

UNIVERSITY OF GHANA

TRADE OPENNESS AND UNEMPLOYMENT: EVIDENCE FROM SUB-SAHARAN

AFRICA

BY

WAHAB SAMIRATU

(10382727)

**THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN
PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF MPhil
ECONOMICS DEGREE**



JULY, 2018.

DECLARATION

I, SAMIRATU WAHAB, the author of this thesis, hereby declare that with the exception of references to other studies which have been duly acknowledged, this thesis is the original research undertaken by me towards the award of Master of Philosophy degree in Economics in the Department of Economics, University of Ghana under the guidance of my supervisors. This thesis has neither in part nor in whole been submitted for any academic award elsewhere. I bear sole responsibility for any shortcomings.

.....

SAMIRATU WAHAB

(10382727)

.....

DATE

.....

DR. FESTUS E. TURKSON

(SUPERVISOR)

.....

.....

DR. PRISCILLA T. BAFFOUR

(SUPERVISOR)

.....

ABSTRACT

While unemployment remains a challenge in Sub-Saharan African countries, trade openness has been identified in the literature as unemployment inducing. Nevertheless, the assessment of the effect of trade openness on unemployment has not received much attention in Sub-Saharan Africa. This study therefore empirically investigates the effects of trade openness on aggregate unemployment and youth unemployment in SSA.

The study adopts the system GMM estimator in order that consistent and efficient estimates are obtained and to control for endogeneity in the estimation model. Using data for thirty-five SSA countries for the years 1991 to 2015, this study finds that an increase in trade openness results in lower aggregate and youth unemployment in the region. However, the magnitude of the effect of trade openness on youth unemployment is higher than that of aggregate unemployment.

The study further shows an inverse relationship between real GDP per capita and unemployment. On the other hand, government expenditure, urbanization, real GDP growth, inflation and credit to the private sector are found to have a positive significant effect on unemployment in SSA. However, no significant relationship is observed between FDI and unemployment and Domestic investment and unemployment.

It is recommended that Governments of SSA countries should take pragmatic measures to promote trade especially through the reduction of tariff and non-tariff barriers. In addition, inflation must be controlled and investments must also be channeled to sectors that are employment generating.

DEDICATION

This thesis is dedicated to Allah Almighty and to my parents, Mr. Ibrahim Wahab and Hajia Rahmatu Sumaiya Ibrahim.

ACKNOWLEDGEMENTS

My greatest gratitude goes to Almighty Allah for divinely guarding and guiding me throughout this work. Secondly, my parents deserve endless thanks for their patience, wisdom, care, and support in pursuance of this project.

Unceasing thanks to the African Economic Research Consortium (AERC) for sponsoring my MPhil program. I also remain forever grateful to my two supervisors Dr. Festus Ebo Turkson and Dr. Priscilla Twumasi Baffour; my mentors, for their constant motivation, prompt guidance, and insightful comments. Their display of commitment to supervising this project and the reaffirmation of the potential eagerness of knowledge acquisition was resourceful. I could not find enough words to express how I feel about them. May the Almighty grant their hearts' desires.

Again, not forgetting Dr. Alexander Nuer for believing in me and also served as a source of motivation for me. More so, I would like to express my profound appreciation to my siblings; especially Zainab Wahab and Hajia Jamila Wahab for their moral support during my period of study. God bless you all for the unconditional love shown me.

Finally, applause to my colleagues on the MPhil program; Abdul-Wahab, Philip, MaryAnne, Kingsley, Mary, and all others whose names I could not mention but have been helpful throughout the journey, I am very grateful. Your contributions and inspiration meant a lot to me.

TABLE OF CONTENT

CONTENT

DECLARATION	i
ABSTRACT.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENTS.....	iv
LIST OF TABLES.....	viii
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS.....	x
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background	1
1.2 Statement of Problem.....	4
1.3 Research Objectives	6
1.4 Significance of the Study	7
1.5 Organisation of the Study.....	7
CHAPTER TWO	9
OVERVIEW OF TRADE AND UNEMPLOYMENT IN SUB-SAHARAN AFRICA	9
2.1 Introduction	9
2.2 Trade Liberalisation	9
2.3 Trade Performance	11
2.4 Composition of Trade.....	17
2.5 Aggregate Unemployment Trend.....	21
2.6 Youth Unemployment Trend	24
2.7 Concluding Remarks	28
CHAPTER THREE	29

LITERATURE REVIEW	29
3.1 Introduction	29
3.2 Theories of International Trade.....	29
3.3 Theoretical Framework	31
3.4 Theoretical Literature Review.....	33
3.5 Empirical Review	36
3.6 Concluding Remarks	43
 CHAPTER FOUR.....	 45
METHODOLOGY AND DATA DESCRIPTION.....	45
4.1 Introduction	45
4.2 Description of variables and Data Source	45
4.3 Model specification	51
4.4 Panel data Estimation Techniques.....	53
4.5 Diagnostic tests	56
4.5.1 Test for Over-identifying Restrictions.....	56
4.5.2 Heteroskedasticity	56
4.5.3 Autocorrelation	57
 CHAPTER FIVE	 58
PRESENTATION AND DISCUSSION OF RESULTS	58
5.1. Introduction	58
5.2. Descriptive Analysis	58
5.3 Estimation Results.....	60
5.4 Diagnostics tests.....	62
5.4.1 Hausman Test	63
5.4.2 Heteroskedasticity	63
5.4.3 Autocorrelation.....	63
5.4.4 Test for over-identifying restrictions.....	64
5.5 Discussion of empirical results	64

5.6 Concluding Remarks	69
CHAPTER SIX	71
SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS	71
6.1 Introduction	71
6.2 Summary and Conclusion	71
6.3 Policy Recommendations	73
6.4 Limitations of the Study	74
REFERENCES	76
APPENDIX	81

LIST OF TABLES

Table 2.1: Regional Shares of Trade in Africa between 2005 and 2015 (in %).....	13
TABLE 2.2: Share of some selected countries in SSA's trade (in %).....	15
Table 2.3: Commodities Share of SSA Merchandise Exports and Imports from 1995 to 2015 (in %).	18
Table 2.4: Top five SSA export countries for 2012.....	19
Table 2.5: Global Unemployment Rates, 1991 to 2015.....	21
Table 2.6: Youth to Adult Unemployment Rates (2008 to 2015).....	27
Table 4.1: Summary of Explanatory Variables and their Expected Signs.....	51
Table 5.1: Descriptive Statistics of Variables, 1991 to 2015.....	59
Table 5.2: The Impact of Trade Openness on Aggregate Unemployment in SSA.....	61
Table 5.3: The Impact of Trade Openness on Youth Unemployment in SSA.....	62

LIST OF FIGURES

Figure 2.1: Regional Shares of Global trade (exports and imports); 2005 to 2015 (in %)	12
Figure 2.2: Trends in the degree of openness between 1989 and 2015	16
Figure 2.3: Trends in Regional Unemployment Rates from 1991 to 2015	22
Figure 2.4: Aggregate Unemployment Rates in SSA Countries in 2015	23
Figure 2.5: Youth Unemployment Trend in SSA (1991 to 2015)	25
Figure 2.6: Youth Unemployment in Selected Countries in SSA and NA in 2015 (% of total labour force in the country)	26

LIST OF ABBREVIATIONS

AERC	African Economic Research Consortium
CPI	Consumer Price Index
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GMM	Generalised Method of Moments
ILO	International Labour Organisation
IMF	International Monetary Fund
ISI	Import Substitution Industrialisation
MDG	Millennium Development Goals
NAFTA	North American Free Trade Area
OECD	Organisation for Economic Co-operation and Development
SAP	Structural Adjustment Program
SDG	Sustainable Development Goals
SSA	Sub Saharan Africa
UNCTAD	United Nations Conference on Trade and Development
WDI	World Development Indicators
WTO	World Trade Organisation

CHAPTER ONE

INTRODUCTION

1.1 Background

International trade is currently one of the fastest growing economic activities in the global economy which has generated a great influence on the incomes of most economies in the world (Mbogela, 2015). Despite some temporary setbacks in the past decades, global trade has accounted for a significant proportion of Gross Domestic Product (GDP) in most countries. For instance, the share of global exports of goods and services to GDP grew to 32 percent in 2005 from its 13.5 percent level in 1970. Additionally, all major geographic regions recorded an excess of trade over output growth (Jansen and Lee, 2007). The growth in trade volumes and global integration has also been rapidly increased by the global value chain i.e. globally dispersed production. Over the past century to date, the increasing global trend of FDI flows has also been attributed to an increased rate of international trade (Mbogela, 2015).

Given these various roles and the quest to reach all the Millennium Development Goals (MDGs) which is now the well-established Sustainable Development Goals (SDGs), international trade has received much attention in the literature. A great number of researches have examined the role of trade and its consequences in areas such as economic growth, the environment and a more recent focus on labour market outcomes. Among the few studies, this research is focused on examining the impact that trade openness has on unemployment in Sub-Saharan Africa.

From a broader perspective, most economies consider unemployment phenomenon as part of the challenges facing their economies in their quest to achieving inclusive growth. Although the

phenomenon is applied to all factors of production, the term, however, is usually directly linked with labour in both political and economic circles (Iyoha et al, 2003). It has however been blamed on several factors including the abandonment of most productive factors such as the agricultural sector which was an economic growth engine in several sub-Saharan African countries (Ogbeide, 2015). Others also think that the extent to which an economy is opened to trade is an important contributing factor to unemployment in the region.

Sub-Saharan Africa's trade with the rest of the world remains marginal accounting for 3 percent of global imports and exports between 2008 and 2009 for instance, as compared with Latin America and developing Asia that showed about 6 percent and close to 30 percent of global trade respectively (Chea, 2012). The region also faces high rates of unemployment especially youth unemployment which has been an economic ill given the bulging youth population in recent times. In 2015, SSA recorded an unemployment rate of 7.1 which was greater than the global average of 5.7 percent. However, the youth to adult rate was 1.9 percent.

Economists have asserted that trade openness would have an influence on unemployment given the fact that trade leads to changes in production of goods and services. This has intrigued various researchers to put forward several debates in relation to whether trade openness really influences the level of unemployment in a country. In one of the few earlier works, Matusz (1996) established that trade would result in the establishment of more firms in a country and commensurately higher levels of employment. Matusz (1998) equally agitates that introducing trade is likely to improve the utility of workers which relaxes the efficiency wage constraint hence permitting an increase in employment and an even larger benefit from trading activities.

However, a study by Jansen and Lee (2007) posits that in spite of the increasing role of trade and FDI, most jobs are yet to be linked directly by these developments in both developing and industrialized countries. They further stressed that, in the developing world, a chunk of employment is in subsistence agriculture and informal economy whereas a bulk of jobs in developed countries is already in the services sector all of which are highly part of non-tradable activities.

Further observations by Jansen and Lee (2007) revealed that in the short run, the resulting employment effect of openness whether negative or positive is contingent on country-specific factors like the functioning of the labour market. Whereas, the efficiency gains in the long run caused by the openness of trade are expected to impact employment positively either in terms of quality or quantity of jobs or a combination of both quantity and quality.

Chea (2012) also adds that, in the shorter term, structural adjustment cost and the instant effect on the poor may be unfavorable especially in developing SSA where infrastructure or institutions are not large enough to facilitate the changes nor are there social safety nets as anchors to cushion such negative impacts. Chea further established that trade openness is relevant to a country especially where there are no externalities in the longer run hence would result in an efficient allocation of resources and job creation.

Nonetheless, several arguments have been put forward to support greater openness of trade. In general, trade openness is viewed to have the tendency to create larger markets that will enable firms and businesses to obtain larger economies of scale, increased returns to investment as well as adopt more new technology. Thus, trade openness is more likely to decrease risk and instability since world markets are highly stable than local markets (Chea, 2012) and as such,

countries are able to improve the welfare of citizens. Moreover, international trade facilitates greater efficiency in the production of goods and services by transferring production to economies that have a comparative advantage in producing those goods and services (Somwaru and Makki 2004).

Given these numerous advantages of openness, an important question that arises is that, are developing countries reaping the gains from liberalisation and openness? This study seeks to find the probable effects of trade openness on unemployment in SSA. It finds some justification on the grounds that there is very little empirical information on the role of trade openness in determining unemployment in Sub-Saharan Africa.

1.2 Statement of Problem

Despite the abundant natural and human resources, Sub-Saharan Africa remains one of the poorest regions in the world, together with unstable policy environments and insufficient infrastructure among others. Unemployment also remains a challenge to many of the countries in the region despite the efforts by Governments of SSA countries to tackle the phenomenon. Many macroeconomic factors have been pointed out in the literature to impact unemployment in general. However, a more recent idea in the theoretical and empirical literature suggests that trade openness may have some influence on the levels of unemployment in a country.

Since the inception of the Structural Adjustment Programs (SAP) in the late 1970s throughout the 1980s, many SSA countries have opened up their economies to freer trade. While trade has generally improved in the region, it is observed that the region has been marginalised in world trade. This has been attributed to its high concentration on exports of primary products that do not attract high prices in the world market and imports of manufacturing products (Chea, 2012).

For instance, in 2008 and 2009, SSA accounted for a minute 3 percent of global imports and exports as compared to about 6 percent for Latin America and a huge 27 to 30 percent for developing Asian countries (Chea, 2012).

The observation regarding SSA is that countries are becoming more trade opened over the years but are yet to raise their contributions to global trade. The pertinent question that arises is whether openness in the region would bring about welfare improvement in terms of low unemployment rates. This study, therefore, attempts to examine the crucial role trade openness have played in determining unemployment in the region.

From the point of view of the pioneers of international trade theories, Adam Smith (1776), David Ricardo (1817), Heckscher (1919) and Ohlin (1933) and other modern theorists, that tend to stress that trade enhances productivity and improves the living standards of the people, they do not emphasize directly the influence of trade on unemployment. Nevertheless, a very interesting prediction of the H-O theory is affirmed in the real experiences of some countries. For instance, while countries in East Asia are taking up more roles in the exports of mostly manufactures and imports of primary products, countries in the sub region are high exporters of primary products especially unprocessed ones that intensively uses labour in their production and importers of manufactures that are highly capital intensive (Mbogela, 2015). This suggests that trade openness can influence a country's unemployment through its abundant factor of production and resource endowment.

In general, this issue has been addressed by various researchers who have generated mixed results. Some have confirmed that indeed trade openness influences unemployment, but the magnitude and direction differ among studies. Just to mention a few, Felbermayr et al (2011)

showed that truly openness has led to a fall in unemployment in OECD countries. Anyanwu (2014) also found that factors such as high intra-African trade, inflation, high levels of economic growth, urbanization and domestic investment tend to reduce unemployment especially among young people in Africa. Ogbeide (2015) finds an unemployment reducing effect of trade openness in Nigeria suggesting that openness can have an influence on economic activities through technology diffusion in the domestic economy. In contrast, Raifu (2017) expressed that trade openness may worsen unemployment in the country especially due to the pronounced stringency in labour market regulations that is more prevalent in the popular informal sector. In support of Raifu, Kim (2011) incorporated labour market institutions and found that trade results in high aggregate unemployment as it interacts with relatively rigid labour market institutions.

However, studies that have explored the effects of openness on unemployment are scanty. Interestingly, previous studies in the literature have neglected the relevance of trade and its impact on youth unemployment in the region. This is surprising since youth unemployment has been a major unemployment issue faced by most countries across the region. This study shares a similar view with Anyanwu (2014) who stresses that trade is critical in understanding youth unemployment in Africa. This study complements Anyanwu by investigating the impact of trade openness on both aggregate and youth unemployment in Sub-Saharan Africa, though the measure of trade openness is quite different.

1.3 Research Objectives

The key objective of the study is to empirically assess the impact of trade openness on unemployment rates in Sub-Saharan Africa. In the quest to achieve the objective of the study, the following specific objectives have been outlined to guide the rest of the study:

- To examine the impact of trade openness on aggregate unemployment in Sub-Saharan Africa
- To investigate whether trade openness has a significant impact on youth unemployment in Sub-Saharan Africa

1.4 Significance of the Study

This study is thus important as it seeks to unravel a great deal of evidence on the of impact international trade openness on unemployment in SSA. Just few literature exist on the trade-unemployment nexus and the results have mostly been mixed. Whiles some have discovered a negative relationship, others have unraveled a positive relationship and few have unraveled no relationship. This study will, therefore, provide more insight into the subject through its empirical analysis on SSA and probe further to find out whether openness significantly affects youth unemployment. It is known that; the region is faced with the fastest growing youth population accompanied by increasing levels of youth unemployment in most of the countries. This study is therefore relevant to SSA as it will inform countries about one of the prominent factors that impact both aggregate and youth unemployment and as such seek solutions to curb the economic ill. By this, Governments of SSA countries will develop insightful and workable policies that will aid the region in capturing all the benefits from international trade.

