THE EFFECTS OF FOREIGN TRADE, AND VOLATILITY OF EXCHANGE RATE ON ECONOMIC GROWTH IN SUB-SAHARAN AFRICAN COUNTRIES

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LIST OF ABBREVATIONS

AMG	Augmented Mean Group
ATR	African Trade Report
ARDL	Autoregressive Distributed Lag
CADF	Cross-Sectional Dependence Augmented Dickey-Fuller
CEPII	*Centre d'Etudes Prospectives et d'Informations Internationales*
CFA franc	Central African Currency
CS-ARDL	Cross Sectional- Autoregressive Distributed Lag
CSD	Cross Sectional Dependence
CCE	Common Correlated Effects
DCCE	Dynamic Common Correlated Effects
DOLS	Dynamic Ordinary Least Square
DH	Dumitrescu and Hurlin
EGARCH	Exponential Generalized Autoregressive Conditional Heteroscedasticity
ECM	Error Correction Model
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GCV	Global Value Chains
GMM	Generalized Method of Moments
HHI	Herfindahl Hirschman Index
HOS	Heckscher-Ohlin-Samuelson
IMF	International Monetary Fund
IGP	Imitation Gap Model
IID	Independent and Identically Distributed

KRW	Korean Won
LDC	Least Developed Countries
MENA	Middle East and North Africa
OECD	Organization for Economic Co-operation and Development
OLS	Ordinary Least Square
PCM	Product Cycle Model
REER	Real Effective Exchange Rate
SACU	Southern African Custom Unions
SSA	Sub-Saharan Africa
SEE	South East European
SIDS	Small Island Development States
TGM	Technological Gap Model
UNCTAD	United Nations Conference on Trade and Development
UN	United Nations
USD	United States Dollar
UNDPR	United Nations Development on Poverty Reduction
UNDESA	United States Department of Economic and Social Affairs
VECM	Vector Error Correction Model
VAR	Vector Autoregressive
WTO	World Trade Organization
WPR	World Population Review
WDI	World Development Indicators

KESAN PERDAGANGAN ASING, DAN TURUN NAIK KADAR PERTUKARAN TERHADAP PERTUMBUHAN EKONOMI DI NEGARA-NEGARA AFRIKA SUB-SAHARA

ABSTRAK

Kajian ini mengkaji kesan perdagangan asing, dan turun naik kadar pertukaran terhadap pertumbuhan ekonomi dalam sampel panel dari 40 negara-negara Afrika sub-Sahara (SSA) selama periode 1992-2018 menggunakan *Augmented Mean Group* (AMG) bersama dengan *Dynamic Common Correlated Effect*s (DCCE) penganggar. Pertama, ia mengkaji hubungan antara perdagangan asing dan pertumbuhan ekonomi di negara-negara SSA. Kedua, kajian ini mengkaji kesan turun naik kadar pertukaran pada perdagangan. Ketiga, kajian ini mengkaji kesan perdagangan asing terhadap turun naik pertumbuhan ekonomi di negara-negara SSA. Bukti dari model pilihan (AMG) menunjukkan bahawa Eksport dan Jumlah perdagangan mempunyai kesan positif yang signifikan terhadap pertumbuhan ekonomi di negara-negara SSA. Eksport mempunyai kesan yang lebih besar (0.0692) dan lebih ketara (5%) terhadap pertumbuhan ekonomi berbanding Jumlah perdagangan (0.0286) yang signifikan pada tahap 10%. Jangka pendek DCCE menunjukkan pekali positif dari semua pengukuran perdagangan (Import, Eksport, Imbangan perdagangan dan Jumlah perdagangan) dan signifikan secara statistik pada tahap 5% kecuali Imbangan perdagangan yang tidak signifikan. Walau bagaimanapun, anggaran jangka panjang DCCE menunjukkan pekali negatif dari semua pengukuran perdagangan dan juga signifikan secara statistik pada 1%. Ujian bukan-kausalitas Dumitrescu dan Hurlin (DH) menunjukkan kausalitas tidak arah berjalan dari Eksport ke GDPgr dan Imbangan perdagangan ke

GDPgr pada tahap signifikan 1%. Sementara, terdapat kesan sebab dua arah antara GDPgr dan Import. Kedua, AMG menunjukkan keanjalan eksport dan import yang signifikan dan positif berkenaan dengan turun naik kadar pertukaran. Pekali keanjalan import (0.118), bagaimanapun, lebih tinggi daripada keanjalan eksport (0.101) turun naik kadar pertukaran sebenar. Anggaran jangka panjang DCCE menunjukkan kesan negatif dan ketara dari turun naik kadar pertukaran pada eksport dan import, dengan demikian tidak kuat. Kausalitas. AMG mendedahkan pekali positif Exco dan signifikan secara statistik pada tahap 1%. Sementara, Imbangan perdagangan mempunyai kesan negatif yang tidak signifikan terhadap GDPgrvol, dan pekali istilah interaksi (Trbl × Exco) positif dan signifikan secara statistik pada tahap 5% pada kedua-dua penganggar AMG dan DCCE. Kesan marginal eksport dan keseimbangan perdagangan positif dari AMG dan negatif dari hasil DCCE. Kausalitas DH membuktikan kausalitas sehala berjalan dari *GDPgrvol* ke Imbangan perdagangan, sementara penyebab dua arah dikenal pasti antara Exco dan GDPgrvol. Berdasarkan penemuan ini, perdagangan asing mendorong pertumbuhan ekonomi jangka panjang dengan mengorbankan turun naik kadar pertukaran dan turun naik pertumbuhan di rantau ini. Untuk mengekalkan pertumbuhan ekonomi jangka panjang dan mengurangkan turun naik, pembuat dasar di seluruh wilayah harus mengatur kadar pertukaran dan meminimumkan kejutan eksogen melalui kepelbagaian eksport dan sistem kewangan yang efisien.

