International Trade, Economic Growth and Governance: Evidence from ECOWAS Member Countries

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Abstract
This study examines the relative effects of trade in goods and trade in services on economic growth. Data were obtained from the World Development Indicators and the Worldwide Governance Indicators for thirteen (13) ECOWAS member countries covering the period 2000 to 2017. We also created an index of worldwide governance indicators using the principal component analysis and then used that index as a key explanatory and interaction variable. Applying the Fully Modified Ordinary Least Squares (FMOLS) and the Dynamic Ordinary Least Squares (DOLS), we found that both Goods and Services Trade positively influence economic growth, but Goods Trade had a higher impact than Services Trade. This implies that prioritizing Goods Trade would improve economic growth in ECOWAS if the Goods Trade is associated with value addition or diversification. Consistent with the findings, efforts to diversify ECOWAS trade should be promoted.

Keywords: ECOWAS; Economic Growth; FMOLS; DOLS; Goods Trade; Services Trade

JEL Classification Codes: F11, F14, F15, F43

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1.0 Introduction

International trade is being considered as a key driver of economic growth (Ariu *et al*., 2018; Castilho, Menendez and Sztulman, 2012; Karam and Zaki, 2015; Lennon, 2009; Ngouhouo and Nchofoung, 2020; Were, 2015; World Bank Group and World Trade Organisation, 2018). It enables countries to have both static and dynamic gains. The static gains are usually short term while the dynamic gains are long-term. For example, when countries/regions open up to international trade, they enjoy benefits such as an increase in the volume of foreign goods/services consumed, transfer of technological know-how and, efficient use of resources as a result of specialisation (Karam and Zaki, 2015; Lennon, 2009). Proponents of the endogenous growth model argue that trade is a key component of economic growth, especially when it enhances the productive capacities of sectors that have the propensity to spur growth in the long run. In the work of Karam and Zaki (2015), many services sectors enhance the value of manufactured products so that promoting those services sectors is another way of improving economic growth through trade in manufactured goods.

According to Annexes 1A and 1B of the Marrakesh Agreement that established the World Trade Organisation (WTO), trade in goods consists of trade in tangible products that are usually traded across borders; while trade in services is concerned with the import and export of intangible products. These products have four modes of supply, namely: cross-border trade, consumption abroad, establishment of commercial presence, and temporary movement of natural person (Cole and Guillin, 2015; WTO, 2004). The fact that trade in services has four modes of supply may suggest that services trade is associated with more benefits than goods trade. In fact, the services sector contributes about 47 percent to Gross Domestic Product (GDP) in low-income countries and 70 percent to GDP in high income countries (Lennon, 2009). Furthermore, Cole and Guillin (2015) and Mashayekhi (2020) argue that growth rate of trade in services has been very fast in recent decades – thus serving as a major contributor to economic growth. For instance, services trade accounts for two-third, one-third and almost 20 percent of global output, global employment and global trade respectively. These findings suggest that if services trade is promoted, economic growth will be stimulated faster as compared to other sectors.

However, in the trade-growth literature, little attention has been placed on services trade in empirical research (Cole and Guillin, 2015; Karam and Zaki, 2015; Karmalia and Sudarsan, 2008), especially in the Economic Community of West African States (ECOWAS) region (Iyoha and Okim, 2017). Most of the existing empirical studies focused either on the relationship between merchandise trade and economic growth or the relationship between export and economic growth with total disregard to services trade. Only a few authors like Cole and Guillin (2015), Karam and Zaki (2015), Lennon (2009), Malchow-Moller, Munch and Skaksen (2015), Mashayekhi (2020), and Sandri, Alshyab and Ghazo (2016) analyzed the impact of both trades in goods and services on economic growth simultaneously. However, these authors analyzed only a few countries/regions whose results cannot be easily generalized in the ECOWAS context because of region/country-specific effects that cannot be measured. Furthermore, previous research conducted in this area have produced mixed findings which can also be attributed to the type of data used as well as the methodology adopted (Kollie, 2020). To this end, we contribute to the literature by applying panel cointegration, fully modified ordinary least squares (FMOLS), and dynamic ordinary least squares (DOLS) to analyse the relative effects of trade in goods and trade in services on economic growth among thirteen ECOWAS member countries between 2000 and 2017. The FMOLS and DOLS have greater power when compared with the Ordinary Least

Squares estimation technique (Ngouhouo and Nchofoung, 2020). They can be used to overcome the issue of endogeneity, serial correlation, and heteroskedasticity. We used both FMOLS and DOLS to show that our results are robust and consistent. Additionally, we created a worldwide governance indicator (WGI) index using principal component analysis (PCA) and then used that index to evaluate the relative effects of goods and services trade on economic growth. The findings from this study would better inform policymakers, particularly those from ECOWAS, regarding which sector of trade to prioritize in generating economic growth.

The rest of the paper proceeds as follows. Section two provides an overview of ECOWAS and reviews related literature. Section three discusses the data used, research methodology, and the theoretical framework. In the fourth section, we present the results including their discussions and interpretations. And finally, the conclusion and policy recommendations are presented in section five.

