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ECONOMIC INTEGRATION AND THE PROMOTION OF TRADE AND ECONOMIC GROWTH IN ECOWAS: A CROSS COUNTRY ANALYSIS, 1990 – 2018

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Abstract: This research was conducted to study the effect of economic integration in the ECOWAS region on the trade relations between member-states as well as their respective economic growth. To this end, data on seven ECOWAS countries were analyzed using panel-OLS estimation technique to ascertain how economic integration in the region has impacted trade and economic growth in the participating countries. Key findings revealed that intra-regional trade is still low, despite the existence of numerous trading blocs. Specifically, poverty rates are still high and Real Gross Domestic Product (RGDP) does not seem to be positively influenced by economic integration in the region. Many social, economic, and political challenges contribute to the inability of the ECOWAS bloc to promote intra-regional trade and economic growth among its members. It is therefore the opinion of the study that addressing these hindrances would amplify the positive effects of the regional bloc towards enhancing intra-ECOWAS trade and economic growth.

I. Introduction

Trade relations among nations of the world have become a normal economic practice over time. In this regard, trade has been presented as a necessity for the attainment of sustainable economic growth and development. However, the nature and direction of relationship, as well as the economic status of participating countries is of utmost importance. Following the traditional trade theories as put forward by Adam Smith and David Ricardo, and their extended form in the Hecksher-Ohlin-Samuelson's factor endowment theory, favorable conditions for a mutually beneficial trade between two or more countries exist only on the basis of different factor endowments which forms the basis for an absolute or comparative advantage in trading. This assertion, however, could be said to apply favourably when dealing with inter-industry trade. With insights from Todaro & Smith (2006), this form of trade usually occurs between the developed countries (North) and the developing countries (South). Howbeit, as often reported, the benefits obtainable from inter-industry trade is

usually very minimal for developing countries, given their exports composition of primary products which are mostly underprized in the global market, and their economic smallness and fragmented existence which robs them of the capacity to negotiate better prices for their primary products (Salvatore, 2006). The consequence has been the continuous state of underdevelopment and economic dependence of the developing countries on the developed countries. Nevertheless, Linder (1961) brought forward a possible remedy from this state of economic frustration, he made suggestions on the possibility of trade occurring between countries with similar factor endowments, and stressed the need for developing countries to utilize intra-industry trade on similar but differentiated products in a regionally integrated market as a step towards integration into the global market. The concept of economic integration comes to the fore here.

Economic integration has been identified as one of the ways through which third-world countries can achieve economic independence. The many benefits attached to it has been the major motivation behind the switch into regionalism. Empirical wisdom proves it, and economic theories of trade and growth show it, that integration processes are likely to have a tremendous impact on the intensity of trade and the division of labour between the countries involved, as well as on wages and incomes within them (Ombeni, 2008). Many economic blocs exist with their peculiarities, some notable examples include the North American Free Trade Area (NAFTA) and the European Union (EU). These two appear to be the foremost economic blocs which serve as models for others to be tailored after. Ombeni (2008) stated that these sort of arrangements by default have positive accruals which are expected to be more at higher levels of integration. Schiff and Winters (2002), further explained that each integration brings changes to the consumers and manufacturers of a country that embraces it, while other changes take place as well. With respect to Ombeni (2008), these changes include: increased trade, expanded markets, attraction of Foreign Direct Investment (FDI), increased bargaining power, strengthened security and conflict resolution in the region, and the free movement of people across the region. Member Countries could as well undertake several projects together including transport and communication projects, collective employment and poverty reduction, joint environmental conservation as evident in the East African Community (EAC) in the conservation of Lake Victoria (commonly owned by Tanzania, Kenya and Uganda), and a joint tourism promotion.

In West Africa, the Economic Community of West African States has been in existence from 1975 with the processes of economic unification engaged in the 1990's. According to the Treaty of Lagos, a major reason for forming the Community (ECOWAS) was "the overriding need to accelerate, foster and encourage the economic and social development of their states in order to improve the living standards of their people" (Diejomaoh and Iyoha, 1980). The primary instrumentality for achieving this desirable objective of rapid economic development was the establishment of a customs union entailing: internal free trade among members, a common external tariff, free labour mobility, free movement of

services and capital between member states (Diejomaoh and Iyoha, 1980). From here, the most attractive factor of integration is hinged on the general principle of the creation of a common market where goods, services and capital are guaranteed freedom of movement within the integrated area. This guarantee includes the right of residence and establishment, and all activities have a bearing on national output which inspires economic growth.

A quick review would prove the fact that the actual benefits obtained from these arrangements are yet to be seen. Notwithstanding, efforts are constantly made to further deepen the integration arrangement within the ECOWAS region and in Africa as a whole. It is on this note that this study launched out with the objective to ascertain the benefits that member countries are enjoying or expecting to enjoy because of their membership in the ECOWAS bloc. The paper shall further perform an isolated evaluation to ascertain how economic integration in the ECOWAS region has been effective in promoting intra-regional trading activities and economic growth in the region.

2. Literature Review

2.1. Economic Integration

Just like conventional wisdoms present integration to be a union of two or more distinct entities, the economic aspect is not far from the mark. The term Economic Integration (EI) is seen to have several connotations. It usually involves the unification of trade among the Members of a given trade bloc. It equally includes partial or full removal of tariffs on trade across national boundaries with the purpose of reducing prices and enhancing the welfare of citizens in the Member States, usually in a region (Todaro and Smith, 2006). Regional Trade Agreements (RTAs) is important for trade creation and formation of a custom union. An important outcome of RTAs through trade liberalization is to enable more efficient producers in a region to expand output via economies of scale to the advantage of consumers and the detriment of less competitive producers (Njinkeu, Wilson, and Fosso, 2008). These gains are only feasible should trade restrictions be removed and harmonized.

In line with the neo-classical model, Economic integration implies the removal of artificial barriers to trade and the deliberate introduction of strategies that liberalize economies by eliminating barriers to mobility of resources and commodities, developing the economies by facilitating the accumulation of capital and economies of scale, increasing competition and productivity, as well as culminating in the harmonization and co-ordination of policies. As consequences, these reductions of transaction costs are expected to yield increased trade intensity of goods and services, adjustments in the international division of labor through increased flows of capital, information and knowledge and through migration of workers, and, finally, changes of income, employment and growth (Bhagwati, 2004; Schulze and Ursprung, 1999). This aims towards achieving market equilibrium, resulting in uniform prices and free movements of both commodities and

factors. Viner (1950) notes that the rationale for formation and succession of Integration draws from the standard trade theory whose basic principle stipulates that 'free trade is superior to all other trade policies', as subsequently confirmed especially of Africa by Brueckner and Lederman (2015).

Economic integration processes can be realized through various stages, namely: preferential trading area, free trade area, customs union, common market, economic union, customs and monetary union, economic and monetary union, fiscal union, and full economic integration (Viljoen, 2015). The stages and duration as well as effectiveness depend on both the nature of regulations and the adherence to laid down rules by the Member States. The Economic blocs essentially exist to help host regions maximize the benefits of engaging in international trade and minimize possible costs that are involved. This is usually pursued through market access and the reduction of trade restrictions. Yang and Gupta (2007) have noted that regional groupings in Africa have not been effective in promoting trade due to external trade barriers and low level of resource harmonization among members. Other possible challenges include fragmented markets of small sizes, poor transport facilities and high trading costs (Osabuohien, 2011). Economic blocs also strive to achieve the existence of mutually benefitting integration, strong political commitment to the integration and strong institutions among members (McCarthy, 1996).

2.1.1. The broad and narrow perspectives of economic integration

World Development Report (2009) presents integration as having broad and narrow aspects, referring to regional integration as the narrow liberalization and globalization as the broad liberalization. According to the report, narrow and broad liberalization should be treated as complements, not substitutes. The report further argued that without global integration the benefits of regional integration would be small, and without regional integration the benefits from global integration might be unattainable for some countries which cannot compete on a global scale by themselves. Regional integration is not simply about adapting inward-focused policies at the regional level which have failed to deliver at the national level. Rather it is a means to achieving greater global integration. The key objective of regional integration is to be better connected to global markets.