THE EFFECTS OF FOREIGN TRADE, AND VOLATILITY OF EXCHANGE RATE ON ECONOMIC GROWTH IN SUB-SAHARAN AFRICAN COUNTRIES

ABSTRACT

This study investigates the effects of foreign trade, volatility of exchange rate on economic growth in a panel sample of 40 sub-Saharan African (SSA) countries over the period of 1992-2018 using Augmented Mean Group (AMG) along with Dynamic Common Correlated Effects (DCCE) estimators. Firstly, it examines the relationship between foreign trade and economic growth in SSA countries. Secondly, the study investigates the effects of exchange rate volatility on trade. Thirdly, the study examines whether the effects of foreign trade on economic growth volatility vary with the degree of export concentration in SSA countries. Evidence from preferred model (AMG) show that export and total trade have significant positive effect on economic growth in SSA countries. Export have greater (0.0692) and more significant (5%) impact on economic growth than total trade (0.0286) which is significant at 10% level. The DCCE short run show a positive coefficient of all trade measurement (import, export, trade balance and total trade) and statistically significant at 5% level with the exception of trade balance which is insignificant. However, the long run estimates of DCCE revealed a negative coefficient of all the trade measurement and also statistically significant at 1%. The Dumitrescu and Hurlin (DH) non-causality test shows a unidirectional causality running from export to GDP growth and trade balance to GDP growth at 1% level of significant. While, there is a two-way causal effect between GDP growth and import. Secondly, the AMG indicates a significant and positive

elasticity of export and import with respect to exchange rate volatility. The coefficient of import elasticity (0.118) is, however, higher than the export elasticity (0.101) of exchange rate volatility. The DCCE long run estimates revealed a negative and significant impact of exchange rate volatility on export and import, as such not robust. The DH causality revealed a unidirectional causality running from exchange rate volatility to export and import at 1% level of significant. Lastly, AMG revealed a positive coefficient of export concentration and statistically significant at 1% level. While, trade balance has insignificant negative impact on GDP growth volatility, and the coefficient of interaction term (trade balance × export concentration) is positive and statistically significant at 5% level in both AMG and DCCE estimators. The marginal effects of export concentration and trade balance are positive from the AMG and negative from DCCE results. The DH causality evinced a one-way causality running from GDP growth volatility to trade balance, while bidirectional causation is identified between export concentration and GDP growth volatility. Based on these findings, foreign trade promotes long-run economic growth at the expense of higher volatility of exchange rate and growth volatility in the region. To sustain a long run economic growth and reduces the volatility, the policy makers across the region should regulate exchange rate and minimize the exogenous shocks through export diversification and efficient financial system.

CHAPTER 1

INTRODUCTION

1.1 Background to the Study

The achievement of sustainable economic growth is the most important priority of any country, especially developing countries. Many of these countries are struggling to achieve rapid economic growth. Recently foreign trade has been recognized as significant factor that determines economic growth in the world (Helpman and Krugman, 1985). The contribution of trade in economic growth of developing and advanced countries cannot be over emphasized. Institutions like the World Trade Organization (WTO) and International Monetary Fund (IMF) are consistently encouraging countries particularly developing nations to embraces growth processes through trade liberalization in order to acquire and sustain a desire growth rate (Tahir and Norulazidah, 2013).

African economies are heavily dependent on foreign trade and this reliance has significantly increased in few decades. Foreign trade is an essential source of foreign exchange required for the importation of intermediate goods needed for domestic productions. Foreign trade also provides access to new technology, provides varieties of consumer preference, and capacity to increase productivity, creation of employment and economic growth. African countries dependence on trade increases nowadays because of the following factors: Information and communication technology; reduction of tariff and other barriers to trade; a world paradigm shifts from protectionist to liberalization as strategy of development; and the significant roles of developing economies in the global economy. Improvement of terms of trade in Africa

as a result of the commodity price boom over the past few decades boosted African capacity to export and import (UNCTAD, 2016).

Foreign trade is an important component of the gross domestic product (GDP) particularly in developed and emerging countries, which trigger economic growth processes of a country. Theory of foreign trade suggests that trade openness contribute positively to economic growth of a country through gains from economies of scale especially in small countries (Helpman and Krugman, 1985); encouraged competition through efficiency (Balassa, 1978); and stimulating transfer of knowledge (Grossman and Helpman, 1991). Therefore, GDP growth and exports trade relationship are bi-directional as argued by Islam (1998) and Love and Chandra (2004). Though, other researchers, argued that foreign trade could dampen the growth process of the economy, specifically developing countries where SSA countries belongs. They believed that trade protection policies in certain situations might increase local production and subsequently high economic growth (Chaudhuria and Marjit, 2017; Buongiorno et al., 2017).

Empirical studies also revealed that there could be gainers and losers in foreign trade transaction (Autor et al., 2014; Pierce and Schott, 2017). The advent of China as main trading bloc in the world has reawakened the argument on the losers and gainers of foreign trade. Some developing and developed countries are regarded as losers, while India and China are recognized as main gainers of foreign trade (Pierce and Schott, 2017). The united states for example, recent studies show that Chinese trade competition has caused serious repercussion to other countries. Autor et al. (2014) and

Pierce and Schott (2017) disclose that imports from China causes for significant job losses between 1990 and the 2000s in the US.

