. Thus, COMESA's has focused on unleashing a comparable and balanced growth of the production and market structures of its respective member states. At the centre of such a process, is supposedly a coherent and consistent development financing plan for the essential investments across its sectors. However, with their minute economies, some countries have remained deficit spenders with the majority not being able to effectively meet their growth and development needs from their domestic savings augmented by foreign capital obtained through functional markets. Therefore, foreign aid has continued to anchor their growth and development platform with no evidence of termination in the near future for most of the countries in the region. Nevertheless, economic growth in most countries in the region has remained unsatisfactory, barely reaching the 7% minimum SDGs growth rate following decades of increasing foreign aid.

This thesis has assessed the role of foreign aid in the region's growth in a bid to unveil salient factors behind the seemingly poor performance of foreign aid. It adopted a multifaceted approach that encompassed both the aggregate and sectoral implications of aid receipts in the region without undermining the role of the factors that affect its utilisation as mostly discussed in the literature. The study focused on unveiling both direct and indirect effects of foreign aid in the region by assessing how foreign aid relates to its key growth elements and the nature of this linkage. Accordingly, the thesis addressed four key research questions. The first question sought to understand how the received aid fared against the region's development financing gaps. The second question examined the aggregate impact of foreign aid in different countries in the COMESA bloc and its specific effects in relation to the region's collective goals. The fourth question sought to understand the direct effects of foreign aid on growth, which were assessed through its role in the region's core growth sectors, specifically the agricultural sector. And lastly, the fourth question wanted to get answers about the indirect effects of foreign aid through its impacts on the growth-supporting sectors.

The thesis used trends analysis in Chapter 4 to assess the extent to which the received foreign aid volumes consistently filled their overall and specific sectoral development financing gaps in response to the first research question. Focusing on the role of foreign aid in development financing and hence growth, the chapter established that ODA remains a key source of foreign

capital to the region except for a few countries such as Seychelles and Swaziland that have been enjoying relatively better FDI inflows. Overall, foreign aid covers at least 60% of the development financing gaps in most countries in the region. However, this has not been translated into better growth outcomes in the region where most countries barely achieved the 7% minimum SDG stipulated growth rate. The chapter identified several reasons for this trend. Firstly, the chapter noted that not all foreign aid in the region was meant to enhance growth. An annual average of about 24% since 2000 is disbursed for humanitarian assistance, which has been empirically validated to have week linkages with economic growth in the short to medium term (Alesina and Dollar, 2000; Radelet et al., 2004 and Canavire-Bacarreza et al., 2005).

Secondly, the chapter found that aid disbursement in the region did not always follow systematic assessments of the region's development financing needs. Notably, the chapter observed a few episodes (years) of foreign aid over and above what was required to fill the respective development financing gaps. Equally, the few episodes where substantial foreign aid inflows are observed for countries such as Zimbabwe, although their investment financing needs were fully covered by their respective domestic savings, thereby increasing the potential of foreign aid misallocation in these countries. Underscoring these trends, the chapter found that in Mauritius, Madagascar, Egypt, and Kenya, domestic savings fully accounted for their investments suggesting that the received foreign aid was either for humanitarian purposes or consumption through the social sectors for instance. Similar conclusions can be drawn for foreign aid receipts that were over and above what was invested in countries such as the DRC, Burundi, Rwanda, and Malawi. On the one hand, these trends reflect poor development financing resource needs assessment by the respective donors. But these could also potentially reflect that the recipient development financing needs and hence, growth, are not the primary determiner of the direction of foreign aid inflows. While these assertions were found not to hold in countries with a bigger need for humanitarian assistance in those periods, it remained true for several countries. Ultimately, such foreign aid did not translate into viable growth outcomes as highlighted by lower investment levels in most of these countries in years of more aid than required to effectively close their development financing needs. On the other hand, this reflects the quality of institutions and human capacities in the respective COMESA countries that chokes the efficient utilisation of foreign aid.

Thirdly, the chapter established that foreign aid in the region is highly skewed towards the social sectors, particularly health and humanitarian assistance, directly or indirectly through

general government budget support. Nevertheless, foreign aid in the social sector largely funds recurrent consumption, as less than 10% is invested in education and/or health facilities and training in most COMESA countries with at least 17% of the total social sector allocation streamlined for government and civil society consumption at the regional level. Accordingly, foreign aid allocations to the sector are not effective in enhancing the region's growth (Appendix 4.4). Furthermore, the chapter observed that high aid volatility is among the factors compromising aid potency in the region as development planning on volatile resources remains highly unfeasible. Overall, the chapter concludes that while the region receives substantial foreign aid volumes in relation to the respective development and financing gaps, the volatility and misalignment of foreign aid allocations both within and across sectors impair its potency in stimulating growth.

Chapter 5 was developed in response to the second research question that sought to establish the aggregate impact of foreign aid on growth in the region. Contending for comparable growth effects of foreign aid across the countries in the region to effectively contribute to its collective regional growth and development goal, the chapter adopted the PMG estimator. The choice of this estimator was motivated by its ability to allow for country-specific short-run estimates and hence, country-specific policy inferences in the panel model. The chapter found that overall, foreign aid has a positive impact on growth in the region only in the short run with equally consistent SR effects in all its countries, albeit insignificant in a few countries. This implies that the marginal incremental effect of foreign aid on growth has been decreasing with increases in foreign aid over time. In other words, there are diminishing returns to aid in the region since that aid receipts in the region have been steadily increasing without being properly augmented with relevant human skills and economic infrastructure over time to enhance its potency. This is well supported by the findings in Chapters 4 and 7, which show that foreign aid in the region has not been effective in bringing out the desired growth outcomes in both the social and economic infrastructure sectors. As such, these continue to cripple the region's efforts in pursuit of inclusive and sustainable growth.

Notably, the chapter attributes the poor LR performance of foreign aid in the region to corruption as underscored by its negative impact on growth with increases in foreign aid in the LR. Despite decreases in corruption in some countries, the chapter found that corruption is still high in most countries rendering both loans and grants ineffective in stimulating growth at the country level. The chapter found that corruption in some countries was affecting loans and grant

with its effect on grants being negative contrary to its positive impact on loans, and vice versa. This finding confirmed the assertion that the effectiveness of the two components is not always affected by the same factors. Further, in line with this assertion, the chapter found that the magnitude of the impact of corruption was higher on loans. Overall, the chapter found that the overall net impact on corruption in COMESA countries was lower in countries whose corruption scores have been improving since 2007

Notwithstanding comparable aggregate foreign aid effects on growth across the countries, the chapter found varying effects of loans and grants both at the regional and country level. Grants have a positive impact on growth only in the LR. At the country level, varying impacts of grants were observed in different countries in the region. Depending on the factors including corruption and the large component of humanitarian foreign aid that affect utilisation of loans and grants, the two components have different growth outcomes in different countries. Notably, relatively better performance of grants in the presence of corruption. Overall, the chapter established comparable SR effects of aid on growth across countries in COMESA, although its long-term effect is negative. While poor performance of grants was due to both the high component of humanitarian assistance and corruption, the negative effects of corruption on the utilisation of loans are the main factor in its poor performance.

Research questions 3 and 4 sought to establish the direct and indirect effect of foreign aid on growth in the region through sectoral analysis of foreign aid in the core growth and growth supporting sectors, respectively. These were addressed in Chapters 6 and 7 that assessed the role of foreign in the growth and development of the agricultural and economic infrastructure sectors. The choice of these sectors for the analysis of the direct and indirect effects of aid on growth was guided by the OECD classification in which the economy comprises core growth and growth supporting sectors. The core growth sectors cover the primary sector (Agriculture), secondary sector (Industry), and the tertiary sector (Service). The primary and secondary sectors broadly constitute the production sectors as they are generally concerned with the extraction of raw materials and the production of goods. The growth supporting sectors comprise the social and economic infrastructure sectors. The education and health sectors constitute the social sectors, and the economic infrastructure covers roads, water, and sanitation, ICT, and energy sectors. However, water and sanitation were not included in the analysis as the component is covered under the social sectors in the OECD database.

Guided by the above sectoral classifications, the ultimate choice of sectors for an in-depth analysis was further informed by the recent debates on Africa's inclusive and sustainable growth. These debates have focused on structural transformation as a critical priority in ensuring an inclusive and sustainable economic and development transformation of African economies (Lopes et al., 2017). In this regard, the thesis analyzed foreign aid on sectors with the current prominent contributions to this plight. A thorough understanding of the relative sectoral roles in this regard, vis-à-vis aid inflows, was essential in guiding the final choice of the sectors for detailed analysis in this thesis.

It is well understood that the production sectors (agriculture and industry) constitute an economy's primary and secondary (core growth) sectors. However, their relative roles on the development path of an economy are uniquely different, notwithstanding their complementarity in pushing a developing country onto a self-sustaining and inclusive growth path. Following the seminal work of Athur-Lewis (1954), empirical evidence continues to suggest that agriculture remains the hub for unleashing the desired structural changes for self-sustaining and inclusive growth (Lopes, 2019). This is particularly due to its ability to transfer labour and provide raw materials as demanded by the industrial and service sectors. However, its potency in effectively supporting the industrial sector overtime requires continued increased investments supported by the industrial sector proceeds until an equilibrium identified by comparable wages in the two sectors is reached (Fei and Ranis, 1961; Nurkse, 1961). In this regard, Lopes (2019) contends for the rapid growth and development of the agricultural sector to enhance the industrial push that is well supported by balanced investment in relevant industries. He notes that an effective structural transformation for inclusive and sustainable growth in Africa will require rationalisation of rural agriculture to significantly enhance its productivity while ensuring the existence of viable linkages with the industrial sector.

The above approach remains relevant for COMESA as agriculture continues to be the hub for its industrial development and the key sustainer of livelihoods. With 12 of the 33 African LDCs housed in the region, agriculture remains key in sustaining livelihoods in these LDCs, covering between 70% and 92% of their total employment. Furthermore, it continues to support industrial development covering at least 50% of its needed raw materials. However, the sector continues to be among the least performing in the region, and therefore, it is not effective in unleashing the desired structural changes for a successful transformation of the economies in the region. Notwithstanding the marginal changes in the sectoral employment structure and contribution to

GDP, the region evidently has a long way to self-sustaining and inclusive growth through viable structural transformation. Notably, the share of agriculture share in GDP and employment has marginally decreased in most countries as the industry and/or the service sectors have been increasing. Among other things, the sector's low productivity is reflected in the region through its inability to effectively unleash structural changes towards the industrialization of the respective countries. Currently, the industrial sector makes substantial contributions only to the GDPs of Egypt (30%), Libya (46%), Mauritius (27%), Zambia (32%), and Zambia (26%). And overall, it accounts for only 13% of the total employment in the region, which is also highly concentrated in these few countries, with agriculture continuing as the predominant sector both in its GDP share and employment in the remaining countries. Recognizing the important role of the agricultural sector to turn around this trend in the region (Lewis 1954; Fei and Ranis, 1961; Hossein, 2012), the thesis opted for the agricultural sector in Chapter 6 for a detailed assessment of the direct effects of foreign aid on growth in the region.

The chapter examined the response path of agricultural productivity and growth to the relative exogenous shocks in foreign aid using IRFs and FEVD. The results indicate a unidirectional causality from agricultural productivity (growth) to foreign aid and thus confirming the theoretical dispositions of the developmental role of foreign aid in the region. However, instead of complementing domestic resources in this regard, the results further indicate that foreign aid substitutes the government's agricultural financing in the region and thus effectively compromising the potency of foreign aid by the substituted amount. Nevertheless, results further indicate that domestic resources have higher potency in stimulating agricultural growth and productivity in the region. It accounts for up to 14% of the variations in agricultural growth, while foreign aid explains only 0.4% of its variations.

Contending for effectiveness within sector prioritisation of foreign aid receipts for enhanced aid potency, the chapter further assessed the relative contribution of the sub-sectoral foreign aid to the collective sectoral growth and development goals. Results suggest that the allocation of agricultural foreign aid in its subsectors is not beneficial in maximising its growth benefits. The chapter found that foreign aid in the sector is heavily skewed towards agricultural development. However, the results show that foreign aid in this sub-sector has a diminishing effect on the overall sector's growth at the expense of other growth-enhancing sub-sectors, including extension, research, and training as well as water and land resources management. Although closely connected with rural agricultural development, the chapter further found that foreign

aid for rural development has a diminishing effect on both agricultural productivity and growth in the region.

