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OVERLAPPING TRADE FLOWS AND POTENTIALS FOR INTRA-TRADE EXPANSION IN AFRICA: THE CASE OF NIGERIA'S AGRICULTURAL TRADE

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ABSTRACT

African countries' endorsement of the African Continental Free Trade Area (AfCFTA) agreement framework has been regarded as a potential game-changer for intra-African trade and key to unlocking sustained economic growth and development. The euphoria surrounding this proposed introduction of a single continental market for goods and services, with free movement of businesses, persons, and investments, is closely linked to the positive relationship between trade and development as documented in the literature. However, it needs to be clarified from the literature what role overlapping trade flows may play in limiting the potential of the AfCFTA to boost intra-trade in Africa.This paper constructs trade overlap and trade expansion indices between Nigeria and selected African countries to investigate the scope for expansion of agricultural trade between Nigeria and the selected trading partners. The study finds the existence of considerable trade overlap and export expansion potential for Cassava among other agricultural products, between Nigeria and Equatorial Guinea, Guinea Bissau, Mauritania, and Sierra Leone. The study then opines that any overlapping trade flows that currently exist in the trade of Cassava between the selected partners can be redirected following the expected removal of customs tariffs once the AfCFTA is fully implemented.

Keywords: African Continental Free Trade Area (AfCFTA), Trade Overlap Index, Trade Expansion Index, Trade Overlap, Agricultural Products.

INTRODUCTION

There has been growing optimism for a boost in the volume and value of trade within Africa following the endorsement of the African Continental Free Trade Area (AfCFTA) agreement framework and the agreement itself by major African countries. The AfCFTA is a continent-wide free trade area for states that have deposited instruments of ratification. The AfCFTA is expected to drive industrialization, economic growth, and development in Africa. The AfCFTA is a negotiated rules-based system, to establish the rule of law in trade, accelerate regional integration, deepen, and expand intra-Africa trade from its very low base, which is estimated about 18% [UNCTAD, 2019].

The AfCFTA aims to create a single continental market for goods and services with free movement of persons, and investments, thereby accelerating the establishment of the Continental Customs Union and the African Customs Union. As it implies, according to Chappelow (2019), The AfCFTA deal is intended to establish a market for over one billion people, with an estimated GDP of about US $2.6 trillion. Implementing of the African CFTA would significantly enhance economic cooperation among African countries by eliminating artificial barriers to trade originating within the continent.

As the continent's largest economy, Nigeria's signing the deal on July 7, 2019, was a major boost to the agreement, even though she was one of the countries to commit to the deal (Felix, Libby & Keith, 2019). Some issues that affected the process of accession for many countries such as Benin, Zambia, Eritrea, South Africa, and, predominantly, Nigeria, were "the concern that the elimination of tariffs could put the survival of national productions at risk" (Andrea Cofelice, 2018), and the fact that in many instances, aggregate production has been struggling to keep pace with the rapid population growth (TRALAC, 2018). Some positive implications stemming, however, from

membership in the free trade area agreement for national domestic economic agents would include greater access to variety and cheaper options open to consumers, exporters exposed to larger markets and more competitive inputs, and producers enjoying the benefits of efficiency by gaining cheaper inputs and thereby making exports more competitive.

Agriculture is a major contributor to intra-African trade (UNECA, ALI and ADB, 2017). Agriculture contributes significantly to export earnings, employment, and value-added manufacturing in Africa (TRALAC, 2018). This sector is especially relevant for the economic growth of African economies, employing about 53% of the continent's workforce in 2016. In an extensive outlook, Agriculture accounts for approximately 32% of the GDP in Africa and 60% of jobs on the continent. Two-thirds of value-added manufacturing is on agricultural raw materials as vital inputs; its activities are a dependent necessity for rural populations, especially for the extremely few women who play an important role in small-scale rural agricultural production.

Available statistics show that intra-African exports of agricultural raw materials accounted for 8.98% of Africa's total export of agricultural raw materials in 2015. Intra-African imports of agricultural raw materials stood at 11.43% during the same year (9). These figures are consistently the lowest over recent years when compared to other major regions of the world. Similar statistics for Intra-regional trade in agricultural raw materials within the Economic Community of West African States (ECOWAS) are even more disturbing. In 2015, ECOWAS Intra-regional exports of agricultural raw materials were 1.66%, while imports stood at 5.99%. A major explanation for the poor performance of intra-regional agricultural trade in the ECOWAS region is the homogenous nature of agricultural commodities traded by ECOWAS countries. The other explanation is the weak infrastructure available to support trade. There is also the issue of non-tariff barriers (NTBs), which constitutes a serious bottleneck to free trade within the region.