2.1.2. Types of integration schemes

Following the work of Ombeni (2008), the process of economic integration ranks integration arrangements according to the intensity of its achievement in along a continuum starting with a preferential trade area, and evolving through a free trade area, customs union, common market, economic union, economic and monetary union to ultimately achieve a state of total economic integration.

In Preferential Trade Areas (PTAs), countries lower tariffs on trade among themselves while retaining autonomy in setting tariffs on trade with countries outside the regional bloc. A Free Trade Area (FTA) is simply a slightly deepened integration process; beyond

what is obtainable in the PTA. Here, countries eliminate tariffs on trade among themselves while retaining autonomy in trade policy with non-members. A problem with preferential and free trade areas is the danger of trade deflection. This can arise where goods are imported through the country with the lowest external tariff for free circulation throughout the region. Trade deflection can be controlled by the use of rules of origin (rules which determine if a product is deemed to have originated in a particular country and is thus eligible for preferential tariff treatment) or through forming a customs union.

Customs unions remove tariffs on trade among members and maintain a Common External Tariff (CET) on trade with non-members. A common market is an extension of the customs union but with a free movement of capital and labour between members as well as freeing trade in goods and services. In an economic union, members pursue some degree of harmonization of national economic policies to remove discrimination due to disparities in these policies. Monetary union adds the adoption of a common currency and a common monetary policy, while the stage of total economic integration involves the unification of monetary and fiscal policies under the auspices of a supranational authority.

In the past, there was a tendency to see this typology as the process through which participating countries would move to successively deeper stages of integration. While there is some support for this in the EU experience, this conclusion does not take account of the specific problems which arise when integrating mixed economies. A mixed economy is one where the economic order is based on market principles but where there is considerable public intervention either to control market forces (e.g. competition, consumer protection and environmental policies) or to correct or compensate for market outcomes (e.g. social and regional policies). Differences in these public interventions give rise to unintended trade barriers which can only be overcome either by eliminating the intervention (deregulation) or by 'supranationalizing' it (by transferring the intervention to the union level through a form of positive integration).

2.1.3. Benefits of a Regional Economic Community to its Member Countries

The benefits or impacts which developing countries in Africa can get from regional economic integration can be better understood by looking at the benefits that member countries of ECOWAS are getting or expecting to get out of that economic integration. ECOWAS is one of the old regional economic communities (since 1975) in Africa. According to ECOWAS annual report (2016), the Economic Community of West African States (ECOWAS) started her integration experience with the implementation of the preferential and free trade areas simultaneously, and has gradually progressed to the partially implemented Customs union which has been open to deliberations from December 25th, 2014, following the agreement of some member countries to unanimously impose a Common External Tariff (CET) on all extra-regional commodities. However, the benefits of a REC to its member states according to Ombeni (2008) is presented as follows:

(i) Larger market: Regional Economic Integration (REI) offers a channel to overcome the disadvantages of economic smallness, by pooling resources or combining markets. As theory states that small countries on their own cannot attract any major investment in this globalized economy, by moving towards the economic integration via the ECOWAS, the West African countries have created a single market of a larger capacity of over three hundred million participants. Thus, we can say that the ECOWAS provides its partner states with a wider market within which investors can take advantage of economies of scale and thereby produce competitively. Furthermore, it provides a training ground and equips them to survive competition within the world market.

(**ii) Inflow of Foreign Direct Investment (FDI):** Judging from the large number of participants in the regional economy, the ECOWAS region can become a choicest destination for FDI inflows. Investment, both foreign and domestic, is one of the important macroeconomic aspects which have attracted the attention of all member countries in the ECOWAS. The union has the potentials of promoting cross-border investments and serve to attract investment into the region. This is because a large market with customs clearance formalities is more attractive to investors than the small individual national markets.

(**iii) Trade development:** Trade is one of the main motives of economic integration in West Africa and countries expect to expand their trade to their neighbor's liberalized market under the agreement. Nigeria's trade with the other countries that belong to the Economic Community of West African States (ECOWAS) remains poor as well as aggregate trade flow among all the ECOWAS member states. Specifically, Nigeria's export to the ECOWAS region, which averaged about 7 percent of its total exports between 2001 and 2006, plummeted to 2.3 percent in 2010. Most of Nigeria's exports to the ECOWAS are mineral fuel and oils, which reached 97 percent and 94 percent, respectively, in 2009 and 2010. Comparatively, the share of manufacturing in Nigeria's total exports to the ECOWAS region climbed from 1 percent in 2001 to 5.4 percent in 2010, while the share of Nigeria's agricultural exports—which was 3 percent in 2001—plunged to nearly nothing in 2009 and 2010. Likewise, the share of other ECOWAS countries in Nigeria's imports dropped from 4.4 percent in 2001 to less than 0.5 percent in 2010. Therefore, we can conclude that the union has made it possible for its partner states to expand their trade in value-added articles within the region due to agreed trade liberalization under the agreement. The ongoing implementation of the ECOWAS customs union and deeper integration to be achieved later is expected to provide momentum for even higher achievements on trade.

(**iv) Free movement of people across the borders:** as a result of the ECOWAS, citizens of member countries are now moving freely across the border by the use of

ECOWAS biometric I.D. which are issued in all member countries. To facilitate the movement of people in the region, the ECOWAS Biometric ID, which replaces the ECOWAS Travel Certificate, is currently being implemented. Senegal, Mali, and Niger were the first countries to commence implementation. Free movement of people is very important because it eases cross border trade, and it also creates a sense of unity and community through increased interaction of the citizens of the member states.

(**v**) **Increased regional efficiency:** Opening of the domestic economies to competition from member countries of the ECOWAS has the tendencies to enhance efficiency in some sectors as well as increase product varieties. Other advantages may include the introduction of new and modern methods of doing business in the region. These benefits arise due to increased competition from other member states in which local companies are forced to adjust themselves in offering better services for fear of being left behind or kicked out of the business. Increased competition may lead to efficiencies in the long run, but in the short run the firms which stand to gain most are those that are already competitive.

(**vi**) **Security and conflict resolution:** Regional integration reduces the risk of conflict in two ways. Firstly, increasing interdependence among members makes conflict costlier. Economic integration may pave the way for political integration, substantially reducing the risk of internal conflict. Secondly, regular political contact among members can build trust and facilitate cooperation, even in the area of security. It is argued that increasing trade as a result of integration reduces risks of internal conflict, as cross-national trade relations and mutual interests are established. Furthermore, Shams (2003) also argued that the treaty establishing the Economic Community of West African States (ECOWAS) included principles on political cooperation and maintain regional peace and security. The author claimed that this group is behaving more as a security organization, rather than an economic organization.

2.1.4. Rationale for Economic Integration in Africa

According to Inotai (1991), Africa has been identified as the most fragmented continent in the world and therefore, economic integration will help to bring these developing countries together for mutual economic, political, cultural, and social benefits. But in reality, the need for economic integration is usually perceived to be the result of the nature of the problems that individual African countries are confronted with in the attempts to industrialize and modernize their economies, while achieving self-sufficiency. According to FONDAD (1996), these problems include difficulties in gaining access to all required materials, following the uneven spread of natural resources and the lack of funds. Difficulty in finding efficient and affordable technologies to suit domestic market conditions and

difficulty in securing domestic and external markets for manufactured goods are also parts of the problem. Also, the small nature of individual countries in Africa pull a difficulty in providing meaningful domestic markets for both heavy and light industrial goods produced with equipment designed for larger scales of production, thereby forcing the acceptance of ineffective production techniques. The smallness of countries and the large number of them competing with one another on international markets for the same agricultural products often reduce the strength of their bargaining on such markets hence the need for regional arrangements to increase the negotiating power.

