FREE TRADE DYNAMICS AND EXPORT-IMPORT COMPETITIVENESS IN ENGLISH SPEAKING WEST AFRICAN COUNTRIES (ESWACS)

UZOMBA, PETER CHIKA
Department of Economics, Federal University Lokoja, Kogi State, Nigeria
uzombapc@gmail.com / puzomba@yahoo.com / peter.uzomba@fulokoja.edu.ng
+234803-275-5065

ABSTRACT
The dwindling performance of African countries on the global competitiveness scale has remained an issue of concern; even when the countries take part in international trade. This concern is heightened by the recent 2019 global competitiveness index report where none of the African countries is in the top 100 countries. Bothered by this, the study aims at examining free trade dynamics and export-import competitiveness in ESWACs (Nigeria, Ghana, Gambia, Liberia and Sierra Leone). Specifically, its aim is to determine the impact of trade openness (TROP), terms of trade (TETR) and free trade benefits (FTRB) on export-import competitiveness (XMCO). Theoretically, the study relies on Ricardo-Heckscher-Ohlin, Global Strategic Rivalry and Porter's National Competitive Advantage theoretical framework and makes use of balanced panel data sourced on the variables from the five countries. Descriptive statistics, correlation, Im, Pesaran and Shin (2003) unit root, Panel-ARDL Bounds cointegration and Error Correction Mechanism, Fixed, Random and Hausman, Wald Unrestricted Coefficient tests, residual diagnostic and impulse tests are the analytical techniques used. The key finding is that TETR significantly impacts on XMCO as revealed by the Hausman test; while other explanatory variables do not. On the strength of the result, the study concludes that free trade has not made expected impact on export-import competitiveness in ESWACs. The study recommends that the governments of member countries of ESWACs should give more attention to trade regional blocs by investing massively on the real sector, so as to be able to contribute to economic growth - which will lead to higher degree of trade openness and better competitiveness in ESWACs.
Keywords: Free Trade, Trade Openness, Exports, Import, Competitiveness
JEL Classification: B27; F4; F6; F13; F14; F15; F30; F43; O5

1. INTRODUCTION

The increasing benefits of international trade from free trade, regional, continental and world integrations cannot be overemphasized. Such benefits are achieved through trade agreements. This is why economic cooperation has been, unarguably, identified as a key development strategy that has made emerging economies, especially those in the developing category, to account for an increasing share of world production of goods and services (Yaya & Miao, 2017). Hence, regional, continental and world trade negotiations are critical to nation's economic prosperity. This is because they spur economic growth, support good jobs at home (Saygili, Peters & Knebel, 2018); raise living standards, enhance efficiency of production, increase innovation, create common markets, increase opportunities for profitable domestic and foreign investments (Uzomba, Ajie & Gbosi, 2015), and heighten the need to mobilize unemployed resources and achievement of macroeconomic goals (Nwadike, Ani & Alamba, 2020).

These benefits increase overall trade performance through increase in exports and decrease in imports. More importantly, they increase the competitiveness of participating countries in international trade. For Jamea and Finco (2008), free trade serves as an excellent antimonopoly weapon that stimulates greater efficiency of domestic production of goods and services to meet global competition. Such weaponry projects the production possibility of a nation from inefficient point to efficient frontier (Salvatore, 1994; 2002); and represents a vent for surplus produced goods (Salvatore & Hatcher, 1991). In addition, benefits of free trade expand the size of the market (Cline, 2018), create opportunity for possible division of labour and economies of scale (Krugman, 2002), serve as a vehicle for transmission of new ideas and new technology (Reidel, 2019), create room for free movement of goods and factors of production and ensure the absence of discrimination in common economic region (Uzomba, Ajie & Gbosi, 2015).

In order to ensure countries have fair share of these benefits, the World Trade Organization (WTO) has designated countries into trade group known as free trade area. The essence is for the purpose of increasing global competitiveness through lowering world prices and enabling the region to break the shackles of monopoly in the course of negotiating and implementing trade agreements. These, no doubt have remained part of the reasons why free trade agreements are entered by countries. On this account, Onwuka and Udegbunam (2019) note that reaping such benefits led to the grouping and creation of Continental Free Trade Area (CFTA) in 2015. This offers the needed opportunity that motivated the United Nations Economic Commission for Africa (UNECA) and African Union (hereafter refers to AU) to broker an agreement that led to the creation of The African Continental Free Trade Area (AfCFTA); though yet to take off fully. This as reported by Onwuka and Udegbunam (2019) was targeted at achieving a formidable continental free-trade zone through export-import competitiveness with an estimated Gross Domestic Product (GDP) of USD$3.4 trillion, and becoming the largest in the world, since the inception of World Trade Organization (WTO), through sound performance of free trade dynamics such as trade openness, terms of trade and free trade benefit. Moreso, for the establishment of continental trade platform (that was chiefly done in consonance with Article 3 of the AfCFTA) to boost intra-African trade by 52% when taken off fully, fulfill the aspiration to create a single continental and liberalized market for goods and service.

Unfortunately, this projection may not come by any time soon as the free trade dynamics in the ESWACs have not performed as expected. This is not surprising because the indices of free trade measured in terms of trade openness, terms of trade and free trade benefits have not performed well. In other words, the ratio of total trade to gross domestic products (GDP) has been abysmal; the ratio of an index of a country's export prices to an index of its imports prices has remained below acceptable average; and investment in manufacturing sub-sector as a ratio of total expenditure in the region has continuously been dwelled. The poor performance of these free trade dynamics, otherwise indices, has made the ESWACs to remain a region with low export-import competitiveness index; therefore may not have made significant contributions for successful take off of AfCETA.

This situation is not unconnected with fact that the ESWACs are still export driven countries. This suggests that they have not reasonably benefited from the opportunities offered by free trade which has sparked deep concerns whether or not free trade impacts positively on external or export-import competitiveness in Africa. In reaction to this, panelists and researchers such as Rodriguez and Rodrik (2001), Mahmood (2004), Rahmaddi and Ichihashi (2012), Atoyebi (2012), Duru and Siyan (2019), Nwodo and Asogwa (2019) and Enu, Havi and Hagan (2013), have argued that free trade impacts positively on growth, as well as export-import competitiveness in developing countries.

Of important to note is that such positive impact between free trade and export-import competitiveness is not found in ESWACs. This unfortunately reveals that a great deal of effort to use free trade to catalyze exports-import synergy in the region seems not to be near in achieving sustainable linkage between trade and external competitiveness, especially in ESWACs (Nigeria, Ghana, Gambia, Liberia and Sierra Leone). No wander it is evident in the recent global competitiveness index report that none of ESWACs has ever been in the top 100 countries since 2008. In fact, in recent times; particularly in 2018 precisely, Ghana, Nigeria, Gambia, Liberia and Sierra Leone ranked 106th, 115th, 119th, 132ndand 134th, and in 2019, they ranked 111th, 116th, 114th, 124thand 130thpositions respectively. This pulls a string of concern because on the average, ESWACS have more than 200 export partners, upward 2,500 exporting products, and approximately 2 index of export market penetration (Global

Competitiveness Report, 2019). This unravels the fact that ESWACs have performed poorly in relation to its export-import competitiveness. Such performance could be attributed to the fact that the trade openness, terms of trade and free trade benefit as the dynamics of free trade have made no reasonable and substantial contributions to the economies of ESWACs.

This appalling performance of ESWACs in global competitiveness profile presents a very poor trade dossier for the African countries. In addition, it creates an eyebrow-raising scenario that sets a string of concern on why the ESWACs has overtime failed to perform reasonably well in terms of competitiveness ranking, even when the countries have engaged in free trade, howbeit. This situation informs the aim of this study to investigate the impact of free trade dynamics on export-import competitiveness in ESWACs from 1980 to 2019. To achieve this aim, the study is guided by these research questions: what is the impact of trade openness on export-imports competitiveness in ESWACs? To what extent have terms of trade impacted on export-imports competitiveness in ESWACs? Have investment in manufacturing sub-sector as a ratio of total expenditure (hereafter referred to as free trade benefits) impacted on export-imports competitiveness in ESWACs? Providing empirical answers to these questions forms the thrust of the study. The rest of the paper as patterns to literature review (theoretical and empirical reviews), methodology, presentation of empirical results and discussion, and concluding remarks are presented in sections 2, 3, 4, and 5 respectively.