2.0 Literature Review

2.1 Overview of ECOWAS

In 1975, the Economic Community of West African States (ECOWAS) was established in order to promote economic integration among member states. It currently has fifteen (15) member countries; namely: Benin, Burkina Faso, Cabo Verde, Cote d'Ivoire, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, The Gambia, and Togo.

With regards to trade, like other developing regions of the world, ECOWAS has depended on the export of primary commodities (usually inter-regional trade). Nevertheless, ECOWAS has embarked on several trade-related reforms in order to facilitate trade and the free movement of people within the region. In 1979, the ECOWAS Trade Liberalization Scheme (ETLS) was established which, to date, serves as a major policy instrument that improves trade in the region. With the ETLS, member countries can trade among themselves freely without the payment of import duties and non-tariff barriers. In addition to the ETLS, the Common External Tariff (CET) is a related instrument that was adopted in 2015. The CET is intended to facilitate free trade within the region by allowing all member countries to have a uniformed import duty rate on imported goods. It has five-band import duty rates (0 percent on necessities; 5 percent on raw materials and capital equipment; 10 percent on intermediate products; 20 percent on consumer products; and 35 percent on goods for regional development) (AfDB, 2019). However, some policymakers have argued that the CET is likely to increase hardship in poorer countries by increasing the rate of inflation on imported goods (AfDB, 2019; ECOWAS, 2016). Usually, the CET import duty rate is higher than some individual member countries' rates. So, from the supply side, this CET might only benefit those countries that have the ability to produce in the region (AfDB, 2019).

Nevertheless, it is worth noting that the ECOWAS region has made some significant improvements since its establishment. For example, total trade for the region has increased by an average of 18 percent per year between 2005 and 2014, with Nigeria, Ghana, Côte d'Ivoire, and Senegal leading the improvement. ECOWAS trade is mainly driven by mining commodities (such as oil resources, iron, bauxite, manganese, gold, etc.); agriculture (such as coffee, cocoa, cotton, rubber, fruits and vegetables), and other products rather marketed within the region (such as dry cereals, roots and tubers, livestock products, etc.) (ECOWAS, 2016).