In line with the findings in Chapter 5 on the relative impact of corruption on foreign aid utilisation, the chapter also established that the net effect of corruption in the sector on aid utilisation is positive. While the chapter conclusively found that corruption does not compromise the aggregate potency of loans in the sector, it could not completely overrule traces of its negative impact on the utilisation of loans. The negative impact of corruption on the potency of loans is not statistically significant. Thus, the chapter contends that corruption in some countries potentially increases the fiducial risk associated with the GBS or sectoral support approaches that are used in the region, particularly through the concessional loan component.

Lastly, for the indirect effects of foreign aid on growth in the region, the key growth supporting sectors were initially considered. On the one hand, the social sectors (health and education) were deemed key for the desired structural transformation in pushing the region onto a self-sustaining and inclusive growth path. Among other things, vibrant social sectors entail the existence of skilled and health workforce, which is indispensable in the development of the core growth sectors as they remain a key input in the production function. On the other hand, viable and relevant economic infrastructure is equally indispensable in the pursuit of inclusive and sustainable growth. The sector remains key in determining the productivity and competitiveness of the productive sectors as they facilitate reallocations/movement of factors of production, among other things. However, an initial screening of the impact of sectoral aid in Chapter 4 showed an inverse relationship between social sector foreign aid and growth in the region (Appendix 4.3) despite being the most heavily prioritized sector in the region. The chapter noted that this was because of the large foreign aid that falls into the consumption component either through humanitarian assistance or components with a significant positive lag (if any) effect on growth. Very little was observed to be efficiently utilized in the sector's productive investments such as education, health, and training infrastructure. Moreover, the significant amounts being utilized in the population and reproductive health programmes are a significant lag in positively influencing the direction of economic growth. In this regard, a detailed analysis of the growth-supporting sectors (indirect effects) only covered economic infrastructure in Chapter 7 on the assumption that all foreign aid receipts in the sector were productively invested.

Using the system GMM estimator, Chapter 7 found that both loans and grants have not been effective in the development of viable and relevant economic infrastructure in the region. On the one hand, loans that account for an annual average of about 59% of the total aid in the sector are insignificant in stimulating viable growth outcomes. This was largely an effect of corruption in most countries in the region, which increases the cost of loans such that the net effect of the loan in infrastructure development is negative. On the other hand, the results indicate that grants have a statistically significant negative impact on infrastructure development. However, this could not be pinned down on corruption, which had a positive and significant sign implying that the net effect of corruption on the potency of grants is positive. This result suggests that there are other factors that are responsible for the poor performance of grants that are yet to be statically established in the region.

In line with the poor performance of both loans and grants as described above, the chapter found that the net effect of foreign aid in the sector's development is negative. However, the chapter failed to solely attribute the negative outcome to corruption, which had a statically positive impact on the overall utilization of foreign aid in the sector. Corruption was statistically confirmed to compromise the potency of foreign aid in only the ICT sub-sector as its negative impact in the energy sector is not statistically significant. In the transport sub-sector, the net effect of corruption on aid utilization was positive. In line with these findings, further analysis indicated that corruption in countries that are leading to infrastructure development in the region has been decreasing since 2007. These countries include Ethiopia, Kenya, Seychelles, Egypt, Mauritius, Rwanda, and Zambia. However, the net negative impact of foreign aid in the sector with corruption still affecting the net utilization of loans still highlights that corruption continues to reduce the potency of aid in the region. This remains true in the whole bloc except for Rwanda, Mauritius, and Seychelles that have low levels of corruption with scores of 0.09, 0.39, and 0.39, respectively. The thesis found that corruption in the rest of the COMESA countries is high with scores of between -1.11 and -1.34 in Burundi, Zimbabwe, and DRC, and the scores are between -0.41 and -0.91 for the rest of the countries. These values continue to reflect that low levels of transparency and accountability in the public system persist in most countries in the region, which, according to empirical evidence, negatively affects the administration of most infrastructure projects (Elhiraika, 2015).

In sum, notwithstanding the comparable short-run positive effects of aid on growth across the COMESA bloc, the thesis could not establish that foreign aid positively contributes to the region's long-term sustainable growth and development objective. While it marginally

enhances productivity and growth of its core growth sector, foreign aid in the region has not brought the desired changes in the growth-enhancing support sectors (economic infrastructure and social sectors). The performance of loans and grants varies significantly across countries in the region, with an overall net positive effect observed only from grants. The thesis did not find any significant net effect between concessional loans and growth in the region.

High levels of corruption in some COMESA member countries, which potentially lead to unnecessary increases in the overall financial and economic costs of its loans and the substitution effect of aid on domestic resources, are among the critical factors for the poor performance of foreign aid. While both are functions of weak institutions in the region, GBS, SGBS, and SWAPs funding modalities boost the substitution effect of foreign aid. Moreover, poor alignment of foreign aid to the respective development financing gaps both across (within) sectors and countries is also vital in accounting for aid inefficiency in enhancing the region's growth. There is evidence of a lack of systematic assessment on the part of the region's development partners (donors) to properly align aid to the region's development financing gaps as reflected by episodes of aid over and above existing development financing gaps. While the large component of humanitarian aid in some of the countries in the region comprehensively explains this mismatch, it does not provide an adequate explanation for other countries in the region, including those whose investments were fully covered by domestic resources in the presence of aid receipts. Poor sectoral prioritization of the received aid in the bloc in favour of non-growth enhancing consumption in the social sectors does not lead to the attainment of its growth-enhancing objectives.

Lastly, it remains clear that foreign aid in the region will continue to be a critical source of foreign capital for development financing in COMESA. Following decades of foreign aid, the thesis noted that most countries in the region are still not able to generate enough domestic savings. They are also unable to augment their savings with foreign capital obtained through functional markets. Notably, the thesis noticed an increased potential of domestic savings (resources) over foreign aid in bringing about their desired changes for sustainable and inclusive growth. Domestic resources perform better than foreign aid despite being persistently below foreign aid volumes in most countries in the region.

8.2. Contribution to Literature

Foreign capital (referred to as external financing in Chapter 4) remains an important component of development financing for both developed and developing countries. External financing is vital in complementing domestic savings for the required capital either to sustain the attained growth levels, particularly for developing countries. In the case of developing countries, external financing complements their domestic savings to raise the required capital and enables them to achieve at least a minimum 7% growth rate as stipulated in the Sustainable Development Goals (SDGs). While developed economies acquire external financing through functional markets that are supported by well-developed and balanced productive capacities developing countries cannot achieve the same due to their underdeveloped production infrastructures, institutions, and human capital relevant for highly productive investments (Aluko and Arowolo, 2010).

While developing economies experience FDI inflows and other external financing sources, these flows are generally very minimal to make any meaningful contribution to the countries' capital investment needs. As a result, these countries rely on foreign aid as their key source of foreign capital for financing growth. However, theoretical dispositions of foreign aid posit that foreign aid remains a temporal gap filler such that, other sources of external financing get prominence as the foreign aid component steadily declines over time. This assumption assumes that the volumes of aid disbursed to the developing countries is sufficient to effectively cover their development financing gaps. This assumption has not been thoroughly tested as the empirical focus of the aid-growth nexus has been on qualitative factors such as recipient institutions and donor motives (Ranaweera, 2003). The first contribution of this thesis to this body of knowledge, therefore, lies in its focus on the relevance of the actual received foreign aid vis-à-vis the region's development financing gaps in enhancing the potency of foreign aid.

The second contribution is on the disaggregation of foreign aid in loans and grants in the assessment. While agreeing with previous studies on the role of specific factors, including the quality of institutions on the potency of foreign aid, the thesis argues that such an assessment is mostly done on the aggregated foreign aid receipts. The thesis contends that the implicit assumption of equal effects from the different components of foreign aid behind its aggregation in assessing the role of specific factors, including institutional quality as done in most studies, is misleading. The management of these components varies significantly across countries and sectors, rendering their vulnerable to different factors. Similarly, policy inferencing from the

assessments of the total effect of foreign aid are equally not effective as they fall short on the relative impact and factors affecting the respective components of foreign aid.

The third contribution is on the emphasis of comparable effects of foreign aid across countries in the region if it is to meaningfully contribute to collective regional core growth objective. The thesis utilised the hardly utilised estimator (PMG) in the aid-growth literature to assess the relevance of the individual country impacts of foreign aid vis-à-vis the region's core growth objective. Furthermore, the thesis provides one of the few assessments of infrastructure and economic growth, focusing on the role of financing in stimulating growth through infrastructure development.

Overall, the main contribution of this thesis to the body of knowledge is its multifaced approach in assessing the impact of foreign aid in the region. Previous studies focused on the aggregate impact of foreign aid on growth or on specific sectors of the economy. This thesis underscores the fact that different sectors have different roles to play in the pursuit of inclusive and sustainable growth and development. For example, while changes in the output of the core growth sectors have a direct impact on the overall GDP performance of a country, the good output from these sectors remains an illusion without the good performance of the supporting sectors. Thus, the thesis contends that effective aid policy inferencing should address the specific sectoral needs in line with the country's (regional) growth objectives. The thesis provided detailed assessments of the impact of foreign aid on various key sectors of the COMESA economies. Therefore, the thesis presented insights on the key aspects or linkages of foreign aid with the fundamental components of growth in the region. This approach encompassed detailed assessments of both core and growth supporting sectors without undermining the potential differential impacts of the different components of foreign aid (loans and grants) on the specific sectors.

8.3 Policy recommendations

Although foreign aid is a critical capital resource supporting domestic financing for sustainable and inclusive growth, the thesis highlighted several factors that compromise its potency in the realization of this development goal. As discussed in the above section, high levels of corruption and foreign aid fungibility (foreign aid substituting domestic financing) choke aid in achieving its developmental role. While the net effect of foreign aid utilization is positive at the regional level, the thesis demonstrated that not all sectors are free from its negative impact. Loans are more prone to abuse. This means that the COMESA bloc should deal with corruption in order

to achieve the SDG minimum stipulated growth rates. At the regional level, countries that have been improving their corruption scores are doing better in many development aspects such as economic infrastructure development and overall growth. This implies that over time, those countries with high levels of corruption will continue to lag behind. This will have a negative effect on the region's integration efforts towards an inclusive and sustained growth goal. Thus, it remains imperative that COMESA intentionally encourages strategies in its member states to strengthen institutional accountability in the use of both domestic and foreign aid resources. Key lessons in this regard can be drawn from countries within the region, such as Rwanda, that have reduced corruption levels over time.

Empirical evidence suggests that funding modalities, such as SWAPs, GBS and SGBS, are associated with increased fiduciary risk as the recipient governments have increased flexibility on their usage. This risk becomes even higher with weak corruption monitoring mechanisms. However, addressing corruption alone in COMESA will not address fungible resources as signified by the substitution effect of foreign aid on domestic resources in the region. The thesis, therefore, recommends a comprehensive revision of foreign aid delivery modalities in the region. Focusing on eliminating fungible resources and corruption with their consequent unproductive investments, COMESA, and its development partners should enhance accountability and potency of foreign aid receipts by adopting Aid on Delivery approaches. As discussed in Section 5.1, future allocations of foreign aid under AoD approaches are strictly a function of a recipient country's achievement of mutually agreed outcomes (see Stefan Leiderer, 2012:4). This will curb corruption and eliminate fungible resources as the delivery of the agreed outcomes are dependent on the agreed financing components (ODA and counterpart funding). Adoption of these AoD modalities would even be more effective if accompanied by good strategies for enforcing the adoption of the 5 pillars of the PDAE, which include mutual accountability.

The thesis also identified poor alignment of foreign aid with the development financing needs both across the countries and sectors in the region. At the country level, this indicates poor development financing needs assessment by the respective development partners of COMESA countries. However, at the bloc level, poor sectoral allocations are largely the responsibility of the respective COMESA governments. Thus, the thesis recommends a joint donor-recipient financing needs assessments as well as COMESA wide capacities assessments for effective targeting to improve growth outcomes of foreign aid. Moreover, a thorough understanding of

the relative sectoral roles in pursuit of inclusive and sustainable growth by the COMESA member countries will further enhance equitable resource allocation.

Lastly, the thesis argued that the large humanitarian assistance component in foreign aid reduces its efficacy in stimulating growth. As previous studies proved, this component takes a lot of time for its growth outcomes (if any to manifest). Thus, the thesis recommends the rethinking of the concept of ODA so that it excludes humanitarian assistance in its development financing definition. This would likely improve the efficacy of foreign aid in the aid-growth empirical analysis.

8.4 Limitations

The study used secondary data, which was not consistent. For instance, there were years where different values were registered for the same variable in the same year in different sources. This was problematic because it was difficult to distinguish the correct values. This might have affected the results of this study.