The theoretical literature on the relationship between foreign trade and economic growth revealed that long-term economic growth can be stimulated through trade. Thus, foreign trade has been considered as a main component of economic growth and development in the world. Finding from empirical studies shows countries that actively engaged in international trade are more productive than countries that only produce for local market (Michelis and Zestos 2004; Awokuse 2007). Furthermore, foreign trade encourages efficient distribution of resources, higher factor accumulation, technology diffusion and speedy economic growth (Grossman and Helpman, 1991).

The theoretical and empirical literature on the impact of foreign trade on economic growth has been well documented by researchers. The neoclassical economists believed that there is strong correlation between foreign trade and economic growth. They argued that economic growth can be accelerated through expansion of export trade. Helpman and Krugman (1985) revealed that exports diversification increases growth through specialization, economies of scale, and dissemination of technical knowledge. Bhagwati (1988) also noted that export expansion enhances economic growth which invariably increases economic growth, skill formation as well as technological progress. However, trade performances and the distribution of its benefits vary across economies. Therefore, trade liberalization in developing economies particularly sub-Saharan African (SSA) countries has often been introduced with the main aims of growth expansion.

Despite the importance of trade to economic growth of a country, African trade in relation to another continent of the world is not impressive. World merchandise exports increased after the world financial crisis, during the year 2014, but it was reversed the following year and Africa's economies encountered slowdown compared to other continents. In 2015 and 2016 Africa's exports fell by 29.6 % and 11.5 % respectively, compared to 12 % and 4.5 % in Asia, 10.9 % and 3.7 % in America, and 14% and 1.3 % in Europe. This unprecedented decline is mostly triggered by the 2014–2015 collapse of the world commodity prices, particularly oil price. Comparatively to the world exports Africa's percentage decline in 2014 from 2.9 % to 2.2 % in 2016 (United Nations Economic Commission for Africa, 2017).

Africa's merchandise imports fell also (though not as much significantly to decrease the trade deficit), attributed to fall in commodity related incomes, domestic currencies depreciation and low investment capacity. This situation account for a fall in merchandise imports in Africa from US$642.2 billion to USD$500.8 billion in 2014 and 2016 respectively. However, the exports volume fell significantly much more than imports, which contributed significantly to the Africa's trade deficit. The trade balance in Africa shifted from a surplus of US$24.0 billion in 2012, to a deficit of US$86.9 billion in 2014 and US$154.9 billion in 2016. Generally, import portrayed the country's weakness in attaining self-sufficiency and reliant on other countries to survive. Unlike exports, too much importation worsens the country's foreign exchange and trade balance, which translate to lower economic growth. However, in some circumstances, import is regarded as a growth enhancing factor, particularly importation of capital goods that aid productivity. Africa's export of services fell from US$105.8 billion to US$101.4 billion in 2014 and 2015 respectively; in 2016 it further

fell to US$95.7 billion. Service exports in African region were mostly dominated by transportation, travelling and related business services, which recorded 26.4 %, 35.3 % and 14.2 %, respectively (United Nations, 2017).

Table 1.1 Merchandise Trade by Group of Economies

Group of Economies	**Exports Value** Billions of US$ 2012	**Value** Billions of US$ 2017	Annual growth rate (%) 2017	**Imports Value** Billions of US$ 2012	**Value** Billions of US$ 2017	Annual growth (%) 2017	**Trade Balance** Billions of US$ 2017
World	18502	17707	10.4	18629	17993	10.9	-286
Developing economies	8230	7851	11.6	7686	7510	12.9	341
Africa	640	414	16.4	617	534	7.6	-120
America	1122	995	11.8	1127	1013	8.4	-18
Asia & Oceania	6468	6422	11.2	5942	5963	14.2	497
Transition economies	823	549	23.8	615	450	20.8	99
Developed economies	9499	9307	8.8	10329	10032	9.1	-726

Source: UNCTAD *Handbook of Statistics (2018).*

From Table 1.1 above, it can be observed that in 2017 developing and transitional economies showed surplus balance in merchandise trade of US$341 billion and US$99 billion respectively. Merchandise trade balance deficit of US$ 726 billion recorded in developed economies and the trade balance deficit of US$ 286 billion was recorded in the world. A trade balance deficit of US$ 120 billion was recorded in developing African countries while Asia and Oceania recorded a surplus trade balance of US$497 billion.

Global trade in services recorded US$5.4 trillion in 2017 which signifying one third of the merchandise exports value. The 2017 was a year of economic recovery, after two conservative years of decline. The high proportion of services exports comes from developed economies because of technological advancement. This supply reached beyond two thirds of traded services internationally. Furthermore, most developing Asian economies have confirmed themselves as important exporters (see table 1.2 below). The upward shift in exports services was a worldwide trend in 2017. Only a few countries, such as Norway, Korea and some countries in Caribbean and Africa recorded negative growth rates.

Table 1.2 Trade in Services by Group of Economies

Group of Economies	**Export** **Value** Billions of US$ 2012	**Value** Billions of US$ 2017	World share (%) 2017	Annual growth (%) 2017	**Import** **Value** Billions of US$ 2012	**Value** Billions of US$ 2017	World share (%) 2017	Annual growth (%) 2017
World	4545	5351	100.0	7.8	4459	5182	100.0	6.4
Developing	1328	1579	29.5	7.8	1639	1951	37.7	6.3
Africa	104	109	2.0	13.7	172	160	3.1	10.4
America	164	185	3.5	6.0	224	218	4.2	6.4
Asia & Ocn.	1060	1285	24.0	7.5	1244	1573	30.4	5.9
Transition	125	122	2.3	13.8	168	146	2.8	14.6
Developed	3092	3650	68.2	7.7	2652	3084	59.5	6.1

Source: UNCTAD, *Handbook of Statistics (2018)*

Table 1.2 shows the trade in services by different group of economies, the developing economies comprises (Africa, America, Asia and Oceania) share in global export services and import services are 29.5 % and 37.7 % respectively. World share of export services of 2.3 % and import services of 2.8 % was recorded for transition economies while developed economies recorded 68.2 % exports services and 59.5 % imports services.

