Transnational Trade in ECOWAS: Does Export Content Matter?

Amaghionyeodiwe Lloyd
Department of Economics
Strayer University
Virgina
USA

Adeyemi A. Ogundipe
Department of Economics
Covenant University, Ota
Ogun State
Nigeria

Paul Ojeaga
Department of Economics
Covenant University, Ota
Ogun State
Nigeria

Abstract

In spite of the vast deposit of resources and human endowments in ECOWAS region, gains from trade have really been marginal in the region. ECOWAS region is characterized with poor performance in export of dynamic products; they remained commodity dependent in its exports, leading to transfer of economic gains across border. Over 90% of the region's export is primary products with very little value-added which accentuated from commodity price and demand inelasticity resulting in terms of trade losses and volatile foreign earnings. Based on these facts, the study tries to investigate the impact of export diversification and composition on GDP growth and GDP per capita respectively. This was achieved using econometric analyses involving co-integration technique and a panel least square technique for the period of 1975-2009 and 1990-2007 respectively in 15 ECOWAS states. The study was deemed significant, as export diversification and manufacturing value-added index induced a positive and significant impact on per capita income growth. The study found high skewness of ECOWAS to commodity export in the period observed but a vertical diversification of product base would emanates more spill-over and surplus gains from the regions endowments. The conclusive finding centred on that fact that it is not how much that is exported that matters but very important is what is exported as regions with less specialization and more diversified exports generally experienced higher economic growth rates and contributed much more to overall exports. The notable recommendation for ECOWAS policy makers is the need to develop domestic processing capability and see export as originating from domestic sufficiency.

Keywords: ECOWAS, Commodity export, Co-integration technique and Panel least square

JEL Classification: A1, B20, C22, C23, F1

1.0 Introduction

In the development process of Africa, trade is regarded as very important. This stems from the fact that a favourable term of trade generates foreign exchange needed for economic advancement and ensures optimum level of societal welfare; therefore, trade balance is a major economic goal. Trade as a common practise of exchanging excess produce for scare ones, measured by level of foreign exchange earnings is not equally obtained by every nation. The inter-country struggle to acquire maximum wealth at the detriment of trading partners had made rewards for exchanges unequal depending on the universal general preferences for trading goods.

The concern of the economists overtime has been at what level of output exchange, under what exchange policies and what nature of output would such an exchange generate economic growth. Whether nations are trading (exporting) is not an ideal reasoning, but all products are not equally preferred, different products do not carry similar prices and countries restrict the volume of injections by trading partners.

More than any other developing region, Africa's heavy dependence on primary commodities as a source of export earnings has meant that the continent remains vulnerable to market vagaries and weather conditions. Price volatility, arising mainly from supply shocks and the secular decline in real commodity prices, and the attendant terms-of-trade losses have enacted heavy costs in terms of incomes, indebtedness, investment, poverty and development. (United Nations Conference on Trade and Development-UNCTAD, 2003)

Africa, undergarments (Standard International Trade Classification-SITC 846) are the only important export item among the most dynamic product in world trade. However, their share in total Africa exports is only 1.7 per cent. Moreover, two countries (Mauritius and Swaziland) account for just over 85 per cent of total exports of this product. Seventeen of the 20 most important export items of Africa are primary commodities and resource-based semi-manufactures. On average, world trade in these products has been growing much less rapidly than manufactures. However, trade in some non-traditional commodities has seen considerable expansion over the past two decades. Of such commodities, there are among the 20 most important export items of SSA (namely fish and crustaceans, SITC 0.34, 0.36 and 0.37), accounting for 8.5 per cent of total African export earnings in 2000. World trade in other Primary commodities that account for an important proportion of total exports of Africa, particularly agriculture products such as Coffee, Cocoa, Cotton and Sugar, has been sluggish, with the average growth of trade in such products in the past two decades barely reaching one-third of the annual growth rate of world trade in all products, i.e. 8.4 per cent over 1980-2000.

