

Impact of Intra and Extra-Regional Trade on Economic Growth: Evidence from ECOWAS

Okoro, Agwu Sunday PhD¹, Umar, Farida Bello²

¹ Principal Manager Central Bank of Nigeria Abuja

² Senior Supervisor Central Bank of Nigeria Abuja

Abstract: *This paper assessed the impact of intra- and extra-regional trade on economic growth of ECOWAS countries, using cross-country time series regressions (panel analysis). Using standard growth model with import and export trade values of the selected countries as our major variables. Our estimate of the Hausman test, show a prob>0.6028, which supports the random effect estimate. Accordingly, the result show that intra-regional trade is positively and significantly related to the dependent variable, gross domestic product per capita. Thus, an 8 per cent increase in intra-regional trade will bring about 1 per cent rise in gross domestic product per capita, a proxy for the standard of living of the people. Furthermore, extra-regional trade is increasing rapidly at a disproportionate rate to intra-regional trade compared to other regions like SADC, suggesting that there is great potential for economic growth in the region if part of extra-regional trade is converted to intra-regional trade. Export growth in West Africa is dominated by commodities as a result of greater focus placed on extra-regional trade than on intra-regional trade. Therefore, there have been limited implications for employment and poverty levels in the region.*

Keywords: intra and extra-regional trade, economic growth, ECOWAS, panel analysis

Disclaimer: The views expressed in this paper are strictly the authors' and does not represent that of the Central Bank of Nigeria

1. Introduction

Theoretical studies on trade discusses channels through which buying and selling can affect economic development (Wooster, Dube and Banda, 2007). Firstly, international trade is a vehicle through which knowledge and technological innovations are transferred between trading partners (Sala-i-Martin & Barro 1997 and Grossman & Helpman 1991). Secondly, other studies show higher trade openness increases competition in the local market, which in turn increases production efficiency and economic growth (Wacziarg, 2001 and Vickers & Yarrow, 1991). Finally, nations that have access to bigger markets through trade, benefits more than countries that don't have access to larger trade. Alcalá & Ciccone (2003) show that trade matter for economic development for local markets that are small. What this implies is that small local markets benefits more from trade openness than the bigger ones. As a result, openness to trade allows nations to capture the potential benefits of increasing return to scale (Ades & Glaeser, 1999).

The theory of Regional Trade Agreements (RTAs) have become an important feature of the Multilateral Trading System (MTS), and the core objectives of RTAs and global trade liberalization have been pegged around reducing trade barriers and improving economic growth among the participating nations. (Radelet 1997, and Wooster et al 2010). RTAs have remained one of the major means to international developments. The advantages of regional economic integration among nations include; the reduction in the depth of borders, opportunities to reap from trade efficiency and economies of scale (De Melo & Tsikata, 2014). RTAs have continued to play an increasing role in the

global trading system and have regularly created measures to reduce or eliminate trade barriers (Wooster et al 2010).

The surge in regional trade agreements has persisted in both developed and developing nations over the past four decades. Within the African region, over twenty regional trade agreements or blocs exist, of which many are for regional integration schemes. However, the South Africa development Community (SADC), Economic Community of West Africa (ECOWAS), Common Market for Eastern and Southern Africa (COMESA) and West Africa Economic and Monetary Union UEMOA are the most successful.

ECOWAS as a regional arrangement in Africa was established by the ECOWAS Treaty of Lagos, 1975 to promote regional economic integration among the West African states. With 15 member countries at present, Article 3 of the ECOWAS Treaty show that the organization aims at establishing an economic union through the promotion of co-operation and integration of member countries. Trade relations among the ECOWAS nations has been much lower than extra –ECOWAS trade. Nigeria is a dominant exporter in intra and extra-ECOWAS trade. However, Cote d'Ivoire and Benin seem to follow with their large ports. Benin, Togo and Senegal are important exporters in the West African region supplying products to others. Mali, Burkina Faso and Sierra Leone majorly depend on the aforementioned countries for agri-food products. Growth-exports from and imports to West Africa partners and rest of the World relationship is considered of paramount importance.