1.5 Organisation of the Study

The study comprises six chapters and it is organized as follows. Chapter one will focus on the background of the study, statement of problem, objectives, and significance of the study. The second chapter presents an overview of the study. Chapter three will focus on the review of relevant theoretical and empirical literature followed by a discussion of methodology and

description of variables considered in the study in chapter four. Chapter five will report the econometric results and further throw some light on the findings of the study. Finally, chapter six will look at the summary and conclusion of the paper as well as some key policy recommendations.

CHAPTER TWO

OVERVIEW OF TRADE AND UNEMPLOYMENT IN SUB-SAHARAN AFRICA

2.1 Introduction

This chapter presents an overview of trade and unemployment with a major emphasis on the Sub-Saharan African region. The rest of the chapter is organized as follows. Section 2.2 presents an overview of trade liberalization followed by an overview of trade performance in section 2.3. Section 2.4 follows with a discussion of the composition of Sub-Saharan Africa's trade. Section 2.5 outlines aggregate unemployment trends followed by section 2.6 that discusses youth unemployment trends. The final section concludes.

2.2 Trade Liberalisation

Prior to the 1980s, many countries in Africa experienced restrictive trade policies which were driven by the desire to protect infant industries through Import Substitution Industrialization (ISI). This led to a widespread of an inward-looking strategy which resulted in the imposition of both tariff and non-tariff barriers to trade. The rationale behind this strategy was to protect infant industries from cheap imports and to promote industrialization.

However, these countries saw their economic progress declining with the collapse of real commodity prices and the oil crises experienced in the 1970s. The early 1980s also saw an even deteriorating situation in many countries characterized by a low export base that was dominated by few agricultural products, weak terms of trade and declining access to international finance. To most African countries, it led to the realization that the inward-oriented strategy was not

sustainable as most countries experienced slow growth and sluggish pace of economic development.

At the time, the only source of relief was the institutional funding by the Breton Woods institutions; the International Monetary Fund (IMF) and the World Bank together with some developed donor countries. These institutions and countries offered to help on certain conditions including the cutting down of government support to social services, the devaluation of currency, the retrenchment of the public sector and the removal of subsidies from important sectors of the economy. Strict compliance of these conditions was required from the countries by these institutions. However, they were meant to destroy the ISI initiated by many of these countries immediately after their independence.

Many economies saw the need to reform their trade policies to increase liberalization in order to open their economies to more trade and to capture the potential beneficial effects of openness. They were required to rely on unilateral trade liberalisation through the Structural Adjustment Programs (SAP) to stabilize their economies. They started to join regional integrations such as the ECOWAS, EAC, COMESA, and SADC compelling them to implement some reforms to fit into their respective groups. Some also joined the World Trade Organisation (WTO) to participate in the multilateral trade reforms. This led to a series of economic reforms between the 1980s and 1990s.

The liberalization of trade was however aimed at facilitating imports through the reduction of tariff and non-tariff barriers as well as to stimulate exports through the elimination of export taxes and increased incentives. In a way, it was also meant to promote open and free competitive markets economy where the state has less power in the economic activities of the country. In an

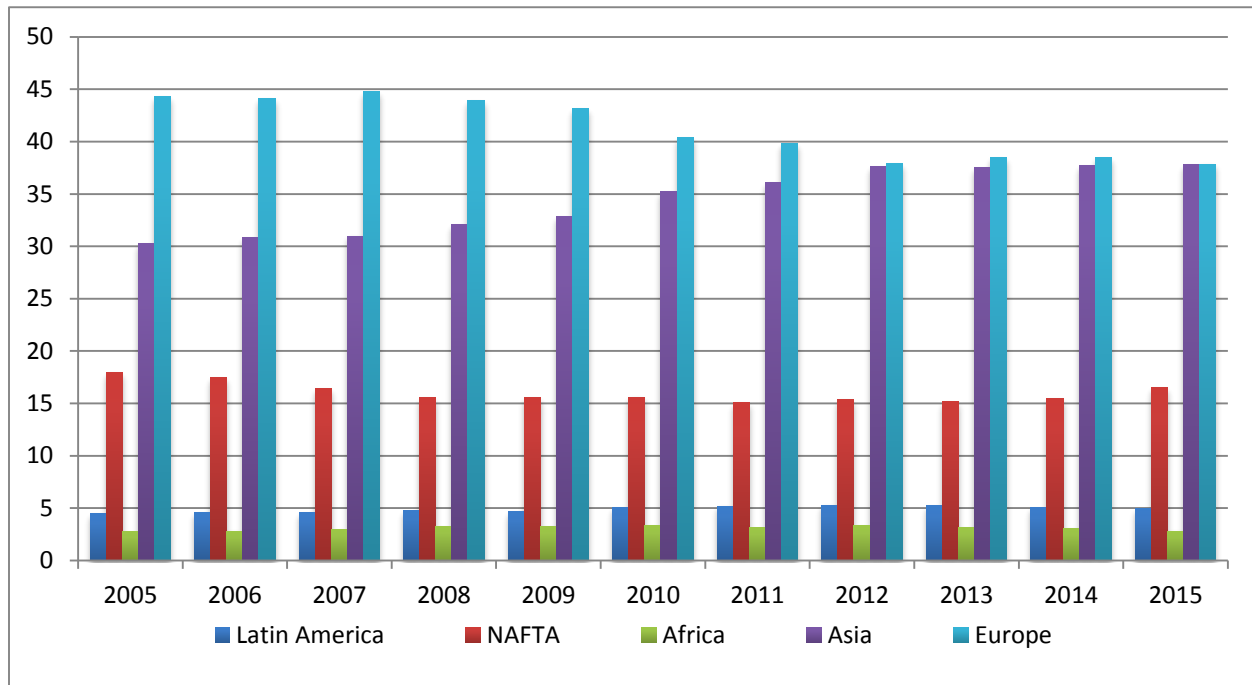
account by Chea (2012), liberalization in the past years has been used as an effective drive for development.

In their study, Ackah and Morrissey (2005) advanced that the benefits of liberalization can be grouped into four. First, access to the global market as a result of trade could result in a decline in production cost as production volume increases. Second, resources are being allocated more efficiently through trade especially exports. Third, by increasing the variety of goods available for consumers, imports liberalization expands the consumption possibilities in an economy by making it possible for a country to have access to goods it cannot produce efficiently. And fourth, through engagement with the rest of the world, countries are likely to benefit from economic growth.

2.3 Trade Performance

In general, the share of global trade has been marginalized for Sub-Saharan Africa. The participation of the region in global trade is in line with what can be expected according to the international benchmarks that relate volumes of trade to income levels, geographical factors and country size (Mbogela, 2015). In their study, Ackah and Morrissey (2005) show that the region accounted for a little over 3 percent of world merchandise exports in 1990 and 2.3 percent in 2000. That of North America and Asia was 15.4 percent and 21.8 percent in 1990 respectively, increasing to 17.1 percent and 26.7 percent in 2000. Comparatively, the highest performance of both merchandise exports and imports in global terms was recorded by Western Europe. In figure 2.1 below, a more recent regional contribution to international trade is shown.

Figure 2.1: Regional Shares of Global trade (exports and imports); 2005 to 2015 (in %)



Source: Authors tabulation from UNCTAD database

In the last few years, Africa has continued to experience the lowest contribution to global trade. The figure shows that Africa's share of global imports and exports increased from 2.7 percent to 3.3 percent between 2005 and 2015. The largest performance has been recorded by Europe followed by Asia, NAFTA, Latin America, and Africa respectively. Total imports and exports for all regions received positive growth except in 2009 which according to Anyanwu (2014) can be attributed to the global economic and financial crises. In spite of the marginal performance, Africa has made tremendous efforts in boosting international trade over the years. For instance, between 2005 and 2015, Africa's trade in value terms has increased from a little above US\$7million to over US\$10million, indicating a 64.9 percent growth in trade volumes (UNCTAD).

Within the African continent, however, Sub-Saharan African countries share of trade has been larger as compared to North Africa. This is evident from Table 2.1 below which shows the share of the two regions in Africa's trade as well as the share of the four sub-regions in SSA to the region's trade.

Table 2.1: Regional Shares of Trade in Africa between 2005 and 2015 (in %)

Region	2005	2008	2011	2013	2015
North Africa	36.0	38.4	30.0	32.0	31.0
Sub Saharan Africa	64.0	63.3	70.0	68.0	69.0
Share of Sub-regions in SSA's trade					
<i>East Africa</i>	<i>13.8</i>	<i>13.8</i>	<i>15.4</i>	<i>18.1</i>	<i>21.2</i>
<i>Southern Africa</i>	<i>34.2</i>	<i>29.2</i>	<i>28.9</i>	<i>27.1</i>	<i>28.2</i>
<i>Central Africa</i>	<i>18.7</i>	<i>24.6</i>	<i>22.6</i>	<i>23.0</i>	<i>19.3</i>
<i>West Africa</i>	<i>30.7</i>	<i>29.5</i>	<i>31.0</i>	<i>30.2</i>	<i>29.4</i>

Source: Author's calculation from UNCTAD database

From the table, SSA has dominated Africa's trade between 2005 and 2015 with the lowest share of 63.3 percent in 2008. On the other hand, North Africa's share dropped from 36 percent to 31 percent. Its lowest share was recorded in 2011 when SSA experienced a peak of 70 percent. According to Ackah and Morrissey (2005), North Africa had experienced the highest tariffs in Africa. Additionally, decreased tariffs in the sub-region saw a fall in imports and a very slow growth of exports, therefore, contributing to the slow performance of the region.

There have also been substantial differences within the sub-regions (East Africa, Southern Africa, Central Africa, and Western Africa). Southern Africa and Western Africa, with lowest tariffs and significant liberalisation (Ackah and Morrissey, 2005) had the highest share in total

SSA trade between 2005 and 2015. Although East Africa, experienced the greatest tariff reduction since the 1990s, it accounted for the lowest share but tend to have improved over the years. It is not surprising for Central Africa to have experienced some fluctuations in trade performance in SSA since the region had the lowest tariff reduction.

Despite the generality that Africa has performed poorly in global trade flows, some countries have been an exception as a result of their massive contribution to SSA's trade. According to Ackah and Morrissey (2005), in 1980 only six countries (South Africa, Algeria, Angola, Morocco, Libya, and Nigeria), in Africa three of which are dependent on oil and a fourth dependent on minerals, accounted for 76 percent of total African exports falling to 70 percent in 2000. Other small African countries have had export successes due to some specific factors. The success of Mauritius for instance can be attributed to its preferential access to the EU for its exports of clothing and sugar in the 1990s maintaining the country's export to GDP ratio above 60 percent, while Botswana that tend to manage its diamond resources, experienced a steady export performance in the early 1990s and an export to GDP ratio of over 50 percent (Ackah and Morrissey, 2005).

TABLE 2.2: Share of some selected countries in SSA's trade (in %)

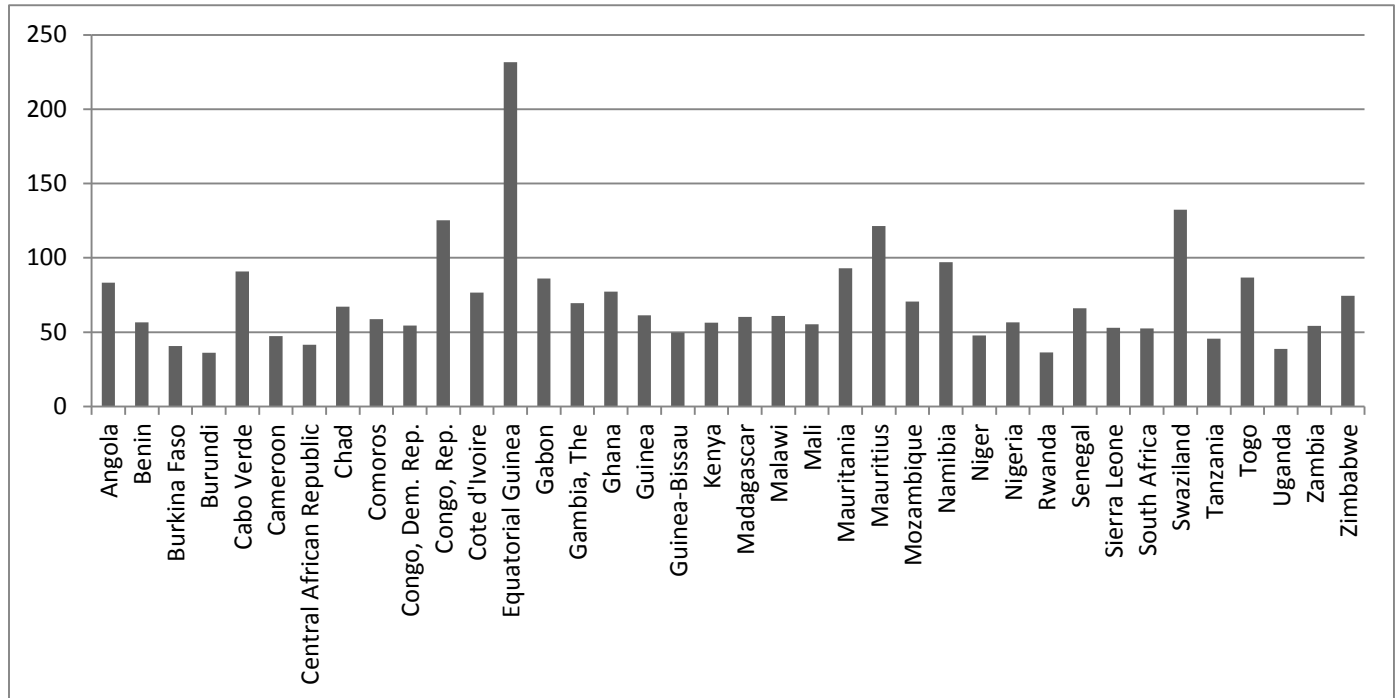
Country	2005	2008	2011	2013	2015
South Africa	29.8	26	25.3	23.4	24.1
Nigeria	19.5	18.9	19.5	17.5	15.2
<i>South Africa and Nigeria only</i>	49.3	44.9	44.9	40.9	39.3
Ghana	2.3	2.4	3.4	3.8	4.6
Kenya	2.6	2.6	2.7	2.9	3.3
Equatorial Guinea	2.0	2.6	2.6	2.3	1.7
Total share in SSA trade	56.2	52.5	53.6	50.0	48.8
Others	43.8	47.5	16.4	50.0	51.2

Source: Author's calculation from UNCTAD database

In Table 2.2 above we show the contribution of five SSA countries (South Africa, Nigeria, Ghana, Kenya, and Equatorial Guinea), that have contributed tremendously to trade in Sub-Saharan Africa between 2005 and 2015. South Africa accounted for the largest share of SSA's trade. In 2015, the country's share of total trade stood at 24.1 percent followed by Nigeria at 15.2 percent, 4.6 percent for Ghana 3.3 percent for Kenya and 1.7 percent for Equatorial Guinea. The share of these countries in trade has hovered around 49 percent and 56 percent from 2005 to 2015. South Africa and Nigeria tend to be the two most dominant countries, collectively contributing more than a third of SSA's exports and imports.

Nonetheless, most SSA countries experienced substantial growth towards their contribution in the world trade in the late 1980s towards the mid-1990s. This was partly as a result of the cuts in tariff and non-tariff barriers and other barriers to trade. Through that, the region has seen a great diversion in trade patterns away from commodity exports dependence to much greater dependence on manufactures and services (Mbogela, 2015). Evidently, this has led to a greater share of economic activities being attributed to trade.

Figure 2.2: Trends in the degree of openness between 1989 and 2015 (in %)



Source: Author's compilation from WDI database

Figure 2.2 clearly shows that although there are significant country differences, trade plays a greater role in the economic activities of these countries. In the figure, trade accounted for more than 50 percent of GDP in many countries in the region between 1989 and 2015. Even the lowest degrees of openness in countries like Rwanda, Burundi, Uganda, and a few others showed a level above one quarter.

