




Institutional Quality and Growth in West Africa: What Happened after the Great Recession?

Jonathan E. Ogbuabor¹ · Anthony Orji¹ ·
Charles O. Manasseh² · Onyinye I. Anthony-Orji¹ 

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Abstract This paper examines the impact of institutional quality on economic growth in West Africa after the Great Recession using a panel of 13 countries. In addition to the traditional institutional variables documented in the Worldwide Governance Indicators, such as government effectiveness, control of corruption, rule of law, regulatory quality, political stability, voice and accountability, and absence of violence/terrorism, the paper also derived an institutional-quality variable from the Freedom House database. To address the methodological shortcomings in the extant literature, the study used region-specific variables and adopted both the system generalized method of moments and the panel two-stage least squares estimation techniques under the framework of a cross-country growth model. The results predominantly showed a significant negative relationship between institutional quality and growth in West Africa. Specifically, corruption, government ineffectiveness, weak regulatory quality, political instability, lack of rule of law and absence of accountability were found to hinder growth in the sub-region. However, the empirical findings also showed an initial level of gross domestic product per capita, capital, labour and foreign direct investment as important drivers of growth in the sub-region. Therefore, the study concludes that the sub-region needs improved institutions that can attract higher levels of investment to promote sustained economic growth and development.

Keywords Institutional quality · Economic growth · GMM regression · Great recession

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✉ Onyinye I. Anthony-Orji
onyinye.anthony-orji@unn.edu.ng

¹ Department of Economics, University of Nigeria, Nsukka, Nigeria

² Department of Banking and Finance, University of Nigeria, Enugu Campus, Enugu, Nigeria

Introduction

The nexus between institutional quality and macroeconomic performance has been the subject of growing literature in both developing and developed economies. This is because no economy exists in a vacuum. Certain institutional issues play important roles in the growth of every economy. For instance, no respect for the rule of law, poor government regulations, obstructions of civil liberties (such as the right to organize demonstrations, freedom of speech, freedom of religious association, education, travel and other individual rights), lack of freedom to exercise political rights and participate in the political process and high level of corruption have been blamed for the economic stagnation in most developing countries (Siba 2008; Ogbuabor et al. 2019). Egbetunde and Akinlo (2015) argued that Sub-Saharan African (SSA) economies cannot experience sustainable growth without strong institutions. Anthony-Orji et al. (2019) and Benyah (2010) agreed that institutional quality can be regarded as the level to which procedures by regulatory authorities foster the protection of investors and also enhance greater access to funds for borrowers. Levine (1998) explained institutional quality in terms of respect for legal rules and noted that no economy can achieve sustainable growth when there are no clear rules on the protection of investors, enforcement of property rights and effective regulation.

From the foregoing paragraph, institutional quality can be conceptualized to include the processes and institutional arrangements like governance, regulations, stability of the political environment, economic freedom, rule of law, corruption control, civil liberties, assurance of political rights, accountability, and the likes, that encourage the protection of citizens, investors, creditors and consumers, and ensure that the economic environment functions optimally and efficiently. Dysfunctional institutions generally render the economic environment unproductive and obstruct trade, thereby encumbering the growth objective of an economy (Anyanwu and Yaméogo 2015; Herger et al. 2008). In West Africa, the extant literature has attributed the underdevelopment of institutions to resource curse and foreign aid dependence, colonial heritages, ethnic fractionalization, and sociopolitical competitions and constraints (Siba 2008).

Even though the institutions-growth link has been discussed in the literature, this study nonetheless recognizes that a large scope still needs to be covered towards a better comprehension of this nexus in the West African region. For instance, the extant literature is replete with studies that used inefficient methods and variables that are not region-specific while ignoring institutional variables that are important for the region. This study further acknowledges that the institutions-growth link is dynamic and may have witnessed changes in West Africa in the aftermath of the global financial crisis (GFC) that occurred between 2007 and 2008. The GFC, also known as the Great Recession, affected the economies of many West African countries. According to Verick and Islam (2010), the GFC heavily affected the real and financial sectors of the global economy, thereby revealing the vulnerabilities of many economies across the globe. As a result, there was a decline in demand, and commodity prices equally crashed. Furthermore, many large capital projects were suspended in the energy sector and unemployment rates and inflation rates increased. Additionally, trade volumes dwindled as a result of gross domestic product (GDP) losses of almost 10% of world output in 2008, the regional economic growth rates declined and fiscal positions

deteriorated. Ultimately, corporate borrowings and trade credits dried up and many economies across the globe nosedived into a serious, deep recession (Osakwe 2010).