RTAs are likely to transform the establishment of international trade, their actual impact on trade flows remains controversial. Empirical literatures show that estimates are variables but demonstrating lack of robustness (Ghosh and Yamarik 2004; Head and Mayer 2014; Cipollina and Salvatici 2010 ;). On the other hand, another critics by

Volume 10 Issue 6, June 2021

www.ijsr.net

Licensed Under Creative Commons Attribution CC BY

Brown *et al* (2005) show that poorly implementation of RTAs have led to tensions between countries and it has also increased the risk of inter-state conflict. At the same time, the economic and political adjustment in pursuing RTAs have undermined domestic livelihoods and this has created winners and losers, hence encouraging competition among member countries Brown *et al* (2005). The aforementioned increases empirical questions on the actual consequences of shifting to regionalism for global trade. Studies by (e.g., Grant and Lambert 2008; Egger and Larch 2011; Egger and Wamser 2013; Fugazza and Nicita 2013; Caliendo and Parro 2015) show that RTAs generates large trade flows between the member states, although often at the cost of third countries. Others studies found that the impact of RTAs on trade flows tend to be lower than often expected, in particular because of the large number of goods subject to low duties (Carpenter and Lendle 2011) or because of the depth of the trade agreements and the contrasting scope (WTO 2011).

To contribute and broaden the debate, we investigate the impact of trade on economic growth, using data from ECOWAS Member States. Our decision to use ECOWAS is influenced by the paucity of empirical studies along this line in the sub-region and the peculiarities of the region. For instance, the ECOWAS sub-region represents a collection of countries with primary-based economies. Their productive sectors are still at their embryonic stage, with large informal economies. Understanding the impact of trade on economies with the presence of structural rigidities in their labour markets, demographic characteristics that hinder production, lack of access to credit and economic structures and incentives that promote export forms the motivation for the study. The decision to decompose trade into internal and external trade and investigate the effect of each on economic growth is a unique feature of this study. The objective of this paper, therefore, is to analyze the impact of intra-extra regional trade within the ECOWAS region and the likely effects of trade on output growth using panel analysis. Based on the foregoing this paper is divided into five sections. Section two is the literature review, while section three discussed the methodology. Section four covers the empirical analysis, while section five concludes the paper.

2. Review of Related Literature

2.1 Theoretical Review

Extant literature relied on Richardian comparative advantage model, Heckscher-Ohlin model' factors of production and the production possibility curve, technology difference model, Leontief paradox, among others, in advancing the argument for gains of international trade (see Sodersten & Reed, 1994). The underlining assumption of these models is that countries gain from trade by improving economic welfare, labour quality, employment generation, increasing market size, facilitating technology transfer, higher wages, efficient allocation of resource and improved competition, which ultimately lead to economic growth.

Earlier studies for developed nations such as Henrekson *et al* (1997) show a positive relationship between regional integration and growth, while Vanhout (1999), note that EU

membership seem insignificant in explaining growth rates. Wooster, Dube and Banda (2006) show that intra-regional and extra-regional trade have different impacts on growth in the 13 EU countries they studied, but also added that "extra-regional trade have a higher marginal effect on output growth per capita". Regional trade relations appear to be low in West Africa. Scholarly work in this area seems scanty. To the best of our knowledge no studies have been done that specifically dwelt on the implications of intra- and extra- regional trade on economic growth in West Africa using time series regression.

Some scholars, however, argued against international trade, insisting that it could hurt an economy, especially, less developed economies. These scholars admitted that protectionism in certain circumstances could stimulate domestic production (Buongiorno *et al.*, 2017; and Chaudhuria and Marjit, 2017). Empirical evidence also suggests that there might be losers and gainers in international trade (Pierce and Schott 2016, 2017; and Autor *et al.*, (2013, 2014). These studies suggest that China and India are benefiting from international trade, while some developed and developing economies are losers. In the US for instance, China's trade competition has attracted serious backlash as Pierce and Schott (2016, 2017) and Autor *et al.*, (2013 and 2014) revealed that imports from China accounted for substantial job loss in the US between 1990 and 2000s, fuelling an argument that developed countries are the losers in international trade. On the other hand, the President of the Association of Brazilian capital goods producers has argued forcefully that "there is a real invasion of imported products, most of them coming from China. The consequence is that we are transferring thousands of jobs abroad" (Quoted in Pavcnik, 2017).

Theoretically trade can affect economic growth through different channels. Recent and traditional theory opines that low income nations aspire to form regional trade agreements with other nations with more export baskets and diversified economy in order to benefit from such agreements. This is underscored by contributions of previous scholars at different climes; for instance exchange of goods and services or trade is channel of technological innovations and knowledge transmitted among trading partners hence promote growth (Martin and Barro 1997); trade openness could promote competition and increase productive efficiency via economic growth (Wacziarg 2001); and economies with larger markets and trade are likely to benefit economically, all things being equal. Therefore, increasing the size of the market, and trade openness allows economies to harness the potentials of increasing returns to scale (Ades and Glaeser, 1999).

2.2 Empirical Review

Trade and economic growth remains a major concern for countries, as a result many studies using different methodologies have been conducted to capture the implication of intra-extra regional trade on economic growth in developing and developed countries.