Nevertheless, the region still faces some challenges impeding their contribution to global trade. Some studies (Chea, 2012; Ackah and Morrissey, 2005; Longo and Sekkat, 2001), have noted that, SSA's small role in the global economy's trade is due to certain factors which may include costly trade barriers, red tapes and infrastructure, lack of institutional capacity to effectively implement policy and regulation, weak trade-related institutional and regulatory measures, the issue of high transport costs, the problem with convertibility of currencies, political instability in

some countries and inadequate credit facilities to support the export sector, among others. One of the concerns raised in the literature is that SSA trade is highly concentrated in primary commodities exports and manufacturing imports.

2.4 Composition of Trade

Majority of SSA countries are economically small and concentrate mostly on the exports of few unprocessed primary commodities especially oil, minerals and agricultural produce and imports of many manufactures. Many of the countries also tend to be net importers of goods and services. Comparing the SSA region with other regions like Asia that is taking up manufactures exports, SSA can be said to follow the H-O international trade theory (Mbogela, 2015); it produces and exports those products that use the resource it is well endowed with. Other factors according to Mbogela (2015) that are driving this trade pattern may include government policies, transportation costs, technical advantage and varying distances among trade partners.

Bhorat et al. (2017) assert that the growth performance of sub-Saharan Africa is disproportionately connected to the higher exports of primary commodities but not growing complexity. In terms of manufacturing exports, the composition of goods exported is dominated by low-technology goods. Conversely, Asian economies tend to be developing well-established manufacturing sectors and are also shifting toward more technology-intensive manufactures and a diversified and complex manufactures export.

Table 2.3: Commodities Share of SSA Merchandise Exports and Imports from 1995 to 2015 (in %).

Commodity	Exports	Imports
Primary	75.9	31.2
Ores and Metals	5.3	
Manufactures	16.9	64.2
<i>South Africa</i>	65.6	
<i>Other countries</i>	34.4	
Other Commodities	1.9	4.6

Source: Author's calculation from UNCTAD database

Table 2.3 above depicts the share of major commodities in SSA's merchandise exports and imports between 1995 and 2015. Two key points emerge from the table. First, the concentration of Sub-Saharan Africa's merchandise exports on Primary commodities contrasts to that of manufactures, ores and metals and other commodities. Primary commodities characterized by a narrow range of commodities contributed an amazing 75.9 percent to merchandise exports whereas manufactures and ores and metals accounted for almost a quarter (25 percent) of merchandise exports. Notice also the contribution of South Africa to the region's export of manufactures, with only 34.4 percent share from other countries in the region. This depicts the region's poor performance in terms of manufactures exports indicating that, manufactured goods exports composition is more diverse in South Africa than in other countries in Sub-Saharan Africa. Secondly, there has been a clear dominance of manufacturing goods in the region's import basket (65 percent) whereas primary commodities contribute 31.2 percent of the total merchandise imports.

Table 2.4: Top five SSA export countries for 2012

Country	Total exports (US	% of Africa's	Major exports
	exports	exports	
South Africa	114,440,000,000	14%	diamonds, gold, manufacturers platinum,
Nigeria	98,087,456,287	12%	petroleum and petroleum products, rubber, cocoa
Angola	71,871,233,332	9%	diamonds, refined petroleum products, crude oil
Ghana	16,802,810,000	2%	cocoa, tuna, aluminum, gold, timber, bauxite
Kenya	11,025,644,515	1%	horticultural products, coffee, tea
Total	312,227,144,134	38%	

Source: Mbogela (2015)

A greater percentage of the region's export activities has however been contributed by some few countries. In table 2.4 below, we present some top countries in the list of SSA exporters that include mainly five countries with resource-rich endowment. In summary, these top five countries accounted for 38 percent of Africa's exports in 2012. Mbogela (2015) advanced that, in the oil-rich countries like Nigeria and Angola, one thing worth noting is that the contribution of oil exports to their total exports was almost 90 percent, with the exception of Ghana, Kenya, and South Africa that export mainly cocoa, tea and gold metal respectively.

Nonetheless, the relatively high dependence on few primary products and for that matter unprocessed ones put the region vulnerable to global market prices. However, some periods have experienced increased prices although it tends to benefit just the few resource-rich countries that export oil petroleum and minerals which attract foreign investors. From 1997 to 2003 for

instance, such commodity price increase led to a surge in GDP of 7 percent for oil-rich countries, 2.1 Percent for Agricultural exporters and 2.3 percent for metal exporters (Mbogela, 2015).

Unstable prices in the world market have also contributed to a fall in the region's export value. For instance, Ackah and Morrissey (2005) report that, prices of copper, sugar and cotton reduced by almost half their value between the years 1995 and 2002 whereas that of coffee reduced to nearly a third of its value in 1995. Other few export products like oil, cocoa, and tea have seen a rise in their prices with oil experiencing the highest increase. The variability in commodity prices is the dominant cause of the fluctuating African export earnings which tends to deter investment although some manufactured commodities are being protected from unstable prices (Ackah and Morrissey; 2005).

Chea (2012) emphasized that one main challenge faced by sub-Saharan Africa is the region's inability to produce and export a diversified range of exportable goods and services in order to move into the global production and distribution chains where export value addition and diversification takes place. As evident from some countries in Asia, the region would need to increase the production of goods and services especially manufacturing commodities that command higher value so as to acquire a greater share of the world's trade.

Bhorat et al (2017) also attributed the poor performance of SSA in manufacturing exports, to the fact that the region has had to face competition in the world market with well-established manufacturing exporters from other countries. Additionally, they also blame the poor performance on the easy penetration of Asian exporters in SSA's domestic market making it even more difficult for SSA nations to build productive manufacturing sectors.

2.5 Aggregate Unemployment Trend

Unemployment remains one of the greatest developmental challenges facing all countries in the global world. Governments have battled and are still battling with this phenomenon due to its adverse impacts on their economies. Africa and for that matter, sub-Saharan Africa's growing labour force is an opportunity to improve its production capacity which could result in increased economic growth and standards of living as well as create larger markets. However, failure to utilize the economic potential of new entrants of the labour market has changed the narrative hence generating high unemployment rates in the region, in spite of the rising economic growth over the past two and a half decades (Bhorat et al 2017).

The increased growth experienced by countries in the region is expected to translate into high levels of job creation to realize the gains from labour force expansion. Since the year 2000, the SSA region had outperformed not only Latin America and the Caribbean but also some high-income countries that were previously outperforming the region in the 1980s and 1990s. The statistics have shown that, the region recorded a growth rate of 3.0 percent between 2000 and 2008 and 1.3 percent between 2009 and 2015 while Latin America and the Caribbean showed a decline from 2.24 percent to 0.90 percent respectively.

Table 2.5: Global Unemployment Rates, 1991 to 2015

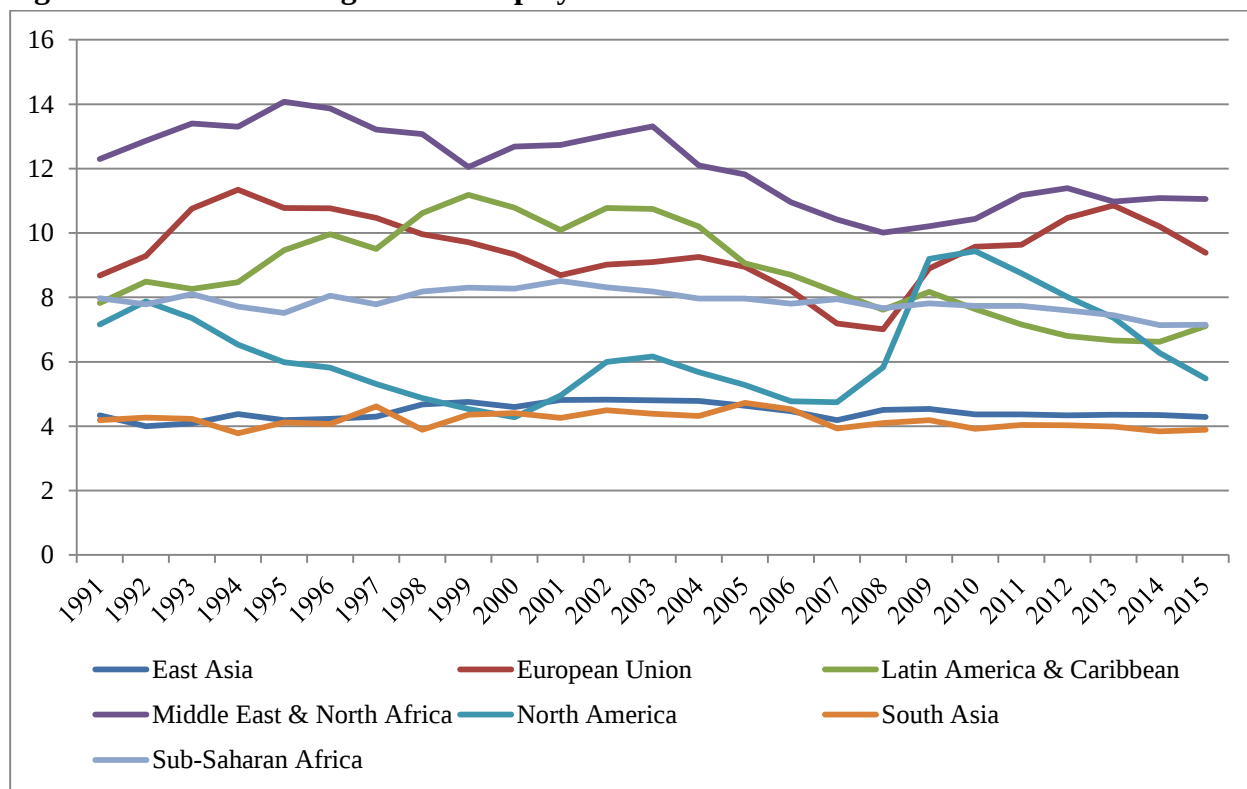
Year	1991	1995	2005	2007	2010	2015
Unemployment Rate	6.1	6.2	6.2	5.5	6.1	5.7

Source: Author's compilation from the WDI database (ILO estimates)

While increased growth translated into a decline in the global unemployment rates between 1991 and 2015 (see table 2.5) from 6.1 to 5.7, there has been considerable heterogeneity across

regions. Figure 2.3 below shows the trends in unemployment in some regions as well as the considerable heterogeneity among the regions.

Figure 2.3: Trends in Regional Unemployment Rates from 1991 to 2015



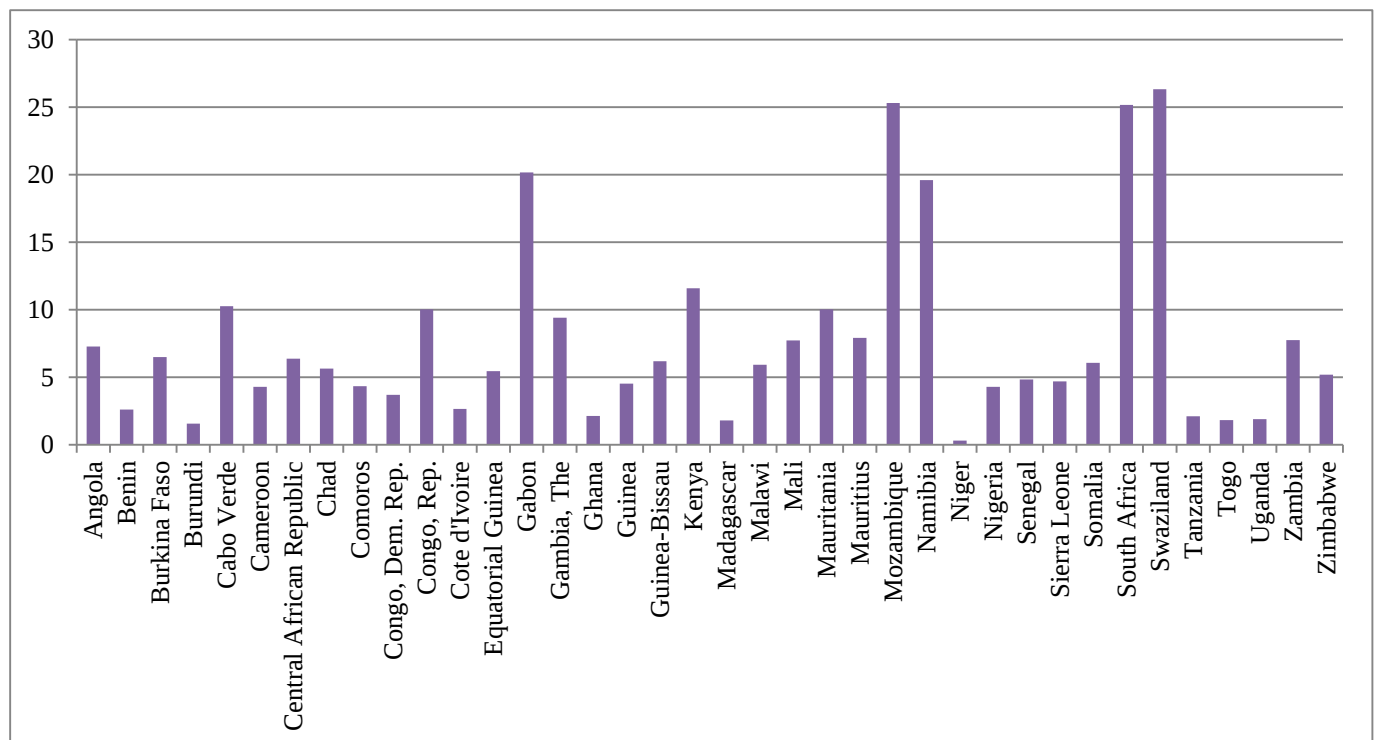
Source: Authors Compilation from the WDI database (ILO estimates)

Figure 2.3 shows that the Middle East and North Africa has the highest unemployment rates followed by Europe and Latin America and the Caribbean. Sub-Saharan Africa's unemployment rates show an average of 7.9 percent and 7.1 percent between 1991 and 2015, slightly exceeding 8 percent in some years but higher than that of North America, South Asia, and East Asia. According to the World employment and social outlook (2016), this could be attributed to the broad gaps in social protection which force people to work even if not regular and informal. East Asia and South Asia tend to be performing relatively well in comparison to the other regions.

Some regions also experienced unemployment rates above the world's average. For instance, in 2015, the Middle East and North Africa recorded the highest at 11.1 percent, followed by the EU and Sub-Saharan Africa at 9.3 and 7.1 percent respectively.

Nonetheless, the changes in global unemployment rates, as well as country aggregates, mask considerable country-level differences across the world. This is no different when it comes to Africa particularly Sub-Saharan Africa. While global unemployment trend seems to have taken a downward turn, high unemployment rates have been recorded in some countries in SSA with some upper middle-income countries such as South Africa, Mozambique, and Swaziland experiencing the highest rates.

Figure 2.4: Aggregate Unemployment Rates in SSA Countries in 2015



Source: Authors Compilation from WDI database (ILO estimates)

Figure 2.4 above depicts the rates of unemployment in some SSA countries in 2015. The figure shows that some countries (Gabon, Mozambique, South Africa, and Swaziland) experienced unemployment rates between 20 percent and 30 percent. While some countries (Ghana, Niger, Guinea, among others) experienced low unemployment rates below 5 percent, other groups of lower middle income and lower income countries in the region saw their unemployment rates above the global average of 5.7 percent.

