# THE MODERATING EFFECT OF INSTITUTIONS IN GOVERNMENT EXPENDITURES - ECONOMIC DEVELOPENT NEXUS IN ECOWAS COUNTRIES


## Abstract

The total effect of growing public spending on economic development is ambiguous, especially with today's realities of exposure to international trade and domestic factor such as institutions. Hence, this study tested the hypotheses that good institutions influence the effect of large government size on economic development. The study employed secondary data covering the period 1986 to 2018. Data on Gross Domestic Product per capita, government size, population growth rate, inflation rate, gross fixed capital formation, human development index (HDI) and financial development were sourced from World Development indicator database while data on institutions was obtained from International County Risk Guide database. Data were analysed using system generalized method of moments (Sys-GMM). The study validated the hypotheses that good institutions mitigate any negative effect of large government size on economic development. The study therefore, concluded that the relationship between government size and economic developmentdepends on quality of institutions in ECOWAS countries.



**Keywords:** Institutions, government size, economic development


## 1. INTRODUCTION

There is an on-going debate among economists and policy makers on whether government spending promotes economic growth, and subsequently development. Evidences in literature suggest that findings from studies depend on types of data, study area and method of analysis. For instance, ample evidence indicates that linear relationship exist between government size and economic development in ECOWAS countries. Ansari, Gordon and Akuamoach, 1997; Enang, 2010; Mudaki&Masaviru, 2012) reported in their studies that large government size in term of public spending is a drag on economic development, whereas Yasin (2003), Oriakhi&Arodoye (2013) and Gisore, Kiprop, Kalio, Ochieng & Kibet (2014) asserted that government is a spur to growth and economic development. Arising from the conflicting views on the subject matter, it becomes essential to consider the possibility of an intermediate variable in the nexus between government spending and economic development.

Most of previous studies did not consider whether institutions influence the government size – economic development nexus. There is strong reason to suspect that institutional variables affect the results of the relationship between government spending and economic development (Doucouliagos&Ulubasoglu, 2006; Asoni, 2008; Bergh and Henrekson, 2011). With the data used by Fölster and Henrekson (2001) for rich income countries (OECD), Bergh and Karlsson (2010) examined how the results change when they added the Economic Freedom Index (a measure of institutions) to the regressions. They found some evidence that countries with big government size can use sound institutions to mitigate negative effects of large public expenditure; therefore, moderating the effect of big public spending on economic development through the channels of institutions. Whether this conclusion holds for low-income economies such as ECOWAS sub region needs to be investigated.

More so, the recent emergence of the Chinese economy as the second largest economy and its continuous high growth rates due to strong intervention of the government has provided economic analysts with a complex puzzle. Sweezey and McConaghy (2011) argued that public policy and government intervention in economic activity could create comparative advantage and strengthen private sector productivity. They surmised that it is the strong government intervention in the Chinese economy that has given China the comparative

advantage in manufacturing over most of the advanced industrialised countries of OECD. China shows that big government with right political and economic institutions precipitate economic development (Przeworski &Curvale 2007). Does it then follow that efficacy of government size in promoting economic development is conditioned upon the quality of institutions in developing countries? This question begs for an empirical answer. West African countries, most of which are members of ECOWAS, are inhibited by a low equilibrium output growth rate and the key reason for this is probably due to poor quality institutions especially corruption in public space.

As Acemoglu and Verdier (2000) point out, corruption is a by-product of government interventions. It is especially made possible by the discretion that the policy makers enjoy in determining the type, size, and composition of projects and service delivery. This foregoing analysis has important implications for the linkages between corruption and public investment, as it suggests that corruption will be associated with higher public expenditure on infrastructure as decision makers seek to maximise their private gains by giving preference to large new investment projects over maintenance expenditures. Hence high public investment might not necessarily be a desirable outcome in an environment characterised by corruption since it will result in wasteful allocation of public resources. This view that corruption is detrimental to growth and development is supported by previous studies such as (Davis and Hopkins (2006), zouhair (2012), Nabila, Shazia and Muhammad (2015), Nirola and Sahu (2019), among others.

Differing from extant studies [such as, Iyare, Lorde & Francis, 2005; Dogan & Tang, 2006; Oteng-Abayie, & Frimpong, 2009; Moreno-Dodson & Bayraktar, 2015] that have investigated the link between government size and economic development for developing economies, this study look beyond income-based measure of economic development and employ other indicator. Recent development in macroeconomics has showed that income-based indicator (GDP growth) is not a good measure of economic development and well-being (Stiglitz, Sen & Fitoussi, 2009; Stiglitz, 2016). This study, therefore, employed Human Development Index (HDI) toexamine whether institutions play any significant role in moderating the effect of government size on economic growth and development.

## 2. CONCEPTUAL LITERATURE

The economic historian Douglass North was awarded the Nobel Prize in economics in 1993, largely because of his work emphasizing the importance of institutions in the historical development process. North (1990, p. 3) offers the following definition of institutions: "Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction." He goes on to emphasize the key implications of institutions: "In consequence [institutions] structure incentives in human exchange, whether political, social, or economic."

According to Acemoglu (2007) this definition encapsulates the three important elements that make up institutions. First, they are "humanly devised"; that is, in contrast to geography, which is outside human control, institutions refer to man-made factors. Institutions are about the effect of the societies' own choices on their own economic fates. Second, institutions are about placing constraints on individuals. These do not need to be unassailable constraints. Any law can be broken, any regulation can be ignored. Nevertheless, policies, regulations and laws that punish certain types of behavior while rewarding others will naturally have an effect on behavior. And this brings the third important element in the definition. The constraints placed on individuals by institutions will shape human interaction and affect incentives. In some deep sense, institutions much more than the other candidate fundamental causes, are about the importance of incentives.