The Nigerian economy is the largest in the ECOWAS sub-region, and its major agricultural export commodities include cocoa, palm oil, cassava, rubber, wool, cotton, wood logs (Iroko and Mahogany), groundnut oil, cashew, garlic, and so on. The country's major agricultural import commodities include rice, fish, chicken, fresh fruits, and so on. A review of Nigeria's agricultural raw material exports expressed as a percentage of merchandise exports for some recent years will quickly reveal the unimpressive export performance of the agricultural sector. For example, agricultural raw material exports were 1.63% of merchandise exports in 2010, 6.13% of merchandise exports in 2011 and peaked in 2012 with a relatively strong performance of 7.27% of merchandise exports. Exports of agricultural raw materials from Nigeria began to decline in 2013, falling to 3.20% of merchandise exports in 2013, and plummeted further in 2014, reaching an all-time low of 0.43% of merchandise exports in 2014. Agricultural raw material exports (% of merchandise exports) in Nigeria were reported at 0.1144% in 2019, according to the World Bank collection of development indicators. These values strongly suggest agricultural policy failure on the part of the state and a lack of enthusiasm in the private sector to invest in agriculture.

The Federal Government of Nigeria, in its 2017 annual budget, made an unprecedented budgetary provision of ₦92 billion (about US $300 million) to boost agriculture. In addition, many state governments are also making considerable efforts to boost agricultural activities at the state level. These efforts are aimed at self-sufficiency in producing of staple foods in the agricultural sector. However, the federal government recently demonstrated its inability to continue the positive trend of supporting agriculture in the country. For example, in the year 2020, the current administration budgeted ₦79.79 billion for agriculture, which was less than 1% of the total federal budget. The latest proposal for 2021 shows only a meagre 0.5% increase over the previous year.

Fortunately, there has also been a tremendous effort at the West African regional level and the African continental level to boost agricultural activities. These efforts are well emphasised under

the African Union Boosting Intra-Trade (BIAT) and Continental Free Trade Area initiatives. There is an understanding at the continental level that needed interventions by stakeholders exist at the product level, the infrastructural level, and the regional market level. What remains now is for countries to begin to devise strategies to strengthen local enterprises for them to take advantage of regional and continental markets. In other words, Nigeria, as an African country must begin to promote the space for agricultural entrepreneurship to thrive. Nigeria also needs to periodically undertake a strategic analysis of the regional and continental markets with the aim of finding ways to exploit all possibilities for expanding regional and continental trade.

A good description of the country's agricultural trade overlapping and expansion indicators will indicate how current overlapping trade flows from and outside a region may be redirected to increase intra-regional trade. These statistics will help in determining regional patterns of specialisation and Nigeria's trade expansion possibilities in the region, and ultimately provide guidance for the country in selecting its optimal trading partners within the region. The argument here is that Nigeria will be better off in its agricultural trade outcomes if the country strategically selects agricultural trading partners within Africa based on its knowledge of Nigeria's current trade overlapping realities, and trade expansion possibilities with key potential trading partners within the AfCFTA arrangement. Nigeria's agricultural trade with neighbouring countries in West Africa is currently underperforming. However, given the gradual recovery of the Nigerian economy from the COVID-19 induced economic recession, the macro-economic outlook for the country in 2021 is highly suggestive of improved agricultural export performance.

This study therefore, has the overarching objective of determining how Nigeria's current overlapping trade flows from and outside Nigeria may be redirected to increase intra-regional trade with selected African countries under the AfCFTA trading framework. The rest of the paper is organised as follows: Section 2 comprises a review of the related literature, followed by Section 3,

which deals with the study's methodology. Section 4 presents the results and a discussion of the main findings, while Section 5 concludes with key recommendations.

LITERATURE REVIEW

There is ample evidence in the literature that efforts at African economic integration have seen a litany of setbacks, including overlapping membership of different regional economic groups (Dinka & Kennes, 2007; Draper, Hallson, & Alves, 2007; UNECA (2006 ; UNECA 2008), unmet agreements, and unattainable ambitions. Despite these difficulties, regional integration has a great deal of potential to promote more steady and reasonable economic growth as well as to support the decrease of poverty and unemployment in Africa [see, for instance, Anyanwu (2014); and UNDP (2011)]. "There is a strong desire to integrate the economies of Africa on a regional and ultimately continental level. Elite Africans and their international development partners share it. To promote this objective, several official initiatives have been developed, all falling under the broad purview of the African Union's strategy to achieve a continental common market by 2028" Peter (2010).

Experience has shown that in order to realise these prospects, it is necessary to carefully take advantage of the opportunities for greater regional integration. Even though Africa has many RECs, intra-regional trade is still incredibly low when compared to major trading blocs in Europe, Asia, and Latin America (Edris, 2013). Producers in Africa will become more competitive and better able to enter more competitive global niches if given this access to regional markets and connected through more advanced regional value chains (Steve, John, & Pedro, 2014). About 30 regional trade agreements (RTAs) exist in Africa, many of which are components of larger regional integration plans. Every African nation is a member of four RTAs on average. In recent years, there has been a renewed movement for greater and broader trade agreements with preferences in Africa. The Organisation of African Unity (OAU) oversaw the formation of the African Economic

Community (AEC), the African Union, and the New Partnership for Africa's Development (NEPAD), while some of the previously disbanded regional agreements (such as the East African Community) have been restored. TRALAC [2019] reports that eight RECs, including ECCAS, ECOWAS, EAC, SADC, COMESA, AMU, CEN-SAD, and IGAD, have been formally recognized as building blocks of the AfCFTA.