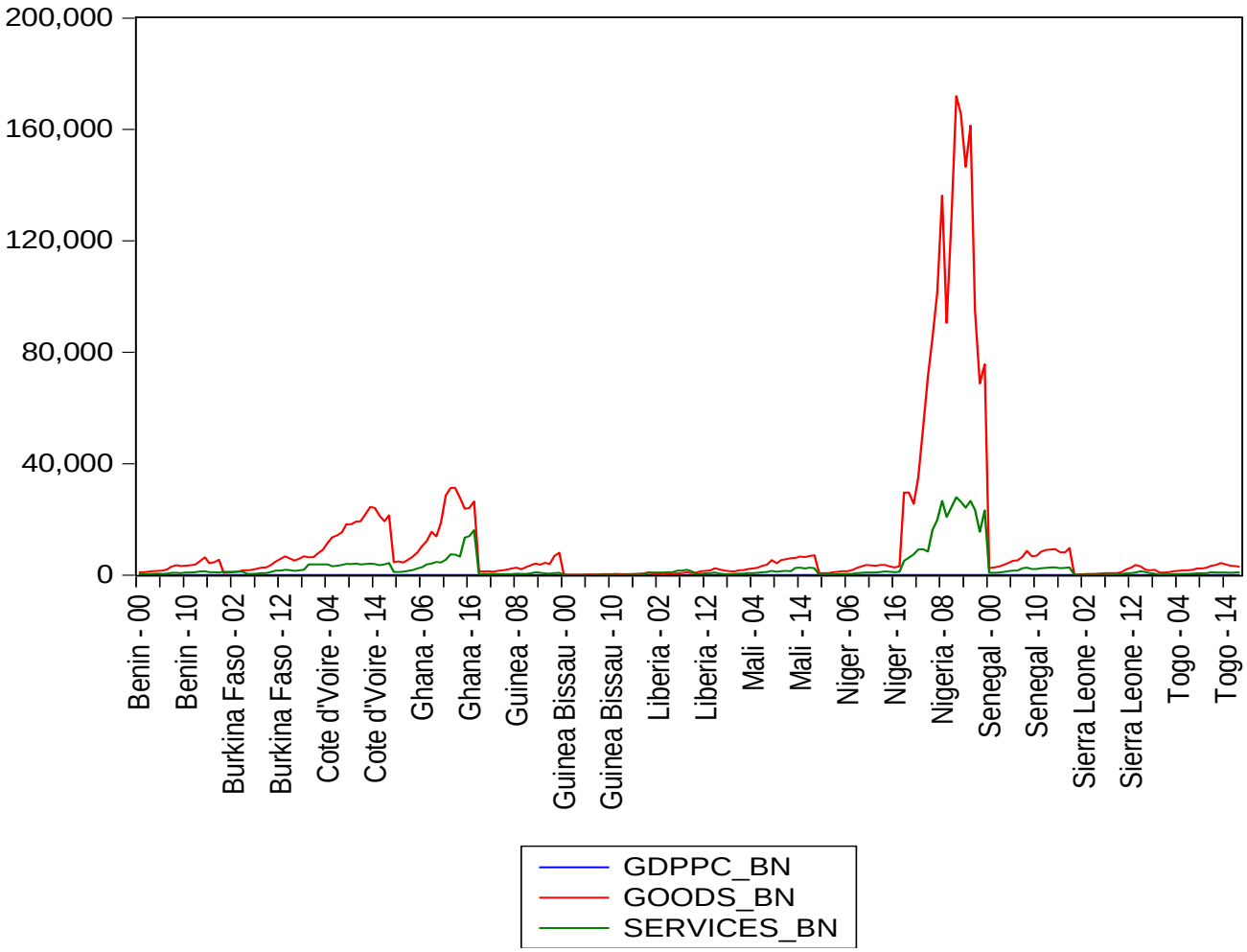

Fig. 1: Trend of GDP per capita, Goods Trade and Services Trade

Figure 1 gives a comparative analysis of the trends in GDP per capita, goods trade and services trade for thirteen ECOWAS member countries. Between 2004 and 2014, Cote D'Ivoire had its highest volumes of goods and services trades. The same is the case for Ghana between 2006 and 2016, Nigeria in 2008, and Senegal between 2000 and 2010. The growth in these countries total trade volume (i.e. both goods and services) has led to tremendous improvement for the region (ECOWAS, 2016).

2.2 Empirical Literature

Several studies in the economic literature have considered international trade as a key factor that induces the growth of an economy. The literature has given more attention to merchandise trade over the years. Nevertheless, in recent decades, researchers are now drawing conclusions from both goods and services trades as key variables influencing economic growth.

A study by Karam and Zaki (2015) analyzed the relative impact of trade in goods and services on real GDP growth in the Middle East and North African (MENA) countries and found that both trades in goods and services were significant in improving economic growth, even though goods trade had higher explanatory power than services trade. Lennon (2009) examined whether there was a difference or complementary effect between goods and services trade. The author found that the factors that account for services trade are actually different from goods trade. Further, the author used the gravity model and instrumental variable approaches and found that both trades in goods and services complement each other – indicating that a boom in services trade induces goods trade and *vice versa*. However, the impact of goods trade was found to be of higher magnitude than services trade.

Nordas (2010) provides a framework for analyzing the impact of trade in tasks following services trade liberalization for all OECD Countries. The author found that the impacts vary both in magnitude and direction, depending on the interaction between intermediate services and other inputs in the production process. Besides, the author found that services trade closely follows goods trade – which implies that tasks and components may be complementary. Therefore, liberalization in services trade would stimulate trade in both goods and services for OECD member countries. Similar result was found for the Belgian economy by Ariu *et al* (2018). The authors estimated the complementary impact of trade in goods and services for major Belgian firms from 1995 to 2005. They found that trade in goods complements trade in services and vice versa; such that an increase in barriers to import goods directly leads to a fall in firm-level import of services.

The literature has also documented mixed findings of the trade-growth relationship. Mattoo, Rathindran and Subramanian (2006) examining the impact of liberalization of services trade on economic growth found a positive effect of services liberalization on economic growth. The authors constructed an index for two sub-sectors of trade in services (financial and telecommunication) for 60 countries over the period 1990 to 1999. Though services liberalization was found to have a positive impact on economic growth, the impact from financial services was stronger than that of telecommunication services. A similar study was done by Sandri *et al* (2016) for the Jordanian economy. Applying the FMOLS estimation technique to a dataset spanning from 1980 to 2014, the authors found that trade in goods had a negative impact on economic growth; whereas trade in services had a positive impact on economic growth. Probable reason for the negative impact of goods trade can be attributed to the fact that majority of Jordan's goods trade are consumable goods which do not add much value to production. Nevertheless, the findings from Sandri *et al* (2016) suggest that efforts to revive the Jordanian economy be channeled through services trade, especially export of services. However, the finding of an earlier study by Malchow-Moller *et al* (2015) was in contradiction to the conclusions of previous and recent studies. Malchow-Moller *et al* (2015) used longitudinal firm-level data for 10,330 Danish firms covering the period 1995 to 2008. They found that firms that traded in goods became both productive and grew bigger than firms that traded in services. Such a finding is an indication that trade in goods is a necessary condition for improving economic growth.

For Sub-Saharan Africa (SSA), Zahonogo (2017) analyzed the impact of trade openness on economic growth for a panel of 42 SSA countries over the period 1980 to 2012. Using a dynamic growth model and the pooled mean group estimation technique, the author found that there is a trade threshold below which greater trade openness improves economic growth; and above which

economic growth declines as a result of trade openness. This is an indication that the relationship between trade openness and economic growth is not a linear one for the SSA Countries studied.

A review of the related literature has shown that studies are yet to converge regarding the relative effects of both trades in goods and in services on economic growth. The mixed findings in the literature may be attributed to differences in the treatment of the dataset, including the measurement of the variables and the methodology adopted (Kollie, 2020). Besides, none of the previous studies investigated the impact of trade on economic growth by considering improvement in governance indicators. We filled in these gaps in this study as a way of making an improved contribution to research.