In addition to the small size of nations, the fact that many African economies are dependent on a narrow set of similar primary products generally affects their participation in world trade. Africa's participation in world trade, which has never been significant, has fallen in the last decade and intra-regional trade is itself very low. To offset the unfavorable trends of external markets, it is often suggested that increased trade among African nations could bring greater advantages to the nations involved and help them to mobilize their resources by finding markets for their goods. This would be especially so if it involved some regional groupings. McCarthy (1996) has observed that the small size of most of these developing economies in Africa restricts their ability to benefit from lower unit costs (derived from economies of scale) and viable import-substituting opportunities, hence the argument that African countries should attempt to create effective economic integration. This will enable manufacturers to produce at lower unit costs for a larger protected market. In this light, formation of regional integration arrangements has been pursued as a developmental objective by many African governments. It can be concluded here that, Nigeria, being one of the largest economies in Africa does not only need to be economically integrated, but to be instrumental to ensuring an effective economic integration designed in a good manner.

2.2. Theoretical Issues

2.2.1. Viner's Theory of trade creation and diversion

This theory is attributed to the work of Jacob Viner in 1950 entitled "The Customs Union Issue." In the theory, Viner analyzes the production effects of a customs union through the concepts of trade creation and trade diversion. While the latter provides ample opportunities for efficient producers in the region to expand production (and benefit from economies of scale) to the advantage of consumers and the detriment of less competitive producers, the former occurs when the removal of tariffs within the region leads to goods hitherto imported from cheaper sources being replaced by more expensive suppliers within the region which can be sold for less because they no longer have to pay any import duty. According to the theory, for a given product, trade creation appears when high cost production is substituted by low cost production because of regional integration; while economic diversion depicts a situation where low cost of production is substituted by high cost of production. Nevertheless, besides the trade creation and trade diversion effects,

the static effects of regional integration can involve other impacts. Viner considers only trade-creation and trade-diversion effects.

2.2.2. Linder's theorem

The hypothesis was proposed by Staffan Burenstam Linder in 1961 as a possible resolution to the Loentif paradox which argued against the validity of the Heckscher–Ohlin (H-O) theory, opposing the assertion that trade between countries of the world is dependent on their factor endowment. Linder argues that countries can enjoy a mutually beneficial trade even if the factor proportions were identical, provided their demand preference is similar. The Linder's theorem explains that a country cannot enjoy a comparative advantage in any good without it being produced or demanded for in the domestic market first. This assertion is in line with the popular opinion that foreign trade is, in fact, an extension of domestic trade. Moreover, since the foreign market is considered too risky, especially for developing countries whose products are disposed as inferior, exclusive dependence on foreign markets for trade would translate to leaping in the wrong direction. Rather, the domestic market could be ideally utilized to achieve economies of scale and consequent reduction in cost to create favourable conditions with which to enter the foreign market. Therefore, Linder's main conclusion is that countries with similar per capita income (similar demand) would develop similar industries, and that they would enjoy more trade potential with one another in similar but differentiated products, relying on specialization to create a comparative advantage (Linder, 1961).

Hence, by applying the Linder's theorem specifically to the case of economic integration, it can be deduced that as countries integrate, markets are enlarged, and in order that a country may benefit from economies of scale, its product must be demanded in the new member country of the union. Therefore, similarity of demand preferences, proxied by similarity in per capita income, is an important element in the success of economic integration efforts. In other words, the Linder hypothesis suggests that similar demand structures determine trade in manufacturing goods rather than differences in factor endowment as postulated by the H-O model.

2.3. Review of Empirical Literature

Economic integration has been considered a paramount policy measure for weighing down the transaction costs on the exports and imports of developing countries, due to the increasing concerns for a transparent, efficient, and procedurally uniformed system in the international business community.

Bolaky and Freund (2004) noted that gains from trade can lead to improvement in the level of welfare, which will stem from increasing specialization as well as economies of scale gained from the effective processes of economic integration. However, when economic activities are not flexibly structured to incorporate new developments, the positive impacts of such arrangements get undermined.

Njoroge (2010) investigated how regional integration affects economic growth with a focus on three African trading blocs: COMESA (the Common Market for Eastern and Southern Africa), SADC (the Southern African Development Community), and EAC (the East African Community). He used an economic integration index consisting of Most Favored Nations (MFN) tariffs and the degree of regional cooperation in the three blocs. With the aid of the system GMM estimation method, he established that economic integration and trade significantly increase economic growth when combined or examined separately. He identified that intra-regional trade within the three blocs was hampered by numerous obstacles like trade regime distortions and poor customs, transport, and communications infrastructure. So, he recommended policies like the use of both nondiscriminatory trade liberalization and preferential liberalization to enhance and sustain the positive impact of economic integration on economic growth.

Adam (2012) in an evaluation of intra-ECOWAS trade concluded that the potential for trade amongst West African countries was enormous but conditioned on deepened regional integration and reduction in the costs of trading with partners. This is particularly imperative in regional arrangements characterized by socioeconomic diversities of member countries. In this regard, Ackah et al., (2013) tried to measure the associated trade cost for ECOWAS countries and infer their impact on trade flows within the region.

Tumwebaze & Ijjo (2015) investigated economic integration and growth within COMESA over a 20-year period. They found that COMESA members experienced economic growth owing to factors like population growth, increase in capital stock and global GDP, and increased openness to global trade. However, it was gathered that integration under this bloc did not result in significantly positive economic growth for member states.

Iyoha and Okim (2017) studied the relationship between trade and economic growth in ECOWAS countries. They applied a panel data regression analysis to a pooled data of 15 ECOWAS countries covering the period 1990 to 2013. In their findings, exports were consistently in a state of positive correlation with growth. The study also established that the relationship between trade and economic growth in the ECOWAS region is unclear, further explaining that the question of whether integration promotes trade and economic growth remains controversial.

The major gap from the studies reviewed is that the issue of trade and economic growth as related to economic integration in the ECOWAS community has not been exactly considered. Various scholars have studied theoretically the relationship between economic integration, trade and economic growth. However, quite a few have done so empirically. This study fills the gap by exploring the impact of economic integration in the promotion of trade and economic growth in ECOWAS countries.

3. Model Specification and Method of Analysis

The model capturing the link between the variables of interest is in this section.

3.1. Model Specification

3.1.1. Trade Impact Model

This model explores the impacts of Economic integration in the ECOWAS region on intra-regional trade (proxied as Intra-regional Merchandise export volume –EXP). From the Linder's hypothesis, which suggests that the more similar the trading partners in their economic standing, like similarity in per capita income and consumption demands; the more the volume of trade should be between them (Linder, 1961). The major conclusion of this theory is that countries with a similar per capita income (PCI) would enjoy more trade potentials with one another in similar but differentiated products of the same industry. In doing so, the participating economies enjoy benefits of division of labor which lead to learning, innovation, and unique skills. Furthermore, economies of scale, improved quality of output, a wider range of variety for the differentiated product of the same industry will be enjoyed as well as specialization by splitting up of value chain.

