

REGIONAL TRADE AND ECONOMIC GROWTH IN WEST AFRICA

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ABSTRACT

This paper examines the role of regional trade in economic growth in four countries in West Africa between 1990 and 2017. Also, the study utilizes the Autoregressive Distributed Lag (ARDL) modelling approach to examine the relationship between the variables. The results indicate that the export share of countries in the ECOWAS and African regions is largely dominated by negative values, which implies that these countries have not explored or largely benefitted from intra-African trade as expected. Specifically, the short-run results for the export share in the sub-region show a positive influence on economic growth in only models for Côte d'Ivoire and Nigeria and is only positively related to growth in the model for Côte d'Ivoire in the long-run. Similar results were also observed in the case of trade intensity, except that Senegal's result turned positive under trade intensity in Africa in the short run. The same pattern was observed in the long run.

Key words: Regional trade, Economic growth, ARDL, West Africa

JEL classification: B4, F1, O4, O5

1. Introduction

Africa is known for its abundance of natural resources and could be most advantaged in terms of trade. However, due to gross mismanagement, underutilization, lack of human and physical capital, the continent is seriously faced with the dilemma of pro-poor growth as most countries in the region have remained trapped in the 'Hindu rate of growth'. Since 2016, the growth of the West Africa region has slowed down, averaging about 0.5 percent (AfDB, 2018). The slowdown in the growth of the

region is largely hinged on the negative growth experienced in Nigeria and Liberia. Despite the high positive increase in the growth rate of other countries in the sub-region, the market size of Nigeria led to the overall slow down of West Africa's growth rate. However, in 2017, the growth rate recovered (2.5%) and the growth was projected to increase further. Unfortunately, the recent global pandemic, due to the emergence of the novel COVID-19, dampened the prospect of growth in the world and the region. Due to the pandemic, growth in the sub-region which was projected to expand by 4 percent after a 3.6 percent increase in 2019 is now expected to contract by -2.0 percent in 2020. Moreover, the growth in the region has not been inclusive; about 43 percent of the people in the region live below the international poverty line (AfDB, 2018).

Given the growth challenges, regional trade has been identified as a key driver of growth through increased opportunities in trade, conglomerate resources for investment, large domestic markets, and the advantages of the continent's economies of scale. There are eight (8) building blocks of Regional Economic Communities (REC) that have been acknowledged by the African Union (AU) to aid the regional integration agenda in Africa for the formation of a Continental Free Trade Area (CFTA) and improve intra-African trade. The economic communities involve various forms of integration which include free trade areas, a customs union, a common market, an economic union, and total economic integration. Major stakeholders in the continent are drafting various means to improve regional trade across Africa and boost economic growth.

Against this backdrop, during the 2012 African Union summit, the African leaders agreed to create a new continental free trade area by 2017. Thus, the African Continental Free Trade Area (AfCFTA) was established, came into force in May 2019 and was implemented in January 2021. The framework is to abolish tariffs on 90 percent of goods tarry lines. For the most sensitive, 7 percent of the product; 3 percent of the tariff lines (not exceeding 10 percent of the value of imports). According to the International Monetary Fund (IMF), 90 percent of trade liberalization within the AfCFTA will lead to a 10 percent increase in trade. Further, the United Nations Economic Commission for Africa estimates that the agreement will increase intra-African trade by 52 percent by 2022. AfCFTA is designed to create a comprehensive African market, encompassing 1.2 billion people and a combined GDP of about \$2.5

trillion. The free trade area (FTA) agreement has great potentials for the continent: to establish a regional value chain and boost growth and development. International economists believe that regional trade agreement can be welfare-improving as it has potentials to increase household consumption, growth, and development. In particular, economic growth rates in West Africa have been insufficient to make a significant reduction in poverty and huge improvement in household consumption (USAID, 2019).

Studies such as Okoro et al. (2020), Zahonogo (2016), and Jayme Jr. (2001) affirm that the relationship between trade and growth is not clear, given different arguments from empirical and theoretical standpoints. The growth literature leads to problems such as the endogeneity of the variables while empirical policy literature has been proved to be weak in trying to make a clear correlation between trade and growth. Fatou and Ismael (2013) state that the positive outcome of FTA is based on the argument that members are major trade partners and agreement is reciprocal. Thus, FTA involves both import-liberalization and export-liberalization policies that are expected to induce a general equilibrium effect through the reallocation of resources between imports competing towards export-oriented industries. Empirically, it has been documented widely that encouraging regional integration and reducing barriers to trade and investment will lead to long-run economic growth, improve household consumption, poverty reduction and increased employment (Winters, McCulloch & McKay, 2004).

From the foregoing discussion, several studies (Fatou and Ismael, 2013; Castillo-Manzano et al, 2016; Mosle, 2019; Johnson, 2017; Mold and Mukwaya, 2016; Santos-Paulino, DiCaprio & Sokolova, 2018) on the effect of regional free trade on macroeconomic realities have shed light on the importance of the agreement. Mold and Mukwaya (2016) established that there was a significant 29 percent increase in intra-regional trade as a result of FTA in Africa. Also, the North American free trade agreement has benefited the United States economically as well as strategically in terms of North American relations (Johnson, 2017). However, Mosle (2019) established that some FTAs succeeded in creating positive economic impacts while others had mixed or even negative impacts. Moreover, the impact of FTA varies by regional clusters. Sub-Saharan Africa experiences relatively lower growth impact of FTA compared to

other regions (Santos-Paulino et al., 2018). Traditional theories assert that trade is growth-enhancing, while modern theories believe that is not always beneficial to growth (Zahonogo, 2016). In their theoretical model, Grossman and Helpman (1991) stated that trade facilitates new technologies transfer, enhancing technological advancement and productivity improvement; however, these gains largely rely on the degree of economic openness. The model conclusion arises from the assumption that trade provides economic incentives, boosting productivity through two dynamics. In the short-term period, trade is expected to reduce the misallocation of resources while in the long-term period, it fosters the transfer of technological development. However, some theories submit that the growth effect depends on the level of economic development of each country; also, that trade may hamper growth. Trade might reduce long-run growth if an economy lacks technological innovations or human capital development (Redding, 1999).

Hence, this study focuses on the country-by-country analysis that can shed light on the extent to which regional trade at ECOWAS and Africa levels influence economic growth of ECOWAS countries that remain scarce in the literature. ECOWAS countries rely on trade with developed countries relative to countries within the sub-region and Africa as a whole. According to Bloomberg Trade Flows (2019), ECOWAS countries trade more with China, India, and the EU, among others. A more recent study by Okoro et al. (2020) explores the role of regional trade in economic growth. However, this study does not provide evidence on how regional trade influences economic growth in the individual countries, which is more relevant to trade policy formulation. Thus, this study provides empirical explications on the effect of regional trade on economic growth in ECOWAS countries. This will assist the countries in the sub-region to understand how they can maximize their regional trade to boost their economic growth. The rest of the paper is structured as follows: section 2 focuses on the review of related literature; section 3 deals with methodological issues, section 4 presents the empirical analysis and discussion, while section 5 provides concluding remarks.