Ostrom (1990) offers less succinct but equally important definition of institutions. According to him "Institutions" can be defined as the sets of working rules that are used to determine who is eligible to make decisions in some arena, what actions are allowed or constrained, what aggregation rules will be used, what procedures must be followed, what information must or must not be provided, and what payoffs will be assigned to individuals dependent on their actions. In Ostrom's definition, the concept of *arena* or *action arena* (Ostrom, 2005) is analogous to North's concept of a game. If the definitions of institutions have a lot of common ground and are widely accepted by the scientific community, there are still more variations in terms of how to correctly sum up or classify everything, that can be considered to be part of the institutional environment. Often the definition of institutions will include the provision that institutions are all rules or forms of conduct, which are devised with the intention of reducing uncertainty (as a consequence of imperfect information and limited rationality), controlling the environment/game and lowering transaction costs (Menard and Shirley, 2005).

In respect to classification of institutions, Joskow (2008) posits institutions as being legal, political, economic and social institutions.

- *Legal institutions* are the most omnipresent type of institutions, for some or another form of legislature can be found in practically any kind of, but most primitive or intimate, social interactions. They vary from public or state devised legal institutions, to private legal institutions, which are realized in contracts. Legal institutions are a large part of what is called formal institutions in the degree of formality classification. The range of issues where legal institutions are important is vast, some of the grave issues involve property rights, the origins of legal systems and their effects, and enforcement of legislation.
- We can talk about *political institutions* at any time, when we discuss polity in a broad meaning, the voters, electoral rules, political parties and rules of and limits of a government or state.
- *Economic institutions* are being intersected to a large extent by legal institutions and are institutions needed to secure a properly working market, such as the legal system, enforcement of property rights, some parts of regulation, etc.
- *Social institutions* are concepts such as norms, beliefs, trust, civic cooperation, and coincide largely with informal institutions in the degree of formality classification. The literature on social institutions also examines and researches social capital and social networks.
- Lastly, institutions within a firm or modes of governance are the micro organizational type institutions, which rest directly on transaction costs concepts. The issues researched within this last group of institutions are what kind of types of organization (ranging from a free market to a perfectly integrated firm) are most appropriate.

Aside definition and classification of institutions, the important issue in empirical research is the measurement of institutions. Institutions are latent factors within the economic system, and it is hard to find one proxy which would suitably represent the quality of the institutional environment. A composite indicator which combines the information of several empirical measures is a better solution. It can be based on a simple average of more variables or better yet, extracted as the latent factor with factor analysis, so that it truly represents the underlying institutional dimension, which is the institutional proxies share. Kuncic (2014) reviewed the available empirical institutional indices which correspond to the above stated definitions of institutions and composed a table of the ones that have the longest time coverage and those with proven track record in the literature. Table 1 presents some proxies for institution.

**Table 1: Proxies for Institutions**

| Institutional group | Source | Code |
|---|---|---|
| **Legal institutions** | | |
| Index of Economic Freedom: Property rights | The Heritage Foundation and WSJ | L1 |
| Freedom of the Press: Legal Environment* | Freedom House | L2 |
| Freedom in the World: Civil Liberties* | Freedom House | L3 |
| EFW Index: Judicial independence | Fraser Institute | L4 |
| EFW Index: Impartial courts | Fraser Institute | L5 |
| EFW Index: Protection of property rights | Fraser Institute | L6 |
| Law and order | ICRG | L7 |
| Religion in Politics | ICRG | L8 |
| Rule of Law | WB WGI | L9 |
| **Political institutions** | | |
| Freedom of the Press: Political Environment* | Freedom House | P1 |
| Freedom in the World: Political Rights* | Freedom House | P2 |
| Institutionalized Democracy – Institutionalized | Autocracy Polity IV | P3 |
| Checks and balances | WB DPI | P4 |
| Democratic accountability | ICRG | P5 |
| Corruption | ICRG | P6 |
| Bureaucratic quality | ICRG | P7 |
| Internal conflict | ICRG | P8 |
| Military in politics | ICRG | P9 |
| Control of Corruption | WB WGI | P10 |
| Corruption perceptions index | Transparency international | P11 |
| Political terror scale* | Political terror scale | P12 |
| **Economic institutions** | | |
| Index of Economic Freedom: Financial Freedom | The Heritage Foundation and WSJ | E1 |
| Index of Economic Freedom: Business freedom | The Heritage Foundation and WSJ | E2 |
| Regulatory Quality | WB WGI | E3 |
| Freedom of the Press: Economic Environment* | Freedom House | E4 |
| EFW Index: Freedom to own foreign currency bank accounts | Fraser Institute | E5 |
| EFW Index: Regulation of Credit, Labor, and Business: Credit market regulations | Fraser Institute | E6 |
| EFW Index: Regulation of Credit, Labor, and Business: Labor market regulations | Fraser Institute | E7 |
| EFW Index: Regulation of Credit, Labor, and Business: Business Regulations Fraser | Fraser Institute | E8 |
| EFW Index: Foreign ownership/investment restrictions | Fraser Institute | E9 |
| EFW Index: Capital controls | Fraser Institute | E10 |
| Investment profile | ICRG | E11 |
| * Scale is inverse, a higher number implies lower quality. | | |

Sources: Kuncic (2014)



## 3. STYLIZED FACTS ON ECONOIC DEVELOPMENT, GOVERNMENT EXPENDITURES AND INSTITUTIONS

Since the turn of the 21st century, Africa has shown steady progress on human development, as measured by the UN Human Development Index (HDI) and the countries of ECOWAS sub-region are part of the move. The HDI measures the level and progress of core development indicators – health, education and standard of living focusing on human capabilities and choices. It is only Ghana that have achieved medium level of human development and has the highest level that is greater than Sub-Saharan Africa (SSA) but

approaching the world average. Figure 1, however, depicts that sub-region has seen steady improvement.