Consequently, following Choi (2002), the model adopted and adapted to the study based on the Linder's hypothesis is presented as:

$$EXP = f(FDI, PCI, INFLR, POPGR) \quad (1)$$

Where: EXP = Merchandise Exports (expressed as a percentage of intra-regional merchandise exports to total exports)

FDI = Foreign Direct Investment (% of GDP)

PCI = per capita income

INF = Inflation rate (at constant 2010 USD)

POPGR = Population Growth rate

The model is transformed to its panel and econometric form as:

$$EXP_{it} = \beta_0 + \beta_1 FDI_{it} + \beta_2 PCI_{it} + \beta_3 INFLR_{it} + \beta_4 POPGR_{it} + v_{it} \quad (2)$$

Expected Signs: $\beta_1, \beta_2 > 0$; $\beta_3, \beta_4 < 0$

3.1.2. Economic Integration Impact Model

The model shows a relationship between economic integration in ECOWAS (proxied by FDI, POPGR, INFLR and EXP) and the Economic growth of ECOWAS countries. Considering the presentation by Iyoha *et al* (2017), the following model which includes the basic determinants of output growth is adopted and adapted to the study. Specifically, inflation rate and population growth rate have been included as factors that potentially affect economic growth. Thus, the equation can be written as:

$$RGDP = f(FDI, POPGR, INFLR, EXP) \quad (3)$$

Where:

RGDP = Real Gross Domestic Product

EXP = Intra-regional Merchandise export (expressed as a percentage of merchandise exports within region to total merchandise exports)

FDI = Foreign Direct Investment (as a percentage of GDP)

INFLR = Inflation rate (at constant 2010 USD)

POPGR = Population Growth rate

In its panel and econometric form, the model is transformed as:

$$RGDP_{it} = \beta_0 + \beta_1 FDI_{it} + \beta_2 POPGR_{it} + \beta_3 INFLR_{it} + \beta_4 EXP_{it} + v_{it} \quad (4)$$

Expected Signs: $\beta_1, \beta_4, > 0; \beta_2, \beta_3 < 0$

3.2. Data Sources

The study was focused on seven countries (Nigeria, Ghana, Guinea, Benin, Cote D'Ivoire and Niger) selected from the 15 member-states of the Economic Community of West African States based on their significance in the ECOWAS trading system according to UNCTAD (2014), as well as their similarity in per capita income as deduced from Linder (1961).

Data on variables were gotten from secondary sources which include World Bank Doing Business Database, World Development Indicators (WDI), International Monetary Fund International Financial Statistics (IMF-IFS) and United Nations Commission for Trade and Development (UNCTAD) stat database.

3.3. Data Analysis

There are several estimation techniques in panel data regression; however, the Fixed-Effects model was used in estimating the parameters for both models in the study.

The fixed-effects (FE) model was so chosen because estimation is done on variables that vary over time. Since FE explores the relationship between predictor and outcome variables within an entity (country, person, company, etc.), this makes it ideal for the analysis on ECOWAS and its member-states. Also, FE removes the effects of time-invariant characteristics from the predictor variables so we can assess the predictors' net effect. In a nutshell, the FE model is used when correlations are suspected between the individual variables, error component and the regressors. Additionally, econometric principles have it that if the T (the number of time series data) is large and N (the number of cross-sectional units) is small, the FE model would be preferable.

The decision on FE as the preferred estimation technique was reached after subjecting variables of both models to the Hausman test, which tests for possible correlations between the unique errors and the regressors. The null hypothesis for the Hausman test is that the preferred model is random-effects, and the alternative hypothesis is that the fixed-effects model is appropriate (Greene, 2008). The results for both models fell in favor of the alternative hypothesis, thus, making the fixed effects model the more preferred model for analysis. The test results are documented in the appendix section of the paper.

4. Results and Discussion

The descriptive statistics for all the variables used in the study for the sampled countries are presented in Table 1.

Table 1: Descriptive Statistics of Variables

	RGDP	*INFLR*	*POPGR*	*FDI*	*EXP01*	*PCI*
Mean	13322754	10.16743	2.716657	2.468693	23.67533	1.91E+09
Median	6506194.	4.914240	2.662069	1.678472	20.15227	1026.612
Maximum	69780693	72.83550	4.271428	18.80927	87.86628	2.30E+10
Minimum	9009.193	-3.502586	1.926554	-2.069713	1.331403	460.2763
Std. Dev.	17109690	14.10079	0.375271	2.730665	18.79093	4.95E+09
Skewness	1.572136	2.324372	0.666361	2.378605	1.228873	2.518459
Kurtosis	4.774256	8.405983	3.968144	11.22739	4.307762	8.225177
Jarque-Bera	106.4478	408.8020	22.15986	730.0948	63.29783	430.1630
Probability	0.000000	0.000000	0.000015	0.000000	0.000000	0.000000
Sum	2.61E+09	1962.313	532.4647	478.9264	4640.364	3.73E+11
Sum Sq. Dev.	5.71E+16	38175.78	27.46158	1439.111	68854.29	4.78E+21
Observations	196	193	196	194	196	196

Source: Authors' computation

Table 1 presents a summary of the descriptive properties of the data set used in the panel study collected across the sampled countries. The data set indicated above, contains an average of 195 observations for the seven sample countries over the study period (1990 -2017). The Table shows the means, standard deviations, maximum and minimum values, as well as information concerning the skewness and kurtosis variables.

The mean of Foreign Direct Investment (FDI) is observed to be 2.469 for the seven countries. The maximum value of FDI is 18.80 indicating the highest recorded amount of FDI inflow to one of the countries, while the minimum value is -2.069 indicating the lowest recorded amount of FDI inflow to one of the countries. The deviation from the mean of FDI among the countries is given by the value of 2.731, while the skewness value of 2.399 indicated that the distribution of Foreign Direct Investment inflow to the countries is positively skewed. Also, the kurtosis value of 11.227 showed that the distribution of FDI is leptokurtic since 11.227 is greater than 3 which is the threshold for a normal (bell-shaped) peak of a distribution.

Inflation rate (INFLR) has a mean value of 10.167 with a standard deviation, maximum and minimum value of 14.101, 72.835 and -3.502 respectively. The skewness value of 2.324

indicates that the inflation rate is positively skewed among the seven countries while the kurtosis value of 8.405 shows that the distribution is leptokurtic since 8.405 is greater than 3 as the threshold for a normal peak of a distribution.

Per Capita Income (PCI) of the seven countries has a mean value of 1.91E+09 while the maximum value, minimum value and standard deviation are 2.30E+10, 460.2763, and 4.95E+09 respectively. The skewness value of 2.324 indicates that the distribution of PCI among the seven countries is positively skewed while the kurtosis value of 8.225 showed that the distribution of exchange rate is leptokurtic since 8.225 is greater than 3 as the threshold for a normal peak of a distribution.

Exports (EXP) which provides information about the external flow of merchandise trade among the countries has a mean value of 23.675, while maximum, minimum, and standard deviation is 87.866, 1.331, and 18.791 respectively. The skewness value of 1.228 indicates that the distribution of inflation rate among the seven countries is slightly positively skewed while the kurtosis value of 4.308 showed that the distribution of inflation rate is leptokurtic since 4.3 is greater than 3 as the threshold for a normal distribution.

Population Growth Rate (POPGR) which gives information about the pace of increase in the population of the reporting country has a mean value of 2.717, coupled with a standard deviation of 0.375. While the maximum and minimum values are 4.271 and 1.926 respectively. The skewness value of 0.666 indicates that the distribution of POPGR among the seven countries is not skewed while the kurtosis value of 3.968 showed that the distribution of is leptokurtic since 3.968 is greater than 3 as the threshold for a normal distribution.

Real Gross Domestic Product (LRGDP), which was analysed in the log-linear form, has a mean value of 13322754, with a standard deviation of 17109690, as well as a maximum and minimum value of 69780693 and 9009.193 respectively. The skewness value of 1.572 indicates that the RGDP is positively skewed among the seven countries while the kurtosis value of 4.774 shows that the distribution of RGDP is leptokurtic since 4.774 is greater than 3 as the threshold for a normal distribution.

4.1. Trade Impact Analysis

The result of the analysis of the impact of economic integration in the ECOWAS regional community on trade between member states is presented as Table 2. From the result, there exist a positive and significant relationship between Per Capita Income (PCI), and Intra-Regional Merchandise Exports (EXP). This conforms to the a priori expectations deduced from the Linder's hypothesis that similarity in Per Capita Income (PCI) influences the flow of intra-regional trade.