The periodic commodity boom has lure Africa countries into a false sense of prosperity, however, commodity booms have tended to be cyclical and it is doubtful if the present one can last forever. Africa's over dependence commodity exports with minimal value added has crashed its productive intensity and aggravated its poverty rate, putting household and government budget under immense stress. Africa's lack of productivity capacity to convert its resources into consumables and attract added surplus value has been its worst plague and uprising damnation, the continent is fast losing its vast based resource wealth to weak productive potentials leading to term of trade losses and retrogressive economic growth.

Export discovery are not random, but followed some sequence. Countries that become good at producing a particular export are likely to develop comparative advantages in related sectors. It has been discovered that new exports cluster together or follow a pattern in time (TV sets and DVDs or Cell phones in China, different varieties of fruits in Chile, different kinds of apparel in East Asia or Central America (Agosin, 2005). Export discovery may facilitate the emergence of other new exports in the same or in closely related sectors. An export discovery has not only positive intra-industry growth effects but also intra-industry spillovers (Hausmann and Klinger, 2007). In the past, this subject is often overlooked because the conventional trade theory suggests that in order to benefit from trade activities a country should specialise in its production activities, in which it has comparative advantage. However, given a different set of international economic characteristics, specialisation in economic activities needs greater consideration. (Yee and Karim 2010)

Lau Sun Yee et al (2010) study of the impact of the degree of specialisation and diversification (DSD) on economic growth in Malaysia documented empirical evidence to support diversification-led growth in Malaysia. Also, previous studies by Malizia and Ke (1993), Wagner and Deller (1998), Trendle and Shorney (2004) and Woerter (2007) shared critical impacts of diversification on economic performance in their empirical analyses.
This paper is unique as it considers the impact of ECOWAS export composition on GDP per capita which has not been really observed and econometrically evaluate the impact of diversification and concentration index on GDP growth in the region. This aspect of the study has not been looked into as most studies considered an analytical study of the subject matter in the region. The paper adopted a Johansen Co-integration analysis to empirically validate the impact ECOWAS export composition in Per capita income in the region. The study also considers the two prominent literature strands on the issue of export, first is the neoclassical view of trade specialization and new modern theory or the international completion theory which sees exports as originating from world demand and not specialization.

2.0 Background Issues

2.1 Commodity Trade in Africa

Africa's Share in world trade has been falling consistently since 1980 and the continent remains heavily dependent on the export of a few primary commodities, most of which have suffered a decline in prices leading to large terms of trade losses. (United Nations Conference on Trade and Development, 2003)

Table 1: Africa Share of World Trade

Year	1980	1985	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008
Export	6.0	4.3	3.2	2.2	2.4	2.3	2.3	2.4	2.6	2.9	3.1	3.1	3.4
Import	4.7	3.7	2.8	2.4	2.0	2.1	2.2	2.2	2.3	2.5	2.5	2.7	3.0

Source: Computed from UNCTAD Handbook of Statistics, 2009

The Africa economy is diving deep into crisis as its import prices are rising and export prices declining. Nigeria for instance had continued to specialize in primary products (food, raw materials and organic oils and fats) and import secondary products such as chemicals, machinery, transportation equipments, and manufactures.

Table 2: Share of Developing Region Export in World Merchandise Trade

Region	1980	1985	1990	1995	2000	2002	2004	2006	2008
Developing Africa	6.0	4.3	3.2	2.2	2.4	2.3	2.6	3.1	3.5
North Africa	2.2	1.7	1.2	0.7	0.8	0.8	0.9	1.1	1.3
Sub-Saharan Africa	3.9	2.6	2.0	1.5	1.5	1.5	1.7	2.0	2.2
Developing Asia	18.0	15.5	16.9	21.0	23.8	24.1	26.0	28.7	29.6
Developing America	5.5	5.5	4.1	4.4	5.7	5.4	5.2	5.7	5.5

Source: Computed from UNCTAD Handbook of Statistics, 2009

The continent's share in world merchandise exports fell from 6.3 per cent in 1980 to 2.5 per cent in 2000 in value terms. Similarly, its share of total developing-country merchandise exports fell to almost 8 per cent in 2000, nearly a third of its value in 1980, while the share of world manufactured exports remained a little below 1 per cent. In contrast, Latin America's share of global merchandise trade has remained by and large unchanged, while its share of manufactures has risen from 1.9 to 4.6 per cent of global exports.