2. LITERATURE REVIEW

2.1. Theoretical Reviews

The debate regarding the direction of the impact of trade on economic growth by numerous researchers has enriched the annals of economic literature, but remains inconclusive. Free trade policy direction anchors on the arguments that only through free trade, according to Ricardo theory of comparative advantages and Heckscher - Ohlin (H-O) theory, makes it possible for countries to achieve optimum use of natural resources in terms of maximizing welfare, both at national and international levels (Caffè, 2018; Boatto & De Francesco 2003; Salvatore, 2002). Another side of the divide, protectionist policy, however, argues that by looking through the lens of trade activities between poor and rich countries in relation with comparative advantages theory, it is obvious that those who benefit (rich countries) and those who suffer (poor countries) the costs of international trade are not the same, despite the admitted positive effects of free trade (Krugman, 2002; Wood, 1994).

This study anchors on Ricardo's theory of comparative advantages, Heckscher-Ohlin theory, Global Strategic Rivalry and Porter's National Competitive Advantage. The traditional theory of both classical political economy and neo-classical thoughts that particularly emanates from Ricardo's doctrine of comparative costs theory strongly asserts that free trade in goods between different regions is always to the advantage of each trading country. It goes ahead to argue that if one country is more efficient in everything- has a higher productivity all round - it pays for it to specialize in those things in which its comparative efficiency is greatest and to rely on the rest for supplies from the less efficient countries. This is because of its spillover effect on the welfare of the trading world as a whole.

Further, uses Heckscher-Ohlin theory which holds that nations tend to engage in international trade by exporting goods that require more inputs from a production factor (capital, land or labour) which they have in abundance and vice versa. On the other hand, they import goods that require more input from a production factor that is scarce; by so doing, equilibrium position in world price could be approached through prices of goods as well as the returns to production factors (Batra & Dhir, 2019). The argument herein is that free trade is advantageous as it gives ample opportunity for nations to specialize in production that needs less factor inputs. By doing so, specialization will lead to concentration of economic activities that will give rise to increase in the degree of trade openness, favourable terms of trade and more trade benefits – measured in terms of the manufacturing value added of each country (which comes through investment in manufacturing sub-sector). This suggests, summarily, that the best idealistic options for regions (like ESWACs) to benefit from free trade is to abide by the assumptions of the theories – which encourages the production of more exportable goods, leads to trade openness, brings about favourable terms of trade, produces more benefits for participating countries, leads to economic growth and spurs trade competitiveness, otherwise christened export-import or net export competitiveness.

Of importance to this study is the theory of Global Strategic Rivalry. It emerged in the 1980s based on the work of economists Paul Krugman and Kelvin Lancaster. The central thesis of the theory is on multinational corporations (MNCs). It argues that MNCs make efforts to gain a competitive advantage over competitive global firms in the same line of production. This is because any firm or economy that engages in the production of goods and services with global relevance and importance has the tendency to 'bump into' global competition (Nggada,Yusha'u & Ya'u, 2021). In this regard, for such firm or economy to prosper and make reasonable progress there is need for it to develop sustainable competitive advantages, which would serve as a critical way of breaking the bias to entry for their new industry and product.

Another important theory is the Porter's National Competitive Advantage Theory. This theory was propounded by Michael Porter in 1990. It states that a nation's competitiveness in trade (whether domestic or external) depends on the capacity of the industry or nation to innovate and upgrade – which enables them to take more active part in the competitiveness within the community of international trade. By expounding on the theory, Porter identified four determinants that can link free trade dynamics (trade openness, terms of trade and benefits of trade) to external competitiveness. The determinants are local market resources and capabilities (akin to trade openness), local market demand conditions (likened to terms of trade), local suppliers and complementary industries (benefits of free trade), and local firm (manufacturing) characteristics.

In line with the theoretical dispositions,Yaya and Miao (2017) argue that for a country's trade openness to significantly impact on economic growth there is need for such a country to device means of being ahead of others. And for those intending to break into the industry or market, having a competitive advantage edge would serve as advantage for being ahead of other nations in the international trade arena (David, Akighor & Emmanuel, 2020). Also serve as better advantage for intending nations and industries to gain entry into the space of international trade. From the foregoing, it is evident that free trade dynamics stand as natural factor endowment that can guarantee export-import competiveness for a given country. This is predicated on the assumption that there are inherent advantages in specialization which arises from the existence of economies of scale.

Berkum and van Meijl (1998) supporting the theoretical ideology argue that free trade is the best policy from a world point of view and can be beneficial if a country can influence the world price, improve its terms of trade at the expense of its trading partners. The implication of this assertion is that free trade can be used to correct certain distortions within an economy through revenue that could be generated from domestic prices and create additional welfare gain through production of certain goods. Besides, it can speed up country's economic growth and social progress which are by-products of international trade. However, these benefits seem to be lacking in most of the African countries, especially the ESWACs. This, Ashkah and Wanogho (2021) say undoubtedly has necessitated the establishment of regional trade blocs like the Continental Free Trade Area (CFTA), the United Nations Economic Commission for Africa (UNECA) and the most recent one – the African Continental Free Trade Area (AfCFTA), with expectation of reaping the benefits of free trade. It is on this assumption that this study relies on the propositions of Ricardo theory of comparative advantages, Heckscher - Ohlin (H-O) theory, Global Strategic Rivalry theory and Porter's National Competitive Advantage theory. Arising from this, the study adopts a theoretical framework that argues that free trade leads to economic benefits and social progress; which further leads to export-import competitiveness. This is cast thus: Free Trade →›››››→ Economic Benefits →›››››→ Export-Import Competitiveness.

2.2. Empirical Review

Most scholars have agreed that there is relationship between free trade and economic growth. However, certain scholars have differed on the direction of the causality between free trade and economic growth and export competitiveness. On this basis, this study takes a journey into reviewing related empirical studies in relation to the study specific objectives. By reviewing empirical literature in relation to the first objective of the study, Bahami-Oskooee (1991) and Boggio and Tirelli (2019) report that trade openness has not served as an engine of growth for today's developing countries as it did for the advanced countries. However, they submit that there are numerous vital sources by which trade openness contributes to economic growth and development even in today's changed international conditions. Salvatore (1994; 2002) reports that trade openness can lead to full utilization of underemployed domestic resources; expands the size of the market (Salvatore & Hatcher, 1991), makes possible division of labour and economies of scale, serves as a vehicle for transmission of new ideas, new technology, and new managerial and other skills (Edame & Eyang, 2013), stimulates and facilitates international flow of capital (Oyovwi & Eshenake, 2013), and ultimately leads to higher external or export-import competitiveness (Ogbuabor, Agu, Odo & Nchega, 2017).

Merale, Vehapia and Mihail (2015) examine the effects of trade openness on economic growth of South East European (SEE) countries with 16-year panel data of 10 SEE countries over the period 1996 to 2012 using system GMM. The results of the study reveal that the positive effects of trade openness on economic growth are conditioned by the initial income per capita and other explanatory variables. The result suggests that trade openness is more beneficial to countries with higher level of initial income per capita FDI and gross fixed capital formation. Yaya and Miao (2017) uses conducts Autoregressive Distributed Lag bounds test to cointegration and the Toda and Yamamoto Granger causality tests on capital formation, labour and trade openness to assess the impact of trade openness on economic growth in Cote d'Ivoire over the period, 1965–2014. The study concludes that trade openness has positive effects on economic growth both in the short and long run. Furthermore, positive and strong complementary relationship exists between trade openness and capital formation in promoting economic growth.

Silajdzic and Mehic (2018) conduct an empirical study on trade openness and economic growth. The study argues that the relationship between trade openness and economic growth is ambiguous from both theoretical and empirical points of view. The theoretical propositions reveal that while trade openness leads to a greater economic efficiency, market imperfections, and differences in technology and endowments have adverse effect on trade liberalization. In line with this proposition, the relationship between trade openness and growth predominantly depends on trade specification (Chang & Ying, 2008).Trade openness leads to increases in income but does not cause economic growth in the long run (Afzal & Hussain, 2010; Anumudu, Ugwuanyi, Asogwa & Ogbuakanne, 2018). The same result has been supported by Brunner and Cooke (2010) who argue that trade openness has a significant positive impact on income but not on economic growth.

Nwadikie, Ani and Alamba (2020) carry out a study on impact of trade openness on Nigerian economic from 1970 to 2011 using econometric method of analysis. The results of the study reveals that trade openness has positive significant impact on Nigeria's economic growth; while, GDP responds to the shock of trade openness value as a proxy of total import and total export divided by GDP. Thus, the co-integration results indicate that there exists long-run relationship among the variables used. Cosmas (2019) takes an empirical study on the determinants of trade openness in the African economies. In doing this, the study utilizes equation that is amenable to panel data approach for 49 African countries covering a span of 1989 to 2009. According to the study, the leading factors that boost trade openness in the African countries are found to be the population size, the income per capita and economic location.