As a result of the GFC, economic activities in many regions of the world contracted significantly. Economic growth in most West African economies has not been impressive in the aftermath of the GFC. For instance, the World Bank (2017) indicated that from 2009 to 2015, the average annual per capita GDP growth was 1.11% in Benin, 1.96% in Burkina Faso, -0.05% in Cape Verde, 2.91% in Côte d'Ivoire, 0.27% in The Gambia, 4.77% in Ghana, 1.30% in Guinea, 0.92% in Guinea-Bissau, 2.23% in Liberia, 0.87% in Mali, 0.90% in Mauritania, 2.69% in Nigeria, 0.83% in Senegal, 2.58% in Sierra Leone and 1.88% in Togo. In contrast, available statistics showed that the GDP per capita growth rate in South Asia over the same period was 5.56%. Thus, West African economies recorded lower per capita GDP growth compared to South Asian economies even though most African economies have rich natural resource endowments and were richer than their Asian counterparts in the 1960s (Iheonu et al. 2017). Mijiyawa (2013) argued that Africa caught up with East Asia in terms of investment and economic growth experienced during the period 1995–2005. Unfortunately, while East Asia has continued to improve on its advantage in terms of growth fundamentals, Africa's growth fundamentals have continued to deteriorate since the Great Recession.

The West African growth statistics shown earlier present a serious concern to scholars and policymakers in the region. This is more worrisome as the United Nations has classified countries in West Africa as among the most impoverished globally (United Nations Conference on Trade and Development 2011). Therefore, the puzzle exists of how institutional quality is affecting growth in the West African sub-region after the experience of the Great Recession. Interestingly, while the majority of the studies in the extant literature concentrated on the pre-GFC periods, none of the studies exclusively focused on the post-GFC period despite the unanimity in the literature that the region has witnessed poor growth performance following the GFC. Hence, this paper sought to determine: (i) if institutional quality is a significant driver of economic growth in West Africa after the Great Recession; and (ii) if there are other significant drivers of economic growth in West Africa following the GFC. This study provides reliable and unbiased econometric evidence that will be useful for policy formulation and implementation towards increased growth in West Africa during the post-GFC era. Furthermore, the fact that the extant literature has yet to reach consensus on the institutions-growth relationship in Africa as a whole shows that inquiries into the nature and dynamics of this relationship have just begun regardless of the voluminous nature of the extant literature. A strand of the literature suggests that institutional quality plays an important role in the growth of African economies, while another strand posits that the role of institutional quality is rather weak or muted.

An Overview of the Literature

Following the initial works of Mauro (1995) and Knack and Keefer (1995), a growing body of literature on the institutions-growth link has emerged. Some aspects of the emerging literature indicate that the role of institutions in the growth experience of African countries can no longer be called unimportant. For instance, in a study aimed at

determining the factors contributing to Africa's growth performance, Mijiyawa (2013) established that between 1996 and 2010, government effectiveness was one of the key drivers of growth. Anyanwu (2014) also established that between 1996 and 2010, Africa's growth was significantly affected by government effectiveness. Anyanwu and Yaméogo (2015) and Mijiyawa (2015) found that political instability hinders foreign direct investment (FDI) inflows into Africa, and thus impedes growth. Akobeng (2016) also found that the quality of bureaucracy, accountability in government, and sound regulations and policies contributed significantly to the growth-poverty nexus in SSA. Zghidi et al. (2016) showed that African countries promoting greater freedom of economic activities benefit more from the growth effect of FDI inflows. Chikalipah (2017) and Malikane and Chitambara (2017) also showed that strong institutions promote economic growth in Africa.

Quite recently, Iheonu et al. (2017) investigated the effect of institutional quality on the performance of some West African economies from 1996 to 2015 using a panel of 12 countries in West Africa. The study used some institutional-quality variables and adopted fixed effect, random effect and panel two-stage least squares models (2SLS). The results revealed that government effectiveness was only significant after using the panel 2SLS model to account for endogeneity. All of the institutional-quality variables were seen to positively and significantly affect economic performance under the fixed and random effect models. Given that the evidence from this study is mixed, it may be difficult to inform policy. Additionally, the study focused neither on the post-GFC period nor accounted for other important institutional variables, like accountability, political stability, civil liberties and political rights. Besides, the use of 2SLS rather than the more efficient dynamic system generalized method of moments (GMM) estimator suggests that the results may be doubtful.

Louis et al. (2015) studied the effect of institutions on economic development in Africa since the previous literature showed opposing results with some emphasizing the role of geography rather than the effects of institutions. The study found that institutions can be considered a powerful factor in explaining the differences in development, while geography is insignificant. Wanjuu and Le Roux (2017) also found that economic institutions measured as property rights protection is an important driver of growth in the Economic Community of West African States (ECOWAS) sub-region. Other studies have shown that the quality of institutions is an important determinant of growth in Africa (Ojapinwa 2017; Kebede and Takyi 2017; Amin 2013; Kilishi et al. 2013; Kandil 2009). Kandil (2009) obtained mixed evidence on the role of institutional quality among 16 countries in the Middle East and North Africa (MENA). The study established that some measures of institutional quality increase economic growth, while institutional quality negatively affects private credit and private investment.