REFERENCES

Arndt C., Jones S. Tarp F. (2009) "Aid and Growth: Have We Come Full Circle?" *United Nations University Discussion Paper No. 2009/05*

Abrogo M.R.M and Love I. (2016) "Estimation of Panel Vector Autoregression in Stata: a Package of Programs." *University of Hawai`i at Mānoa Department of Economics Working Paper Number 16-2*

AfDB (2016) "Feed Africa: Strategy for Agricultural Transformation in Africa" 2016-2025). Abidjan

AfDB (African Development Bank), African Union Commission, and NEPAD (2010) "Programme for Infrastructure Development in Africa: Interconnecting, Integrating and Transforming a Continent." *Available at http://www.afdb.org/fileadmin/uploads/afdb/ Documents/Project-and-Operations/PIDA%20note%20English%20 for%20web%200208.pdf*

Al-Foul B.M (2013) "Foreign Aid and Economic Growth in Egypt And Jordan: An Empirical Analysis." *The Global Journal of Finance and Economics,* Vol. 10, No. 2. pp 225-231

Arellano, A. Bulir, T. Lane, And Lipschitz L. (2005): "Dynamic Implications of Foreign Aid and its Variability," *IMF Working paper/05/119.*

Alesina, A., and Weder B. (2002) "Do corrupt governments receive less foreign aid?" *American Economic Review*, 92(4): 1126-1137.

Alesina A, and Dollar D. (2000) "Who gives foreign aid to whom and why?" *Journal of Economic Growth*, 5(1):33-63.

Alesina A. & Dollar D. (1998) "Who Gives Foreign Aid and Why?" *National Bureau of Economic Research*, Working Paper # 6612

Akpokodge G. and Omojimite B. U. (2008) "The Effect of Aid Flows on Nigeria's Agricultural Growth." *Pakistani Journal of Social Science*, 5(6):514-520

Akramov K.T. (2006) "Governance and Foreign Aid Allocation." *PhD in public policy analysis Thesis at the Pardee RAND Graduate School*.

Aluko F. and Arowolo D. (2010) "Foreign aid, the Third World's debt crisis and the implication for economic development: The Nigerian experience" *African Journal of Political Science and International Relations*, 4(4): 120-127.

Alvi E., Mukherjee D and Shukralla E.K. (2008), "Aid, policies, and growth in developing countries: a new look at the empirics." *Southern Economic Journal*, 74(3): 693-706.

Ancharaz V., Kandiero T. and Mlambo K. (2010) "The First Africa Region Review for EAC/COMESA." *African Development Bank Group Working Paper Series #* 109, April 2010

Arndt C., Jones S. and Tarp F. (2015). "Assessing Foreign Aid's Long-Run Contribution to Growth and Development." *World Development*, 696–18.

Aschauer, D.A. (1989), "Is Public Expenditure Productive?" *Journal of Monetary Economics*, 23: 177–200.

Aschauer, D.A. (1989), "Does Public Capital Crowd Out Private Capital," *Journal of Monetary Economics*, 24: 171–188.

Asongu SA and Nwachukwu JC (2017). "Foreign Aid and Inclusive Development: Updated Evidence from Africa, 2005-2012*: Foreign Aid and Inclusive Development." *Social Science Quarterly*, 98(1):282–298.

Asongu S. A. (2012) "The political economy of development assistance: peril to government quality dynamics in Africa." *African Governance and Development Institute* WP /12/008.

Asteriou D. (2009) "Foreign aid and economic growth: New evidence from a panel data approach for five South Asian countries". *Journal of Policy Modeling*, 31: 155-161. 10.1016/j.jpolmod.2008.04.012.

Bacha E. (1990) A Three-gap model of foreign transfers and the GDP growth rate in developing

countries." *Journal of Development Economics*, 32(2): 279–296.

Barro R.J. and Sala-i-Martin X. (2004) "Economic Growth" *Second Edition*, Massachusetts Institute of Technology, London, England.

Babatunde O.A., Afees S.A. and Olasunkanmi O.I. (2012) "Infrastructure and economic growth in Nigeria: A multivariate approach." *Research Journal of Business Management and Accounting*, 1(3): 030 - 039.

Barañano I. and San Martín M. (2014) "Foreign Aid Linked to Infrastructure and/or PollutionAbatement." Ikerlanak Working Paper Series: IL. 78/14.

Bassi D. (2011) "Investigate How and the Extent to Which Foreign Aid Damages the Recipient Country." *EC831 Final Year Project*, University of Essex.

Berthelemy JC (2005) “Bilateral Donors’ Interest vs. Recipients’ Development Motives in Aid Allocation: Do all Donors Behave the Aame?” *Cahiers de la Maison des Sciences Economiques* 2005.01 - ISSN: 1624-0340.

Bigdon C. and Korf B. (2004). The Role of Development Aid in Conflict Transformation: Facilitating Empowerment Processes and Community Building. In: Austin A,, Fischer M, and Ropers N, eds. *Transforming Ethnopolitical Conflict*. VS Verlag für Sozialwissenschaften. Wiesbaden: 341–370.

Biondo K del (2015) “Moving beyond a Donor-Recipient Relationship? Assessing Partnership in the Joint Africa-EU Strategy.” *In KFG working paper (63), pp. 1–29.*

Birhanu B. (2017) “Infrastructure Development and Economic Growth in Ethiopia.” *Journal of Economics and Sustainable Development* 8 (13): 2017.

Bitew T (2014) “Foreign Aid and Economic Growth in Ethiopia: A cointegration analysis.” *MA Thesis Submitted to the Economics Department, University of Addis Ababa, Ethiopia.*

Boone P. (1996) “Politics and the effectiveness of foreign aid.” *European Economic Review*, 40: 289-329.

Booth D (2012) “Aid effectiveness: bringing country ownership (and politics) back in.” *Conflict, Security & Development*. 12(5):537–558.

Bräutigam DA and Knack S (2004) Foreign Aid, Institutions, and Governance in Sub-Saharan Africa. *Economic Development and Cultural Change*, 52(2):255–285.

Burnside, C. & Dollar D. (2000) “Aid, Policies and Growth.” *The American Economic Review*, 90 (4): 847-868.

Busse, M., & Gröning, S. (2009) “Does foreign aid improve governance?” *Economics Letters*. 104(2): 76–78.

Büthe T., Major S. and Souza A de Me (2012). “The Politics of Private Foreign Aid: Humanitarian Principles, Economic Development Objectives, and Organizational Interests in NGO Private Aid Allocation.” *International Organization*, 66(4):571–607.

Calderón C. and Serven L. (2004) “The effects of infrastructure development on growth and income distribution.” *Accessible at elibrary.worldbank.org/doi/book/10.1596/1813-9450-3400*

Canavire G., Nunnenkamp P., Thiele R. and Triveño L. (2005) "Assessing the Allocation of Aid: Developmental Concerns and the Self-Interest of Donors." *Kiel Working Paper No. 1253*

Cassel, Gustav (1967) [1924]. "Capital and Income in the Money Economy". The Theory of Social Economy (PDF). New York: Augustus M. Kelley. pp.51–63

Cauas J. (1973) "Short-term economic policy", in: Jagdish N. Bhagwati and Richard S.Lockwood W.G Eckaus, eds., Development and planning: Essays in honor of Paul Rosenstein-Rodan." MIT Press, Cambridge, MA.

Chatterjee S., Giuliano P. and Kaya I. (2012). "Where Has All the Money Gone? Foreign Aid and the Composition of Government Spending." *The B.E. Journal of Macroeconomics*. 12(1):1935–1690.

Chauvet L. and Guillaumont P. (2003) "Aid and Growth Revisited: Policy, Economic Vulnerability And Political Instability." CERDI, *Etudes et Documents,* E 2003.27.

Chenery, H. & Strout W. (1966), "Foreign Assistance and Economic Development", *American Economic Review,* 56: 679-753.

Christiaensen, L.J., Demery, L., Kuhl, J., (2010). "The (evolving) role of agriculture in poverty reduction – an empirical perspective". *Journal of Development Economics*. 96: 239–254.

Clemens, M. A., Radelet s., Bhavnani R.R., and Bazzi S. (2012) "Counting Chickens When They Hatch: Timing and the Effects of Aid on Growth." *Economic Journal*, 122 (561): 590–617.

Collier P. and Dehn J. (2001) "Aid, Shocks, and Growth." *Policy Research Working Paper*

2688. World Bank, Washington, DC

Collier P. and Dollar D. (2002) "Aid allocation and poverty reduction." *European Economic*

Review, 46: 1475–1500.

Crawford G and Kacarska S (2017). Aid sanctions and political conditionality: Continuity and change. *Journal of International Relations and Development*.

Chisali O.O., and Fanelli J.M. (1990), "Three Gap Models, Optimal growth and the Economic Dynamis of Highly Indebted Countries." *CEDES Document 47,* CEDES-CONICET, Argentina.

De Mello L. R., 1997. “Foreign Direct Investment in Developing Countries and Growth: A Selective Survey”, *Journal of Development Studies,* 34(1): 1-34.

Dany C (2015). “Politicization of Humanitarian Aid in the European Union.” *European Foreign Affairs Review*, 20(3):419–437.

Dacy D.C. (1975) “Foreign Aid, Government Consumption, Saving and Growth in Less-Developed Countries.” *The Economic Journal,* 85: 339, 548-561.

Diao X., Hazell P., Resnick D. and Thurlow J. (2007) “The Role of Agriculture in Development: Implications for Sub-Saharan Africa.” *International Food Policy Research Institute (IFPRI) Research Report No. 153*.

Djajic´ S. (2009) “Foreign Aid, Infrastructure Development and Welfare: An Intertemporal Analysis.” Review of Development Economics, 13(3): 393–402.

Djankov, S., J. Montalvo, and M. Reynal-Querol (2008). ‘The Curse of Aid’. *Journal of Economic Growth*, 13 (3): 169–94.

Dollar D. and Easterly W. (1999) “The Search for the Key: Aid, Investments and Policies in Africa.” *Journal of African Economies,* 8(4): 546-577.

Domar E. (1946). “Capital Expansion, Rate of Growth, and Employment". *Econometrica.* 14 (2): 137–147. doi:10.2307/1905364.

Dreher A., Lang V. And Ziaja S. (2017) “Foreign Aid in Areas of Limited Statehood.” *CESifo Working Paper No. 6340,* Category 2: Public Choice.

ECA (2015) “Innovative Financing for the Economic Transformation of Africa.” Addis Ababa, Ethiopia.

ECA (2010) “Assessing Regional Integration in Africa IV: Enhancing Intra-African Trade.” Addis Ababa, Ethiopia

ECA & AUC (2013) “Assessment of progress on regional integration in Africa.” Addis Ababa, Ethiopia

Emara N., Plotkin D. & Stein A. (2013) “Foreign aid and growth in Egypt: The role of

economic policy.” *MPRA Paper No. 68687*

Eakin D. H. and Schwartz A. E. (1994) “Infrastructure in a Structural Model of Economic Growth.” *National bureau of Economic Research (NBER) Working Paper No. 4824.*

Easterly, W. (2013) *The Tyranny of Experts: Economists, Dictators, and The Forgotten Rights of The Poor*. New York: Basic Books, A Member of The Perseus Book Group.

Easterly, W. (2014) *The Tyranny of Experts*. New York: Basic Civitas Books

Easterly W. (2003) “Can Foreign Aid Buy Growth?” *The Journal of Economic Perspectives,* Vol. 17, No. 3, pp. 23-48.

EasterlyW. and Rebelo, S. (1993) “Fiscal policy and economic growth: an empirical investigation.” *Journal of Monetary Economics* 32, 417–458.

Esfahania H.S. and Ramırez M.T. (2003) “Institutions, infrastructure and economic growth.” *Journal of Development Economics* 70:443–477.

FAO (2002) “The Role of Agriculture in The Development of Least-Developed Countries and their Integration into the World Economy.” Rome, Italy.

Faye M. and Niehaus P, (2012) “Political Aid Cycles.” *The American Economic Review*. 102(7):3516–3530.

Fei, J.C. and Ranis, G. (1961) “A theory of economic development.” *American Economic Review,* 514, 533-65.

Fielding D. (2014) “The Dynamics of Humanitarian Aid Decisions.” *Oxford Bulletin of Economics and Statistics,* 76(4):536–564.

Führer H. (1994) “The Story of Development Assistance: A History of the Development Assistance Committee and the Development Co-Operation Directorate in Dates and Figures.” OECD, Paris

Garsous, G. (2012): “How Productive is Infrastructure? A Quantitative Survey,” ECARES Working Paper, Université libre de Bruxelles.

