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Towards Export-Led Growth in the West Africa Sub Region Economies

Raphael Kolade AYENI (Phd)
Department of Economics and Management Studies
School of Business and Public Administration
University of The Gambia

Momodou Mustapha FANNEH (PhD)
Department of Economics and Management Studies
School of Business and Public Administration
University of The Gambia

ABSTRACT

The policy of import substitution dominated developing economies especially Sub-Sharan African countries up till 1970. The focus later shifted to pursuing growth through increased export. Recently, countries of the West Africa Sub-region are clamoring for a revisit of growth through import substitution policies. This study therefore delved into the question of whether ECOWAS countries should go for import substitution growth strategy, or to develop strategy that promotes export-led growth, following the law of comparative advantage or a considerable mix of the two strategies. Using an export-augmented neoclassical production function, the study tested how relevant is the Export-led Growth Hypothesis for the ECOWAS sub-region over the period 1980-2014. Evidence does not offer a strong support for the Hypothesis in the short run but a strong evidence for improved capital stock and labor causing growth. However, long-run results suggest a significant relationship between export and growth but currently negative. A likely explanation of this negativity is that although exports, in the West African sub-regions has the tendency of increasing growth in the long run along with other factors of production, the present conditions of export, especially manufactured and agricultural exports, is experiencing a kind of "Import surge". That is the import content of exports is high and the local content is low, thus reducing the spillover or multiplier effects. This was confirmed by the strong bilateral causality between export and import discovered in this study. A policy mix of import substitution and export promotion strategies was recommended for countries in this sub-region. Policies that will promote technological innovation in manufacturing and linkages with local suppliers alongside incentives to produce towards export are imperative. Production towards export should be focused on manufactured and agricultural products where each country has the highest comparative advantage so as to reduce the import content of the export.

Keywords: Export-led growth; Import substitution, Import surge, causality, West Africa.

INTRODUCTION

In the 1950s up till 1970s, the policy of import substitution (IS) formed a major plank upon which many developing countries hoped to achieve significant economic growth. Later on, countries shifted their focus from import substitution to export-led growth. This led to many countries establishing export promotion strategies especially the West African countries. It is a great surprise that countries of the West Africa sub region are gradually are indirectly shifting ground and returning to policies that favor import substitution growth again. The recent closure of border against import of certain products in Nigeria and the threat to implement indigenization policy on ownership of retail trades in Ghana are pointing our attention to this new clamor.

There have been debates on the relative merits of development strategies which accord priority to expansion of the foreign sector in contrast to those which emphasize inward-oriented development. However, evidences across global economies showed that the inward-oriented growth by substituting import has not been favorable to developing countries especially. Export-led growth hypothesis (ELGH) advocates criticized the inward-oriented growth with evidences. According to them, Latin American countries which pursued inward oriented policies under the IS strategy had underperformed. They recorded no growth on average, while real income declined between 1960 and 1990 (Barro and Sala-i-Martin, 1995). Moreover, countries in the region increasingly faced fiscal deficits, acute inflation, supply shortages and ultimately, severe balance- of-payments crises coupled with economic recession. Many economists favor the superior growth performance of nations that have opted for outward-oriented development (OOD), particularly in recent years with the discrediting of import-substituting industrialization (ISI), the most visible branch of more inward-oriented strategies (Krueger,2002).

The World Bank has urged poor nations to adopt development strategies which emphasize export expansion, dismissing the caution against excessive trade dependence often emphasized by political economists. Unfortunately, the voice of political economists is louder in Africa than any region of the world. They tend to exaggerate the cost of importation above the opportunity cost if comparative advantage concept is not followed. Thus, the clamor to close boarder against import is very high now in countries like Nigeria which is the largest economy in the West Africa sub-region.

This study is out to answer some questions which are really pertinent to whether to support the clamor for import substitution growth strategy currently ongoing in many West African countries or to develop strategy that promote export-led growth, that follow the law of comparative advantage and produce for export., or a mix of the two strategies. The following questions are considered in this study:

i. Can export promotion policy lead to a long run sustainable increase in growth in the ECOWAS region?
ii. How much of the variance in forecast error of future income growth can be attributed to innovations in export growth in the short run, compared to innovations in import and other factors of production?

The study is divided into seven (7) sections. Section one is the introduction. Sections two discusses export performance in Africa, with a focus on the ECOWAS countries. Section three

reviewed relevant literature. Section four discusses the hypothesis of Export-led Growth from theoretical perspectives. In section five, the model for this study is specified following the Augmented Noe-classical production function. Section six discuss the empirical findings of this study in relation to the research questions. The last section summarizes the study's major findings and offers some policy recommendations.

EXPORT PERFORMANCE IN AFRICA

The United Nations Conference on Trade and Development (UNCTAD), has identified that the share of global exports is lowest for Africa amongst the developing regions. When measured in terms of total share, Africa maintained the bottom position amongst the developing country regions. The share of Africa region in global exports has been on a decline, from 7 per cent in the 1940s, through 5 per cent in the 1970s and 3 per cent in the 1980s, and to 2 per cent at the end of 2016. In contrast, Asia's share has been rising steadily, especially since the mid-1980s, from a low of 8 percent in 1970 and currently representing 36 percent of global merchandise exports. (UNCTAD,2018). The pattern of African export growth, since the mid-1990s, is compared to that of other developing regions as shown in Table 1.0 and Figure 1.0

Table 1.0: Growth in Total Export of Africa Compared with other Developing Regions.