The result also showed a negative but insignificant relationship between Foreign Direct Investment (FDI), Inflation Rate (INFLR) and the dependent variable Intra-regional Merchandise Export (EXP). The negative relationship depicted by Foreign Direct Investment (FDI) deviates from the a priori expectation. However, this insignificance can

Table 2: Result of the Fixed-effect estimation on the integration-trade relation

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
C	-821.7667	862.6237	-0.952636	0.3421
EXP(-1)	0.790955	0.058218	13.58620	0.0000
FDI	-0.102651	0.099906	-1.027472	0.3056
PCI	3.51E-10	1.79E-10	1.957870	0.0519
INFLR	-0.011800	0.010333	-1.141922	0.2551
POPGR	-1.294894	1.225174	-1.056906	0.2920
YR1991-2017	-0.411721	0.426877	-0.964494	0.3362
Effects Specification				
Cross-section fixed (dummy variables)				
Weighted Statistics				
R-squared	0.930687	Mean dependent var		39.60426
Adjusted R-squared	0.925851	S.D. dependent var		29.73712
S.E. of regression	8.390255	Sum squared resid		12108.18
F-statistic	192.4578	Durbin-Watson stat		2.230604
Prob(F-statistic)	0.000000			

be explained from the standpoint of major trade flows. It is factual that third-world countries engage more in exchanging their low-priced primary products with the western countries. Hence, the impact of FDI has a greater level of significance when analysis is focused on inter-regional trade. Also, there is an inverse and insignificant relationship between the Population Growth Rate (POPGR) and Intra-Regional Merchandise Exports (EXP), contrary to the conclusion by Tumwebaze *et al* (2015), this means that population growth-rate is a negative but weak determinant of trade between countries of the ECOWAS region. This can be explained in line with the fast rate of population growth which implies increased and changing domestic demands. When these changes are not met by sufficient and adequate supplies, the consequence is the mopping up of domestic production in a quest to satisfy these needs; thus, eliminating the possibility of engaging in gainful trading. According to UNCTAD (2014), ECOWAS imports more food than it exports. As a result, imbalances occur since the rate of population growth mounts a downward pressure on the efficiency of domestic capacity, as what is produced is barely enough for consumption and trading.

4.2. Integration Impact Analysis

The results on regional impact analysis, as presented in Table 3 revealed the existence of a positive and significant relationship between Foreign Direct Investment (FDI), Population

Growth Rate (POPGR) and Real Gross Domestic Product (LNRGDP). This implies that a unit increase in these variables will increase the RGDP by 0.002672 and 0.0227, respectively. The positive relationship between Population Growth Rate (POPGR) deviates from the apriori expectation, this implies that population growth has a significant positive influence on the real general output. However, such positive influence ends up servicing the consumption needs of this growing population instead of expanding the capacity for an export-led growth which this research seeks to establish.

There is also a negative and significant relationship between inflation rate (INFLR) and real gross domestic product (RGDP), this conforms absolutely with the a priori expectations as an increase in price levels lowers the purchasing power of money, and consequently, lowers the level of consumption. A reduction in consumption spills over to reduce the aggregate output. However, the result from the analysis implies that a unit increase in the rate of inflation will reduce the real gross domestic product by 0.000186. The result also showed a positive and insignificant relationship between intra-regional exports and RGDP, which does well to explain how insignificant the contribution of economic integration has been to the real economic growth of member-countries in the ECOWAS region.

Table 3: Result of the Fixed-effect estimation of the integration-growth relation

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
C	-24.56422	20.85791	-1.177693	0.2405
LNRGDP(-1)	1.006741	0.006870	146.5413	0.0000
FDI	0.002672	0.000645	4.144277	0.0001
POPGR	0.018588	0.008082	2.299884	0.0227
INFLR	-0.000186	0.000143	-1.301957	0.0447
EXP	1.07E-05	0.000129	0.083397	0.9336
YR1991-2017	-0.012123	0.010343	-1.172137	0.2428
Effects Specification				
Cross-section fixed (dummy variables)				
Weighted Statistics				
R-squared	0.999944	Mean dependent var		17.71476
Adjusted R-squared	0.999940	S.D. dependent var		7.341750
S.E. of regression	0.026973	Sum squared resid		0.125141
F-statistic	254587.5	Durbin-Watson stat		1.608047
Prob(F-statistic)	0.000000			

The report of these findings further clarifies the fact that despite similarity in per capita income and resource endowment in the ECOWAS region, which according to Linder (1961), forms the basis for a beneficial integration and trade between countries of the same regional

grouping; there still exist very poor trade links between ECOWAS countries as trade flows are mostly directed to non-ECOWAS countries, mostly the More Developed Countries (MDCs). As a result, the expected benefits from economic integration remain unachieved; despite the efforts to further deepen integration arrangements. However, it has been observed that potentials do exist for some positive contributions to growth from economic integration as indicated by the positive export (EXP) coefficient.

5. Conclusion and Recommmendations

The study made use of the panel ordinary least squares technique to analyse the models specified in the study. Based on the findings, it can be reasoned that an effective regional integration with emphasis on trade has the potentials to generate intra-African trade which could provide a major avenue for the achievement of a sustainable economic growth in the continent and enhance its competitive ability in the global market. This line of reasoning inspired the formation of the economic blocs that have added up to eight (8) in Africa, including the ECOWAS. However, the actual outcome of these arrangements deviates greatly from the expected, as empirical studies on African trading blocs suggest the existence of weak trading links among African countries who are members of the various regional economic communities (RECs), especially the ECOWAS. Few blocs are involved in trade creation, and in addition to that, a myriad of economic, social, and political barriers undermine the ability of these RECs to increase trade and economic integration among their members. From these findings, it can be concluded that regional trade integration within Africa is yet to reach its full potentials and achieve the desired economic growth for individual nations, the regional blocs, and the continent.

From the findings of the study, the following recommendations are made:

i) Greater efforts should be channelled towards strengthening the existing (customs union) integration arrangements in the ECOWAS region. Modalities should be set up to ensure compliance of member countries to the rules and regulations surrounding the integration arrangement. For instance, the border closure issue between Nigeria and the Benin Republic could be addressed if the rule of origin is rightly adhered to and the policy of a Common External Tariff is strengthened.

ii) There should be more emphasis on building regional value chains in the production of the key staple imports of West Africa – Rice and Wheat (UNCTAD, 2014) - where production could be split favourably according to the relative economic advantages of member countries. In doing so, there would be benefits of scale economies, competitive advantage, specialization, and reduction in unit cost of output as a result of increased efficiency due to regional division of labour. Also, the negative trade balances that emanate from the importation of these items from other regions would be taken care of.

iii) The duty of economic integration should not be exclusively side-lined to the government. The private sector should be actively involved in integration processes

by encouraging integration in their respective industries, while the government plays the facilitator's role through policy formulation and coordination.

iv) Investment in, and patronage of indigenous technologies should be encouraged as they are prerequisites for a proper adaptation to modern and cutting-age technology transfer that could flow in through the FDI channels.

v) There should be a regional development framework for the construction of regional infrastructures to aid a free flow of trade between member countries and reduce transaction costs which could become temporary causes of trade diversion.

vi) An agreement to discontinue the export of primary products in their raw form by ECOWAS countries should be considered. Instead, more emphasis should be laid on the export of intermediate goods while R & D efforts are set up to sort out better options on developing regional value chains.

vii) Population growth should be checked to ensure that the efforts to increase productions does not get used up in a bid to satisfy domestic consumptions, as this would greatly undermine the benefits derivable from economic integration.