Lucas (1988), and Romer (1986), show international trade to significantly affect economic growth in the long run.

Edward (1992), examined the impact of international trade on economic growth using nine indexes of openness and concluded all the openness measures to have a positive correlation with growth. Levine and Renelt (1992), used cross country regression to examine the empirical linkage between long run growth rate and a variety of economic policy. They found international trade to indirectly affect growth through investment. Vamvakidis (1997), estimated the impact of international trade on growth from 1970-1990. The study found trade and growth to be significantly correlated from 1970s and 1980s. Bassanini et al (2001), while studying the driving forces of economic growth for OECD countries, employed panel data analysis, and found that differences in investment rates, human capital, R&D, trade exposure, financial structures and macroeconomic conditions play important role for GDP per capita patterns across countries.

Some scholars had dwelt on the contribution of trade openness to economic growth, for instance Wooster et al (2008) confirmed the importance of trade openness for growth. Fernandes and Almeida (2008) suggest that nations that are more open to free trade tend to have greater technological spillovers and therefore grow faster than nations that are less open. They also show that free trade is beneficial to growth. Chang et al (2009) acknowledged a positive relationship between trade openness and economic growth. Corroborating, Kim and Lin (2009) investigated whether trade openness contributes to long run economic growth and if the effect varies with the level of economic growth. They found that greater international trade and integration may contribute to more diverging economies. In addition, the relationship of trade with growth is found to work possibly through both investment and productivity growth channels. Jouini (2015), show openness to trade to serve as a good indicator of economic growth because it involves the movement of goods and services from one place to another.

Considering the effects of trade liberalization on economic growth, Mwaba (2000) examined the link between trade liberalization and economic growth for east African countries, and conclude that while opening an economy to trade may not provide the desired quick fix, the removal or relaxation of quantitative import and export restrictions and lowering of tariffs would result in increased exports and growth. The dawn of a global economy ushered in by universal trade liberalization, therefore, need not spell catastrophe for African economies as it is widely feared. Economic Commission of Africa (2011) state that trade liberalization in Eastern Africa has been pronounced over the last two decades, which has significant increase in exports and imports through the intra-extra regional trade. However, Fenira (2015) found that trade liberalization has weakened contributions to economic growth for 82 developing countries.

Few studies have attempted to ascertain the relationship between intra-regional and extra-regional trade. Wooster et al (2008) examined the contribution of intra-regional and extra-regional trade in the European Union. They found that intra-regional and extra-regional trade have different

impacts on growth, with extra-regional trade having higher marginal effect.

Younes (2010) investigate the contribution of trade to growth of Arab Countries. He confirm the significance of trade openness for growth. And importantly added that, intra-regional trade has had small impact on growth in output per capita than extra-regional trade. He further noted the need for Pakistan to revisit her regional trade. In contrast Musila and yiheyis (2015) and Ulasan (2015) report a negative relationship.

Onyekwena and Oloko (2016) employed descriptive analysis to examine the prospects of regional trade for inclusive development in West Africa, by considering the nature and composition of trade in the ECOWAS region with the rest of the world. The outcome show that economic growth within the ECOWAS region is increasing, although this does not translate to inclusive development as poverty level reduction was not achieved. They added that extra-regional trade is increasing rapidly at a disproportionate rate to intra-regional trade compared to the SADC, this suggests that there is great potential for inclusive development in the region if part of extra-regional trade is converted to intra-regional trade. The study concludes with a recommendation that West African countries revive their commitment to regional industrial policy as well as intensify investment in human capital development to ultimately achieve inclusive development in the region. However, the authors could not use any econometric analysis to investigate the topic but rather descriptive analysis. This paper would attempt to employ a Panel data analysis to ascertain the implications of intra and extra-regional trade on economic growth in West Africa countries.

3. Methodology

3.1 Data

In this section we explain the data used in the methodology. To test the effect of internal-trade (trade among ECOWAS Member States) and external-trade (trade between ECOWAS Members States and the rest of the world) on economic growth of ECOWAS Member States, we used annualized panel dataset that spans from 2006 to 2016. We chose this data range because of the timing of the research and the need to minimise missing observations in the baseline model (data availability). The selected ECOWAS Member States are Nigeria, Benin, Cabo Verde, The Gambia, Ghana, Guinea, Guinea Bissau, Niger, Senegal, Sierra Leone and Togo while Mali, Cote d'Ivoire, Liberia and Burkina Faso were dropped from the observation because of non-availability of data.