	1992-95	1995-00	2000-05	2005-10	2010-15
Africa	15	3	17	9	-5
America	15	8	10	7	0
Asia	15	5	15	10	4

Source: UNCTAD Statistics Database, 2017

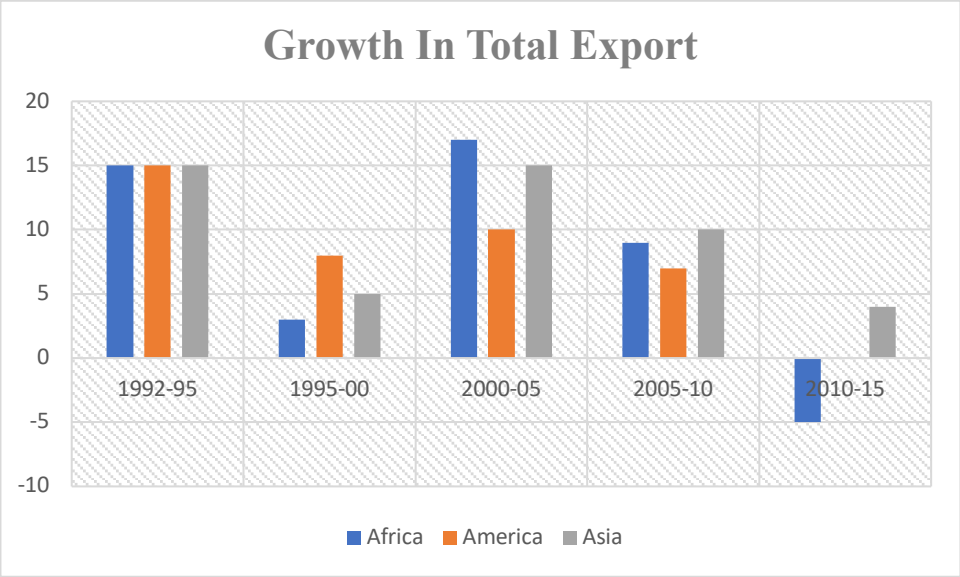

Fig. 1.0: Growth in Total Export of Developing Regions of the World.

In the 1990s, Africa countries started to experience a resurgence in their growth. They started experiencing a similar growth pattern like the other developing regions like Asia and Americas, 15% between 1992 and 1995. Between 1995 and 2000, growth in export witnessed a decline across African economies compared to other developing regions. Africa's best performance in exports growth was in 2000–2005, when it recorded a growth rate of 17 percent, as compared

with Asia's of 15 percent (as shown in Table 1.0 and Figure 1.0). But the periods following this supposed golden period was witnessed by underperformance and of course, negative growth was recorded in 2010-2015 period (-5%) compared to an increase of 4 percent for Asia.

So many reasons have been given for this decline. Fosu, (2013) believe that the region had been relatively tough in the face of the most recent global financial and economic crisis. While Ancharaz (2011), explained that exports in Sub-Saharan African countries have demonstrated a high degree of dependence on a few primary agricultural or mineral exports. He also attributed the dominance of agriculture and natural resources in African exports to the region's vast arable land and wealth of mineral resources. According to Sy (2017), unprocessed mineral and energy accounted for 80 per cent, on average, of African exports; agriculture employs between 65 and 80 per cent of the workforce in the region.

One may be justified to conclude that Africa has consistently performed worst on export diversification based on these evidences. Agricultural production in most African countries are mainly not sufficient for domestic consumption talk less of export. The fact remains that most countries spend much in production consumable crops on which they have limited comparative advantage. The case of rice production in Nigeria is a good example. Nigeria has a yield per hectare of 1.1, China has 6.5, Brazil has 6.5, and so on, how can Nigeria compete in this highly concentrated market? Yet the government of Nigeria want to spend huge amount to substitute imported rice with locally produced one.

The West Africa is sub-region in the Sub-Saharan African with about 17 countries is not excluded in these observations. The economies of this sub-region are into lots of economic integration and trade agreement via the Economic Community of West Africa, ECOWAS. An analysis of export performance in this sub-region revealed that exports in West African countries have demonstrated a high degree of dependence on a few primary agricultural or mineral exports. Table 2.0 shows a 10-year distribution of manufactured and agricultural exports in the West Africa sub-region.

Like many countries of the Sub-Saharan Africa, export is grossly underperforming due to the undiversified nature of it. Table 2.0 and Figure 2.0 show the distribution of export between manufactured and agricultural products in ECOWAS countries. Note that Manufactured exports (% of merchandise exports) comprise chemicals, basic manufactures, machinery and transport equipment, and miscellaneous manufactured goods, but exclude non-ferrous metals. Agricultural raw materials exports (% of merchandise exports) include crude materials except fuels, exclude crude fertilizers and minerals, coal, petroleum, and precious stones, and metalliferous ores and scrap.

Table 2.0: Manufactured and Agricultural Raw Materials Export by West African Countries (% of Merchandise Export)

	Manufactured Export					Agricultural Export				
	2000	2005	2010	2015	***Average***	2000	2005	2010	2015	***Average***
Benin	7.34	9.22	4.65	26.52	***11.9325***	71.86	64.33	26.74	45	***51.9825***
Burkina Faso	18.45	7.71	9.08	12.99	***12.0575***	59.16	75.41	55.88	35.88	***56.5825***
Cape Verde	89.81	55.81	17.5	13.85	***44.2425***	0.03	0	0	0	***0.0075***
Cote D'Ivoire	14.49	18.71	16.17	8.11	***14.37***	13.97	8.27	9.65	8.75	***10.16***
Gambia	10.78	1.57	0.98		***3.3325***	1.32	1.65	0.04		***0.7525***
Ghana	14.75	32.53	20.68		***16.99***	10.25	7.21	6.95		***6.1025***
Guinea	30.23	12.01		27.17	***17.3525***	2.99	2.26		3.41	***2.165***
Mali	4.73	12.03	20.19		***9.2375***	90.76	68.92	47.98		***51.915***
Mauritania	80.79	57.07	60.15	66.03	***66.01***	0.51	0.17	0.52	0.35	***0.3875***
Niger	9.4	20	14.06	10.01	***13.3675***	3.28	4.98	2.79	1.55	***3.15***
Nigeria	0.21		6.69		***1.725***	0.01		1.63		***0.41***
Senegal	26.94	43.42	41.67	31.81	***35.96***	1.75	2.11	1.48	2.14	***1.87***
Togo	30.83	58.11	64.86	50.48	***51.07***	23.44	8.92	3.98	10.85	***11.7975***

Source: World Development Indicators database, 2017.

