EFFECT OF REGIONAL FINANCIAL INTEGRATION AND GOVERNANCE QUALITY ON ECONOMIC GROWTH IN ECOWAS (2001-2016)

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ABSTRACT
This study estimates and analyzes the impact of regional financial integration and governance quality on economic growth in West Africa for the period 2001 to 2016. In order to capture regional financial integration, composite index of financial integration and macroeconomic policies, called African Regional Integration Index (ARII) was employed. Governance quality was captured by building an index from components measuring various political and economic dimensions facing firms in a country. The theoretical foundation for this study is based on the Neoclassical-Solow growth model, while the model was estimated using the dynamic panel approach with system generalized methods of moments (SGMM). Estimated result shows that financial integration and governance quality do not support economic growth in ECOWAS, as negative relationship was found. However, the interactive effects of regional financial integration and governance quality shows a positive but insignificant effect on economic growth. The study concluded that ECOWAS commission with full support of all member countries should provide all necessary financial infrastructures that will provide essential support to good governance in the financial sector of the region.

Keywords: Financial integration, governance, economic growth, SGMM, ARII, ECOWAS

I. Introduction
Financial integration – a critical component of regional integration, and its impact on economic growth has been one of the most debated issues among regional economists. Attempts have been made to ascertain if more financially integrated economies grow faster than less financially integrated ones, and whether there are sensible policies that can promote growing regional financial integration. A major rationale for the push for regional financial integration centers on the role of the financial sector in promoting the mobilization of savings, facilitating access to credit and enhancing resource allocation (Muthoga, 2012).

WAMA (2011) describes financial integration as involving the removal of capital controls, financial innovation and technological progress which can be achieved when there is a perfect

mobility of financial assets across the national boundaries of member states of a regional economic community. According to Silder (2010), financial integration implies an increase in capital flows, and a tendency for the prices and returns on traded financial assets in member states of the integrated region to equalize on a common denominator basis. It is therefore clear that regional financial integration (RFI) cannot take place in isolation, but rather it is pursued in various forms and stages across a whole spectrum of the financial sector, comprising financial policies, financial infrastructure, and financial institutions.

A general consensus reached among researchers, Terfa (2015), Mirdala et al. (2015), and Tomlinson (2007) is that RFI reduces transaction cost and increases the effectiveness of financial institutions. Also, that its trickle-down effects in terms of growth enhancement on the respective member countries are fourfold. First, it provides further powerful incentive for domestic financial reforms. Second, it increases the scale of operations and competition and hence, the efficiency of the financial system. Third, it induces FDI inflows. Fourth, it enables local financial institutions to grow into regional, continental, and eventually even global players in financial markets. It is of course not expected that all the member countries to a RFI agreement simultaneously benefit from the alliances as some members are more fragile, smaller than other members and as a result could lose out at the initial stages of the RFI. This eventuality can however be avoided through appropriate compensatory policies as part of the RFI strategy.

The benefits from regional integration result from the combination of reforms undertaken on different levels. The national level reforms that are undertaken by countries in preparation for integration lead to a first level of benefits, as domestic markets become better regulated, better governed and managed, hence they become more efficient as a result of increased competition. A second level of benefits is realized as financial institutions, markets and infrastructures are merged together across the region. Tomlinson (2007) however stresses the fact that the benefits from regional financial integration cannot be secured in isolation from the national level reforms required to permit progress on the integration agenda. Rather, the benefits increase as a group of countries move towards full integration (i.e. a common market in financial services). That is to say the benefits are not likely to be linear; early reforms will lead to institutional scale economies, but only with a critical mass of policy reforms in place will the greatest benefits of scale be able to be realized

One of such groupings that has been adjudged by the Africa Regional Integration Index report in 2016 to be the most financially integrated region in Africa is Economic Community of West African States (ECOWAS). Financial integration in the region is a requirement under the ECOWAS Monetary Cooperation Programme. Article 53 which specifically provided for the establishment of appropriate mechanisms to encourage investments in enterprises located in the territories of other member States through cross-border dealings in stocks, shares and other securities. This objective is crucial as it ensures speedy and unhindered flow of capital within the community through the removal of controls on the transfer of capital among member states. This objective is based on the premise that when capital flows more freely across ECOWAS region, investment increases and finance is allocated where it can generate the most productivity. In addition, the continent's investors get higher returns. In turn, as transaction costs of doing business

fall and financial institutions work more effectively, companies, micro, small and medium-sized enterprises and start-ups will benefit.

