



Investigation of Nigeria's Comparative Advantage for the African Continental Free Trade Area

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Abstract

Nigeria's comparative advantage for the African Continental Free Trade Area (AfCFTA), has been investigated by this work. The specific objectives of this study are calculating the Revealed Comparative Advantage (RCA) and the Revealed Symmetric Comparative Advantage (RSCA) of Nigeria, and computing and comparing the Revealed Comparative Advantage (RCA) and the Revealed Symmetric Comparative Advantage (RSCA) of Nigeria, Ghana and South Africa. Time series data of Nigeria's, Ghana's and South Africa's export products namely raw materials, intermediate goods, consumer goods and capital goods were obtained from the World Integrated Trade Solution (WITS). The RCA and RSCA of raw materials, intermediate goods, consumer goods and capital goods were computed using the Balassa index, and it was found that Nigeria has comparative advantage in the export of raw materials but has comparative disadvantage in the export of intermediate goods, consumer goods and capital goods. Compared to Ghana and South Africa, Nigeria can profitably export raw materials to AfCFTA trade partners because, though Ghana and South Africa also have comparative advantage in the export of raw materials, theirs is lesser than Nigeria's. Unlike Nigeria, Ghana and South Africa have relative advantage in intermediate goods export trade. In the export of consumer goods, Nigeria, Ghana and South Africa all have comparative disadvantage, but the position of South Africa is better than that of Nigeria and Ghana. Similarly, Nigeria, Ghana and South Africa have comparative disadvantage in the export of capital goods, however, the position of South Africa is better than those of Nigeria and Ghana. Based on the findings, this

study recommends that Nigeria should continue to strengthen its raw materials exports and at the same time, pursue policies and programmes that would improve the comparative advantage positions of its intermediate goods, consumer goods and capital goods export trade. In the area of trade negotiations, the findings of this study has been recommended to the Nigerian Office for Trade Negotiations (NOTN) for adoption in its preparations of guidelines on the rules of origin for stakeholders' negotiations under AfCFTA

Key words: Revealed Comparative Advantage, Revealed Symmetric Comparative Advantage, Goods, Free Trade Area, Nigeria.

JEL Classification Codes: F10, F11, F12, F14.

1. Introduction

International trade is a very important economic activity which involves goods and services exchange between countries. Trade contributes to the Gross Domestic Product (GDP) of countries. For instance, trade as a percentage of Nigeria's GDP in 2010 stood at 43.32. Trade as a percentage of Ghana's GDP in 2019 stood at 71.11. Similarly, trade as a percentage of South Africa's GDP in 2019 stood at 59.20 per cent (The World Integrated Trade Solution-WITS, various years). The World Bank posits that trade has increased incomes worldwide by 24% since 1990, and by 50 per cent for the poorest 40 percent of the population (World Bank, 2021). The United Nations Conference on Trade and Development (UNCTAD), reports that trade amongst African countries is currently 14.4% of total African exports, and predicts that the AfCFTA could increase trade between African countries by about 33% and reduce the continents' trade deficit by 51% (Grynspan, 2021). According to the African Development Bank (2021), the AfCFTA is expected to boost trade between African countries by up to \$35 billion a year, and create a 52 per cent increase in trade by 2022 –a projected significant leap from the 16% intra-African trade as of December 2020 (see NEPC, 2020). There are indeed ambitious plans for and expectations of AfCFTA in the 54 African countries that have signed the agreement. The AfroChampions Initiative has, in Kigali Rwanda, presented a \$1 trillion deal structure in support of AfCFTA objectives by 2030 (see African Business, 2019).

In view of the importance of trade, countries have continuously devised ways to enhance the welfare of their citizens through improved trade transactions. Economists have over time, proffered suggestions about how best to manage trade between countries. For example, Adam Smith in his *Wealth of Nations* (1776), made far reaching suggestions in this regard. Thus, the African Continental Free Trade Agreement is a product of these collective quest for more mutually beneficial trade.

Presently, 36 countries have ratified the AfCTTA Agreement which was signed at Kigali on 21 March 2018 (see African Union, 2018a; African Union, 2018b). And the agreement entered into force on January 1, 2021, thus, the African Continental Free Trade Area is fully created, and has brought about a lot of excitement and hope of economic rejuvenation of Africa. Proponents of the Free Trade Area expect the AfCFTA to harness 1.3 billion people of Africa in a \$3.4 trillion economic bloc, improve their welfare, increase firm competitiveness, and stimulate trade cum investment in the continent. Generally, small and medium-sized enterprises expect opportunities from AfCFTA with cautious optimism because of concerns about imminent competition from foreign products and the possibility of dumping of substandard goods in the country (African Union, 2022).