3.0 Materials and Methods

3.1 Theoretical Framework

Economic growth has been a key focus of economists in both developed and developing countries. One of the seminal growth models, which is the Solow Growth Model, by Solow (1956) argues that the rate of saving, population growth, and technological progress are exogenous; and that capital, as a major factor of production, has a decreasing return. The Solow Growth Model is presented in equation (1).

$$Y_{(t)} = K_t^{\alpha}(A_{(t)}L_{(t)})^{\beta} \tag{1}$$

Where $Y_{(t)}$ is output at time *t*; $K_{(t)}$ is capital at time *t*; $L_{(t)}$ is labour at time *t*; and $A_{(t)}$ is the technological progress at time *t*. However, the Solow Growth Model considers only capital, labour and technological progress as the factors of production. Besides, these factors are assumed to exhibit a decreasing return to scale.

We follow the works of Karam and Zaki (2015) and Zahonogo (2017), where they used an augmented form of the Neoclassical Growth Model to investigate the impact of trade on economic growth. They included other variables (controls) that affect economic growth apart from the traditional variables identified by Solow (1956). Most importantly, trade, as an explanatory variable, was added in their augmented models. The model used by Karam and Zaki (2015) and Zahonogo (2017) is presented in equation (2).

$$Y_{it} = A_o H_{it}^{\beta 1} K_{it}^{\beta 2} L_{it}^{\beta 3} Trade_{it}^{\beta 4} Z_{it}^{\beta 5} \tag{2}$$

H_{it} and K_{it} are human and physical capital in country *i* at time *t* respectively. $Trade_{it}$ is used to capture the impact of international trade on economic performance. Z_{it} is used to represent a vector of controls.

We transform equation (2) into a log-linear equation, thus yielding equation (3).

$$\ln(Y_{it}) = \alpha_0 + \beta_1 ln(H_{it}) + \beta_2 ln(K_{it}) + \beta_3 ln(L_{it}) + \beta_4 ln(Trade_{it}) + \beta_5 ln(Z_{it}) \tag{3}$$

As pointed out by Lennon (2009), including trade in services in our model is appropriate because it has some unique properties. For example, quality and location are used to differentiate services products, and in some cases, they might be tailored in a way to fulfil client needs. Secondly, services must exhibit strong increasing returns to scale. And thirdly, clients improve their productivity more if a larger number of varieties of services are supplied. In this regard, equation (3) is augmented to account for other control variables, including the disaggregation of $Trade_{it}$ into *Goods Trade* and *Services Trade*. Due to lack of data for most of the ECOWAS countries, we only considered gross fixed capital, and not human and physical capitals. In the disaggregated estimable model, we derive two regression models. The first one incorporates *Goods trade* as the variable of policy interest, and then excludes *Services Trade;* while the second one incorporates *Services Trade* as the main policy variable but excludes *Goods Trade*. The two models are presented in equations (4) and (5) below.

$$\ln(GDPPC_{it}) = \alpha_0 + \beta_1 ln(Goods_{it}) + \beta_2 ln(Exchrate_{it}) + \beta_3 ln(Labour_{it}) + \beta_4 ln(GFCF_{it}) + \beta_5 ln(NDC_{it}) + \beta_6 WGI_{it} + \beta_7 ln(Goods) * WGI_{it} + \epsilon_{it} \quad (4)$$

$$\ln(GDPPC_{it}) = \alpha_0 + \beta_1 ln(Services_{it}) + \beta_2 ln(Exchrate_{it}) + \beta_3 ln(Labour_{it}) + \beta_4 ln(GFCF_{it}) + \beta_5 ln(NDC_{it}) + \beta_6 WGI_{it} + \beta_7 ln(Services) * WGI_{it} + \epsilon_{it} \quad (5)$$

Equations (4) and (5) are the estimable equations for this study. With the exception of *WGI*, all of our variables are expressed in logarithmic form to enable us overcome the issue of non-normality since some ECOWAS countries might have outlier values. The logarithmic expression also helps us interpret our results as elasticities. From equations (4) and (5), $GDPPC$ is the value of Gross Domestic Product per Capita. This is where the total GDP is divided by the population. It is recorded in current United States Dollar (USD) and is used as a proxy for economic growth. *Goods,* as used in this study, represents the current USD value of total merchandise trade (i.e. merchandise export plus import). *Services* also represents the current USD value of total trade in services (i.e. services export plus import). $Exchrate$ is the price of the local currency in terms of the United States Dollar. $Labour$ captures the working population of ECOWAS[1]. $Capital$ is proxied by gross fixed capital formation (GFCF), which is the current value of domestic capital in USD. *NDC* is net domestic credit. It is defined as the sum of net claims on the central government and claims on other sectors of the domestic economy. It is recorded in current USD. *WGI* measures the index of worldwide governance indicators. This index consists of six governance variables (Control of Corruption, Government Effectiveness, Political Stability and Absence of Violence/Terrorism, Regulatory Quality, Rule of Law, and Voice and Accountability). *LnGoods*WGI* is the interaction term between log of goods trade and worldwide governance indicators. It indicates the impact of goods trade on economic growth if governance is improved. Similarly, *LnServices*WGI* is the interaction term between log of services trade and worldwide governance indicators. It also indicates the impact of services trade on economic growth if governance is improved.