II. Problem Statement

The ultimate goal of RFI is to spur FDI, boost intra-regional and global trade and finally enhance the economic growth and development of the respective member countries. A necessary precondition for promoting financial integration both across any region and global market is consistent macroeconomic stability. However, macroeconomic stability can be achieved when the stability, predictability, and transparency of the financial system is guaranteed (Silder, 2010). The small size of the financial system of ECOWAS countries has greatly limited the scope of its financial services and has become more expensive to operate. In some cases, there are too few institutions to make the market competitive and the institutions themselves are often too small to achieve economies of scale, more so that the financial system is dominated by the banking financial institutions. The banking sector accounts for over 75 percent of total financial sector assets, while the non-bank financial institutions (NBFIs) such as insurance companies, pension funds, finance houses, and micro finance institutions are being relegated to the background (WAMA, 2016)

A critical question that arises is; to what extent can financial integration foster economic growth positively when governance quality is weak? The governance quality-financial integration linkage is critical because financial integration cannot be achieved in isolation. Rather, institutions within member countries and commissions set up by the regional body are needed to deliver on the financial integration agenda. Problem results when there are leakages around these institutions, which could result in little growth being achieved (Kose et al., 2011).

Governance quality in terms of regulatory quality, government effectiveness, control of corruption, rule of Law, political stability and absence of violence, voice and accountability, property right protection and so on, affects resource allocation such that capital that could have been allocated to viable investments and projects are usurped through those leakages in the system. A departure from existing studies which focused on financial integration and economic growth in isolation, is therefore, to incorporate governance quality with the aim of determining the growth effects of the interactions between governance quality and financial integration.

This study draws from financial systems concepts and theories to establish the theoretical linkage between financial integration and economic growth. More importantly, this study finds its significance from the roles played by governance quality serving as a conduit between financial integration and economic growth in the region. It is on this background that this study intends to find answers to the following research questions;

- What is the effect of regional financial integration on economic growth in ECOWAS?
- What is the interactive effect of governance quality and regional financial integration on economic growth in ECOWAS?

III. Stylized Facts

The surge in growth indicators like the GDP and GDP per capita in recent years have tagged ECOWAS as the fastest growing sub-region in the world. As shown in table 1, the GDP increased by 79% in the period within 2001 from an average of $102.22 billion to $182.54 billion in 2006. This increase continued consistently throughout the period such that nominal GDP reached an average of $642.88 billion as at 2016. The per capita GDP also witnessed similar trend as it rose by over 300% from an average of $422 in 2003 to an average of $1882 in 2016.

Table 1: Growth Indicators of ECOWAS' Economy

	2001-2003	**2004-2006**	**2007-2009**	**2010-2012**	**2013-2016**
Population (thousands)	244,866	265,086	287,561	312,156	343,364
Population Growth (%)	2.60	2.70	2.77	2.77	2.74
Nominal GDP (Billion $)	102.22	182.54	284.19	543.06	642.88
Real Growth rate	5.50	5.12	4.47	5.41	5.34
GDP per capita (USD)	422.91	894.66	1369.08	1741.26	1882.83
GDP growth rate (WAEMU)	3.68	3.66	3.77	4.26	5.45
Nominal GDP (WAEMU) $Billion	33.47	48.29	68.14	80.44	93.64
GDP per capita (WAEMU) USD	367.83	505.71	681.26	747.22	796.18
GDP Growth rate (WAMZ)	7.92	7.08	5.41	6.96	5.20
Nominal GDP (WMAZ) $Billion	68.72	134.25	216.05	462.66	549.24
GDP per capita (WAMZ) USD	338.55	552.79	795.92	993.54	1093.27

Source: Based on data collected from AfDB database (2017)

Going by the performance of the individual member countries in ECOWAS, Cote D'Ivoire's economy looks really strong among the West African Economic and Monetary union (WAEMU) countries despite her slow growth rate of 0.12% in 2001. This is followed by Senegal and Mali with nominal GDP of $4.88billion and $3.47billion respectively in 2001. Nigeria is the biggest economy in both West African Monetary Zone (WAMZ) and ECOWAS, due to the strong growth of the oil sub-sector. This is followed by Ghana whose GDP had risen from $32.2billion in 2001 to $42.8billion in 2016. Other member countries such as Guinea-Bissau, Liberia, Gambia, etc. have smaller economies, with low GDP, and GDP per capita, compared to other member countries.