2. Literature Review

From the literature, there have been diverse conclusions on the effect of free trade on economic growth. There is yet to be a convergence on the growth impact of trade because different studies employ different proxies

for free trade and use diverse methodologies. Mold and Mukwaya (2016) show that there was a significant 29 percent increase in intra-regional trade as a result of FTA in Africa. Also, the North America free trade agreements have benefited the United States economically as well as strategically in terms of North American relations (Johnson, 2017). Kim and Lin (2009) concluded that trade openness promotes long-run economic growth, with varying effects depending on the level of economic development. Also, trade openness positively influences economic growth, indicating that overregulation restricts economic growth due to the prevention of resources moving into the most productive sectors and to the most efficient firms within the sectors (Bolaky and Freund, 2008). Almeida and Fernandes (2008) explain that countries with more openness to trade have greater opportunities to benefit from technological spillover which facilitates economic growth. Further, regional integration exerts a positive effect on economic growth (Henrekson, Torstensson & Torstensson, 1997). Mosle (2019) established that some FTAs succeed in creating positive economic impacts while others have mixed or even negative impacts.

However, Fenira (2015) posit that trade liberation has not contributed to economic growth positively. To identify the important crisis values and differential post-liberalization growth effects in crisis and non-crisis regimes, Falvey, Foster and Greenway (2012) used threshold regression techniques on crisis indicators. The findings show that an economic crisis during liberalization affects post-liberalization economic growth, in a way that depends on the crisis nature. An internal crisis reduces economic growth while an external crisis increases economic growth compared to a non-crisis regime. Employing a dynamic panel data framework, Ulaşan (2015) posits that measures of trade openness are not strongly associated with economic growth, suggesting that trade openness alone does not boost economic growth. According to Trejos and Barboza (2015), trade openness is not the major driver of the Asian economic growth miracle. They explained that policies, such as measures aimed at fostering macroeconomic stability and a favourable investment climate, must accompany trade openness.

Further, the impact of FTA varies by regional clusters. Sub-Saharan Africa experiences relatively lower growth impact of FTA compared to other regions (Santos-Paulino, DiCaprio & Sokolova, 2018). Herzer

(2013) explains that trade openness positively enhances growth in the developed countries has a negative effect for developing countries. Also, the effect of trade liberalization on growth depends on the extent of liberalization (Liang, 2008). There is a possible bi-directional causality in the trade–growth link, where countries that trade more may have higher income, while countries with higher income may be better able to afford the infrastructure conducive to trade. Zeren and Ari (2013) found a positive bidirectional causal link between openness and economic growth for G7 countries.

The studies on Africa have also shown the impact of trade on economic growth. Mwaba (2000) reveals that trade openness has the potential to improve export and growth through the relaxation of import and export restrictions and low tariffs. Also, Onyekwena and Oloko (2016) show that commitment to regional policy and human capital development by ECOWAS countries will facilitate inclusive development. In the view of Zahonogo (2016), the empirical evidence shows that a trade threshold exists below which greater trade openness has beneficial effects on economic growth and above which the trade effect on growth declines. The findings support the view that the relationship between trade openness and economic growth is not linear for sub-Saharan Africa.

3. Methodology

3.1 Model specification

The study explored the neoclassical growth model proposed by Mankiw, Romer and Weil (1992) to analyse the role of regional trade in economic growth. This model is modified to account for the role of intra-African trade in the growth process. Theoretically and empirically, several studies have established the linkage between trade and economic growth (see Grossman and Helpman, 1990; Jayme Jr., 2001; Kim and Lin, 2009; Musila and Yiheyis, 2015). The growth effect of trade largely depends on the benefits that accrue to the individual countries. To achieve our objective, we evaluate the modified growth model developed by Mankiw et al. (1992), thus, specifying our model as follows:

$$\begin{aligned}
 LGDPC_t = & \beta_0 + \beta_1 LABF_t + \beta_2 LCAP_t + \beta_3 EXT_t + \beta_4 GOVT_t + \\
 & \beta_5 PSE_t + \beta_6 LE_t + \beta_7 RT_t + \varepsilon_t
 \end{aligned}
 \tag{1}$$

From equation 1, $LGDP C_t$ is the log of GDP per capita as the proxy for economic growth. The choice of the measures is informed by its comparability property which will allow for better comparison among the countries based on their population. $LABF_t$ is the labour force participation rate (as a share of total population aged 15-64) and $LCAP_t$ is the log of capital stock. These are traditional determinants on which growth models are built. Theoretically, labour and capital are expected to enhance economic growth (see Solow, 1956; Mankiw, Romer and Weil, 1992). Traditionally, productivity depends on inputs (capital and labour). It is expected that labour and capital will positively affect economic growth. External debt (EXT_t) can influence growth both positively and negatively depending on its utilization in the growth process. However, Fosu (1999) argues that external debt is deleterious to economic growth. $GOVT_t$ represents government final consumption expenditure which captures the crucial role of government in the growth process (Arpaia & Turrini, 2008). The role of human capital is captured by PSE_t and LE_t , which represent primary school enrolment and life expectancy respectively. These measures capture the development of labour skills and capacities to expand productivity (Aghion and Howitt, 1992; Becker and Hall, 2013). RT_t represents regional trade. The role of trade in the growth process is crucial depending on how countries try to explore the market for their benefits in terms of productivity expansion. Excessive regulations retard growth due to the prevention of resources moving into productive sectors and efficient firms (see Bolaky and Freund, 2008). In addition, benefits from trade also require the establishment of reliable policy measures that will ensure macroeconomic stability and a favourable investment climate (see OECD, 2012). RT_t is captured by two measures which are export share (ES) and trade intensity (TI). In the context of these countries, ES is measured in two ways: export share in the ECOWAS sub-region (ESR) and export share in the African region (ESA). Interestingly, the effect of bilateral trade can be captured from the demand and supply sides. On the demand side, an increase in aggregate demand of country j will lead to high imports in country i , hence increasing the productivity of country i . On the supply side, Wälti (2011) argues that the effect of international trade may be ambiguous as this

depends on the nature of the product of the countries involved. The export share is computed as follows:

$$Z_{ij,t} = \frac{X_{ij,t}}{X_{i,t} + M_{i,t}} \times 100 \quad (i)$$

where:

$Z_{ij,t}$ represents the export share of bilateral trade linkage of country i with country j and t represents the time period

$X_{ij,t}$ captures the total exports from country i to country j

$X_{i,t} + M_{i,t}$ is the total trade of country i .