The African trade accounts for around 3% of the global trade in goods. During the period 2013-2019, the African trade annual exports and imports had both first a decreasing trend between 2013 and 2016 and an increasing trend afterwards, with imports exceeding exports over the observed period. Therefore, the trade balance from 2013 up 2019 was negative. The ratio of exports and imports in goods lessened from 92.5 in 2013 to 83.1% in 2019. The major net exporters in 2019 were Angola (ratio 261.3%), Congo (ratio 242.3%), Libya (ratio 217.6%), and Gabon (ratio 199.9%).The three major African importers (South Africa, Egypt and Nigeria) and three major exporters (South Africa, Nigeria and Angola) accounted respectively for 39% of African imports and for 40% of total African exports in 2019. Strengthening intra African trade is very significant for the economic growth and integration of the continent. Nevertheless, the share of Intra African trade remains low: on average 13% for intra-import and 20% for intra exports over the period of the last seven years. The value of total intra-African exports reduced and the share of intra-exports trade improved slightly from 18.2% in 2013 to 19.6% in 2019 (African Trade Statistics Yearbook, 2020).

Extra African trade makes up more than 80% of the total trade. The extra-African trade balance is negative over the period followed, with an average of 372 billion US dollars for exports and 495 billion US dollars for imports. The major player in intra African trade is South Africa, which share in intra exports varies from 26 to 31% over the period of seven years and is followed by Nigeria (13.9% in 2019) and Democratic Republic of Congo (7% in 2019). South Africa is a leader for intra imports (14%) as well, followed by Namibia (7%) and Botswana (6%). For the period concerned, China remains by far the major African trading partner accounting in 2019, 16% of extra African exports and 19% of extra African imports. The value of goods imported from India, United States of America (USA) and France makes up approximately 6% for each. The largest destination markets for African goods after China are India (8% of extra African exports in 2019), Spain and France (7%), Italy and United States accounting around 6% each for 2019 (African Trade Statistics Yearbook, 2020).

In the 1960s and 1970s, Sub-Saharan African (SSA) countries adopted interventionist policies aimed at protecting their domestic markets from foreign competition. But the 1979 oil shock, followed by the debt crisis and global recession of the early 1980s, left the region in economic depression: non-fuel primary commodity prices dropped, debt to GDP ratio rose to 70% and per capita income declined by 14% from 1980 to 1987 (UNCTAD, 2004). This prompted international financial institutions, such as the World Bank and the International Monetary Fund (IMF), to offer financial aid to the region, but on condition that countries opened up their trade regimes. By the mid-1980s and early 1990s, free trade policies and Structural Adjustment Programs began dominating the region. Early liberalizers

included Niger and Ghana, while countries such as Angola, Burundi and the Democratic Republic of the Congo (DRC), only embarked on significant trade reforms in the early twenty-first century. The removal of trade barriers such as import tariffs, export duties and quantitative restrictions stimulates the growth of exports and imports. Trade-growth nexus has not been adequately explored in the literature on Sub-Saharan African countries. This study, therefore, seeks to examine the impact of foreign trade on economic growth in SSA countries in the light of the limited, conflicting and inconclusive results of prior studies. In addition to adopting the recent panel data techniques, the study contributes to the existing literature by using four trade indicators (Export Trade balance and Total trade) to investigate the relationship between foreign trade and economic growth in SSA countries.

In the year 2015 economic growth in Africa fell by more than half from 3.7 % to 1.7 % in 2016 among weak global economic and financial crises, fall in oil price and commodity prices, and adverse weather conditions. These problems in 2016 also contributed significantly for weakening economic situation in Africa's biggest economies such as South Africa 0.6 %, Nigeria -1.6 % and Angola 0.8 %. However, in Algeria growth decelerated 2.9 %, Morocco 1.7 % and Egypt 3.4 % while performances diverged: In 2016 Côte d'Ivoire recorded 8 % growth, Kenya 6 %, Morocco 1.7 % and South Africa 0.6 %, but Nigeria recorded a 1.6 % contraction and Equatorial Guinea 4.5 % (United Nations Economic Commission for Africa, 2017). The figure 1.1 shows the trends of global trade in billion US dollars.