Table 2: Real and Nominal Growth of ECOWAS Economies

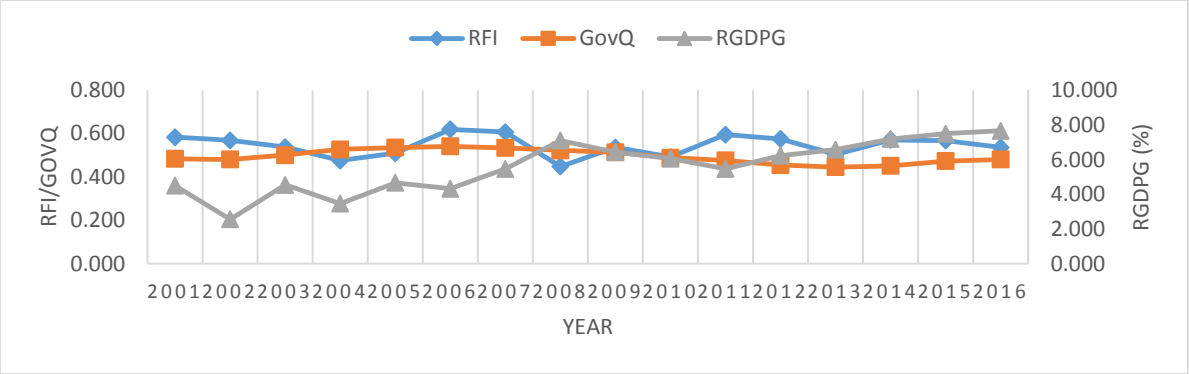
	GDP (Nominal $Billion)			**GDP per Capita ($)**			**Real GDP Growth (%)**		
Country	**2001**	**2010**	**2016**	**2001**	**2010**	**2016**	**2001**	**2010**	**2016**
BENIN	2.68	6.97	8.58	348.6	734.17	768.14	5.33	2.12	3.98

BURKINA FASO	2.81	8.98	11.3	233.5	574.46	607.02	6.61	5.37	5.92
COTE D'IVORE	11.20	24.9	36.16	625.7	1236.0	1564.3	0.12	2.02	8.34
GUINEA BISSAU	0.39	0.847	1.2	159.4	519.55	619.92	2.19	4.72	5.76
MALI	3.47	10.7	14.05	265.4	704.06	773.88	15.38	5.41	5.80
SENEGAL	4.88	12.9	14.77	482.4	997.60	942.38	4.58	4.18	6.74
TOGO	1.33	3.17	4.4	266.3	496.48	591.44	-1.63	4.00	5.04
NIGER	1.95	5.72	7.51	155.9	351.01	392.24	7.10	8.37	5.04
NIGERIA	44.10	369	405	350.2	2314.9	2164.0	4.70	8.00	1.50
GHANA	5.31	32.2	42.8	385.3	1493.7	1526.4	4.20	8.00	3.50
GAMBIA	0.69	0.952	0.96	329.8	562.57	479.78	4.50	5.50	2.20
LIBERIA	0.52	1.29	2.1	242.1	326.40	469.85	3.60	5.60	-0.50
GUINEA	2.83	4.74	8.52	315.9	430.06	653.35	3.70	1.90	5.20
SIERRA LEONE	1.08	2.62	6.97	190.9	446.34	585.76	18.20	5.00	6.10

Source: Based on data collected from the World Bank database

ECOWAS has had a fairly average level of financial integration as shown in figure 1. The RFI indicator has trended between the ranges of 0.45 which is the lowest RFI level appearing in 2008 and RFI level of 0.62 occurring in 2006. In the same vein, governance quality during this period has maintained an average point of 0.495, which means that governance quality is not critically low but it is below the acceptable level for categorizing a country or region as possessing a high quality governance system. The region's economy has grown at an average of 5.6 percent within the period covered in the study.

Figure 1: Relationship between RFI, Governance quality, and Economic growth



Source: Researcher, using WDI database (2016)

Trade and financial integration among the WAEMU countries have progressed faster than that of WAMZ. The reason being that WAEMU have made efforts to monetarily integrate by adopting a common currency, CFA Franc. The purpose for which common currency was created within the former French colonies in Africa was to guarantee currency stability. Prior to 1999, CFA franc was pegged against the French Franc, and thereafter to the euro. According to Martina (2008), WAEMU adopted three main instruments in order to harmonize the financial system of the sub-region. First, France guarantees the convertibility of the CFA franc, which is issued by the central bank of WAEMU (BCEAO). This requires that the central bank deposit at least 50 per cent of their foreign exchange reserves in an account in the treasury in Banque de France. Second, Banque de France act as lender of last resort to WAEMU countries in cases of financial constraints. This is done by giving member countries unlimited overdraft facilities, and in exchange, WAEMU member should have foreign exchange reserves equivalent to at least 20 per cent of their base money. Also, credit from the WAEMU central bank to a member country must not exceed 20 per cent of the country's public revenues of the preceding year. Third, WAEMU member countries are compensated for any depreciation of the euro against the Special Drawing Rights (SDR) and pays interest to the central banks of the countries of WAEMU on their deposits.