Nigeria, the biggest economy on the African continent became the 34th member of the trading bloc, when on July 7, 2019, it signed the agreement (Yewande & Chukwuka, 2021).

The motivation for this agreement is to achieve economic prosperity for the member countries through engaging in free trade. Thus, the agreement amongst other objectives, provides for –

- (i) establishment of single market for goods and services, enabled by movement of persons in order to deepen the economic integration of the African continent in accordance with Agenda 2063;
- (ii) making of a liberalized market for goods and services through sustained negotiations;
- (iii) progressive removal of both non-tariffs and tariff obstacles to trade in goods; and
- (iv) progressively liberalize trade in services exports.

Free trade agreements are known to engender competition between trading partners. And like all competitions only the prepared win and the less prepared loss. Preparedness in this context connotes the one with relative advantage in the international trade. In addition to the possession of comparative advantage, participants should have the capacity to prepare guidelines on the rules of

origin for stakeholders' negotiations (see Shibayan, 2021). Also, countries should be able to design and implement national strategies and mitigation policies. According to a joint training proposal on AfCFTA done by the United Nations Economic Commission for Africa, and the African Institute for Economic Development and Planning (Ancharaz, 2020), ability to design and implement national strategies and mitigation policies is the foundation for a successful participation in AfCFTA. Other potential enablers of AfCFTA have been identified by LCCI and AfroChampions respectively to include leveraging the likes of ECOWAS Protocols, using transportation and connectivity infrastructure, leveraging AfCFTA awareness, as well as removal of non-trade barriers (ECOTIS, 2022). Similarly, Seyoum (2013), identified good transportation system and leveraging the entrepreneurial class as conditions for successful international trade.

Comparative advantage is used in economic models to explain the composition and direction of international trade. According to Sodersten & Reed (1994), comparative advantage exists when a country can produce a good at lower opportunity cost than its trade partners.

Does Nigeria have the comparative advantage required to 'win' in the largest free trade area in the world? This paper will focus on investigating Nigeria's comparative advantage for the African Continental Free Trade Area.

2. Literature Review

Saboniene (2009), holds that comparative advantage as a concept, is used widely in modern economic literature to evaluate the patterns of trade and specialization of countries in commodities. Valentine & Krasnik (2000), in their work, used RCA indicators to describe comparative advantage in international trade for individual member states and for collective group. Etuk & Ohen (2017) in their paper, measured Nigeria's export competitiveness in the palm oil trade during the 1990-2013 period in comparison to Ghana and Côte d'Ivoire and empirically found that Côte d'Ivoire is highly competitive in the export of palm oil followed by Ghana and lastly Nigeria which is less competitive compared to the aforementioned countries. Yewande & Chukwuka (2021), in their piece, raise hope of economic prosperity for Nigeria, and fear that the free trade may bring fierce competition for Nigeria. The paper identified manufacturing capacity, domestic costs of doing business, firm productivity, infrastructural capability, AfCFTA awareness levels, and access

to loans and financing, as some of the factors that will determine who will gain from the AfCFTA in the face of the mutual competition that AfCFTA would engender. Ibrahim & Iorember (2018) in their study, identified commodities and sectors of comparative advantage between Nigeria and China and the extent to which Nigeria exports matches with China's import demand. The study applied the Revealed Sectorial Comparative Advantage Index and the Trade Complementarity Index on data collected from the World Integrated Trade Solution (WITS, 2018), and found that:

- i. Nigeria can competitively export fuels to China, while China can competitively export textile and clothes, footwear, metals, machinery, electronics, and miscellaneous products to Nigeria;
- ii. Nigeria has a sustained comparative advantage in raw materials export with strong competitiveness while China has comparative advantage in consumer and capital goods with low export competitiveness;
- iii. Nigeria has comparative advantage in the petroleum sector and China has comparative advantage in the industrial sector (see UNIDO, 2021); and
- iv. Nigeria can only partially meet 32.61% of Chinese import demand from 1988-2017. While China moderately meets 57.40% of what Nigeria requires from its export supply. Based on its findings, the study, recommends the need for government to initiate policies aimed at maintaining existing product comparative advantage and to strengthen the competitiveness of products and sectors having a comparative disadvantage. Ibrahim (2015) examined the trade complementarity and similarity between Nigeria and India in the context of bilateral trade relations and found that out of twenty major product categories, Nigeria has comparative advantage in only few products like mineral fuels, ships, boats and floating structures, rubber and articles thereof, lac; gums resins and other vegetables. The RCA indices of these products were greater than one which means that Nigeria can export these products to India if India has low comparative advantage in them.