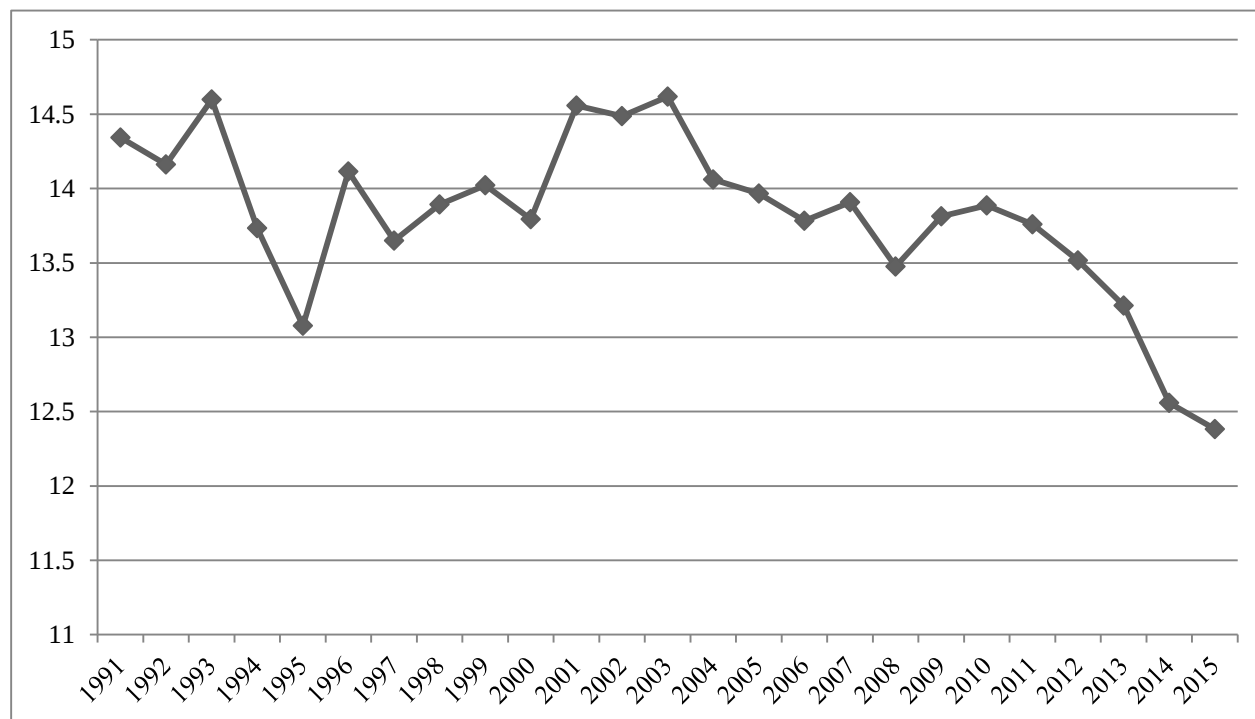
2.6 Youth Unemployment Trend

Globally, Africa has the fastest growing and most youthful population as compared to other regions. The population is expected to further increase in the coming years since over 40 percent of the region's population is below 15 years which is projected to reach 500,000 by 2035 (Bhorat et al, 2017). This issue of youth bulge is problematic in particular creating demographic challenges and economic costs as well as leaving the job demands of the youth unmet. In 2008, the working age (15 to 64 years) population in Africa increased to 550 million from its 443 million level in 2000 with only 73 million jobs created over the same period (Sparreboom and Albee, 2011). However, only 22 percent of the jobs created were obtained by the youth. This shows a mismatch between the high levels of labour force rates and the quantum of jobs created.

With the youth bulge as well as increased growth performance (5.9 percent from 2004 to 2014 on average) recorded in the region in recent times, SSA stands a greater chance to achieve the recently agreed Sustainable Development Goals (ILO 2016). Despite the efforts that have been taking place such as the ILO's effort which led to the declaration of 1985 and 2012 as the international youth year, the 2006 enactment of the African Youth Charter, as well as the proliferation of policies targeting the youth across SSA to deal with the challenge, and the

benefits of positive economic growth and increased investment, youth unemployment is still high in Africa with significant country-level differences (see figure 2.5).

Figure 2.5: Youth Unemployment Trend in SSA (1991 to 2015)



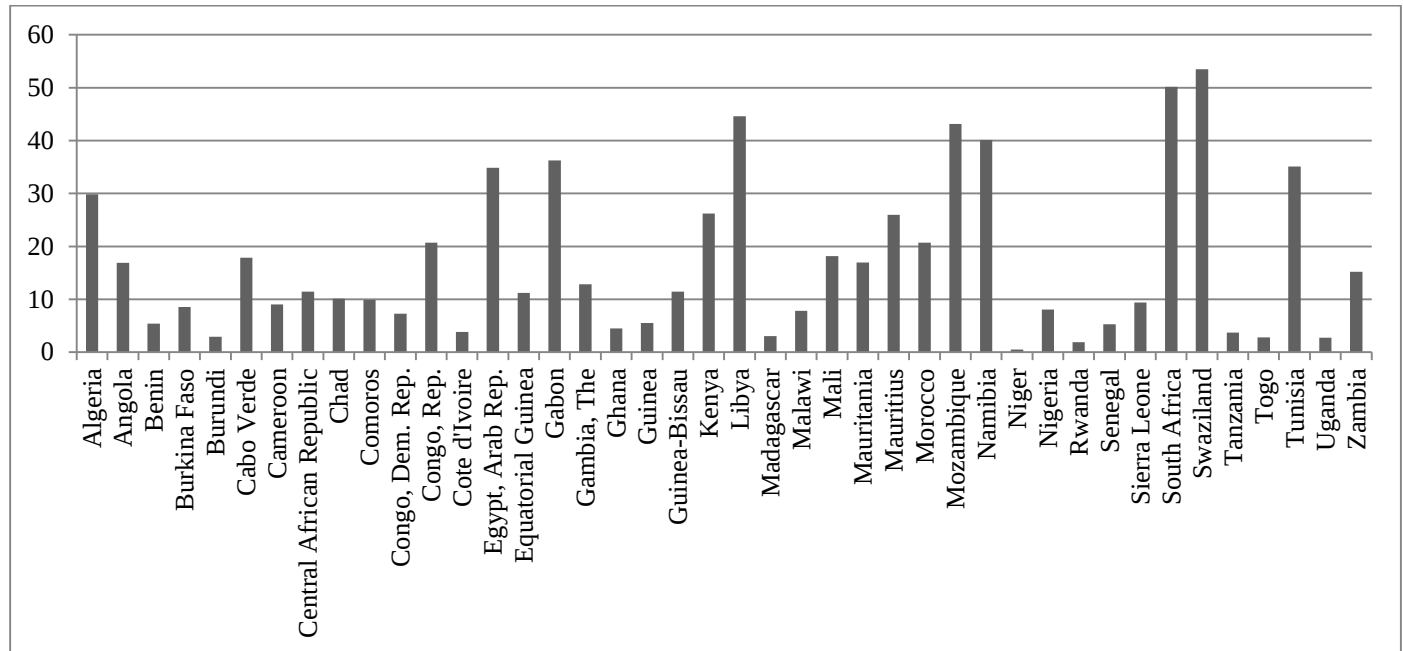
Source: Authors compilation from the WDI database (ILO estimates)

Figure 2.5 shows the average youth unemployment rates in SSA from 1991 to 2015. Periods following global financial crises have experienced a decline in youth unemployment from 13.9 percent in 2007 to 13.4 percent in 2008 and 12.4 percent in 2015. In general, the youth unemployment rate declined from 14.3 percent in 1991 to 12.4 percent in 2015.

However, regional aggregation of youth unemployment hides important country differences. According to AERC (2013), a close scrutiny of the countries in SSA show that countries like Mozambique and Kenya have high urban unemployment experience and the youth unemployment rate as high as 30% whiles countries with large rural sectors like Uganda and

Burkina Faso have relatively low youth unemployment rates. Figure 2.6 below shows the youth unemployment rates in some SSA countries and some North African countries.

Figure 2.6: Youth Unemployment in Selected Countries in SSA and NA in 2015 (% of total labour force)



Source: Authors compilation from the WDI database (ILO estimates)

As shown in figure 2.6 above, significant country heterogeneity exists in youth unemployment rates among countries in Sub-Saharan Africa and North Africa. South Africa well known as an upper middle-income country had one of the highest youth unemployment rates above 50 percent in 2015. Also, other upper middle-income countries like Namibia and some North African countries including Algeria and Libya experienced high unemployment rates. Other lower income and lower middle-income SSA countries including Benin, Malawi, Mali, Ghana, Uganda, and a few others experienced unemployment rates below 10 percent in the same year. With the exception of Morocco, all North African countries recorded unemployment rates way above 20 percent.

Table 2.6: Youth to Adult Unemployment Rates (2008 to 2015)

Indicator	Region	2008	2009	2010	2011	2012	2013	2014	2015
Youth to Adult Unemployment rate	SSA	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9
	North Africa	3.5	3.6	3.4	3.2	3.6	3.5	3.3	3.3
	World	3.0	2.8	2.8	2.9	2.9	2.9	3.0	3.0

Source: Adapted from ILO's global youth employment outlook 2016

Additionally, Youth unemployment rates are higher than adult unemployment rates in SSA just as in other regions and the global world. Evidence from ILO's Global youth employment trends show a high youth to adult unemployment rate in Africa. This is illustrated in table 2.6 above. Between 2008 and 2015, the ratio reached almost 2.0 for Sub-Saharan Africa. It is important to notice the North African ratio reaching almost 4.0 which indicates the relative job market disadvantages of the North African sub-region.

A number of factors have been mentioned for the labour market discrimination on the part of employers against the youth. Notable among the factors contributing to the high rates is the cost of layoffs. In general, young people's cost of layoff is not as high as that of adults, hence making it less difficult to lay off the youth than older workers (Anyanwu 2014). Again, unemployment has become an issue for most of these young people as most of them get out of school with little or no work experience. It is well known that the educational system in Africa mainly geared towards literacy and numeracy rather than industrial skills that make the youth unattractive to employers in the industrial sectors as they require workers with preferred skills and lots of

experiences. Additionally, small private sectors, as well as high rates of rural urban migration, are also contributing factors in the youth unemployment problem in Africa.

2.7 Concluding Remarks

Africa and for that matter, SSA has made tremendous progress over the years to boost international exports and imports of goods and services. The region's heavy reliance on primary products exports and manufactures imports has contributed largely to the growth performance in the region. Over the years, most countries in the region experienced a trade to GDP ratio of over 50 percent. However, the region still remains marginalised in global trade. A more worrying issue is the region's over-reliance on only few resource-rich countries for their exports of goods and services contributing almost 40 percent of Africa's exports with only South Africa contributing more than half of the region's manufactures exports.

Concerning unemployment, although it has taken a downturn after the global financial crises, it still remains high in some countries. High unemployment rates have also been recorded with some high-income resource-rich countries despite the rise in economic growth. Youth unemployment has also risen above aggregate unemployment. Additionally, SSA has also seen high youth to adult unemployment rate reaching almost 2 percent in 2009 although lower than that of North Africa and the world's average.

As unemployment remains a global concern and in the face of increased openness coupled with a high concentration of trade on primary products exports and manufactures imports, this study seeks to investigate whether trade openness has some significant influence on aggregate unemployment as well as youth unemployment rates in sub-Saharan Africa.

CHAPTER THREE

LITERATURE REVIEW

3.1 Introduction

This chapter presents a review of the literature on the link between trade and unemployment. Section 3.2 presents the theoretical foundations of trade, starting with the Mercantilists theory, absolute and comparative advantage theories of international trade before proceeding to look at the more advanced theory which is the Heckscher-Ohlin theory. Section 3.3 presents the theoretical framework that forms the basis for this study whiles section 3.4 reviews the relevant theoretical literature. Section 3.5 presents the empirical review and findings of some related studies and section 3.6 finally concludes the whole chapter.

3.2 Theories of International Trade

The theories of international trade developed by the Fathers of Economics have examined the necessary conditions for trade to take place, the sectors of production that require specialization as well as sectors that countries need to reduce production and concentrate on the importation of goods produced by those sectors. The various theories that have described the causes of trade are outlined below.

Before Adam Smith's Publication in 1776 of *The Wealth of Nations*, there had been some writings on international trade. During the seventeenth and eighteenth centuries, a group of Bankers, Merchants, Government officials, and Philosophers, wrote some pamphlets and essays on trade to advocate an economic philosophy known as the Mercantilism. They posit that, for a country to become rich and powerful, it has to engage more in exportation than importation. The

export surplus would then be settled by an inflow of precious metals (silver and gold) and bullion. That is to say, the more endowed a country was with these metals, the richer and powerful it was. According to the Mercantilists, Governments had to use their power to stimulate exports as well as restrict and discourage imports (particularly import of luxuries). However, all nations could not concurrently experience export surplus and the amount of gold and silver was fixed at any particular point in time, hence one nation will end up gaining at the expense of other nations (trade was a zero-sum game). They, therefore, preached economic nationalism, while believing that the interests of nations were conflicting. Thus, they measured a nation's wealth by the stock of metals it possessed. More gold or other precious metals meant more wealth in circulation and more business activities, and more exports meant greater output and employment.

In the 18th century, the Law of Absolute advantage developed by Adam Smith followed as a reaction to the views of the Mercantilists on international trade. According to Adam Smith, international trade between countries is dependent on absolute advantage. Given two countries, both nations can benefit from trade by specializing in the production of those commodities in which they have an absolute advantage. Each country can then exchange part of its output for the commodity of the other country that also has an absolute advantage in the production of that commodity. He further argued that with trade, the output of both commodities would increase in both nations than if each nation were to produce both goods. Thus, while Mercantilists believed that trade involves a zero-sum game and advocated for Government control of trade and other economic activities, Adam Smith and other classicals believed that all countries would benefit from trade and hence a laissez-faire approach would be appropriate.

Following Adam Smith's theory in 1817, David Ricardo presented the law of Comparative advantage in his publication of "Principles of Political economy and Taxation". His theory

remains one of the most relevant and unchallenged laws in economics with many practical applications. Ricardo hypothesizes that even if a country has an absolute disadvantage in the production of both commodities, trade can still be mutually beneficial with other countries. This country should specialize in the production and export of the commodity with the smaller absolute advantage (the nation has a comparative advantage here) and import the commodity produced by the other country in which its absolute advantage is greater (the nation has a comparative disadvantage here). This theory suggests that trade can even be mutually beneficial even if one nation is less efficient in the production of both commodities.

In 1933, Bertil Ohlin first published the book which explained the Heckscher-Ohlin (H-O) theory of international trade. However, Heckscher was credited as a co-developer of the model due to his earlier works on trade. The model essentially posits that a country would export the commodity that uses intensively its relatively abundant factor and import the other commodity that uses its scarce factor of production. The H-O model assumes that the relative abundance of both factors of production reflect the differences between countries. While some countries are labour endowed, others are capital endowed.

Other extensions of the model include the works of Rybczynski (1955), Stolper-Samuelson (1941) and few other economists all of which lend support to the positive effect of trade improving welfare if countries should engage in the production of commodities that uses intensively their most abundant factors of production.

3.3 Theoretical Framework

What forms the theoretical basis for trade openness and unemployment is the Heckscher-Ohlin model of trade. Unlike the early models presented above, the H-O model better explains the

linkage between openness and unemployment in developing countries as well as developed countries. It provides some insights into the effect of international trade on the relative demand for workers for the production of goods and services.

Since a country would produce and export the commodity that uses its most abundant resource, developed countries are more likely to export capital intensive goods while developing countries would export labour intensive goods since developed countries are capital endowed while developing countries are mostly labour abundant. This produces some fair predictions regarding the employment effect of trade across sectors and across countries.

Following the model, a clear argument is made regarding the influence of trade on unemployment. All things being equal, increasing trade leads to the contraction of the import sector and the expansion of the most efficient sector which is the export sector leading to an increase in production in the export sector. This results in a surge in employment in the export sector and unemployment in the import sector especially import-competing sectors. Thus, trade results in employment redistribution away from the import sectors towards the export sectors even though the effect on aggregate employment depends on whether the number of jobs created by the latter outweighs the number of jobs lost by the import-competing sectors that exit the market due to their inability to face competition from foreign sectors. The general intuition here is that labour abundant countries especially SSA countries that tend to export mostly primary products, would experience an increase in aggregate employment hence a decline in unemployment.

3.4 Theoretical Literature Review

The relationship between trade and unemployment has been discussed in the theoretical literature by various economists across the globe. Nevertheless, no consensus has been drawn on the impact of trade openness on unemployment. Some of these studies include the theoretical arguments by Matusz (1996), Sener (2001), Dutt et al (2009), Moore and Ranjan (2005), Matusz (1996), Felbermayr (2011) and a few more that have delved into the subject matter using different approaches.

The study by Matusz (1996) was one of the very few early theoretical studies. Matusz merged the Shapiro Stiglitz efficiency wage model with a model of monopolistic competition in intermediate goods production to show that international trade increases employment. He argued that international trade brings about a greater division of labour as a result of the increased variety of intermediate goods which results in increased productivity. Higher productivity here results in higher real wages which tend to relax the efficiency wage constraint leading to increased employment.