In line with the other objectives, the study of Syed and Abdul (2011) documents that Arize (1996) investigates the effect of terms of trade on balance of trade for 16 countries between 1973 and 1992. The study reports that for the most of the countries, positive long run equilibrium relationship exists between terms of trade and trade balance. Mendoza (1997) cited in Syed and Abdul (2011) reports positive relationship between rate of change of terms of trade and economic growth. Bleaney and Greenaway (2001) as reported by Syed and Abdul (2011) investigates the impact of terms of trade, volatility and real exchange rate on investment and growth for a panel of 14 Sub-Saharan African countries using annual data from 1980 to 1995. Conclusively, the study upholds that those countries heavily depend on exports of primary commodities.

Tsen (2009) empirically examine the long and short run impact of investment in manufacturing and terms of trade on trade balance in three Asian Economies; Japan, Hong Kong and Singapore by applying cointegration and error correction modeling approaches. From the analysis, the cointegration results suggest that investment in manufacturing, terms of trade and trade balance are cointegrated. In other words, they maintain long run relationship; and the cointegrating vectors have been normalized by trade balance and terms of trade. The study further argues that for Japan, an increase in foreign demand will cause a decrease in trade balance, even as; increaseindomesticdemandwillinitiateanincreaseintradebalance.Conversely, for Singapore and Hong Kong, an increase in foreign demand will cause an increase in trade balance, at the same time an increase in domestic demand will lead to a decrease in trade balance. Syed and Abdul (2011) examine the effects of terms of trade and its volatility on economic growth for a sample of 94 developed and developing countries, using 5 year average annual data from 2004 to 2008. The cross country ordinary least square estimation results indicate positive effect of terms of trade on economic growth. Furthermore, volatility of terms of trade has positive effect on economic growth (Mohammed, Idris & Shehu, 2021).

Evidence abounds from some studies carried out to underscore the determinants of export competitiveness. Mahmood (2004) using RCA Balassa index to calculate comparative advantage for the non-agricultural sector of Pakistan, reports that terms of trade, openness of trade and sundry benefits of free trade account for favourable export competitiveness in Pakistan. Rahmaddi and Ichihashi (2012) reacting to a similar subject matter investigate competitiveness of manufacturing exports and export's structure for Indonesian economy using RCA measure. Their study concludes that export performance of Indonesia deteriorated due to restricted free trade within the region. A study by Amador and Cabral (2008) using constant market share analyzes Portuguese economy for the time period, 1968-2006, explains the results of a market share of Portugal to be favourable on the strength of free trade.

Umme, Shamim and Munshi (2012) conduct a research with the objective to assess the impact of trade liberalization on Bangladesh economy between the periods 1980 to 2010. They utilize Ordinary Least Square (OLS) technique as methodology for empirical findings. The analysis clearly indicates that GDP growth increased consequent to liberalization. Trade liberalization does not seem to have affected inflation in the economy. The quantitative analysis also suggests that greater openness has had a favourable effect on economic development. Both real export and imports have increased with greater openness. Liberalization policy certainly improves export of the country which eventually leads higher economic growth after 1990s.

A glossary look at economic literature points to the fact that empirical studies conducted across countries and continents have supported the postulations that free trade can serve as a catalyst for economic growth. This suggests that the dynamics of free trade have the required potentials to stimulated economic growth that will guarantee export-import competitiveness. Nevertheless, the reports narrow trade openness as the only booster of exports and economic growth; without considering exports plus imports as percentage of gross domestic products. Hence, neglecting the principal components of free trade dynamics such as free trade benefits and terms of trade; and how they impact on external or export-import competitiveness within the regional trade bloc known as ESWACs. Additionally, it is evident that the argument on the direction of impact of free trade on economic growth in African countries is inconclusive. Consequently, it becomes pertinent to examine the impact of free trade dynamics on export-import competitiveness in ESWACs with a view to providing empirical basis that would justify the commencement of AfCFTA in earnest. This identified gap forms the research motivation of the study.

3. METHODOLOGY

In order to examine the impact of free trade dynamics on export-import competitiveness in ESWACs over the years, this study follows a theoretical postulation that free trade is a key that unlocks economic benefits and leads to high export-import competitiveness. As a result, this study adopts this theoretical framework: Free Trade Dynamics ↔«»«»«»↔ Economic Benefits ↔«»«»«»↔ Export-Import Competitiveness. On this premise, the study therefore follows Yaya and Miao (2017), Berkum and van Meijl (1998), Edame and Eyang (2013), Merale, Vehapia and Mihail (2015); as well as Silajdzic and Mehic (2018) Nwadike, Ani and Alamba (2020) and presents empirical evidence using ARDL technique which estimates well in cross sectional dynamic studies by accounting for bi-causal impacts among economic variables, as specified below:

Model Specification

The study adopts *ex-post facto* research design following the theoretical propositions that free trade leads to economic growth and increases trade competitiveness. The study therefore regresses free trade dynamics on export-import competitiveness in ESWACs with a view to finding the direction of the impact. The study uses export-import competitiveness (XMCO) measured by the differentials of export competitiveness and import competitiveness. Export Competitiveness measures a country's manufactured export volumes in relation to the country's export price (or purchasing power parity) and that of its competitors in their common market. Import Competitiveness measures manufacturing import volumes in relation to producer's market prices and that of their competitors within a common market (Mahmood, 2004; Rahmaddi & Ichihashi, 2012).

Free trade dynamics (FRTD) proxied as trade openness, terms of trade and free trade benefits are employed. Trade openness (TROP) is the ratio of total trade to gross domestic products (GDP). It is measured by summing total exports with total imports and divided by GDP (Cosmas, 2019; Nwadike, 2020).Terms of trade (TETR) is the ratio of an index of a country's export prices to an index of its imports prices, multiply by 100. It measures the percentage ratio of an index of a country's export prices to an index of its imports prices (Syed & Abdul, 2011; Tsen, 2009). Free trade benefits (FTRB) operationalised as the investment in manufacturing sub-sector as a ratio of total expenditure. It is measured as the manufacturing value added of each country (Umme, Shamim & Munshi, 2012).

Proceeding from the above, the specification and estimation of study equations rely on the implicit assumption that export-import competitiveness depends on free trade dynamics (trade openness, terms of trade and free trade benefits) within a region; and vice versa. On this basis, the econometric Panel-ADRL equations are specified starting with the functional relationship cast below:

$$XMCO_{it} = f(FRTD_{it}) \quad (1)$$

Equation 1 argues that export-import competitiveness depends on free trade; because free trade is regarded as the lubricant of international trade (Yaya & Miao, 2017). On the other hand, if a country has high export-import competitiveness through increase in the number of trading partners, market share and size, as well as quality and quantity of exporting goods and services, such a country would be encouraged to go into more trade agreements (Umme, Shamim & Munshi, 2012; Nwadikie, Ani & Alamba, 2020). In most cases, changes in one economic variable directly or indirectly affect the behaviour of other economic variables beyond the time space (Pesaran & Shin, 1998; Pesaran, Shin & Smith, 2001; Priya, 2018). Such change may not reflect or show immediately, but distributes itself over future periods by relying on the previous period effect. To account for this dynamics and capture inherent traits in variables that can affect one another, ARDL method is adjudged relatively better to address the distributive lag problem more efficiently than other methods; such as conventional ordinary least squares. For this reason, the study utilizes balanced panel-ARDL approach with five countries and data from 1980 to 2019, and specifies the econometric ARDL natural lag model as follows:

$$\Delta In(XMCO)_{1itn} = \beta_{0(it)n}+\beta_{1it}In(XMCO)_{t-1itn}+\beta_2 ln(TROP)_{t-1itn} + \beta_3 In(TETR)_{t-1itn} + \beta_4 ln(FTRB)_{t-1itn} + \sum_{i=1}^{p}\theta_{1i(it)}\Delta(XMCO)_{t-1(it)n} + \sum_{i=1}^{r}\theta_{2i(it)}\Delta(TROP)_{t-0(it)n} + \sum_{i=1}^{s}\theta_{3i(it)}\Delta(TETR)_{t-0(it)n} + \sum_{i=1}^{t}\theta_{4i(it)}\Delta(FTRB)_{t-1(it)n}+ \mu_{t-1it} \quad \text{--(2)}$$