Intra-African and Intra-Regional Trade

Although still relatively low, intra-regional trade in Africa has been increasing. Africa's intra-regional trade increased from 9% in 2000 to 17% in 2017. In contrast, intra-regional trade in other areas, such as Europe and Asia, was above 50% in 2017. A rise in commodity exports, improved macroeconomic conditions, and the development of RTAs have all contributed to the expansion of intra-regional trade in Africa (Arizala, Bellon, and MacDonald, 2018). In comparison to other groupings, the SADC and the EAC had the greatest amounts of intra-union trade (almost 20% of total trade), which was largely responsible for this.

TRALAC [2019] reports that while Africa's exports to the rest of the world climbed by 22% between 2017 and 2018, intra-African exports increased by only 1%. As of 2018, intra-African exports were worth US$74 billion, or 15% of all exports from Africa. South Africa was the largest intra-African exporter and importer, accounting for 34% of all intra-African exports and 20% of all intra-African imports. Other significant intra-African exporters include Nigeria (9%), Egypt (6%), the Ivory Coast (4%), and Zimbabwe (4%). Significant intra-African importers include Botswana, Zambia, Namibia, and Mozambique, all of which are in southern Africa, and together they account for another 24% of intra-African imports. Additionally, the only nations whose intra-African exports are more substantial than exports to the rest of the world are Eswatini, Zimbabwe, Togo, Gambia, and Uganda.

Contrary to trade outside of the continent, intra-regional trade has a different composition. Most of Africa's trade is with nations outside the continent. Since 2000, China and, more broadly speaking, Asia have replaced the USA and Europe as Africa's primary trading partners. Food and manufactured commodities dominated intra-African trade from 2000 to 2017. Most exports to the rest of the world, however, were made up of primary goods. In all, these made up nearly 60% of exports. The SACU member states accounted for 20% of intra-African exports in 2018, 4% of exports within the EAC, 0.1% within CEMAC, and 13% of exports within the ECOWAS nations. Most nations trade more with their REC counterparts, as measured by intra-REC exports as a share of all African exports by a REC. When compared to trade outside of the continent, the makeup of intra-regional trade is different. In 2000–2001, CEMAC and ECCAS intra-REC trading were the outliers. Nearly all the intra-African exports of Zambia, Namibia, Botswana, Mozambique, Zimbabwe, and Lesotho are intra-SADC exports, which account for 50% of all intra-African exports. Burkina Faso sells 97%, Niger 96%, Gambia 95%, and Guinea-Bissau 92% of their intra-African exports to other ECOWAS members. Eritrea exports 94% of its intra-COMESA goods, whereas the DRC exports 93% of its intra-African goods.

The major agricultural exports from Africa include unmanufactured tobacco (8%), of which Zimbabwe exports 77%, and sugar (8%), whose top exporters are Eswatini (22%), South Africa (19%), and Uganda (10%). Ivory Coast, Ghana, Kenya, and Uganda export 74% of the continent's total palm oil exports, which make up 4% of all agricultural exports. South Africa, Zimbabwe, and Uganda are the top exporters of agricultural products to the rest of the continent. Kenya and Botswana are the top importers. A total of US$25 billion in intra-African trade was conducted in the agriculture sector in 2018 (US$13 billion in exports and US$12 billion in imports), accounting for 18% of all intra-African exports and 16% of all intra-African imports. Intra-African agricultural exports and imports fell by 15% and 3%, respectively, during 2017 and 2018. Niger was one of the major intra-African exporters in 2017, but between 2017 and 2018, agricultural exports were cut in

half. The primary agricultural exports from Africa to other continents are cocoa beans, nuts, and coffee. The main agricultural exports from Africa to other continents include tobacco, sugar, and palm oil.

The impact of economic integration on the success of agricultural exports has been the subject of intense academic discussion, according to Shobande (2019). The primary issues have been those related to the forces driving regional integration, and its static and dynamic effects on the theory of customs unions (Che, Yi, Julan Du, Yi Lu, and Zhigang Tao, 2015, Fuchs, Andreas, & Nils Hendrik Klann 2013, and Qureshi; Mahvash Saeed, 2013). With mixed findings, several studies have looked at how trade liberalisation affects export growth in developing nations. While some studies have found positive effects of trade liberalisation on export performance (Bleaney, Mahvash Saeed, 2013, Coyle, William, Mark Gehlhar, Thomas, Zhi Wang & Wusheng Yu 1998, Hoque, Monjurul & Yusop 2012, and Krueger 1997), others have found a negligible or even negative relationship (Greenaway, David, Wyn Morgan, & Peter Jenkins 1999, Peter Wright 1997).