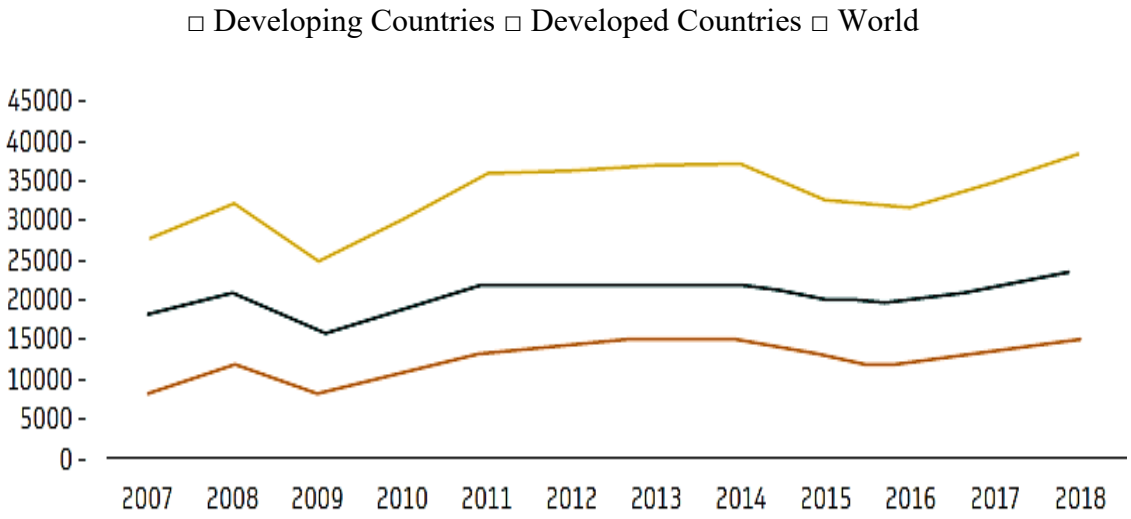

Figure 1.1 Global Trade Trends (Billion USD)

Source: IMF, Direction of Trade Statistics Database (2019)

Economic growth performance across countries of sub-Saharan African varies in recent years. The average GDP growth of sub-Saharan African countries under the period was 4. 05%. In 2018 the West African region became the fastest growing in sub-Saharan Africa because growth was propelled by resources and non-resources sectors. The West Africa has some countries that belong to the category of world fast growing countries, these are: Senegal, Côte d'Ivoire, and Ghana. These countries were able to achieve 7 % average growth rate in 2018. Therefore, the economies were among the greatest drivers of growth in Africa as a whole (Fofack 2019).

Nigeria's economic growth performance is anticipated to rise from 0.8 % in 2017 to 1.9 % in 2018 and 2.3 % in 2019 (0.4 % point higher than in the April 2018), accelerated by the impact of rises in oil price and production. Angola which is the Africa's second biggest exporter of oil, real GDP is expected to declare by 0.1 % in 2018, following a 2.5 % contraction in 2017, but is projected to increase by 3.1 % in

2019 as a result of the recovery driven by effective system of foreign currency allocation and availability of foreign currency as a result of rises in oil prices. Furthermore, in South Africa, growth performance remains modest in relation to uncertainty in 2019 general elections, with growth projected to decline to 0.8 % in 2018 from 1.3 % in 2017, before renouncing to 1.8 % in the medium term (IMF, 2018).

The exchange rate plays a significant role in foreign transactions. Regardless of external shocks and policies, the value of currencies and its fluctuation have a serious consequence on foreign trade, balance of payments and general economic activities. The history of exchange rate volatility draws its origin from the cessation of the Bretton Woods system of fixed exchange rates in the 1970s. Prior to the collapse, the initial idea was that moving from a fixed to a flexible exchange rate will cause some stability in exchange rates movements. Nevertheless, the years ahead revealed a completely different scenario as exchange rates became extremely more volatile than they were in the past. In the light of the above, foreign transactions became enormously uncertain. Given the riskier atmosphere of international economic transactions, many countries felt the impact of the floating exchange rate regime, of which many Sub-Saharan African (SSA) countries were not exempted.

The latter statement coincides with the opinion of Alege and Osabuohien (2015), who asserted that the majority of SSA countries, especially within the context of regional economic integration, have over the years experienced some measures of real foreign exchange rate depreciation. Clark et al. (2004) upheld that following the incorporation of exchange reforms under the structural adjustment program (SAP), many SSA countries experienced the highest average level of volatility in their

exchange rates between 1970 and 2002 than any other region in the world. Four SSA countries namely Angola, Uganda, Congo and Zambia in 1970s and 1990s belonged to first five nations in the world that recorded the highest volatile exchange rate. This unpredictable volatility of exchange rate creates uncertain environment for foreign trade flows and thus a drastic decreased in foreign transactions, growth rate and general economic welfare of a country (Hall et al., 2010). Similarly, the depreciation of the nominal exchange rate of most SSA countries coupled with the high inflation rate have resulted to the poor performance of real exchange rate in the across the countries. The Table 1.3 shows the real effective exchange rate of some SSA countries using IMF data.

Table 1.3 Real Effective Exchange Rate of SSA countries

Countries	1992	2015	2016	2017	2018
Angola	NIL	NIL	NIL	NIL	NIL
Burundi	120.52	117.69	119.02	129.78	118.34
Cabo Verde	NIL	NIL	NIL	NIL	NIL
Cameroon	149.91	93.50	95.62	96.57	98.03
Central African Republic	140.88	113.00	119.17	123.33	128.76
DRC Congo	264.68	113.07	129.21	101.37	111.13
Equatorial Guinea	75.59	93.31	101.72	102.23	104.08
Eritrea	NIL	NIL	NIL	NIL	NIL
Ethiopia	NIL	NIL	NIL	NIL	NIL
Gabon	151.31	93.61	95.70	97.68	103.00
Gambia	197.26	73.33	88.91	90.42	89.05
Ghana	146.40	64.66	74.22	73.62	73.80
Kenya	NIL	NIL	NIL	NIL	NIL
Lesotho	207.29	76.33	71.45	79.50	80.64
Liberia	NIL	NIL	NIL	NIL	NIL
Malawi	181.60	79.56	68.36	71.41	76.87
Mali	NIL	NIL	NIL	NIL	NIL
Niger	NIL	NIL	NIL	NIL	NIL
Nigeria	50.16	119.03	110.16	100.81	109.11
Seychelles	NIL	NIL	NIL	NIL	NIL
Sierra Leone	106.14	142.61	129.66	112.26	102.43
South Africa	133.69	75.07	70.35	79.32	80.72
Togo	118.38	93.21	95.37	94.65	95.79
Uganda	118.50	100.72	97.38	94.88	91.30
Zambia	46.01	86.15	84.04	94.87	89.10

Source: International Monetary Fund (2019).