$$\Delta In(TROP)_{1itn} = \beta_{0(it)n} + \beta_{1it}In(TROP)_{t-1itn} +\beta_2 ln(XMCO)_{t-1itn} + \beta_3 In(TETR)_{t-1itn} + \beta_4 ln(FTRB)_{t-1itn} + \sum_{i=1}^{p}\theta_{1i(it)}\Delta(TROP)_{t-1(it)n} + \sum_{i=1}^{r}\theta_{2i(it)}\Delta(XMCO)_{t-0(it)n} + \sum_{i=1}^{s}\theta_{3i(it)}\Delta(TETR)_{t-0(it)n} +\sum_{i=1}^{t}\theta_{4i(it)}\Delta(FTRB)_{t(it)n} + \mu_{t-1it} \; - \quad \text{--(3)}$$

$$\Delta In(TETR)_{1itn} = \beta_{0(it)n} +\beta_{1it}In(TETR)_{t-1itn}+\beta_2 ln(TROP)_{t-1itn}+ \beta_3 In(XMCO)_{t-1itn}+ \beta_4 ln(FTRB)_{t-1itn} + \sum_{i=1}^{p}\theta_{1i(it)}\Delta(TETR)_{t-1(it)n} + \sum_{i=1}^{r}\theta_{2i(it)}\Delta(TROP)_{t-0(it)n} + \sum_{i=1}^{s}\theta_{3i(it)}\Delta(XMCO)_{t-0(it)n} + \sum_{i=1}^{t}\theta_{4i(it)}\Delta(FTRB)_{t-1(it)n} + \mu_{t-1it} \quad \text{--(4)}$$

$$\Delta In(FTRB)_{1itn} = \beta_{0(it)n} +\beta_{1it}In(FTRB)_{t-1itn}+\beta_2 ln(TETR)_{t-1itn}+ \beta_3 In(TROP)_{t-1itn}+ \beta_4 ln(XMCO)_{t-1itn} + \sum_{i=1}^{p}\theta_{1i(it)}\Delta(FTRB)_{t-1(it)n}+ \sum_{i=1}^{r}\theta_{2i(it)}\Delta(TETR)_{t-0(it)n}+ \sum_{i=1}^{s}\theta_{3i(it)}\Delta(TROP)_{t-0(it)n}+\sum_{i=1}^{t}\theta_{4i(it)}\Delta(XMCO)_{t-1(it)n}+\mu_{t-1it} \quad \text{--(5)}$$

Where:
XMCO, TROP, TETR and FTRB retain their previous descriptions; β_{0it} is the slope of the panel-ARDL regression line, as well as the constant (trend deterministic) for the equation; β_{1it}–$\beta_{4it}$and θ_{1it}–θ_{5it} are coefficients of the lagged parameters to be estimated (assumed to be constant across time and space (*t and i*) – called scalars; Δ = denotes the first difference operator; ln = natural log (introduced in order to make the variables be on a common scale, reduce extrema features, get rid of exponentials and curtail the effects of outliers on the models). This is necessary because the variables do not have the same scale of data).

Further, $XMCO'_{1it}$,$TROP'_{1it}$,$TETR'_{1it}$, and$FTRB'_{1it}$are vector for the panel data equations 2 - 5; $(XMCO'_{t})'_{1it}$,$(TROP')'_{2it}$,$(TETR')'_{3it}$, and $(INPR'_{t})'_{4it}$, are the panel data of the independent variables allowed to be purely *1(0), 1(I)* or cointegraeted, but must not be *I(2)*; p = denotes maximum lags for dependent variables; r, s, and t are maximum lags associated with the exogenous variables; 1 – t = is lag operator; t = represents time series dimensions (40 years: 1980 - 2019), i = represents the 5 cross sectional dimensions (within this domain, the member countries of ESWACs are coded thus: Nigeria = 1; Ghana = 2; Gambia, The = 3; Liberia = 4; and Sierra Leone = 5); n = denotes 200 total period of observation (40 x 5); μ_{it}= vector of the uncorrelated random error term with zero mean and constant variance as prescribed by ordinary least squares assumption.
The apriori expectation is specified thus: $\beta_1> 0$; $\beta_2> 0$; $\beta_3> 0$.
Panel-ARDL error correction mechanism models are specified as follows:

$$\Delta(LNXMCO)_{itn} = \Psi_0 + \sum_{i=1}^{p} \Psi_{1it}\Delta(LNXMCO)_{t-1itn} + \sum_{i=0}^{r} \Psi_{2it}\Delta(LNTROP)_{t-1itn} + \sum_{i=0}^{s} \Psi_{3it}\Delta(LNTETR)_{t-1itn} + \sum_{i=0}^{t} \Psi_{4it}\Delta(LNFTRB)_{t-1itn} + þ_1ECT_{t-1it} + \varepsilon_{t-1it} \quad (6)$$

$$\Delta(LNTROP)_{itn} = \Psi_0 + \sum_{i=1}^{p} \Psi_{1it}\Delta(LNTROP)_{t-1itn} + \sum_{i=0}^{r} \Psi_{2it}\Delta(LNXMCO)_{t-1itn} + \sum_{i=0}^{s} \Psi_{3it}\Delta(LNTETR)_{t-1itn} + \sum_{i=0}^{t} \Psi_{4it}\Delta(LNFTRB)_{t-1itn} + þ_1ECT_{t-1it} + \varepsilon_{t-1it} \quad (7)$$

$$\Delta(LNTETR)_{itn} = \Psi_0 + \sum_{i=1}^{p} \Psi_{1it}\Delta(LNTETR)_{t-1itn} + \sum_{i=0}^{r} \Psi_{2it}\Delta(LNTROP)_{t-1itn} + \sum_{i=0}^{s} \Psi_{3it}\Delta(LNXMCO)_{t-1itn} + \sum_{i=0}^{t} \Psi_{4it}\Delta(LNFTRB)_{t-1itn} + þ_1ECT_{t-1it} + \varepsilon_{t-1it} \quad (8)$$

$$\Delta(LNFTRB)_{itn} = \Psi_0 + \sum_{i=1}^{p} \Psi_{1it}\Delta(LNFTRB)_{t-1itn} + \sum_{i=0}^{r} \Psi_{2it}\Delta(LNTROP)_{t-1itn} + \sum_{i=0}^{s} \Psi_{3it}\Delta(LNXMCO)_{t-1itn} + \sum_{i=0}^{t} \Psi_{4it}\Delta(LNTETR)_{t-1itn} + þ_1ECT_{t-1it} + \varepsilon_{t-1it} \quad (9)$$

Model Estimation Techniques and Justifications

Descriptive statistics, correlation matrix and econometric methods are used as analytical techniques. Specifically, Im, Pesaran and Shin (2003) unit root test is conducted to ensure that none of the variables is integrated of order 2 [*I(2]*; Panel-ARDL Bounds cointegration, Panel-ARDL optimal lag order selection criteria, Panel-ARDL Error Correction Mechanism, Fixed, Random and Hausman, Wald Unrestricted Coefficient, and lastly, Breusch-Godfrey Serial Correlation and Heteroscedasticity Residual Diagnostic tests are conducted to examine the impact of free trade dynamics and export-import competitiveness in ESWACs. The estimation is done in order to find if or otherwise, there is a long run equilibrium relationships among the variables of study (Pesaran & Shin, 1999; Pesaran, 1996), determine the speed of adjustment for the correction of the previous errors in the subsequent periods in the models (Pesaran, *et.al.,* 1997) and for robustness checks.

4. PRESENTATION, INTERPRETATION AND DISCUSSION OF RESULTS

4.1. Presentation of ESWACs' Balanced Panel Data Descriptive Statistics Results

Table 4.1: Results of ESWACs' Balanced Panel Data Descriptive Statistics

	C_ID	C_Name	LNXMCO	LNTROP	LNTETR	LNFTRB
Mean	3.000000	ESWACs	21.03281	-0.342569	5.622826	19.34920
Median	3.000000	ESWACs	20.84484	-0.478040	5.278050	18.00000
Maximum	5.000000	ESWACs	25.28926	3.586847	9.888900	25.00000
Minimum	1.000000	ESWACs	15.76403	-3.218880	3.849300	4.065004
Std. Dev.	1.417762	ESWACs	1.827929	1.038652	1.197612	2.859868
Skewness	-1.06E-16	ESWACs	0.506884	1.552685	1.403482	-0.699196
Kurtosis	1.700000	ESWACs	2.777903	6.793947	4.752804	7.996094
Jarque-Bera	14.08333	ESWACs	10.68078	199.3097	91.26145	224.3038
Probability	0.000875	ESWACs ESWACs	0.004794	0.000000	0.000000	0.000000
Sum	600.0000	ESWACs	5005.809	-68.17128	1124.565	3869.839
Sum Sq. Dev.	400.0000	ESWACs	791.8940	213.6018	285.4208	1627.591
Observations	200	0	238	199	200	200

Source: An Extract from ESWACs' Panel Data Descriptive Statistics Result Output, 2022.