According to Amponsah (2002), "the economic advantages of regional integration and the push for regionalism are justified in terms of the impacts of trade creation and trade diversion that emerge when the trade barriers between members within an RTA are lifted." Regional trade agreements can be beneficial if they move their member nations closer and more quickly towards more openness and integration, according to this theoretical evaluation of empirical and theoretical data on the influence of trade liberalisation on economic growth. The article makes the argument that effective reforms need to be adjusted to each member country's unique economic and social features, priorities, and relative degree of development based on a thorough investigation of the relevant data, which is what this work aims to discover.

Edris (2013) based his research on the observation that, despite several regional economic communities (RECs) in Africa, intra-regional trade on the continent remained alarmingly low comparing to other trading blocs in Europe, Asia, and Latin America. As a result, he tried to identify the primary causes of the low level of intra-regional trade and the role of RECs in boosting intra-regional trade by selecting four RECs in Africa. The study discovers that the conventional gravity model factors are significant predictors of bilateral trade flows in Africa, along with differences in choice and taste across nations, production capacity and demand potential, geographical distance, and landlocked ness that discourage trade. Accordingly, the paper suggests that African nations should make significant investments in physical infrastructure to connect their neighbours, adopt, implement, and harmonise trade policies, and streamline customs procedures to encourage intra-regional trade within the existing regional economic communities.

Using statistics information from the UNCTAD, Peter (2010) conducted a descriptive study. According to the findings of this research, the relatively low initial level of economic growth in Africa is the main barrier to economic diversification. Integration with nearby nations that experience this issue may be somewhat mitigated by encouraging commodity specialisation and encouraging subsistence farmers and emerging manufacturers to produce for broader markets, but it does not have nearly as much potential to solve it as integration with vibrant and significant external markets. According to Peter's (2010) research, the continent's recession is not caused by intra-regional trade; rather, it is the development of Africa's trade links to the outside world. The way these links are expressed in European forms of economic integration is inappropriate for regional capacities and, in some cases, may even do more harm than good. In contrast, regional economic integration in Africa only provides a small quantity of a replacement in the short or medium term due to the small size of neighbouring markets and the low amounts of trade. Another problem is that capital inflows come mostly from outside the region, and given the political and

economic barriers, attempting to integrate the regional economy further is not necessarily beneficial.

The research concluded that for the foreseeable future, African countries cannot to sever their present commercial links with outside parties. These dynamics suggest a restricted regional economic integration agenda, suited to regional capacities. Peter (2010) asserts that the agenda should include three key components: trade facilitation; supply of regional public goods, particularly network services infrastructure; and promotion of productivity gains by enlarging regional markets by establishing free trade zones (FTAs). According to Draper, Halleson & Alves (2007), there are five key principles guiding regional economic integration in Africa. These five principles include the following: on the supply side, pooling capacities would provide regional public goods that are typically absent from domestic markets; on the demand side, expanding regional markets would promote dynamic economic development by increasing the possibility of division of labour expansion and related specialization. The third is that rather than merging policy methods, regional economic integration in Africa would reaffirm the importance of a trade facilitation agenda in the broadest sense and place a focus on laws linked to network infrastructure. Furthermore, regional authorities must support the REC and show good faith by giving it preferential access to their markets.

These imperatives face the difficulty that regional governments (such as Kenya and Nigeria) that are deeply impoverished, will unlikely succeed in securing the support of their domestic lobbies for such an agenda (as seen in the AfCFTA). Finally, these difficulties imply that an alternative strategy may be preferable to the formal institutional integration that follows the EU style (Gilpin & Gilpin, 2000). Additionally, regional economic integration does not provide a cure-all for African governments; as a result, ongoing economic integration with northern allies is still necessary to reap the benefits of increasing openness.

Using the export similarity index, Peinzhi & Xiao-Jing (2015) researched on the export similarity between China and the European Union (EU) in the global market, the American market, and the Indian market from 2007 to 2013. In contrast, their report concentrated on the trade in goods using data from the UN COMTRADE database. As a result of the EU's integration and China's loss of access to cheap labour, they concluded that China and the EU have high export similarity indices and convergent export structures. The study recommends that in order to fix the problem, the two sides should instead strengthen their bilateral collaboration, and China should further her economic system reform and support economic structure transformation by providing more money for capital- and technology-intensive goods and technologies, which will raise the export commodities of the nation's overall competitiveness.

Lisandro, Maria, Tunc, Garth, and Hector (2019) used a multi-country, multi-sector general equilibrium model with different settings, such as perfect competition and monopolistic competition, to figure out how much 45 African countries would benefit from the AfCFTA. Import tariffs and non-tariff barrier reductions were not even included in their simulation. Import tariffs and non-tariff barrier reductions were not even included in their simulation. Their findings indicated that trade liberalization in Africa might result in considerable potential welfare improvements, with most of these gains coming from eliminating non-tariff barriers because intra-regional import tariffs on the continent are already low. However, cutting NTBs will involve a procedure and is likely to happen gradually, particularly significant transportation cost cuts—which will require significant expenditures. According to other findings from this research, manufacturing, and agriculture account for most of the predicted income growth in virtually all nations. As a result, a key policy suggestion from this research is that AfCFTA countries should restrict the size and breadth of tariff reduction carve outs.