The dependent variables is economic growth, which we defined as the growth rate per capita income (economic growth). Thus, per capita income is nominal gross domestic product divided by total population. The major explanatory variables are internal-trade and external-trade, which measures trade among ECOWAS Mmember States and trade between ECOWAS Member States and the rest of the world, respectively. We estimate internal and external trade by using the natural logarithm of the variables in each year. To

make our findings comparable with previous empirics, some theoretically important control macroeconomic variables that are important determinants of economic growth were introduced to the baseline model. The variables are inflation rate, exchange rate, population growth, unemployment rate and gross capital formation. The data were collated from World Development Indicator (WDI).

Table 1 depicts the descriptive results. The choice of the moderating variables stems mainly from the interactive influence they arguably exert on economic growth. Measure of aggregative tendencies such as mean is presented alongside measures of spread and variation like standard deviation, minimum and maximum values. The standard deviation of 35,974 for external trade reveal the degree of external trade in ECOWAS, compared to trade among ECOWAS Member States. The standard deviation of 11,147 supports the anecdotal that ECOWAS Member States trade more with the rest of the world than trading with each other. The descriptive results also reveals high degree of capriciousness in inflation rate, gross capital formation and unemployment among Member States, which tend to suggest the presence of heterogeneity among the economies of ECOWAS Member States.

Table 1: Descriptive Statistics

Variables	(1)	(2)	(3)	(4)	(5)
	N	Mean	Std	min	max
Internal Trade	152	6,158	11,147	23.02	54,284
External Trade	141	15,826	35,974	-4,865	182,889
Inflation Rate	154	9.055	9.085	-35.84	34.70
Exchange Rate	156	2,707	6,216	22.88	42,350
Economic Growth	156	2,300	1,495	757.4	6,075
Population Growth	156	2.670	0.632	1.060	4.515
Unemployment	156	8.681	7.204	0.800	30
Gross Capital Formation	139	21.49	9.803	3.554	49.79

3.2 Empirical Technique

To establish the dynamic relationship between internal trade, external trade and economic growth in ECOWAS Member States for the period of 2006 to 2016, we employed the system-GMM (Arellano and Bond, 1991; and Blundell and Bond, 1998). The use of panel data enables us to investigate the dynamic relations between trade and economic growth, as well as controlling for the unobserved heterogeneity of the 12 selected ECOWAS countries. In examining the linkage between trade and living standard, reverse causality becomes an issue since past empirical literature has also established that causality could run from economic growth to trade, and not merely vice versa. Thus, resolving the problems of causality and dynamics become crucial to the analyses of our hypothesized link and justifies our decision to use the system-GMM. First, we state the general framework for a static panel study as:

$$Y_{it} = \alpha_i + \beta X_{it} + \mu_{it} \dots \dots \dots (1)$$

Where:

Y_{it} is the dependent variable and X_{it} is a vector representing the explanatory variables. The cross-sectional and time series dimensions are represented respectively by i and t subscripts. The composite error term μ_{it} can be decomposed into specific effects and the remainder

disturbance term. Hereafter i will be referred to as individual member countries of ECOWAS. To capture the individual country specific effects, we decompose μ_{it} by re-writing equation 1 as follows:

$$Y_{it} = \alpha_i + \beta X_{it} + \eta_i + \lambda_t + \varepsilon_{it} \dots \dots \dots (2)$$

Where Y_{it} is defined as the measures of food security; X_{it} is a vector of independent variables. η_i is the country specific effects; λ_t is the time specific effect; and ε_{it} is the disturbance term that captures the effects of the omitted variables. All the variables are in natural logarithm forms. From equation 2, we can specify the empirical model depicting the effect of trade on economic growth. Applying the baseline model in Equation 2, we compare estimates from pooled Ordinary Least Square (OLS) panel fixed effects (FE), random effects (RE), and Least Square Dummy Variable (LSDV) models. The Hausman test is used to compare estimates from the RE with that of the FE.

As stated earlier, some of the variables are endogenous in nature. To address the probable endogeneity problems that might be present in Equations 2, we apply instrumental variable (IV) regression model, based on the GMM technique. We validate the instruments by adopting Roodman (2009a, b) prescription, through the imposition of lags and collapse to reduce the proliferation of instruments. The lag of the dependent variable is used to indicate the dynamics in the model as shown in equation 3 below:

$$y_{it} = \alpha_{it} + y_{it-1} + \beta X_{it} + \mu_{it} \dots \dots \dots (3)$$

where the variables are as previously defined.