This section presents the balanced panel descriptive statistical analysis of free trade dynamics and export-import competitiveness in ESWACs. The results in table 4.1 depict that LNXMCO, LNTROP, LNTETR and LNFTRB have mean values of 21.03281, -0.342569, 5.622826 and 19.34920 respectively. The maximum and minimum values of LNXMCO are 25.28926 and 15.76403, while that of LNTROP are 3.586847 and -3.218880, LNTETR has 9.888900 and 3.849300; and LNFTRB has 25.00000 and 4.065004 as maximum and minimum values respectively. The distribution shows that the series do not deviate more than the normal distribution as the values range between -0.699196 and 1.552685; 2.777903 and 7.996094 for skewdness and kurtosis respectively. This apparently asserts that the assumption that all the variables are normally distributed be cannot be rejected since all the probability values are less than the Jarque-Bera values at 0.05 chosen alpha.

4.2. Presentation of ESWACs' Balanced Panel Data Correlation Matrix Test Results

Table 4.2: Results of ESWACs' Balanced Panel Data Correlation Matrix

	LNXMCO	LNTROP	LNTETR	LNFTRB
LNXMCO	1	0.02261	0.3872	0.0115
LNTROP	0.02261	1	-0.1556	0.2883
LNTETR	0.3872	-0.1556	1	-0.2310
LNFTRB	0.0115	0.2883	-0.2310	1

Source: An Extract from ESWACs' Panel Data Correlation Matrix Result Output, 2022.

Having ascertained that the series are normally distributed, correlation matrix test is conducted and the result reported in table 4.2. It can be discerned from the result that LNXMCO has correlation values of 0.02261, 0.3872 and 0.0115 with LNTROP, LNTETR and LNFTRB respectively. This implies that export-import competitiveness is weakly but positively correlated with other variables. Within the free trade dynamics, it is evidenced that LNTROP has values of -0.1556 and 0.2883 for LNTETR and LNFTRB respectively. This points to the fact that LNTROP is weakly and negatively correlated with LNTETR, but maintains a weak and positive correlation with LNFTRB. Still within the same domain, it is further revealed that LNTETR and LNFTRB are weakly and negatively correlated to the value of -0.2310. In all, within the free trade dynamics, positive and negative correlations are established, while the variables are found to be in positive correlation with export-import competitiveness.

4.3. Presentation of ESWACs' Panel Im, Pesaran and Shin (IPS) Unit Root Stationary Test Results

Table 4.3: Result of ESWACs' Panel Im, Pesaran and Shin (IPS) Unit Root Stationary Test

Variables	IPS Stat. at Levels	1% Crit. Value	5% Crit. Value	IPS Stat. at First Diff.	1% Crit. Value	5% Crit. Value	Order of Integration
InXMCO	0.9861	-3.679322	- 2.967767	-5.1934*	- 3.6892	-2.9719	I(1)
InTROP	0.9048	-3.679322	- 2.967767	- 10.5442*	- 3.6892	2.9719	I(0)
InTETR	1.752268	-3.679322	- 2.967767	-3.9029*	- 3.6892	- 2.97193	I(1)
InFTRB	- 1.398938	-3.679322	- 2.967767	-1.4040*	- 3.6892	- 2.97193	I(0)

Note: *(**) indicates at (5%) Significant Levels

Source: An Extract from ESWACs' Panel Data IPS Unit Root Test Result, 2022.

To ascertain the level of stationarity and order of integration, unit root stationarity test was conducted akin Im, Pesaran and Shin (2003) and reported in table 4.3. The estimator (IPS referred hereafter) has a null hypothesis that all the panels contain a unit root. The result reveals that at 5% alpha level and 95% confidence interval the null hypothesis is rejected; hence the series are stationary at first difference.

On this basis, there is a strong evidence that all the series are integrated of orders zero [I(0)] and one [I(1)]; as the IPS statistical values at level and first difference are lower than the critical values at 5 per cent; except for lnTROP and lnFTRB. This suggests the existence of heterogeneous structural breaks in both the intercept and slope of each cross-section unit which allows for breaks in the slope. This enables the avoidance of dependency on the nuisance parameters that identifies the size and location of breaks. It validates the reliability of the data set for further Panel-ARDL analysis as conducted and reported in subsequent tables. The result conforms to the guideline established by Pesaran, *et. al.,* (2001), that for the avoidance of the collapse of Panel-ARDL testing approach, no series in the study must be integrated of order two [I(2)]. However, the dependent variable must be integrated of order one (I(1), while the independent variable(s) may be integrated of order zero or one [I(0)] and[I(1)].

4.4. Presentation of ESWACs' Panel-ARDL Bound Test for Long Run Equilibrium

On the strength that all the series in the study have proven to be reliable and credible to be used to conduct further analysis akin ARDL testing approach; the study proceeds to conduct Panel ARDL Bounds cointegration test and reports the result in table 4.4.

Table 4.4: Result of ESWACs' Panel ARDL Bound Test for Long Run Equilibrium

Equations	**F-Statistical Value**	**Critical Value Bounds at 5%**		**Decision on Cointegra tion**	**Decision on Next Action**
		I(0) Bound	**I(1) Bound**		
LNXMCO	7.511921*	3.23	4.35	Reject H_0	Estimate Panel-ARDL ECM
LNTROP	7.703391*	3.23	4.35	Reject H_0	Estimate Panel-ARDL ECM
LNTETR	5.108060*	3.23	4.35	Reject H_0	Estimate Panel-ARDL ECM
LNFTRB	10.03466*	3.23	4.35	Reject H_0	Estimate Panel-ARDL ECM

Note: *ARDL =Autoregressive Distributive Lag; ECM = Error Correction Model. * Indicates Cointegrating Equations*

H_o: No level or long run relationship or cointegration exists .Decision Rule: If F-stat < I(0)and I(1) Bounds critical values, $H_o$cannot be rejected or dropped; but If F-stat > I(0)and I(1) Bounds critical values, $H_o$can be rejected.

Source: *An Extract from ESWACs' Panel ARDL Bound Test Result, 2022.*

From table 4.4, it is evidenced that four equations were modeled and tested for free trade dynamics and export-import competitiveness in ESWACs. The four equations (LNXMCO, LNTROP, LNTETR and LNFTRB equations) report F-statistical values of 7.511921, 7.703391, 5.108060 and 10.03466 respectively. The values are greater than critical values of 3.23 and 4.35 for "I(0)" Bounds and "I(1)" Bounds respectively, at 5% level of significance. This inspires the rejection of the null hypothesis of no long run relationship or cointegration, and acceptance of the alternative hypothesis. As a result, there is a long run relationship between free trade dynamics and export-import competitiveness in ESWACs. This result enables the conclusion that free trade dynamics impact on export-import competitiveness in ESWACs in the long-run. On the account of this, decision is taken to, exclusively, estimate and conduct panel-ARDL ECM test, without recourse to short run panel-ARDL, because all the model posses cointegrating equations. Before that, optimal lad order selection is done and reported in table 4.5, using these criteria: LR: Sequential Modified LR test Statistic (each test at 5% level); FPE: Final Prediction Error; AIC: Akaike Information Criterion; SC: Schwarz Information Criterion; HQ: Hannan-Quinn information Criterion.

4.5. Presentation of ESWACs' Panel-ARDL Optimal Lag Order Selection Criteria

Table 4.5: Result of ESWACs' Panel-ARDL Optimal Lag Order Selection Criteria

Endogenous variables: LNXMCO LNTROP LNTETR LNFTRB
Exogenous variables: C
Date: 02/26/22 Time: 14:28
Sample: 1 201
Included observations: 187

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1396.990	NA	37.80121	14.98385	15.05296	15.01185
1	-1086.209	604.9430	1.615512	11.83111	12.17668*	11.97114
2	-1055.576	58.31657*	1.381819*	11.67461*	12.29664	11.92666*
3	-1041.792	25.65264	1.415801	11.69831	12.59680	12.06237
4	-1031.261	19.14663	1.502764	11.75680	12.93175	12.23289

* indicates lag order selected by the criterion
LR: Sequential Modified LR test Statistic (each test at 5% level); FPE: Final Prediction Error; AIC: Akaike Information Criterion; SC: Schwarz Information Criterion; HQ: Hannan-Quinn information Criterion.