Given that just 90% of the tariff lines are to be liberalised under the AfCFTA, this is a pertinent factor. Because it is concentrated in the current free-trade zones, most intra-African trade is focused on a small number of items and is already tariff-free. The potential welfare advantages of the AfCFTA would be diminished if a significant amount of the remaining trade was contained within the final 10% of tariff lines.

METHODOLOGY

This research uses descriptive and statistical techniques in its estimation, using annual time series data ranging from 2009 to 2018. As opposed to quantitative econometric research, which seeks to describe and explain the causal relationship between the variables, this research aims to discover the scope for the possibility of agricultural trade expansion in the African Continental Free Trade Area (AfCFTA). Therefore, secondary data for Nigeria and selected African Countries are analysed and compared using statistical methods with the aid of graphs and tables, and to literary discourse.

Model Specification

This research hinges of the current economic realities and the growing perception on the subject matter of the African Continental Free Trade Area and how it could be either beneficial or harmful for its member nations.

Therefore, in a bid to study Nigeria's Trade Expansion Potential of Agricultural products in Africa within the African Continental Free Trade Area, this study adopts the following models for calculating the trade overlapping indicators and trade expansion indicators for a given country:

Trade Overlapping Indicators (TOI)

$$TOI_i = 2\left(\sum_k Min(E_{ik}, M_{ik})\right)\Big/\sum_k (E_{ik} + M_{ik}) \quad (1)$$

Where;

- TOI_i denotes the trade expansion indicator for country i
- E_{ik} and M_{ik} denote the values of the export and import of an agricultural product k by a country i

The TOI ranges from 0 to 1. If the nation only exports or imports a single product, it will be zero. If the nation buys and exports goods, the value will be 1. It displays the proportion of a nation's product exports that match its product imports in that nation.

The Trade Expansion Indicator (TEI)

This indicator demonstrates which products have the highest potential for increased trans-border trade based on the degree of overlapping trade flows.

$$TEI_{ik} = 100 \cdot [Min(E_{ik}, M_{ik})/Max(E_{ik}, M_{ik})] \quad (2)$$

Where;

- TEI_{ik} is the trade expansion indicator of country *i*, for product *k.*
- E_{ik} and M_{ik} are defined as the values of the export and import of an agricultural product k by a country i

Based on the degree of overlap between trade flows, the TEI suggests which items have the most potential for growing transnational trade. Indicators for trade expansion range from 0 to 1. It will

be zero if the country has no trade expansion possibility for the individual products. The more it tends to 1, the higher the possibility of trade expansion the country has for that product.

Measures of Variables and Data Sources

The study uses of time series data from the Food and Agricultural Organisation Statistics Trade, and Production Indicators. The data set consists of yearly values of the Export and Import quantity in metric tons, Export and Import value in 1000 USD, and the Production Value and Quantity of the selected Agricultural Products for Nigeria and other selected African countries for a period of 10 years. For the purpose of this data from 2009 to 2018, the following statistical data were collated for the estimation.

Table 1

Variable Definition, Data Sources and Measurements

Variable	Data Source	Measurement
Global agricultural exports by selected African countries (different commodities)	(FAOSTAT 2020)	USD 1000; metric tons
Global agricultural imports by selected African countries (different commodities)	(FAOSTAT2020)	USD 1000; metric tons
Global agricultural production by selected African countries (different commodities)	(FAOSTAT 2020)	USD 1000; metric tons
Total Production of agricultural products, selected African countries	(FAOSTAT2020)	USD 1000; metric tons
Total Imports of agricultural products, selected African countries	(FAOSTAT 2020)	USD 1000; metric tons
Total exports of agricultural products, selected African countries	(FAOSTAT 2020)	USD 1000; metric tons

Note: FAOSTAT = Food and Agricultural Organisation Statistics, Online database

RESULTS

Trade Overlap Index

The Trade Overlap Index (TOI) calculates how much a country's or group of nations' trade flows overlap. The findings show that trade flows between the nations overlap to a significant degree. Figure 1 shows considerable increases over the duration of time from 2009 to 2018 in the overlapping trade flows between Nigeria and the selected African countries; from 11% in 2013 to 14% in 2014 and 16% in 2015. This was followed by an increase in 2016 to 18% and the highest degree of overlapping flow on imports and exports in 2017 stood at 25%. It is important to note that in many cases, the TOI varies between 0 and 1 and is significantly less than 1.