Since the abolition of common currency usually issued by the Board of British West Africa prior to independence, Anglophone West African countries decided to have their own individual currencies, and conducted national trade policies to accommodate individual development strategies all of which have made intra-regional trade and financial integration more challenging to achieve. Furthermore, unlike in WAEMU whereby a commission such as the West African Monetary union (WAMU) is set up to supervise, regulate and monitor all the financial institutions in the union. WAMZ countries have their individual Central Banks, which is the apex regulatory institution, with the exception of Nigeria where other institutions such as the Nigeria Deposit Insurance Corporation (NDIC), Asset Management Corporation of Nigeria (AMCON) co-supervise the activities of the Banks and Non-Banks financial institutions. Therefore, the call for a unified banking regulatory frameworks in WAMZ has been a challenge because the variations in supervisory coverage in the zone makes it difficult for convergences in the financial sector to be achieved.

IV. Literature Review

A number of theoretical literatures have discussed the channels through which financial integration may affect growth. For example, the Standard classical model believes strongly that opening international capital markets generates flows from capital-abundant countries towards capital-scarce countries, thereby facilitating some sorts of convergence in the developing economies. The neoclassical framework on the other hand believes that all effects are generated through capital flows. That is, financial integration enhances the functioning of domestic financial systems through the intensification of competition and importation of financial services, bringing about positive growth effects.

Robust evidences of both positive and negative effects of financial integration on economic growth have been provided in the literature. For example, Mirdala et al. (2015), Chen and Quang (2012), Muthoga et al. (2013) Mougani (2012) found that RFI has positive effects on growth. Their studies stress the fact that if RFI could stimulate economic growth, then it is more likely to strengthen domestic financial systems of the respective member countries. Mirdala et al. (2015) and Chen and Quang (2012) suggested that the beneficial effect of financial integration often depends on the prior development of the economic and social characteristics.

On the other hand, Edison et al (2002), Farid (2013), Terfa (2015) found negative effects of RFI on economic growth. Edison et al (2002) for example, argued that openness is unassociated with economic success most especially when both variables are robustly linked with varieties of financial integration measures and assortment of econometric approaches. Farid (2013) found that even if a country is more open to international flow of capital, it does not guarantee faster growth, rather, growth could likely occur through indirect channels via financial development.

Stavarek et al. (2011) consider three widely accepted interrelated benefits of financial integration; more opportunities for risk sharing and risk diversification, better allocation of capital among investment opportunities, and potential for higher growth. The availability of risk-sharing opportunities provided via financial integration enhances financial markets development and permits risk-averse investors to hedge against negative shocks. Stavarek et al. (2011) further opined that financial integration promotes portfolio diversification and the sharing of idiosyncratic risk across regions due to the availability of additional financial instruments. This allow households to hold more diversified equity portfolios, and in particular to diversify the portion of risk that arises from country-specific shocks. The enhancement of all these three channels lead to increase in economic growth.

Using time-varying parameters from a state-space model to assess the degree and timing of financial integration in Africa, Ekpo and Chuku (2017) found results that indicate contemporary patterns toward increasing financial globalization relative to regionalization. The study also found that higher levels of financial integration is associated with higher levels of growth and investment, but not necessarily total factor productivity. Juraev (2013) found that the effect of financial integration on growth varies under different economic conditions. After applying mixture of models that included Generalized Methods of Moments, Ordinary Least Squares (OLS), and Panel data approach with 14 financial integration measures, the results show that countries with high

current account surplus are better-off under financial integration, particularly with less inflation and less strict rule of law.

Schularick et al. (2006) examined whether financial integration actually spur economic growth. After specifying three models in order to make their findings independent from parsimonious specifications, the models were analyzed using the GMM dynamic panel estimation. The regressions indicated that financial integration actually spurred economic growth. The authors however emphasized the role of institutional quality, especially the assignment and enforcement of property rights as one of the critical factors responsible for such positive impact.

Furthermore, there have been controversies among liberal economists regarding the roles of governance in economic development. While they all agree that governance is critical for economic development, they differ on the patterns of implementing these governance structures. The neo-classical growth theory disregards the impact of governance on economic growth. Solow model for example made assumptions concerning property rights as being secure. But from the standpoint of governance, the model is deficient in the sense that it does not take into account the shortcomings in the quality of governance by assuming that they do not exist (Bayar, 2016).