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Appendix I : Pooled data of countries

ID	*Country*	*Years*	*PCI*	*EXP(%)*	*INFLR (2010 = 100)*	*POPGR*	*FDI (% of GDP)*	*RGDP*	*RGDP (Log)*
1	Nigeria	1990	1514.098	6.503674	7.3644	2.57931	1.08795099	19,305,633.16	16.78
1	Nigeria	1991	1481.331	8.594055	13.00697	2.545949	1.450317769	19,199,060.32	16.77
1	Nigeria	1992	1511.345	7.064414	44.58884	2.521578	1.87601773	19,620,190.34	16.79
1	Nigeria	1993	1443.989	7.287485	57.16525	2.503347	4.847790004	19,927,993.25	16.81
1	Nigeria	1994	1382.873	6.73004	57.03171	2.493414	5.790847305	19,979,123.44	16.81
1	Nigeria	1995	1347.892	8.288478	72.8355	2.489914	2.449412513	20,353,202.25	16.83
1	Nigeria	1996	1369.932	7.657014	29.26829	2.488917	3.119792056	21,177,920.91	16.87
1	Nigeria	1997	1375.514	8.098219	8.529874	2.488785	2.826858087	21,789,097.84	16.90
1	Nigeria	1998	1376.309	10.38942	9.996378	2.491319	1.925363071	22,332,866.90	16.92
1	Nigeria	1999	1350.225	10.61679	6.618373	2.496357	1.692559347	22,449,409.72	16.93
1	Nigeria	2000	1382.895	6.999758	6.933292	2.503847	1.641739329	23,688,280.33	16.98
1	Nigeria	2001	1428.406	6.330282	18.87365	2.511617	1.608284185	25,267,542.02	17.05
1	Nigeria	2002	1606.356	9.267851	12.87658	2.521515	1.964726797	28,957,710.24	17.18
1	Nigeria	2003	1681.184	8.3053	14.03178	2.537255	1.911463474	31,709,447.39	17.27
1	Nigeria	2004	1790.293	7.834187	14.99803	2.559662	1.374086175	35,020,549.08	17.37
1	Nigeria	2005	1856.93	7.618595	17.86349	2.585689	2.828830019	37,474,949.16	17.44
1	Nigeria	2006	1918.704	8.070716	8.239527	2.610844	2.056023761	39,995,504.55	17.50
1	Nigeria	2007	1992.049	9.314602	5.382224	2.632173	2.189934296	42,922,407.93	17.57
1	Nigeria	2008	2071.202	8.053467	11.57798	2.649864	2.431642644	46,012,515.31	17.64
1	Nigeria	2009	2178.899	9.768782	11.53767	2.662917	2.930908157	49,856,099.08	17.72
1	Nigeria	2010	2291.36	8.936398	13.7202	2.671443	1.658474771	55,469,350.70	17.83
1	Nigeria	2011	2349.298	8.201593	10.84003	2.677884	2.154610831	58,180,353.10	17.88
1	Nigeria	2012	2383.977	10.38102	12.21778	2.680914	1.539029779	60,670,051.80	17.92
1	Nigeria	2013	2475.948	9.957448	8.475827	2.6769	1.080240346	63,942,847.30	17.97
1	Nigeria	2014	2563.092	11.34645	8.062486	2.665019	0.818201344	67,977,460.10	18.03
1	Nigeria	2015	2562.522	12.52967	9.009387	2.647419	0.634335906	69,780,693.10	18.06
1	Nigeria	2016	2455.919	12.27774	15.67534	2.627703	1.098506848	68,652,431.20	18.04
1	Nigeria	2017	2412.203	11.43048	16.52354	2.607676	0.930745294	69,205,692.20	18.05
2	Cote D'Ivoire	1990	1489.669	30.47801	-0.80588	3.606675	0.445679822	8,333,930.86	15.94
2	Cote D'Ivoire	1991	1437.535	30.01276	1.683348	3.603345	0.155403142	8,337,264.43	15.94
2	Cote D'Ivoire	1992	1383.652	30.65743	4.231384	3.575492	-2.069713043	8,316,421.27	15.93
2	Cote D'Ivoire	1993	1333.204	24.52212	2.164715	3.521456	0.795780797	8,301,451.71	15.93
2	Cote D'Ivoire	1994	1298.637	24.51061	26.08157	3.434919	0.938097252	8,315,680.30	15.93
2	Cote D'Ivoire	1995	1345.683	21.3301	14.29507	3.324636	1.922539659	8,779,005.52	15.99
2	Cote D'Ivoire	1996	1403.693	18.94267	2.480807	3.224716	2.217443032	9,493,238.79	16.07
2	Cote D'Ivoire	1997	1411.435	24.38438	4.020833	3.125098	3.542898469	10,036,504.09	16.12
2	Cote D'Ivoire	1998	1437.446	25.13579	4.611448	2.986875	3.013107328	10,531,371.95	16.17
2	Cote D'Ivoire	1999	1420.322	24.92525	0.702376	2.803037	2.615216668	10,701,719.78	16.19
2	Cote D'Ivoire	2000	1355.264	30.02912	2.530775	2.598674	2.189989261	10,480,365.40	16.17

2	Cote D'Ivoire	2001	1324.835	29.45528	4.361529	2.392102	2.436261804	10,493,085.62	16.17
2	Cote D'Ivoire	2002	1274.125	29.11507	3.077265	2.221114	1.722123017	10,318,098.50	16.15
2	Cote D'Ivoire	2003	1230.519	23.45087	3.296807	2.113538	1.080236263	10,177,820.25	16.14
2	Cote D'Ivoire	2004	1219.967	25.96421	1.457988	2.085445	1.709389786	10,303,187.87	16.15
2	Cote D'Ivoire	2005	1215.002	28.76947	3.88583	2.114435	2.042272411	10,480,531.22	16.17
2	Cote D'Ivoire	2006	1207.087	28.36863	2.467191	2.158037	1.969861651	10,639,399.55	16.18
2	Cote D'Ivoire	2007	1201.717	30.04894	1.892006	2.195518	2.178644623	10,827,188.87	16.20
2	Cote D'Ivoire	2008	1204.975	30.59394	6.308528	2.240258	1.925661163	11,102,507.12	16.22
2	Cote D'Ivoire	2009	1216.022	28.64467	1.019505	2.28716	1.631267084	11,463,500.00	16.25
2	Cote D'Ivoire	2010	1211.93	30.414	1.226456	2.334565	1.439124162	11,694,792.00	16.27
2	Cote D'Ivoire	2011	1131.445	29.415	4.912434	2.385512	1.188172175	11,203,772.39	16.23
2	Cote D'Ivoire	2012	1222.439	33.38017	1.304511	2.435929	1.232800624	12,335,548.12	16.33
2	Cote D'Ivoire	2013	1298.545	43.16851	2.58117	2.476674	1.303332493	13,479,293.08	16.42
2	Cote D'Ivoire	2014	1377.797	32.17729	0.448682	2.504549	1.242401253	14,664,672.54	16.50
2	Cote D'Ivoire	2015	1462.284	26.90764	1.2515	2.522095	1.491679289	15,961,449.81	16.59
2	Cote D'Ivoire	2016	1539.316	27.12872	0.723178	2.5361	1.636058549	17,292,972.66	16.67
2	Cote D'Ivoire	2017	1616.169	26.92796	0.685881	2.547807	2.555885411	18,641,987.79	16.74
3	Ghana	1990	815.5073	2.510892	37.25907	2.88324	0.251308552	9,009.19	9.11
3	Ghana	1991	834.0731	4.147121	18.03144	2.896004	0.303188963	9,486.64	9.16
3	Ghana	1992	841.7454	16.66997	10.05612	2.890408	0.350800517	9,856.56	9.20
3	Ghana	1993	857.7244	14.37121	24.95984	2.855531	2.095116345	10,223.26	9.23
3	Ghana	1994	861.6922	12.59289	24.87026	2.785186	4.27950048	10,592.62	9.27
3	Ghana	1995	873.275	7.254008	59.46155	2.694865	1.647296722	11,041.34	9.31
3	Ghana	1996	890.0092	7.238462	46.56102	2.601561	1.730357096	11,554.53	9.35
3	Ghana	1997	904.2373	7.756893	27.88521	2.524705	1.187002423	12,114.31	9.40
3	Ghana	1998	923.6263	7.585694	14.62417	2.471693	2.237678076	12,682.93	9.45
3	Ghana	1999	940.9334	7.814883	12.40867	2.449458	3.156999582	13,244.59	9.49
3	Ghana	2000	952.1375	10.51767	25.19322	2.44949	3.329303379	13,739.43	9.53
3	Ghana	2001	966.2619	7.908103	32.90541	2.449526	1.680555283	14,314.04	9.57
3	Ghana	2002	985.3333	9.328135	14.81624	2.447185	0.955673775	14,965.09	9.61
3	Ghana	2003	1011.398	9.810815	26.67495	2.458459	1.791715353	15,750.45	9.66
3	Ghana	2004	1041.826	9.381968	12.62457	2.484618	1.568114186	16,628.98	9.72
3	Ghana	2005	1075.866	40.05222	15.11819	2.517456	1.350866032	17,604.81	9.78
3	Ghana	2006	1115.85	41.93128	10.91517	2.554408	3.116219155	18,705.08	9.84
3	Ghana	2007	1134.698	47.35353	10.73273	2.579994	5.586606897	19,518.16	9.88
3	Ghana	2008	1206.99	51.20488	16.52214	2.578728	9.517042508	21,304.03	9.97
3	Ghana	2009	1233.678	58.93395	19.25071	2.543839	9.132935172	22,336.10	10.01
3	Ghana	2010	1298.437	62.93133	10.70757	2.487042	7.855067085	24,100.59	10.09
3	Ghana	2011	1445.361	51.18362	8.726837	2.42437	8.207966429	27,486.03	10.22
3	Ghana	2012	1542.685	40.5914	7.12635	2.369475	7.855367882	30,040.25	10.31
3	Ghana	2013	1617.467	22.53703	11.66619	2.323852	5.099781812	32,236.95	10.38
3	Ghana	2014	1626.623	20.32227	15.48962	2.291781	6.27484841	33,522.39	10.42
3	Ghana	2015	1624.77	16.60014	17.14997	2.268815	6.490850221	34,808.12	10.46