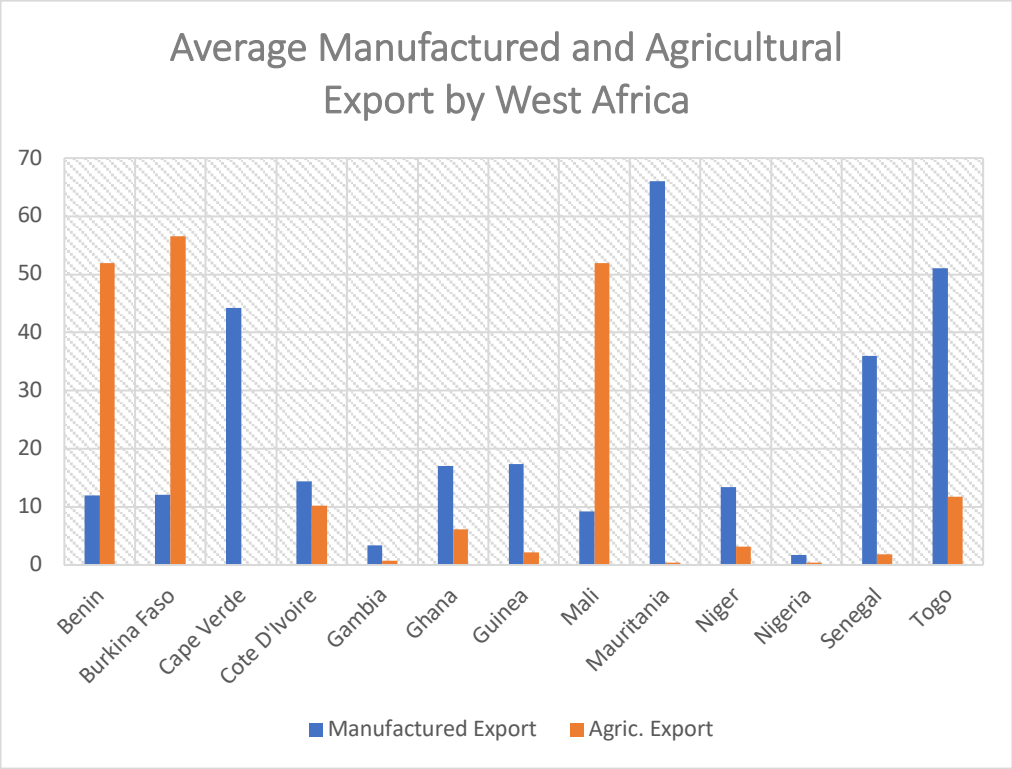

Fig. 2.0: Manufacture and Agricultural Export in ECOWAS Countries.

Three countries, Benin (51.9%), Burkina Faso (56.5%) and Mali (51.9%) have exported agricultural products more than manufactured goods between 2000 and 2015. Apart from these three countries, all of the ECOWAS countries export performance in Agricultural exports

is below 12% on the average despite West Africa being an agricultural region. Four countries, Cabo Verde, Mauritania, Senegal and Togo performed significantly better in manufactured exports than agricultural exports. It is also interesting to know that apart from Cabo Verde whose manufactured exports was 44% of its total merchandise export, manufactured exports across West African countries fall below 18% of their total merchandise export. This confirms that export in ECOWAS countries is grossly underperforming and undiversified.

BRIEF REVIEW OF LITERATURE

It is a general believe that trade contributes favorably to growth, with most studies establishing a positive relationship between trade and economic growth, irrespective of measures of trade, time period, or the number of countries employed. Likewise, many studies have established a positive link between trade, especially export, and growth through the total factor productivity.

Irwin and Terviö (2002) uncovered positive trade effects based on a comprehensive analysis covering 1913–1990, using the trade share in GDP as a measure of trade. A similar favorable effect of trade is observed by Dollar and Kraay (2004) over the 1980s and 1990s for approximately 100 countries.

Various authors adopted a variety of trade measures, including export share, import penetration, and trade shares in GDP, to assess the impact of trade on economic growth. For example, Yanikkaya (2003) find that all the measures resulted in positive relationships with growth. Chang et al. (2009), for 82 countries covering 1960–2000, also established positive effects of trade on growth.

This is similar to Feyrer (2009) wo equally find a positive relationship between trade and growth, but with differences across countries. Noguer and Siscart (2005), for 97 countries, established a positive impact of trade on growth, with a 1 percent increase in the measure of trade share of GDP inducing around 1 percent increase in income per capita.

Fosu (1990a) in his study, focused on African countries and exports. He used an augmented production function to estimate the export growth effect on GDP for the 1960-1980 sample period, He found out a GDP growth of 0.12 across African developing countries compared with 0.15 for non-African developing countries. Lussier (1993) extended the work of Fosu (1990a) by using a panel framework. His conclusion further established a positive contribution of export growth to economic growth in African countries when panel data are employed.

Jung and Marshall (1985), use standard bivariate Granger causality tests to analyze the relationship between export growth and economic growth for 37 developing countries and find evidence to support the ELGH in only 4 (Indonesia, Egypt, Costa Rica, and Ecuador).