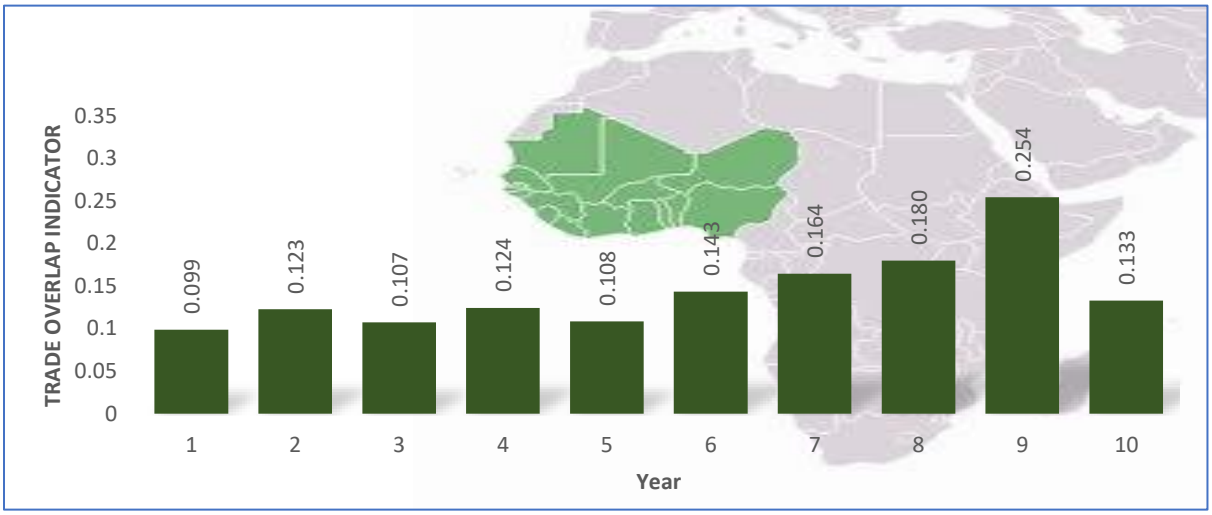

Figure 1. Trade Overlap Index between Nigeria and Selected African Countries by Year

Source: Authors' computation

Figure 2 reveals the overlapping trade flows of selected individual products between Nigeria and the selected African countries. It shows which products are mostly imported by Nigeria and exported by the other African countries. The graph below shows significant overlapping trade flows; 58% in the trade of cassava, followed by 26% in the trade of oil seeds, and 22% in

groundnuts from and to Nigeria from these countries. The products with close to zero overlapping trade flows in the trade of cereals, sesame cocoa and natural rubber.

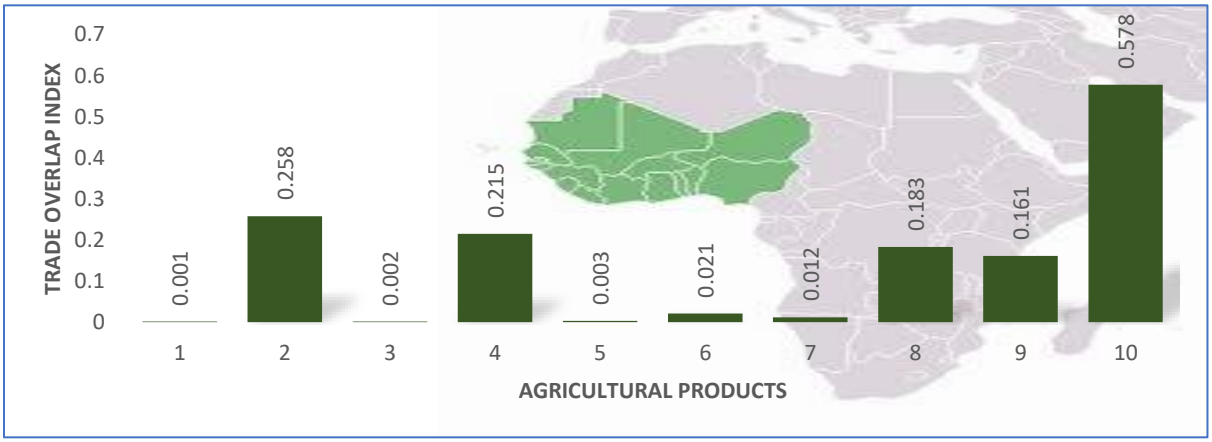

Figure 2. Trade Overlap Index between Nigeria and Selected African Countries by Product

Source: Authors' computation

Trade Expansion Index

Based on how much trade flows overlap, the Trade Expansion Indicator (TEI) identifies which goods have the most potential for growing transnational trade. Table 2 shows the trade expansion possibility between Nigeria and other selected African countries for the ten (10) selected products across time from 2009 to 2018. Just like the Trade Overlap Index, in most cases, the TEI varies between 0 and 1. The table above shows the agricultural products with the highest and lowest TEI values between Nigeria and the selected African countries over the duration of time from 2009 to 2018; cassava having the highest and continuous increases in TEI values from 0.22 in 2019, to 0.49 in 2012, and then 0.52 in 2018.