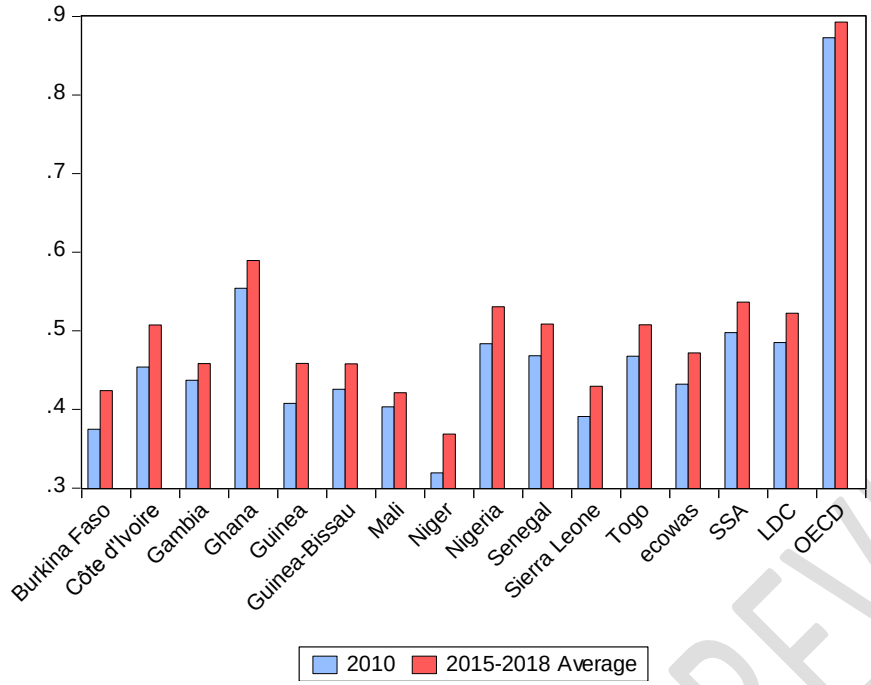


Figure 1: Human Development Index Pattern, 2010-2018
*Source*: *Human Development Report* (UNDP, 2019).

The governments of ECOWAS countries have not demonstrated significant priority to human development through their level of investment in the social sector. For instance, reviewing the most recently available data from 2000, Figure 2 shows that public expenditure on human development continues to grow as countries become wealthier but the trend dropped in 2016 and 2017. Over the period, expenditure on health is consistently above that of education. Public expenditure on health is up to 7% of GDP (in Niger, for example), while public expenditure on education is above 6% of GDP in Ghana. However, many the countries continue to spend far less. Nigeria, for example, spend less than 1% of GDP on health (World Bank, 2017). Health expenditure remains below the 15% of government spending threshold prescribed under the 2001 Abuja Agreement. (AEO, 2017)

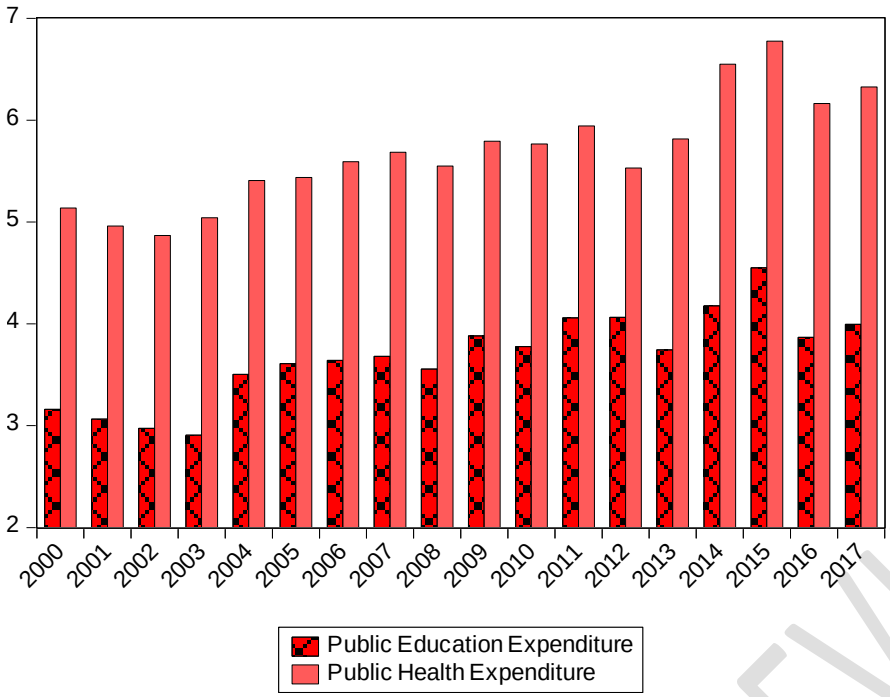


Figure 2: Public expenditure on Health and Education in ECOWAS countries (2000-2017)
*Source*: *Human Development Report* (UNDP, 2019)

The three sample frames presented in Figure 3 suggest that government size is relatively consistent with little deviation except for countries such as Guinea, Nigeria, Togo and ECOWAS average. The government size is in neighbourhood of 13% for Cote d'Ivoire, 16% for Mali and 10% for Sierra Leone. This relative stable series is also observed for data on less developed countries (LDC), low and middle income countries (LMY), sub-Saharan African countries and OECD countries.