Apart from Fosu (1990a), emphasis has been placed on time series analyses to determine whether a long-term relationship between export and economic growth exists and the direction of causality. The contribution by Bahmani-Oskooee and Alse (1993) was perhaps the first to utilize an error correction mechanism in their analysis of exports and GDP. They find strong empirical support for bidirectional causality between export and GDP in eight out of nine countries; the only exception was Malaysia. They concluded that there is evidence that export-promotion contributes to economic growth in LDCs and vice-versa.

In like manner, Ogunleye and Ayeni (2008) analyzed the link between export and productivity growth in the Nigerian manufacturing sector using the error correction mechanism. Export growth was regressed on total factor productivity growth using Error Correction Model. Import growth rate, growth rate of foreign income, relative income and capacity utilization were used as control variables impacting export growth through productivity. The empirical analysis results provided support for a link between export growth and productivity growth. The direction of causality runs in both directions.

A study by Waithe, Lordeb, and Brian (2011) tested the validity of export-led growth on economic growth in Mexico. They employed an export-augmented neoclassical production function to test the validity of the Export-led Growth Hypothesis for Mexico over the period 1960-2003. Evidence offers support for the Hypothesis in the short run; however, contrary to the Hypothesis, long-run results suggest an inverse relationship between exports and GDP.

THE EXPORT-LED GROWTH HYPOTHESIS

The scale effect of export stipulates that it can have positive employment effects on an economy through its impact on growth according to the theory of derived demand. But there is a necessary condition for export diversification to influence employment, as a result of the scale effect. This would be that export diversification positively affect economic growth. The export-led growth hypothesis postulates that exports are the main determinant of overall economic growth. One of the main arguments in support of the hypothesis is that export growth may affect total factor productivity through dynamic spillover effects on the rest of the economy. Empirical studies based on the production function framework include exports because of this spillover effect. In short, this is “learning by doing”, or more precisely, “learning by exporting" (Tyler, 1981; Lucas, 1988).

In theory, exports can potentially cause an increase in economic growth in a dynamic or sequential way:

i. When exports expand, it will promote specialization in the production of export products.
ii. Specialization in turn will boost productivity levels and cause the general level of skills to rise in the export sector.
iii. A rising skill will in turn lead to a reallocation of resources from the (relatively) inefficient non-trade sector to the higher productive export sector.
iv. Productivity change will then lead to output growth.
v. Balassa (1985) asserts that in general, the production of export goods is focused on those economic sectors of the economy which are already more efficient.
vi. Therefore, export expansion helps to concentrate investment in these sectors, which in turn increase the overall total productivity of the economy.

These sequential effect of export on growth have been reinforced by the endogenous growth theory. The new endogenous growth models have made major modifications to the neoclassical growth theory ‘s approach to handling trade effects. Endogenous growth theory emphasizes that exports are likely to increase long-run growth by allowing a higher rate of technological innovation and dynamic learning from abroad (Lucas, 1988; Romer, 1986, 1989; Grossman and Helpman, 1991; Edwards, 1992).

It is to be noted that there are arguments against export-led growth hypothesis. Moon (1998) argued that nations characterized as following outward-oriented policies do not manifest levels of trade notably higher, or expand their trade at rates higher, than those regarded as inward-oriented. He further noted that it is not apparent that export expansion is the principal source of superior macro-economic performance of outward-oriented nations.

Other critics like Buffie (1992), pointed out that the experiences in the East and Southeast Asian countries are unique in many ways and not necessarily replicable in other countries. He observed that the production and composition of exports was not left to the market but resulted as much from carefully planned intervention by their governments. Jaffee (1985) also questioned whether a reliance on exports to lead the economy will result in sustained long-term economic growth in lesser developed countries (LDCs), due to the volatility and unpredictability in the world market.

MODEL SPECIFICATION

Recent models of economic growth tend to extend the neoclassical growth model in the direction of policy-responsive productivity growth that. The work by Romer (1986) makes technological change endogenous rather than exogenous as suggested by Solow. These models emphasized that policy can affect productivity growth by impeding investment in human and physical capital, so that the rate of technological advancement slows. Also, because of externalities to human and physical capital investment, appropriate public policies can help private agents internalize these externalities and thereby accelerate growth, the models further explain. This implies that the policy regime of a country, which may include taxes, property rights and macroeconomic distortions, can affect savings and investment allocation decisions the outcome of which can affect growth. This "new" growth models have provided a conducive environment for us to study the role of trade policies in economic growth and productivity.

To establish the causal links between trade policy and productivity, there are two ways that can be followed, which ultimately leads us to same direction. The first way is simply to add to the variables of the Neoclassical production function any additional variable presumed to affect output. That is:

$$Q_t = A_t K_t^{\alpha} L_t^{\beta} \text{.....1}$$

Such that we have:

$$Q = f(A\ K\ L\ X_i) \text{ .....2}$$

Where *Xi* are trade policy variables.

In Equation 2, the technology variable, A, is now different from the variable in equation 1 because part of the effect of *A* in Equation 1 is now picked by the included trade policy variables. Interesting results have been achieved with this approach, but it is criticized as misleading because Equation 2 implies that the additional variables enter directly into the production process in the same way that capital and labor do, that is they are direct factors of production which in the actual sense they are not.

Waithe, et al (2011), following Bruno (1995), suggested another approach to explain TFP with its own equation and then augment the Neoclassical production function. Thus, the ideal

approach is to express the equation in the following manner and use correlation analysis or econometric methods to determine the links between TFP growth and *Xi* (trade policy variables).

$$A_t = TFP_t = f(M_t, X_t, C_t) = M_t^{\delta} X_t^{\gamma} C_t \ldots\ldots 3$$

Where Ct are other exogenous variables which are assumed to be uncorrelated with M and X.