4. Discussion of Results

Table 2 presents the static model approach and reports the baseline results of Equation 1 using economic growth as the dependent variable. Models 1, 2, 3 and 4 respectively show the Pooled Ordinary Least Square (OLS), Fixed Effect Model results (FE), Least Square Dummy Variable (LSDV) and Random Effect Models (RE). The predictive value of the exogenous variable of interest as well as the moderators was displayed in table 2. The results of the static panel analyses revealed the mixed results and did not form the basis for our estimation because of the limitations of Generalised Least Square (GLS). Specifically, the GLS estimator involves quasi-demeaning the data, which causes the dependable variable to be correlated with the quasi-demeaned residuals, making the GLS estimator biased and inconsistent. Aside from the above limitation of GLS estimator, we are also interested in the dynamic behaviour of the variables. These factors influenced our decision to adopt the dynamic GMM since the dynamic model has the tendency to overcome the deficiencies of the static model (Arellano and Bond, 1991; and Blundell and Bond, 1998). Importantly, the static panel results for the four models revealed that trade among ECOWAS Member States is statistically positively significant, while trade between ECOWAS Member States and the rest of the world is positive but not statistically significant. This evidence implies that trade among ECOWAS Member countries is a major predictor of growth for the sub-region, while trade

with the rest of the world is not a clear determinant of growth in the sub-region. The result also revealed that population growth and unemployment are a major impediments to growth in the sub-region, since the variables are negative but statistically significant across the four models.

Table 2: Static Panel Data Analyses

Variables	(1)	(2)	(3)	(4)
	OLS	FE	LSDV	RE
Internal Trade	0.0846*** (0.0120)	0.0370*** (0.00414)	0.0811*** (0.0128)	0.0380*** (0.00462)
External Trade	0.000325 (0.00361)	0.00123 (0.000810)	0.00210 (0.00391)	0.00128 (0.000909)
Exchange Rate	-0.0277*** (0.00913)	0.0327*** (0.00347)	-0.0274*** (0.00965)	0.0317*** (0.00389)
Population Growth	-1,348*** (85.67)	-97.57** (46.83)	-1,359*** (89.25)	-133.1** (51.98)
Unemployment Rate	15.65** (6.809)	-31.79** (15.04)	15.64** (7.043)	-19.02 (14.91)
Gross Capital Formation	41.44*** (5.343)	2.742 (2.332)	44.86*** (5.817)	3.162 (2.607)
Constant	4,515*** (296.1)	2,436*** (179.7)	4,650*** (357.2)	2,499*** (301.4)
Observations	132	132	132	132
R-squared	0.849	0.800	0.856	
country effect	NO	YES	YES	YES
year effect	NO	NO	NO	NO
F-test	111	71.91	34.95	
Prob > F	0	0	0	
No of countries		12		12
Wald-chi2				352
Prob > chi2				0

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 3 also presents the results of the Dynamic Difference GMM models (Arellano and Bond, 1991). Models 1 and 2 represent the One-Step Arellano-Bond GMM estimator, while models 2 and 3 present the Two-Step Arellano-Bond GMM estimator. Our decision to migrate to Two-Step Arellano-Bond GMM estimator is because it yields a more asymptotically efficient estimate compared to One-Step. The results that collapse the instrument matrix followed Roodman (2009b) which is considered more efficient since it strives to limit spuriousness of the results that might be associated with the proliferation of instruments.

However, there are diagnostic issues with the result. The Sargan test in the result of the collapsed instrument matrix suggests the presence of the likelihood of over-identification and misspecification problems (DGMM1-CL- (a) 0.01 and DGMM2-CL-(a) 0.0193) (see Roodman, 2006). This indicates a possible correlation of the residuals and the instrumental variables. Though the Hansen tests and the AR(1) and AR(2) show that there is a proper correction of serial correlation, there are inherent limitations of the difference GMM for which cause we settled for the system GMM in estimating the relationship between trade and economic growth. One major problem with the difference-GMM is that lagged levels are poor instruments for the first difference if variables are close to a random walk (Bond 2002; Rodman 2009a; and Sarafidis et al, 2009).

Despite the superiority of the Difference GMM estimator, over the static models, the results are relatively consistent. For instance, internal trade was positive and statistical significant across the four Difference GMM models, while external trade was not statistically significant, though positive. Unemployment rate and population growth were negative across the four models also, indicating population growth and unemployment are major impediments to growth in ECOWAS.