Thus, the bilateral is between the four countries and the ECOWAS sub-region and African region. On the other hand, the trade intensity of bilateral trade linkage between the four countries and the ECOWAS sub-region and African region is derived using the following approach:

$$Z_{ij,t} = \frac{X_{ij,t} + M_{ij,t}}{X_{i,t} + M_{i,t}} \times 100 \quad (ii)$$

$M_{ij,t}$ is the imports of country i from country j while other symbols have been defined above.

In addition, trade intensity is captured in two ways: trade intensity in the ECOWAS sub-region (TIR) and trade intensity in the African region (TIA).

3.2 Estimation technique

3.2.1 Unit Root Tests

The unit root test checks for the stationarity of variables which are necessary for time series analysis to prevent spurious regression. In other words, working with non-stationary variables may bring spurious results (Granger and Newbold, 1974), thus, this study employs Philip-Perron tests for observing the order of integration of variables.

3.2.2 The ARDL Modelling Technique

The ARDL is a linear cointegration framework developed by Pesaran, Shin and Smith (2001). It is built on the ordinary least squares (OLS) estimation of a conditional unrestricted error correction model (UECM) for cointegration analysis. It is used to test for the existence of a long-run relationship and estimate both the long-run and short-run coefficients of the study. Following Pesaran et al. (2001), the ARDL model can be specified as:

$$y_{it} = \alpha_0 + \lambda_i y_{it-1} + \sum_{p=1}^k \beta_i(L, p_i)x_{it} + \gamma'k_t + \varepsilon_t \quad (2)$$

$$t = 1 \dots \dots, n$$

where:

y_{it} is the dependent variables,

α_0 is the constant,

x_{it} are the independent variables,

L is the lag operator and

r_t is the $k \times 1$ vector of deterministic variables that captures constant, time trends and other explanatory variables with fixed lags.

The unrestricted Error Correction Model form of the selected ARDL model can be derived by rearrangement of Eq. 2 with respect to the lagged levels and first difference of $x_{1t}, x_{2t}, \dots, x_{rt}$ and as follows:

$$Dy_t = \alpha_0 + \varpi_{yx}z_{t-1} + \sum_{i=1}^{q-1} \delta_i Dy_{t-i} + \sum_{i=1}^{q-1} \delta_i Dx_{t-i} + \gamma_t w_t + \varepsilon_t \quad (3)$$

where: D is the first difference operator, the coefficient of δ_i is expressing the short-run dynamics of the model's convergence to equilibrium and $z_t = (y_t', x_t')$.

According to Pesaran et al. (2001), equation (1) can be expressed in the unrestricted form of the ARDL model as presented below:

$$\begin{aligned}
D(LGDPC)_t = & \alpha_0 + \sum_{i=1}^{m1} \alpha_i D(LGDPC)_{t-i} + \sum_{i=0}^{m2} \alpha_2 D(LABF)_{t-i} + \sum_{i=0}^{m3} \alpha_3 D(CAP)_{t-i} + \\
& \sum_{i=0}^{m4} \alpha_4 D(EXT)_{t-i} + \sum_{i=0}^{m5} \alpha_5 D(GOVT)_{t-i} + \sum_{i=0}^{m6} \alpha_6 D(PSE)_{t-i} + \sum_{i=0}^{m7} \alpha_7 D(LE)_{t-i} + \sum_{i=0}^{m8} \alpha_8 D(RT)_{t-i} + \\
& \lambda_1 (LABF)_{t-1} + \lambda_2 (CAP)_{t-1} + \lambda_3 (EXT)_{t-1} + \lambda_4 (GOVT)_{t-1} + \lambda_5 (PSE)_{t-1} + \lambda_6 (LE)_{t-1} + \lambda_7 (RT)_{t-1} + \varepsilon_t
\end{aligned}
\tag{4}$$

$\alpha_1, \alpha_2, \alpha_3, \alpha_4, \dots, \alpha_8$ are short-run parameters while $\lambda_1, \lambda_2, \lambda_3, \lambda_4, \dots, \lambda_7$ represent long-run parameters.

The Autoregressive Distributed Lag framework allows the “Bounds test” to swiftly ascertain the cointegrating relation in the cases of small samples (Tang, 2003). The technique is appropriate and pliable to any explanatory variables integration order, either I(0) or I(1) or mutually cointegrated whereas the endogenous variable must be statistically significant under I(1). Moreover, it also accommodates a large number of choices which include decisions with respect to the number of endogenous and explanatory variables. The technique allows several optimal lags with different combinations for several variables as well as capturing short-run and long-run coefficients independently.

As explained above, the study utilized the ARDL model developed by Pesaran et al. (2001) for the four countries instead of the panel approach, to avert the challenge of obscuring countries’ particularities and ensure specific policy prescription. Also, it permits for easy analytical comparison among the countries in terms of their performance. This modelling technique is adopted due to several advantages: the model shows that after appropriate augmentation of the order of the ARDL model, the OLS estimators of the short-run parameters are \sqrt{T} -consistent with the asymptotically singular covariance matrix; the estimators of the long-run coefficients of the ARDL are very reliable; valid inferences on the long-run parameters can be determined by employing the standard normal asymptotic theory; the technique yields consistent estimates of the long-run coefficients that are asymptotically normal regardless of the order of integration of the regressors. In our study, we have 28 annual observations (i.e., 1990-2017). Hence, the utilization of this approach is very appropriate.

3.3 Data source

This study makes use of a dataset from four West African countries – Benin Republic, Côte d’Ivoire, Nigeria and Senegal. The choice of the countries is due to the availability of data. The analysis follows a country-specific approach which allows for comparison and circumvents potential heterogeneity issues commonly associated with the panel approach. The data for this study was sourced from World Development Indicators (WDI), Penn World Table Version 9.1, and International Monetary Fund (IMF). Data on GDP per capita (constant US\$ 2011); (GPDC); Labour Force participation rate (LABF); External debt as a percentage of GDP (EXT); General Government Final Consumption Expenditure (GOVT); Primary School Enrolment (PSE); Life Expectancy (LE) were collected from World Development Indicators (2020). On the other hand, data on Capital Stock in millions (Constant US\$ 2011) were collected from Penn World Table Version 9.1 while Direction of Trade (export, import and total trade) was collected from the International Monetary Fund database.