The criticality of governance to stimulate economic growth is made by Bayar (2016) when he asserted that countries with higher levels of public governance will likely stimulate domestic private investments and foreign direct investments by reducing uncertainty, thereby creating an investment environment for both domestic and foreign firms and positively contributing to economic growth. This is further stressed in the Copenhagen criteria laid down at the June 1993 European Council in Copenhagen. This criteria require that a candidate country who aspires to join the European Union, possess a stable institutions guaranteeing democracy, rule of law, human rights and respect for and protection of minorities, a functioning market economy, the capacity to cope with competition and market forces in the European Union. This is a reflection of the good governance systems being practiced among the EU members.

The extent to which governance can accelerate economic development was further described by Khan (2007) who made a distinction between what he called ‘market-enhancing’ governance and ‘growth-enhancing’ governance. Market-enhancing governance according to Khan, focuses on the role of governance in reducing transaction costs to make markets more efficient and to achieve the goals of maintaining stable property rights, maintaining a good rule of law and effective contract enforcement, minimizing expropriation risk, minimizing rent seeking and corruption, and to achieve a transparency and accountability in a democratic environment. Growth-enhancing governance on the other hand focuses on the effectiveness of institutions for accelerating the transfer of assets and resources to more productive sectors, and accelerating the absorption and learning of potentially high-productivity technologies in a politically stable economy.

V. Materials And Methods

A. Data Descriptions and Sources

This study is a panel study where datasets from 14 countries over a 16-year period is used from 2001 to 2016. Panel data of the composite index of financial integration and convergence of macroeconomic policies, called African Regional Integration Index (ARII), is employed and it

proxies for the RFI index. The indicators of the RFI index are; regional convertibility of national currencies and inflation differential. Dummy variable was used to capture regional convertibility of national currencies. Value of one was assigned to the WAEMU sub-regional group who use a single currency, while zero was assigned to WAMZ sub-regional group who maintained their individual national currencies and in which no officially regulated platform for foreign exchange of currencies exists.

Inflation differential is the difference between inflation rate of the country and the annual regional average. This indicator measures the extent of regional macroeconomic stability, which is a precondition for a successful regional integration agenda. Higher inflation differential means that the economy of the country contributes less to macroeconomic stability of the region. Afterwards, the min-max method was used to build the index for inflation differential. The index ranges from zero to one, with values closer to one indicating higher level of macroeconomic stability. The average of both regional convertibility of national currencies and the index of inflation differential gave the indicator for regional financial integration.

Table 3: Measures of governance quality index

Dimensions	**Components**
Voice and Accountability	Military in politics
	Democratic accountability
Political Stability and Absence of Violence	Government stability
	Internal conflict
	External conflict
	Ethnic tensions
Government Effectiveness	Bureaucratic quality
Regulatory quality	Investment profile
Rule of Law	Law and order
Control of Corruption	Corruption

Source: ICRG database

Furthermore, data for governance quality index is sourced from the International Country Risk Guide (ICRG). It is a comprehensive system that enables various types of risk to be measured and compared between countries. The ICRG includes risk index which consist of 6 dimensions measuring various components of the political and business environment facing firms operating in a country.

Also, data of other variables such as growth rate of GDP per capita and other controlled variables are sourced from World Bank Development Indicators (various issues), International Financial Statistics, various issues of economic surveys, annual report of West African Monetary Institute, ECOWAS publications such as ECOWAS annual report, ECOWAS financial stability report, ECOWAS convergence report.

B. Model Specification

The theoretical foundation for this study is based on the neoclassical –Solow growth model. This model highlights the importance of savings, technological progress, and population growth. One robust prediction of this model is that countries exhibit slow convergence to their steady-state levels of output per worker due to the fact that new investment is to be financed by domestic savings. It is crucial at this point that the assumption of domestic savings be relaxed to allow investment be financed by savings from abroad. This will allow an integrated regional economy to allocate capital in the most efficient way and make cross-country differences in rates of return to capital gradually disappear.
Accordingly, the model below is specified

$$y_{it} = \gamma y_{it-1} + \alpha RFI_{it} + \beta' X_{it} + \eta_i + \varepsilon_{it} \quad (1)$$

Where y_{it} is the logarithm of real per capita GDP growth, RFI_{it} is the indicator for financial integration, X_{it} is a vector of control variables, η_i is the unobservable country-specific fixed effects, and ε_{it} is the disturbance term. The subscripts i and t represent country and time period respectively.