Gomanee K, Girma S & Morrissey O. (2005) “Aid and Growth in Sub-Saharan Africa: Accounting for Transmission Mechanisms.” *CREDIT Research Paper No. 02/05*

Gokal v. and Hanif S. (2004). “Relationship between Inflation and Economic Growth.” *Reserve Bank of Fiji Working Paper # 2004/04*

Grundmann H.E. (1978) "The effects of development aid on exports." *Intereconomics*. 13(9):242–245.

Guillaumont P. and Wagner L. (2012) "Aid and Growth Accelerations: Vulnerability Matters." *WIDER Working Paper Series No. 031. World Institute for Development Economic Research (UNU-WIDER).* (accessed 14 February 2020).

Guillaumont P and Chuvet L (2003) "Aid and Growth Revisited: Policy, Economic Vulnerability and Political Instability." *CERDI, Etudes et Documents E 2003.27*

Guillaumont P. and Chuvet L. (2001) "Aid and Performances: A Reassessment." *Journal of Development studies*, 37 (6).

Gulrajani N. (2016) "Bilateral versus multilateral aid channels: Strategic choices for donors:" *ODI report, https://www.odi.org/sites/odi.org.uk/files/resource-documents/10393.pdf*

Hayakawa K. (2009) "First Difference or Forward Orthogonal Deviation- Which Transformation Should be Used in Dynamic Panel Data Models?: A Simulation Study," *Economics Bulletin, AccessEcon*, 29(3): 2008-2017.

Hansen H. & Tarp F. (2000) "Aid Effectiveness Disputed" *Journal of International Development* No 12 (3) pp 375-398 (2000).

Hansen H. & Tarp F. (2001) "Aid and growth regressions." *Journal of Development Economics*, 64 (2):547-570.

Harrod R.f. (1939) "An Essay in Dynamic Theory." *The Economic Journal*, 49 (193): 14-33. doi:10.2307/2225181.

Hassan S., Abu Bakar N. & Abdullah H. (2014) "Analysis of FDI inflows into China from ASEAN-5 Countries: A Panel Cointegration Approach." *Journal of Economic Cooperation and Development*, 35(3): 1-28.

Hossein, H. (2012) "Arthur Lewis' Dualism, the Literature of Development Economics, and the Less Developed Economies," King's College, Wilkes-Barre, PA, USA.

Hudson D. and VanHeerde-Hudson J. (2012). "A Mile Wide and an Inch Deep": Surveys of Public Attitudes towards Development Aid. *International Journal of Development Education and Global Learning*. 4(1):5–23.

Ighodaro C. A. and Nwaogwugwu I. C. (2013) “Effectiveness of Foreign Aid on the Growth of the Agricultural Sector in Nigeria.” *Ethiopian Journal of Economics*, 22 (2):131-146.

Ilorah R. (2011) “Africa’s Endemic Dependency on Foreign Aid: A Dilemma for the Continent.” *ICITI - ISSN: 16941225 4-6, 22-25. 81*

Inder, B. (1993). “Estimating long-run relationships in economics: a comparison of different approaches.” *Journal of Econometrics, 57, 53–68.*

Iqbal Z. (1995) “Constraints to the Economic Growth of Pakistani: A Three-gap Approach.” *The Pakistani Development Review*, 34(3-4) 1119-1133.

Jepma C.J. (1997) “The Tying of Aid.” *OECD Development Center,* Paris.

JIBC (2008) “Aid Effectiveness to Infrastructure: A Comparative Study of East Asia and Sub-Saharan Africa.” *JBICI Research Paper No. 36-4*.

Jones S. and Tarp F. (2016) “Does Foreign Aid Harm Political Institutions?” *Journal of Development Economics,* 118:266–81.

Karakaplan M.U., Neyaptı B. And Sayek S. (2005) “Aid and Foreign Direct Investment: International Evidence.” *Turkish Economic Association Discussion Paper 2005/12*

Karras G. (2006) “Foreign Aid and Long-Run Economic Growth: Empirical Evidence for a Panel of Developing Countries.” *Journal of International Development*, 18: 15–28.

Karugia J., Massawe S., Guthiga P., Ogada M. and Wambua J. (2012) “Public agricultural expenditures in COMESA, EAC and IGAD: Status and trends.” *Regional Strategic Analysis and Knowledge Support System, East and Central Africa (ReSAKSS-ECA)* Annual Trends & Outlook Report 2012, Nairobi, Kenya.

Karugia J., Massawe S., Guthiga P., Ogada M. and Wambua J. (2011) “Agricultural productivity in the COMESA, EAC and IGAD: status, trends and drivers.” *Regional Strategic Analysis and Knowledge Support System, East and Central Africa (ReSAKSS-ECA),* Nairobi, Kenya.

Kaya O., Kaya I. & Gunter L. (2008) “The Impact of Agricultural Aid on Agricultural Sector Growth.” *Paper presented at the Southern Agricultural Economics Association Annual Meeting*, Dallas, TX, February 2-6, 2008.

Kim B. (2006) “Infrastructure Development for the Economic Development in Developing Countries: Lessons from Korea and Japan.” *GSICS Working Paper Series No. 11*

Kolawole B.O. (2013) “Foreign Assistance and Economic Growth in Nigeria: The Two-Gap Model Framework.” *American International Journal of Contemporary Research,* 3(10): 201.

Leiderer, S. (2012) “Fungibility and the Choice of Aid Modalities.” *United Nations University/World Institute for Development Economics Research Working Paper no. 68.*

Lensink, R. and White H. (1999). “Is there an Aid Laffer Curve.” *Credit Research Paper No. 99/6.* University of Nottingham: Centre for Research in Economic Development and International Trade.

Lensink, R. and White H. (2000a), “Aid Allocation, Poverty Reduction and the Assessing Aid Report,” *Journal of International Development, 12 (3):399-412*

Lensink, R. and White H. (2000b) “Assessing Aid: a manifesto for aid in the 21st century?” Oxford Development Studies.

Lewis, W.A. (1954) “Economic development with unlimited supplies of labour.” *Manchester School of Economics,* 20: 139-91.

Limao, N. and Venables, A. (2000). “Infrastructure, Geographical Disadvantage and Transport Costs,” Mimeo, World Bank, Washington, and Columbia University, New York.

Lopes C. (2019) *Africa in Transformation: Economic Development in the Age of Doubt*. Basingstoke, UK: Palgrave Macmillan.

Lopes, C., Hamdock, A., & Elhiraika, A. (Eds.). (2017). *Macroeconomic Policy Framework for Africa’s Structural Transformation*. London: Palgrave Macmillan.

Lumsdaine D.H. (1993) *Moral Vision in International Politics: The Foreign Aid Regime 1949-1989*. Princeton NJ: Princeton University Press.

Matunhu J. (2011) “A critique of modernization and dependency theories in Africa: Critical assessment.” *African Journal of History and Culture,* 3(5): 65-72.

Mellor, J. W., (2001). Faster more equitable growth – agriculture, employment multipliers and poverty reduction. Agricultural Policy Development Project Research Report 4, Cambridge, MA.

Menard A. and Weil L. (2016) “Understanding the Link Between Aid and Corruption: A Causality Analysis.” *Economic Systems*, 40: 260-272.

McGillivray M. (2009) “Aid, Economic Reform, and Public Sector Fiscal Behaviour in Developing Countries.” *Review of Development Economics*, 13(3): 526-542.

Mlambo V.H. and Mlambo D.N. (2018) “Challenge’s Impeding Regional Integration in Southern Africa.” *Journal of Economics and Behavioral Studies* (10, (2): 250-261.

Morrison, C.J. and Schwartz A.E. (1996), “State Infrastructure and Productive Performance,” *American Economic Review*, 86: 1095–1111.

Moreira S.B (2005) “Evaluating the Impact of Foreign Aid on Economic Growth: A Cross Country study.” *Journal of Economic Development*, 25(30):2.

Morrissey, O., M'Amanja, D. and Lloyd, T. (2006), "Chapter 16 Aid and Growth in Kenya: A Time Series Approach", in Lahiri, S. (Ed.) *Theory and Practice of Foreign Aid* (*Frontiers of Economics and Globalization, Vol. 1*), Emerald Group Publishing Limited, Bingley, pp. 313-332. https://doi.org/10.1016/S1574-8715(06)01016-

Mosley P. (2015) “Fiscal Composition and Aid Effectiveness: A Political Economy Model | Elsevier Enhanced Reader.” *World Development*, 69106–115.

Moyo, D. (2009) “Dead Aid.” New York: Farrar, Straus and Giroux.

Munemo J., Bandyopadhyay S. and Basistha A. (2007) “Foreign Aid and Export Performance: A Panel Data Analysis of Developing Countries.” *Federal Reserve Bank of St. Louis Working Paper 2007-023A*

Munnell, A. H. (1990a) “Why Has Productivity Declined? Productivity and Public Investment.” *New England Economic Review*, 3–22.

Munnell, AH., (1990b) “How does public infrastructure affect regional economic performance?” *New England Economic Review*, 11—32.

Msowoya C.D. (2013) “Foreign Aid and Economic Development: *Aid Fungibility in Malawi” Master of Public Policy in Economic Development Thesis, KDI School of Public Policy and Management*

Mwanamanga R. (2015) “Does Foreign Aid Promote Growth? Evidence From Malawi.” *MSC Thesis, Bradford Centre for International Development (BDID),* University of Bradford.

Nedozi F.O., Obasanmi J.O. and Ighata J.A. (2014) “Infrastructural Development and Economic Growth in Nigeria: Using Simultaneous Equation.” *Journal of Economics,* 5(3): 325-332.

Newbery, D. (2005) Infrastructure Pricing and Finance, in HM Treasury ‘Microeconomics Lecture Series, May 2004-June 2005, pp.22-39.

Newman C. et al. (2016). “An Agenda for Aid”. *Made in Africa. Learning to Compete in Industry*, Brookings Institution Press: 205–228.

Ng’ang’a S. I. (2012) “Infrastructure and Technology Planning and Development for Sustainable Industrial Growth: Lessons from Wood Enterprises in Kenya.” *International Journal of Business and Social Science,* 3(16).

Ndubuisi P, Uma K E, Obidike P (2008). FDI-growth nexus in Nigeria: a co-integration and error correction tests. International Journal of Research in management, Economics and Commerce, 6(8): 1-8.

Norris E., Minoiu C, and Zanna L.F. (2010) “Business Cycle Fluctuations, Large Shocks, and Development Aid: New Evidence .” *IMF WP/10/240.*

Nurkse R. (1961) “Equilibrium and Growth in the World Economy.” Gottfried Haberler and Robert M. Stern (eds). *Harvard Economic Studies CXVIII*. Cambridge, MA: Harvard University Press.

Nurkse R. (1953) *Problems of Capital Formation in Underdeveloped Countries*. Oxford: Oxford University Press.

OECD (2015). States of Fragility 2015: Meeting Post-2015 Ambitions. OECD. *https://www.tralac.org/images/docs/7366/states-of-fragility-2015.pdf*

OECD (2019). Revised DAC Recommendation on Untying ODA. Available at https://one.oecd.org/document/DCD/DAC(2018)33/FINAL/en/pdf (accessed 14 February 2020).

OECD (2011) "Measuring Aid 50 Years of DAC Statistics – 1961-2011." OECD. *https://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/MeasuringAid50yearsDACStats.pdf*

Odusanya, Abidemi, Abidemi, Ibrahim, Olawale, Logile I, Lateef, Akanni (2011). "Foreign

aid, public expenditure and economic growth: The Nigerian case." *Journal of Applied Business Research*, 27(3): 33-42.

OECD (2018) "Official Development Assistance" (ODA).*http://www.oecd.org/dac/stats/officialdevelopmentassistancedefinitionandcoverage.htm*

Overton J., Prinsen G., Murray W.E. and Wrighton N. (2012) "Reversing the Tide of Aid: Investigating Development Policy Sovereignty in the Pacific." *Journal de la société des océanistes*. 135(135): 231-242.

Owolabi, M. O. (2015) "Infrastructure development and economic growth Nexus in Nigeria." International." *Journal of Academic Research in Business and Social Sciences*, 5(1): 376-382.

Ojong F. & Ejar B.F. (2017) "Corruption and Infrastructure in Africa: Challenges for Integrated Sustainable Development." *International Journal of Development Strategies in Humanities, Management and Social Sciences*, 7(3): 103-111.

Parr J.B. (2001) "On the Regional Dimension of Rostow's Theory of Growth." *RURDS* Vol.13 No. 1.

Pesaran, H. M., Shin Y. and Smith R.J. (2000) "Structural analysis of vector error correction models with exogenous I(1) variables." *Journal of Econometrics*, 97 (2): 293-343.

Pesaran, M.H., Shin, Y., Smith, R.P., (1999) "Pooled mean group estimation of dynamic heterogeneous panels." *Journal of the American Statistical Association*, 94: 621 – 634.