Felbermayr et al (2011) developed a model to examine the impact of globalization (trade) on labour market outcomes. They agree with Matusz (1996) that trade improves productivity and further found that tariff cuts reduce unemployment. This occurs due to the exit of less productive firms and the reallocation of labour into more productive firms.

In another study by Matusz (1998), he merged the one-sector model of monopolistic competition and intra-industry trade with the Shapiro-Stiglitz model of efficiency wages to estimate that trade increases employment. He argued that trade enhances worker utility through an increased variety

of available goods even when employment is held constant. This causes an increase in employment by relaxing the efficiency wage constraint that magnifies the benefits of trade.

However, Davidson et al (1999) through an argument that trade economists should begin to consider models in which unemployment is carefully modeled, introduced such a model like the Heckscher-Ohlin type that has frictions in both capital and labour markets. He found that, when a relatively labour abundant small country trades with a relatively capital abundant large country, unemployed workers in the latter suffer unambiguously from welfare losses and aggregate unemployment rate tends to increase in the large country.

On the other hand, Sener (2001) has shown that trade liberalisation results in increased innovation activities and growth and as such increased demand for skilled labour. This raises the relative wage of skilled labour thereby motivating more unskilled labour to undergo skill training. Additionally, Sener found that liberalisation raises the unskilled labour unemployment but tends to have an ambiguous overall effect on the economy's unemployment rate. Sener further stressed that the findings of the model imply that North-North trade liberalization is in line with increasing relative wage inequality and rising unskilled labor unemployment rate.

Contrary to Sener, Moore, and Ranjan (2005) agitated that; unemployment of either skilled or unskilled labour in a country would depend mostly on the most abundant resource in the country. They present a framework which applied a standard model of labour market search to an open economy with two factors; skilled and unskilled labour to investigate the implications for unemployment and wage inequality resulting from globalization and Skill-biased technological change (SBTC). They found that trade openness leads to a decline in unemployment of skilled labour in a skill-abundant country but an increase in unskilled-labor unemployment. The

opposite happens in an unskilled-abundant economy where unemployment falls for this type of labour but increases for skilled labour. In line with Sener (2001), they derived an ambiguous prediction for aggregate unemployment but predicted that unemployment is likely to fall in a skilled abundant country and worsen in an unskilled abundant economy. Additionally, opening up to trade would result in an increase in inequality, an increase in real wages of skilled labour and a fall in real wages for unskilled labour in the skill-abundant country.

Similarly, Dutt et al (2009) explored the relationship between trade and unemployment where trade results from the Heckscher-Ohlin and or Ricardian Comparative advantage and unemployment is search induced. They presented a unified model from which they derived as special cases, the Ricardian and Heckscher-Ohlin implications of trade liberalization for unemployment. The paper agitated that, trade driven by Ricardian comparative advantage would solely result in a fall in unemployment. On the other hand, trade driven by Heckscher-Ohlin comparative advantage is likely to worsen unemployment in capital abundant countries but expected to reduce unemployment in labour abundant countries.

Helpman and Itskhoki (2010) on the other hand reviewed a framework that combines matching frictions in the labour market with a two-country two-sector model of trade in which one sector produces homogenous products and the other heterogeneous products, to examine an economy's response (effect on wages, unemployment, and inequality) to trade with its partners. According to their findings, opening up to trade may increase a country's unemployment rate if its relative labour market frictions in the differentiated sector are less. They further find that; trade openness can result in increased unemployment resulting from the expansion of the trading sector when the export sectors experience high growth rates. Thus, the reallocation of workers towards

exporting sectors of the economy especially when the sectors are highly characterized by labour market frictions would result in increased unemployment.

The study by King and Stahler (2010) developed a model of trade and unemployment in a general equilibrium model where all outcomes are attributed to technology and endowments. They found that trade would increase rental rates and unemployment in capital abundant countries and reduce rental rates and unemployment in labour abundant countries if countries should differ by endowments. They further found that, if technology is the main engine of trade, international trade may raise unemployment if the country is capital endowed and as well reduce unemployment if the country happens to be labour abundant.

3.5 Empirical Review

The role played by trade in most economies has brought about a large number of empirical studies trying to link trade and economic growth, wages, inequality, and other developments. While majority of these studies have focused on trade and economic growth, one interesting area that has received less attention is the debate on trade openness and its impact on unemployment.

Most of these studies have been carried out in developed and OECD countries with just a little focus on developing countries. The findings from these studies, however, remain mixed. This could be the result of different measures of trade openness, different datasets or methodological differences and factors such as the different econometric specifications used across studies.

An early study by Gaston (1998) sought to ascertain how trade protection and trade flows had impacted the labour market outcomes specifically manufacturing employment in Australia. Using data for 12 manufacturing industries for the period between 1973 and 1974 and the period between 1991 and 1992, Gaston found that a fall in effective protection is associated with a fall

in employment. This result was reflected in the sector's employment trend that showed a downward turn. His empirical estimations show that a 10 percentage point reduction in effective protection leads to a less than 1 percentage point reduction in employment. It was observed that import competition generates a large adverse impact on employment and exports tend to have a positive effect on employment. Gaston concluded that these effects may indicate an increased import competition in labour-intensive industries whereas export had been concentrated probably in the production of low labour intensive goods.

In a similar study of the UK manufacturing sector, Greenaway et al (1999) find little evidence of a strong direct effect of trade openness on the sector's employment but a stronger indirect impact of trade on employment through induced productivity increase. The study modeled the employment impact of trade openness in the UK in a dynamic labour market framework using a sample of 167 manufacturing industries from 1979 to 1991. Findings from the study reveal that increasing both the import and export volumes in the country leads to a fall in the derived demand for labour. By further disaggregating imports by origin, they find a stronger impact of openness with the US and EU as compared to countries in the Eastern part of Asia.

Goldberg and Pavcnik (2003) explored the linkage between trade liberalization and the informal sector in order to prove the claim that an increase in foreign competition results in the expansion of the informal sector. Two countries; Brazil and Columbia that experienced huge falls in trade barriers in the 1980s and 1990s were used in the sample. The study found no evidence of a relationship between informality and trade policy in both cases. Specifically, for Brazil, there was no relationship between trade policy and informal employment. However, in the case of Columbia, tariff reduction was found to be associated with a rise in informal employment even

though the impact was small. However, this was found for only industries with the largest tariff cuts and for the period prior to a major reform in the labour market.

In a cross country study, Dutt et al (2009) conducted an empirical study to test the model they constructed (explained above) for both Heckscher-Ohlin and Ricardian comparative advantage involving search induced unemployment. They used data from multiple trade policy measures, trade openness measure, unemployment rates and a variety of controls from 1990 to 2000 and also used 1990's averages for cross country analysis as well as data from 1985 to 2004 for their panel analysis. They found strong robust evidence supporting the Ricardian comparative advantage that there is a negative relationship between trade openness and unemployment in the cross-section regression. However, they do not find robust support for the positive Heckscher-Ohlin effect of trade restrictions on employment for labour abundant countries and the negative prediction for labor-scarce countries. On the other hand, their panel result suggests a short-run increase in unemployment resulting from liberalization, recovering in the longer term and eventually declining in the steady state.

In line with Dutt et al, Kim (2011) argued that labour market institutions play a bigger role in determining the impact of trade on unemployment. He incorporated similar labour market institutions such as generosity of unemployment benefits, stringency of employment protection, unionization rate and the coordination or centralisation in wage bargaining as additional controls to investigate both the direct and indirect impact of trade openness on unemployment. Using a sample of 20 OECD countries between the period 1961 and 2008, he finds that an increase in trade openness leads to high (low) aggregate unemployment as it interacts with relatively rigid (flexible) labour market institutions.

Felbermayr et al (2011) used the sys-GMM, diff-GMM, and cross-sectional techniques to investigate the impact of trade openness on unemployment in 20 OECD countries and a cross-section of 62 countries from 1990 to 2007. They found a negative relationship between trade openness and unemployment in both the short and long run. For robustness checks, Felbermayr et al used different measures of trade openness as well as unemployment measures and found a negative link across all estimations. In order to deal with business cycle effects, they averaged the rates of unemployment over a five year period. Their results suggest that a 10 percent increase in the level of trade openness, leads to a decline in unemployment by about three-quarters of one percentage point. Their measure of trade openness was somewhat different. In line with Alcalá and Ciccone (2004), they constructed a measure of real openness using GDP in PPP terms.

Heid and Larch (2012) also relied on the high correlation between trade openness and immigration to argue that trade economists need to consider not only the effect of trade openness but also the impact of immigration on unemployment in OECD countries. The study collected a panel dataset of OECD countries and used dynamic panel econometric techniques to investigate the impact of trade openness and immigration on the destination country's level of unemployment. First, they found a high persistent effect of unemployment rates across the OECD region. Akin to Felbermayr et al (2011) and Alcalá and Ciccone (2004), they measured openness using GDP-PPP and found a significant positive impact of trade openness on unemployment but no robust statistically significant impact of migration inflows on unemployment rates on average. They conclude that there is no evidence to support the belief that immigration is detrimental to the employment prospects of workers in the destination country on average.

Using data from Australia; a country that has always depended on its value of exports for prosperity for the period 1960 to 2008, Gaston and Rajaguru (2011) found that a sustained improvement in the terms of trade reduces unemployment. They found strong robust evidence that lower unemployment benefit replacement rate; capital accumulation in the tradable sector and higher prices of exports each reduces the equilibrium unemployment rate in Australia.

Furthermore, Peluffo (2013) used the difference in difference regression to investigate the labour market outcome effect of trade openness as a result of Mercosur's creation for the period 1988 to 1996. He finds a significant positive relationship between total earnings and trade openness as well as a positive relationship between unemployment probability and trade openness. In trying to control for hours worked which is part of the explanatory variables used in the study, the link between trade openness and total earnings tends to be positive but not significant indicating that higher total earnings are the result of higher hours worked but not higher hourly wage.

In a more recent study, Adekunle (2016) examined the impact of trade openness on unemployment in 11 high-income countries and 9 low-income countries. Using data from the World Bank and United Nations databases from 1993 to 2013, he finds that, trade impacts unemployment negatively in both high and low-income countries. He also controlled for GDP growth rates and accounted for Granger causality issues and finds robust evidence to support his findings. Adekunle concludes that, in spite of the potential unemployment reducing impact of trade openness, trade openness is not enough to impact the unemployment rate of a country.

Most of the aforementioned studies have focused on developed countries. Few recent studies have however looked at developing countries including Sub-Saharan African countries to investigate the unemployment effect of trade openness.

For instance, in a single country study, Zaki (2011) explored the impact of exports on macroeconomic employment in Egypt for the period 1960 to 2009. He found a positive relationship between exports and employment. The elasticity of exports with respect to employment was found to be 4.3%. At the microeconomic level, exports affect women in terms of quantities (employment) while men are affected in terms of wages. Zaki argued that the results are not surprising since some sectors like the textile and garments sectors that intensively employ women in production had experienced an increase in employment over the period.

In line with Zaki (2011), Anyanwu (2014) finds a greater impact of trade openness on unemployment for women than men. Using data from the World Development Indicators (WDI), IMF DOTS and PolityIV Project Online (2013), the study examines the impact of Intra-African trade on Youth unemployment in Africa. By employing panel data econometric technique, Anyanwu finds that intra-Africa trade openness has a negative and significant impact on overall youth unemployment as well as male and female youth unemployment in Africa. However, the impact is greater for females than males suggesting that women receive high employment gains than men in developing countries such as Africa where low-skilled jobs predominate. Results from the pooled regression show that a 1 percent increase in intra-African trade leads to a 1.47 percent fall in overall youth unemployment, a 1.67 percent and 1.46 percent reduction in female and male unemployment respectively. For robustness checks, Anyanwu additionally used the instrumental variables approach and the results were consistent with that of the pooled regression.

In a recent study, Wamboye and Seguino (2015) sought to find the gender impacts of trade openness in Sub-Saharan Africa in order to assess the effect of export and economic structure on women's relative and absolute employment. Using panel techniques and data from the World

Development Indicators and Africa Development Indicators, they grouped countries into non-oil mineral exporters (MECs), non-oil non-mineral exporters (NMECs) and oil exporting countries. Their results, however, convey mixed findings. First, they found a negative impact of trade openness on women's relative and absolute employment in NMECs but a positive effect in MEC's. By further segregating the trade variable into exports and imports, they found a negative impact on women's relative employment in both groups of countries with the exception of MEC's that recorded a positive effect of imports. While food imports favours men, food exports favours women in both absolute and relative terms. Manufacturing imports and exports were found to have a negative effect on women's absolute and relative employment in NMEC's but in MEC's, exports were found to increase employment while imports retard employment. The most robust finding is the positive correlation between infrastructure improvements and women's absolute and relative employment indicating that infrastructure improvement reduces women's unpaid labour burden hence increases their access to work.

In a single country study, Ogbeide et al (2015) used the Error Correction Model (ECM) and OLS techniques to investigate the impact of factors such as FDI, output size, trade openness, exchange rate depreciation, financial development and natural resource rent on the Nigerian aggregate unemployment rates. Using data for the period 1981 to 2013, they found that trade openness, FDI, exchange rate depreciation and output size deteriorate unemployment rates in the country while all other factors were found to worsen unemployment rates.

In another country study, Raifu (2017) finds conflicting results for Nigeria. The study sought to find the role of trade openness and current account balance in determining unemployment in the country. By employing the autoregressive distribution lag estimation technique, and using data that spans from 1981 to 2014, Raifu finds that openness worsens unemployment in both the short

and long run. However, the current account balance was found to increase unemployment in the short run but not in the long run. They finally conclude that trade and other macroeconomic policies that will ensure international competitiveness and hence create employment in the country are very needful.

Using cross-sectional data over the period 1991 to 2009, Anyanwu (2013) finds a negative effect of trade openness on youth employment in overall Africa and in sub-Saharan Africa suggesting that trade openness cannot help for employment creation without value addition that will create employment for the youth that is highly skilled. His result was however in consonance with Raifu (2017).

Von Uexkull (2012) in his study explored the employment effect of regional trade in the ECOWAS region. His results show that regional exporting firms in ECOWAS contribute more and faster to employment creation than the global exporting firms in the region. Mashayekhi et al (2012) used a global general equilibrium model to investigate the effects of regional integration on employment in SADC. They find that the removal of high tariffs would result in substantial changes in employment in some sectors. They also find the employment effect of the elimination of intra-SADC tariffs to be positive but small in all member countries.

3.6 Concluding Remarks

The empirical studies cited above do not share a consensus. Results from the various studies seem to have varied among country, firm level and regional level studies. They tend to also differ between developing and developed countries but one key observation is that; trade openness indeed has an impact on unemployment. However, the magnitude and sign differ across papers.

Majority of the studies have been carried out for developed countries especially OECD countries. The manufacturing sector has also received a bit of attention. A very interesting focus in most of the developing country studies in the literature is the gender dimension of the impact of openness on unemployment with less focus on the aggregate effect on unemployment. Although the results have been mixed, women seem to have a positive employment gain than men.

The obvious ambiguity in the literature regarding the linkage between trade openness and unemployment necessitates further research in this area to estimate new evidence using more recent data. With particular reference to sub-Saharan Africa where trade plays a greater role in the economic activities, the question of how this affects unemployment rates in the region deserves to be answered.

This study, however, differs in the sense that, apart from using a different measure of trade openness (explained below) to estimate its impact on aggregate unemployment, it considers also its effect on youth unemployment which has received a little attention in the literature. This is very important given the overwhelming rate of youth unemployment in the region. Apart from adding knowledge to existing literature, this study as well informs governments and policymakers about policies that should be undertaken to aid in reducing the high unemployment rates especially among the young people in the region.

CHAPTER FOUR

METHODOLOGY AND DATA DESCRIPTION

4.1 Introduction

This chapter discusses the models and econometric approaches to be employed in examining the relationship between trade openness and unemployment in sub-Saharan Africa. The next section describes the variables to be included in our empirical estimations. Section 4.3 discusses the model followed by the estimation techniques to be employed in section 4.4. In section 4.5, some necessary diagnostics tests to be carried out in the empirical estimations are discussed.