Table 3: Dynamic Panel Data Analyses-Difference GMM

Variables	(1)	(2)	(3)	(4)
	DGMM1	DGMM1-CL-a	DGMM2	DGMM2-CL-a
Internal Trade	0.0348*** (0.00818)	0.0233*** (0.00812)	0.0388*** (0.00979)	0.0214* (0.0123)
External Trade	0.000567 (0.000656)	0.000400 (0.000660)	0.000360 (0.000746)	0.000638 (0.00138)
Exchange Rate	0.0346*** (0.00526)	0.0334*** (0.00815)	0.0292*** (0.00846)	0.0368** (0.0165)
Population Growth	-60.09* (32.44)	-8.038 (42.63)	-409.3 (516.7)	9.300 (59.70)
Unemployment Rate	-38.70 (33.01)	-38.54 (28.13)	-49.74 (43.88)	-48.17 (53.30)
Gross Capital Formation	3.042 (6.665)	-1.007 (2.422)	-1.427 (5.448)	-0.372 (3.402)
Observations	132	132	132	132
No of countries	12	12	12	12
Country effect	YES	YES	YES	YES
year effect	NO	NO	NO	NO
Hansen_test	3.153	8.768	3.153	8.768
Hansen Prob	1	0.119	1	0.119
Sargan_test	146.5	104.3	146.5	104.3
Sargan Prob	5.43e-09	0	5.43e-09	0
AR(1)_test	-1.317	-1.464	-1.046	-1.222
AR(1)_P-value	0.188	0.143	0.296	0.222
AR(2)_test	0.801	0.783	1.191	0.802
AR(2)_P-value	0.423	0.434	0.234	0.422
No. of Instruments	67	11	67	11

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

DGMM1 & DGMM2 denote One-Step & Two-Step Diff-GMM respectively. Regressions with suffix ‘‘CL’’ follow Roodman (2009b) and collapse the instrument matrix. a denotes lag(1 5)

The weaknesses associated with difference-GMM influenced our decision to migrate to the system-GMM since system-GMM produces a more consistent estimator in the face of persistence in the series. This it does, by addressing large sample bias in the face of additional moment conditions (Blundell and Bond, 1998, 2000, and Rodmann 2009b). In the light of the preceding, the system-GMM forms the basis for estimating the relationship between trade and economic growth over and above the static models and the Diff-GMM. We also estimated the One-Step and Two-Step estimators based on reasons previously discussed (Ujunwa et al, 2018; Afangideh, et al, 2018). The results of models 4 and 5 of table 4 form the basis of our analysis.

The results of the System-GMM in model 4 and 5 reveal that the estimated coefficients of lagged economic growth in the models are highly persistent, positive and significant, suggesting that the previous value of growth strongly affects

the current value. The results also revealed that internal trade is a major driver of growth, while external trade negatively affect economic growth, though not statistical significant. This finding tend to validate the results of the static and difference GMM models, which suggest that external trade is not a clear determinant of growth in ECOWAS. The results of the controlled variables are also very interesting. The estimated coefficients of exchange rate also revealed that depreciation hurts economic growth while appreciation promotes economic growth, bringing to the fore, the imperativeness of promoting strong value of the currency of ECOWAS Member States. The coefficient of population growth and unemployment rate are negative and statistically significant indicating that population growth and unemployment rate are major impediments to growth in ECOWAS.

On the validity of the selected models, the differences in the five models have been succinctly explained in the footnote of table 4. Model 1 is one-step which not corrected for proliferation of instruments. Model 2 is also one-step that

corrects for proliferation of instruments. Model 3 is two-step not corrected for proliferation of instruments, while model 4 is two-step corrected for proliferation of instrument of lag (1-5). Model 5 is two-step, which treat the independent variables and the lagged value of inequality as endogenous, and follow Roodman (2009b) prescription for correcting proliferation of instrument with lag (2-4). Effectively, models 4 and 5 reduced the number of instruments to 10 and 11 respectively, which is less than the 12 selected countries. The AR (1) and AR(2) results validates the specification of the model. The results of Hansen J-test (mostly used to validate over identifying restrictions) and Sagan test shows that model specification is valid. Roodman (2009a) which requires “the estimated coefficient on the lagged dependent variable in the model should point out convergence by having a value less than (absolute) unity” is also consistent with the result. The estimated coefficient of the lagged growth in models 4 and 5 are 0.993 and 0.783, revealing that the steady state assumption for instrument validity holds for the models.