Several other papers have also analyzed the effects of institutions on growth from different perspectives, with the majority indicating that poor institutional framework may be growth retarding. For instance, Mauro (1995) found that investment is reduced by corruption, which in turn reduces growth. Diop et al. (2010) found that weak institutions and poor governance hinder growth in the ECOWAS sub-region. A few comments from Diop et al. (2010) are considered germane at this point. Apart from the fact that this study focused on the pre-GFC period, it excluded control of corruption, which is a critical institutional variable in the ECOWAS sub-region. Other West African-specific growth factors excluded in the study are exchange rate and labour

force. None of the institutional variables entered the growth equations as separate regressors. The interaction terms bearing the institutional variables like accountability and government effectiveness entered the growth equations at the same time, even though these institutional variables are known to be highly correlated. This means that the regression results may be fraught with the problem of collinearity and hence doubtful. Furthermore, the study estimated the growth equations using the generalized least squares (GLS) estimator rather than the more efficient GMM estimator, which has been extensively used in recent studies. The current study fills these gaps. Ajide and Raheem (2016) also found that dysfunctional institutional frameworks constitute avoidable drags on remittances in the ECOWAS region, thereby hindering growth.

Another aspect of the literature has also established a weak linkage between institutions and growth. For instance, Hoedemakers (2016) found weak support for the measurable importance of institutions for economic development in Africa. The study emphasized that papers on the role of institutions, or other growth determinants in Africa, require careful examination of the variables used to ensure that the choice of variables focuses on Africa-specific determinants of economic growth.

Overall, the extant literature indicates that several components of institutional quality are important for growth, especially in Africa, and these include government effectiveness (Iheonu et al. 2017; Mijiyawa 2013; Anyanwu 2014), political stability (Anyanwu and Yaméogo 2015; Mijiyawa 2015; Borner et al. 1995), control of corruption (Mauro 1995), regulatory and bureaucratic quality (Keefer and Knack 1997; Iheonu et al. 2017), accountability (Diop et al. 2010), and economic freedom and well-defined property rights (Wanjuu and Le Roux 2017; Zghidi et al. 2016; Knack and Keefer 1995). Apart from these studies, other empirical studies in the extant literature have also found either negative or no significant impact of institutional quality on economic growth (e.g., Klomp and de Haan 2009; Ali and Crain 2002). However, the majority of these studies covered periods that are before the Great Recession, while a bulk of them cannot be generalized to West African economies due to regional differences, particularly as they are not based on West Africa-specific determinants of economic growth. This study, therefore, revisited the institutions-growth nexus in West Africa after the recession based on a panel of 13 countries chosen based on data availability.

The foregoing overview of the literature indicates that the debate on the role of institutions in Africa's economic growth has just begun. Apart from focusing on the post-GFC period and using region-specific determinants of growth, this study contributed to this debate in the West African sub-region in two other important ways. The first area was in the choice of institutional-quality variables. In addition to the traditional institutional-quality variables, like control of corruption, government effectiveness, regulatory quality and rule of law, this study included three other institutional-quality variables, namely: voice and accountability, political stability and absence of violence/terrorism, and political rights and civil liberties. The use of a range of institutional-quality variables in this study provided an adequate robustness check on the results, thereby ensuring that the results obtained were not due to happenstance.

The second area was in the use of the robust dynamic panel system GMM estimation framework, in addition to the panel 2SLS technique commonly found in the extant literature. The dynamic system GMM technique has become quite popular in recent growth modelling due to its important features. For instance, system GMM is useful for

correcting any country heterogeneity that is not observed. It also helps correct omitted variable bias and potential endogeneity that affect estimations of growth models that are dynamic in nature. Some recent studies in West Africa, such as Iheonu et al. (2017), completely ignored the dynamic nature of growth models. The GMM estimator has been found to be more efficient than the 2SLS estimator or simple instrumental variable (IV) if heteroscedasticity is present. If heteroscedasticity is not present, the GMM estimator is no worse asymptotically, but in the face of any sign of heteroscedasticity and autocorrelation within panels, the use of robust estimator ensures that the standard errors are consistent. This means that the method works to eliminate heteroscedasticity and serial correlation (Blundell and Bond 1998; Bond et al. 2001). Unlike Diop et al. (2010) and Iheonu et al. (2017), this study exploited these desirable features of the dynamic system GMM estimators.

Methodology

Theoretical Framework and Model Specification

This study was anchored on the theoretical framework of the new growth theory. To specify a model on the growth effect of institutional quality, the study adopted and extended a cross-country economic growth function by including standard variables in growth regressions that are specific to the West African sub-region, such as initial per capita GDP growth (annual %) ($PGDP_{i,t-1}$), FDI inflow as a percentage of GDP ($FDI_{i,t}$), trade openness measured as $(Exports + Imports)/GDP$ (% of GDP) ($TRADE_{i,t}$), nominal official exchange rate of local currency per U.S. dollar ($EXCH_{i,t}$), and institutional quality ($INST_{i,t}$). Even though these selected regressors are specific to the region, they are nonetheless consistent with some established studies in the literature (e.g., Mankiw et al. 1992; Alexiou et al. 2014; Tumwebaze and Ijjo 2015).