Olayungbo et al. (2011) maintained that foreign exchange rate for SSA countries have been highly volatile following introduction of the structural adjustment reforms since early 1980s. The 2008–2009 global financial crisis which affected many economies in the world has proved again the vulnerability of SSA countries to global developments. The majority of SSA countries experienced a significant depreciation in their exchange rates since the wake of the global financial crisis.

Against this background, one could irrefutably substantiate that SSA countries have undergone global economic changes that have exerted considerable pressure on their currencies, which in turn negatively affected their trading activities and economic growth. In this context, the main question is center around whether the theoretical assumption that exchange rate volatility dampens or improves foreign trade flaws of SSA countries. Although there exists a large volume of empirical literature on the effect of exchange rate volatility on foreign trade flows, but less attention has been given to SSA countries (Musila and Al-Zyoud 2012). Furthermore, the ambiguity of the theoretical predictions and the lack of empirical consensus on the nature of the impact of volatility in exchange rate on trade flows suggest the need to continue the investigation into the issue using recent datasets and estimation techniques to gain a better understanding and act as another contribution to the long-lasting debate on exchange rate volatility and foreign trade.

There is a general believe that low-income countries are more vulnerable to exogenous shocks compared to rich or advanced countries. Why output growth is mostly volatile in low-income countries than in the developed countries? Although, recent economic problems across the globe have aided to a renewed interest in the

area. Such as global economic and financial crisis, fluctuation in oil prices, the late 1990s Asian financial crisis, the unstable African growth patterns, and concerns over 'fragile states' emanating from civil wars or conflicts. In the context of Africa where majority of the countries are within the low-income categories, financial institutions and international development have recognized the significance of taking into consideration of the risks of exogenous or external shocks, vulnerability and economic growth volatility. Despite the heterogeneity of growth pattern across the continent, one common feature of SSA countries growth pattern is its volatility (Toh, 2016).

Foreign trade theories suggest that trade enhances efficiency in allocation of resources, lower consumer prices, and increase productivity. It encourages economic integration of the countries in the world and leads to diffusion of technological advancement of the trading partners and, thus improves productivity. The policy reforms of international organizations focused on trade liberalization as a means of accelerating economic growth and general economic welfare. It is generally argued that foreign trade under normal circumstances is positively associated with growth (Frankel and Romer, 1999). However, the nexus between foreign trade and economic growth volatility is not clearly defined in the literature.

Countries are more vulnerable to external shocks when trade integration intensifies. Does this mean those countries that trade more often must have higher growth volatility? Are there other circumstances that may lead to whether the larger vulnerability to external shock translates into a high volatile growth or not? Nevertheless, majority of economists are of the views that, trade openness increases growth rates averagely; but also increases growth volatility by rendering country

vulnerable to external shocks. Contrary to this view, recent literature evinced negative association between trade and growth volatility due to financial system development and institutional quality (Ahmed, 2003). If this scenario was taken into consideration, the relationship between trade openness and growth volatility is still an opened debate.

Generally, African countries depend on exportation of primary commodities, and importation of capital goods and intermediate inputs. The prices of primary commodities are often volatile in international market. Therefore, in-depth comprehension of African macroeconomic fluctuations requires a good understanding of the macroeconomic effects of external shocks (Kose and Riezman, 2001). One of the basic arguments regarding the effect of depending on production and exportation of primary products was propounded by (Singer,1950; and Prebisch, 1959). They postulated that the price of primary products shows a consistent downward movement compared to manufactured products. The downward movement is mostly attributed to differences in production capacity of countries, market structure asymmetric, and income elasticity of manufacturing goods is high relatively to primary commodities.

Moreover, most of the developing economies especially SSA countries are encountered with the problem of balancing between the gains and risks associated to trade openness. A study conducted by Nnyanzi (2014) revealed a potential risk sharing and gains in African countries and regional group as well. Several economic and financial crises that affected developing countries recently were attributed to external shocks from foreign trade. However, this assertion could not stand the test of time as trade openness enable risk sharing among countries and diversification of the economy are crucial in reducing external shocks (Bekaert, Harvey and Lundblad, 2006).

Therefore, countries that engaged in foreign trade are less vulnerable due to diversification and specialization which enhances trade performance and reduces growth volatility (Haddad et al., 2013). Contrarily, World Bank (2019) submits that majority of African countries especially oil- exporting countries have high export concentration index compared to another continent in the world. Razin, Sadka, and Coury (2003) argued that foreign trade adversely affects economic growth by intensifying macroeconomic uncertainties.

Several researchers opined that developing economies have greater growth volatility than developed countries (Hakura, 2009). Growth volatility mostly is the consequence of external shocks in developing and emerging economies (Reinhart and Rogoff, 2014). Foreign trade is regarded as essential transmission mechanism of external shocks in global economy, particularly in developing economies. The exports concentrations of these economies are in small volatile areas, which render them vulnerable to external shocks. Therefore, the export concentration instigates greater growth volatility.