Source: Author's Computation, 2022.

Arising from table 4.5 – where all the models are found to be cointegrating; the conduction of panel-ARDL ECM for the equations becomes inherent. ARDL testing approach requires that lag order should be selected on the basis of certain criteria; LR, FPE, AIC, SC, and HQ using vector autoregressive (VAR) procedure. From the table, lag order selection process iteratively increases the lag length to 2; thus no improvement is seen afterward. This selection enables the determination of lag length used in the ARDL ECM test as reported below.

4.6. Presentation of ESWACs' Balanced Panel-ARDL ECM Test for Cointegrating Equations

Table 4.6: Result of ESWACs' Balanced Panel-ARDL ECM Test for Cointegrating Equations

Variables	**LNXMCO Equation**		**LNTROP Equation**		**LNTETR Equation**		**LNFTRB Equation**	
	Coefficient	**Prob. value**	**Coefficient**	**Prob. value**	**Coefficient**	**Prob. value**	**Coefficient**	**Prob. value**
D(LNXMCO(-1))	0.202951	0.2398	-0.337752	0.0001	-0.252504	0.0017	-0.574750	0.0000
D(LNXMCO(-2))	-0.080741	0.2729	-0.154061	0.0427	-0.183574	0.0281	-0.254993	0.0005
D(LNTROP(-1))	-0.307277	0.0434	-0.023200	0.8230	0.023451	0.7661	0.023563	0.9188
D(LNTROP(-2))	-0.115558	0.4109	0.053000	0.1964	0.008696	0.9047	-0.093826	0.6982
D(LNTETR(-1))	0.030827	0.8406	-0.183377	0.0274	-0.246347	0.0142	-0.402797	0.0805

D(LNTETR(-2))	-0.018539	0.9080	0.030496	0.7244	-0.074243	0.0602	-0.277690	0.1904
D(LNFTRB(-1))	0.024660	0.6134	0.016325	0.5346	0.023547	0.3518	0.555726	0.0565
D(LNFTRB(-2))	-0.006706	0.8896	0.036979	0.1531	0.016345	0.5104	0.297962	0.0099
ECM(-1)	-0.726899	0.0001	-0.001376	0.9897	0.259202	0.0122	-0.365899	0.2212

Source: *An Extract from ECM Result Output, 2022.*

Arising from table 4.6, the result of LNXMCO equation reveals that, among the series, only the coefficient of differenced LNTROP lag is statistically significant at 0.0434, at 5% level of significant ($p < 0.05$). The ECM coefficient value of -0.726899 is statistically significant at p-value of 0.0001, ($p < 0.05$). In equation LNTROP, the coefficient values of (-0.337752 and -0.154061) of differenced LNXMCO lags 1 and 2 are statistically significant at 0.0001 and 0.0427 respectively, at 5 per cent, ($p < 0.05$). Also the coefficient (0.0274) of differenced LNTETR lag 1 is statistically significant, ($p < 0.05$), but the coefficient of ECM, -0.001376, is not statistically significant at 0.9897, ($p > 0.05$).

In equation LNTETR, the coefficient values -0.252504 and -0.183574, of differenced LNXMCO lags 1 and 2 are respectively, statistically significant at 0.0017 and 0.0281, at 5 per cent, ($p < 0.05$). Also the coefficient -0.246347 of differenced LNTETR lag 1 is statistically significant, ($p < 0.05$), but the coefficient of ECM, 0.259202, is not statistically significant at 0.0122, ($p > 0.05$). In equation LNFTRB, the coefficient values -0.574750 and -0.254993of differenced LNXMCO lags 1 and 2 are respectively statistically significant at 0.0000 and 0.0005, at 5 per cent, ($p < 0.05$). Also the coefficient 0.297962 of differenced LNFTRB lag 2 is statistically significant, ($p < 0.05$), but the coefficient of ECM, -0.365899, is not statistically significant at 0.2212, ($p > 0.05$).

Specifically, the speed of adjustment in the results are -0.726899, -0.001376, 0.259202, -0.365899 for LNXMCO, LNTROP, LNTETR and LNFTRB equations respectively. This means that there will be approximately -73%, -0.14%, 26% and -37% speed of adjustment to correct the previous errors or disequilibrium in the subsequent periods in LNXMCO, LNTROP, LNTETR and LNFTRB equations respectively. It is important to note that LNXMCO, LNTROP and LNFTRB equations posses the right negative sign, while LNTETR equation possesses a positive sign.

4.7. Presentation of ESWACs' Panel-ARDL Fixed and Random Effects, and Hausman (1978) Tests

Table 4.7: Result of ESWACs' Panel-ARDL Fixed and Random Effects, and Hausman (1978) Tests

Variables	Fixed Effects		Random Effects		Hausman Test	
	Coefficient Values	Prob. Values	Coefficient Values	Prob. Values	Comparison P-value	Period Random Stat (P-value)
C	19.21017	0.0000	18.08427	0.0000		
LNTROP	-0.110424	0.2853	-0.026650	0.7894	0.0013	
LNTETR	0.353603	0.0001	0.469409	0.0000	0.0000	32.419109
LNFTRB	-0.018448	0.6120	0.007582	0.8330	0.0000	(0.0000)
YR1-YR39	0.235920	0.6517	0.116583	0.8108	0.5263	

LNXMCO is the independent variable. Hausman H_0: The random effects are independent of explanatory variables.
Note that YR1-YR39 is introduced to control for time trend for a period of 40 years in the analysis.
Source: An Extract from Panel-ARDL Fixed and Random Effects and Hausaman Results Output, 2022.

Table 4.7 presents the results of fixed effects, random effects and Hausaman test. Both fixed and random effects (within and between estimators) results reveal that among LNTROP, LNTETR and LNFTRB only the coefficients of LNTETR (0.0001 and 0.0000) are found statistically significant at 5%. On the strength that the time-invariant characteristics are unique to the individual and should not be correlated with other individual characteristics, the fixed effects become somewhat unsuitable and inefficient because of the possibility of error terms being correlated that may render an inference incorrect. This informs the rationale for the Hausman test. Meanwhile, it is the p-value of the Hausman test that decides whether fixed effect or random effect is used, irrespective of the unique characteristics of each of the estimator.

The result of the Hausman test in comparison of p-values shows that LNTETR and LNFTRB are statistically significant, while the result of the period random statistics value is 32.419109 and the p-value is 0.0000. The p-value of the result of Hausman test is less than 5% suggesting the rejection of the null hypothesis in favour of the alternative– hence suggesting the rejection of random effect and acceptance of fixed effect result. Following the application of fixed effects, the results of Hausman test specifically implies that LNTETR is statistically significant. This means that the effect of terms of trade (LNTETR) on export-import competitiveness is statistically significantly common to the five countries that make up ESWACs because of the possibility of one time-invariant intercept for each country.

4.8. Presentation of ESWACs' Balanced Panel-ARDL Wald Unrestricted Coefficient Diagnostic Test

Table 4.8: Result of ESWACs' Balanced Panel-ARDL Wald Unrestricted Coefficient Diagnostic Test

Equations (Dependent Variables)	Wald Test F-Stat.	Chi-Square	Prob.	Df	Level of Significance	Decision
LNXMCO	12.82992	38.48975	0.0000	(3, 195)	0.05	Reject H_0: Significant
LNTROP	6.795019	20.38506	0.0002	(3, 195)	0.05	Reject H_0: Significant
LNTETR	18.25951	54.77853	0.0000	(3, 195)	0.05	Reject H_0: Significant
LNFTRB	9.740624	29.22187	0.0000	(3, 195)	0.05	Reject H_0: Significant

Source: *An Extract from ESWACs' Panel ARDL-Wald Result Output, 2022.*

Table 4.8 reports the result of the Wald test conducted to determine the level of contribution each variable makes in the overall estimation. From the table, the results of LNXMCO, LNTROP, LNTETR and LNFTRM equations show that their Wald test F-statistical values (12.82992, 6.795019, 18.25951, and 9.740624) are less than the values of Chi-Square (38.48975, 20.38506, 54.77853, and 29.22187); with their respective probability values (0.0000, 0.0002, 0.0000 and 0.0000) are less than 0.05. This indicates that the four variables make significant contributions in the model; and as such their inclusion in the model earns some good justification.