4.2 Description of variables and Data Source

This section attempts to explain the variables included in the empirical model for 35 SSA countries from 1991 to 2015. Countries included in the sample were chosen due to the availability of data. The choice of control variables for our econometric analysis was also driven by economic theories and existing empirical studies. In particular, we take guidance from Anyanwu (2014), Choudhry et al (2013) and Dutt et al (2009). The variables included in the empirical model deemed essential for the unemployment rate (both aggregate and youth rates) are real trade openness, the lag of real GDP growth, foreign direct investment, urban population share, level of institutionalised democracy, domestic investment, inflation, the lag of credit to private sector, real GDP per capita and the lag of government consumption expenditure. With the exception of data for institutionalised democracy that was sourced from PolityIV project online and data on nominal exports and imports used in computing trade openness that was taken from the Observatory of Economic Complexity, data for all other variables is taken from World

Development Indicators (WDI) online database of the World Bank 2018. However, unemployment figures drawn from WDI are ILO estimates. Below is the detailed explanation, calculation as well as the source of data for each variable used in our empirical analysis.

Unemployment: The dependent variable in the study is the unemployment rate categorized into two parts, 1) aggregate unemployment rate and 2) youth unemployment rate in sub-Saharan Africa. This is done in order to explore the differential effect of openness on overall unemployment and youth unemployment in SSA. We also follow Felbermayr et al (2011), Heid and Larch (2012), Dutt et al (2009) and Choudhry et al (2013) and include the first lags of the dependent variables as part of our regressors to capture the persistent effect of unemployment rates.

Trade Openness: This forms the main explanatory variable in the study. Following from Felbermayr et al (2011), Heid and Larch (2012) and Alcala and Ciccone (2004) we construct a real openness measure originally proposed by Alcala and Ciccone (2004) which is measured by summing total imports and total exports in US-\$ and dividing that by Gross Domestic Product measured by Purchasing Power Parity (GDP-PPP) in US-\$. Alcala and Ciccone (2004) argue that the measure of trade openness (imports plus exports over nominal GDP) used in most empirical studies may result in a misleading picture of the gains from trade. They advanced that, the Balassa Samuelson effect distorts any nominal price openness as countries with low productivity levels and high prices of traded relative to non-traded goods would experience high degrees of openness. Using real openness, therefore, cancels out any such distortions which may arise due to cross country differences in non-tradable goods prices. Data for total exports and total imports is taken from the Observatory of Economic Complexity database whiles data for GDP-PPP is taken from the World Development Indicators online database.

Considering both types of unemployment, and inferring from the Heckscher-Ohlin theory as well as some empirical literature (Anyanwu, 2014; Dutt et al, 2009; Felbermayr et al, 2011) we expect a negative impact of trade openness on unemployment. The rationale behind this assertion is that most countries in the sub-region export mainly primary products majority of which require the use of unskilled labour. This type of labour is however abundant in Sub-Saharan Africa hence, we expect unemployment to decline with an increased level of trade openness.

Urban Population Share: Urban population share is measured by the ratio of people living in urban areas to the total population of a country. Anyanwu (2014) posits that a high rate of urbanization is usually associated with increased access to the labour market and employment opportunities especially formal employment. He further argues that people living in urban centres experience high economic opportunities than those in rural areas. Following Anyanwu (2014) and Anyanwu (2013), we expect a negative relationship between urban population share and unemployment. Data for this variable is extracted from the World Development Indicators online database.

Real GDP Per Capita: We include real GDP per capita to capture the effect of a country's potential demand on unemployment rates. It is measured by GDP divided by the population in constant US dollars. Anyanwu (2014) and Anyanwu (2013) argue that affluent countries with high GDP per capita tend to have high rates of unemployment in Africa. Contrary to that, Kim (2011) also argues for an unemployment reducing effect of GDP per capita for affluent countries.

Government Expenditure: It is a measure of all government current expenditures for the purchases of goods and services including the compensation of employees. It also includes most expenditure on national defense and security but excludes government military expenditures that

are part of government capital formation. As the government spends more, we expect fewer resources at the government's disposal to spend on economic and social programs to create jobs for the unemployed (Anyanwu, 2013). We, therefore, expect an inverse relationship between unemployment rates and government expenditure. Data for this variable is also obtained from the World Development Indicators.

Credit to the Private Sector: This refers to financial resources provided to the private sector by financial corporations, such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment. Data is taken from the World Development Indicators database. By intuition, the greater the financial resources available to the private sectors, the more likely businesses would invest and expand to create employment. We, therefore expect a negative impact of this variable on unemployment.

Inflation: This implies an increase in the general price level in a country usually for a period of one year. The relation between inflation and unemployment is the well known Phillips curve that has been established in some empirical papers. Anyanwu (2014) finds support for the Phillips curve in his empirical analysis of intra-African trade and youth unemployment. Similarly, Chaudhry et al (2012) explain that, inflation could reduce unemployment if the actual price level exceeds the expected price level in a country reducing real wages than expected. During the wage bargaining process, employment increases and consequently unemployment reduces. A conflicting theoretical prediction is that, in periods of high inflation, unemployment could increase as a result of increased cost of production when employees adjust their real wages. Employers would also react by reducing employment due to the increased cost of production and nominal wages of their workers. The sign of the inflation variable is therefore ambiguous. It is measured by a change in Consumer Price Index (CPI) which reflects the annual percentage

change in the cost to the average consumer of acquiring a basket of goods and services and data is sourced from the World Development Indicators database.

Level Institutionalised Democracy: This variable is conceived as the presence of institutions and procedures, the existence of institutionalized restraints on the exercise of power by the executive as well as the existence of civil liberties to all citizens including systems of checks and balances and rule of law. The literature states clearly that, most African countries are characterized by low levels of institutionalised democracy which could have adverse effect on unemployment. Some empirical literature has provided evidence to prove that the level of institutionalised democracy negatively affects unemployment (see for instance Anyanwu, 2014; Dutt et al, 2009; Heid and Larch, 2012). This study controls for the effect of institutionalised democracy by using the Polity2 variable taken from the POLITYIV dataset which ranges from +10 (strongly democratic) to -10 (strongly autocratic). It is expected to be inversely related to unemployment.

Foreign Direct Investment: FDI which measures the net inflow of FDI as a percentage of GDP is included in the study as an additional explanatory variable. Data for the variable is sourced from the World Development Indicators database. As widely known, the inflow of FDI in developing countries like Africa has been increasing over the years and as such prompted these countries to implement FDI inducing policies to attract foreign investors. Anyanwu (2013) and Anyanwu (2014) argue that FDI inflows do not increase employment, especially for the youth. Following from Anyanwu, the effect of FDI on unemployment is expected to be positive.

Domestic Investment: This includes land improvements, plants, machinery and equipment purchases and what have you. Anyanwu (2012) asserts that a high value of domestic investment

rate would ensure that more resources are available at the disposal of the government and the private sector. This increases their ability to spend on the economic and social programs including innovation, employment creation, and wealth creation. Thus, an increase in investment is expected to result in a decline in unemployment. This study will, therefore, use gross fixed capital formation sourced from the World Development Indicators as a proxy for domestic investment.

Real GDP Growth: We include the lag of real GDP growth to control for the influence of economic growth on unemployment. The relationship between unemployment and GDP growth which is well known as the Okun's law and which gives a general notion that when economic growth increases, unemployment falls has been established in most empirical studies (see Dutt et al, 2009; Anyanwu, 2014 and Chaudhry, 2012). Anyanwu (2014) asserts that the economic performance of a country should have a positive influence on employment by serving as an incentive for people to join the labour market. Following from Anyanwu (2014), we expect a negative linkage between GDP growth and unemployment in SSA since most countries in the region have experienced positive economic performance over the years. The source of data for this control variable is the World Development Indicators database.

Table 4.1 below summarizes the explanatory variables and their expected signs. With the exception of real GDP per capita that was logged, all other variables were not logged. There was no need to transform the rest of the variables into natural logarithms since most of them are in percentages. However, we took the lag levels of Government consumption expenditure (lagGOVEXP), real GDP growth (lagRGDPGR) as well as credit to the private sector (lagCPS) before running our regressions.

Table 4.1: Summary of Explanatory Variables and their Expected Signs

Variable	Indicator	Expected sign
Lagged Unemployment Rates	Percentage of total labour force	Positive
Trade Openness	Sum of export and imports (% of GDP-PPP)	Negative
Urban Population Share	Urban population (% of total population)	Negative
Real GDP Per Capita	GDP (% of total population)	Positive/Negative
Government Expenditure	General government final consumption expenditure (% of GDP)	Positive
Inflation	Percentage change in Consumer Price Index (CPI)	Positive/Negative
Institutionalised Democracy	Polity2 index	Negative
Foreign Direct Investment	Net FDI inflows (% of GDP)	Positive
Domestic Investment	Gross Fixed Capital Formation	Negative
Real GDP Growth	GDP annual growth rates	Negative
Credit to the Private Sector	Credit to the private sector(% of GDP)	Negative

Source: Author's compilation based on literature

4.3 Model specification

From the theoretical framework discussed in chapter 3 above and following Anyanwu (2014) and Kim (2011), with few modifications based on the description of variables the preceding section, the model to be estimated is written as;

$$\begin{aligned}
 UNEMP_{it} = & \delta UNEMP_{i,t-1} + \beta_1 TRADEOPEN_{it} + \beta_2 INF_{it} + \beta_3 FDI_{it} + \beta_4 logRGDPPC_{it} + \\
 & \beta_5 INV_{it} + \beta_6 URBAN_{it} + \beta_7 POLITY2_{it} + \beta_8 lagRGDPGR_{it} + \beta_9 lagGOVEXP_{it} + \beta_{10} lagCPS_{it} \\
 & + \varepsilon_{it} \dots (1)
 \end{aligned}$$

Where

$UNEMP_{it}$ = Aggregate Unemployment rate

$UNEMP_{i,t-1}$ = Lag of total unemployment rate

$TRADEOPEN_{it}$ = Trade Openness

INF_{it} = Inflation

FDI_{it} = Foreign Direct Investment.

$\log RGDP_{PC_{it}}$ = Real GDP per Capita

INV_{it} = Domestic Investment (Proxied with Gross fixed capital formation).

$URBAN_{it}$ = Urban population share

$POLITY2_{it}$ = Level of Institutionalized Democracy.

$RGDPGR_{it}$ = Real GDP Growth

$GOVEXP_{it}$ = Government Consumption Expenditure

CPS_{it} = Credit to the Private Sector

ε_{it} = Error term

i = index for countries.

t = index for time period which is in years.

Notice that, the dependent variable in model 1 is aggregate unemployment. This study seeks to isolate the impact of trade openness on youth unemployment in SSA. To this, the dependent variable is replaced with youth unemployment. The model is modified as;

$$YUNEMP_{it} = \delta YUNEMP_{i,t-1} + \beta_1 TRADEOPEN_{it} + \beta_2 INF_{it} + \beta_3 FDI_{it} + \beta_4 \log RGDP_{PC_{it}} + \beta_5 INV_{it} + \beta_6 URBAN_{it} + \beta_7 POLITY2_{it} + \beta_8 \log RGDPGR_{it} + \beta_9 \log GOVEXP_{it} + \beta_{10} \log CPS_{it} + \varepsilon_{it} \dots (2)$$

Where

$YUNEMP_{it}$ = Youth Unemployment rate

$\delta YUNEMP_{i,t-1}$ =Lag of Youth Unemployment rate

4.4 Panel data Estimation Techniques

In order to analyze the link between trade openness and unemployment, the panel data econometric approach is employed. This study will first employ fixed and random effects techniques. Fixed effect model explores the relationship between the predictor variable and outcome variables within an entity (i.e. Country, firm, etc). Under the fixed effect model, it is assumed that something within the individual may influence the predictor variable which needs to be controlled for. Fixed effect removes the effect of the time-invariant characteristics so it is easy to assess the net effect of the predictors on the dependent variable. This is done using the within transformation or the first difference transformation.

On the other hand, if there is any reason to believe that differences across units have an influence on the outcome variable then we use the random effect model. Under the random effect model, the individual specific effects are assumed random and not correlated with the regressors.

Nevertheless, a decision must be taken about which of the two models i.e. fixed effect or random effect provides efficient and consistent estimates of the parameters in the model. The Hausman test will be conducted to check the appropriate model to use. It involves testing the null hypothesis that, there is no correlation between regressors and individual effects (the random effect is appropriate) against the alternative hypothesis that the fixed effect model is the appropriate and most efficient model. If the results are significant, that is if the $\text{prob} > \chi^2$ is greater than 0.05 then we fail to reject the null hypothesis that the random effect model is appropriate and choose the random effect model over the fixed effect model, otherwise, we select fixed effect model.

However, the GMM estimation procedure would yield reliable estimates if the data fits the fixed effects model. The Generalized Method of Moments (GMM) is a technique perfectly designed for dynamic models with current realizations of the dependent variable affected by its past ones. The problem with using OLS to estimate models 1 and 2 is that they may suffer from the problem of endogeneity. Endogeneity arises when any of the regressors are correlated with the random error term which then results in a “dynamic panel bias”.

Introducing lagged unemployment rate as a regressor is suspected to give rise to endogeneity. This is because current values of unemployment rates depend on previous ones; hence likely to correlate with the error terms.

Additionally, there exists evidence in the literature concerning the reverse causality between trade openness and unemployment rates which is likely to create an additional problem of endogeneity. The trade and unemployment literature (see Anyanwu, 2014, Kim, 2011, Dutt et al, 2009, Heid and larch, 2012, Felbermayr et al' 2011) has established that not only can trade openness cause unemployment, but the level of unemployment may itself influence the level of trade openness. For instance, in times of high unemployment, voters would support any policy that would impose restrictions on trade hence reducing international trade. In this case, unemployment rate would have an influence on trade openness which renders the OLS or any other estimator inconsistent.

Two types of estimation techniques under the GMM procedure are identified in the literature; these are the difference GMM and system GMM techniques. The Arellano and Bond estimator known as the difference GMM transforms all regressors by taking their differences and instrumenting all endogenous variables with their respective lags in levels. Arellano and Bover (1995) and Blundell and Bond (1998) argue that, the lagged levels used as instruments for the first differenced variables in the difference GMM are rather poor instruments. To improve efficiency, they augment the difference GMM by including lagged levels as well as lagged differences as instruments (Baum, 2006). This estimator known as the system GMM is specially designed to generate internal instruments even when there are no external instruments available. The system GMM is preferable to the other techniques because it overcomes the endogeneity issue by using lagged values of explanatory variables as instruments. It also allows the use of level and lagged values of the variables in the estimation model. Additionally, it gives consistent estimates even when T (time period) is small and N (number of countries) is large.

4.5 Diagnostic tests

4.5.1 Test for Over-identifying Restrictions

Under the system GMM estimator, the number of instruments tends to increase exponentially with the number of time periods leading to overfitting of endogenous variables (Heid and Larch, 2012). Nonetheless, the estimator requires that the instruments used for the endogenous variables must be valid in order to yield consistent and efficient estimates. That is, there should be no correlation between the residuals and the explanatory variables and the instruments must be correlated with the endogenous explanatory variables. We, therefore, test for the validity of instruments using the Sargan tests for over-identifying restrictions. Under the null hypothesis that the instruments are valid against the alternative that they are not and are also correlated with the error term, a p-value > 0.05 implies we fail to reject the null and conclude that instruments used are truly valid and hence exogenous.

4.5.2 Heteroskedasticity

An important test carried out in panel data estimation is the test for heteroskedasticity which is an estimation problem associated with cross-sectional data. Since panel data encompasses cross-section, this estimation problem is likely to be found in our estimations. Heteroskedasticity occurs when the variance of the error term differs across observations which render it not constant (that is $\text{Var}(\varepsilon_{it}) \neq \sigma^2$). According to Wooldridge (2008), the presence of heteroskedasticity renders parameters inefficient, making inferences from the t and F tests unreliable. We will employ the modified Wald test for heteroskedasticity in case the hausman test favors the fixed effects model. We will also run a robust command to correct for the presence of heteroskedasticity. This approach gives standard errors of regression coefficients that are robust to heteroskedasticity.

4.5.3 Autocorrelation

Another important diagnostic check in dynamic panel data estimations is the AR test for autocorrelation of the residuals. There is the issue of autocorrelation due to the presence of the lagged dependent variable as an explanatory variable. This is the case because if the dependent variable is a function of a component of the error term, then its lag is also a function of the error term. However, by construction, the residuals of the differenced equation in the GMM should possess serial correlation but if the assumption of serial independence in the original errors is warranted, the differenced residuals should not exhibit significant AR(2) behavior. If AR(2) statistic is encountered, the second lags of the endogenous variables will not be appropriate instruments for their current values. Under the null hypothesis, of no serial correlation in first differenced errors, we compare the p-value to the 5% or 10% significance levels. However, to decide on whether there is autocorrelation or not, we check the p-value of the AR (2) statistic. Failure to reject the null implies that there is no autocorrelation in first differenced error.