Table 3: Merchandise Export Earnings as a Percentage of GDP and Share of Primary and Manufactured Commodities in Total Merchandise for Selected Countries, 2000

Country	Exports as Percentage of GDP	Percentage Share of Primary Commodities	Percentage Share of Manufactures
Developing Countries			
Malaysia	110.0	20	80
Indonesia	40.7	46	54
Jamaica	19.6	30	70
Philippines	53.2	59	41
Bangladesh	11.9	9	91
Nigeria	48.7	99	1
Venezuela	27.2	88	12
Sri Lanka	33.0	25	75
Kenya	15.9	77	23
South Korea	37.8	9	91
Togo	25.0	82	18
Mexico	29.0	15	85
India	8.9	24	76
Brazil	9.4	46	54
China(excl. Hong Kong)	23.1	12	88
Developed Countries			
United Kingdom	19.8	17	83
United States	7.9	17	83
Japan	10.2	6	94

Source: World Bank, 2001 World Development Indicators (New York: Oxford University Press, 2001), tab. 6.1; and World Bank, 2002 World Development Report (New York: Oxford University Press, 2002) calculating from tabs. 3 and 4

2.2 Commodity Trade: The ECOWAS Experience

ECOWAS share of global merchandise exports fell from 2 per cent in 1980 to 0.5 per cent in 2008, while its share of total developing-country merchandise exports marginally increased from almost 1.3% to 1.8% per cent over the same period. Similarly, its share in global manufactures trade increased twofold, reaching 0.075 per cent in 2000. The value of East Asia's total exports recorded 7 per cent average annual growth over the period under review, compared to a mere 0.6 per cent for ECOWAS (UNCTAD, 2003).

ECOWAS countries are heavily dependent on a narrow base of few agricultural and mineral exports for foreign exchange earnings and have had to endure the consequences of all problems resulting from the fluctuation of commodity prices in world markets. About 17 of the 20 most important export items of ECOWAS are primary commodities and resource-based semi-manufactures.

On average, world trade in these products has been growing much less rapidly than manufactures. In fact, world trade in other primary commodities that account for an important proportion of total exports of ECOWAS such as coffee, cocoa, cotton and sugar, has been sluggish, with the average growth of trade in such products in the past two decades barely reaching one-third of the growth rate of world trade in all products (UNCTAD, 2003). For instance, world prices for many of the commodities that Africa exports declined between 1990 and 2000: Cocoa, Cotton, sugar and copper by over 25 percent, coffee by 9 percent and minerals overall declined by 14 percent (WTO, 2001). As noted in Ng and Yeats (2002), one-half of traditional products in ECOWAS experience average price changes of 50 percent or more during the 1990's.

Table 4: Product Share in Total Export

Year	Share of primary products			Share of primary products		
	Ecowas –incl. Fuels	Ecowas –excl. Fuels	Share of fuels	Africa –incl. Fuels	Africa –excl. Fuels	Share of fuels
1995	91.1	43.3	47.8	70.8	33.3	37.5
1996	91.4	37.6	53.8	72.1	31.9	40.2
1997	89.7	32.6	57.1	72.1	27.5	44.6
1998	86.8	40.7	46.1	63.4	30.4	33
1999	91.5	24.3	67.2	71.5	27.6	43.9
2000	95.8	16.7	79.1	76.5	21.8	54.7
2001	93.8	22.7	71.1	76.9	26.8	50.1
2002	89.6	26.9	62.7	73.9	25.4	48.5
2003	91.8	24.5	67.3	75.4	26.0	49.5
2004	90.3	18.8	71.5	76.1	23.5	52.6
2005	92.6	15.0	77.6	80.3	20.3	60
2006	94.0	13.4	80.6	82.3	20.4	61.9
2007	92.6	17.9	74.7	80.7	20.9	59.8
2008	92.1	15.1	77	82.0	19.3	62.7