[1] The working population for ECOWAS consists of the total number of people with ages from 15 to 64 years.

Additionally, subscript ***i*** is used to represent the individual country's index while subscript ***t*** is used to represent the time period of the study. α_0 is the intercept and $(\beta_1 \ldots\ldots \beta_7)$ are the parameters to be estimated. In order to make inference about the data used, we conducted several diagnostic tests, which are reported in the preceding sections.

3.2 Data and Measurement

The dataset used in this study was gathered from the World Development Indicators (2019) and the Worldwide Governance Indicators (2020) on thirteen[2] ECOWAS member countries covering the period 2000 to 2017. The countries used in this study are: Benin, Burkina Faso, Cote d'Ivoire, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo. As mentioned earlier, several diagnostic analyses were conducted on the dataset including correlation analysis. Table 1 shows the correlation matrix for the Worldwide Governance Indicators (WGI) variables. It further shows that the measures of WGIs are highly and significantly correlated with one another; such that they may contain similar information with regards to governance. In this regard, the use of an index is necessary (Muhoza, 2019).

Table 1: Correlation matrix of measures of Worldwide Governance Indicators

	Corruption	**Gov't**	**Political**	**Regulatory**	**Rule**	**Voice**
Corruption	1.000000					
Gov't	0.813900	1.000000				
Political	0.533183	0.464934	1.000000			
Regulatory	0.821401	0.847032	0.532788	1.000000		
Rule	0.871832	0.841430	0.663616	0.874727	1.000000	
Voice	0.726032	0.736182	0.646405	0.687698	0.833088	1.000000

Source: WGI (2020)

The WGI index was created using the principal component analysis (PCA) technique. Six variables on governance were used. They include: Control of Corruption (Corruption), Government Effectiveness (Gov't), Political Stability and Absence of Violence/Terrorism (Political), Regulatory Quality (Regulatory), Rule of Law (Rule), and Voice and Accountability (Voice). From table 2, the first component explains a large portion of the changes in the standardized variance than the other components. For example, the first component explains 77.77 percent of the changes in the standardized variance; while the second, third, fourth, fifth and sixth components explain 10.72, 4.78, 3.18, 2.31 and 1.24 percent of the changes in the standardized variance respectively. In this way, given the high explanatory power of the first component, it is regarded as the best measure of the worldwide governance indicators.

[2] We could not use all of the fifteen ECOWAS Member Countries due to data unavailability.

Table 2: Principal Component Analysis for Worldwide Governance Indicators

	PC 1	**PC 2**	**PC 3**	**PC 4**	**PC 5**	**PC 6**
Eigenvalue	4.666471	0.643146	0.286512	0.190762	0.138772	0.074337
Cumulative Eigenvalue	4.666471	5.309617	5.596128	5.786891	5.925663	6
% of variation	**0.7777**	**0.1072**	**0.0478**	**0.0318**	**0.0231**	**0.0124**
cumulative % of variation	0.7777	0.8849	0.9327	0.9645	0.9876	1
Variables	**Vector 1**	**Vector 2**	**Vector 3**	**Vector 4**	**Vector 5**	**Vector 6**
Corruption	0.421104	-0.222527	0.150371	-0.806609	0.202156	0.243015
Gov't	0.416402	-0.357631	-0.065869	0.463153	0.691192	-0.045975
Political	0.327696	0.841524	0.348498	0.084914	0.220023	0.085911
Regulatory	0.420975	-0.266035	0.420906	0.346106	-0.557839	0.379301
Rule	0.447558	-0.012703	0.012564	-0.084424	-0.274744	-0.846617
Voice	0.405422	0.208525	-0.821145	0.027294	-0.215190	0.266120

3.3 Descriptive Statistics

Table 3 gives a description of the data used in this study. We can draw meaningful conclusion from Table 3 since it is evident that the variables used are consistent. This is because all of the means obtained lie midway between the maximum and minimum values.

Table 3: Descriptive Statistics

Variable	**Observations**	**Mean**	**Maximum**	**Minimum**	**Std. Dev.**
GDPPC	234	755.7915	3221.678	139.3148	545.2336
GOODS	234	1.18E+10	1.72E+11	1.13E+08	2.76E+10
SERVICES	234	2.77E+09	2.80E+10	33977620	5.27E+09
EXCHRATE	234	1031.448	9088.319	0.544919	1662.881
LABOUR	234	11959983	1.02E+08	645631	20802799
GFCF	234	5.88E+09	8.57E+10	6974332	1.49E+10
NDC	234	6.39E+09	1.23E+11	5777871	1.91E+10
WGI-INDEX	234	-1.15E-09	1.917332	-2.40361	1.086795
GOODS*WGI	234	-7.03E+09	5.78E+10	-2.23E+11	3.82E+10
SERVICES*WGI	234	-1.05E+09	2.91E+09	-3.69E+10	7.73E+09

Source: Author's computation based on dataset.