4. Empirical Analysis and Discussion

The summary statistics of all the variables for the four countries are presented in Table 1. These sampled countries were selected from the West African region based on available data. These countries are Benin, Côte d’Ivoire, Nigeria and Senegal. The standard procedures for time series properties require analysis of individual statistical characteristics of the series as presented in Table 1. The mean statistic of GDP per capita shows that Nigeria and Côte d’Ivoire have comparably high average values of \$1,842.09 and \$1,331.10 respectively. However, Benin recorded the lowest mean value of \$718. In terms of volatility as measured by standard deviation, Nigeria and Senegal had the highest values. This implies a high disparity between the minimum and maximum values. The statistical summary of labour force participation rate reveals that Benin Republic and Côte d’Ivoire had the highest average values while Senegal had the lowest mean value. However, Côte d’Ivoire and Senegal had the highest volatile values as indicated by the standard deviation. In addition, the summary statistics indicate that Nigeria had the highest average value relative to other countries while Benin Republic recorded the least value. In terms of variability, Nigeria had the highest value due to the large difference between the minimum and maximum values, while Benin Republic recorded the lowest variability.

Focusing on external debt (as a percentage of GDP), Côte d'Ivoire had the highest mean values while Nigeria had a relatively low mean value. This simply implies that Côte d'Ivoire had more external debt compared to other countries. In terms of fluctuation, Côte d'Ivoire still recorded the highest value while Benin Republic recorded the least value of all the countries. The statistical summary of government final consumption expenditure (as a percentage of GDP) shows that Senegal recorded the highest average value while Nigeria recorded the lowest value. However, Senegal had the lowest standard deviation which indicates a small difference between the minimum and maximum values. On primary school enrolment (as a percentage of GDP), Benin Republic recorded the highest average value compared to other countries while Côte d'Ivoire had the lowest mean value. But Benin Republic had the highest value of standard deviation while Nigeria had the lowest value. Among the four countries, Senegal had the highest mean value of life expectancy while Nigeria has the lowest value. In terms of standard deviation, Senegal had the highest value while Benin Republic recorded the lowest volatile value.

Analysing the summary statistics of export share at sub-region and regional levels (ESR and ESA), Côte d'Ivoire had the highest average value while Benin Republic recorded the lowest value. This implies that Côte d'Ivoire explored the West African sub-region and the African region the most in trading activities relative to other countries. This summary statistics further indicates that most of these countries did not explore the sub-regional and regional markets in trading activities. Thus, these countries explored extensively the trading activities outside the continent. The high trade dependence outside the continent by these countries suggests that trade benefits that are supposed to accrue to this continent to foster growth and development are lost major trading partners outside the continent. Focusing on the trade intensity in the sub-region and African region (TIR and TIA), Côte d'Ivoire and Senegal have the highest average value of trade intensity while Nigeria has the lowest mean value. This further reinforces the observed pattern under export share. The standard deviation shows that Nigeria has the lowest value relative to other countries in the sample. The summary statistics give insight into the low level of trading activities of these countries within West Africa and Africa as a whole.

Table 1. Descriptive Statistics

Benin Republic											
	GDPC	LABF	CAP	EXT	GOVT	PSE	LE	ESR	ESA	TIR	TIA
Mean	718.00	72.69	48,719.03	35.48	11.46	96.96	57.23	2.50	4.55	9.53	13.35
Maximum	862.06	73.64	74,074.73	86.49	17.57	132.47	61.17	7.59	28.23	15.86	39.12
Minimum	609.35	71.65	36,356.24	9.23	7.79	51.25	53.81	0.37	0.75	0.91	1.85
Std. Dev.	76.42	0.76	11,021.08	22.10	2.78	25.58	2.33	1.58	4.94	4.07	6.42
Observations	28	28	28	28	28	28	28	28	28	28	28
Côte d'Ivoire											
	GDPC	LABF	CAP	EXT	GOVT	PSE	LE	ESR	ESA	TIR	TIA
Mean	1,331.10	63.16	133,854.10	94.22	13.14	76.20	49.78	10.35	13.78	17.82	22.86
Maximum	1,616.17	67.67	201,630.20	209.24	17.44	98.37	54.10	16.55	24.40	29.34	41.74
Minimum	1,131.45	57.08	114,022.10	23.87	8.74	68.00	46.57	7.89	10.07	12.78	16.16
Std. Dev.	119.18	3.57	22,398.90	55.54	2.15	8.14	2.35	1.61	2.54	3.61	5.04
Observations	28	28	28	28	28	28	28	28	28	28	28

Nigeria											
	GDPC	LABF	CAP	EXT	GOVT	PSE	LE	ESR	ESA	TIR	TIA
Mean	1,842.09	59.00	1,459,998.00	34.27	4.20	91.47	48.54	3.68	5.61	4.45	7.04
Maximum	2,563.90	61.19	2,211,252.00	110.62	9.45	102.11	53.88	8.83	9.89	12.20	14.00
Minimum	1,348.68	53.18	1,201,518.00	3.90	0.91	78.66	45.84	2.11	3.12	2.47	3.99
Std. Dev.	447.86	2.49	299,354.50	31.53	3.09	5.96	2.81	1.56	1.50	2.12	2.09
Observations	28	28	28	28	28	28	28	28	28	28	28
Senegal											
	GDPC	LABF	CAP	EXT	GOVT	PSE	LE	ESR	ESA	TIR	TIA
Mean	1,186.92	50.32	97,081.57	43.42	14.10	72.97	60.93	5.57	7.10	10.92	14.38
Maximum	1,489.37	53.65	167,711.90	75.34	18.44	86.99	67.48	9.81	11.84	17.16	20.89
Minimum	1,001.43	45.66	60,448.50	16.34	12.32	53.41	57.20	1.36	2.16	4.59	5.86
Std. Dev.	135.03	2.61	31,934.19	17.55	1.52	12.44	3.74	2.46	2.77	4.08	4.79
Observations	28	28	28	28	28	28	28	28	28	28	28

Source: Authors' compilation

Apart from descriptive statistics, another necessary condition for time series analysis is the test of stationarity of the variables. As presented in table 2, all the series are stationary at either level or first difference. Since the integration orders are mixed, the autoregressive distributed lag (ARDL) modelling is the most suitable approach. This allows for analysis of the short-run and long-run impacts of regional trade (as measured by export share and intensity) on economic growth. Also, the bounds test reveals the existence of long-run relationships between the variables in the model estimated.