4.9. Presentation of ESWACs' Panel-ARDL of Residual Diagnostic Test
Table 4.9: Result of ESWACs' Panel-ARDL of Residual Diagnostic Test

Breusch-Godfrey Serial Correlation LM Test			Heteroskedasticity Breusch-Pagan-Godfrey Test		
F-Stat	Prob. value	Decision	F-Stat	Prob. value	Decision
9.384643	0.0001	Retain H_0 (F-stat > 5%)	3.965723	0.0002	Reject H_0 ($p < 0.05$)

Source: An Extract from ESWACs' Panel ARDL Residual Diagnostic Result output, 2022.

In testing for the residual diagnostics, the result of the Breusch-Godfrey serial correlation Lagrange Multiplier reveals that the errors in the distribution are not serially correlated; hence, the null hypothesis that the errors are not serially correlated is retained at 5% level of significance. In order to measure how the errors in the distribution increase across the explanatory variables, Heteroskedasticity Breusch-Pagan-Godfrey test is conducted with a null hypothesis postulation that the errors variance are all equal. The result of the test inspires the rejection of the null hypothesis, and heteroskedasticity is assumed. This suggests that the errors, if still exist, do not correlate within the variables. Hence, it becomes logical to submit that the residual diagnostic results strongly reveal that the models are free from serial correlation and the errors are not correlated.

Discussion of Results

There is a weak, but positive correlation, as well as long run relationship between export-import competitiveness and trade openness, terms of trade and free trade benefits. This strongly suggests that free trade dynamics asserts somewhat impacts on export-import competitiveness in ESWACs in the long-run. The ECM results reports -0.72 (73%), -0.0013 (14%), 0.26 (26%), -0.37 (37%) as speed of adjustment for LNXMCO, LNTROP, LNTETR and LNFTRB equations respectively. This shows the respective speed of adjustments required to correct the previous errors in the subsequent periods. From this result, it is pertinent to point out that the LNXMCO equation possesses the highest speed of adjustment which explains the fact that the three exogenous variables are capable of correcting the shortfalls in export-import competitiveness. However, such shortfall is not surprising because of the glaring fact that the ESWACs are depending so much on imports. Nevertheless, if it is reversed by 73%, the needed impact on XMCO would be seen from TROP, TETR and FTRB.

This argument gains credence from the significant result of Wald test, which shows the potency of the exogenous variables in making meaningful positive impact on XMCO – with TETR taking the lead. By lending support to this argument, the Hausman test, which favours fixed effect variant, finds TETR significant. This means that the gap that exists between export competiveness and import competitiveness could be narrowed by ensuring that the ratio of the index of exports prices does not significantly fall below the ratio of the index of imports prices in ESWACs. By so doing, equilibrium position in world price would be approached through prices of goods as well as returns to production factors (Batra, 2015), free trade would favour export competitiveness (Mahmood, 2004) and export performance would not deteriorate (Rahmaddi & Ichihashi, 2012).

The results study are generally in line with the most of prior studies, who argue that free trade - as an economic integration strategy - considerably eliminates trade restriction, fosters cooperation, liberalizes and facilitates trade, leads to growth, and achieves optimum use of natural resources in terms of maximizing welfare, both at national and international levels (Caffè, 2018; Salvatore, 2002; Boatto & De Francesco 2003). It expands market size (Salvatore & Hatcher, 1991), makes possible division of labour, guarantees economies of scale, serves as a vehicle for the transmission of new ideas, new technology, managerial and other skills (Edame & Eyang, 2013). Also, it stimulates and facilitates international flow of capital (Mahmood, 2004), and ultimately leads to higher external or export-import competitiveness.

The implications of the results for the achievement of the objectives of AfCFTA

1. As one of the objectives of AfCFTA is to achieve progressive elimination of tariffs and non-tariff barriers to trade in goods; there is need to delineate member countries into trade sub-regions or blocs. As this would signal a renewal of interest in harnessing their potentials in a bid to ease movement and trade within such a region like ESWACs. It would also strengthen South-South cooperation and help to achieve the AfCFTA Agenda 2030, AU Agenda of 2063 and resolve the challenges of multiple tariffs. This is because one of the free trade dynamics is found to be significantly impactful on export-import competitiveness.

2. To boost and expand intra-African trade by 50% as forecast by United Nations Economic Commission for Africa (UNECA) and increase the current 15% overall African external trade there is need to channel energy and resources of ESWACs towards enhancing its terms of trade; as it is found to be significant by Hausman-Fixed-Effect test result.

3. To fulfill the aspiration of conquering a single continental and liberalized market for goods and service, and create $3.4 trillion economic bloc, there is need for commitment and political determinations (using working-the-talk-approach) by investing in manufacturing sub-sector. This will enable free trade to create therapeutic manufacturing value added in achieving AfCFTA the objective and birth new energy for growth in real sector of the economies.

4. To facilitate economic and continental integration processes in African; ensure free movement of capital through regional economic communities (RECs); and pave way for establishing Continental Customs Union (CCU), improvement of free trade dynamics as critical elements that provide second to none advantages is the best way to go. This argument is supported by the significant result of Wald test.

5. To enhance export-import competitiveness through free trade dynamics within ESWACs in particular, and AfCFTA in general, there is need to reduce the volume of imports by 73%, as suggested by ECM result of LNXMCO equation. This will produce a speed of adjustment capable of restoring equilibrium in the long run relationship between free trade dynamics and export-import competitiveness in ESWACs; being an emerging trade bloc for AfCFTA.

5. Concluding Remarks

The study analyzes the impact of free trade dynamics on export-import competitiveness in ESWACs. A plethora of proxy measures of free trade (trade openness (TROP), terms of trade (TETR) and free trade benefits (FTRB); and export-import competitiveness (XMCO) are employed as a new consideration in the investigation. Given the efficacy of trade in enhancing the growth of a nation, the study relies on Ricardo-Heckscher-Ohlin, Global Strategic Rivalry and Porter's National Competitive Advantage theories. Also, the effectiveness and importance of panel-ARDL analysis informs the choice of methods that allow the conduct of descriptive statistical, correlation, Im, Pesaran and Shin(2003) unit root, Panel-ARDL Bounds cointegration and Error Correction Mechanism, Fixed, Random and Hausman, Wald Unrestricted Coefficient, residual diagnostic and impulse tests. In the analyses, time dummies were created to allow control for time trend.

The analyses reveal that TROP, TETR, FTRB and XMCO have mean scores of 21.03281, -0.342569, 5.622826 and 19.34920 respectively. TROP is weakly and positively correlated with TROP, TETR and FTRB to percentage values of (2.261%), (39%) and (1.15%) respectively. The variables were confirmed not to be integrated of 2 using Im, Pesaran and Shin unit root technique; afterward the four cointegrating Panel-ARDL equations were revealed. In the each of the four cointegrating equation, it was revealed that -73%, -0.14%, 26% and -37% are needed to correct the previous errors in the subsequent period and speedily adjust the model for long run relationship. The Hausman test is found to be significant; hence the fixed effect result is adopted. This finds TETR to be significant; and all the values make meaningful contribution in the model.

On the strength of the result, the study concludes that free trade made dynamics have asserted the required impact on export-import competitiveness in ESWACs within the time and space of the study. Consequently, for the objectives of AfCFTA to be achieved, there is need to give attention to the trade regional groups that make up the area (AfCFTA). For policy relevance, the result of this study provides some interesting insights; therefore, it is recommended that the governments of ESWACs should give considerable attention to formulation of export promotion policies that would reduce imports prices, so as to produce favourable terms of trade ESWACs; invest massively in manufacturing sub-sector; and ensure that importation is reduced by 73%.

REFERENCES

African Union (AU) (2019). AfCFTA agreement secures minimum threshold of 22 ratification as

Sierra Leone and the Saharawi Republic Deposit Instruments', Available at: <https://au.int/en/pressreleases/20190429/afcfta-agreement-secures-minimum-threshold-22-ratification-sierra-leone-and> [Accessed 3 August 2019].