To explain these variables, Okoh, (2005) and Ogunleye, et al (2008), identified two different hypotheses. The first is the outward oriented hypothesis which sees export as being foreign demand dependent and not supply constrained. Following this hypothesis foreign income or rate of tariff will be useful variables. The second is the inward oriented hypothesis which sees export as being domestic supply constrained and not foreign demand dependent. To capture this hypothesis an inclusion of capacity utilization in the industry of a country will be a useful variable as productivity measures efficiency and effectiveness simultaneously.

Substituting equation 3 into equation 2 gives the Augmented Cobb-Douglas production function useful to test the suitability of export-led growth in an economy. (Kimberly, et al 2011)

$$Q_t = C_t K_t^{\alpha} L_t^{\beta} M_t^{\delta} X_t^{\gamma} \ldots\ldots 4$$

where α, β, δ and γ are the elasticities of production with respect to *Kt, Lt, Mt* and *Xt.*

It is necessary to separate the economic influence of exports on output from the influence incorporated into the growth accounting relationship (Heller and Porter, 1978; Islam, 1998; Herzer et al., 2006). Therefore, we use output net of exports instead of aggregate output.

Taking natural logs (Ln) of equation (3) and expressing it econometrically for estimation purposes we obtain:

$$lnQ_{it} = lnC_{it} + \alpha lnK_{it} + \beta lnL_{it} + \delta lnM_{it} + \gamma lnX_{it} + u_{it} \ldots\ldots 5$$

Where i represents individual cross-sectional observation and t is the time period.

This study empirically examines equation 5 using the Johansen Fisher Panel Cointegration Test in Panel framework of 16 West African countries for a period of 34 years, (1980-2014). This answers our first research question of export promotion policy leading to a long run sustainable increase in growth in the ECOWAS region. Evidence of a cointegrating relationship in equation 5 will suggest that export, among other factors, can lead to a sustainable long run increase in growth. The reverse is otherwise.

The next step is to estimate the short-run dynamics of the production function by means of causality test from a Vector error correction model. The objective is to ascertain whether exports leads growth, growth leads exports, both (that is bilateral causality or feedback), or the two are independent of each other. Equation 6 outlines the procedure for exports and RGDP only:

$$\Delta lnrgdp_{it} = \alpha_0 + \sum_{i=1}^{n}[\alpha_i \Delta lnck_{it-1} + \beta_i \Delta lnemp_{it-1} + \delta_i \Delta lnexpt_{it-1} + \gamma_i \Delta lnimpt_{it-1} + \ldots + \gamma_i \Delta lnrgdp_{it-1}] + \varphi_i ecm + v_t$$

$$\Delta lnexpt_{it} = \alpha_0 + \sum_{i=1}^{n}[\alpha_i \Delta lnck_{it-1} + \beta_i \Delta lnemp_{it-1} + \delta_i \Delta lnexpt_{it-1} + \gamma_i \Delta lnimpt_{it-1} + \ldots + \gamma_i \Delta lnrgdp_{it-1}] + \varphi_i ecm + v_t \quad \ldots 6.$$

where Δ is the difference operator and the *ecm* is the error correction mechanism which represents the lagged error from the cointegration equation. Variance decomposition is used to determine the short-run dynamic responses. That is, how economic growth responds over time to a shock in exports and compare this to responses to shocks from other variables like import, capital stock and labor. If the variance decomposition shows a stronger and larger percentage of growth variance attributed to a shock in than shocks in other variables, then, there is support for the export led growth. This answers the second research question of this study.

Also, to determine the relative importance of each innovation towards explaining the behavior of endogenous variables, we employ variance decomposition. This answers the question of how much of the variance in forecast error of future income growth can be attributed to innovations in export growth. If, for example, a shock to exports leads subsequently to a large change in economic growth, but that a shock to economic growth has only a small effect on exports, this is evidence in support of the Export led growth hypothesis.

DATA AND EMPIRICAL ANALYSIS.

The choice of the period 1980 to 2014 was dependent on data availability for the countries and to get a balance panel. The required series for the variables in equation 5 *rgdpt, ckt, empt* were sourced from the Penn World Table (2015 version), while expt and *impt* were sourced from the World Bank World Development Indicators online database. The variables *RGDPt, IMPTt* and E*XPTt*, represent output-side real RGDP (less export), real imports, and real exports respectively. C*Kt*, is capital stock, while EMP*Tt*, is number of persons engaged, proxy for labor. All data are annual and run from 1980 to 2014, for 16 cross sectional observations. The data are lagged for estimation purposes.

We test for unit roots using the Panel Unit root test. This gives us the levels of integration of each variable and further directs whether the condition for Johansen technique is met or not. The result is presented in Table 3.0. There are five Unit root test summarized in Table 1.0. The Levin, Lin & Chu test the null hypothesis that there is common Unit root process in all the cross-sectional observations. Breitung t-stat, Im, Pesaran and Shin W-stat, ADF - Fisher Chi-square and PP - Fisher Chi-square are all testing the hypothesis that there is unit root process in each individual sample.

We used the rule that a conclusion will be drawn based on agreement between at least three of the five tests. For RGDP and IMPT variables, there is agreement among Breitung t-stat, Im, Pesaran and Shin W-stat, and ADF - Fisher Chi-square that each is stationary at first difference. That is integration of order one, I(1). In the case of CK, EMP and EXPT variables, there is agreement among three of the tests, Im, Pesaran and Shin W-stat, ADF - Fisher Chi-square and PP - Fisher Chi-square that each variable is stationary at first difference, that is integrated of order one. I(1). The PP - Fisher Chi-square also shows some variables to be stationary at levels.