The institutional-quality variables used in this study include: control of corruption (CC), which shows the level to which public power is used for private gain, and includes corruption in both small and grand forms; regulatory quality (RQ), which shows the perception of the ability of the government to evolve and implement sound policies and regulations that permit and promote private sector development; rule of law (RL), which reveals the perceptions of the level to which people abide by the rules of society and have confidence in them (including the quality of contract enforcement, the police, property rights and the courts, as well as the likelihood of crime and violence); government effectiveness (GE), which reflects people's perceptions on the quality of the civil/public services and the degree of its independence from political pressures, the quality of policy formulation and implementation and the credibility of the government's commitment to such policies; voice and accountability (VA), which reflects perceptions of the extent to which the citizens of a country are able to participate in selecting their government (including freedom of expression, freedom of association and a free media); political stability and absence of violence and terrorism (PS), which shows the likelihood of political instability and/or politically-motivated violence, including terrorism; and political rights and civil liberties (PR), which shows the rights to express one's opinion freely, freedom to participate in

political activities, to associate or demonstrate, to acquire education, to travel, freedom of religious worship and other individual rights.

Data for the institutional-quality variables were taken from World Bank (2018) and Freedom House (2017), while data for other variables were taken from World Bank (2017). The period covered by this study is 2009 to 2016 since the study focused on the post-GFC period. The countries included in the study based on data availability include: Ghana, Mali, Benin, Cape-Verde, Burkina Faso, Cote D'Ivoire, Gambia, Guinea-Bissau, Mauritania, Senegal, Togo and Nigeria.

For the econometric analysis, the model expressed for this study in its implicit form is as follows:

$$PGDP_{i,t} = f(K_{i,t}, L_{i,t}, PGDP_{i,t-1}, FDI_{i,t}, TRADE_{i,t}, EXCH_{i,t}, INST_{i,t}) \quad (1)$$

where $PGDP_{i,t}$ represents the real GDP per capita growth rate of West African countries, $PGDP_{i,t-1}$ represents real GDP per capita growth rate lagged by 1, $K_{i,t}$ denotes capital, $L_{i,t}$ denotes labour, i represents cross-sectional index (i.e. country index) and t represents the time index. By using lowercase variables to denote the natural log of the respective uppercase variables, Equation (1) was expressed as the following log-linear equation:

$$pgdp_{i,t} = \alpha_0 + \alpha_1 K_{i,t} + \alpha_2 L_{i,t} + \alpha_3 pgdp_{i,t-1} + \alpha_4 fdi_{i,t} + \alpha_5 trade_{i,t} + \alpha_6 exch_{i,t} + \alpha_7 INST_{i,t} + \varepsilon_{i,t} \quad (2)$$

where α_0 is the constant term, $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$ and α_6 denote the elasticities of real GDP per capita growth relative to the respective variables and $\varepsilon_{i,t}$ is the stochastic error term. This study used 2SLS and robust IVs system GMM estimators in estimating the coefficients of the variables in Equation (2).

In line with economic theory, the parameters $\alpha_1, \alpha_2, \alpha_4$ and α_5 were expected to have a positive sign. This is because labour, capital, FDI and trade were expected to engender growth, though some studies have established that FDI sometimes may not enhance growth (Dutt 1997; Iheonu 2016). The parameters α_3 and α_6 were expected to be negative. This was in line with the convergence hypothesis advanced by the neoclassical growth models (Mankiw et al. 1992). Some recent empirical studies in Africa (e.g., Diop et al. 2010; Tumwebaze and Ijjo 2015; Zghidi et al. 2016) are consistent with the convergence hypothesis. Studies like Krueger (1978) and Connolly (1983) provided support for expansionary effects of devaluations, but the contractionary effects have become more prominent in a large number of recent studies, though mixed results and insignificant effects have also been reported by few studies (Razzaque et al. 2017; Ayen 2014).

The coefficient of institutional quality was expected to be either positive or negative following the institutional-quality hypothesis and empirical findings (e.g., Iheonu et al. 2017; Louis et al. 2015; Wanjuu and Le Roux 2017). Other recent empirical studies have also documented that weak and poor institutional quality were growth retarding (e.g., Diop et al. 2010; Hoedemakers 2016; Ajide and Raheem 2016).

Results

Table 1 reports the descriptive statistics of the dependent, institutional-quality and other independent variables in the study. The statistics indicate that the institutional-quality variables follow a clear pattern. They all have a negative average value, except for political rights and civil liberties whose values range from 0 to 2. Political rights and civil liberties data display a different pattern because these are the only institutional-quality indicators data obtained from Freedom House (2017). It can be argued that a dummy index ranging from 0 to 2 hardly inspires confidence in the validity of statistical conclusions. However, studies like Skaaning (2018), Amin (2019) and Arshad (2019) have used the Freedom House (2017) data with great success.