Qian N (2015) "Making Progress on Foreign Aid." *Annual Review of Economics*, 7(1):277–308.

Qian N. (2014) "Making Progress on Foreign Aid." *National Bureau of Economic Research Working Paper 20412*. http://www.nber.org/papers/w20412.

Radelet S. (2006) "A Primer on Foreign Aid." *Center for Global Development Working Paper Number 92*

Radelet S., Clemens M., and Bhavnani R. (2004) "Aid and Growth: The Current Debate and Some New Evidence." https://www.researchgate.net/publication/241893172: 1-21..

Ranaweera T. (2003) "Foreign Aid, Conditionality and Ghost of the Financing Gap: A Forgotten Aspect of the Aid Debate." *World Bank Policy Research Working Paper 3019, April 2003*.

Rajan, G.R. & Subramanian A. (2011) "Aid, Dutch Disease, and Manufacturing Growth." *Journal of Development Economics*, 94: 106-118.

Rajan, R. G., and A. Subramanian (2008). 'Aid and Growth: What Does the Cross-Country Evidence Really Show?', *The Review of Economics and Statistics*, 90 (4): 643–65.

Rajan, R., and A. Subramanian (2007). 'Does Aid Affect Governance?'. *AEA Papers and Proceedings*, 97(2): 322–27

Rajan, G.R. & Subramanian A. (2005) "What undermines aid's impact on growth?" *IMF working paper WP/05/126.*

Reci A. (2014) "Advantages and Disadvantages of Foreign Assistance in Albania." *Forum Scientiae Oeconomia*, 2 (3): 123-132.

Regional Bureau For Africa, Undp & Odusola A. (2017). "Agriculture, Rural Poverty and Income Inequality in sub-Saharan Africa." *researchgate publication # 321625980*

Remmer K.L. (2004) "Does Foreign Aid Promote the Expansion of Government?" *American Journal of Political Science*, 48(1):77.

ReSAKSS database, 2019 www.resakss.org

Rosegrant M.W. and Hazel P.B.R. (2001) "Transforming the Rural Asian Economy: The Unfinished Revolution." A 2020 Vision for Food, Agriculture, and the Environment. 2020 Brief 69, May 2001.

Riddell R. C. (2007) *Does Foreign Aid Really Work?* New York: Oxford University Press.

Rosentein-Rodan P. N. (1961) "International Aid for Underdeveloped Countries." Massachusetts Institute of Technology. Center for International Studies Cambridge, Massachusetts

Roger C. Riddell RC (2014). Does Foreign Aid Really Work? Keynote address to the Australasian Aid and International Development Workshop, Canberra 13 February 2014

Rostow W.W. (1961) *The Stages of Economic Growth: A non-Communist Manifesto*, Cambridge: Cambridge University Press.

Rostow, W.W. (1959) "The Stages of Economic Growth", *The Economic History Review*, NS 12(1): 1-16.

Schwartz A.E. (1994) "Infrastruci1jre in a Structural Model of Economic Growth." *National Bureau of Economic Research* (NBER) WP No. 4824.

Sisay D. (2015) Alternative Estimations of Manufactured Exports: mean-group, pooled mean-group and GMM estimators. *Model-group paper, Statistics Denmark* (DSI30414).

Snowdon, Brian. (2009) "The Solow model, poverty traps, and the foreign aid debate." *History of Political Economy*, 41(1): 241-262

Sogge D. (2002) *Give and Take: What's the Matter with Foreign Aid*? London: Zed Books

Soubbotisn T. (2004) *Beyond Economic Growth: An introduction to Sustainable Development*. Washington DC: The World Bank.

Stewart, J. (2010) "The UK National Infrastructure Plan 2010", European Investment Bank Papers: Public and Private Financing of Infrastructure.

Svensson J. (2000) "When is foreign aid policy credible? Aid dependence and conditionality." *Journal of Development Economics*, 61(1):61–84.

Swaroop V., Feyzioglu T. and Zhu M. (1996) Foreign Aid's Impact on Public Spending. *SSRN Scholarly Paper No. ID 636129.* Social Science Research Network. Rochester, NY.

Tanzi V. and Davoodi H.R (2002) Corruption, Public Investment, and Growth. *in George T. Abed Sanjeev Gupta (eds) (2002) "Governance, Corruption and Economic Performance."* IMF, Washington D.C.

Tarp F. (2009) Aid effectiveness. *United Nations University, WIDER, Helsinki. URL: http://www.un.org/en/ ecosoc/newfunct/pdf/aid_effectiveness-finn_tarp.pdf*

Tarp F. (2006) Aid and Development. *SSRN Scholarly Paper No. ID 2537701*. Social Science Research Network. Rochester, NY.

Tran T. and Doan T. (2010) Industrialization, Economic and Employment Structure Changes in Vietnam during Economic Transition. MPRA paper #26996

Tan K.Y. (2006) A pooled mean group analysis on aid and growth. *CSAE WPS/2006-14*

Taylor L. (1994) GAP Models. *Journal of Development Economics*, 45: 17-34.

Taylor L. (1989) Gap Disequilibria, Inflation, Investment, Saving and foreign exchange. WIDER Working Papers.

Todaro M.P. & Smith S.C. (2012) Economic Development. 11th ed.

UNCTAD (2020) UN List of Least Developed Countries. *https://unctad.org/en/Pages/ALDC/Least%20Developed%20Countries/UN-list-of-Least-Developed-Countries.aspx*

UN (2002). Monterrey Consensus of the International Conference on Financing for Development. Available at https://www.un.org/esa/ffd/wp-content/uploads/2014/09/MonterreyConsensus.pdf (accessed 14 February 2020).

UN (2015). Addis Ababa Action Agenda of the Third International Conference on Financing for Development (Addis Ababa Action Agenda). Available at https://www.un.org/esa/ffd/wp-content/uploads/2015/08/AAAA_Outcome.pdf (accessed 14 February 2020).

UNCTAD (2019). *Least Developed Countries Report 2019: The Present and Future of External Development Finance -Old Dependence, New Challenges.* United Nations Conference on Trade and Development. Geneva.

United Nations Economic Commission in Africa (UN-ECA) (2017) *Economic Report on Africa (ERA): Urbanization and Industrialization for Africa's Transformation.* Addis Ababa, Ethiopia

Verter N. (2017) The Impact of Agricultural Foreign Aid on Agriculture in Nigeria. *Bulgarian Journal of Agricultural Science,* 23(5): 689–697.

Wane W. (2004) The Quality of Foreign Aid: Country Selectivity or Donors Incentives? *World Bank Policy Research Working Paper* 3325.

Wang P. (2015) Big Push Theory. Department of Economics, Washington University in St. Louis

Welle K, Nicol A and van Steenbergen F (2008). Why is Harmonisation and Alignment difficult for donors? Lessons from the water sector. *ODI Project Briefing*. (6)4.

Woolfrey S. (2016) The political economy of regional integration in Africa. *Common Market for Eastern and South Africa (COMESA) Report.* COMESA

World Bank (2019) Agricultural development and economic growth. *https://openknowledge.worldbank.org/bitstream/handle/10986/5965/9780195032253_ch05.pdf?sequence=16&isAllowed=y*

World Bank (2018). The World Development indictors. https://databank.worldbank.org/source/world-development-indicators

World Bank (2018). *Economic Transformation in Djibouti: Systematic Country Diagnostic*. World Bank.

World Bank (2008) *World Development Report, 2008: Agriculture for Development*, Washington DC.

World Bank, (1998d). *Assessing aid: what works, what doesn't, and why*. Oxford: Oxford University Press.

Yap J.T. (1997) "Macroeconomic Impact of a Tariff Reduction: A Three-Gap Analysis with Model Simulations." *Journal of Philippine Development*, 43(1): 67-91.

Yousuf A.S (2012) "The Impact of Health Aid on Infant Mortality." MPRA Paper No. 42945: 1-44.

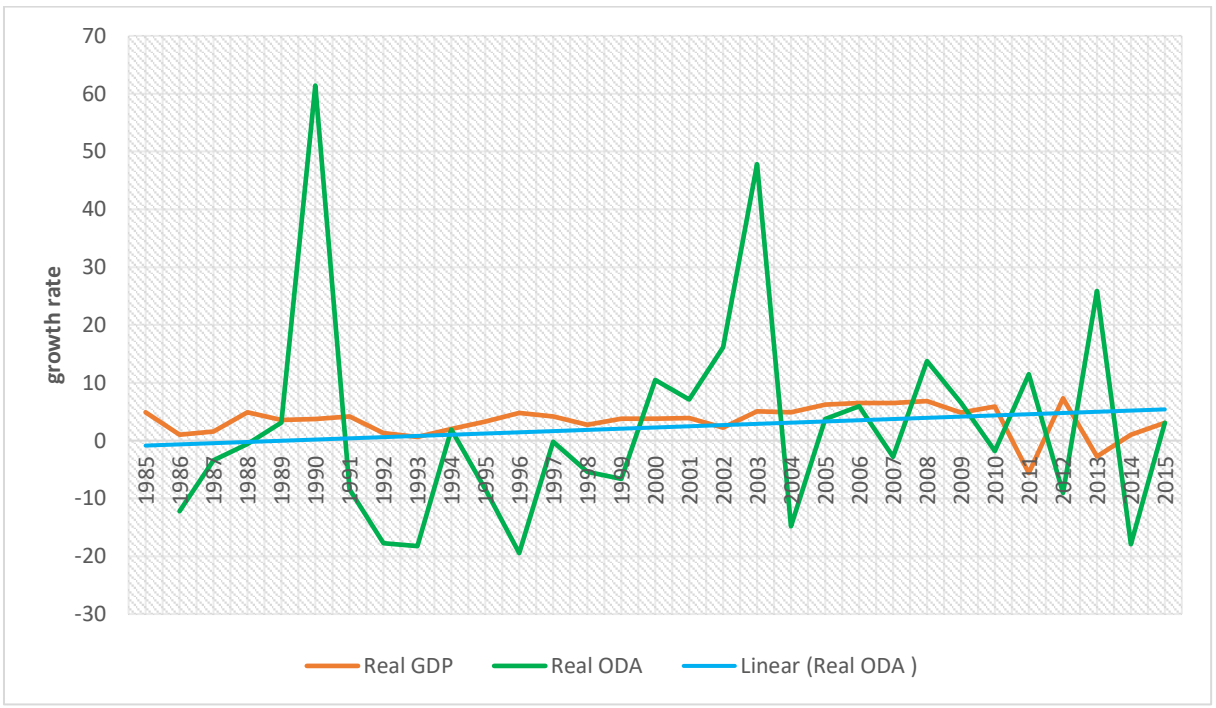
APPENDICES

APPENDIX 1

Appendix 1.1A : COMESA Real GDP growth (1985-2015)

Source: OECD Database accessed on April 23, 2018

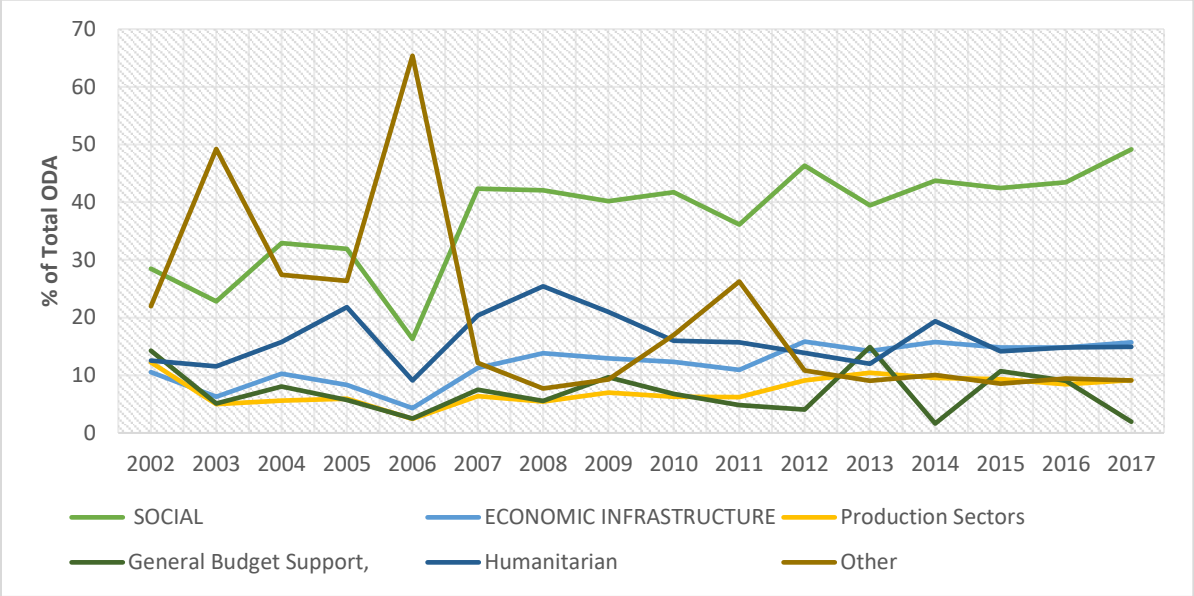
Appendix 1.1B COMESA Real GDP and Real ODA growth (1985-2015)