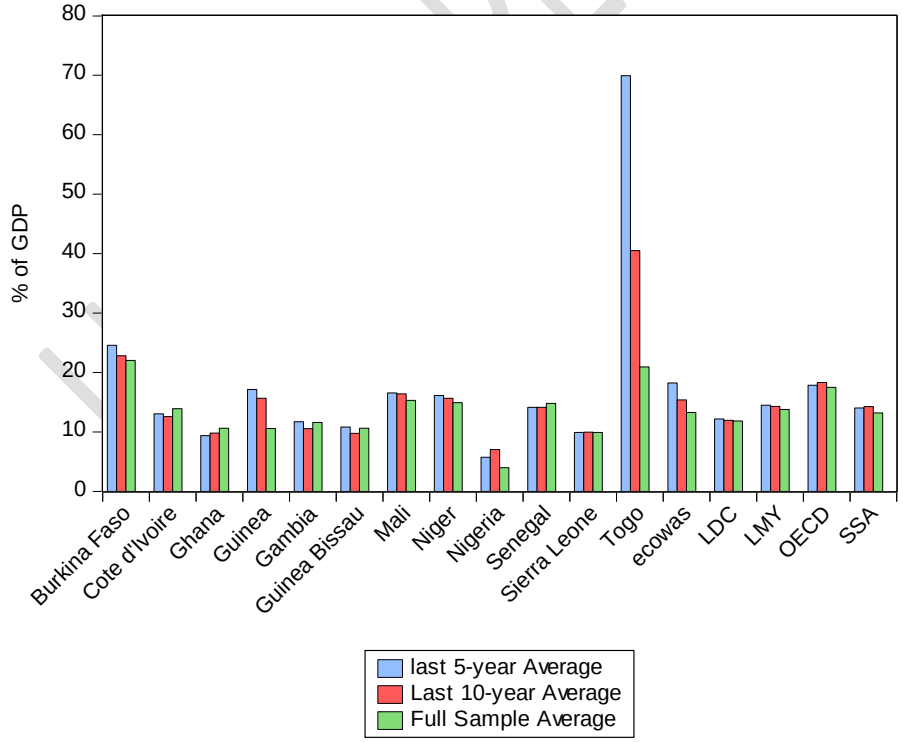


Figure 3: Government Spending Averages (% of GDP), 1986- 2018
*Source: Source: Author's calculation based on WDI database*

The corruption perception index is presented in Table 4. Basically the ranking is done based on the following classification: highly clean (100) and highly corrupt (0). None of the ECOWAS member countries has passed CPI score of 50. Ghana has the highest average score of 45 while Guinea Bissau has the lowest score of 20, however Guinea Bissau has been making consistent improvement since 2012.

Analysing institutional data from political risk of International Country Risk Guide (ICRG); Figure 5 show the chart average point of government stability, law and order and corruption. Nigeria, Togo, Niger, Sierra Leone and Guinea Bissau have high level of corruption while Guinea Bissau, Cote d'Ivoire and Sierra Leone have less government stability. In term of adhere to law and order Guinea Bissau, Nigeria and Niger have low rank.

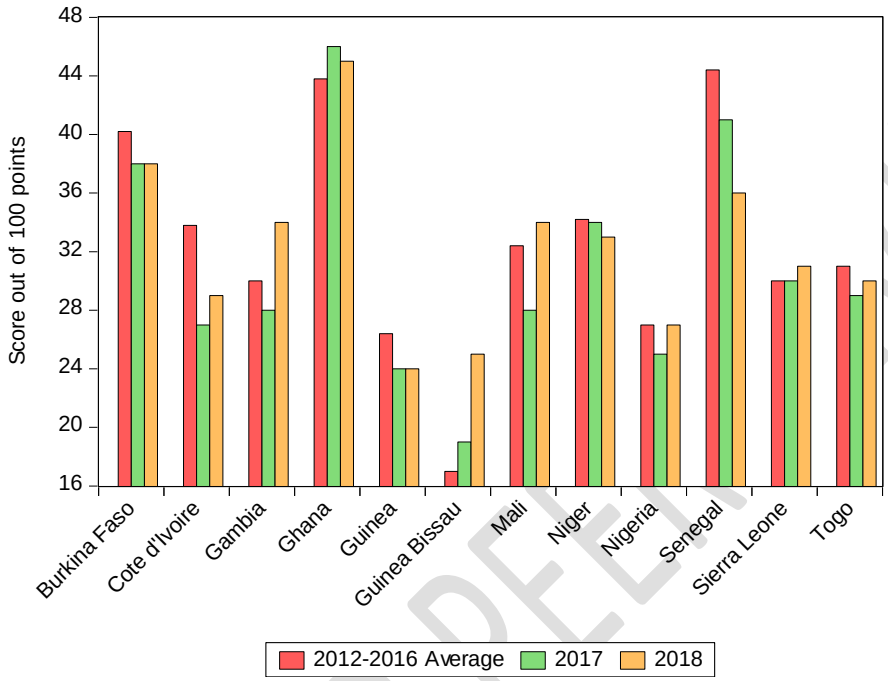


Figure 4: Corruption Perception Index Score for ECOWAS countries (2012-2018)
*Source: Transparency International Database, 2018*

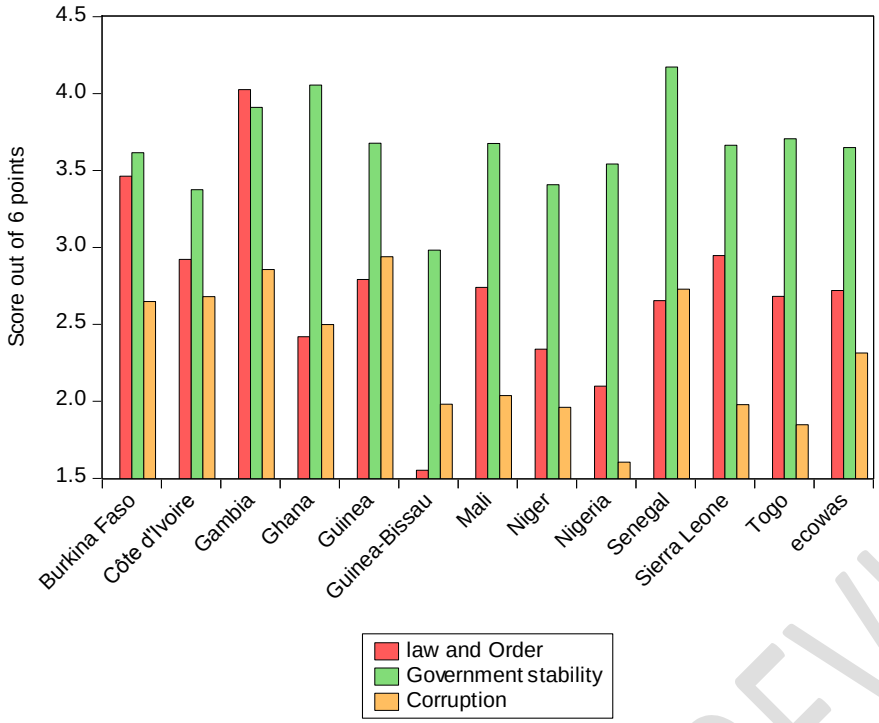


Figure 5: ICRG's Political Risk Average Points for ECOWAS countries (1986-2016)
*Source: International Country Risk Guide Database*



## 4. DATA AND METHOD

Secondary data was employed for this study. Data covering the period 1986 to 2018 are sourced as discussed below: Gross domestic product per capita, government size (government expenditure to GDP), population growth rate, inflation rate, gross fixed capital formation and financial development, were sourced from World Development indicator (WDI) database; Data on globalisation index was obtained from the database of KOF Swiss Economic Institute, Switzerland while data on institutions was obtained from the Political Risk Services (PRS) group's International County Risk Guide (ICRG) database.