To eliminate the country specific effects (η_i), we take the difference of equation (1) to obtain:

$$y_{i,t} - y_{i,t-1} = \gamma\left(y_{i,t-1} - y_{i,t-2}\right) + \alpha\left(RFI_{i,t} - RFI_{i,t-1}\right) + \beta'\left(X_{i,t} - X_{i,t-1}\right) + \left(\varepsilon_{i,t} - \varepsilon_{i,t-1}\right) \quad (2)$$

which is equivalent to $\Delta y_{i,t} = \gamma \Delta y_{t-1} + \alpha \Delta RFI_{i,t} + \beta' \Delta X_{i,t-1} + \Delta \varepsilon_{i,t}$

Inserting our variables, we have;

$$\Delta rgdpg_{it} = \Delta\beta_1 rgdpg_{i,t-1} + \Delta\beta_2 rfi_{it} + \Delta\beta_3 crprsgdp_{it} + \Delta\beta_4 fdigdp_{it} + \Delta\beta_5 cabal_{it} + \Delta\beta_6 fiscdef_{it} + \Delta\beta_7 infl_{it} + \Delta\beta_8 tdebt_{it} + \Delta\beta_9 exrvar_{it} + \Delta\beta_{10} resimp_{it} + \Delta\beta_{11} gov\_index_{it} + \Delta\beta_{12} rfi\_gov_{it} + \Delta u_{it} \quad (3)$$

Where;$\boldsymbol{rgdpg_{it}}$**:** refers to Real Per Capita GDP growth; $\boldsymbol{rgdpg_{i,t-1}}$**:** refers to one-lagged value of a change in real per capita growth**; rfi:** Regional Financial Integration; **crprsgdp:** Credit to the Private Sector as a percentage of GDP; **fdigdp:** Foreign Direct Investment as a percentage of GDP; **cabal:** Current Account Balance as a percentage of GDP; **fiscdef:** Fiscal Deficit as a percentage of GDP; **infl:** Inflation; **tdebt:** Total Debt as a percentage of GDP; **exrvar:** Exchange Rate Variation; **resimp:** Gross Reserves (in Months of Imports); **gov$_{index}$:** Governance Quality Index; **rfi$_{gov}$ index:** refers to the interaction term between regional financial integration and governance quality index.

The a priori expectations are $\beta_1, \beta_2, \beta_3, \beta_4, \beta_{10}, \beta_{11}, \beta_{12} > 0$; $\beta_5, \beta_6, \beta_7, \beta_8, \beta_9, < 0$.

C. Diagnostic Tests

Table 4 shows the unit root test which determines whether or not there are unit roots (i.e. non-stationarity) in the panel data. The null hypothesis states that there is presence of unit root and vice versa. Three methods are adopted to tests for the unit roots, and they are; Levin Lin & Chu, Pesaran and Shin W-stat, and the Breitung tests. The stationarity of the data using all of these three methods

either at levels or at first difference show that we can proceed to use Least square regression to estimate the model.

Table 4: Unit root test

	Levin, Lin & Chu			**Pesaran and Shin W-stat**			**Breitung**		
	T-statistic		**P-value**	**T-statistic**		**P-value**	**T-statistic**		**P-value**
	Levels	**First difference**		**Levels**	**First difference**		**Level**	**First difference**	
RGDPG		-9.3574	0.0000		**-3.77408**	**0.0001**	**-2.46575**		**0.0068**
RFI	-4.1386		0.0000	-8.62389		0.0000	-4.55169		0.0000
CABAL	-5.84316		0.0000	-4.35802		0.0000	-2.62879		0.0043
CRPRSGDP		-11.9871	0.0000		-9.87558	0.0000		-4.70447	0.0000
EXRVAR	-11.4488		0.0000	-7.31717		0.0000	-3.33017		0.0004
FDIGDP	-5.33552		0.0005	-2.88053		0.002	-3.56813		0.0002
FISCDEF	-5.22328		0.0004	-2.33946		0.0097	-4.23194		0.0007
INFL	-8.98099		0.0000	-7.1807		0.0000	-4.00361		0.0000
RESIMP	-3.93162		0.0000		-8.40905	0.0000		-7.53226	0.0000
TDEBT		-6.76741	0.0000		-4.97396	0.0000		-7.46121	0.0000

Gov$_{index}$	-3.95388		0.0000	-2.67677		0.0037		-4.85485	0.0000
RFI$_{GOV}$	-9.32373		0.0000	-8.28414		0.0000	-3.04201		0.0012

Source: e-view's estimate

Previous researches such as Saten et.al. (2014) have shown that estimated functions and their outcomes usually differ depending on the estimation technique employed. That is, various estimators differ in their sensitivity to assumption violations, missing observations or number of observations, thereby leading to different results. Therefore, the applicability of the various alternative estimation techniques on the gathered data are assessed, thereby necessitating the need to perform tests to ascertain the usability and effectiveness of the models in making predictions.