Table 3.0: Panel Unit Root Test

		Level		***1st Difference***		
	Method	***Statistic***	***Prob.***	***Statistic***	***Prob.***	***I(p)***
RGDP	Levin, Lin & Chu test	187.896	1.0000	523.791	1.0000	
	Breitung t-stat	6.72949	1.0000	-3.16512	0.0008	*I(1)*
	Im, Pesaran and Shin W-stat	4.66483	1.0000	-11.8399	0.0000	*I(1)*
	ADF - Fisher Chi-square	20.4084	0.9438	188.438	0.0000	*I(1)*
	PP - Fisher Chi-square	1612.5	0.0000			*I(0)*
CK	Levin, Lin & Chu test	76.6251	1.0000	465.75	1.0000	
	Breitung t-stat	0.07599	0.5303	-0.08635	0.4656	
	Im, Pesaran and Shin W-stat	15.7604	1.0000	-2.39751	0.0083	*I(1)*
	ADF - Fisher Chi-square	1.92108	1.0000	55.3301	0.0064	*I(1)*
	PP - Fisher Chi-square	1352.2	0.0000			*I(0)*
EMP	Levin, Lin & Chu test	205.347	1.0000	1451.81	1.0000	
	Breitung t-stat	0.8678	0.8072	-0.4381	0.3307	
	Im, Pesaran and Shin W-stat	8.14695	1.0000	-4.2346	0.0000	*I(1)*
	ADF - Fisher Chi-square	9.65078	1.0000	87.5403	0.0000	*I(1)*
	PP - Fisher Chi-square	1968.8	0.0000	2954.44	0.0000	*I(0)*
EXPT	Levin, Lin & Chu test	31.2416	1.0000	57.0022	1.0000	
	Breitung t-stat	8.34917	1.0000	1.80197	0.9642	
	Im, Pesaran and Shin W-stat	9.15519	1.0000	-11.1366	0.0000	*I(1)*
	ADF - Fisher Chi-square	10.6003	0.9999	213.196	0.0000	*I(1)*
	PP - Fisher Chi-square	1016.45	0.0000	2212.77	0.0000	*I(1)*
IMPT	Levin, Lin & Chu test	46.2921	1.0000	85.1098	1.0000	
	Breitung t-stat	7.85551	1.0000	-2.46926	0.0068	*I(1)*
	Im, Pesaran and Shin W-stat	8.35161	1.0000	-11.7611	0.0000	*I(1)*
	ADF - Fisher Chi-square	5.21941	1.0000	184.863	0.0000	*I(1)*
	PP - Fisher Chi-square	1075.26	0.0000	2290.47	0.0000	*I(1)*

To verify if these variables are cointegrated, we proceed with the Panel Cointegration test as reported in Tables 4a and 4b. two types of cointegration tests were employed for confirmation. The Pedroni residual unit root test that test for long run association among the variable under two alternative hypotheses. That is both within dimension and between dimension. This is used to determine whether there is a stable long-term relationship among the relevant panel regressors of the modified pooled production (Export-led growth) function. The other one is the Johansen Fisher panel cointegration test that test for the number of cointegrating equations among the series. From the Table 4a, there are 11 test statistics all together under the two dimensions. Out of these statistics, 8 are significant, implying that the null hypothesis of no cointegration is rejected by eight out of eleven statistics. Agreement between the majority of the test statistics confirms that there is cointegration among the variables. That means export can correct any disequilibrium in growth in the long run, in the study area. This answers our first research question. However, Pedroni test do not show the number of cointegrating equations in the model, hence we resort to the Johansen Test in Table 4b.

Table 4a: Pedroni Residual Cointegration Test

Null Hypothesis: No cointegration				
H1: common AR coefs. (within-dimension)				
	Statistic	**Prob.**	**Weighted Statistic**	**Prob.**
Panel v-Statistic	4.467902	0.0000	-0.846081	0.8012
Panel rho-Statistic	-3.66082	0.0001	1.122047	0.8691
Panel PP-Statistic	-8.78048	0.0000	-2.956543	0.0016
Panel ADF-Statistic	-2.9699	0.0015	-1.337945	0.0905
H1: individual AR coefs. (between-dimension)				
	Statistic	**Prob.**		
Group rho-Statistic	2.116422	0.9828		
Group PP-Statistic	-6.90993	0.0000		
Group ADF-Statistic	-1.78866	0.0368		

Table 4b: Johansen Fisher Panel Cointegration Test *RGDP CK EMP EXPT IMPT*

Hypothesized No. of CE(s)	Fisher Stat. (from trace test)	Prob.	Fisher Stat. (from max-eigen test)	Prob.
None	607.3	0.0000	413.2	0.0000
At most 1	243.8	0.0000	166.7	0.0000
At most 2	113.1	0.0000	95.72	0.0000
At most 3	45.4	0.0586	40.28	0.1495
At most 4	25.33	0.7924	25.33	0.7924

The Johansen Fisher Panel Cointegration test in Table 4b rejects the hypothesized number of cointegrating equations up to rank 3. This means that there are 4 Cointegrating equations among the variables.

Having established that there is a linear combination that keeps the pooled variables in proportion to one another in the long run, we can proceed to generate individual long-run estimates for equations 6. The next step is to generate the Cointegrating equation, which is the long run version of our model in equation 6. We proceed to estimate the pooled production (productivity) function via a "group-mean" panel fully modified Ordinary Least Squares (FMOLS) estimator developed by Pedroni [1999b; 2001] which not only generates consistent estimates of the parameters in relatively small samples, but also controls for potential endogeneity of the regressors and serial correlation. But this single equation estimators have been argued to have several drawbacks that can be avoided by using a system approach. First, these estimators assume that all regressors are I(1) and not cointegrated. If there are more than

one cointegration relationships, then the matrix "" is singular and the asymptotic results are no longer valid. Second, the cointegration relationship has to be normalized such that the variable yit enters with unit coefficient. Boswijk (1995)

The result of unit root test for this study can also be interpreted to suggest that the variables are integrated of different order. Therefore, for confirmation reasons and comparative analysis, and since the sample for this study is relatively large, (N = 16, T = 35), other methods, Dynamic OLS and Pool Mean Group (ARDL), were also used to estimate the cointegrating equations. The results are summarized in Table 5.