CHAPTER FIVE

PRESENTATION AND DISCUSSION OF RESULTS

5.1. Introduction

In this chapter, we present the estimation and discussion of results as well as the diagnostics test results carried out as specified above in the preceding chapter. The chapter is divided into four sections, starting with section 5.2 which provides a descriptive analysis of the variables considered in the study. Section 5.3 presents the empirical results and section 5.4 presents the results of some diagnostics tests carried out. Discussion of empirical results is presented in section 5.5. Finally, section 5.5 concludes the whole chapter.

5.2. Descriptive Analysis

This section briefly discusses the descriptive statistics of the variables of interest. It presents the mean, standard deviation and the maximum and minimum values of the variables relating to the 35 Sub-Saharan African countries used in the study spanning from 1991 to 2015. Table 5.1 below shows the descriptive analysis.

Table 5.1: Descriptive Statistics of Variables, 1991 to 2015

Variable	Mean	Standard deviation	Maximum	Minimum
Aggregate Unemployment	7.445	6.12	0.3	30.304
Youth Unemployment	13.71	12.638	0.403	55.172
Trade Openness	16.664	11.165	0	88.554
Urban Population Share	35.401	15.769	5.491	87.156
Domestic Investment	20.164	11.675	201	99.037
Real GDP Per Capita	6.754	1.008	2.058	9.920
Government Expenditure	14.280	5.842	2.058	59.723
Real GDP growth	4.578	5.904	-28.1	63.380
Credit to the Private Sector	17.792	23.883	0.410	160.125
Inflation	11.923	27.414	-35.837	324.997
Institutionalised Democracy	1.264	5.231	-9	10
Foreign Direct Investment	3.828	8.983	-8.589	161.824

Source: Author's computation using Stata 13

From the above table, aggregate unemployment statistics averaged 7.45 percent with a standard deviation of 6.12 percent over the period 1991 to 2015 for all 35 Sub-Saharan African countries in the sample. Given that the minimum and maximum values of unemployment are 0.3 and 30.3 percent respectively, the standard deviation indicates high variability in unemployment rates. The same can be said about youth unemployment rate which shows a mean of 13.71 and a standard deviation of 12.64 percent. Unsurprisingly, a close scrutiny at the maximum values of both youth and general unemployment depicts higher rates for the former than the latter which is a challenge to the region.

Over the same period, table 5.1 also displays that trade openness averaged 16.664 percent of GDP-PPP with 11.165 percent dispersion from the mean. The maximum trade openness indicates the region is highly opening up to trade; thus out of their economic activities almost 90 percent can be attributed to the movement of goods and services, which is a great opportunity to capture the benefits of openness. On the other hand, the log of real GDP per capita shows the lowest standard deviation of 1.008 and a mean value of 6.754.

With regards to inflation, the annual average change in Consumer Price Index (CPI) averaged 11.923 percent varying from -35.837 (minimum) to 324.997 (maximum) which clearly indicate high price instability over the period from 1991 to 2015. Apart from inflation that showed quite high standard deviation of 27.414 percent, Credit to the private sector also showed high variability of 23.883 percent.

The minimum and maximum proportion of any country's population that formed the urban population is 5.49 and 87.156 percent respectively, averaging 35.401 percent. This high proportion may have challenges on the urban cities in terms of employment and standard of living although it may also offer greater opportunities for acquiring higher skills in the urban areas. Government consumption expenditure averaged 14.280 percent within the period showing a minimum value of 2.058 percent and a maximum of 59.723 percent. The mean values for all other variables; domestic investment (20.164), democracy (1.264) foreign direct investment (3.828) and real GDP growth (4.578) and other statistics for these variables are not that bad.

5.3 Estimation Results

In this study, we estimate equations 1 and 2 using the random effect, the fixed effect, and the system GMM estimators over the period 1991 to 2015 (25 years) for a panel of 35 sub-Saharan

African countries. Empirical results of our estimations are presented below in table 5.3 and table 5.4 for general unemployment and youth unemployment respectively. While column 1 treats errors as random, column 2 treats them as fixed. However, column 3 employs the system GMM estimator.

Table 5.2: The Impact of Trade Openness on Aggregate Unemployment in SSA

VARIABLES	RE Aggregate Unemployment	FE Aggregate Unemployment	Sys-GMM Aggregate Unemployment
Trade Openness	-0.009* (0.005)	-0.011 (0.007)	-0.042** (0.016)
Lag of Aggregate Unemployment	0.977*** (0.014)	0.907*** (0.051)	0.868*** (0.070)
Urban Population Share	0.009* (0.005)	0.003 (0.023)	0.033** (0.013)
Domestic Investment	0.003 (0.002)	-0.002 (0.004)	0.002 (0.004)
Log of Real GDP per capita	-0.250** (0.113)	0.059 (0.203)	-0.218 (0.276)
Lag of Government Expenditure	0.010** (0.005)	0.015** (0.007)	0.034* (0.020)
Lag of Real GDP growth	0.000** (0.000)	0.000 (0.000)	0.000 (0.000)
Lag of credit to private sector	0.003** (0.002)	0.017 (0.013)	0.010 (0.006)
Inflation	0.001 (0.002)	0.007*** (0.002)	0.005* (0.003)
Foreign Direct Investment	0.005 (0.005)	0.005 (0.005)	0.008 (0.007)
Institutionalised Democracy	0.006 (0.006)	0.018* (0.010)	0.013 (0.012)
Constant	1.152** (0.579)	-0.461 (1.730)	0.923 (1.502)
Sargan test (Prob>Chi-squared)			0.970
Autocorrelation AR(2)			0.449
Observations	681	681	681
R-squared		0.861	

Notes: The numbers in parenthesis are robust standard errors. ***, ** and * indicate levels at significance at 1%, 5% and 10% respectively. Time dummies are included but not shown for brevity. OID, AR(1) and AR(2) are the Sargan over-identification test of all instruments, first order and second order autocorrelation respectively. First lag of dependent variable used for FE, RE and Sys-GMM.

Source: Author's computation using Stata 13

Table 5.3: The Impact of Trade Openness on Youth Unemployment in SSA

VARIABLES	RE Youth Unemployment	FE Youth Unemployment	Sys-GMM Youth Unemployment
Trade Openness	-0.017* (0.010)	-0.028** (0.012)	-0.088*** (0.028)
Lag of Youth Unemployment	0.973*** (0.014)	0.923*** (0.045)	0.945*** (0.052)
Urban Population Share	0.015 (0.010)	-0.026 (0.030)	0.045** (0.017)
Domestic Investment	0.004 (0.004)	-0.006 (0.007)	0.007 (0.009)
Log of Real GDP per capita	-0.386* (0.223)	-0.036 (0.347)	-0.443 (0.487)
Lag of Government Expenditure	0.017* (0.009)	0.033*** (0.012)	0.036 (0.030)
Lag of Real GDP growth	0.000** (0.000)	0.000 (0.000)	0.000* (0.000)
Lag of Credit to Private Sector	0.010*** (0.003)	0.022 (0.015)	0.014* (0.007)
Inflation	0.004 (0.003)	0.013*** (0.004)	0.005 (0.005)
Foreign Direct Investment	0.011 (0.010)	0.010 (0.009)	0.011 (0.012)
Institutionalised Democracy	0.017 (0.011)	0.032** (0.015)	0.015 (0.017)
Constant	1.662 (1.116)	1.543 (2.815)	2.126 (2.847)
Sargan test (Prob>Chi-squared)			0.882
Autocorrelation AR(2)			0.238
Observations	681	681	681
R-squared		0.870	

Notes: The numbers in parenthesis are robust standard errors. ***, ** and * indicate levels at significance at 1%, 5% and 10% respectively. The dependent variable is youth unemployment. Time dummies are included but not shown for brevity. OID, AR(1) and AR(2) are the Sargan over-identification test of all instruments, first order, and second order autocorrelation respectively. First lag of dependent variable used for FE, RE, and Sys-GMM.

Source: Author's computation using Stata 13

5.4 Diagnostics tests

In this section, we present the results of some diagnostics tests carried out in order to make appropriate corrections to obtain consistent and reliable results. The diagnostics tests carried out as discussed in the previous chapter include the Hausman test to choose between random and

fixed effects models, the test for the presence of heteroskedasticity and serial correlation (autocorrelation) as well as the Sargan test for the validity of instruments.

5.4.1 Hausman Test

In our regressions, we conduct the Hausman test to determine whether individual heterogeneity is correlated with the regressors or not. The result of the Hausman test is shown in Appendix II below. It rejects the null hypothesis that the Random effect model is appropriate. Hence, the fixed effect model is chosen over the random effect model. However, we conduct the system GMM estimator since it yields more consistent and reliable results as compared to the fixed effect model in the presence of endogeneity caused by the lagged dependent variable and the trade openness variable.

5.4.2 Heteroskedasticity

Since the Hausman test chooses the fixed effect over the random effect, we employ the Modified Wald test for GroupWise heteroskedasticity which is available for the fixed effect model. The result of this test is depicted in Appendix III in the appendix section. The test rejects the null hypothesis of constant variance (homoskedasticity), at 5 percent significance level thereby confirming the presence of heteroskedasticity in errors.

5.4.3 Autocorrelation

This test is conducted using the Arellano-Bond test for serial correlation in first differenced errors. The results are reported together with the estimation results in tables 5.2 and 5.3 above. The results show an AR(2) p-value of 0.449 when general unemployment was considered and 0.238 when youth unemployment was alternatively used as the dependent variable. Given that

the p-values are greater than 0.05, we fail to reject the null hypothesis of no second order autocorrelation and conclude that the errors are not correlated with each other.

5.4.4 Test for over-identifying restrictions

As mentioned earlier in the previous chapter, the Sargan test which tests the null hypothesis that the overidentifying restrictions are valid is conducted. The tests results reported in our final estimation tables (tables 5.2 and 5.3) in section 5.3 shows a Sargan p-value of 0.970 and 0.882 respectively. Since these p-values are greater than 0.05, we fail to reject the null hypothesis that the instruments are valid for the model. As a result, the system GMM should produce consistent and reliable estimates based on the Autocorrelation test result as well as the Sargan test result.

5.5 Discussion of empirical results

Our discussions will be based on the system GMM estimator since it is comparatively more consistent and reliable as it treats the potential endogeneity of the regressors. In our discussions, we will simultaneously discuss the results in table 5.2 and table 5.3 in order that we may capture and highlight the differential effects of trade openness on both groups of unemployment.

Firstly, the estimated coefficients for the lagged dependent variables in tables 5.3 and 5.4 in our selected model are positive and highly significant at 1 percent level. The findings reveal that there is a very high degree of persistence in unemployment rates in Sub-Saharan Africa confirming our a priori prediction. Our results are in consonance with some empirical findings in the literature on the openness–unemployment nexus (Dutt et al, 2009; Felbermayr et al, 2011; Heid and Larch, 2012 and Choudhry et al, 2012). Apart from Felbermayr et al (2011) who found that unemployment rates are only moderately persistent in his OECD panel, Dutt et al (2009),

Choudhry et al (2012) and Heid and Larch (2012) found a high degree of persistence in unemployment rates.

The dependent variable is general unemployment in table 5.3 and youth unemployment in table 5.4. We observe that, with the exception of the coefficient of trade openness in column 2 of table 5.4, the coefficients of trade openness under all estimations are negative and statistically significant which implies that greater openness to trade reduces both total and youth unemployment rates in SSA. Looking at the estimates across the three columns in both tables, we observe that the openness coefficient is particularly larger in the GMM estimations than the FE and RE estimations. We can say that the FE and RE models suffer from endogeneity bias, hence a more reason we focus on the GMM estimator. That is, our results reveal that a 1 percentage point increase in openness leads to a 0.042 percent and 0.088 percent reduction in general unemployment and youth unemployment respectively.

Our result confirms the empirical findings of Dutt et al (2009) and Felbermayr et al (2011) who find that high trade openness reduces total unemployment in OECD countries. Anyanwu (2014) also finds robust evidence to support the negative relationship between trade openness and youth unemployment in Africa. The negative impact of trade openness on unemployment in SSA suggests that countries with high degrees of openness are likely to experience a reduction in unemployment rates than those with low degrees of openness.

Comparing the coefficients of trade openness for youth unemployment and general unemployment, we notice that, the unemployment reducing impact of trade openness is larger and highly significant at 1 percent for young people. This is suggestive of the fact that Sub-Saharan African countries that open up more to trade and add more value to exports are likely to

employ more young people since most value addition requires highly skilled labour of which the youth highly constitute this kind of labour.

Contrary to this finding, however, Felbermayr et al (2011) again found that OECD countries experience lower general as well as prime unemployment arising from increasing trade openness, but a non-significant negative impact on youth unemployment. They explained that it is not overly surprising since youth unemployment is not strongly related to the extent of trade openness but rather to labour market institutions. Similarly, Kim (2011) finds that trade openness causes unemployment in countries with more stringent labour market institutions.

Additionally, the Positive and highly significant coefficient of urban population share under the system GMM estimator indicates that rapid urbanization increases unemployment in Sub-Saharan Africa. Our results depict a larger impact of urbanization on youth unemployment than total unemployment. That is, a percentage point increase in urbanization results in a 0.045 and 0.033 percentage increase in youth unemployment and general unemployment respectively suggesting that the youth faces high unemployment rates due to urbanization. The results, however, contradict the findings of previous empirical studies by Anyanwu (2014) and Anyanwu (2013) and is as well contrary to general intuition. This is because; urbanization is perceived to generate opportunities for people to acquire more skills suitable for the labour market. This finding, therefore, suggests that urbanisation in SSA does not create employment opportunities for migrants especially the youth, unsurprisingly, contributing to the high youth to adult unemployment rate in the region since they migrate more in search of jobs as compared to old folks.

Again, the coefficient of the lag of credit to the private sector carries a positive sign across all estimations but only significant at 10 percent level of significance when youth unemployment is the dependent variable. An increase in previous year's credit to the private sector by 1 percent increases contemporaneous youth unemployment rates by 0.014 percent showing that a credit boom results in high unemployment of the youth in SSA. This result may, however, be counter-intuitive. By intuition, higher financial assistance available to the private sector should promote entrepreneurship as well as business expansion in order to generate employment particularly for the youth who are usually new entrants into the labour market. This negative relation between unemployment and CPS indicates the inefficient allocation of financial resources into unproductive sectors that are unable to create jobs. Our results share the same spirit as Ogbeide et al (2015) and Anyanwu (2014). Ogbeide et al (2015) argue that large multinationals with foreign affiliations are mostly offered these financial support while less credit is being given to key productive sectors like the agricultural sectors. This finding depicts a characteristic of many Sub-Saharan African countries where farmers lack credit facilities to be able to expand their produce to generate employment.

It is observed that the coefficient of inflation is positive for both youth unemployment and general unemployment although not significant for the former. The result shows that a 1 percentage point increase in inflation results in a 0.005 percent increase in total unemployment confirming our a priori expectation. This suggests that countries with high inflation rates are more likely to experience high unemployment rates that result from the increased cost of production. Our finding may add to existing literature by indicating to SSA countries that reducing inflation is key to maintaining and increasing jobs for the people. Our result contradicts

that of previous studies by Choudhry et al (2012), Anyanwu (2014) and Anyanwu (2013) who find support for the Phillips curve.

Across all estimations, real GDP growth appears to worsen unemployment even though its effect is only statistically significant for youth unemployment. With general unemployment, we find real GDP growth to be significant only when the RE model was considered. Our results, therefore, show that a 1 percentage point increase in the previous year's economic growth results in a 0.000069 and a 0.00019 percentage rise in total unemployment and youth unemployment respectively. This suggests that economic performance in SSA is not employment generating hence inconsistent with the well-known Okun's law theory. This is quite indicative of the fact that growth in the sub-region is driven by sectors that do not necessarily generate employment.

Furthermore, apart from the RE model, no significant relationship was found between real GDP per capita (GDPPC) and unemployment. That notwithstanding, it showed a significant negative relationship with total unemployment and youth unemployment only in the RE models. The results predict that a 1 percentage point increase in potential demand leads to a 0.0025 percent fall in total unemployment and a 0.00386 percent fall in youth unemployment. Here again, youth unemployment is amply affected by the level of economic activities than total unemployment. This result confirms the empirical findings of Kim (2011) and Ogbeide et al (2015). They posit that more affluent periods or more affluent countries experience lower rates of unemployment.