In the ECOWAS region, the value of GDP per Capita is averaged around US$755.79 per person per year, while the highest and lowest values are US$3221.68 and US$139.31 respectively. By virtue of the fact that ECOWAS, as a region, reports per capita GDP to be less than US$1,000 between 2000 and 2017, justifies its inclusion in the list of low-income countries/regions by the World Bank (Iyoha and Okim, 2017).

4.0 Results and Discussions

4.1 Panel Unit Root Tests

We tested for panel unit root to establish the stationarity status of the variables used and, by extension, their order of integration. To do this, we used the Im-Pesaran-Shin (IPS) panel unit root test, which is an improvement over the first-generation test developed by Levin and Lin (1993). The IPS panel unit root test caters for heterogeneity in the autoregressive coefficient. Therefore,

its application in this study provides greater power in either failing to reject or rejecting the null hypothesis. The null hypothesis for the IPS test is that the variable has unit root. The panel unit root test result is reported in Table 4.

Table 4: Panel Unit Root Test Results

	IPS Test Statistics		
Variables	**Level**	**First Difference**	**Conclusion**
LGDPPC	-1.16165	-6.77235***	I(1)
LGOODS	-0.03904	-8.04115***	I(1)
LSERVICES	0.24982	-7.91292***	I(1)
LEXCHRATE	2.79896	-6.32038***	I(1)
LLABOUR	10.5629	-4.65791***	I(1)
LGFCF	0.22476	-12.0256***	I(1)
LNDC	2.78862	-9.57299***	I(1)
WGI-INDEX	-0.77793	-8.89593***	I(1)
LGOODS*WGI	-0.64268	-9.23061***	I(1)
LSERVICES*WGI	-0.59663	-8.91044***	I(1)

Note: *** denotes rejection of null hypothesis at 1 percent significant level. L attached to a variable indicates its logarithmic value.

From Table 4, all of the variables used are non-stationary at level, but became stationary after first difference. Given this finding, we conclude that the variables used in this study have a long run relationship. As such, this led us to conduct a separate test for panel cointegration.

4.2 Panel Cointegration Test

With all of the variables being integrated of order one, we used the Kao Residual Panel Cointegration test to establish as to whether there is a long run relationship among the variables used. The null hypothesis of the Kao Cointegration test is that there is no cointegration amongst the variables used. Table 5 contains the result of the Kao Cointegration test.

Table 5: Kao Residual Cointegration Test Result

	T-Statistic	**Prob.**
ADF	-6.043073***	0.0000
Residual variance	0.005630	
HAC variance	0.006833	

Note: *** indicates rejection of null hypothesis at 1 percent significance level.

Analysis of table 5 shows that we fail to accept the null hypothesis of no cointegration. This implies that the variables used have a long run relationship. In view of this conclusion, Ee (2016) suggests the use of Fully Modified Ordinary Least Squares (FMOLS) and Dynamic Ordinary Least Squares (DOLS) to estimate the long run relationship in such a case.

4.3 Panel Estimation Results

The empirical findings of this study are reported in Tables 6 and 7. We ran two sets of regressions using the Fully Modified Ordinary Least Squares (FMOLS) and Dynamic Ordinary Least Squares (DOLS). In the first regression, *Goods Trade* is used as the main policy variable of interest; while in the second regression, *Services Trade* is the key variable of policy interest. In both regressions, the logarithm value of GDP per capita is the dependent variable. Table 6 presents the result of the first regression (equation 4), and Table 7 presents the result of the second regression (equation 5).

Table 6: Estimation Results (Dependent Variable = Log GDP per Capita)

Variable	FMOLS Estimates	DOLS Estimates
Log of Goods Trade	0.557027***	0.527167***
	(0.0000)	(0.0000)
Log of Exchange Rate	0.006415	0.014984
	(0.6238)	(0.2500)
Log of Labour Force	-0.669466***	-0.679823***
	(0.0000)	(0.0000)
Log of Gross Fixed Capital Formation	0.185252***	0.233575***
	(0.0042)	(0.0000)
Log of Net Domestic Credit	0.035703	0.022630
	(0.1478)	(0.2266)
WGI-Index	-0.667358**	-0.624308**
	(0.0431)	(0.0249)
LGoods*WGI	0.028035*	0.027704**
	(0.0564)	(0.0280)

Note: *P-values* are in parenthesis. *, ** and *** indicate significance level at 10, 5 and 1 percent respectively.

Table 6 presents the estimation results for equation (4), where goods trade is serving as the variable of policy interest. The table produces both the FMOLS and DOLS estimation results. The coefficients on five of the variables are statistically significant for both FMOLS and DOLS. In addition, the table presents consistent estimates since the direction of the variables are the same under the two estimation techniques used. The coefficients on *Log of Goods Trade, Log of Gross Fixed Capital Formation,* and *the interaction term between log of goods trade* and *WGI-Index* are positive and statistically significant at conventional levels; while the coefficients on *Log of Labour Force* and *WGI-Index* are negative and statistically significant. The results suggest that a 1 percent increase in the value of *Goods Trade* leads to increase in GDP per capita by 0.56 percent and 0.53 percent for the FMOLS and DOLS respectively. This finding is in line with the work of Karam and Zaki (2015) who found a positive and significant impact of *goods trade* on economic growth for the MENA countries. Furthermore, value addition of merchandise goods has significant impact because it passes through several processes. For example, inputs of these goods are firstly extracted from their natural sources before being taken for processing. In these stages, additional incomes are earned by workers involved. These incomes can further be spent within the region/economy – thus leading to increase in GDP.