Table 2
Trade Expansion Index between Nigeria and Selected African Countries

Year	Cereals	Oilseeds	Sesame	Groundnut	Cocoa	Rice	Rubber	Cotton	Spices	Cassava
2009	0.0009	0.0777	0.0000	0.0655	0.0026	0.0006	0.0134	0.0678	0.1022	0.2227
2010	0.0008	0.0904	0.0000	0.0650	0.0038	0.0005	0.0045	0.0784	0.0715	0.4780
2011	0.0005	0.0785	0.0000	0.0650	0.0038	0.0004	0.0034	0.0862	0.0666	0.3939
2012	0.0005	0.0978	0.0016	0.0650	0.0039	0.0003	0.0250	0.0952	0.0605	0.4926
2013	0.0005	0.1339	0.0020	0.0666	0.0000	0.0003	0.0093	0.0733	0.0543	0.3456
2014	0.0006	0.2352	0.0028	0.1067	0.0000	0.0006	0.0003	0.0380	0.0608	0.5620
2015	0.0007	0.2724	0.0001	0.3417	0.0000	0.0005	0.0005	0.0914	0.0925	0.3130
2016	0.0008	0.2148	0.0015	0.3517	0.0000	0.0005	0.0003	0.0817	0.0000	0.5611
2017	0.0006	0.2216	0.0000	0.2710	0.0000	0.0005	0.0003	0.2589	0.1014	0.5081
2018	0.0007	0.1168	0.0006	0.0000	0.0000	0.0005	0.0029	0.1782	0.0834	0.5219

Source: Authors' computation

Oil seeds and groundnuts are two other agricultural products that also exhibit some near significant trade expansion possibilities for Nigeria with other selected African countries. Oil seeds and groundnuts, with their average TEI values (2009- 2018) indicate an average value of 0.15 and 0.14 respectively as shown in figure 3 below.

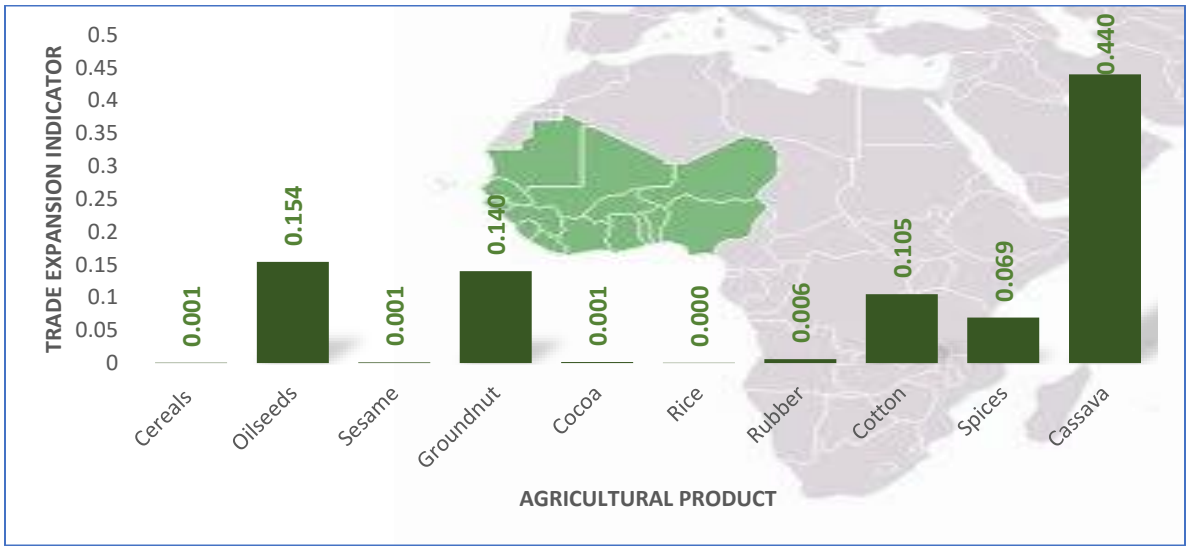

Figure 3. Trade Expansion Index between Nigeria and Selected African Countries by Product
Source: Authors' computation

DISCUSSION OF FINDINGS

Agricultural products such as cereals, sesame seed, cocoa, rice, and, rubber show close to zero TEI values and hence, indicate no trade expansion possibility between Nigeria and the selected African countries. Based on the agricultural products examined, there are overlapping trade flows between Nigeria and the selected African countries in the trade of cassava. The theory states that trade flows can be redirected because of the formation of a free trade area, i.e., any current overlapping trade flows from and to outside Nigeria can be redirected once the AfCFTA is fully implemented. This takes place as trade flows change from truly cost-efficient partner states to less efficient ones, although the total cost of the goods becomes cheaper as they trade within the region because of the low tariff. Low tariffs will allow consumers to buy more and better-quality products at lower costs. This will then drive competitiveness and innovation among the countries, thus promoting technical efficiencies in Nigeria. As a result, it would be easier for Nigeria to expand her export of cassava and diversify her national agricultural production. Therefore, to redirect trade flows, Nigeria can invest in building the weak productive capacity and technical inefficiencies in the production of cassava. Large scale investments should be encouraged by the government in the competitive production of cassava and the manufacture of high-end and secondary goods made with cassava.