Focusing on the statistics for control of corruption, apart from Cape Verde, all the countries in the sample predominantly maintained negative values throughout. Cape Verde recorded the maximum value for this index, which was 0.95 in 2015. The patterns in government effectiveness, regulatory quality, rule of law, voice and accountability, and political stability and absence of violence/terrorism are similar to that of control of corruption, with the exception that Cape Verde predominantly recorded a negative value for regulatory quality over the sample period. Overall, these statistics indicate that the West African countries under study generally ranked poorly in terms of institutional quality. In the case of political rights and civil liberties whose value ranged between 0 and 2, the study found that only Benin, Cape Verde, Ghana and Senegal mainly had a value of 2, indicating a high level of institutional quality over the sample period, while the rest of the countries mainly had a value of 0 or 1, indicating poor institutional quality. Clearly, the descriptive statistics in this study show that Cape Verde ranks best among all the countries in terms of the quality of institutions.

The descriptive statistics in Table 1 further indicate that the highest GDP per capita is 3452.95 United States dollars (US\$) recorded in Cape Verde in 2016, while the lowest GDP per capita is 393.55 US\$ recorded in Sierra Leone in 2009. The average GDP per capita is 1162.89 US\$. The highest capital of 70.3 billion US\$ was recorded in Nigeria in 2014, while the minimum capital was 48.63 million US\$ in Guinea-Bissau in 2009. The average capital is 7.16 billion US\$. The standard deviation shows that both GDP per capita and capital varied remarkably across countries in West Africa. Trade as a percentage of GDP has a maximum value of 132.49% recorded in Mauritania in 2012, while the lowest value of 21.12% was recorded in Nigeria in 2015. The average trade value of 74.24% shows that overall, West African countries are somewhat open to international trade. The minimum FDI inflow as a percentage of GDP is shown as -0.26% for Benin in 2009, while the highest value of 32.30% was recorded in Sierra Leone in 2011. The FDI average value of 4.79 indicates that West African countries have a lot of work to do in terms of attracting FDI inflow. The statistics indicate that the average labour force is 54.39, with a maximum of 64.90 and a minimum of 49.45. The maximum exchange rate of 6289.94 was recorded in Sierra Leone in 2016, while the minimum value of 1.41 was recorded in Ghana in 2009. In sum, the standard deviation indicates that the exchange rate has been quite volatile in West Africa during the period under study.

The correlation matrix of the regressors in this study is reported in Table 2. In the case of capital, labour, FDI, exchange rate and trade, which were included in all the models, Table 2 did not show any problem of collinearity. However, in the case of the

Table 1 Descriptive statistics of dependent, independent and institutional-quality variables ($N=104$)

Dependent Variable	Independent Variables					Institutional-Quality Variables									
	CAP	LAB	FDI	TRA	EX	CC	PR	GE	PS	RL	RQ	VA			
Mean	1162.89	7,160,000,000.00	54.39	4.79	74.24	672.17	-0.59	1.13	-0.78	-0.48	-0.61	-0.53	-0.32		
Median	789.54	2,210,000,000.00	53.87	3.00	70.73	472.19	-0.68	1.00	-0.84	-0.23	-0.67	-0.52	-0.30		
Maximum	3452.95	70,300,000,000.00	64.90	32.30	132.49	6289.94	0.95	2.00	0.15	0.89	0.63	0.13	0.99		
Minimum	393.55	48,628,165.00	49.45	-0.26	21.12	1.41	-1.55	0.00	-1.64	-2.21	-1.59	-1.26	-1.46		
Std. Dev.	838.63	16,400,000,000.00	3.11	5.24	22.78	1160.56	0.55	0.71	0.44	0.75	0.50	0.36	0.63		
Skewness	1.53	3.07	1.23	2.73	0.16	3.22	1.22	-0.18	0.38	-0.56	0.66	-0.04	0.35		
Kurtosis	4.37	10.94	5.21	12.36	2.71	12.52	4.51	2.03	2.46	2.82	3.13	2.19	2.23		
Jarque-Bera	48.78	437.23	47.65	508.25	0.84	572.66	35.67	4.68	3.81	5.61	7.59	2.89	4.63		
Probability	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.10	0.15	0.06	0.02	0.24	0.10		

Statistics reported here are for the raw data before they were logged for estimation. Notations include *PGDP*: per capita GDP; *CAP*: capital; *LAB*: labour; *FDI*: foreign direct investment; *TRA*: trade; *EX*: exchange rate; *CC*: control of corruption; *PR*: political rights and civil liberties; *GE*: governance effectiveness; *PS*: political stability; *RL*: rule of law; *RQ*: regulatory quality; *VA*: voice and accountability. Source: Own calculations using data from World Bank (2017, 2018) and Freedom House (2017) over the period 2009–2016

Table 2 Correlation matrix of the regressors for the 2SLS and Dynamic Panel System GMM estimations