Oladimeji, Amida & Essien (2019), in their work, examined the impact of business innovation on competitive advantage in the Nigerian Manufacturing Sector, and found that innovation in business significantly affects the products costs, market share and quality. They therefore recommended that multinational companies should prioritize customer satisfaction through product quality; and emphasize innovation for competitive edge. Duru & Ezenwe (2020), investigated the nexus

between exports and economic growth in Nigeria, utilizing the Autoregressive Distributed Lag Bounds testing technique to cointegration, found that in the short-run and long-run, export exerted a negative and insignificant relationship with economic growth in Nigeria. The implication of this result is that government efforts through the Economic Recovery and Growth Plan (ERGP) 2017-2020 (see The Ministry of Budget & National Planning, 2017), which is an export-led economic growth and development agenda and the National Industrial Revolution Plan (see Nigerian Federal Ministry of Industry, Trade and Investment, 2014) meant to revitalize industries and possibly make manufactured exports a reality have not yielded the desired results. The causality results showed a uni-directional causality running from non-oil exports to economic growth. However, no causality was found between exports of goods and services and economic growth. Based on the findings, the study recommended that government diversifies her export composition by finding a viable alternative to crude oil export and invest in technologies for the processing of primary export commodities to ensure value addition. Besides, a conducive climate is needed in the export sector to attract investors.

3. Methodology

Employed in this study, is a methodology that is geared towards achieving the aims of the study. The methodology includes the computation of Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA) of Nigeria's export products, namely: (i) raw materials (ii) intermediate goods (iii) consumer goods; and (iv) capital goods. For the purpose of comparison, the Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA) are also computed for Ghana's and South Africa's export trade of the products of choice. Ghana and South Africa have been chosen as representative sample of other AfCFTA members for comparison purpose in order to explain the trade opportunities available to Nigeria in AfCFTA. The data used for the analysis was sourced from World Integrated Trade Solution (WITS). The data collection was guided by United Nations Standard Products and Services code which are used to classify products and services.

The Revealed Comparative Advantage is given as:

$$RCA_{it} = (X_{ij}/X_{tj}) / (X_{iw}/X_{tw}) \dots\dots\dots (1)$$

Where: -

- i. RCA_{it} = revealed comparative advantage index of product i at time t ;
- ii. X_{ij} = export of product i from j ;
- iii. X_{tj} = total exports from j ;
- iv. X_{iw} = World's export of product i ;
- v. X_{wt} = World's total export.

If RCA index computed ranges from $1 - \infty$, there is a comparative advantage but if RCA index computed ranges between 0 and 1, there is a comparative disadvantage. However, these two ranges of >1 and <1 are not symmetrical which makes the distribution of indices skewed and this affects the judgment on the comparative advantage of different commodities or sectors. Therefore, the study adopted the refined method of RCA index proposed by Benedictis (2005) in order to correct the defect found in Balassa index (1965). The refined method of RCA index proposed by Benedictis is called the Revealed Symmetric Comparative Advantage-RSCA (for RCA and RSCA see Laursen, 2015; Widodo, 2009).

The Revealed Symmetric Comparative Advantage (RSCA) by Benedictis (2005) is given as:

$$RSCA = (RCA - 1) / (RCA + 1) \dots \dots \dots (2)$$

RSCA adjusts RCA to make it become symmetric about its neutral value. When RSCA is on balance, it is the best measure of comparative advantage.

The use of RCA is informed by the suggestion made by Balassa (1965) that export results could be used to reveal the comparative advantage of a country in the absence of comprehensive data on factor costs. Hence, the RCA of Nigeria's raw materials, intermediate goods, consumer goods and capital goods exports have been computed to reveal Nigeria's comparative advantage index using export data only. The same computations have been done for Ghana and South Africa and compared with that of Nigeria for the purpose of evaluating Nigeria's chances in the AfCFTA arrangement.

4. Data and Method of Data Analysis

4.1. Nature, Sources and Uses of Data

The data needed and used for analysis in this study include time series data of Nigeria's, Ghana's and South Africa's export products namely raw materials, intermediate goods, consumer goods and capital goods; the data were obtained from World Integrated Trade Solution (WITS), and the data collection and classification was guided by United Nations Standard Products and Services Code (see UNGM, 2022). which are used to classify products and services. The RCA in respect of those products were computed for the three countries. In order to neutralize the effect of changes in exchange rate, the values of exports were referred to in US dollars. The data covered the period 2008 to 2019.