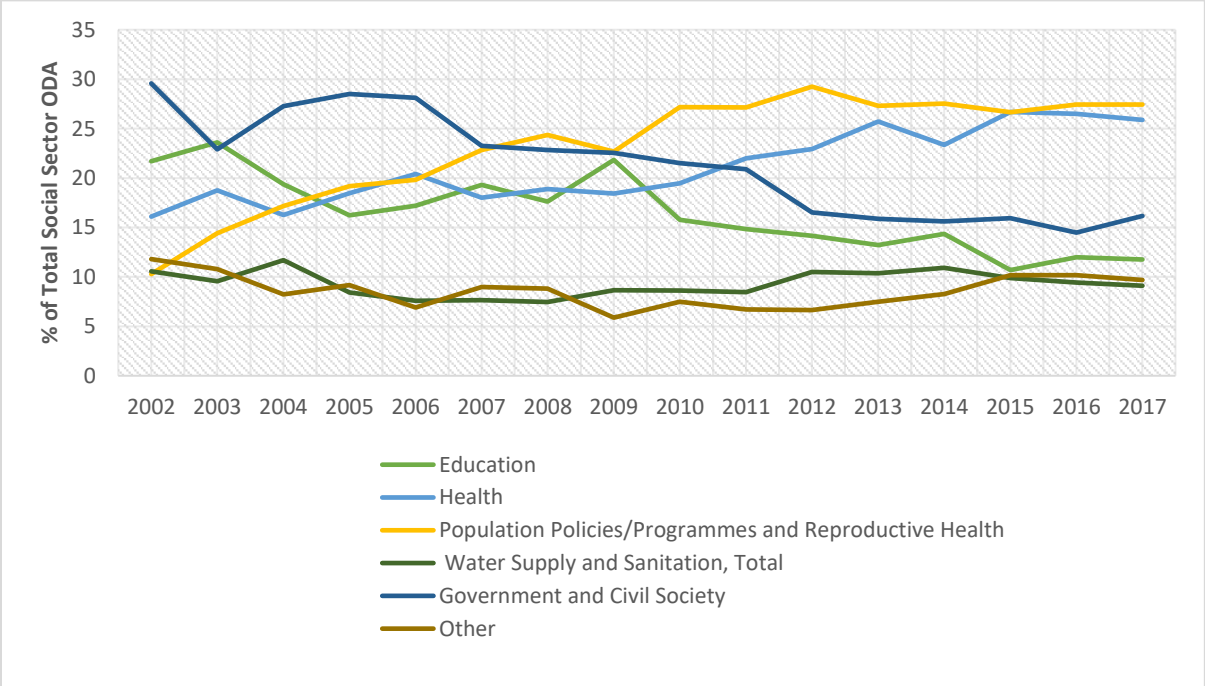
Source: OECD Database accessed on April 23, 2018

APPENDIX 4

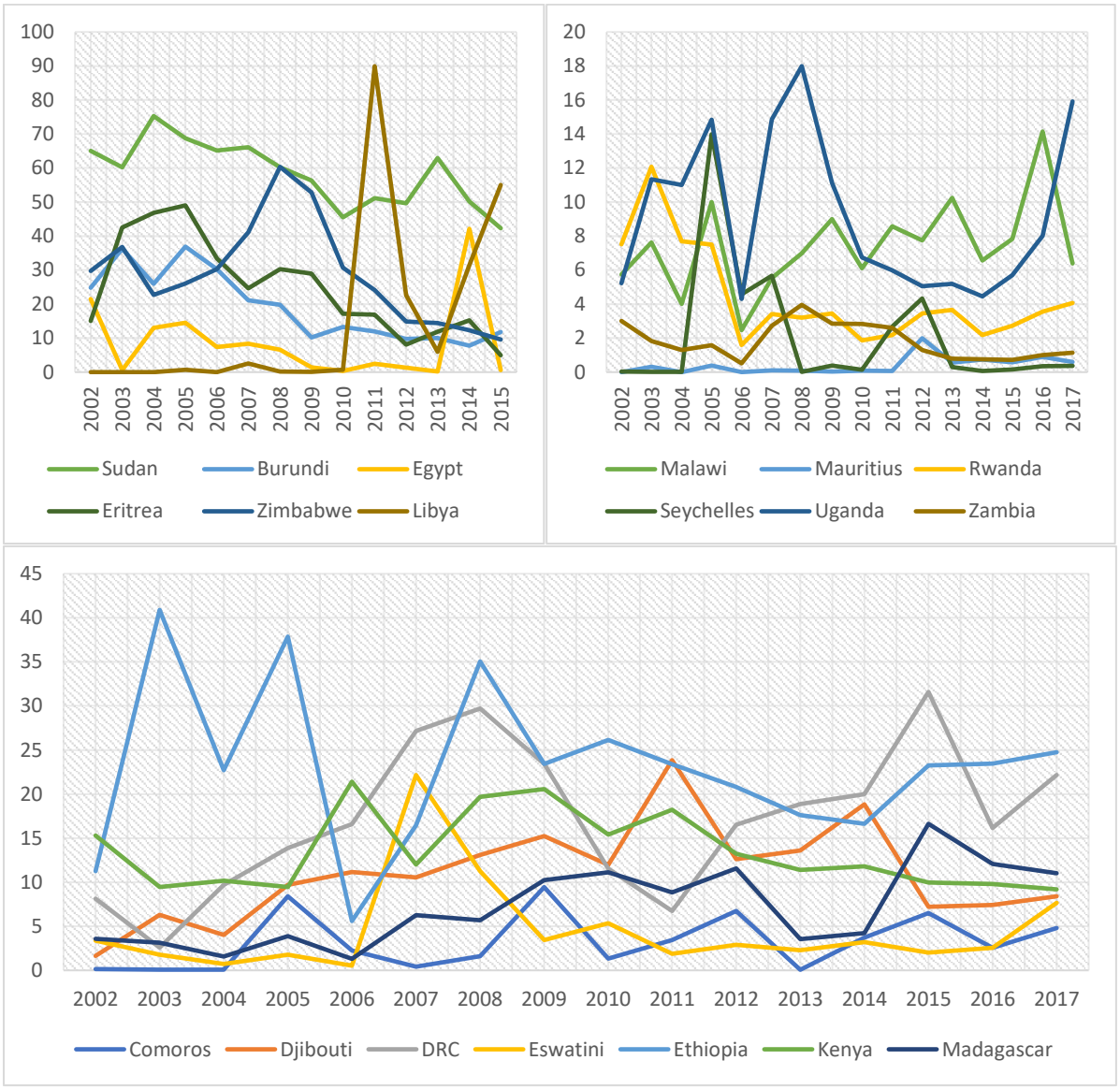
Appendix 4.1: COMESA Sectoral Allocations (2002-2017)



Appendix 4.2: COMESA Social Sector Allocations (2002-2017)

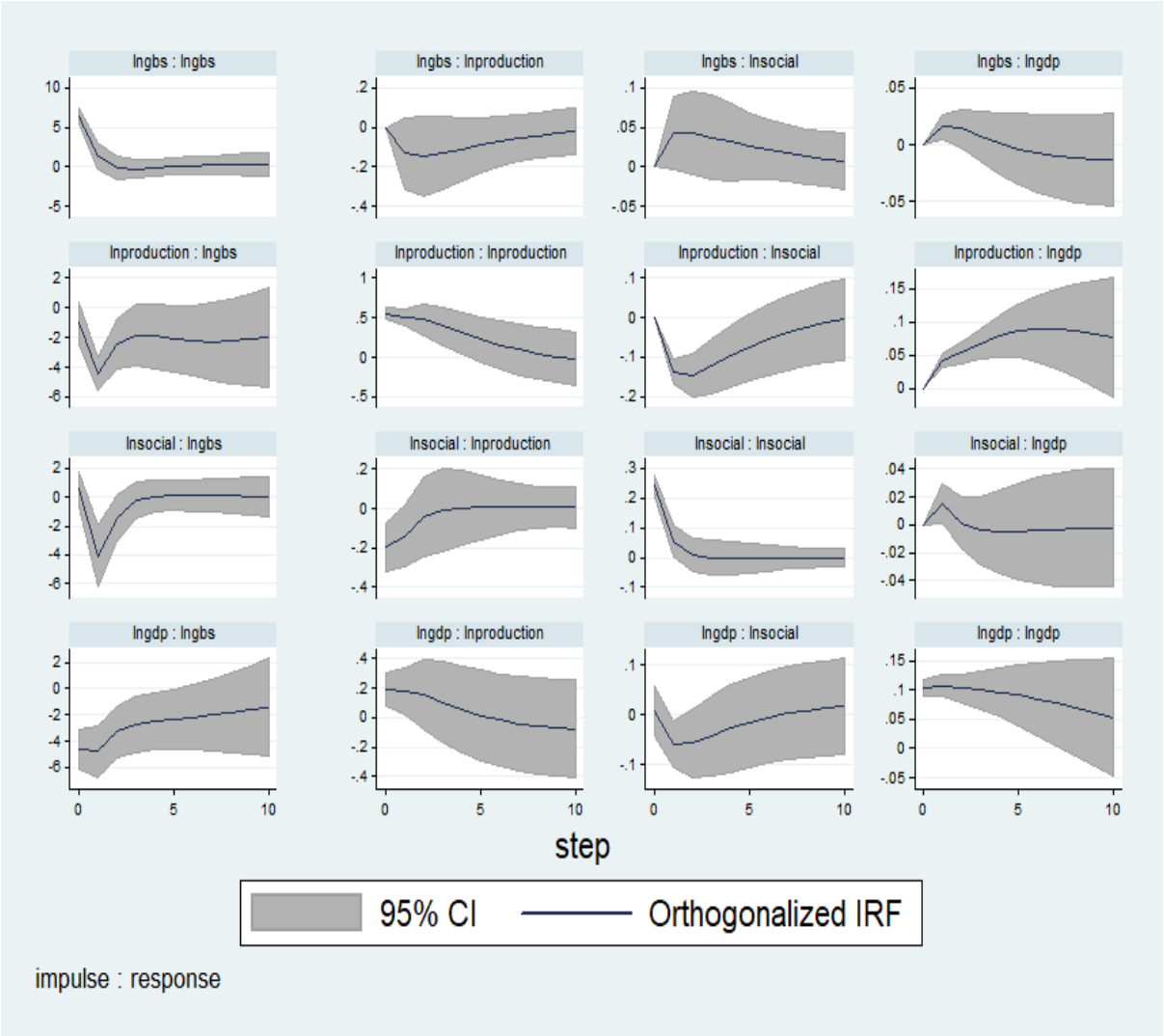


Appendix 4.3: Humanitarian Foreign Aid to COMESA countries (2002-2015)