Nevertheless, the degree of country's vulnerability is depending on export concentration and diversification. Majority of African countries reliant on few commodities for export revenues, making these revenues vulnerable to fluctuations in unfavorable external shocks. As exports related to economic growth positively, thus, export earnings volatility means fluctuations of economic fortunes. Similarly, export earnings volatility and country's growth rate are positively correlated to the extent of export concentration of the country (Foxley, 2009). Therefore, larger exports diversification should stabilise growth, whereas more concentrated exports are expected

to rise economic growth volatility. Large degree of export diversification probably infer that a country is further involved in explicit and implicit global insurance structures. The structures might be in form of connection in global production chains, foreign lending and joint ventures that would help to lessen the effect of external and even internal shocks. Based on this consideration, the effect of trade on economic growth volatility will not only becomes lower but eventually negative in diversified economies (Haddad et al., 2013). The Table 1-3 shows the export concentration indices of 40 SSA countries selected from 1995 to 2016 using Herfindahl-Hirschman Index[1].

[1] See Rhoades, S. A. (1993). The Herfindahl-Hirschman Index. Federal Reserve Bulletin for more details.

Table 1.4 Export Concentration Indices of 40 SSA countries selected

Countries	1995	2000	2005	2010	2016
Angola	0.89	0.88	0.95	0.94	0.93
Benin	0.67	0.59	0.40	0.33	0.31
Botswana	0.71	0.67	0.78	0.61	0.88
Burkina Faso	0.56	0.54	0.75	0.57	0.75
Burundi	0.72	0.70	0.65	0.58	0.44
Cabo Verde	0.37	0.36	0.43	0.32	0.32
Cameroon	0.32	0.43	0.44	0.36	0.41
Central African Republic	0.38	0.68	0.44	0.36	0.46
Chad	0.71	0.74	0.73	0.85	0.74
Comoros	0.63	0.75	0.51	0.52	0.68
Congo	0.75	0.77	0.79	0.74	0.67
DRC Congo	0.12	0.11	0.16	0.31	0.22
Equatorial Guinea	0.45	0.80	0.92	0.74	0.68
Eritrea	0.33	0.27	0.20	0.14	0.40
Ethiopia	0.56	0.48	0.38	0.36	0.30
Gabon	0.81	0.76	0.78	0.82	0.76
Gambia	0.35	0.34	0.30	0.21	0.35
Ghana	0.36	0.33	0.39	0.48	0.43
Guinea	0.70	0.58	0.64	0.42	0.45
Guinea-Bissau	0.50	0.59	0.88	0.87	0.88
Kenya	0.23	0.27	0.21	0.22	0.20
Lesotho	0.36	0.39	0.39	0.28	0.28
Liberia	0.80	0.56	0.84	0.41	0.33
Madagascar	0.23	0.26	0.23	0.18	0.30
Malawi	0.66	0.60	0.56	0.53	0.41
Mali	0.72	0.61	0.58	0.65	0.74
Mauritania	0.53	0.48	0.56	0.46	0.36
Mauritius	0.36	0.36	0.28	0.25	0.20
Namibia	0.34	0.32	0.30	0.22	0.27
Niger	0.40	0.59	0.33	0.38	0.30
Nigeria	0.85	0.92	0.88	0.80	0.73
Rwanda	0.60	0.39	0.44	0.43	0.33
São Tomé and Príncipe	0.49	0.36	0.55	0.38	0.59
Sénégal	0.22	0.24	0.21	0.26	0.22
Seychelles	0.46	0.57	0.45	0.49	0.51
Sierra Leone	0.28	0.46	0.47	0.24	0.66
South Africa	0.11	0.14	0.14	0.14	0.12
Togo	0.36	0.29	0.21	0.22	0.20
Uganda	0.70	0.38	0.27	0.19	0.17
Zambia	0.75	0.45	0.52	0.67	0.66

Source: UNCTADstat (2017).

Consequently, volatility effects of external shocks can be eased through exports diversification. Moreover, transition and developing economies are idiosyncratic by weak financial system compared to developed economies which have reliable hedging instrument against volatility. Thus, developing economies are encountering severe economic crises from external shocks more than advanced economies (Jansen et al., 2009). Conversely, sectorial diversifications improve financial system development and lessen uncertainty in the economy.

Empirical literature reports a mixed result as well, some literature evinced a positive significant relationship between foreign trade and economic growth volatility, particularly in emerging economies (Easterly and Kraay, 2000; Easterly et al., 2000; Di Giovanni and Levchenko, 2009). Other studies report insignificant relationship or even a negative effect of trade openness on macroeconomic volatility (Razin and Rose, 1994; and Karras, 2006). It is general believed that openness to foreign trade renders a country vulnerable to external shocks leading to growth volatility.

The relationship between foreign trade and economic growth is very glaring, but several empirical literatures on trade and growth relationship was investigated in the absence of volatility. With the presence of globalization and integration of countries in the last few decades, there is consensus that trade flows among countries has triggered domestic growth (Klundert and Kolnaar, 2007). Nonetheless, it is also argued that foreign trade can increase countries vulnerability to external shocks that could lead to high exchange rate volatility and growth volatility. There are several

studies proposing that poor African countries' growth performance is attributed to frequent domestic macroeconomic instability in the last 30 years[2].

Therefore, to improve African countries growth performance through trade, there is need to identify the sources of economic volatility. Recent studies have revealed the importance of the association between volatility and growth (Martin and Rogers, 2000). The finding implies that policies and external shocks that affect volatility can have an impact on growth. Based on this consideration, the relationship between foreign trade and economic growth should not be examined independently from volatility; rather they should be investigated as a related phenomenon. Most empirical studies on foreign trade adopt a narrow approach, analyzing its impact on economic growth without considering whether long run economic growth is sustainable and consistent in the presence of volatility.