Table 5: Cointegration Regression Using FMOLS, DOLS and PMG(ARDL)

	FMOLS		DOLS		PMG	
Variable	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
CK	0.540802	0.0000	0.543558	0.0000	0.365245	0.0000
EMP	0.388121	0.0000	0.715199	0.0000	0.516732	0.0000
EXPT	-2.258752	0.0000	-3.14928	0.0000	-1.817447	0.0000
IMPT	-0.358833	0.0000	0.523029	0.3295	0.0929	0.2933
R-squared	0.984548		0.994224			

The estimated cointegrating coefficients are shown in Table 5 under the three methods. These are the long run coefficients of the model. The coefficients of capital stock and labor are all positive and significant under the three methods. This implying that a unit increase in capital stock or employment will lead to an increase in growth. It further shows the importance of investment in capital stock and labor (through training and education) as sources of long run growth. The only significant coefficient of import is the FMOLS estimate and it is negative (-0.3588), implying that import has shown a negative relationship with growth across the ECOWAS countries. This can be explained in the direction of overdependence on importations in the region. This in effect, has reduced domestic production, hence growth.

However, contrary to expectations, the results of the three methods indicate a negative and significant relationship between exports and RGDP. That is, in the long run an increase in exports will lead to a decrease in economic growth. A possible explanation for this surprising result is that although exports, in the West African sub-regions has the tendency of increasing growth in the long run along with other factors of production, the present conditions of export, especially manufactured and agricultural exports, is unfavorable. Export performance in this sub-region is currently experiencing a kind of “Import surge”. That is the import content of exports is high and thus greatly reduced the spillover or multiplier effects. In most countries in this region, a reasonable percentage of their exports are offset by *imports*. Thus, the net benefit to their domestic economy is minimal. Even in countries where manufactured export performed a little high, overdependence on imported raw materials do offset the gains from such exports as evidenced in Table 6.0.

Table 6.0: Average Net Income from Abroad in West African Countries (1980-2014)

Country	*Benin*	*Burkina Faso*	*Cabo Verde*	*Cote D'Ivoire*	*Gambia*	*Ghana*	*Guinea*	*Guinea Bissau*
Av. NI	-424.15	-614.29	-104.65	-4102.53	-110.01	-1321.17	-241	-110.34
Country	*Liberia*	*Mali*	*Mauritania*	*Niger*	*Nigeria*	*Senegal*	*S. Leone*	*Togo*
Av. NI	-236.02	-289.32	-370.69	-150.15	-714.82	-932.87	-159.98	-288.68

The table shows the average Net Income from abroad for the period under study. Average for each country for the period of study (1980 – 2014) are summarized in the table. All countries recorded negative net income meaning that their import values were greater than their export.

Table 7.0: Short-run: Vector Error Correction Model

	D(RGDP)	D(CK)	D(EMP)	D(EXPT)	D(IMPT)
CointEq1	-0.03432	-0.07493	5.17E-06	-0.00219	-0.00209
	-0.00828	-0.01315	-9.00E-05	-0.00019	-0.00019
	[0.0000] *	[0.0000] *	[0.9543]	[0.0000] *	[0.0000] *
D(RGDP (-1))	-0.07952	0.244689	4.69E-05	0.000152	0.002219
	-0.05578	-0.08863	-0.00061	-0.0013	-0.0013
	[0.1541]	[0.0058] *	[0.9385]	[0.9063]	[0.0878]
D(CK(-1))	0.063239	-0.07626	-5.25E-05	-0.00026	-0.00125
	-0.0306	-0.04862	-0.00033	-0.00071	-0.00071
	[0.0389] *	[0.1169]	[0.8749]	[0.7159]	[0.079]
D(EMP(-1))	-0.09343	-1.29461	0.985025	0.047912	0.033221
	-1.74291	-2.76912	-0.01899	-0.04047	-0.0406
	[0.9573]	[0.6402]	[0.0000] *	[0.2366]	[0.4132]
D(EXPT(-1))	-1.08265	-0.4405	0.001287	-0.08859	0.078884
	-1.71808	-2.72966	-0.01872	-0.03989	-0.04002
	[0.528]	[0.8718]	[0.9452]	[0.0265] *	[0.0488] *
D(IMPT(-1))	-0.22787	-0.78567	0.000127	0.093951	-0.03687
	-1.45396	-2.31003	-0.01584	-0.03376	-0.03387
	[0.8755]	[0.7338]	[0.9936]	[0.0054] *	[0.2764]
C	1507.813	3753.434	8.581817	83.17392	121.1426
	-781.943	-1242.34	-8.51996	-18.1571	-18.2132
	[0.0539] *	[0.0025] *	[0.3139]	[0.0000] *	[0.0000] *

NOTE: Probability values in parenthesis; *significant at 5%

Table 7.0 presents the short-run model of the analysis through the VECM model. Our major focus is the model of RGDP. The significance of the error correction term in the *Table 7.0* implies that real growth in ECOWAS countries adjust to changes in capital, labor, imports and export. The estimated error correction term has the correct sign (-0.0343) and is statistically significant at five percent. This implies that growth, across the ECOWAS countries, is in disequilibrium which the combination of export, capital, labor and import are adjusting in the short run towards a long run equilibrium. The adjustment is in the right direction.