The choice of 1986 as the base period is anchored on the fact that during the period, World Bank and IMF found the leverage they needed to implement their newly adopted policies of deregulation called structural adjustment programmes (SAPs) in the West Africa region. Thus, there is a common ground in terms of economic structure for the sample countries; which can be considered a relatively homogeneous group of countries. This way, the link between economic development and public spending for lower-income countries that are members of an economic union, can better be understood. The period of study ends in 2018 because of unavailability of data for 2019 for most of the sampled countries.

In a panel framework, the study used twelve (12) member countries of Economic Community of West African States (ECOWAS) as study area, with special reference to Nigeria being the top economy in the economic region. The sample countries are: Burkina Faso, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo. Three (3) countries, Benin, Cape Verde and Liberia, will be dropped from the population of fifteen (15) ECOWAS member countries due to insufficient data for most of the required series for the study.

Following from the theoretical under-pinning established in the literature, the study constructs a model to investigate the influence of institutions in the effect of government size on economic development. The model formulation in this section is exerted from Gazdar and Kratou (2012) with some modification in line with the study objectives. First, the study

estimate a benchmark model, which examines the effect of government size on indicators of economic development – here institutions variable is included in the model. This baseline model is specified as;

$$DEV_{i,} = \sigma_i + \beta_0 GOV_{i,} + \gamma Z_{i,} + \varepsilon_{i,} \quad (1)$$

Where, *DEV* is economic development indicator, *GOV* stand for government size while *Z* are control variables. σ is an unobserved country specific effect, and $\varepsilon_{i,t}$ is the error term of each observation.

The hypothesis to be tested is whether the level of institutions in the sample country mitigate the effect of government size on economic development. In order to achieve this, equation (1) was slight modified by introducing institutions variable (*INS*) and an interaction terms between government size and institution variable (*GOV* INS*). Hence,

$$DEV_{i,} = \sigma_i + \phi_0 GOV_{i,} + \phi_1 INS_{i,} + \ , + \varepsilon_{i,t} \quad (2)$$

$$DEV_{i,} = \sigma_i + \theta_0 GOV_{i,} + \theta_1 INS_{i,} + \theta_2 (GOV_{i,t} * INS_{i,t}) + \gamma Z_{i,t} + \varepsilon_{i,t} \quad (3)$$

The conditional hypothesis of model in equation (3) centred on the coefficients $\theta_0$ and $\theta_2$and the main tool of analysis in this study is the derivative:

$$\frac{\partial DEV}{\partial GOV} = \theta_0 + \theta_2 INS_{i,} \quad (4)$$

Equation (4) measures the effects of government size on development for different values of institutions factor to be examined in this study, holding the other factors constant. $\theta_0$ measures the direct effects of government size on economic development while $\theta_2$ measures the impact of institutions factor on economic development through its effect on government size. Therefore, holding other determinants of economic development in the model constant, an increase in government spending by one percentage point of GDP results to an increase in measure of development by $\{(e^{\theta 0 \ + \ \theta 2 INSi,t}) - 1\}*100\% \approx (\theta_0 + \theta_2 INS_{i,t})*100\%$. Four possibilities are therefore created and they are;

(i) If $\theta_0>0$ and $\theta_2<0$, and they are significant, then government size promotes economic development only in countries whose institutional qualities is low or failing. Hence, institutions is not a necessary condition for government spending to be development enhancing and welfare maximizing.

(ii) If $\theta_0<0$ and $\theta_2>0$, and significant, then government size has a negative impact on economic development, and the level of institutions mitigates the deleterious effect of government spending.

(iii) If $\theta_0>0$ and $\theta_2>0$, and they are significant, it then implies that a good institutions a necessary condition for government size to promote economic development and enhance social welfare.

(iv) If $\theta_0<0$ and $\theta_2<0$, and significant, then government size has a negative influence on economic development, and the level of institutions aggravate the detrimental effect of government spending.

**Definitions and Measurements of Variables**

Looking beyond GDP, the study used the United Nations Development Programme's human development index (HDI) to capture economic development. While per-capita GDP is correlated with economic development, it does not directly measure, longevity and education, the HDI directly measures per-capita income, longevity, and education. Moreso, while GDP measures productivity in the aggregate, the HDI reflects the types of goods and services that constitute GDP and it is the most widely accepted measure of comparative international welfare (Sen (1996)). Thus, unlike per-capita GDP, the HDI is able to distinguish between standard of living and income.

Approximately every five years, the UNDP calculates indices for every country measuring various social outcomes. The indices employed in the calculation of the HDI are:

life expectancy index, education index, and GDP index. Calculations employed in the 2011 HDI publication are:

$$\text{Life Expectancy Index (LEI)} = \frac{\text{Life Expectancy} - 25}{85 - 25} \tag{5}$$

$$\text{Education Index (EI)} = \left(\frac{2}{3}\right)\left(\text{Adult literacy rate}\right) + \left(\frac{1}{3}\right)\left(\text{Gross enrollment ratio}\right) \tag{6}$$

$$\text{GDP Index (GDPI)} = \frac{\ln\left(\text{GDP}\right) - \ln\left(\text{Minimum GDP}\right)}{\ln\left(\text{Maximum GDP}\right) - \ln\left(\text{Minimum GDP}\right)} \tag{7}$$

$$\text{HDI} = \left(\frac{1}{3}\right)\left(\text{LEI}\right) + \left(\frac{1}{3}\right)\left(\text{EI}\right) + \left(\frac{1}{3}\right)\left(\text{GDPI}\right) \tag{8}$$

When building each dimension of the index, the United Nations creates a minimum and maximum for each measurement to determine a value between zero and one allowing them to create a composite index. The final measurement of the index is scaled between zero and one, with one being the highest level of social welfare. Due to the five year increments of data, the study followed the works of Davies and Quinlavin (2006), and construct a straight-line annual progression between the intervening years from one measurement to the next.