Wald test as shown in Table 5 shows strong significance with a p-value of 0.000, thereby rejecting the null hypothesis of no fixed effect and conclude that there is presence of fixed effects. The result of Breusch and Pagan test means that random effects are present. The presence of both fixed and random effects leads to conducting Hausman test. Result of Hausman test of a significant p-value conclude that fixed effects are the correct model to apply over the random effects. Furthermore, the test for contemporaneous correlation or cross-sectional dependence was carried out using Breusch-Pagan LM test of independence, and the null hypothesis of no cross-sectional was rejected and conclude that there is cross-sectional dependence. Furthermore, the null hypothesis of homoskedasticity is rejected and we conclude that heteroskedasticity is indeed present as indicated in the p-value of 0.0000.

Table 5: Results of Diagnostics tests

Tests	Chi-Square	P-value
Wald	161.56	0.0000
Breusch and Pagan Lagrangian multiplier	120.45	0.0000
Hausman	36.92	0.0001
Test for Contemporaneous Correlation	116.072	0.0390
Heteroskedasticity	344.35	0.0000

Source: Stata's estimates

VI. Presentation of Results

Table 6 shows the estimated results using the estimators; pooled OLS, fixed effects model, and the one-step system-generalized methods of moments (SGMM). The model contains 11 independent variables and the selected estimators are applied to the full datasets. There are 224 observations for each of these estimations, with pooled OLS and SGMM having identical behavioral patterns in terms of size and signs of the coefficients. However, the coefficients under SGMM are quite more significant compared to the pooled OLS. The fixed effect estimated results diverge from the other two estimated results, with smaller and insignificant coefficients except for the coefficient

of total debt and the constant term. The fixed effect result might be ascribed to the presence of strong heteroskedasticity and contemporaneous correlation in the error term/cross-sectional dependence as reported in table 5.

In order to ascertain the accuracy of the SGMM estimator, we test for the validity of the instruments used in the estimation and we also test for the presence of autocorrelation. As shown in table 6, the Sargan test of over-identifying restrictions is significant at one percent level, which implies that the instruments do not satisfy the orthogonality conditions needed for their use. In other words, the rejection of the null hypothesis means that the over-identifying restrictions are not valid. However, the non-robustness of the Sargan test which is due to many instruments used in the model has not weakened the model as indicated in the SGMM estimated result, and so, it can be said that SGMM estimator is an efficient one.

The AR (2) test of autocorrelation which proves to be more reliable and capable instrument for detecting autocorrelation at levels report a p-value of 0.677. We can therefore conclude that no autocorrelation exist in the SGMM estimation model and therefore find the estimator to be efficient.

Table 6:

Rgdpg	**Pooled OLS**	**Fixed Effects**	**SGMM**
Observations	224	224	224
F/Wald statistic	29.18	7.33	740.72
Prob>F	0.0000	0.0000	0.0000
R^2	0.6022	0.2885	
Rfi	-7.429*	-1.154	-7.429***
	(3.0673)	(2.8307)	(2.0191)
Crprsgdp	0.086**	0.035	0.086***
	(0.0293)	(0.0282)	(0.0193)
Fdigdp	0.159***	0.006	0.159***
	(0.0179)	(0.0232)	(0.0118)
Cabal	0.077	-0.078	0.077**
	(0.0452)	(0.0418)	(0.0298)
Fiscdef	0.147*	-0.018	0.147**
	(0.0708)	(0.0641)	(0.0466)
Infl	-0.103	-0.054	-0.103*
	(0.0675)	(0.0513)	(0.0444)
Tdebt	-0.006*	-0.015***	-0.006***
	(0.0027)	(0.0025)	(0.0017)
Exrvar	0.063*	0.038	0.063**
	(0.0301)	(0.0218)	(0.0198)
resimp	0.483***	0.205	0.483***
	(0.1326)	(0.1173)	(0.0873)

gov_{index}	-0.148 (0.3713)	0.555 (0.4147)	-0.148 (0.2444)
rfi_{gov}	4.377 (5.2170)	-0.765 (4.9378)	4.377 (3.4341)
Constant	3.526* (1.7166)	5.584*** (1.3582)	3.526** (1.130)
Sargan test P-value			0.0000
AR (1) P-value			0.0000
AR (2) P-value			0.677

Source: Stata's estimates

Notes: The numbers in parenthesis represents standard errors. ***, **, *, denotes significance at the 1%, 5%, 10% levels respectively.