3	Ghana	2016	1643.449	16.17918	17.45463	2.246599	6.335848825	36,103.65	10.49
3	Ghana	2017	1738.252	13.96157	12.37192	2.220532	5.517233665	39,150.28	10.58
4	Guinea	1990	541.8096	8.418151	33.00198	2.952476	0.669762681	19,709,504.07	16.80
4	Guinea	1991	540.4297	5.679186	57.59528	2.834874	1.285950488	20,201,560.20	16.82
4	Guinea	1992	543.0574	7.424538	69.58364	2.733538	0.599459553	20,862,656.71	16.85
4	Guinea	1993	555.4693	5.241314	48.10817	2.661221	0.082950518	21,915,907.08	16.90
4	Guinea	1994	562.5194	4.150499	15.17635	2.632092	0.006207106	22,792,688.69	16.94
4	Guinea	1995	573.1796	4.133249	45.36531	2.627319	0.020818932	23,859,397.30	16.99
4	Guinea	1996	583.177	3.511605	50.73405	2.635755	0.614468899	24,923,902.22	17.03
4	Guinea	1997	597.5203	5.610089	49.10092	2.622058	0.457240138	26,215,360.00	17.08
4	Guinea	1998	603.6401	4.849676	8.013755	2.560313	0.496324792	27,170,679.50	17.12
4	Guinea	1999	611.5608	4.736097	-2.08631	2.437515	1.833205778	28,206,426.90	17.16
4	Guinea	2000	612.7206	5.940054	8.636321	2.282782	0.331913252	28,912,450.85	17.18
4	Guinea	2001	621.829	14.40205	3.348123	2.117416	0.05918595	29,970,168.48	17.22
4	Guinea	2002	641.0729	1.411233	3.300122	1.987849	0	31,518,010.63	17.27
4	Guinea	2003	636.6922	10.44826	-3.50259	1.926554	2.291232378	31,911,544.91	17.28
4	Guinea	2004	638.9879	1.331403	0.883303	1.953245	0	32,658,312.50	17.30
4	Guinea	2005	644.8584	6.643079	3.329199	2.038714	3.574989252	33,637,171.14	17.33
4	Guinea	2006	638.5993	2.835042	1.954737	2.148575	2.962071801	34,477,000.00	17.36
4	Guinea	2007	667.0953	3.11559	4.617438	2.238929	6.143028628	36,722,000.00	17.42
4	Guinea	2008	678.9524	2.495077	10.46007	2.291532	5.483489	38,243,000.00	17.46
4	Guinea	2009	656.159	3.962973	-1.6514	2.290858	1.355237358	37,655,000.00	17.44
4	Guinea	2010	672.4244	5.133925	2.517851	2.25947	1.478813385	39,243,500.00	17.49
4	Guinea	2011	694.6031	5.228971	5.046102	2.215187	14.09050364	41,446,600.00	17.54
4	Guinea	2012	719.7092	3.194552	2.130546	2.197815	7.928206496	43,898,300.00	17.60
4	Guinea	2013	731.4933	4.496479	1.207126	2.235255	0.00226822	45,625,100.00	17.64
4	Guinea	2014	741.0497	20.99906	-1.50924	2.342418	-0.840221283	47,317,000.00	17.67
4	Guinea	2015	750.4031	22.82524	1.404609	2.489702	0.605767934	49,121,000.00	17.71
4	Guinea	2016	809.9578	18.00641	1.575302	2.644487	18.80926636	54,258,000.00	17.81
4	Guinea	2017	893.1293	19.63167	1.362149	2.765011	5.82523329	58,732,193.05	17.89
5	Benin	1990	609.3456	30.62307		3.235059	3.182545065	1,377,620.42	14.14
5	Benin	1991	614.0053	9.865575		3.377159	6.080271075	1,435,835.89	14.18
5	Benin	1992	610.5509	21.92441		3.479003	4.575651876	1,478,303.77	14.21
5	Benin	1993	623.9537	6.325322	0.440599	3.500774	0.061716924	1,564,580.12	14.26
5	Benin	1994	615.1204	13.25486	38.53087	3.426061	0.85407956	1,596,190.90	14.28
5	Benin	1995	631.1712	7.541356	14.46255	3.293614	0.614368303	1,692,683.81	14.34
5	Benin	1996	638.0763	8.381424	4.91424	3.145324	1.504261846	1,765,880.27	14.38
5	Benin	1997	654.5428	7.615603	3.466296	3.028375	1.190992206	1,867,148.00	14.44
5	Benin	1998	660.6318	14.45585	5.753315	2.958613	1.545858391	1,941,105.96	14.48
5	Benin	1999	675.6775	5.927337	0.326723	2.951754	1.45975477	2,044,789.15	14.53
5	Benin	2000	694.2437	10.61292	4.165404	2.983995	-0.496774564	2,144,200.00	14.58
5	Benin	2001	709.4694	7.332493	3.984295	3.02378	0.624013838	2,258,600.00	14.63