Source: Computed from UNCTAD Handbook of Statistics, 2009

The share of agriculture varied between 14 percent (Cape Verde) and 47 percent (Guinea Bissau) in the period 1980 and 1990. The share of services also varied between 22 percent (Nigeria) and 71 percent (Guinea Bissau) in the period 1980 and 1990. The share of industrial activities was as low as 9 percent for Niger in 1990 with Nigerian recording the highest contribution of industrial activities at 46 percent in 1980 and has since been declining. (Soyibo and Alayande, 2002).

Countries within the same crop belt tend to produce similar agricultural products; hence they cannot be each other's important trade partners. However, most industrial goods penetrating the West African trade zones are processed agricultural commodities such as sugar, canned beef, frozen meat, tobacco, textiles, leather products, etc. Trade among the ECOWAS countries as a proportion of their total trade increased from 3 per cent in the early 1970s to over 10 per cent in 2001; and the volume has been slightly on the increase with the member countries, with Togo and Sierra Leone exporting over 60 percent of trade volume to ECOWAS region. The steady growth of the share of intra-ECOWAS trade in the total trade has to be viewed against the relative stagnation observed over the same period in regard to trade between ECOWAS countries and the rest of Africa.

ECOWAS policy makers' needs to be concerned by the economic and political risks associated with heavy dependence on commodity exports. This is based on the notion that high concentration of exports on primary commodities and natural resources can have detrimental effects on a nation's growth prospects. In other words, resource-rich economies would grow slower than others, as if natural resources were a 'curse'. Furthermore, it has been argued that resource wealth increased the likelihood of civil wars, and favours authoritarian rule, and worsens income inequality. Hence, diversification to non-traditional, manufactured goods has been considered as a primary goal of national development strategies in many low-income countries. (Odularu, 2008)

3.0 Theoretical Literature Review

Whether countries should pursue diversification or specialization in export production has been a topic that has generated much discussion in the theoretical literature and in policy circles. Broadly seen, one strand of the literature advocates greater export diversity as good for economic growth and development, while another sees specialization, in accordance with a country's comparative advantage, as more appropriate. Despite much theorizing however, the empirical evidence on the relationship between export diversification and economic development remains limited (Herzer and Nowak-Lehmann 2006). There is even less evidence on the economy-wide impacts and requirements of greater export diversification vis-à-vis specialization.

An earliest idea of economic development theory suggests that degree of specialization or diversification of a country's production and trade structure is crucial for its economic development. From Adam Smith's recognition of the importance of the division of labour and specialization for economic growth and development, to the standard Heckscher-Ohlin Samuelson (HOS) model of international trade, the position in neoclassical economics has been that countries should specialize in producing and exporting according to their comparative advantage.

The works Prebisch-Singer thesis (Prebisch 1950; Singer 1950) argued that developing countries' dependence on primary commodity production and exports leaves them vulnerable to commodity shocks, price fluctuations and declining terms of trade, especially since the income elasticity of the demand for primary commodities is low. This in turn results in a country's foreign exchange reserves, and thus its ability to afford imported inputs, becoming subject to fluctuation and uncertainty. In such a case, beneficiation of raw commodities before exporting is seen as adding more value to production and raising employment, and providing more stability and growth in export earnings. This claim was supported by the 'big push' arguments advocated by Rosenstein-Rodan (1943).