Table 2. Unit Root Test (Phillip-Perron)

	None	Constant	Constant & Trend	None	Constant	Constant & Trend
Benin						
LGDPC	4.503	0.320	-2.334	-2.736***	-4.451***	-4.416***
LABF	-2.409**	-0.119	-2.430	-1.713*	-2.230	-2.066
LCAP	1.756	-0.794	-3.537*	-6.220***	-12.938***	-14.628***
EXT	-1.347	-1.285	-2.123	-7.801***	-7.905***	-7.795***
GOVT	-1.705*	-2.355	-1.661	-5.128***	-5.208***	-5.495***
PSE	3.184	-2.089	-0.560	-2.387**	-3.019**	-3.277*
LE	-1.580	-2.277	-2.530	-2.207**	-2.086	-1.760
ESR	-1.553	-2.925*	-3.769**	-9.104***	-9.136***	-11.693***
ESA	-3.173***	-5.060***	-4.955***	-21.147***	-20.575***	-24.550***
TIR	-0.958	-1.939	-2.778	-8.664***	-8.544***	-15.439***
TIA	-1.178	-3.645***	-3.894**	-11.067***	-11.526***	-18.921***
Côte d'Ivoire						
LGDPC	0.257	-1.289	0.046	-2.642***	-2.624	-3.205
LABF	-6.482***	2.172	-3.203	-0.606	-1.715	0.114
LCAP	0.546	-0.367	-1.446	-4.614***	-4.881***	-4.902***
EXT	-2.010**	-0.534	-2.785	-5.235***	-6.096***	-5.965***
GOVT	-1.401	-2.151	-2.818	-5.126***	-5.353***	-5.201***
PSE	2.145	1.705	-0.213	-3.604***	-4.184***	-4.895***
LE	-0.695	-0.714	-1.783	-1.730*	-2.5067	-2.041
ESR	-0.554	-4.506***	-4.652***	-12.158***	-11.721***	-11.793***
ESA	-0.582	-3.290**	-3.492*	-7.426***	-7.274	-7.120***

	None	Constant	Constant & Trend	None	Constant	Constant & Trend
TIR	-0.688	-2.727*	-2.888	-6.495***	-6.366***	-6.239***
TIA	-0.604	-2.561	-2.926	-6.105***	-5.975***	-5.841***
Nigeria						
LGDPC	1.599	-0.139	-2.218	-2.173**	-2.531	-2.321
LABF	-1.761*	0.845	-0.667	-2.461**	-2.701*	-2.760
LCAP	-0.911	-1.471	-2.456	-4.935***	-4.866***	-4.751***
EXT	-1.317	-1.045	-2.313	-5.152***	-5.284***	-5.192***
GOVT	-0.335	-1.246	0.925	-4.591***	-4.533***	-4.555***
PSE	-0.008	-2.370	-2.312	-4.740***	-4.643***	-4.598***
LE	4.078	2.507	-2.418	0.268	-1.341	-0.936
ESR	-0.638	-2.507	-3.033	-5.460***	-5.310***	-5.161***
ESA	-0.233	-3.102**	-3.047	-5.844***	-5.690***	-5.514***
TIR	-0.873	-2.408	-3.088	-4.959***	-4.841***	-4.747***
TIA	-0.291	-3.159**	-3.056	-5.322***	-5.180***	-5.014***
Senegal						
LGDPC	2.493	1.239	-2.312	-2.840***	-3.720***	-4.350***
LABF	-4.354***	1.251	-1.415	-1.245	-2.050	-1.808
LCAP	1.647	-0.381	-2.427	-4.786***	-5.332***	-5.286***
EXT	-0.654	-1.170	-1.400	-4.622***	-4.520***	-4.443***
GOVT	-1.534	-3.510**	-2.905	-4.277***	-4.338***	-4.644***
PSE	2.548	-1.158	-0.547	-3.030***	-3.982***	-4.126***
LE	-0.561	-1.135	-0.996	-1.987**	-2.018	-2.779
ESR	0.695	-1.072	-3.571**	-7.245***	-9.021***	-10.021***
ESA	0.652	-1.086	-4.256***	-7.134***	-9.440***	-9.781***
TIR	0.406	-1.266	-2.946	-7.076***	-8.268***	-10.554***
TIA	0.387	-0.951	-2.901	-6.636***	-7.082***	-6.936***

Source: Authors' compilation

This study gives an insight into the role of regional trade in economic growth in four selected West African countries. These countries are Benin, Côte d'Ivoire, Nigeria and Senegal. Regional trade is captured by the export share and intensity of these countries in the ECOWAS region and Africa as a whole. Thus, we first examined the effect of these countries' export shares in the ECOWAS region on their economic growths as presented in table 3. The short-run estimated coefficients of

labour are mixed in the model. The coefficients are positive and statistically significant for Benin and Côte d'Ivoire while they are negative and statistically insignificant for Nigeria and Senegal. Considering the magnitude of the coefficients, the positive effect outweighs the negative effect. Labour serves as a catalyst for enhancing economic growth in Benin and Côte d'Ivoire while it serves as a drag on economic growth in Nigeria and Senegal. For instance, a 100% increase in the labour force will result in a 3.5% and 5.8% increase in economic growth in Benin and Côte d'Ivoire respectively, while it will lead to a 0.6% and 0.08% decline in economic growth in Nigeria and Senegal respectively. This suggests that a large labour force contributes significantly to the aggregate economic activities in Benin and Côte d'Ivoire while its contribution is significantly low in Nigeria and Senegal, which may be attributed to the huge underemployment and unemployment in these countries.

Further, the short-run coefficients of capital stock are positive and statistically significant in all the models except for Nigeria, as it was negative. The capital stock promotes economic growth in most of the countries as predicted in the growth theory. However, Nigeria has not benefited from its capital accumulation. This gives an idea of the nature of capital attracted to these countries. Undoubtedly, most capital inflows go to the real sector of the economy in Benin, Côte d'Ivoire and Senegal while most capital inflows go to the capital-intensive sector in Nigeria, which does not significantly promote growth. This may also give an insight into the saving behaviour in these countries, which affects capital accumulation that can benefit economic growth. On external debt (as a percentage of GDP), the short-run coefficients are negative but only statistically significant in the models for Benin and Senegal. This implies that debt serves as a drag on economic growth across the countries. This points to the fact that most debts in developing countries such as Benin, Côte d'Ivoire, Nigeria and Senegal are not productive given the issue of debt mismanagement. The short-run coefficients of government final consumption are largely dominated by negative signs but only statistically significant in the model for Benin. Also, the magnitude is very small across the models. This is expected as the public sector is quite large and largely dominated by recurrent expenditure which may not enhance growth as observed from the result. Hence, the role of fiscal policy in the growth process is not well pronounced across these countries.

Given the importance of human capital in the growth model, primary school enrolment and life expectancy are used as the proxies for human capital in the estimated model. The short-run coefficients of primary school enrolment are positive across the models except for the model for Senegal. On life expectancy, the estimated short-run coefficients are mixed across the models. The coefficients are positive for Benin and Côte d'Ivoire but statistically significant in Senegal's model while the coefficients are negative and statistically significant for Nigeria and Senegal. This implies that human capital benefits overall economic activities as this is critical for growth in Benin, while the development of human capital is not beneficial to the growth process in Nigeria and Senegal.