	<i>CAP</i>	<i>CC</i>	<i>EX</i>	<i>FDI</i>	<i>PR</i>	<i>GE</i>	<i>LAB</i>	<i>PS</i>	<i>RL</i>	<i>RQ</i>	<i>TRA</i>	<i>VA</i>
<i>CAP</i>	1.00	0.08	-0.22	-0.04	0.24	0.20	-0.10	-0.43	0.15	0.32	-0.21	0.27
<i>CC</i>	0.08	1.00	-0.40	0.12	0.56	0.90	0.58	0.62	0.95	0.80	0.35	0.78
<i>EX</i>	-0.22	-0.40	1.00	-0.01	-0.20	-0.59	-0.32	-0.21	-0.48	-0.55	-0.14	-0.23
<i>FDI</i>	-0.04	0.12	-0.01	1.00	0.02	0.02	0.31	0.21	0.12	0.03	0.45	0.11
<i>PR</i>	0.24	0.56	-0.20	0.02	1.00	0.58	0.30	0.52	0.63	0.55	-0.01	0.87
<i>GE</i>	0.20	0.90	-0.59	0.02	0.58	1.00	0.45	0.58	0.91	0.89	0.21	0.76
<i>LAB</i>	-0.10	0.58	-0.32	0.31	0.30	0.45	1.00	0.48	0.49	0.17	0.47	0.46
<i>PS</i>	-0.43	0.62	-0.21	0.21	0.52	0.58	0.48	1.00	0.66	0.49	0.42	0.53
<i>RL</i>	0.15	0.95	-0.48	0.12	0.63	0.91	0.49	0.66	1.00	0.88	0.31	0.82
<i>RQ</i>	0.32	0.80	-0.55	0.03	0.55	0.89	0.17	0.49	0.88	1.00	0.16	0.68
<i>TRA</i>	-0.21	0.35	-0.14	0.45	-0.01	0.21	0.47	0.42	0.31	0.16	1.00	0.08
<i>VA</i>	0.27	0.78	-0.23	0.11	0.87	0.76	0.46	0.53	0.82	0.68	0.08	1.00

Notations include *CAP*: capital; *CC*: control of corruption; *EX*: exchange rate; *FDI*: foreign direct investment; *PR*: political rights and civil liberties; *GE*: governance effectiveness; *LAB*: labour; *PS*: political stability; *RL*: rule of law; *RQ*: regulatory quality; *TRA*: trade; *VA*: voice and accountability. Source: Own calculations using data from World Bank (2017, 2018) and Freedom House (2017) over the period 2009–2016

institutional-quality variables, Table 2 shows a high pairwise correlation between some of the institutional-quality variables, such as the correlation of 0.95 between control of corruption and rule of law. Thus, to avoid the problem of collinearity, the institutional-quality variables were included in separate models. Specifically, the baseline model was estimated in Equation (4) using only the regressors that are always included in the model and the results are reported in the respective Panel 1 of Tables 3 and 4 for the 2SLS and system GMM estimations, respectively. Thereafter, the model was estimated with the inclusion of one institutional-quality variable at a time, and the results are reported in Panels 2 to 8 of Tables 3 and 4.

Both Tables 3 and 4 include diagnostic checks, which indicate that all the models are adequate for inference and policy. For instance, the estimates were subjected in Table 4 to two important specification tests, namely the Sargan tests of overidentifying restrictions and the Arellano-Bond test for error serial correlation at the second-order (AR2). The results indicated that in all cases, the null hypothesis that the population moment conditions is correct and the null hypothesis of no autocorrelation are not rejected, thereby validating the choice of robust IV system GMM to avoid the problems of heteroscedasticity, serial correlation, reverse causality and potential endogeneity of the regressors, and to correct for unobserved country heterogeneity and omitted variable bias (Bond et al. 2001; Blundell and Bond 1998).

The results in Tables 3 and 4 follow similar patterns. These results found that all the institutional-quality variables negatively affect growth both in the 2SLS estimations and in the system GMM estimations. At the 5% level, institutional variables, such as corruption, government ineffectiveness, rule of law, poor regulatory quality and political instability, significantly hinder growth in West Africa. The negative effect of voice and accountability becomes important only at the 10% level. In the 2SLS estimation, the negative effect of political rights and civil liberties is significant only at the 10%

Table 3 2SLS estimation results (dependent variable = real per capita GDP growth)