SGMM result show that 6 of the 11 variables meet a priori signs and virtually all the variables are statistically significant. Regional financial integration, inflation, total debt, and governance quality index are negatively associated with economic growth. On the other hand, private sector credit, foreign direct investment, current account deficit, fiscal deficit, exchange rate variation, exchange rate reserves and RFI-governance interaction term are positively associated with economic growth of ECOWAS region. The constant term is statistically significant at 10 percent and is positively related to economic growth. Governance quality and the interaction term between governance quality and regional financial integration are the only statistically insignificant variables in the model.

VII. Implications of Regional Financial Integration and Governance Quality on Economic Growth in ECOWAS.

Based on the SGMM estimation used in this study, the result shows that financial integration do not support economic growth in ECOWAS region. This is consistent with previous studies such Muthoga et al. (2013) and Edison et al. (2002) who find significant negative effects of regional financial integration on economic growth. It however runs contrary to the Neo-classical growth model which asserts that financial sector convergence across countries should enhance the growth of the economy. The estimated result could be justified from a number of perspectives. First, the key components that make up financial infrastructures which are: financial regulations, supervision, and financial reporting standards; securities market; payments systems; the legal framework; and the availability of credit information; are grossly lacking in ECOWAS. All of these infrastructures provide essential support to good governance in the financial sector.

Second, the problem relating to the non-convertibility of national currencies in ECOWAS makes financial integration a big challenge. Strong justifications for promoting currency convertibility in ECOWAS are (i) to facilitate intra-regional trade; to reduce transaction costs; (ii) to eliminate the use of third-party currencies mostly US Dollars, Euro, and Pound Sterling as converting currency; and (iii) to conserve scarce foreign exchange resource. However, the official quoting and trading of currencies in ECOWAS is still a big challenge. This issue is most peculiar in WAMZ where no official exchange mechanism exists. The lack of regulatory and institutional flexibilities, coupled

with no provisions for an efficient financial market and cross-border trading system has led many traders to operate in the informal sector. Tomlinson (2007) estimated that formal intra-ECOWAS trade only amounts to about 10% of total trade, and that informal trade not in official statistics may amount to as much as ten times the level of reported intra-ECOWAS trade, all of which affect growth negatively.

Furthermore, estimated result shows that governance indicator do not meet a priori expectation of having positive effects on growth. Rather, the result indicates otherwise, that is, the level of governance has negatively and insignificantly affected economic growth in ECOWAS. This is quite revealing, as it strongly shows that the pillars that hold governance structure in ECOWAS region are weak. Inadequacies of the region on issues such as corruption, rule of law, government effectiveness, voice and accountability, regulatory quality, and political violence have impeded the achievements of its economic objectives of a sustained economic growth. As Chen and Quang (2012) asserted, when "threshold conditions" which are the governance institutions that are expected to ensure that the issues raised above work as designed, are absent, then financial integration efforts becomes ineffective and hence, becomes growth retarding.

In the same vein, the fusion of governance indicator and financial integration (governance interaction with financial integration) shows a positive coefficient of 4.37, but not significant enough to affect growth. What this result suggests is that even though the interaction force between governance and financial integration has the capacity to positively affect growth, the force is not sufficient enough to make any remarkable effect. All of these still boil down to what has been discussed in the previous paragraph, that when institutions that should serve as catalyst for good governance are not present, economic and financial integration policies and programs will not work as planned.

VIII. Conclusion

On the basis of empirical results, the study concludes that ECOWAS is yet to reach the desired threshold for attaining full financial integration. Adequate steps should be taken by ECOWAS commission with full support of member countries to provide all necessary financial infrastructures that will provide essential support to good governance in the financial sector of the region. For example, all member countries should comply with the supervisory and regulatory standards as contained in the Basel Core Principles. This will serve as a benchmark for promoting uniformity and regional harmonization of regulatory framework. Efforts should be intensified to develop a clearly defined institutional and regulatory framework that will ensure all ECOWAS' currencies are quoted and officially traded among themselves. The free convertibility of members' currencies will drastically reduce cash-based transactions, reduce transaction costs, facilitate payment transfer, and conserve scarce currencies as no reserves will be needed to cover import.

The study also concludes that, even though governance quality is not critically low, it is still below the acceptable level for categorizing the region as possessing a high quality governance system. This means that the pillars holding governance structure in ECOWAS is weak. This weakness is seen on issues such as the prevalence of corruption, rule of law, government effectiveness in terms

of the extent of institutional strength and quality of bureaucracy, voice and accountability in terms of democratic accountability and government stability, regulatory quality in terms of investment profile and the ease of doing business in ECOWAS, and political violence.

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