The development of human capital is very worrisome in Nigeria despite its economic and strategic importance in the sub-region. Shifting attention to the export share of these countries in ECOWAS, the short-run result is mixed: positive for Côte d'Ivoire and negative for Benin and Senegal. These coefficients are not statistically insignificant across the models. For instance, if the export shares of Côte d'Ivoire and Nigeria in the ECOWAS region are increased by 100%, economic growth will increase by 0.1% and 0.5% respectively. This implies that these countries need to ensure significant value addition in their exports because ensuring a free trade area may not be sufficient as a country may not engage in trading activities with other countries in the ECOWAS sub-region if the value addition and quality are low. Thus, these countries must explore their area of comparative advantage and add great value to their output if they want to benefit from trade in the ECOWAS region.

Focusing on the long-run impacts of the variables on economic growth in the four countries, there are slight changes in the control variables in terms of magnitude and statistical significance. On labour force, the direction and statistical significance remain the same while the magnitude changes. For instance, the impact of labour force contributes significantly to long-run economic growth for Benin while the dampening effect increases for Nigeria and Senegal. The result of capital stock only changes in terms of magnitude. There are also slight changes in the impact of external debt in the long-run in terms of coefficient and statistical significance. In this case, only Senegal experienced a productive effect of external debt relative to other countries. This implies that effective utilization of debt can enhance growth in the long-run. A significant

change in government expenditure was observed in Senegal's model where the coefficient turned positive and statistically significant.

On human capital, a significant change was observed in the model for Nigeria as the two measures turned positive and statistically significant in the long-run. Expectedly, the impact of human capital can take a longer time due to the time it requires to acquire knowledge and skills as well as guarantee quality health of the workers. In furtherance to the observed pattern in the short-run, this impact of export share of the countries in the ECOWAS sub-region further worsened in the long-run as coefficients were dominated by negative signs. The inference from this result is that trade is significantly low within the sub-region which makes it difficult for the economic growth of these countries to benefit from it. Trade is critical for the growth of these countries given the enormous socio-economic challenges facing them. Thus, regional trade tends to improve economic growth only if the countries can add value and improve the competitiveness of their products. The speed of adjustment which captures the long-run convergence satisfies the theoretical conditions. It is negative and statistically significant across the model. The disequilibrium experienced in the economy adjusts to steady-state faster in the Côte d'Ivoire model relative to others as it converges at a speed of more than 95% annually. However, it will take the other three countries almost two years to converge to a steady-state.

The subsequent discussions focus on the model with the export share of these countries in Africa being as presented in Table 3. The short-run coefficient of labour changed slightly relative to the previous model. The coefficient remained unchanged in terms of direction while the coefficient turned statistically significant for Nigeria. Also, the estimated short-run coefficient of capital stock turned positive across the model. This implies that capital positively influenced economic growth when export share in Africa was introduced but remained statistically insignificant. The impact was way higher for Côte d'Ivoire compared to the other countries as indicated by the large magnitude. The result of the external debt is similar to the result of the previous model discussed. The short-run coefficient of government expenditure remained very small but turned negative across the model. Similarly, the coefficient of human capital was significantly different from the previous model in terms of statistical significance and magnitude.

Table 3. Models with Export Share

Variable	ECOWAS share				Africa share				
	Benin	Côte d'Ivoire	Nigeria	Senegal	Benin	Côte d'Ivoire	Nigeria	Senegal	
Short-run	D(LABF)	0.035*** (0.012)	0.058*** (0.016)	-0.006 (0.010)	-0.0008 (0.017)	0.035*** (0.012)	0.058*** (0.017)	-0.018* (0.009)	-0.0013 (0.017)
	D(LCAP)	1.257*** (0.262)	2.515*** (0.337)	-1.119** (0.501)	0.681** (0.263)	1.298*** (0.254)	2.518*** (0.338)	0.340 (0.428)	0.674** (0.262)
	D(EXT)	-0.0004* (0.0002)	-0.001 (0.0004)	-0.001 (0.001)	-0.001* (0.001)	-0.0003 (0.0002)	-0.001 (0.0004)	-0.0001 (0.0006)	-0.001* (0.001)
	D(GOVT)	-0.006*** (0.002)	-0.0006 (0.003)	0.002 (0.005)	-0.004 (0.007)	-0.0062*** (0.002)	-0.0007 (0.004)	-0.0003 (0.001)	-0.004 (0.007)
	D(PSE)	0.002*** (0.001)	0.0002 (0.002)	0.001 (0.001)	-0.001 (0.001)	0.0024*** (0.0008)	0.0002 (0.002)	0.0003 (0.001)	-0.001 (0.001)
	D(LE)	0.007 (0.007)	0.009** (0.004)	-0.574** (0.186)	-0.041*** (0.012)	0.0087 (0.0071)	0.008** (0.004)	0.054** (0.022)	-0.040*** (0.012)
	D(ESR)	-0.0002 (0.002)	0.001 (0.002)	0.005 (0.006)	-0.0004 (0.005)				
	D(ESA)					-0.0004 (0.0003)	0.0008 (0.002)	-0.006 (0.006)	-0.002 (0.004)
	ECM (-1)	-0.526*** (0.134)	-0.954*** (0.202)	-0.546*** (0.175)	-0.543** (0.231)	-0.510*** (0.104)	-0.955*** (0.209)	-0.450** (0.166)	-0.554** (0.229)
Long-run	LABF	0.067** (0.026)	0.060*** (0.008)	-0.029 (0.020)	-0.002 (0.031)	0.068** (0.025)	0.060*** (0.009)	-0.039* (0.020)	-0.002 (0.030)
	LCAP	0.428*** (0.120)	0.945*** (0.191)	-3.306*** (0.942)	1.255*** (0.296)	0.417*** (0.094)	0.951*** (0.213)	-1.273*** (0.427)	1.218*** (0.289)
	EXT	-0.001* (0.001)	-0.0006 (0.001)	-0.002 (0.001)	-0.002 (0.001)	-0.001 (0.001)	-0.0006 (0.001)	0.002* (0.001)	-0.002 (0.001)