Regressors	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>PGDP(L)</i>	0.5598752 (6.56)*	0.5601459 (6.52)*	0.5536521 (6.49)*	0.5496994 (6.51)*	0.5532153 (6.53)*	0.5626989 (6.64)*	0.5589926 (6.58)*	0.5787074 (6.92)*
<i>CAP</i>	0.1132122 (5.23)*	0.1125872 (4.77)*	0.1039247 (4.49)*	0.0972678 (4.16)*	0.0980498 (4.13)*	0.099265 (4.19)*	0.1109918 (5.13)*	0.0979085 (4.40)*
<i>LAB</i>	0.6862767 (2.27)**	0.6791497 (2.23)**	0.5699492 (2.14)**	0.5285521 (2.88)**	0.8794155 (2.60)**	0.530533 (2.91)**	0.5968828 (2.10)**	0.5353987 (2.31)**
<i>EX</i>	-0.0301505 (-2.89)**	-0.0297161 (-2.86)**	-0.0146296 (-2.40)**	-0.0219758 (-2.65)**	-0.0056028 (-2.15)**	-0.0304476 (-2.91)**	-0.0237824 (-2.70)**	-0.0212419 (-2.64)**
<i>FDI</i>	0.0523369 (1.93)**	0.0528439 (2.87)**	0.0609961 (2.17)**	0.0687185 (2.41)**	0.0565715 (2.09)**	0.0637865 (2.27)**	0.0617308 (2.21)**	0.0501865 (1.90)**
<i>TRA</i>	-0.0013723 (-1.21)	-0.0013666 (-1.19)	-0.0014006 (-1.23)	-0.001412 (-1.26)	-0.001435 (-1.27)	-0.0013755 (-1.22)	-0.0013718 (-1.21)	-0.0013456 (-1.21)
<i>CC</i>		-0.0021662 (-2.72)**						
<i>GE</i>			-0.0417182 (-2.11)**					
<i>RL</i>				-0.0652148 (-2.67)**				
<i>RQ</i>					-0.0697438 (-2.49)**			
<i>VA</i>						-0.0399658 (-1.92)**		
<i>PS</i>							-0.0214927 (-2.28)**	
<i>PR</i>								-0.0269845 (-1.84)**

Table 3 (continued)

Regressors	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No of countries	13	13	13	13	13	13	13	13
R-squared	0.6998	0.6998	0.7049	0.7112	0.7089	0.7079	0.7066	0.7183
F-statistic	27.98*	23.65*	24.23*	24.97*	24.7*	24.58*	24.42*	25.86*
P value (F-stat)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* indicates significance at the 1% level, ** indicates significance at the 5% level, *** indicates significance at the 10% level. t -statistic are reported in parentheses. $PGDP(L1)$ is the per capita GDP lagged by one period (i.e. initial per capita GDP). Notations include $PGDP(L1)$ is the per capita GDP lagged by one period (i.e. initial per capita GDP); CAP : capital; LAB : labour; EX : exchange rate; FDI : foreign direct investment; TRA : trade; CC : control of corruption; GE : governance effectiveness; RL : rule of law; RQ : regulatory quality; VA : voice and accountability; PS : political stability; PR : political rights and civil liberties. Source: Own calculations using data from World Bank (2017, 2018) and Freedom House (2017) over the period 2009–2016

Table 4 Dynamic panel system GMM estimation results (dependent variable = real per capita GDP growth)

Regressors	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>PGDP(L)</i>	0.4533371 (3.19)*	0.4758719 (3.56)*	0.4680703 (3.23)*	0.4326124 (2.92)**	0.4730467 (3.34)*	0.4769085 (3.12)*	0.4486459 (3.06)*	0.4658932 (2.44)**
<i>CAP</i>	0.1196957 (2.76)**	0.1165643 (2.70)**	0.117214 (2.73)**	0.1142737 (2.70)**	0.111962 (2.75)**	0.1088053 (2.39)**	0.1231768 (2.80)**	0.1132714 (2.19)**
<i>LAB</i>	1.007083 (2.28)**	1.053833 (2.48)**	0.9825357 (1.84)**	0.8405948 (2.20)**	1.087222 (2.56)**	0.8275601 (2.82)**	0.9435028 (2.68)**	0.8874452 (3.52)*
<i>EX</i>	-0.0188698 (-2.66)**	-0.0175746 (-2.60)**	-0.0189067 (-2.58)**	-0.0124974 (-2.41)**	-0.0116971 (-2.33)**	-0.0301818 (-2.87)**	-0.0166893 (-2.60)**	-0.0139168 (-2.49)**
<i>FDI</i>	0.1323001 (2.18)**	0.1199267 (2.21)**	0.1328034 (2.16)**	0.1387451 (2.25)**	0.1275244 (2.19)**	0.1409184 (2.29)**	0.1345542 (2.28)**	0.130436 (2.11)**
<i>TRA</i>	-0.0043411 (-1.17)	-0.0037431 (-1.10)	-0.004126 (-1.11)	-0.0044665 (-1.17)	-0.0039754 (-1.07)	-0.0043056 (-1.14)	-0.0044068 (-1.13)	-0.0044794 (-1.10)
<i>CC</i>		-0.0279172 (-2.47)**						
<i>GE</i>			-0.0046983 (-2.83)**					
<i>RL</i>				-0.0549132 (-2.31)**				
<i>RQ</i>					-0.0310501 (-2.49)**			
<i>VA</i>						-0.0424003 (-1.86)**		
<i>PS</i>							-0.0154905 (-2.20)**	
<i>PR</i>								-0.0139409 (1.21)

Table 4 (continued)

Regressors	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No. of Countries	13	13	13	13	13	13	13	13
F-statistic	33.67*	41.36*	47.01*	40.12*	46.3*	44.44*	44.67*	41.54*
P value of A-B AR(2) test	0.315	0.310	0.314	0.264	0.309	0.299	0.314	0.323
P value of Sargan test	0.269	0.215	0.239	0.213	0.271	0.311	0.211	0.241
P value of Hansen test	0.976	0.978	0.977	0.969	0.990	0.984	0.990	0.988