The HDI presents some limitations, such as scaling index values between 0 and 1, the weight assigned to each of the basic dimensions, or difficulties encountered when comparing countries by other factors related to the enrolment rate, such as quality of schools or dropout rates, which vary substantially from year to year. Nevertheless, Nafziger (2006) considers that the HDI is better, more complete and multifaceted than any other indicator or index, being useful for the qualitative aspects of development, influencing countries with low levels of development to review their policies of nutrition, health and education. In this sense, the HDI is the indicator used in the present study to compare countries regarding their levels of development.

The main explanatory variables are government size ($GOV_I$) and Institution (*INS*). The study used the share of general government spending to GDP (*GOV*) – this consists of central, state and local governments, and social security funds – as a measure of government size. Four control variables in the models are; Inflation rate (*inf*) measure as the percentage change of consumer price index, population growth rate (*pop*), domestic investment (*inv*), proxy by gross fixed capital formation as percentage of GDP captured the share of investment to output and financial deepening (*findev*) measure as ratio of credit to private sector to GDP .

The data on institutions comes from the Political Risk Services (PRS) group's International Country Risk Guide (ICRG). The ICRG data comprises of 22 variables divided into three categories of risk: political, financial, and economic risks. For the purpose of this research, the study used three measures of political risk rating as indicators of institutional development. The three measure include (1) government stability, *govstab*, which assesses the government's ability to carry out its declared programs and to stay in office; (2) law and order, *law*, which assesses the strength and impartiality of the law (the law component) and the general observance of the law (the order component); and (3) corruption in government, *corr*, which measures the level of corruption within the government.

According to ICRG this variable measures "Law and Order form a single component, but its two elements are assessed separately. To assess the "Law" element, the strength and impartiality of the legal system are considered, while the "Order" element is an assessment of popular observance of the law." Whereas, government stability is an assessment both of the government's ability to carry out its declared program(s), and its ability to stay in office. The

subcomponents of this variable are government unity, legislative strength, and popular support (ICRG, 2012). This data provides the closest measure of institutional development available and has been used extensively in the literature. The values of these indicators range between zero (0) and twelve (12) for government stability, and zero (0) and six (6) for corruption and law & order. Values close to zero indicate less government stability, higher levels of corruption and less law & order. The study also used the aggregate variable as a measure of institutions and it ranks on a scale of 0-6, with lower scores indicating poor and weak institutions.

As widely used in the growth literature (Islam, 1995; Caselli, et at., 1996; Levine et at., 2000; Hung, 2011) averaging data over fixed intervals has the potential for eliminating business cycle fluctuations. Thus, allowing the focus to be on the medium – and long – term trend in the data. Therefore, all values of variables are five-year averages in order to eliminate short – term fluctuations and reduces potential impacts of single year abnormalities.

**Estimation Method**

Arellano and Bover's Generalized Methods of Moments (GMM) panel estimation technique was used to achieve the study objective. Arellano and Bover (1995), which is an improvement of the generalized least squares technique of Hausman and Taylor (1981), is able to estimate valid coefficients of time-invariant variables in data with large number of observations and small time periods. According to Islam (2013), time-invariant variables can have important effects on the outcome of choice in an economicmodel. Although there are a number of estimation methods available to estimate the coefficients oftime-invariant variables in a panel data setting (such as ordinary least squares, generalized least squares,maximum likelihood, generalized methods of moments), they may, at times, not be able to provideunbiased estimates of their coefficients. This is mainly because of the specifications present in the modelsbeing studied – for example, most panel data models have a parameter that captures the individual specific time-invariant heterogeneity in the sample (also known as individual fixed effect), while somealso have lagged dependent variables in them. These individual fixed effects can not only be correlatedwith the lagged dependent variable, but may also be correlated with other explanatory variables. Thesystem GMMs, like Arellano and Bover (1995) and Blundell and Bond (1998), are capable of addressingthe problem of multi-collinearity in a dynamic model.

Islam (2013) shows that in models with large number of observations and small time periods, the one-step Arellano and Bover (1995) can produce consistent and unbiased estimates of coefficients on time-invariant variables, regardless of whether the time-varying variables are exogenous or predetermined. The study further revealed that Arellano and Bover (1995) is also a good estimator for estimating coefficients of time-invariant variables in models with small observations relative to the time periods in the data, and when the time varying variables are exogenous. The presence of time-invariant variables do not seem to bias thecoefficients of the time-varying variables in these cases. Hence, this study employed one step system generalized methods of moments (System GMM).

Re-specifying equations (2) and (3) using system GMM beget models to be estimated are as follow:

$$DEV_{i,} = \sigma_i + \phi_0 DEV_{i,t-1} + \phi_1 GOV_{it} + \phi_2 INS_{it} + \phi_3 inf_{it} + \phi_4 inv_{it} + \phi_5 pop_{it} + \phi_6 fid_{it} + \delta_{it} \quad (9)$$

$$DEV_{i,} = \sigma_i + \theta_0 DEV_{i,t-1} + \theta_1 GOV_{it} + \theta_2 INS_{it} + \theta_3 (GOV_{it} * INS_{it}) + \gamma_1 inf_{it} + \gamma_2 inv_{it} + \gamma_3 pop_{it} + \gamma_4 fid_{it} + \delta_{it} \quad (10)$$

where $\sigma_i$denote time-invariant variable of countryi, and $\delta_{it} = \mu_i + \varepsilon_{it}$ and $\mu_i$is the *individual-specific heterogeneity that does not vary acrosstime for country I* and $\varepsilon_{it}$ is error term.