		(0.0004)	(0.0004)	(0.002)	(0.001)	(0.0004)	(0.0004)	(0.001)	(0.001)
	GOVT	-0.011***	-0.0007*	-0.004	0.020*	-0.012***	-0.0007	0.021	0.020*
		(0.003)	(0.003)	(0.010)	(0.010)	(0.004)	(0.004)	(0.013)	(0.010)
	PSE	-0.001	0.0002	0.007**	-0.002	-0.001	0.0002	0.001	-0.001
		(0.001)	(0.002)	(0.003)	(0.003)	(0.001)	(0.002)	(0.002)	(0.003)
	LE	0.013	0.009**	0.324***	-0.075**	0.017	0.009**	0.120***	-0.072**
		(0.015)	(0.004)	(0.042)	(0.032)	(0.015)	(0.004)	(0.030)	(0.030)
	ESR	-0.0003	0.001	-0.004	-0.001				
		(0.003)	(0.002)	(0.012)	(0.009)				
	ESA					-0.0007	0.001	-0.049***	-0.004
						(0.001)	(0.002)	(0.016)	(0.007)
Bounds Test	F-statistics	3.692	4.651	5.900	3.111	3.683	4.518	7.842	3.123
Post-Estimation Test									
Serial Correlation									
Test	Q-statistics (Prob.)	12.688(0.242)	6.632(0.760)	7.360(0.691)	8.894(0.542)	13.441(0.200)	7.255(0.701)	10.866(0.368)	11.462(0.323)
Heteroscedasticity									
Test: ARCH LM	F-statistics (Prob.)	0.495(0.776)	0.781(0.578)	0.315(0.895)	0.220(0.949)	0.741(0.679)	0.938(0.483)	1.162(0.370)	0.176(0.968)
Ramsey Test	F-statistics (Prob.)	0.175(0.681)	0.796(0.437)	0.404(0.537)	2.183(0.159)	0.055(0.817)	0.160(0.694)	1.392(0.259)	1.255(0.227)

Source: Authors' compilation

Note: ***, **, and * represent 1%, 5% and 10%, respectively. The values in parenthesis capture the standard errors. 'Bounds' F-statistic values are compared with the critical value of 2.03-3.13 at a 10% level of significance.

Table 4. Models with Trade Intensity

		ECOWAS Intensity				Africa Intensity			
	Variable	Benin	Côte d'Ivoire	Nigeria	Senegal	Benin	Côte d'Ivoire	Nigeria	Senegal
Short-run	D(LABF)	0.021 (0.017)	0.063*** (0.015)	-0.0034 (0.008)	-0.0001 (0.016)	0.033*** (0.010)	0.062*** (0.016)	-0.012 (0.008)	-0.005 (0.017)
	D(LCAP)	1.202*** (0.232)	2.501*** (0.320)	-1.514** (0.430)	0.762*** (0.268)	1.314*** (0.236)	2.505*** (0.329)	-1.062*** (0.318)	0.797*** (0.273)
	D(EXT)	-0.0004* (0.0002)	-0.0007 (0.0004)	-0.0011 (0.001)	-0.001** (0.001)	-0.0004 (0.0002)	-0.0006 (0.0004)	-0.0007 (0.001)	-0.001* (0.001)
	D(GOVT)	-0.004** (0.002)	-0.002 (0.003)	0.004 (0.005)	-0.004 (0.007)	-0.005*** (0.002)	-0.002 (0.004)	0.0009 (0.005)	-0.003 (0.007)
	D(PSE)	0.0024*** (0.001)	-0.00001 (0.002)	0.002 (0.001)	-0.002 (0.002)	0.0024*** (0.0007)	-0.0001 (0.002)	0.0009 (0.001)	-0.002 (0.002)
	D(LE)	0.0443** (0.020)	0.009** (0.004)	0.440** (0.182)	-0.045*** (0.012)	0.0077 (0.007)	0.0084** (0.004)	-0.220* (0.117)	-0.045*** (0.012)
	D(TIR)	-0.0029*** (0.001)	0.0019 (0.001)	-0.001 (0.005)	-0.002 (0.002)				
	D(TIA)					-0.0005* (0.0003)	0.001 (0.001)	-0.0007 (0.004)	0.003 (0.002)
	ECM(-1)	-0.932*** (0.155)	-0.986*** (0.188)	-0.306** (0.130)	-0.575** (0.225)	-0.611*** (0.113)	-0.982*** (0.197)	-0.280** (0.133)	-0.604** (0.227)
	Long-run	LABF	0.060*** (0.015)	0.064*** (0.008)	-0.072 (0.042)	-0.002 (0.028)	0.053** (0.020)	0.063*** (0.008)	-0.044 (0.035)
LCAP		0.373***	1.034***	-4.941**	1.323***	0.396***	1.021***	-3.799**	1.320***

		(0.060)	(0.170)	(1.998)	(0.282)	(0.074)	(0.190)	(1.656)	(0.264)
	EXT	-0.0004	-0.0007*	-0.004	-0.002*	-0.0006	-0.0006	-0.003	-0.002
		(0.0002)	(0.0004)	(0.003)	(0.001)	(0.0003)	(0.0004)	(0.003)	(0.001)
	GOVT	-0.006***	-0.0021	0.011	0.021**	-0.012***	-0.002	0.003	0.020**
		(0.002)	(0.003)	(0.017)	(0.008)	(0.003)	(0.002)	(0.018)	(0.010)
	PSE	0.003***	0.00001	0.007	-0.003	-0.0004	0.0001**	0.003	-0.0033
		(0.006)	(0.002)	(0.004)	(0.003)	(0.001)	(0.002)	(0.004)	(0.003)
	LE	-0.008	0.0087**	0.409***	-0.078***	0.013	0.009**	0.328***	-0.074***
		(0.006)	(0.004)	(0.133)	(0.028)	(0.011)	(0.004)	(0.111)	(0.030)
	TIR	-0.003	0.002	-0.004	-0.004				
		(0.001)	(0.001)	(0.015)	(0.004)				
	TIA					-0.0009*	0.0011	-0.0026	0.005
						(0.0005)	(0.001)	(0.013)	(0.004)
Bounds Test	F-statistics	4.300	4.539	5.493	3.465	3.899	4.505	5.940	3.317
Post-Estimation Test									
Serial	Correlation								
Test	Q-statistics (Prob.)	11.958(0.288)	8.376(0.592)	8.100(0.619)	6.055(0.811)	7.363(0.691)	5.966(0.818)	6.181(0.800)	6.034(0.812)
Heteroscedasticity									
Test: ARCH LM	F-statistics (Prob.)	0.832(0.546)	0.286(0.914)	0.695(0.635)	0.284(0.915)	2.719(0.117)	0.383(0.853)	0.305(0.903)	0.295(0.909)
Ramsey Test	F-statistics (Prob.)	2.222(0.160)	0.136(0.717)	0.330(0.574)	3.325(0.100)	0.077 (0.786)	0.125(0.729)	0.020(0.890)	2.680(0.121)

Source: Authors' compilation

Note: ***, **, and * represent 1%, 5% and 10%, respectively. The values in parenthesis capture the standard errors. 'Bounds' F-statistic values are compared with the critical value of 2.03-3.13 at a 10% level of significance.