4.2. Empirical Results of Data Analysis

Table 1.0: RCA and RSCA of Nigeria's raw materials, intermediate goods, consumer goods and capital goods exports (2008-2019):

Years:	2008-2019	2008-2019	2008-2019	2008-2019
Product:	Raw materials	Intermediate goods	Consumer goods	Capital goods
RCA:	6.86	0.15	0.43	0.05
RSCA:	0.75	-0.74	-0.40	-0.90

Source: Computations by author based on data from WITS.

The RCA computed for raw materials is 6.86, which means that Nigeria has comparative advantage in the export of raw materials. The RCA computed for intermediate goods is 0.15, meaning that Nigeria has comparative disadvantage in the export of intermediate goods. The RCA computed for consumer goods is 0.43, showing that Nigeria has comparative disadvantage in the export of consumer goods. The RCA computed for capital goods is 0.05, which shows that Nigeria has comparative disadvantage in the export of capital goods.

The adjusted RCA (Revealed Symmetric Comparative Advantage) computed, validates the RCA index as presented on table 1.0. That is, the RSCA computation confirms the RCA position that

Nigeria has comparative advantage in raw materials export and comparative disadvantage in the export of intermediate goods, consumer goods and capital goods.

Table 2.0: RCA and RSCA of Nigeria's, Ghana's and South Africa's raw materials, intermediate goods, consumer goods and capital goods exports (2008 to 2019):

Year	2008 – 2019			2008 – 2019			2008 – 2019			2008 – 2019		
Product	Raw materials			Intermediate goods			Consumer goods			Capital goods		
Country	Nigeria	Ghana	South Africa	Nigeria	Ghana	South Africa	Nigeria	Ghana	South Africa	Nigeria	Ghana	South Africa
RCA	6.86	3.49	2.42	0.15	2.51	1.88	0.43	0.33	0.65	0.05	0.04	0.48
RSCA	0.75	0.55	0.42	-0.74	0.43	0.31	-0.40	-0.50	-0.21	-0.90	-0.92	-0.35

Source: Computations by author based on data from WITS.

Table 2.0 above, shows that Nigeria has comparative advantage in raw materials export and comparative disadvantage in the export of intermediate goods, consumer goods and capital goods. Thus, Nigeria can profitably export raw materials to AfCFTA trade partners because even though Ghana and South Africa also have comparative advantage in the export of raw materials, theirs is lesser than Nigeria's. The same table 2.0 shows that Nigeria has comparative disadvantage in the export of intermediate goods, but Ghana and South Africa have relative advantage in intermediate goods exports. In the export of consumer goods and capital goods, Nigeria, Ghana and South Africa all have comparative disadvantage, but the position of South Africa is better than that of Nigeria and Ghana.

5. Conclusion and Recommendations

This study investigated the comparative advantage of Nigeria for the African Continental Free Trade Area using export data from the period 2008 to 2019. The empirical findings shows that Nigeria has comparative advantage in raw materials export and comparative disadvantage in the export of intermediate goods, consumer goods and capital goods. Thus, Nigeria can profitably export raw materials to AfCFTA trade partners because even though Ghana and South Africa also have comparative advantage in the export of raw materials, theirs is lesser than Nigeria's. However, in a competitive environment like AfCFTA, Nigeria must work hard to maintain this

better comparative advantage position in the export of raw materials. Ghana and South Africa have comparative advantage in the export of intermediate goods, suggesting that the two countries have better processing and value addition industrial activities than Nigeria. In the export of consumer goods, Nigeria, Ghana and South Africa all have comparative disadvantage, but the position of South Africa is better than that of Nigeria and Ghana, as South Africa is close to exiting the disadvantaged class. In the same vein, Nigeria, Ghana and South Africa have been shown by their respective RSCA computations to have comparative disadvantage in the export of capital goods; however, the position of South Africa is better as they are close to exiting the disadvantaged group.

The findings of Nigeria's comparative disadvantage in the export of intermediate goods, consumer goods and capital goods, suggests that there is very low level of processing/value addition and manufacturing for export going on in Nigeria. Therefore, this study recommends that Nigeria should endeavor to provide enabling environment for better processing and manufacturing for exports to take place. Specifically, government should provide electricity, functional export processing zones, good roads, industrial parks, tax and other relevant incentives, all of which would help to reduce costs of production as well as improve quality of products for the export market. In the same vein, export performance incentives should be put in place to continue to encourage higher exports of raw materials. In the area of trade negotiations, I recommend the findings of this study to the Nigerian Office for Trade Negotiations (NOTN) in its efforts to prepare guidelines on the rules of origin for stakeholders' negotiations under AfCFTA.

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