## 5. RESULTS AND DISCUSSION

### 5.1.1 Results of Panel Unit Root Tests

The panel unit root tests are applied based on three different panel unit-root tests; Levin, Lin & Chu (LLC), Im, Pesaran and Shin (IPS) and Maddala – Wu ( PP-Fisher) tests. The various tests are reported at level in Table 2. As reported in Table 1, the panel unit root tests (at least two of the tests) show that the following series are stationary at levels at least at 5% significance level; proxies for institutions – law and order (*inslaw*), government stability (*insgovstab*), corruption in government (*inscorr*), institution aggregate (*institutions*) – inflation (*infl*) and population (*pop*).The variables that are non-stationary at levels, achieved stationarity after taking the first difference. The series are; government size, human development index (hdi), investment (*invt*) and financial development (*findev*). Hence, we conclude that these variables are integrated of order one I(1), it therefore necessary to determine whether there is at least one linear combination of the variables that is l(0).

**Table 2: Results of Panel Unit Root**

| | At Level | | | At First Difference | | |
|---|---|---|---|---|---|---|
| Variables | Levin, Lin & Chu t* | Im, Persaran& Shin W-stat | PP-Fisher Chi-sq | Levin, Lin & Chu t* | Im, Persaran& Shin W-stat | PP-Fisher Chi-sq |
| *fdi* | -1.227 | 1.165 | 21.256 | -12.681*** | -3.853*** | 72.018*** |
| *findev* | -3.540*** | -0.327 | 30.490 | -10.254*** | -2.840*** | 70.594*** |
| *govexp* | -2.877*** | -0.177 | 28.920 | -24.200*** | -6.924*** | 95.505*** |
| *hdi* | 0.598 | 3.212 | 7.492 | -4.458*** | -0.296 | 31.384** |
| *infl* | -7.557*** | -3.503*** | 75.507*** | - | - | - |
| *inscorr* | -5.155*** | -0.248 | 39.909** | -10.789*** | -3.166*** | 59.612*** |
| *insgovstab* | -4.349*** | -0.741 | 37.218** | - | | - |
| *Inslaw* | -10.177*** | -2.366*** | 71.548*** | - | - | - |
| *Institutions* | -5.170*** | -1.236 | 45.564*** | - | | - |
| *invt* | -4.819*** | 0.847 | 31.702 | -4.856*** | -0.479 | 33.422* |
| *pop* | -6.319*** | 0.591 | 42.059** | - | | - |
| *ropen* | -3.284*** | 0.4733 | 29.6754 | -6.3311*** | -1.449** | 46.663*** |

*** (1%), ** (5%) & *(10%) level of significance
Source: Author's Computation

The result of the Kao cointegration test, which is a residual-based cointegration technique, is presented in Table 3. Based on the results, the null hypothesis of no cointegration was rejected at 5% significance level. Therefore, the Kao cointegration test, supports the evidence of long-run equilibrium relationship among the variables. This conclusion thus allowing for the estimation of long run parameters in the model presented in equations 9 – 10.

**Table 3: Kao Residual Cointegration Test Result**

| Test | Statistics |
|---|---|
| t-statistic | -2.0534 |
| p-value | 0.0200** |

Note: *** (1%), ** (5%), * (10%)
Source: Author's Computation

The results of system GMM is reported in Table 4, which shows the results of four measures of institutions – corruption in government, government stability, law and order and aggregate measure of institution.. The study first reported full model followed by the model with inclusion of interactive term. Table 4 shows that the lagged dependent variable is positive and significant at 0.01 level of significance in all the models. The linear specifications of models

3,5 and 7 showed that the coefficients of government size are positive and significant at 0.1 and 0.05 level respectively. Of the three measures of institutions, only corruption in government, *inscorr* (Model 9) has the expected significant effect on economic development. With inclusion of interactive term of government size and institutions variables, both government size and institutions variables (except law and order) have expected negative and significant estimates and the estimates of their interactive terms are also statistically significant but positively signed. These results, thus, support the hypothesis that good institutions will mitigate the detrimental effect of growing government size on economic development and well-being. The control variable *infl*is positive and significant in almost all the models in Table 4, *pop* estimate are not always statistically significant while the estimates of *findev* are negative and significant.

**Table 4: System GMM Result Estimates (Dependent Variable -HDI)**

| Variable | Corr | | Govstab | | Law | | inst | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| *Lagged dep* | 1.0205*** (0.000) | 1.0207*** (0.000) | 1.02323*** (0.000) | 1.0207*** (0.000) | 1.02636*** (0.000) | 1.0315*** (0.000) | 1.02274*** (0.000) | 1.02028*** (0.000) |
| *Govexp* | 0.00034 (0.177) | -0.00126* (0.076) | 0.00045* (0.059) | -0.00225** (0.011) | 0.00048** (0.045) | 0.00063 (0.404) | 0.00045* (0.067) | -0.00263** (0.010) |
| *Inscorr* | -0.00243* (0.091) | -0.00167*** (0.004) | | | | | | |
| *Govexp*inscorr* | | 0.00076** (0.021) | | | | | | |
| *Insgovstab* | | | 0.00062 (0.112) | -0.00560*** (0.008) | | | | |
| *Govexp*govstab* | | | | 0.00036*** (0.002) | | | | |
| *Inslaw* | | | | | -0.0015 (0.211) | -0.00358 (0.517) | | |
| *Govexp*inslaw* | | | | | | -0.00045 (0.871) | | |
| *Insti* | | | | | | | 0.00091 (0.352) | -0.01031** (0.006) |
| *Govexp*insti* | | | | | | | | 0.00063*** (0.002) |
| *Infl* | 0.00011* (0.073) | 0.00012* (0.060) | 0.00013* (0.051) | 0.0013* (0.061) | 0.000106* (0.094) | 0.000102 (0.116) | 0.00012* (0.085) | 0.00117* (0.082) |
| *Invt* | -0.00018 (0.198) | -0.00019 (0.189) | -0.00018 (0.204) | -0.00185 (0.205) | -0.00023 (0.108) | -0.00025 (0.095) | -0.00019 (0.206) | -0.00021 (0151) |
| *Pop* | 0.01142* (0.070) | 0.00957 (0.135) | 0.01217* (0.053) | 0.01009 (0.116) | 0.01147* (0.070) | 0.01067 (0.104) | 0.01253* (0.050) | 0.01918 (0.113) |
| *Findev* | -0.00060*** | -0.00549** | 0.000386* (0.062) | -0.00038* (0.081) | -0.00063*** | -0.00060*** | -0.00042* (0.054) | -0.00040* (0.065) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | (0.003) | (0.010) | | | (0.004) | (0.007) | | |
| constant | -0.07345* (0.067) | -0.0301 (0.495) | 0.09504** (0.014) | -0.03201 (0.465) | -0.07931** (0.047) | -0.07128 (0.119) | -0.09655** (0.015) | -0.02316 (0.614) |
| | | | | | | | | |
| Wald chi2 | 14672.18 | 13142.76 | 14526.48 | 13003.21 | 14623.35 | 12718.00 | 12867.60 | 12982.55 |
| Prob. | 0.0000*** | 0.0000*** | 0.0000*** | 0.0000*** | 0.0000*** | 0.0000*** | 0.0000*** | 0.0000*** |