Overtime, several strands of literature stressed the potential benefits of export diversification for economic development. One strand proposed that countries should produce and export goods for which the world demand is increasing, this strand of literature is strongly based on the view that exports are good for economic growth, and that export-led growth (as experienced by Japan and the East Asian tigers) is the most appropriate development path for the developing world (Alexander and Warwick, 2007). In this view, the impact of export diversification is conditional on the type of goods that are exported, and its consistency with world demand.

A second strand of literature has its base in the endogenous growth theory which sees diversification of exports from primary commodities into high-skilled, high-technology goods as desirable because trade in these products allows for more scope for growth through productivity gains than traditional commodity exports. There are more opportunities for spillover effects in manufactured trade than in primary commodity trade (Herzer and Nowak-Lehmann 2006). Similar to the view of Petersson (2005), Mengistae and Pattillo (2004); spillover effects are partly due to skills and technological upgrading (learning-by-doing and learning-by-exporting), which have more positive externalities than in primary commodity production (Petersson 2005). A more similar view recorded that that manufacturing exporting firms in Africa are up to 17 per cent more productive than non-exporters, primarily due to learning-by-exporting effects.

The works of Pineres and Ferrantino (1997); Edwards and Alves (2006), summarized the two strands discussed above often come to the same practical conclusion in recommending that (i) countries diversify exports into high-skilled, high-technology products and (ii) that countries use trade liberalization as the primary means to obtain higher and more diversified exports. A third strand takes a portfolio theory approach as discussed by Brainard and Cooper (1968) they proposed that risk-averse countries should diversify their exports taking into consideration the covariability of different export goods' world prices.

It recognizes the merits in the neoclassical HOS-trade models' recommendation that a country should specialize according to comparative advantage, but points out that this might not hold under uncertainty, and that uncertainty will reduce overall world trade as risk-averse producers of primary commodities reduce their production thereof, a similar idea was documented in the works of Ruffin 1974; DeRosa 1991.

Diversification in exports is needed to offset uncertainty if financial institutions that can provide insurance are lacking, as is for instance the case in many African countries (Chang 1991; Osakwe 2007).

A fourth strand of literature where diversification is advocated originated from among the explanations of African countries' poor economic growth in the 1980s. Here it was observed that countries that have a rich endowment of natural resources, and tend to depend on exporting one or a few highly-valued natural resources, such as oil, minerals or coffee, tend to grow slower than countries with a more diversified, non-resource based export structure (Arezki and Van der Ploeg 2007). A corollary study was conducted by Sachs and Warner (2001), which termed this the 'natural resource curse'. Three main reasons have been advanced as to why a rich endowment of natural resources would be bad for economic growth: 'Dutchdisease' effects whereby the real exchange rate appreciates during resource booms (Bonaglia and Fukasaku 2003), increasing rent-seeking behaviour and corruption, and civil conflict over these valuable resources.

Despite the apparent need for diversification as motivated in the literature surveyed above, a thread of scepticism has remained with regard to the appropriateness and practicality of greater export diversification in many developing countries. Owens and Wood (1997) argue that in the case of Africa, comparative advantage implies that the emphasis should not be on vertical diversification, but on expanding primary commodity exports, and horizontally diversifying only primary production and exports.

4.0 Empirical Literature Review

Using cross-country data Strobl (2005) finds that trade liberalization results in greater variability in export earnings, and that there are significant welfare gains for countries in diversifying into a more 'optimal' export structure, although the precise magnitude of these gains are country specific. A similar study was conducted by Imbs and Wacziarg (2003) using cross-sectional and cross-country data find a U-shaped relationship between the degree of sectoral concentration in a country's production structure and the level of development (as measured by per capita income). This evidence is consistent with the view that countries will first diversify and then specialize in their production (and exports) over their stages of development. Hummels, Ishii and Yi (2001) and Yi (2003) further supported the notion that countries at further stages of development may tend to specialize also in their export structure, by identifying the importance of vertical specialization (when a country specializes in a specific stage of production rather than in the production of the whole product) in global trade. Vertical specialization, for example, has been responsible for 50 per cent of the growth in USA trade since 1962 (Yi 2003).