Source: Author's Calculations from OECD Database accessed on 20th January 2018

Appendix 4.4.1: Impulse Response Function

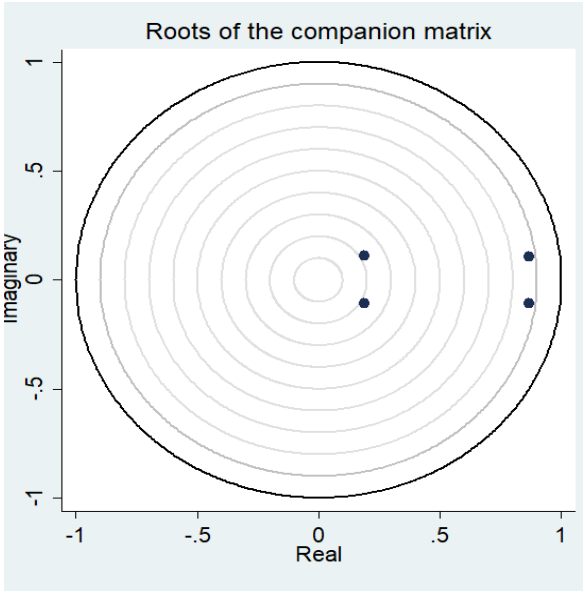


Appendix 4.4.2: Stability Test for IRF Model

Eigenvalue stability condition

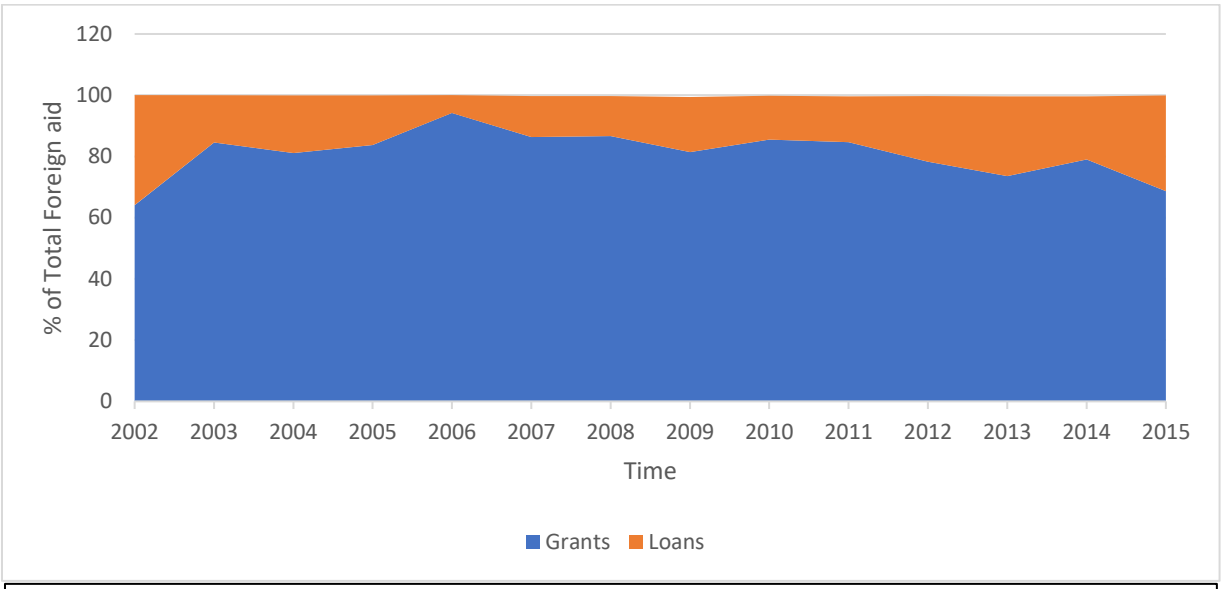
Eigenvalue		
Real	Imaginary	Modulus
.8667599	.1071588	.8733589
.8667599	-.1071588	.8733589
.1891621	-.1088025	.2182208
.1891621	.1088025	.2182208

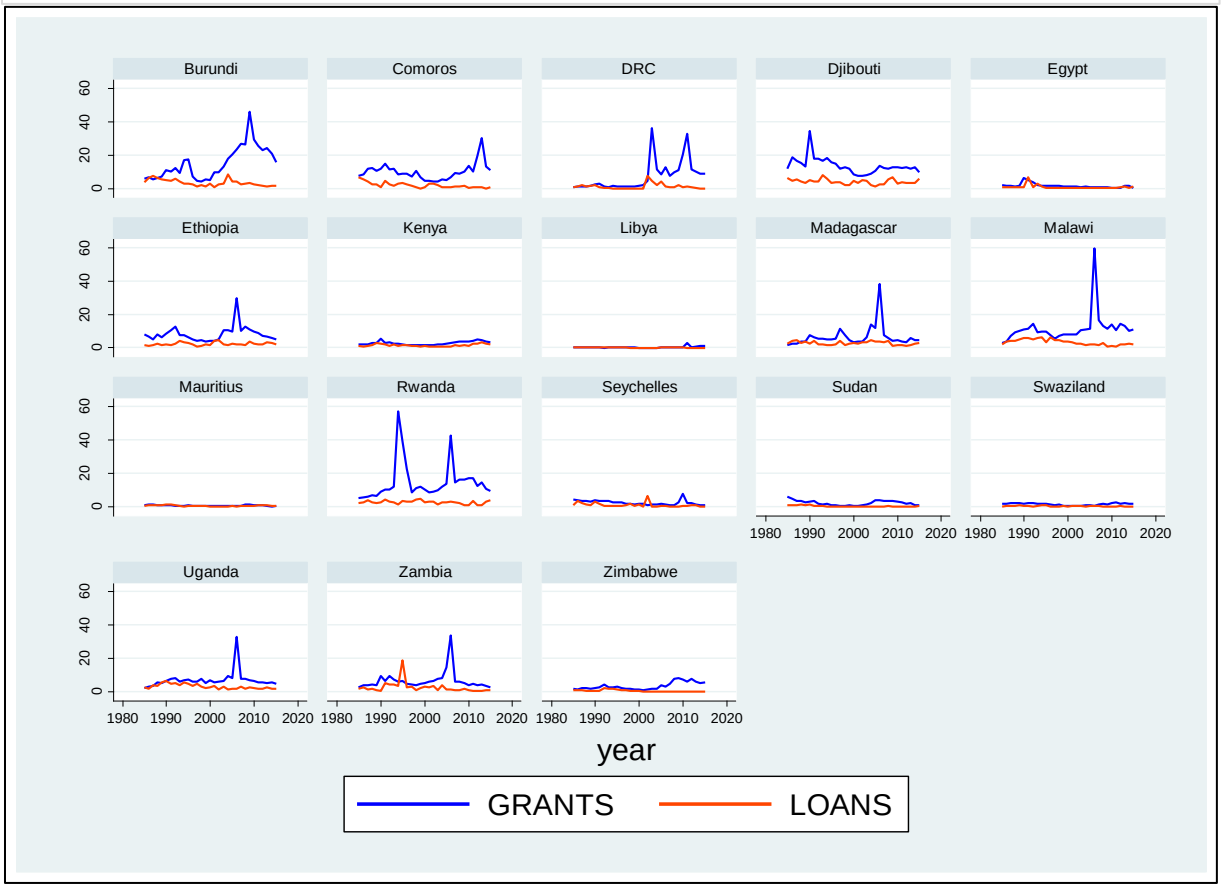
All the eigenvalues lie inside the unit circle.
pVAR satisfies stability condition.



APPENDIX 5

Appendix 5.1: Loans and Grants in COMESA (2002-2015)





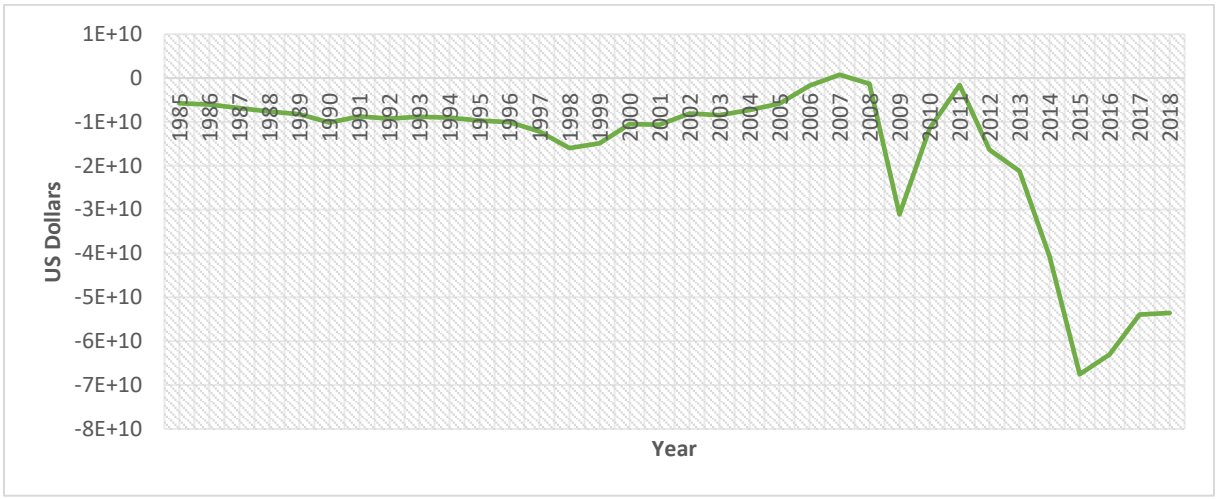
Source: Author's Calculations from OECD Database, 2018

Appendix 5.2: Summary Statistics

Variable		Mean	Std. Dev.	Min	Max	Observations
change~p	overall	.0326365	.0866449	-.94851	.809637	N = 558
	between		.0193426	-.0191462	.0586848	n = 18
	within		.0845775	-.8967273	.8614197	T = 31
lnoda	overall	19.35919	1.642294	14.88022	22.53156	N = 557
	between		1.530714	16.38476	21.28756	n = 18
	within		.6936341	17.59558	23.25141	T-bar = 30.9444
lngrants	overall	19.1996	1.64969	14.45736	22.69735	N = 558
	between		1.508562	16.23874	21.17709	n = 18
	within		.7538508	17.16603	23.23784	T = 31
lnloans	overall	17.77864	1.954814	9.903487	22.49822	N = 558
	between		1.634645	15.03951	20.2889	n = 18
	within		1.137167	11.41716	20.99907	T = 31
lnexpo~s	overall	20.81671	1.716101	16.72785	24.85294	N = 558
	between		1.562802	17.72688	23.62092	n = 18
	within		.7963655	18.34511	22.73906	T = 31
lnfdi	overall	-271.3054	6774	-160000	23.20817	N = 558
	between		1216.859	-5147.172	19.90371	n = 18
	within		6669.789	-155124.1	4897.422	T = 31
lnsavi~s	overall	12.17214	15.82051	-21.59873	24.88215	N = 558
	between		11.81889	-13.65088	23.20292	n = 18
	within		10.86857	-25.2844	41.09716	T = 31
lnp~1564	overall	15.12161	1.797046	10.5402	17.8752	N = 558
	between		1.829466	10.82974	17.52203	n = 18
	within		.250392	14.55444	15.64868	T = 31

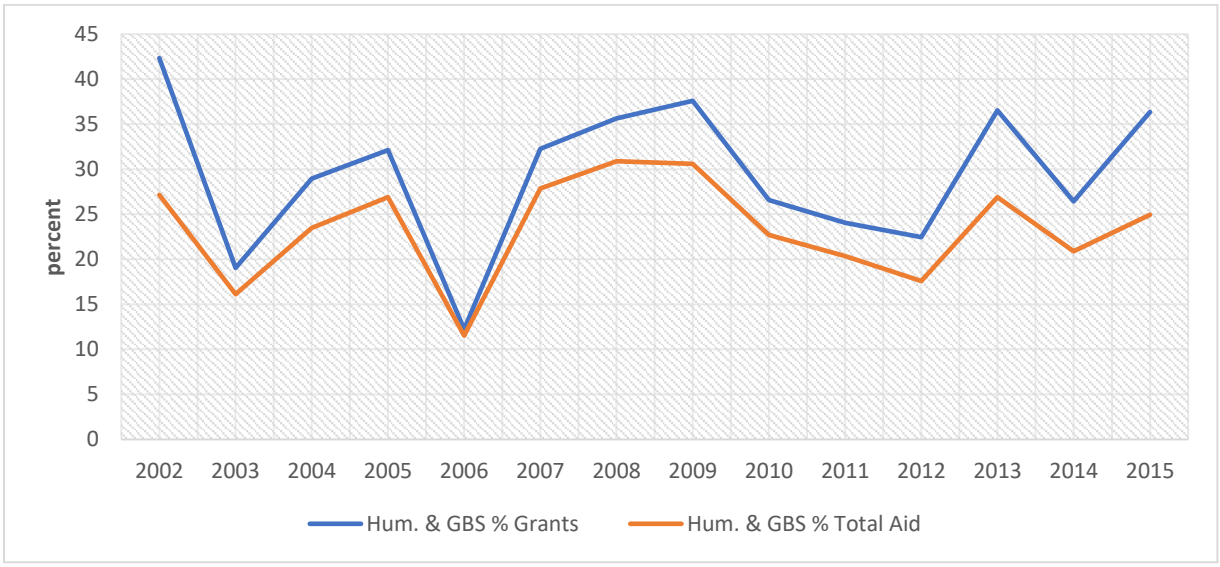
.