Furthermore, once the AfCFTA is fully implemented, the complete removal of tariffs will allow Nigeria's quality products and cassava to become cheaper and therefore more attractive and competitive. The results show the statistical analysis of the Trade Expansion Index between Nigeria and the selected African countries of this study, which reveals some degree of trade expansion possibility, especially in the trade of cassava. This trade expansion in cassava can be focused on Equatorial Guinea, Guinea-Bissau, Mauritania, and Sierra Leone. The Central Bank of Nigeria should focus their agricultural sector intervention funds for development activities on the

production and export of cassava and cassava related products once the AfCFTA is fully implemented.

The UNCTAD (2019) reports that a significant barrier to intra-African trade is the underdeveloped production capability of African nations. Once the AfCFTA is put into effect, Nigeria must address this issue to increase intracontinental trade by creating regional value chains. This value chain may be a key tool for distributing the economic advantages from African trade (such as those from manufacturing), as well as providing Nigeria with chances to advance technologically and along the value chain. An action plan is necessary since there is a lot of untapped potential for turning primary commodities in Africa, particularly agricultural products, into industrially processed finished products within regional value chains in order to enhance the scope for Nigeria's export of cassava in Intra-African trade. This will include taking advantage of the continental value chains to increase competitiveness, local production, and export of agricultural goods with higher value added produced in Africa.

In order for Nigeria to seize the possibility of trade expansion for cassava, policy incentives can be put in place by the government to support a boost in the production of cassava as well as encourage private investors, such as large scale agricultural investors, to direct their investment towards the production and export of cassava where potential markets exists in Africa once the African Continental Free Trade Area (AfCFTA) is fully implemented.

CONCLUSION

The objective of the study was to statistically estimate the existing scope or opportunity for the expansion of Nigeria's Agricultural product exports. Through the IFPRI approach, the study found

in the Trade Expansion Index in Fig. 3 that for the Agricultural Products examined, there is some scope for the export expansion of some of these products.

Over time, the data in Fig. 2 revealed that there has been considerably less overlap in the trade of the selected Agricultural products. However, it is important to note that the results show significant overlapping trade flows in the cassava trade. The implication of this is that, for trade expansion to be realised for this product, Nigeria would have to divert her export and import of cassava to and from other African countries (as in this case of the AfCFTA, not included in this study) as well as invest in the value-chains of this product in order to export "value-added," which will lead to a decrease in the trade overlap and increase Nigeria's competitiveness in the export of cassava.

Overall, in answering the question of the objective one stated above, whether any scope exists for the trade in Agricultural Products, we examined the implications of the results above and the analysis of Fig. 3. The figure shows the statistical analysis of the Trade Expansion Index between Nigeria and the selected African countries of this study, and it reveals some degree of trade expansion possibility, especially in the trade of cassava. Based on the agricultural products examined, there are overlapping trade flows between Nigeria and the selected African countries in the trade of cassava.

Once the AfCFTA is fully implemented, the complete removal of tariffs will allow Nigeria's quality products and cassava to become cheaper on the foreign market and therefore more attractive and competitive. Previous research such as Freund & Ornelas, (2010), has found that Mega Trade blocs with the aim of removing tariff and non-tariff trade barriers and restrictions on investments in a wide range of sectors are exactly the right policy intervention for Nigeria's agricultural commodities trade expansion. Hence, the AfCFTA is a major policy tool as it is beneficial to its members by facilitating the flow of goods between countries, improving links between members

by developing cross-border infrastructure, allowing the free movement of persons, and finally through “trade creation”. It can also lay the foundation for the diversification of individual nations agricultural outputs by creating common markets, managing infrastructure, strengthening human capacity, and harmonising technological standards and regulations. Therefore, the Government should set priority to the implementation of the AfCFTA in Nigeria.Other policy interventions include: The Central Bank of Nigeria, once the AfCFTA is fully implemented, should focus its agricultural sector intervention funds for development activities on the production and export of cassava and cassava related products.

In order for Nigeria to seize the possibility of trade expansion of cassava, policy incentives can be put in place by the government to support a boost in the production of cassava as well as encourage private investors, such as large scale agricultural investors, to direct their investment towards the production and export of cassava where potential markets exist in Africa once the African Continental Free Trade Area (AfCFTA) is fully implemented. Once the AfCFTA is implemented, the Government can maximise the advantage of the West African region and other countries contiguous to Nigeria since there is a scope for Nigeria’s export expansion to these countries. The export of cassava and other agricultural products from Nigeria to these countries is usually done by road. Therefore, the government should look into investments in road infrastructure. This will then reduce the transportation costs of these goods, making them more competitive and attractive. The Government can also work hand in hand with Research and Development, the Private Sector, SME’s, and rural farmers to find and encourage the use of Information Technology in the production of cassava as well as general agricultural systems.

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