Table 4: Dynamic Panel Data Analyses-System GMM

	(1)	(2)	(3)	(4)	(5)
VARIABLES	SGMM1	SGMM1-CL-a	SGMM2	SGMM2-CL-a	SGMM2-END-CL-a
L.economic_growth	0.971*** (0.0306)	0.920*** (0.0563)	0.885*** (0.0571)	0.993*** (0.0711)	0.783*** (0.0833)
Internal Trade	0.00493 (0.00328)	0.00972** (0.00485)	0.0120*** (0.00428)	0.00479*** (0.00589)	0.0200*** (0.00656)
External Trade	0.000272 (0.000322)	-3.64e-05 (0.000458)	-0.000322 (0.000354)	-0.000194 (0.000631)	-0.000164 (0.000361)
Exchange Rate	-0.000455*** (0.00133)	-0.00185*** (0.00201)	-0.00460*** (0.00326)	0.04561*** (0.00229)	-0.00360*** (0.00395)
Population Growth	-75.26 (50.63)	-147.9 (101.3)	-281.0** (132.3)	-31.88 (122.0)	-348.4** (169.4)
Unemployment Rate	-0.0133 (0.655)	0.770 (1.244)	-2.797** (8.729)	-0.790** (1.245)	1.036** (1.715)
Gross Capita Formation	3.428 (2.159)	5.259 (3.392)	2.469* (1.486)	1.563 (4.189)	9.813 (5.982)
Constant	207.1 (146.0)	453.8 (307.5)	995.5** (503.7)	86.27 (371.2)	1,154** (509.6)
Observations	132	132	132	132	132
No of Countries	12	12	12	12	12
Country effect	YES	YES	YES	YES	YES
year effect	NO	NO	NO	NO	NO
Hansen Prob	1	0.902	0.902	0.275	0.252
Sargan Prob	6.28e-10	9.22e-11	9.22e-11	1.11e-08	0.0434
AR(1)_P-value	0.489	0.529	0.459	0.576	0.465
AR(2)_P-value	0.127	0.138	0.108	0.119	0.235
No. of Instruments	79	13	13	10	11

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

SGMM1 & SGMM2 denote One-Step & Two-Step GMM respectively.

Also regressions with suffix “END” treat intra_trade & lagged economic_growth as endogenous. Regressions with suffix “CL” follow Roodman(2009b) and collapse the instrument matrix.

a & b denote lag(1 5) & lag(2 4) respectively.

5. Conclusion and Policy Implication

In conclusion, the increasing movement of RTAs has been

beneficial to the trading world system. To the extent that we can measure it, the increasing wave of regionalism has been largely beneficial to the world trading system. Most empirical analyses indicate that trade creation, not trade diversion, is the norm, both because governments choose well when forming RTAs and because they adjust other trade policies to moderate the distortions from discrimination. Although it is possible that regionalism could endanger multilateralism, at the moment we just do not know. Since regionalism has become, and will probably remain, the preferred form of reciprocal liberalisation for most countries no matter what we economists say we should therefore focus on ways to integrate regionalism with multilateralism more effectively. The findings of our study

bring to the fore, the imperativeness of rethinking growth strategy and economic integration among ECOWAS Member States. For instance, the results showed that trade between ECOWAS Member States is an important predictor of growth, while trade with the rest of the world either hurts or does not promote growth. This finding is consistent with competitiveness problem and factor-price-equalization theories (Pierce and Schott, 2016, 2017). This could also be explained by the nature of ECOWAS trade with the result of the world. Specifically, ECOWAS Member States export primary products (commodities) and in return import finished goods, which is inimical to growth. The monetary integration could therefore, design and ratify additional protocols to promote mutual trade. Member countries should prioritize intra-ECOWAS trade in their development agenda. The result also revealed that currency depreciation or devaluation hinder growth in ECOWAS. This finding contradicts traditional economic theory, but could be explained by the fact that ECOWAS Member States are net importers and inelasticity of import from the rest of the world, irrespective of the exchange rate. Finally, the study has clearly shown that population explosion and rising unemployment could be another deterrent to growth in ECOWAS. These policies could automatically promote exchange rate appreciation, population control and unemployment reduction in ECOWAS sub-region.