For *labour force*, the finding indicates that a 1 percent rise in the total *labour force* causes *GDP per capita* to fall by 0.67 and 0.68 percent for the FMOLS and DOLS respectively. This result is surprising; however, a possible reason could be due to inadequacy of training of ECOWAS labour force so as to produce the requisite goods and services that can spur long-run growth. As such, increasing the number of labour force will only lead to underproduction and/or inefficient production. In this regard, improving the quality of the *labour force* in the ECOWAS region is a better way to improve economic growth.

The coefficient on *Gross Fixed Capital Formation* (proxy for capital) has a positive and significant impact on economic growth. The coefficients of 0.19 for the FMOLS and 0.23 for the DOLS imply that if the value of Capital increases by 1 percent, GDP per capita will rise by 0.19 percent under the FMOLS and 0.23 percent under the DOLS. The positive relationship here is due to the fact that capital, whether human or humanly-created, is a key component of growth in the real world (Krugman, Obstfeld and Melitz, 2012). It easily adds value to products as compared to other factors of production.

Worldwide Governance Indicators Index is a variable that has separate effects on economic growth depending on its application. For example, for the standalone effect, WGI-Index negatively affects economic growth in the ECOWAS region. The results indicate that an improvement in worldwide governance will lead to a fall in economic performance by 0.67 and 0.62 percent for the FMOLS and DOLS respectively. This result is surprising given that many studies find that improvement in worldwide governance improves economic growth.

Even though the standalone effect of *WGI-Index* on economic growth is negative for the ECOWAS region, its interaction with goods trade positively impacts ECOWAS' economic performance. This result indicates that improvement in worldwide governance alone cannot improve ECOWAS' economy unless it is accompanied by improvement in trade (i.e. goods trade). In this regard, it is necessary that as ECOWAS policymakers endeavor to improve their economies through trade, key attention should be given to improvement in worldwide governance. The reverse also holds true.

As mentioned above, Table 7 reports the findings of the second regression (equation 5). Here, *services trade* is serving as the key policy variable. Like Table 6, the estimates reported in Table 7 have the same directions under FMOLS and DOLS. In addition, six of the explanatory variables significantly influence economic growth.

Table 7: Estimation Results (Dependent Variable = Log GDP per Capita)

Variables	FMOLS Estimates	DOLS Estimates
Log of Services Trade	0.256122***	0.267946***
	(0.0000)	(0.0000)
Log of Exchange Rate	0.012878	0.020236
	(0.4226)	(0.1937)
Log of Labour Force	-0.654019***	-0.630615***
	(0.0000)	(0.0000)
Log of Gross Fixed Capital Formation	0.428154***	0.395549***
	(0.0000)	(0.0000)
Log of Net Domestic Credit	0.109106***	0.110555***
	(0.0001)	(0.0001)
WGI-Index	-1.181408**	-0.981071**
	(0.0113)	(0.0311)
LServices*WGI	0.052182**	0.043836**
	(0.0168)	(0.0402)

Note: *P-values* are in parenthesis. ** and *** indicate significance level at 5 and 1 percent respectively.

From Table 7, the coefficient on *Services Trade* is positive and statistically significant for the two estimation techniques used. In particular, a 1 percent rise in the volume of *services trade* leads to a rise in GDP per capita by 0.26 percent and 0.27 percent for the FMOLS and DOLS respectively. These results corroborate the works of Cole and Guillin (2015) and Lennon (2009), who argue that services trade is a fast-growing aspect of international trade and that it has the propensity to spur long run growth.

Given the objective of our study to identify the relative effects of goods and services trade on economic growth, we can observe the followings: While it is true that both trade in goods and services have a positive effect on economic growth, goods trade has a higher explanatory power as compared to services trade. The high coefficients on goods trade (i.e. 0.56 and 0.53) imply that if there is a change in GDP per capita, goods trade will account for a higher proportion than services trade. In this regard, based on the findings, trade in goods has a relatively higher effect over trade in services in influencing economic growth in ECOWAS during the period studied. Our findings are in line with the work of Karam and Zaki (2015), who found that both trade in goods and services were significant in improving economic performance in the MENA region. But trade in goods had more explanatory power than trade in services. Ahmad, Kunroo and Sofi (2018) also found similar result for the Chinese and Indian economies, indicating that both economies have improved as a result of merchandise export. The finding of this study could be attributed to the fact that majority of the services sectors in ECOWAS fall under the "informal sector". And these informal sectors are mainly controlled by female smallholders (AfDB, 2019). Due to the fact that they lack access to credit compared to men, they have less potential to add value to their services produced – thus having a smaller impact on economic growth. Given this finding, ECOWAS policymakers should focus on adding value to their goods (i.e. product diversifications) since goods trade has more returns than services trade. In additional, attention should also be given to the informal services sector.