Appendix 5.3: COMESA Trade Balance (1985-2018)



Source: COMSTAT data accessed on 4-10-2019

Appendix 5.4: Humanitarian Foreign aid and General budget support (2002-2015)



Source: Author's Calculations from OECD Database, 2018

Appendix 5.5: Effect of Loans and Grants on Economic Growth: Controlled for Corruption

	EC	lngrants	lnloans	Grants*cor	Loans*cor	corr	lngov	lnsavings	lnppln
LR		0.00360*	-0.00476*	-0.00194***	-0.00505***	-5.20592***	-0.01779***	0.00064***	0.02491***
SR									
COMESA	-0.92984***	-0.00011	0.01137***	-0.00443	-0.00407*	4.89176***	0.09286***	0.01428**	0.48933
Burundi	-0.79501***	0.03752**	0.02406*	0.00077	0.00630**	4.18903	0.03534	0.00013	0.53145
Comoros	-1.28663***	0.02774*	0.00511*	0.00049	-0.00444*	6.76554***	0.04769**	0.00032	7.32622
Djibouti	-0.63773***	0.03860***	-0.01194***	0.00046	0.00725***	3.51949***	0.02656**	-0.00132***	-2.98696**
DRC	-1.38981***	0.04006**	0.03674***	0.00097	-0.00029	7.31278**	0.02	-0.00032	-0.70039**
Egypt	-0.69310***	0.00305	-0.0009	-0.00227	0.00103**	3.56154*	0.06704***	0.0443	0.22294
Eswatini	-0.87289***	0.02767	0.01489*	0.03957	-0.22171*	4.51829**	0.05262	-0.00038	3.15582***
Ethiopia	-0.73920***	-0.02946	0.02092	0.00026	0.00311***	3.84506**	0.1762	0.01228	-0.21686
Kenya	-0.54270***	0.00606	0.01646	0.00412	0.00210***	2.88921	0.06584	0.02317*	0.94508
Libya	-0.75130***	-0.01954	0.05909***	-0.16047***	0.1487	3.98572***	0.40732***	0.10506***	0.05284
Madagascar	-1.04724***	0.01523	0.02476*	0.0049	-0.01192**	5.45734***	0.13148	0.0007	2.3609
Malawi	-1.32987***	-0.01519	-0.00795	0.00223*	0.01637	7.03636***	-0.08224**	-0.00037	0.27451
Mauritius	-1.09455***	0.00154	0.00112	-0.00083	0.00674	5.69906	0.037	0.04193	-0.49987
Rwanda	-1.16053***	-0.05197*	0.01314	0.0011	0.01164	6.10882***	0.31329***	0.00544***	1.21724**
Seychelles	-0.54123***	0.00277	0.00827	0.01006	0.00058	2.76292***	0.19464***	-0.00310***	-0.28639
Sudan	-0.67528***	-0.01703	-0.00581	0.00367	-0.03943**	3.52304	0.10433***	0.00892	-0.26524
Uganda	-0.69903***	0.01519	-0.00725	-0.00029	0.00001	3.66438***	0.05180***	-0.00019	1.10457
Zambia	-1.66604***	0.00874	0.00715	-0.00073	0.00185	8.96626	-0.07598***	0.01953	-5.69266**
Zimbabwe	-0.81506**	-0.09294**	0.00684	0.01618	-0.00108	4.24690***	0.09863***	0.00088	2.26479

*Note: ***, ** and * indicate significance at 1%, 5% and 10% respectively*

APPENDIX 6

Appendix 6.1: IPS Unit and Fisher-ADF Root Tests Result

	IPS		Fisher-ADF	
Variable	levels	1st difference	Levels	1st Difference
agva	-2.2646*	0.8596	119.4471***	85.55.02***
agvaw	-2.5442***	-9.2627***	130.08***	121.7669***
ODA	-2.9448***	0.3565	164.7906***	43.9622***
Rural	-5.5710***	-2.3286***	103.8134***	46.7373*
govt	-2.5917***	-1.8073***	52.2961**	91.5955***
pcGDP	0.9767*	-1.7401***	74.7420	97.0899***
inflation	-2.1853***	-5.5635***	128.7465	243.885***
policy	-2.7810***	-2.3331**	66.6765***	105.5555***
agridevt	-3.9527***	0.2819*	208.2550***	34.5648
water & land	-4.4582	0.0264**	128.2512***	31.0401
inputs	-2.4660***	-1.7186**	88.8286***	98.0613***
Food crops	-4.0098***	-1.4012	94.9766***	73.4304***
Industrial crops	-2.5763*	3.7380	44.7810*	73.4304***
other	-1.5383***	2.5568	208.5250***	34.5648

*Note: i) ***, ** and * indicate the rejection of the null hypothesis of unit root at 1%, 5% and 10% respectively*

ii) Since the study is covering all COMESA member states, it assumed a finite N for the Fisher-ADF and therefore, only reported on the χ2 ρ. However, it should be noted that all the four tests under the fisher-ADF failed to accept the null hypothesis of a unit root in all the panels at 1%.

iii) all variables are in their natural log transformation and due to unbalanced panels, IPS test was only feasible on demeaned levels and first differenced regressions of these three variables: water and land resource management; agricultural inputs; and other.

Appendix 6.2: Granger Causality

Appendix 6.2a: Model 1

```
. pvargranger

  panel VAR-Granger causality Wald test
    Ho: Excluded variable does not Granger-cause Equation variable
    Ha: Excluded variable Granger-causes Equation variable
```

Equation \ Excluded	chi2	df	Prob > chi2
lnagva			
lnoda	0.022	1	0.882
lnodarural	7.845	1	0.005
lngovt	17.315	1	0.000
ALL	27.744	3	0.000
lnoda			
lnagva	8.288	1	0.004
lnodarural	21.617	1	0.000
lngovt	10.208	1	0.001
ALL	106.868	3	0.000
lnodarural			
lnagva	4.406	1	0.036
lnoda	28.383	1	0.000
lngovt	10.912	1	0.001
ALL	29.937	3	0.000
lngovt			
lnagva	2.026	1	0.155
lnoda	13.181	1	0.000
lnodarural	7.476	1	0.006
ALL	27.249	3	0.000

Appendix 6.2b: Model 2

```
. pvargranger

  panel VAR-Granger causality Wald test
    Ho: Excluded variable does not Granger-cause Equation variable
    Ha: Excluded variable Granger-causes Equation variable
```

Equation \ Excluded	chi2	df	Prob > chi2
lnagvaw			
lnoda	0.655	1	0.418
lnodarural	2.493	1	0.114
lngovt	0.004	1	0.950
ALL	5.389	3	0.145
lnoda			
lnagvaw	7.196	1	0.007
lnodarural	6.859	1	0.009
lngovt	2.999	1	0.083
ALL	21.457	3	0.000
lnodarural			
lnagvaw	13.825	1	0.000
lnoda	22.348	1	0.000
lngovt	7.300	1	0.007
ALL	40.777	3	0.000
lngovt			
lnagvaw	9.275	1	0.002
lnoda	11.429	1	0.001
lnodarural	3.001	1	0.083
ALL	28.948	3	0.000

Appendix 6.3: Summary Statistics

Variable		Mean	Std. Dev.	Min	Max	Observations
agva	overall	5.83e+09	8.18e+09	2.10e+07	3.12e+10	N = 170
	between		8.26e+09	2.48e+07	2.82e+10	n = 17
	within		1.53e+09	1.01e+09	1.14e+10	T = 10
agvaw	overall	1.62e+09	2.35e+09	1.74e+08	1.12e+10	N = 163
	between		2.35e+09	1.83e+08	9.21e+09	n = 17
	within		3.72e+08	1.26e+08	3.61e+09	T = 9.58824
oda	overall	6.64e+07	7.49e+07	3232	4.22e+08	N = 170
	between		6.26e+07	370468.6	2.38e+08	n = 17
	within		4.35e+07	-1.04e+08	3.58e+08	T = 10
grants	overall	4.49e+07	5.13e+07	3232	3.55e+08	N = 170
	between		4.09e+07	370468.6	1.52e+08	n = 17
	within		3.24e+07	-6.25e+07	3.33e+08	T = 10
loans	overall	2.11e+07	3.31e+07	.001	1.68e+08	N = 170
	between		2.65e+07	.001	8.55e+07	n = 17
	within		2.08e+07	-4.10e+07	1.03e+08	T = 10
odarur~t	overall	1.25e+07	1.94e+07	.001	1.29e+08	N = 170
	between		1.74e+07	.001	7.21e+07	n = 17
	within		9313504	-2.60e+07	6.94e+07	T = 10
govt	overall	2.95e+08	3.39e+08	436967.8	1.71e+09	N = 151
	between		3.33e+08	970783.8	1.24e+09	n = 16
	within		9.04e+07	7.69e+07	7.63e+08	T-bar = 9.4375
corr	overall	-.6277346	.6157471	-1.544762	.8836011	N = 170
	between		.6144156	-1.390651	.5325379	n = 17
	within		.147451	-1.088989	-.1753278	T = 10
realgd~a	overall	2217.4	3237.316	213.4056	14142.81	N = 170
	between		3304.993	230.2596	12217.18	n = 17
	within		372.7304	486.4055	4143.024	T = 10
inflat~n	overall	9.362815	8.348915	-8.11517	44.35669	N = 170
	between		5.21366	.981021	21.23973	n = 17
	within		6.630966	-1.801047	37.61265	T = 10
policy~n	overall	8976144	1.13e+07	.001	5.91e+07	N = 170
	between		9290161	13349.3	2.48e+07	n = 17
	within		6761334	-7771879	4.70e+07	T = 10
agricu~t	overall	2.21e+07	3.04e+07	.001	1.85e+08	N = 170
	between		2.46e+07	1939.401	9.71e+07	n = 17
	within		1.87e+07	-6.20e+07	1.10e+08	T = 10
watera~s	overall	1.31e+07	2.19e+07	.001	1.21e+08	N = 170
	between		1.91e+07	742.5009	5.91e+07	n = 17
	within		1.16e+07	-2.99e+07	8.41e+07	T = 10
inputs	overall	3495728	1.92e+07	.001	2.46e+08	N = 170
	between		7120034	.001	2.92e+07	n = 17
	within		1.79e+07	-2.54e+07	2.21e+08	T = 10
foodcr~n	overall	4230555	1.84e+07	.001	1.99e+08	N = 170
	between		8015177	.001	3.35e+07	n = 17
	within		1.66e+07	-2.93e+07	1.70e+08	T = 10
extres~g	overall	7949779	1.18e+07	.001	6.83e+07	N = 170
	between		9693097	92817.4	3.12e+07	n = 17
	within		7069558	-1.40e+07	4.50e+07	T = 10
other	overall	4746933	1.19e+07	.001	1.39e+08	N = 170
	between		5384173	.001	1.72e+07	n = 17
	within		1.06e+07	-1.24e+07	1.26e+08	T = 10

APPENDIX 7

Appendix 7.1: IPS Unit and Fisher-ADF Root Tests Result in Levels

Variable	IPS	Fisher-ADF
AIDI	-1.4530*	74.9844***
ln oda	-2.5543***	159.5298***
ln grants	-2.4516***	136.2613***
ln loans	-3.0752***	145.1916***
Inflation	-1.6813**	112.9707***
Savings	-1.6813**	81.2903***

*Note: *** indicates significance at 1%, ** indicates significance at 5% and * indicates significance at 10%*

Appendix 7.2: Summary Statistics of Variables (2002-2015)

Variable		Mean	Std. Dev.	Min	Max	Observations	
lnaidi	overall	2.982389	.804398	1.266948	4.540205	N =	171
	between		.8106395	1.691381	4.423303	n =	19
	within		.1443736	1.99484	3.299988	T =	9
lnoda	overall	17.2458	2.41814	8.82247	20.65646	N =	171
	between		2.13371	12.87149	20.14204	n =	19
	within		1.228384	12.52504	21.11048	T =	9
lngrants	overall	16.41392	2.342733	8.82247	19.71693	N =	171
	between		2.096122	12.6759	19.19167	n =	19
	within		1.140806	12.56049	19.94958	T =	9
lnloans	overall	12.76353	8.868148	-4.60517	20.41809	N =	171
	between		7.122286	-4.60517	19.7786	n =	19
	within		5.504928	-7.120237	27.21479	T =	9
inflat~n	overall	152.0098	1866.063	-8.11517	24411.03	N =	171
	between		620.5536	1.353912	2714.504	n =	19
	within		1765.001	-2564.893	21848.54	T =	9
corrup~n	overall	-.6365497	.5803856	-1.62	.88	N =	171
	between		.5761305	-1.372222	.4511111	n =	19
	within		.1433219	-1.227661	-.2076608	T =	9
saving~p	overall	8.420032	13.18011	-20.71661	56.52283	N =	171
	between		11.6866	-9.117238	33.49856	n =	19
	within		6.600443	-16.55429	31.4443	T =	9
realgdp	overall	3.04e+10	5.41e+10	8.47e+08	3.18e+11	N =	171
	between		5.31e+10	1.10e+09	2.32e+11	n =	19
	within		1.55e+10	-6.94e+10	1.16e+11	T =	9