However, the coefficient of 0.0343 indicates that adjustment towards long run equilibrium is approximately 3.4 percent each year, which a very slow speed of adjustment.

Given the presence of four cointegrating relationship, the error correction specification can be used to test for causality among the variables. Results indicate that exports do not Granger-causes non-export GDP at the 5 percent level. This suggest that the export performance across the region does not lend credence to Export-led growth hypothesis. Also, capital stock granger cause growth at 5% level of significance. This imply that if export is perform well as to increase growth in this region, it would be through improvement of capital stock, both physical and human capital.

A vey interesting direction of causality is between import and export. The result shows that there is bilateral causality between export and import across West African countries. Export Granger-cause Import and import granger -cause export. This supports the long run result that there is an overdependence on imported raw materials and technology, which tend to be the determinant of export, especially manufacture and agricultural export across West African economies.

Table 8.0: Variance Decomposition of 10-period-ahead Forecast Error Variance.

	Percentage of Variance Explained by Shock				
Shock to:	RGDP	CK	EMP	EXPT	IMPT
RGDP	83.19	16.34	0.0003	0.37	0.094
CK	57.47	42.5	0.00E+00	0.01	0.014
EMP	0.00004	0.00015	99.9	0.0013	0.00041
EXPT	0.0014	1.55	0.13	95.1	3.21
IMPT	0.09	0.81	0.09	40.68	58.32

A further analysis in this study is the shock transmission among the variables. This is necessary to clarify the sources of hindered growth witnessed in West African countries. Table 8 shows the forecast error variance decomposition at a 10-period-ahead forecast horizon. It is presented in averages. The findings agree with those from both the long-run and vector error correction results. It indicates that when variance in growth is decomposed to its various causes, shock to exports explain approximately 0.37 percent only of the forecast error variance of non-export GDP. This implies export is not the most important factor affecting economic growth in the region. The highest of source of variance in growth is accounted for by its own innovation, (83.19), a feedback shock. In like manner, after 10 periods approximately, 95.1 percent of the forecast error variance of exports is accounted for by its own innovations, followed by a 3.21 percent response to shocks in imports. Also, 58.1 percent of the forecast error variance of import is accounted for by its own innovation followed by 40.68 percent response to shock in export. This support the earlier finding that there is a bilateral causality between export and import across West African countries.

CONCLUSION

This study studied economic growth under export-oriented policies across West African sub-region countries. A panel of 16 countries were involved for a period between 1980 and 2014 due to data availability. The study tested whether the export-led growth hypothesis holds for

West African countries over the period. Previous studies were identified to suffer specification bias. To solve this problem, an export-augmented neoclassical production function was employed, following Waithe et. al (2011).

The study started by assuming total factor productivity to be a function of exports and imports of goods and services. This was augmented into the Neoclassical production function. The output variable for the model was gdp less export to separate the influence of exports on output from that incorporated into the national income identity.

The techniques of cointegration and error correction, and innovation accounting analysis using variance decomposition were employed. The following inferences were drawn from the empirical findings:

i. Economic growth as measured by Gross Domestic Product, as well as export and imports of good across West African countries are non-stationary implying that each can be drifted away from equilibrium by any macroeconomic shock.
ii. There exists a longrun equilibrium relation among the variables of the augmented Neoclassical production function for the countries of West Africa Sub-region.
iii. The coefficients of capital stock and labor are all show positive and significant effects on growth in the long-run.
iv. Import of goods shows a negative relationship with growth in the region. This may be explained in the direction of overdependence on importations in the region. This in effect, has reduced domestic production, hence growth.
v. In the long run exports leads to a decrease in economic growth. A possible explanation for this contrary result is in the direction of Export performance in this sub-region which is currently experiencing a kind of "Import surge". A situation of overdependence on imported raw materials that eventually offset the gains from exports.
vi. Real growth in ECOWAS countries is in disequilibrium but adjusts to changes in capital, labor, imports and export in the longrun.
vii. The speed of adjustment is too slow, about 3.4 percent each year.
viii. Export performance across the region does not lend support to Export-led growth hypothesis as there is no causality between export and growth, each is independent of one another. This is explained by the high import content and diminishing local content of exports, and weak linkages with domestic suppliers, thus reducing possible spillover or multiplier benefits.
ix. There is bilateral causality between export and import across West African countries. This supports the findings that there is an overdependence on imported raw materials and technology, which tend to be the detrimental to manufactured export.
x. Variance decomposition further showed that export is not the most important factor affecting economic growth in the region. The highest of source of variance in growth is accounted for by its own innovation, that is production system in the countries that tend to reduce export and promote importation of goods.

From a policy perspective, the West African countries cannot base its growth on export only, unless policies to boost domestic production are put in place. The Total factor productivity which export and import captures in this study, is grossly low and under - performing in the

region. Therefore, if ECOWAS countries are to succeed in their quest to achieve high and steady economic growth, their urgent needs are to consider "inward looking" strategies to formulate industrial policies. A policy mix of import substitution and export promotion strategies is recommended for countries in this sub-region. Policies that will promote technological innovation in manufacturing and linkages with local suppliers alongside incentives to produce towards export are imperative.

Agriculture is supposed to be a dynamic sector producing important linkages with the growth of other sectors. The manufacturing sector, on the other hand, is important in growth-oriented analysis, which generally perceives it as crucial for increasing the rate of growth for the whole economy. Unfortunately, these two sectors are not performing well in the West African economies.

Production towards export should be focused on manufactured and agricultural products where each country has the highest comparative advantage, so as to reduce the import content of their export.

Countries with Oil revenues, in the West African sub-region should re-invest such in the development of the energy sector that can boost manufacturing production or invest in other vital infrastructure needs;

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