All the other variables in Table 7 have the same signs as presented and discussed under Table 6; except for the *log of Net Domestic Credit*, which was insignificant in the trade in goods equation (Table 6), but is significant in the trade in services equation (Table 7). Table 7 shows that *Net Domestic Credit* (proxy for financial development) is one of the variables that has a strong positive influence on economic growth in ECOWAS. With the coefficient of 0.11 for both the FMOLS and DOLS, it means that as domestic credit increases by 1 percent, it spurs economic growth by 0.11 percent for the ECOWAS region. The policy implication here is that improving the financial sector (i.e. domestic credit facility) will strongly impact domestic production. In the ECOWAS context, providing loans to member countries for investment purposes would lead to inclusive ECOWAS growth.

4.4 Panel Cross-Section Dependence Test

The econometric literature has identified cross-sectional dependence as one of the diagnostic issues that researchers should correct when analyzing panel data. This occurs when all the cross-section units in a panel data are correlated, due to the presence of some common factors that are unobserved among the variables (Baltagi and Pesaran, 2007). The presence of cross-sectional dependence leads to loss of estimator efficiency and invalid test statistics. In this study, we used the Pesaran (2004) Cross-sectional Dependence test for analysis. The rationale for our decision is that this test addresses the size distortion of previously developed tests by providing alternative statistics based on the average of the pairwise correlation coefficient which is asymptotically standard normal for *T* and *N* in any order. Furthermore, the mean of cross-sectional dependence is exactly equal to zero for all *T* and *N*, so that the CD test is likely to have good properties for both *T* and *N* even if they are small. The null hypothesis of the Pesaran CD test is that there is no cross-sectional dependence among the cross-sectional units studied.

Table 8: Panel Cross-Section Dependence Test Results

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	261.6834	78	0.0000
Pesaran scaled LM	13.66561		0.0000
Pesaran CD	**-0.790868+++**		**0.4290**

Note: +++ indicates failure to reject null hypothesis

Given the sample size of the dataset used, the Pesaran cross-sectional dependence test is appropriate since *T* and *N* are relatively small. Unlike the Pesaran cross-sectional dependence test, the Breusch-Pagan LM test requires that in order to test for cross-sectional dependence, *N* should be small while *T* should be sufficiently large (Hsiao, Pesaran and Pick, 2007; Pesaran, 2004). Nevertheless, this requirement of Breusch-Pagan does not hold in this study; something that led us to use the Pesaran cross-sectional dependence test. Given the p-value of the Pesaran cross-sectional dependence test (i.e. 0.429), we fail to reject the null hypothesis of no cross-sectional dependence among the cross-sectional units. This is an indication that the cross-sectional units of this study are statistically independent. Probable reason for this independence could be due to the fact that Africa is largely divided on several issues, such as trade policies, governance systems, borders, economic strength, colonial masters, etc.

5.0 Conclusion and Policy Recommendations

Several studies have identified international trade as one of the sources of economic growth. It induces improvement in domestic production by allowing individual countries to specialise in the production of goods and services where they have comparative advantage. The relationship between trade and growth has widely been studied. Nevertheless, a major focus has been placed on trade in goods, neglecting trade in services. Also, the role of institutional quality / democratic governance has been overlooked. We improved and contributed to the existing literature by disaggregating international trade into two sectors (goods and services) and then determining the relative effects of these two sectors on economic growth. Besides, we created an institutional quality index from the Worldwide Governance Indicators through the principal component analysis, and then used it as a key explanatory and interaction variable. Our data spans from 2000 to 2017 for thirteen ECOWAS Member States. Furthermore, we divided our estimation into two regressions; one had *Goods Trade* serving as key policy variable, while the other had *Services Trade* serving as variable of policy interest. Applying the FMOLS and DOLS estimation techniques, which were informed by Kao's test for cointegration, we found that the coefficients on both *Goods* and *Services Trade* positively influence economic growth, but the magnitude of the coefficient on *Goods Trade* was larger than that of *Services Trade.* This implies that prioritizing *Goods Trade* would improve economic growth in ECOWAS if the *Goods Trade* is associated with value addition or diversification.

Furthermore, we found that the coefficients on capital and net domestic credit positively induce economic growth; while those on labour force and WGI-index negatively impacted economic growth. However, the interaction terms (WGI*Goods and WGI*Services) have a positive impact on economic growth. Consistent with the findings, we suggest that efforts to diversify ECOWAS goods trade be promoted in order to improve economic growth of the region. Although the services sector is largely informal, it should not be downplayed. Besides, improving the quality (not just quantity) of *labour force* should be prioritized in the region. This can be done through training, apprenticeship, schooling, exchange programmes, etc. Also, efforts to develop the region's financial sector should be given priority. This includes the availability and accessibility of loans/credits to producers within the region. Most importantly, strategies geared towards improvement in ECOWAS' economic performance should be accompanied by improvement in institutional qualities (democratic governance).

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