1.2 Problem Statement

Over the years, several studies have been developed to justify the poor trade performance of SSA countries. Svedberg (1990) opined that the poor trade performance of SSA countries is attributed to external causes such as low capacity of world primary commodity markets growth and dwindling terms of trade. Other studies believed that deterioration of domestic policies is responsible for poor trade performance such as over-value exchange rate, high taxes on exports, imports protection and institutional inefficiencies of the state in the region (Quarcoo, 1990; and N'geno, 1990). Moreover, as the debate on trade-growth nexus lingers, previours

[2] Collier and Gunning (1999) reveal a comprehensive literature analysing poor growth performance of Africa. Rodrik (1998); Sachs and Warner (1996) utilized regressions to investigate the determinants of growth in Africa and report long-run growth can be achieved through macroeconomic stability.

studies focuses on the effect of individual trade dimension on the relationship between foreign trade and economic growth. However, the effects of the four-trade dimensions (export, import, trade balance and total trade) on economic growth have not been empirically tested. This study seeks to examine the effect of foreign trade on economic growth in SSA countries using four-trade indicators. The use of heterogeneous dimension provides clear direction for policy masures and robustness.

The majority of SSA countries experienced a significant volatility in their exchange rates since the cessation of Breton wood agreement in 1970s and the wake of the global financial crisis. These have exerted considerable pressure on their currencies, which in turn negatively affected their trading activities and economic growth. Therefore, the investigation of the effect of exchange rate volatility on foreign trade has received a lot of attention in recent years, even though there are still mixed conclusions among scholars over the exact direction of the impact. Furthermore, despite the several empirical studies in the area, less attention has been given to SSA countries (Musila and Al-Zyoud, 2012). This study will act as another contribution to the long-lasting debate on exchange rate volatility and foreign trade using different dataset and econometric techniques.

The trade structure and production pattern of SSA countries substantially depend on primary commodities which prices are highly elastic making them exposed to external shocks. These exogenous economic shocks affect their terms of trade, therefore, hinder their economic growth performance. However, foreign trade is an indispensable part of economic growth and increase in foreign trade improves economic activities as well as increases volatility. Despite the clear links between trade

and growth, often the impact of trade on growth is investigated in the absence of volatility (Mahadevan and Suardi, 2010).

Nonetheless, the performance of economic growth in Africa has been impressive in recent times relative to other continents in the world. However, in the year 2015 economic growth in Africa fell by more than half from 3.7 % to 1.7 % in 2016 among weak global economic and financial crises, fall in oil price and commodity prices, and adverse weather conditions. These problems in 2016 also contributed significantly for weakening economic growth in Africa's biggest economies such as South Africa 0.6 %, Nigeria -1.6 % and Angola 0.8 % (United Nations, 2017). Therefore, it is fundamental to determine the growth gains of trade and if such gains prevail in the presence of volatility (exchange rate volatility and economic growth volatility).

Furthermore, foreign trade is becoming a vital channel of external shocks transmission in the world economy, particularly in developing economies, SSA countries inclusive. These economies usually have high exports concentration mostly volatile commodities, which exposes the countries to more uncertainties. Such high concentration imperils the countries susceptible to exogenous shocks and therefore causes greater economic growth volatility. Similarly, economic growth volatility could be related with the country's lack of comparative advantage in production of specific primary commodities. Therefore, variation of prices of these commodities in global market inherently translates into lower or higher economic growth volatility.

Moreover, SSA countries has been characterized by heavy reliance on mostly unprocessed, low value-added primary commodities, weak monetary and fiscal plans, poorly developed financial markets and high export concentration index (overwhelming dependence on one or two export commodities) which underlie the economic decline of the region. Consequently, they are confronting severe economic consequences from external shocks than advanced economies.

However, despite the impact of foreign trade on economic growth volatility, there is paucity of research in the area (Balavac and Pugh, 2016; and Down, 2007). Since the effects of foreign trade on growth volatility differ significantly due to country specific feature, an empirical investigation needs to be carried out in developing countries particularly SSA countries. Moreover, there are several studies proposing that weak growth performance in African countries is attributed to frequent macroeconomic instability in the last 30 years such as Rodrik (1988), Ramey and Ramey (1995), Sachs and Warner (1996). Therefore, to achieve full growth gains from trade in SSA countries, there is need to identify the sources of economic volatility. Despite the clear link between trade, growth and volatility, previous literature ignored trade-growth relationship in the presence of volatility.

Finally, previous studies utilize first-generation panel data estimation which is modelled on cross-sectional independency hypothesis. Given the current wave of globalization and economic integration in the world and the fact that this study is on foreign trade such hypothesis is unrealistic, thus the findings of previous studies are rarely reliable for policy formulation.

1.3 Research Questions

i. Is there any relationship between foreign trade and economic growth in sub-Saharan African countries?

ii. To what extent does exchange rate volatility influences foreign trade in sub-Saharan African countries?

iii. Does the effect of foreign trade on economic growth volatility vary with the degree of export concentration in sub-Saharan African countries?

1.4 Objectives of the Study

The main objective of this study is to examine the effects foreign trade, and volatility of exchange rate on economic growth in selected 40 sub-Saharan African countries. Specifically, the study intends:

i. To examine the relationship between foreign trade and economic growth in sub-Saharan African countries.

ii. To analyse the impact of exchange rate volatility on foreign trade in sub-Saharan African countries.

iii. To evaluate whether the effect of foreign trade on economic growth volatility vary with the degree of export concentration in sub-Saharan African countries.

1.5 Significance of the Study

The relationship between foreign trade and economic growth is a significant issue in international economics. The core findings from the literature showed that internationally active countries tend to be more productive than countries which only produced for domestic market. Most of the empirical studies have proved evidence of