Afzal, M., & Hussain, I. (2010). Export-led growth hypothesis: Evidence from Pakistan. *Journal of Quantitative Economics; 8 (1), 130 –147.*

Anumudu, C. N., Ugwuanyi, C. U., Asogwa, I. S. & Ogbuakanne, M. U. (2018). Agricultural Output and economic Growth Adjustment Dynamics in Nigeria. *Journal of Economics and Allied Research; 2(2), 45-55.*

Ashakah, O. N & Wanogho, O. A (2021). ECOWAS economic integration and economic growth: Empirical evidence from Nigeria. *Journal of Economics and Allied Research; 6 (2), 1-11.*

Atoyebi, K. O. (2012). Foreign trade and economic growth in Nigeria: an empirical analysis. *IOSR Journal of Humanities and Social Science*; *2(1), 73 - 80 · DOI: 10.9790/0837-0217380*

Bahami-Oskooee, M. (1991). Exports, growth and causality in LDCs. *Journal of Development Economics; 15(6), 185 – 199.*

Berkum, S. van & van Meijl, H. (1998). *A survey of trade theories.* The Hague, Agricultural Economics Research Institute (LEI-DLO), 1998 ISBN 90-5242-438-1 Onderzoekverslag 161.

Batra, I., & Dhir, S. (2019). The effects of psychic distance and inter-partner fit on the Performance of International Joint Ventures. *Asian Academy of Management Journal, 24(1), 151-173. http://doi-org.ezproxy.aut.ac.nz/10.21315/aamj2019.24.1.7*

Boatto V. & E. De Francesco, (2003). Dal protezionismo alla liberalizzazione dei mercati agroalimentari, Proceedings of SIDEA National Congress “la liberalizzazione degli Scambi dei prodotti agricoli tra conflitti e accordi”, Padova; 7(2), 18-20.

Boggio, A. W. & Tirelli, M. O. (2019). Economic growth, exports and international Competitiveness. *Economia Internazionale; 42(5), 1-2.*

Caffè, F. (2018). Lezioni di Politica Economica, Bollati Boringhieri, *Torino, 6(4), 241-265.*

Chang, C. P., & Ying, Y.-H. (2008). The generative power of air freight in the trade openness-economic growth nexus in African countries. *South African Journal of Economics; 76 (3), 159 – 168.*

Cooke, D. (2010). Openness and inflation in Nigeria. *Journal of Money, Credit and Banking; 4(2-3), 267–287.*

Cosmas, S. M. (2019). An empirical study on the determination of trade openness in the African economies. *Advances in Management and Applied Economics; 9(3), 1-2.*

Das, A., & Paul, B. P. (2011). Openness and growth in emerging Asian economies: Evidence from GMM estimations of a dynamic panel. *Economics Bulletin, 31(7), 2219–2228.*

Daumal, M. & Ozyurt, S. (2011). The impact of international trade flows on economic growth in Brazilian states. *Review of Economics and Institutions; 2(1), 201 – 217.*

David T., Akighir, R.O. & Emmanuel, T. K. (2020). Oil exports, foreign reserves and economic growth in Nigeria: A structural VAR approach. *Journal of Economics and Allied Research; 4(4),* 16-37.

Duru, I. U., & Siyan, P. (2019). Empirical investigation of exports and economic growth: Evidence from Sane Countries, 1980 – 2016. *IOSR Journal of Humanities and Social Science*; *2(1), 73-80. DOI: 10.9790/0837-0217380.*

Enu, P., Havi & Hagan (2013). *The impact of foreign trade economic growth in Ghana (1980 – 2012).* Being a M.Sc Thesis submitted to the Department of Economics, Faculty of Social Sciences, Imo State University, Owerri, Imo State, Nigeria.

Global Competitiveness Report (2019)

Im, K.S., Pesaran, M.H. and Shin, Y. (2003) Testing for Unit Roots in heterogeneous Panels. *Journal of Economic Policy; 115(9), 53-74.*

Mahmood, A. (2004). Export competitiveness and comparative advantage of Pakistan’s non-gricultural production sectors: Trends and analysis. *Pakistan Development Review; 43(4), 541-561.*

Mankiw, G., Romer, P., & Weil, D. (1994). A contribution to the empirics of economic growth. *Quarterly Journal of Economics; 107(2), 407- 437.*

Martin, D. & Claude, G. (1987). Indicators of international competitiveness: Conceptual aspects and evaluation. A review of Organization from Economic Co-operation and Development (OECD). *Journal of Issues Social and Management Sciences (JISM); 7(4), 15 – 34.*

Merale, F., Vehapia, L. S., &Mihail, P. (2015). Empirical analysis of the effects of trade openness on economic growth: An evidence for South East European countries. *Procedia Economics and Finance; 19(4), 17 - 26. https://doi.org/10.1016/S2212-5671(15)00004-0.*

Mohammed, H.N., Idris, Y., & Shehu, Y. (2021). Public expenditure and economic growth in Nigeria: A non-linear analysis. *Journal of Economics and Allied Research*; *6 (2), 245-254.*

Nggada, M. H., Yusha’u, I & Ya’u, S (2021). Public expenditure and economic growth in Nigeria: A nonlinear analysis. *Journal of Economics and Allied Research; 6 (2), 245-254.*

Nwadike, G. C., Ani, K. J. & Alamba, C. S. (2020). Impact of trade openness on Nigerian economic growth: An empirical investigation from 1970–2011. African Journal of Commerce and Social Studies, 6(4), 89 – 105.

Nwodo, O. S. & Asogwa, F. (2017). Global integration, non-oil export and economic growth in Nigeria. *IOSR Journal of Humanities and Social Science*; *2(1), 73-80 · DOI: 10.9790/0837-0217380*

Ogbuabor, J. E., Agu, C. C., Odo, C. O. & Nchege, J. E. (2017). Does foreign aid impact on economic growth in Nigeria? *Journal of Economics and Allied Research; 2(1), 12-23.*

Okezie, C. A. & Amir, B. H. (2011). Economic crossroads: The experiences of Nigeria and lessons from Malaysia. *Journal of Development and Agricultural Economics; 3(8), 368-378.*

Onwuka, O. N. & Udegbunam, K. C. (2019). The African continental free trade area: prospect and challenges. *Sabinet African Journal, 9(4), 17 – 19.*

Rahmaddi, R. & Ichihashi, M. (2012). How do export structure and competitiveness evolve since trade liberalization? *International Journal of Trade, Economics and Finance; 3(4), 272-280.*

Razvan, V. & Cristian, M. (2015). Competitiveness, theoretical and policy approaches. Towards a more competitive EU. *Procedia Economics and Finance; 22(5), 512 – 521.*

Rodríguez, F. R. & Rodrik, D. (2001). Trade policy and economic growth: A skeptic's guide to the cross-national evidence. *NBER Macroeconomics Annual Review; 15(7), 261-338.*

Salvatore, D. (1994). Trade and trade policies of developing countries. *Merdeterian; 4(6), 4-11.*

Salvatore, D. & Hatcher, T. (1991). Exports and growth with alternative trade strategies. *Journal of Policy Modeling, 16(2) 165 - 186.*

Salvatore D. (2002). Economia internazionale, teorie politiche del commercio internazionale, *ETAS Libri, Milano, 1-541.*

Salvatore, D. &Hatcher, E. (1991). Export growth, export instability, investment and economic growth in India: A Time Series Analysis. *The Journal of Developing Areas, 41(2), 155-170.*

Saygili, M., Peters, R. & Knebel, C. (2018). *African continental free trade Area: challenges and opportunities of tariff reductions*. Geneva: UNCTAD Research Paper, 15(8), 3-16.

Silajdzic, S. & Mehic, E. (2018). Trade openness and economic growth: empirical evidence from transition economies. *Managing the Global Economy; Proceeding of the Joint International Conference, Monastier di Treviso, Italy, 17(4), 581 – 594.*

Syed T. J. & Abdul, W. (2011). Effects of terms of trade and its volatility on economic growth: A cross country empirical investigation. *Transit Study Review, 18(6), 217–229.*

Umme, H. M., Shamim, A. S., & Munshi, N. I. A. (2012). An empirical investigation on trade openness and economic growth in Bangladesh economy. *Asian Journal of Social Sciences; 8(11), 158 -160. 10.5539/ass.v8n11p154*

Uzomba, P. C., Ajie, H. A. & Gbosi, A. N. (2015). Application of 2nd generation panel data Econometric techniques in benchmarking analysis of the nexus between external trade benefits and unemployment rate in ESWACs, 1980 –2013. *IOSR Journal of Business and Management; 17(9), 67-78.*

Wood, A. (1994). *North-South trade employment and Inequality: Changing Futures in a Skill-Driven World, Oxford.* Oxford University Press.

Yaya, K. & Miao, G. W. (2017). The impact of trade openness on economic growth: The case of Cote d'Ivoire. *Cogent Economics & Finance; 5(1), 56 – 78.*