The work of Naude and Rossow (2008) investigated the extent of export diversification and specialization in South Africa over the period 1962-2000 and its relationship to GDP per capita using the computable general equilibrium (CGE) model. The study found a tentative U-shaped relationship between Per capita GDP and export specialization, that export diversification, resulted in higher GDP growth and employment. The claim was as well supported by a Granger Causality test conducted in the study (greater export diversification results in a more substantial increase in exports that in the case of greater export specialization).

The works of Brainard and Cooper (1968), Osakwe (2007) and Stobl (2005) using cross-country data found that trade expansion results in greater variability in export earnings, and that there are significant welfare gains for countries in diversifying into a more optimal export structure. In light of several analyses conducted in estimating the effect of export diversification on GDP growth, this study observed the long-run co-integrating relationship between GDP growth rate and Export diversification and concentration index. This is considered important in order to establish the claims of previous work on the impact of export diversification and concentration index on ECOWAS region, as similar works in the region neglected the effect of concentration index.

5.0 Theoretical Model

In testing the diversification induced growth in ECOWAS region, the study adopted a combined time series data of diversification and specialization indexes for ECOWAS region from UNCTAD Statistics and as well as estimated panel analysis for the region.

Therefore, we estimate a general growth equation of the form:

$$\Delta \alpha y_{i,t} = \alpha + X_{i,t}^{I}\beta + V_{i,t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \quad 1$$

Where $\Delta y_{i,t}$ denotes the log differences of income per capita in period t, $y_{i,t-1}$ is the log initial income, $X_{i,t}$ is a vector of potential determinants of growth, and $V_{i,t}$ is the residual error component.

$$X_{i,t}^{I} = AGR_t^{\alpha 1}, IV_t^{\alpha 2}, MFR_t^{\alpha 3}, POP_t^{\alpha 4}, SEV_t^{\alpha 5}, EDI_t^{\alpha 6}, SPE_t^{\alpha 7} \dots \ \dots \qquad 2$$

Where AGR_t is the share of agriculture contribution to GDP (agricultural value added), IV_t is investment, MFR_t is the share of the manufacturing sector to GDP (Manufacturing value added), SEV_t is the share of the service sector to GDP (services value added), and SPE_t is the percentage share of primary exports.

The Johansen and Joselius techniques of establishing co-integration was adopted to estimate the long-run equilibrium behaviour of ECOWAS GDP and diversification indexes based on the above specified model. (See equation 3)

$$LNGDP_t = \alpha_0 + \alpha_6 LNEDI_t + \alpha_7 LNSPE_t + V_t \dots\dots\dots \quad 3$$

A panel estimation analysis is hereby used to sieve the effect of ECOWAS export composition on per capita income in the region. (See equation 4)

$$LNGDPK_{i,t} = \alpha_0 + \alpha_1 LNAGR_t + \alpha_2 LNIV_t + \alpha_3 LNMFR_t + \alpha_4 LNPOP_t + \alpha_5 LNSEV_t$$
$$+ V_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \qquad 4$$

The V_t is stochastic error term assumed to be purely random. All the variables are transformed by taking natural logs and hypothesized that the estimates $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5, \alpha_6, \alpha_7$ are positive.

In principles, its becomes necessary to test the order of integration of each variable in a model to ascertain whether they are stationary and number of differencing it needs to undergo to derive stationary series. This termed unit root test, has several ways of conducting it; in this study emphasis centred on Augmented Dickey-Fuller (ADF). Also, the Philip and Perron (1988) assume a non parametric method of controlling for higher order serial correlation in a series.

6.0 Data Sources and Empirical Results

An econometric analysis is carried out to analyse the effects of diversification on growth in ECOWAS. Data are drawn from basically from the documents of World Development Indicators.