References

- [1] Arellano, M. & S. Bond (1991). Some Tests of Specification in Panel Data: Monte Carlo Evidence and an Application to Employment Equations, *Review of Economics and Statistics*, 58 (2), 277–97.
- [2] Autor, D. H., Dorn, D., and Hanson, G. (2013). The China Syndrome: Local Labor Market Effects of Import Competition in the United States, *American Economic Review*, 103(6), 2121–68.
- [3] Autor, D. H., Dorn, D., Hanson, G. H., and Song, J. (2014). Trade adjustment: Worker-level evidence, *Quarterly Journal of Economics*, 129(4), 1799–1860.
- [4] Buongiorno, J., Johnston, C. and Zhu, S. (2017). An assessment of gains and losses from international trade in the forest sector, *Forest Policy and Economics*, 80, 209–217.
- [5] Blundell, R. & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models, *Journal of Econometrics* 87, 115 - 143
- [6] Chaudhuria, S. and Marjit, S. (2017). International trade and quality of labour, *International Review of Economics and Finance*, 49, 582–595
- [7] Pierce, J.R., and Schott, P. K. (2017). Trade Liberalization and Mortality: Evidence from U.S. Counties, *mimeo*.
- [8] Pierce, J.R., and Schott, P.K. (2016), The Surprisingly Swift Decline of US Manufacturing Employment, *American Economic Review*, 106(7), 1632–62.
- [9] Roodman, D.M. (2009a). How to do xtabond2: an introduction to difference and system GMM in Stata, *Stata Journal*, 9 (1), 86–136.
- [10] Roodman, D.M. (2009b). A note on the theme of too many instruments, *Oxford Bulletin of Economic Statistics*, 71 (1), 135–158.
- [11] Roodman, D. (2006). How to Do xtabond2: An Introduction to “Difference” and “System” GMM in Stata, *Centre for Global Development*, Working Paper Number 103, 1-51
- [12] Sobdersten, B. and Reed, G. (1994). *International Economics*, 3ed, USA: Macmillian Press Ltd
- [13] Ahmad, M. (2014). Improving Regional Trade to Support Pakistan’s Economic Growth.
- [14] Almeida, R., & Fernandes, A. M. (2008). Openness and technological innovations in developing countries: evidence from firm-level surveys. *The Journal of Development Studies*, 44(5), 701-727.
- [15] Chang, R., Kaltani, L., & Loayza, N. V. (2009). Openness can be good for growth: The role of policy complementarities. *Journal of development economics*, 90(1), 33-49.
- [16] De Melo, J. and Tsikata, Y. (2014). Regional integration in Africa: Challenges and prospects”. WIDER Working Paper 2014/037.
- [17] Henrekson, M., J. Torstensson, and R. Torstensson (1997). Growth Effects of European Integration”. *European Economic Review* 41; 1537-57.
- [18] Italianer, A. (1994). Whither the Gains from European Economic Integration?” *Revue Economique*, Vol. 45(3): 687-702
- [19] Jouini, J. (2015). Linkage between international trade and economic growth in GCC countries: Empirical evidence from PMG estimation approach. *The Journal of International Trade & Economic Development*, 24(3), 341-372.
- [20] Kim, D. H., & Lin, S. C. (2009). Trade and growth at different stages of economic development. *Journal of Development Studies*, 45(8), 1211-1224.
- [21] Levine, R., & Renelt, D. (1992). A sensitivity analysis of cross-country growth regressions. *The American economic review*, 942-963.
- [22] Musila, J. W., & Yiheyis, Z. (2015). The impact of trade openness on growth: The case of Kenya. *Journal of Policy Modeling*, 37(2), 342-354.
- [23] Mwaba, A. (2000). *Trade liberalization and growth: Policy options for African countries in a global economy*. African Development Bank.
- [24] Onyekwena, C. & Oloko, T. F. (2016). Regional Trade for Inclusive Development in West Africa. *CSEA Working Paper WPS/16/03*
- [25] Vamvakidis, A. (1999). Regional trade agreements or broad liberalization: Which path leads to faster growth?” *IMF Staff Papers*, 46, March; 42-68.
- [26] Vanhoudt, P. (1999), Did the European unification induce economic growth? In search of scale effects and persistent changes,” *Weltwirtschaftliches Archiv Vol. 135(2): 193-220*.
- [27] Wooster, R. B., Banda, T. M., & Dube, S. (2008). The contribution of intra-regional and extra-regional trade to growth: Evidence from the European Union. *Journal of Economic Integration*, 161-182.
- [28] World Bank. (2014). Deepening African Integration: Intra-Africa Trade for Development and Poverty Reduction. Available: <http://www.worldbank.org/en/news/speech/2015/12/14/deepening-african-integration-intra-africa-trade-for-development-and-poverty-reduction>. Last accessed 2nd Aug 2017.
- [29] Yayo, M., & Asefa, S. (2016). International Trade

Effects of Regional Economic Integration in Africa:
The Case of the Southern African Development
Community (SADC), *International Journal of African
Development*, 3(2)6

[30] Younes, H. (2010). The Contribution of Trade to
Growth of the Arab Countries. In *Conference on*

Empirical Investigation in Trade & Investment (pp. 11-
13).lk,m

[31] Hossam Younes (2010) The Contribution of Trade to
Growth of the Arab Countries, Conference on
Empirical Investigation in Trade & Investment Tokyo,
Japan March 11 -13, 2010

Appendix 1

---- Coefficients ----

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fixed	random	Difference	S.E.
tt	.0925445	.0910607	.0014837	.0021762
exrt	-.0304991	-.0278342	-.0026649	.0029845
pg	-879.554	-848.9348	-30.61916	23.39376
unempr	13.79229	13.65758	.1347158	1.450626
gcf	45.70014	43.63038	2.069758	2.843529

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\begin{aligned} \text{chi2}(4) &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= 2.74 \\ \text{Prob}>\text{chi2} &= 0.6028 \end{aligned}$$