Note: p-value in bracket; *** (1%), ** (5%), * (10%)

Source: Author's Computation

According to the statistics issued by ICRG (2014), it is observed that institutional quality in most of the developing countries is lower than that in developed countries in term of their high level of corruption, low respect for law and order, poor democratic accountability and bureaucratic quality. Therefore, improving efficiency and performance in public sectors is a pre-condition to boosting economic growth through government spending (Grigoli and Mills, 2014). This study investigated the inference that good institutions moderate, if any, the deleterious effect that increasing large government spending has on economic growth and development.

All other things equal, the results of Table 3 would imply that an increase by one standard deviation in corruption in government, as an institutional indicator, would have reduced human development index (development indicator) by about 0.017 percentage point. Similarly, the result of government stability suggests an increase by one standard deviation would lead to increase in *hdi* in the ECOWAS sub-region by about 0.006 percentage point. To illustrate the effect of institutions on economic development, consider two ECOWAS countries with different level of constraint on corruption in government; Ghana (CPI score 45) and Guinea Bissau (CPI score 25) then regression (10) indicate that if Guinea Bissau has the same level of institutions as that of the Ghana and government size rises by a given percentage then economic development indicator of Guinea Bissau would increase by about 0.033 percentage points instead of a rise of 0.017.

Accounting for the role of institutions in government size – economic development relationship, the study, thus, calculated the marginal effects of government spending on development at the minimum, mean and maximum index value of institutions. The results for the marginal effect of government size are reported in Table 5.

**Table 5: Marginal Effect of Government Size on Economic Development Conditional on institutions**

| | | Evaluated at | | |
|---|---|---|---|---|
| **Specification** | **Institutions** | **Min** | **Mean** | **Max** |
| Model 10 | Corruption in government | -0.000728 | 0.000412 | 0.001780 |
| Model 12 | Government stability | -0.001054 | 0.000370 | 0.001468 |

Source: Author's Computation

The marginal effect of government size at maximum value of institutions index allows the study to comment on Hypothesis that g*ood institutions do not moderate the negative effect of large government size on economic development.* At maximum corruption index value of 4 out of 6 for the sample countries (see Appendix I), the marginal effect of government size is positive as evident under Model 2 of Table 4. This implies that low level of corruption will enable government spending have significant impact on economic

development in ECOWAS countries. It is no surprise that countries plagued with corruption among civil servants are entangled with very high cost of doing business, thereby restricting the flows of foreign investments and potentially impinging on growth of the economy.

Similarly, Model 4 of Table 4 showed that at maximum government stability index value of 10.33 out of 12 for the sample countries (see Appendix I), the marginal effect of government size is positive. This suggest that the more stable government is, the more pronounce the growth and development effect of government spending will be. With respect to the African continent, Collier (2006) has made parallel arguments that to give a big push to Africa's economic performance, it is vital that the quality of institutions should be made robust, reliable and sustainable.

The high level of corruption, the risk of breach of contract and risk of government expropriation, have clear negative effects on growth, according to Abdiweli (2003). This study found that corruption index is statistically significant at 5 per cent level and it's inversely related to growth and development. The negative sign reported suggests that increase in corruption perception level will impact the growth per capita of ECOWAS countries negatively. This result is consistent with Tachiwou (2014) who found that corruption (component of institution) hampered economic growth in West African Economic and Monetary Union (UEMOA) countries.

## 5. CONCLUSION

The core functions of the government are protection of lives and properties, establishing the rule of law, the sanctity of contract, and perhaps the creation of a limited set of public goods. Nevertheless, growing above these functions, the government is likely to be detrimental to economic growth and subsequently economic development. The level of corruption in government is found to be a highly significant variable with the high marginal impact on size of government. This institutional variable makes it clear that corruption strongly contributes to bigger government sizes without corresponding impact on economic development of the citizenry. The study validates the hypothesis that good institutions mitigate any negative effect of large government size on economic development. It therefore concludes that the relationship between government size and economic development depends on quality of institutions in ECOWAS countries. Moreso, improving efficiency and performance in public sectors should be a pre-condition to boosting economic growth through government spending. It is recommended that tightening up of existing public sector rules and regulations on corruption and the setting up of an independent anti-corruption commission would to a large extent reduce or at least deters corruption in the ECOWAS countries.

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## APPENDIX I

Descriptive Statistics of Variables, 1986-2020

| | Mean | Median | Maximum | Minimum | Std. Dev. |
|---|---|---|---|---|---|
| Institutions | 3.054340 | 3.093750 | 4.462500 | 1.641667 | 0.575219 |
| Inslaw | 2.726905 | 2.985000 | 5.000000 | 1.000000 | 0.733281 |
| insgovstab | 7.282262 | 7.480000 | 10.33000 | 3.320000 | 1.839527 |
| inscorr | 2.209048 | 2.000000 | 4.000000 | 0.720000 | 0.691363 |
| hdi | 0.540333 | 0.528514 | 0.936478 | 0.244290 | 0.158393 |
| govexp | 18.35429 | 19.14070 | 27.88220 | 1.830000 | 5.762180 |