We also find that government consumption expenditure positively affects unemployment though not significantly so with youth unemployment. For example, an increase in the previous year's government expenditure by 1 percentage point is associated with a 0.034% increase in total unemployment and a 0.036% increase in youth unemployment. This indicates that in some

instances, Governments of SSA countries engage in certain expenditures that do not necessarily generate employment. Our result is similar to that of Raifu (2017) who found a positive linkage between government expenditure and unemployment for the Nigerian economy and Anyanwu (2013) who found that government expenditure increases unemployment for Africa.

Throughout our regressions, the coefficient of foreign direct investment, domestic investment, and institutionalised democracy showed a positive relationship with both total and youth unemployment; meaning these variables worsen unemployment in SSA. With the exception of the coefficient of institutionalised democracy that was significant in both tables when the FE model was considered, the coefficients of FDI and domestic investment were not significant across all estimations. Concerning the effect of FDI, our findings show that a 1 percentage point increase in FDI results in a 0.008 and a 0.011 increase in general and youth unemployment respectively. Thus, Anyanwu (2014) asserts that such a positive relationship could be the result of FDI inflows being channeled to capital intensive sectors that generate little employment. With regards to the effect of the domestic investment on unemployment, we find that a unit increase in domestic investment raises youth and general unemployment by 0.007 and 0.013 respectively. Unemployment was found also to increase by 0.018 and 0.032 percent for aggregate and the youth respectively with an increasing level of institutionalised democracy.

5.6 Concluding Remarks

The presence of endogeneity caused by the lagged dependent variable and the trade openness variable renders the use of the system GMM consistent and efficient. This is confirmed by some necessary diagnostics checks such as the autocorrelation test, heteroskedasticity test and the test for validity of over-identifying restrictions. Although our preferred model was the system

GMM, the results from all estimation techniques did not frown on the idea that openness causes unemployment to fall. The negative effect was however found to be larger and highly significant for youth unemployment than total unemployment signaling that the youth captures the greater beneficial effect of trade openness.

Our results also show an inverse relationship between real per capita GDP and unemployment. The dynamic nature of our model also reveals a high persistent effect of unemployment. On the other hand, government expenditure, urbanization, real GDP growth, inflation and credit to the private sector were found to have positive linkage with unemployment most of which are deviations from a priori expectations. Finally, we do not find any significant relation between FDI and unemployment, the level of institutionalised democracy and unemployment as well as domestic investment and unemployment.

CHAPTER SIX

SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS

6.1 Introduction

This chapter presents the summary and conclusions based on the results obtained from the study in section 6.2. This is followed by section 6.3 that outlines some policy recommendations premised on the findings of the study. Finally, section 6.4 discusses the limitations of the study and outlines areas for further research.

6.2 Summary and Conclusion

International trade openness has been identified to play a vital role in most economies in SSA. In view of that, many researchers have sought to find out how this affects various developments. In this study, we sought to investigate the probable effect of trade openness on unemployment in Sub-Saharan Africa. Many researchers have delved into the area in the past few decades. The empirical literature has shown mixed findings on the exact linkage between trade openness and unemployment. Whiles some studies attest to a positive relationship between trade openness and unemployment (see for instance Anyanwu, 2013; Heid and Larch, 2012; Kim, 2011; Raifu, 2017; among others), others have challenged this stance by their empirical investigations that shows a negative linkage (see for instance Dutt et al, 2009; Felbermayr et al, 2011; Anyanwu, 2014; Ogbeide et. al, 2015; among others).

In the empirical analysis, this study investigated whether trade openness leads to a fall or a rise in both aggregate and youth unemployment in Sub-Saharan Africa in response to the research questions that sparked the research. Before empirically looking at the issue, the study revisited

the theoretical foundations of trade to tease out their explanations of trade and the potential gains from trade. Basically, the study was premised on the theoretical predictions of the H-O theory. From the theory, developing countries such as Sub-Saharan African countries should produce and export labour intensive commodities since many of the countries are labour endowed and should import capital intensive goods from the capital abundant developed countries that have the potential to produce capital intensive commodities. This explains why the composition of Sub-Saharan Africa's trade is highly made up of primary products exports especially unprocessed agricultural commodities and imports of manufactures.

In order to estimate the stated objectives, the study made use of data from the World Development Indicators (WDI) online database, the Observatory of Economic Complexity and the PolityIV databases over the period 1991 to 2015 for 35 SSA countries. Instead of the popular measure of trade openness used by many authors in the literature, we utilized the measure of trade openness constructed by Alcalá and Ciccone (2004) to take care of distortions that may arise from cross-country differences in relative prices of non-tradable goods. The study alternatively used aggregate unemployment rates and youth unemployment rates as dependent variables to estimate the model.

The study estimated a balanced panel data by employing both the static (Random effect and fixed effect models) and dynamic (System GMM) panel data estimation techniques. In our static estimations, the FE model was chosen over the RE model. However, due the endogeneity caused by the one period lagged values of the dependent variables used as regressors and the potential endogeneity of the trade openness variable, we employed the system GMM technique to generate consistent and reliable results.

Results from all three estimations reveal a negative relationship between unemployment and trade openness in SSA, satisfying the first objective. With regards to the second objective which seeks to find whether trade openness matters for youth unemployment, we find a significant negative influence of trade openness on youth unemployment rates. However, the magnitude of the impact of trade openness is greater for youth unemployment than aggregate unemployment.

6.3 Policy Recommendations

The major conclusion drawn from the findings in the preceding chapter is that trade openness affects both general and youth unemployment negatively. However, the magnitude of the effect of trade openness on the latter is greater. This implies that for countries in the SSA region, further openness to trade would serve as a necessary tool for addressing the problem of unemployment especially youth unemployment rates. Hence, trade should be enhanced in SSA countries.

There is the need to increase international trade participation of SSA countries in the global economy. Whiles, it has been proven empirically that openness is good for unemployment reduction, yet the region's participation in global terms is moderate. Efforts to expand trade should include the elimination of tariff and non tariff barriers to trade since most African countries are still struggling with high rates of tariff and non tariff barriers. Ackah and Morrissey(2005) put it that, more efforts should be put in place to improve exports especially because a great deal of liberalisation has shown an improvement in imports as a share of GDP whiles exports have not improved consistently.

Notwithstanding these findings, SSA governments should avoid introducing unnecessary distortions to trade as a means of promoting trade in order to generate employment for citizens.

This is because unnecessary distortions to trade and market-oriented resource allocation that contradicts a country's comparative advantage are not healthy for economic efficiency and may rather result in worsening unemployment. Trade policies should hence be targeted at those sectors in which SSA countries have a comparative advantage in order to efficiently allocate resources to such sectors to generate employment.

Additionally, governments of SSA countries should deem it necessary to reduce inflation as it helps boost production through reduced cost of production. Investments in sectors that are more likely to generate employment should also be promoted rigorously. Urbanisation should also be controlled since it worsens unemployment in the region. This can be done by introducing equal opportunities in rural areas to prevent urban folks from migrating to urban centres.

6.4 Limitations of the Study

This study failed to look at other key variables such as labour market institutions (unemployment benefits, employment protection legislation, among others) in the estimations as a result of lack of data for many of the countries in SSA. These variables have been pointed out in the literature to greatly have an impact on unemployment in the trade-unemployment nexus (See for instance Dutt et al, 2009; Felbermayr et al, 2011; Heid and Larch, 2012 among others).

In addition, the study failed to look at the comparison of the relationship between trade openness and unemployment across the various sub-regions (East Africa, West Africa, Central Africa, and Southern Africa) as well as specific country analysis for all countries in the region. Furthermore, trade openness might have a differential influence on oil exporting and non-oil exporting countries.

These are areas that would greatly make meaningful contributions to the existing literature hence should be considered by future research on the trade-unemployment nexus in sub-Saharan Africa.

REFERENCES

- Adekunle, S. B. (2016). The Impact of Trade on Unemployment (Master's thesis, Eastern Mediterranean University (EMU)-Doğu Akdeniz Üniversitesi (DAÜ)).
- Ackah, C., & Morrissey, O. (2005). Trade policy and performance in sub-Saharan Africa since the 1980s (No. 05/13). CREDIT Research Paper.
- Alcalá, F., & Ciccone, A. (2004). Trade and productivity. *The Quarterly journal of economics*, 119(2), 613-646.
- Anyanwu, J. C. (2014). Does Intra-African Trade Reduce Youth Unemployment in Africa?. *African Development Review*, 26(2), 286-309.
- Anyanwu, J. C. (2013). Characteristics and macroeconomic determinants of youth employment in Africa. *African Development Review*, 25(2), 107-129.
- Baum, C. F., & Christopher, F. (2006). An introduction to modern econometrics using Stata. Stata press.
- Bhorat, H., Kanbur, R., Rooney, C., & Steenkamp, F. (2017). DP12073 Sub-Saharan Africa's Manufacturing Sector: Building Complexity.
- Chea, A. C. (2012). Sub-Saharan Africa and global trade: What Sub-Saharan Africa needs to do to maximize the benefits from global trade Integration, increase economic growth and reduce poverty. *International Journal of Academic Research in Business and Social Sciences*, 2(4), 360-361.
- Davidson, C., Martin, L., & Matusz, S. (1999). Trade and search generated unemployment. *Journal of International Economics*, 48(2), 271-299.
- Dutt, P., Mitra, D., & Ranjan, P. (2009). International trade and unemployment: Theory and cross-national evidence. *Journal of International Economics*, 78(1), 32-44.

- Edwards, S. (1993). Openness, trade liberalization, and growth in developing countries. *Journal of economic Literature*, 31(3), 1358-1393.
- Felbermayr, G., Prat, J., &Schmerer, H. J. (2011). Globalization and labor market outcomes: Wage bargaining, search frictions, and firm heterogeneity. *Journal of Economic theory*, 146(1), 39-73.
- Felbermayr, G., Prat, J., & Schmerer, H. J. (2011). Trade and unemployment: What do the data say?. *European Economic Review*, 55(6), 741-758.
- Gaston, N. (1998). The impact of international trade and protection on Australian manufacturing employment. *Australian Economic Papers*, 37(2), 119-136.
- Gaston, N., & Rajaguru, G. (2011). How an export boom affects unemployment.
- Goldberg, P. K., & Pavcnik, N. (2003). The response of the informal sector to trade liberalization. *Journal of development Economics*, 72(2), 463-496.
- Greenaway, D., Hine, R. C., & Wright, P. (1999). An empirical assessment of the impact of trade on employment in the United Kingdom. *European journal of political economy*, 15(3), 485-500.
- Heid, B., & Larch, M. (2012). Migration, trade and unemployment.
- Helpman, E., & Itskhoki, O. (2010). Labour market rigidities, trade and unemployment. *The Review of Economic Studies*, 77(3), 1100-1137.
- ILO. (2016). *World Employment and Social Outlook: Trends for Youth 2016*. ILO.
- Iyoha, M. A., Oyefusi, S. A., & Oriakhi, D. E. (2003). An introduction to modern macroeconomics. *Benin: Mindex Publishing Co. Ltd.*
- Jansen, M., & Lee, E. (2007). *Trade and employment: challenges for policy research: a joint study of the International Labour Office and the Secretariat of the World Trade Organization*. International Labour Organization.

- Kim, J. (2011). The effects of trade on unemployment: evidence from 20 OECD countries. *Stockholm University, Department of Economics Research Papers in Economics*, (2011), 19.
- King, I., &Stähler, F. (2010). A simple theory of trade and unemployment in general equilibrium. *Melbourne Department of Economics Research Paper*, 1116.
- Longo, R., &Sekkat, K. (2004).Economic obstacles to expanding intra-African trade. *World Development*, 32(8), 1309-1321.
- Makki, S. S., &Somwaru, A. (2004). Impact of foreign direct investment and trade on economic growth: Evidence from developing countries. *American Journal of Agricultural Economics*, 86(3), 795-801.
- Marelli, E., Choudhry, M. T., & Signorelli, M. (2013). Youth and total unemployment rate: the impact of policies and institutions. *Rivistainternazionale di scienze sociali*, 1(1), 63-86.
- Mashayekhi, M., Peters, R., & Vanzetti, D. (2012). Regional integration and employment effects in SADC. *Policy priorities for international trade and jobs*, 387.
- Matusz, S. J. (1996). International trade, the division of labor, and unemployment. *International Economic Review*, 71-84.
- Matusz, S. J. (1998). Calibrating the employment effects of trade. *Review of International Economics*, 6(4), 592-603.
- Mbogela, C. S. (2015). *Trade openness: an African perspective: examining the determinants of trade openness and bilateral trade flows for the African countries* (Doctoral dissertation, University of Hull).
- Moore, M. P., &Ranjan, P. (2005). Globalisation vs Skill-Biased Technological Change: Implications for Unemployment and Wage Inequality. *The Economic Journal*, 115(503), 391-422.

- Ogbeide, F. I., Kanwanye, H., & Kadiri, S. (2015). The determinants of unemployment and the question of inclusive growth in Nigeria: Do resource dependence, government expenditure and financial development matter?. *Montenegrin Journal of Economics*, 11(2), 49.
- Peluffo, A. (2013). Assessing labor market impacts of trade opening in Uruguay. *SpringerPlus*, 2(1), 219.
- Polity IV Project dataset on Level of Institutionalised Democracy (2016). Retrieved from <http://www.systematicpeace.org>.
- Raifu, I. A. (2017). On the Determinants of Unemployment in Nigeria: What are the Roles of Trade Openness and Current Account Balance?. *Review of Innovation and Competitiveness: A Journal of Economic and Social Research*, 3(4), 5-30.
- Ricardo, D. (1817). On the principles of political economy and taxation. Şener, F. (2001). Schumpeterian unemployment, trade and wages. *Journal of International Economics*, 54(1), 119-148.
- Sparreboom, T. & Albee, A., (2011). Towards Decent Work in sub-Saharan Africa: Monitoring MDG Employment Indicators, International Labor Organization: Geneva.
- Smith, A. (1776). An inquiry into the nature and causes of the wealth of nations: Volume One. London: printed for W. Strahan; and T. Cadell, 1776.
- The Observatory of Economic Complexity (2016), *Data on exports and imports*. Retrieved from <http://atlas.media.mit.edu/en/visualize/line>.
- United Nations Conference on Trade and Development, UNCTAD (2018): Geneva, Switzerland. Retrieved from <http://unctadstat.unctad.org>.
- Von Uexkull, E. (2012). Regional trade and employment in ECOWAS. *Policy Priorities for International Trade and Jobs*, 415.
- Wamboye, E. F., & Seguino, S. (2015). Gender Effects of Trade Openness in Sub-Saharan Africa. *Feminist Economics*, 21(3), 82-113.

World Bank (2018), *World Development Indicators (WDI)*. Washington, DC: World Bank.
Retrieved from <http://data.worldbank.org>

Wooldridge, J. (2008). *Introductory Econometrics*, South Western College. University week, 2.

Zaki, C. (2011). *On Trade Policies and Wage Disparity in Egypt: Evidence from Macroeconomic Data*. Population Council.

APPENDIX

Appendix I: List of 35 Sub-Saharan African Countries for Empirical Analysis

Angola	Equatorial Guinea	Mauritius
Benin	Ethiopia	Mozambique
Burkina Faso	Gabon	Niger
Burundi	Gambia	Nigeria
Cape Verde	Ghana	Rwanda
Cameroon	Guinea	Senegal
Central African Republic	Guinea Bissau	Sierra Leone
Chad	Kenya	South Africa
Comoros	Madagascar	Tanzania
Congo Dem. Rep.	Malawi	Togo
Congo Rep.	Mali	Uganda
Cote d'Ivoire	Mauritania	

Appendix II: Hausman Test for Fixed versus Random Effects

Ho: Difference in coefficients not systematic (there is random effect)

$$\text{Chi2}(6) = (b-B)'[(V_b - V_B)^{-1}](b-B)$$

$$= 45.61$$

$$\text{Prob} > \text{Chi2} = 0.0000$$

Source: Authors computation from Stata 13

Appendix III: Modified Wald test for groupwise heteroskedasticity in fixed effect model

H0: $\sigma(i)^2 = \sigma^2$ for all i

chi2 (34) = 1.9e+06

Prob>chi2 = 0.0000

Source: Author's computation from Stata 13