* Significance at the 1% level, ** significance at the 5% level, *** significance at the 10% level. t -statistic are reported in parentheses. A-B AR(2) test denotes the Arellano-Bond test for AR(2) in first differences. Notations include $PGDP(L/L)$ is the per capita GDP lagged by one period (i.e. initial per capita GDP); CAP : capital; LAB : labour; EX : exchange rate; FDI : foreign direct investment; TRA : trade; CC : control of corruption; GE : governance effectiveness; RL : rule of law; RQ : regulatory quality; VA : voice and accountability; PS : political stability; PR : political rights and civil liberties. Source: Own calculations using data from World Bank (2017, 2018) and Freedom House (2017) over the period 2009–2016.

level and in the system GMM estimation, it remained muted. Overall, a significant negative relationship was predominantly found between institutional quality and growth in West Africa, which is consistent with the poor institutional-quality statistics earlier established in the region. This finding is also consistent with some previous studies (e.g., Diop et al. 2010; Hoedemakers 2016; Ajide and Raheem 2016), which also established that weak and/or poor institutions are growth retarding. However, this finding is contrary to Iheonu et al. (2017), Louis et al. (2015), and Wanjuu and Le Roux (2017), who found a positive relationship between institutions and economic performance.

The results become more interesting when the performance of other regressors were considered in the models, which include the initial per capita GDP growth, capital, labour, FDI, exchange rate and trade. The results reveal a positive and statistically significant effect of initial growth rate of GDP per capita at the 5% level. Thus, evidence from these West African economies clearly shows that the initial GDP per capita significantly affects the economic growth of the sub-region. This is contrary to the convergence hypothesis. The results are also contrary to some empirical studies (e.g., Diop et al. 2010; Tumwebaze and Ijjo 2015; Zghidi et al. 2016), but consistent with Levine and Renelt (1992).

The results further indicate that exchange rate movements negatively and significantly affect growth in West Africa at the 5% level in both the 2SLS and system GMM estimations. These results are contrary to studies like Krueger (1978) and Connolly (1983) that provide support for expansionary effects of devaluations but are consistent with the contractionary effects, which have become more prominent in a large number of recent studies (Razzaque et al. 2017; Ayen 2014). Trade openness negatively affects economic growth in the sub-region. This is contrary to the trade-led growth hypothesis. However, the impact of trade remained statistically insignificant throughout. This finding is in line with some studies (e.g., Iheonu et al. 2017; Keho 2017) that argued that trade openness may be detrimental to economic growth in West Africa. This may be due to low trade volumes and negative trade balances recorded in most West African countries relative to countries in other regions like South Asia (Shuaibu 2015). It may also be due to the structural defects that characterize the West African economies, such as poor transport infrastructure, that hinders trade. Again, the unimportant role of trade can also be explained by the nature of bilateral trade between West African countries which is more in terms of trade diversion than trade creation (Agbodji 2008).

Conclusion and Policy Implications

The question of whether institutional quality is an important driver of growth has been the subject of a growing literature in both developed and developing economies. This study revisits this relationship in West Africa from 2009 to 2016 using a panel of 13 countries. The study became necessary due to several gaps in the extant literature. For instance, despite the severity of the Great Recession, which exposed the vulnerabilities of economies across the globe, the bulk of the extant literature covered pre-recession periods. The extant literature

is fraught with some methodological shortcomings and the use of variables that are not specific to West Africa. To close these gaps, this study focused on the post-recession period, used a range of institutional-quality variables and other region-specific regressors, and adopted both the panel 2SLS and the system GMM regression techniques in the framework of a cross-country growth model. Overall, a significant negative relationship is predominantly found between institutional quality and growth in West Africa. Specifically, the results revealed that corruption, government ineffectiveness, weak regulatory quality, lack of rule of law, political instability, and absence of accountability hinder growth in West Africa. However, the results also indicate that the initial levels of GDP per capita, capital, labour and FDI are important drivers of growth in the sub-region.

The findings of this study have several policy implications. Policymakers in West Africa can see that improved institutions such as control of corruption, government effectiveness, strong regulatory quality, political stability and respect for the rule of law and accountability will enhance economic growth in the sub-region. Thus, there is a need to evolve policy reforms that will enhance these institutional frameworks in the sub-region. Such reforms should be coordinated at least at the level of the ECOWAS to achieve a region-wide impact.

Furthermore, policymakers in West Africa can see that increased FDI inflows, higher levels of capital accumulation and human capital development are important for growth in West Africa. Thus, policy reforms in the sub-region should support improved sociopolitical and economic environments that can attract higher levels of investment and enhance the quality of the labour force. This requires extensive structural transformations across the West African economies to make them more attractive to prospective investors. The proposed structural transformations can be achieved through the removal of bottlenecks to private and public investments, increased investment in basic infrastructure to drive productivity, increased government support to micro, small and medium scale enterprises, formalization of land ownership and transparency in the enforcement of property rights. These will help West African countries to maintain quality institutions that can attract more FDI and promote sustained economic growth and development.

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