Table 5: Sources and Description of Variables

Variable	Description	Source
Real GDP	Monetary Value of goods and services produced within a country over a period of time, adjusted for price level changes.	World Development Indicators (WDI)
Percentage Share of Primary export	Corresponds to the share of share of primary exports in all merchandise exports.	World Development Indicators (WDI)
Export Diversification index	The Herfindahl-Hirschmann Index (HHI) is calculated by taking the square of export shares of all export categories in the market $HHI = SS_i^2$; i = 1, 2, ..., n This index gives greater weight to the larger export categories and reaches a value of unity when the country exports only one commodity or service (high concentration).	UNCTAD Statistics Report
Real GDP per capita	Gross Domestic product divided population adjusted for purchasing power parity	World Development Indicators (WDI)
Investment	Investment share of real GDP per capita	Penn World Table (PWT) 6.1
Agriculture/GDP ratio	Value added of agriculture in constant 2000 as percentage of GDP	World Development Indicators (WDI)
Manufacturing/GDP ratio	Value added of Manufacturing in constant 2000 as percent of GDP	World Development Indicators
Service/GDP ratio	Value added of service in constant 2000 as percent of GDP	World Development Indicators

Compiled by authors

The study attempted to examine the integration order of each variable used in the empirical models; a necessary but not a sufficient condition is for each variable to be integrated of the same order, which must be greater than zero. The ADF unit root test of stationarity is applied to achieve this. The ADF controls for possible serial correlation in error terms by adding the lagged difference terms of the regressand. The table figures show that each series is first difference stationary at one percent using ADF test, since the results are impressive, ADF test is used for co-integration test.

Table 6: Unit Root Tests

Variable	LEVEL		FIRST DIFFERENCE		
	ADF	PP	ADF	PP	COMMENT
LNGDP	-0.4143	-0.4143	-4.9335*	-4.7320*	I(1)
LNEDI	1.2484	-0.6031	-6.3807*	-6.3807*	I(1)
LNSPN	-3..2330	-2.3618	-4.0489*	-5.7961*	I(1)

Analysed by researcher using eviews 6.0

6.1 Testing for Co-Integration Using Johansen Approach

The main theoretical argument of co-integration analysis is that even if individual variable is non-stationary, the group of variables may drift together. This suggests that a linear combination of two or more can be stationary, even if are not individually. Since the variables under study are integrated at the same order, there is the need to test for co-integration relationships using Johansen approach. This approach is preferred to the Engle and Granger two step procedure because the later conceals information on the coefficients of the explanatory variables in the co-integrating vector, hence makes it in appropriate for this study. Using this approach, the result was found to be sensitive to the lag length used. The Akaike information criterion is used in selecting lag length to be included in the estimation. The co-integrating tests of model assume quadratic deterministic trend in data. Both maximum eigenvalue test and trace results indicate the existence of a unique co-integrating vector for the growth equation.

Table 7: Johansen Co-integration Estimation

Trace (λtrace)			
No. of CE(s)	None	At most 1	At most 2
Eigenvalue	0.8883	0.5252	0.2141
λtrace statistics	38.1319	11.8305	2.8913
Critical value	35.0109	18.3977	3.8415
Maximum Eigenvalue (λmax)			
Eigenvalue	0.8883	0.5252	0.2141
λmax statistics	26.3014	8.9392	2.8913
Critical value	24.2520	17.1477	3.8415
Normalized Co-integration Coefficient			
LNGDP	LNEDI	LNSPN	
	27.0478	-8.8509	
	(6.0239)	(1.2487)	

Analysed by researcher using eviews 6.0

The normalised co-integration equation reveals that in the long-run, diversification index has a significant positive impact on growth while the export share of primary product has a significant negative impact on growth. These results provide evidence to justify the fact that what a nation export matters; and that excessive concentration on primary export retrogresses growth potentials. The result is consistent with previous studies by of Al marhubi (2000), Pineres & Ferrantino (2000), Herzer & Lehman (2006), Agosin (2007) and Lau Sim and Abdul Karim (2010) which all shared critical impacts of diversification on economic performance in their empirical analyses.