5	Benin	2002	720.1683	28.41419	2.489162	3.043083	-0.631986845	2,363,400.00	14.68
5	Benin	2003	722.6672	19.98226	1.487242	3.039675	0.271786054	2,444,900.00	14.71
5	Benin	2004	732.3354	27.95549	0.873891	3.005342	-0.900192566	2,553,100.00	14.75
5	Benin	2005	723.2	25.18354	5.364521	2.952384	-0.182887348	2,597,000.00	14.77
5	Benin	2006	730.2752	40.68413	3.782177	2.897545	-0.240209747	2,699,300.00	14.81
5	Benin	2007	752.215	36.2131	1.298068	2.854086	2.328591486	2,860,800.00	14.87
5	Benin	2008	767.0314	41.93609	7.947299	2.823556	0.67317874	3,001,000.00	14.91
5	Benin	2009	763.1545	57.15573	2.15683	2.809302	-0.263935312	3,070,800.00	14.94
5	Benin	2010	757.6959	63.73834	2.307357	2.806086	0.766902232	3,135,600.00	14.96
5	Benin	2011	758.5753	44.68616	2.720909	2.803718	2.061551522	3,228,400.00	14.99
5	Benin	2012	773.1757	43.71281	6.744417	2.797649	3.453698611	3,383,800.00	15.03
5	Benin	2013	805.9561	35.11688	0.890009	2.790718	3.933897273	3,627,300.00	15.10
5	Benin	2014	833.6303	38.69673	-1.00604	2.782182	4.174097283	3,857,700.00	15.17
5	Benin	2015	827.8355	25.30973	0.273668	2.771714	1.805482664	3,938,600.00	15.19
5	Benin	2016	837.2168	22.85931	-0.84835	2.761409	1.536205951	4,097,202.67	15.23
5	Benin	2017	862.0561	21.97732	0.079071	2.750056	2.167330474	4,324,497.27	15.28
6	Gambia	1990	896.3244	4.726604	12.16778	4.271428	4.453087478	23,725.38	10.07
6	Gambia	1991	494.4146	5.12655	8.642343	3.806921	1.332325014	24,238.61	10.10
6	Gambia	1992	490.7342	4.571631	9.486543	3.445831	0.886113481	24,666.02	10.11
6	Gambia	1993	490.1311	12.68492	6.463804	3.197745	1.465524723	25,611.46	10.15
6	Gambia	1994	489.0046	24.20499	1.710206	3.095268	1.302449741	24,741.30	10.12
6	Gambia	1995	474.8322	26.76064	6.980974	3.092131	0.983164302	25,562.76	10.15
6	Gambia	1996	464.4342	8.250409	1.099489	3.098475	1.257203213	26,305.58	10.18
6	Gambia	1997	460.2763	8.466046	2.781228	3.081927	1.451720973	26,678.23	10.19
6	Gambia	1998	468.1764	10.82271	1.114188	3.083834		28,412.41	10.25
6	Gambia	1999	469.8475	18.05709	3.812372	3.101958		30,230.46	10.32
6	Gambia	2000	484.6485	64.29773	0.84497	3.127235	5.558710413	31,900.67	10.37
6	Gambia	2001	495.562	30.98481	4.492596	3.164904	5.161411923	33,735.92	10.43
6	Gambia	2002	507.9706	16.59111	8.609125	3.197208	7.406433371	32,640.54	10.39
6	Gambia	2003	475.9971	21.11982	17.03287	3.200065	3.751799555	34,884.35	10.46
6	Gambia	2004	492.6771	14.19737	14.20674	3.163526	9.59358452	37,342.16	10.53
6	Gambia	2005	510.9872	41.18667	4.838622	3.10616	8.595414957	36,967.26	10.52
6	Gambia	2006	490.6945	34.27316	2.056503	3.043372	12.54951289	37,379.44	10.53
6	Gambia	2007	481.3363	36.09932	5.369135	2.996115	9.775470382	38,694.27	10.56
6	Gambia	2008	484.0904	24.96295	4.443655	2.970181	7.330065158	40,914.24	10.62
6	Gambia	2009	496.8719	67.27494	4.561582	2.974008	4.379925844	43,561.46	10.68
6	Gambia	2010	513.4201	53.18328	5.048937	2.995406	3.902147436	46,402.06	10.75
6	Gambia	2011	530.7877	86.48891	4.796485	3.018401	4.016197033	44,396.58	10.70
6	Gambia	2012	492.8856	83.21111	4.254535	3.030427	4.525524625	46,903.81	10.76
6	Gambia	2013	504.9497	87.86628	5.69973	3.034827	4.999139977	49,155.53	10.80
6	Gambia	2014	513.3144	76.6487	5.947375	3.026045	1.827873626	48,693.36	10.79
6	Gambia	2015	493.3314	79.49365	6.808326	3.008474	-0.121416874	51,550.80	10.85
6	Gambia	2016	506.8026	79.85344	7.228793	2.988606	-0.078508023	51,759.89	10.85
6	Gambia	2017	493.8754	68.99207	8.03419	2.968566	0.365609952	54,118.97	10.90

7	Senegal	1990	8.06E+09	18.27261	0.325099	3.004847	0.786131725	4,154,553.99	15.24
7	Senegal	1991	8.26E+09	12.47088	-1.75356	2.999727	-0.106174386	4,260,737.14	15.26
7	Senegal	1992	8.37E+09	18.87477	-0.10994	2.980102	0.281285779	4,313,683.07	15.28
7	Senegal	1993	8.47E+09	17.68467	-0.58643	2.918948	-0.011298214	4,369,794.61	15.29
7	Senegal	1994	8.47E+09	21.9447	32.29367	2.808315	1.362481178	4,369,037.39	15.29
7	Senegal	1995	8.93E+09	25.54665	7.864008	2.67164	0.512829381	4,603,369.52	15.34
7	Senegal	1996	9.11E+09	25.25035	2.754307	2.530348	0.13600827	4,695,995.08	15.36
7	Senegal	1997	9.39E+09	25.65559	1.753165	2.416646	2.975655325	4,842,699.52	15.39
7	Senegal	1998	9.95E+09	26.1861	1.156781	2.347649	1.108925735	5,128,354.51	15.45
7	Senegal	1999	1.06E+10	25.51111	0.827251	2.336141	2.35322545	5,453,857.11	15.51
7	Senegal	2000	1.09E+10	28.03107	0.731982	2.365148	1.374706632	5,628,325.35	15.54
7	Senegal	2001	1.14E+10	30.10475	2.974501	2.403786	0.729469794	5,886,154.23	15.59
7	Senegal	2002	1.15E+10	32.42465	2.337302	2.437103	1.218866991	5,924,696.98	15.59
7	Senegal	2003	1.23E+10	38.7201	-0.052	2.47567	0.993937503	6,320,658.00	15.66
7	Senegal	2004	1.3E+10	38.87576	0.514782	2.516259	1.350751799	6,691,729.43	15.72
7	Senegal	2005	1.37E+10	40.69587	1.711333	2.557495	1.522998763	7,067,979.07	15.77
7	Senegal	2006	1.4E+10	43.08503	2.112286	2.600244	2.444180824	7,241,962.34	15.80
7	Senegal	2007	1.47E+10	51.07447	5.853304	2.642725	2.456917438	7,599,605.57	15.84
7	Senegal	2008	1.53E+10	46.58516	7.347202	2.681436	2.677925106	7,907,874.13	15.88
7	Senegal	2009	1.57E+10	43.72152	-2.24802	2.714924	2.031885745	8,073,348.54	15.90
7	Senegal	2010	1.62E+10	50.76786	1.228681	2.743232	1.676389217	8,360,981.39	15.94
7	Senegal	2011	1.65E+10	43.36291	3.403228	2.766679	1.891733194	8,482,916.99	15.95
7	Senegal	2012	1.73E+10	43.95663	1.418229	2.78566	1.549334385	8,917,021.30	16.00
7	Senegal	2013	1.78E+10	46.20262	0.710245	2.799059	1.641747255	9,168,669.06	16.03
7	Senegal	2014	1.9E+10	45.61889	-1.09026	2.806701	2.036139529	9,775,039.00	16.10
7	Senegal	2015	2.02E+10	42.41796	0.135212	2.808416	2.301938365	10,397,420.00	16.16
7	Senegal	2016	2.14E+10	44.99063	0.837285	2.807361	2.481102451	11,045,018.10	16.22
7	Senegal	2017	2.3E+10	43.21249	1.318153	2.800658	2.783649922	11,835,155.16	16.29

Source: World Development Indicators (2018), International Monetary Fund International Financial Statistics (IMF-IF).