Shifting the attention to export share of these countries in Africa, the short-run coefficients are largely negative across the models. In addition, the magnitude is inconsequential. This is an indication of poor trade within Africa as most of these countries rely heavily on the developed countries. Thus, the countries must take proactive measures in leveraging regional trade to boost their trading activities as this may have a multiplier effect in addressing several developmental issues in the countries and the sub-region. This narrative further supports the findings of Ismail et al. (2010), Erçakar (2011) and Zahonogo (2016) as they argued that only trade outside the continent benefits most African countries. Thus, exploring regional trade to boost trade within the continent needs serious commitment and cooperation from all African countries to make the regional trade effective. This means that the countries must provide high quality products that can serve as close substitutes to the products imported from the developed countries. These countries must tailor their sectoral activities towards providing standard and competitive products for the African markets.

The next discussions focus on the long-run impacts of all variables on economic growth in the countries as there are slight changes in the control variables in terms of magnitude and statistical significance. The long-run estimates of labour force remain the same in terms of direction and statistical significance but the magnitudes change. For instance, the impact of labour force contributes significantly to long-run economic growth for Benin and Côte d'Ivoire while the dragging effects increase for Nigeria and Senegal. The result of capital stock remains mixed, but magnitudes decline in the case of Benin and Côte d'Ivoire while the negative impact is more severe for Nigeria. There are also slight changes in the impact of external debt in the long-run as all coefficients become statistically significant. The long-run coefficients of government expenditure are only positive and statistically significant in Senegal's model but only positive for Nigeria. This implies that the role of the public sector differs from one country to another.

In addition, the result of human capital significantly changes as models of Côte d'Ivoire and Nigeria turn positive and statistically significant in the long-run. Expectedly, the impact of human capital requires time to evolve due to the long process in the accumulation of knowledge and skills as well as guarantee quality health for the workforce. However, Benin and Senegal experienced a negative impact in the long-run which suggests that there is a

need for huge investment in human capital development in the countries. This finding is in line with the argument of Oyinlola and Adedeji (2020). Furthermore, the impact of the export shares of the countries in the African region further worsen in the long-run as coefficients are dominated by negative signs. This result implies that the trade in these countries is very low within the African region which hinders economic growth. This is similar to the findings of the previous models. Hence, regional trade has the predisposition to foster economic growth only if the countries can promote quality and efficiency in the products offered in the African markets. As established in the preceding discussion, the speed of adjustment satisfies the theoretical conditions in terms of signs and statistical significance. The disequilibrium experienced in the economy adjusts to steady-state faster in the Côte d'Ivoire model relative to others as it adjusts to the steady-state at a rate of 96% annually. However, it will take at least two years to achieve such correction in the other three countries.

The succeeding discussions focus on Table 4, where trade intensity was examined at sub-regional and regional levels. The short-run coefficients of labour are mixed in the two models across the countries. Only Côte d'Ivoire has positive and significant impacts of labour on economic growth under the ECOWAS sub-region measure while Benin Republic and Côte d'Ivoire record a positive impact. This implies that labour is essential in the production process. The coefficients of capital stock are dominated by positive signs which imply that it fosters economic growth in most countries as argued in the growth models (see Solow, 1956 and Mankiw et al., 1992). External debt remains detrimental to economic growth in the two models across the countries. This suggests that external debt has not enhanced growth due to debt management challenges in these countries. The effect of government expenditure remains unfavourable as argued earlier. A similar result on human capital was observed as it follows the nature established in the preceding narrative.

On trade intensity, the coefficients are largely negative across the model when ECOWAS was considered. This further buttressed the findings under the export share. Only Côte d'Ivoire and Senegal have positive coefficients in

the short-run. The result implies that these countries have not explored trade within African countries which is one of the main objectives of the free trade agreement. In addition, boosting intra-African trade will further project the region as a strong competitor in the global market. Thus, there is a need for these countries to show great commitment and efforts towards making the agreement successful. Also, it is important to note that many developmental problems facing these countries may be adequately addressed if they can diligently explore this huge opportunity in the African market. The coefficients of ECM show that most countries converge to the long-run economic growth faster than the previous model with export share except for Nigeria where its convergence may take more than three years. In the long-run, the impact of the control variables does not change significantly. The result of trade intensity does not differ significantly from the short-run result. In sum, there is a need for these countries to explore greatly the opportunities presented by the free trade agreement to boost their trade within the sub-region and Africa as a whole. The post-estimation tests indicate the absence of higher-order serial autocorrelation, heteroscedasticity and non-linearity. Thus, the inferences from the results can be relied upon for policy prescription.

5. Concluding Remarks

This study examined the role of regional trade on economic growth in four selected West African countries between 1990 and 2017. The study relied on countries specific analysis for better comparison among the countries. The study was motivated by the recent trade agreement that is aimed at boosting intra-African trade and making the continent a key player in the global market and the likely implications for the growth of these countries. Four measures were computed to capture regional trade. Thus, we explored the autoregressive distributed lag (ARDL) modelling approach for the estimated models.

The findings from the estimated models with export share show that labour and capital are key determinants of economic growth in most of the countries both in the short-run and long-run though the impacts are more pronounced in the long-run. Also, external debt and government expenditure were found to have dampening effects on economic growth among the

countries in the short-run and long-run. Shifting our attention to human capital (primary school enrolment and life expectancy), the coefficients are positive and statistically significant in models for Côte d'Ivoire and Nigeria, while drag effects were observed majorly in the models for Benin and Senegal. This further corroborates the findings in the summary statistics. The coefficients of export share of the countries in the ECOWAS sub-region and the African region are largely dominated by negative values which implies that these countries have not explored the intra-African trade as expected. Similar results were also observed in the case of trade intensity.

From the above findings, policy implications can be drawn. The study shows that the four countries neglect the huge opportunities in the intra-African trade which has a high tendency to ensure high, stable and sustainable economic growth. Thus, it is very important for these countries to diligently take advantage of the regional trade in boosting and establishing their dominance in intra-African trade. This will require a lot of effort and leadership commitment of these countries. Special attention needs to be directed to the quality of exports by these countries which will require adding great value to the products. Without strong policies in the sectors of the economy that will ensure quality output for export, it may be difficult to compete favourably in the market as no country will be willing to import sub-standard products. In addition, Nigeria should take a lead, given its huge resources, by ensuring that high quality products are exported to the African market. This will not only generate huge revenue but also create several employment opportunities for the sub-region and Africa as a whole. The value addition is critical for these countries to benefit immensely from this paradigm shift in the trading activities of the continents.

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