The existence of co-integration allows for derivation of the error-correction model from the co-integrating equations by including the lagged error-correction term, hence the long-run information lost through differencing are captured. For theoretical meaningfulness, the coefficient of the error term should be negative and range between zero and one in absolute term. The error-correction term to be estimated represents the short-run to long-run adjustment equilibrium trends.

6.2 Vector Error Correction Modelling (VECM)

The error correction term is the residual from the static long run regression and it joins the set of differenced non-stationary variables to be estimated to capture both short run and long run dynamics. Here, the variables in co-integrated equations are considered as endogenous in the Vector Autoregressive (VAR) model.

Table 8: Vector Error Correction Estimates

	D(LNGDP)	D(LNEDI)	D(LNSPN)
Ect(1-)	-0.3795	0.0313	-0.4346
Standard error	(0.1586)	(0.3431)	(0.2787)
t-stat.	[-2.3928]	[0.0915]	[-1.5390]

Analysed by author using eviews 6.0

The diagnosis tests performed on various orders of the error correction model indicate that the model has negative sign, also the magnitude of the error correction term coefficient lies between zero and one. This indicates a 37 per cent short run disequilibrium adjustment to long run equilibrium each year, though the speed of growth to converge to equilibrium path (considering the explained variation by the explanatory variables) is slow.

6.3 Panel Least Square Estimation

The estimation attempts to sieve the impact of export concentration on ECOWAS per capita growth considering individual country fixed effects and period specific effects.

Table 9: Panel Estimation

Variables	Coefficients	t-statistics	Std. error
C	4.5803	9.7963	0.4676
LNAGR	0.0789	1.4052	0.0562
LNIV	-0.2640	-6.6247	0.0399
LNMFR	0.2564	10.9824	0.0233
LNPOP	-1.5684	-17.2960	0.0473
LNSEV	0.8239	13.7419	0.0287

Analysed by author using eview 6.0

Consistent with earlier works, we could confirm a significant impact of manufacturers value-added on per capita income; though with low magnitude, which could have arise from the region less concentration on production and export of manufactures. The coefficient of the investment share of GDP was negative signalling that the low capital injection in improving value-added in ECOWAS impacted negatively on GDP per capita. The population variable is one of the most potent, from the estimation; population was consistently more significant (with higher negative magnitude). This implies the recognition of the potential impact of population in dwindling GDP per capita in the face of low income of some ECOWAS members. The transfer of value-added, literally transfer of income across border in line with rising population has economically endangered ECOWAS region.

The estimated result from panel least square procedure suggest that the coefficients of agriculture value-added, manufacture value added and service value added are positively related with real per capita income; while investment share of growth and population are negatively related with real per capita income. These results show that the observed variables are statistically significant in explaining the variation in real per capita income, except agricultural value-added. This is likely due to the weak processing capability and low production of dynamic agric products.

7.0 Recommendation and Conclusion

The paper investigated the effect of export composition on per capital income growth in ECOWAS using Johansen co-integration analysis and least square panel approach. Evidence from the analysis, covering 1975 to 2008 reveals that the degree of diversification in ECOWAS was found to be positive and significantly related in explaining the trend of economic growth. This supported evidences from most developing countries, for instance, kenji and mengistu (2009) recommended a vertical diversification by means of increasing value-added ventures and enhanced production linkages.

Other theoretical reasons for high income gains from diversification is the dwindling commodity prices which tends to move in cycles that are highly correlated with fluctuations in global aggregate demand.

The escape the trap of unstable foreign earnings and homogenous export, the region must focus on production for domestic need. Production must gain economic priority rather than transferring surplus abroad under the disguise of exports; by this economic gain are retained and per capita income growth is fostered. This enhances industrial activities and innovations in the region. The critical mass of ECOWAS challenge is weak productive capacity; this has accentuated the progress of the member states and the sole cause of social and economic evils within the region. ECOWAS should see exports as originating from domestic sufficiency.

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