# Financial Development and Economic Sustainability in ECOWAS Countries: the Role of Institutional Quality

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**Abstract.** *The literature explored the relationship between financial development and economic sustainability, taking into consideration the roles played by institutional quality in the ECOWAS region. Most literature still debates on the roles of institutional quality on economic growth. The study used data from 1996-2017 for 15 emerging economies within the ECOWAS by applying two-step SYS GMM (SGMM) estimators. The study discovered that financial development has no significant and positive alliance on economic sustainability in the ECOWAS region. Besides that, regulatory quality and control of corruption, considered institutional quality variables have conflicting results with control of corruption reducing growth as well as regulatory quality increasing growth. Again, the results came out that capital formation has a positive association with growth and labor force influencing negatively on growth. Finally, due to a lack of proper corruption control systems in the region and poor financial sector development, growth cannot improve.*

**Keywords:** *financial development, economic sustainability, institutional quality, emerging countries*

JEL Classification: O11, O43, C23

**Abstrak.** *Literatur mengeksplorasi hubungan antara pengembangan keuangan dan keberlanjutan ekonomi dengan mempertimbangkan peran yang dimainkan oleh kualitas kelembagaan di wilayah ECOWAS. Sebagian besar literatur masih memperdebatkan peran kualitas kelembagaan pada pertumbuhan ekonomi. Studi ini menggunakan data dari tahun 1996-2017 untuk 15 negara berkembang dalam ECOWAS dengan menerapkan penduga dua langkah SYS GMM (SGMM). Penelitian ini menemukan bahwa pengembangan keuangan tidak memiliki aliansi yang signifikan dan positif pada keberlanjutan ekonomi di wilayah ECOWAS. Selain itu, kualitas pengaturan dan pengendalian korupsi, yang dianggap sebagai variabel kualitas kelembagaan, memiliki hasil yang berlawanan dengan pengendalian korupsi yang mengurangi pertumbuhan serta kualitas peningkatan regulasi. Sekali lagi, hasilnya keluar bahwa pembentukan modal memiliki hubungan positif dengan pertumbuhan dan tenaga kerja yang berpengaruh negatif terhadap pertumbuhan. Akhirnya, karena kurangnya sistem kontrol korupsi yang tepat di wilayah ini dan perkembangan sektor keuangan yang buruk, pertumbuhan tidak dapat meningkat.*

**Kata Kunci:** *pengembangan keuangan, keberlanjutan ekonomi, kualitas kelembagaan, negara berkembang*

## Introduction

The finance-growth connection in recent years has attracted many concerns from around the globe (Adusei, 2013; Chaudhry et al., 2019; Durusu-Ciftci et al., 2017; Ibrahim & Alagidede, 2018). Most of this literature is concentrated on the developed nations leaving the emerging economies unattended. Ayadi et al. (2015) investigated the relationship between financial sector development and economic growth, employing a sample of northern and southern Mediterranean countries for the period 1985-2009. Dawson (2003) hypothesized that many empirical studies support the positive effects of financial development on economic growth. This hypothesis is on 13 Central and East European Countries (CEECs) amid transition utilizing panel data. The results appeared that financial development, as measured by liquid liabilities as a proportion of gross domestic product, has an insignificant effect on economic growth in CEECs.

Caporale et al. (2015) reviewed the main highlights of the banking and financial sector in ten new EU members and, after that, looked at the relationship between financial development and economic growth in these countries by evaluating a dynamic panel model over the period 1994-2007. The study recommended that the stock and credit markets are still underdeveloped in these economies and that their contribution to economic growth is constrained owing to a lack of financial depth. Halkos & Trigoni (2010), utilizing the VECM, recorded that the financial system does not explicitly appear to affect growth within the European Union countries. The study on the finance-growth nexus in developed countries has extensively conducted by authors including (Ductor & Grechyna, 2015; Omri et al., 2015; Simionescu et al., 2017).

The few investigations conducted on emerging countries also focus on country-specific without considering the countries as a whole. Odhiambo (2010) conducting research involving South Africa by applying the ARDL-bounds testing procedure. Adu et al. (2013) focusing their study on Ghana, with Adeniyi et al. (2015) investigating in the Nigerian context. A bulk of literature on the finance-growth nexus has confirmed the strong positive relationship and impact of financial development on growth. (Akinlo & Egbetunde, 2010; Batuo et al., 2018; Polat et al., 2015) all attested that indeed financial development increases growth. (Ahmed, 2016; Ayadi et al., 2015; Valickova et al., 2015) on the other hand, are also of the view that financial development decreases growth both when employed as an independent variable or as a control variable.

Despite the entire above, there are few of the literature that considers the role of institutional quality. (Effiong, 2015; Omoteso & Ishola Mobolaji, 2014) studies consider institution quality as control variables when dealing with the finance-growth nexus. Their studies employed the GMM method and fixed and random effects method respectively and realized that institutional quality, when coupled with financial development, increases growth.

This current study contributes to the existing body of literature in three distinct ways. First, it adds up to the existing evidence and literature on the finance-growth nexus in Africa as a whole by employing the system GMM method of estimation that has not been considered by most literature on the subject matter in the African context, thus introducing

a methodological novelty. Secondly, most of the studies on finance-growth nexus in Africa, as stated earlier, have been concentrating on country specifics. Although there is a fresh idea that country-specific studies should prefer to cross-sectional panel studies (Arestis & Demetriades, 1997), yet state that the story of Africa on finance-growth nexus is best told if more panel studies undertake to boost the few case studies that produce conflicting results (Adusei, 2013). Lastly, the addition of institutional quality to finance-growth nexus determination in the African context gives another perspective and view. This study, therefore, attempts to examine the effect of financial development and economic sustainability in ECOWAS countries considering the roles played by institutional quality by apply system GMM method of estimation to make policy recommendations.

## Methods

In this study, a panel data from a sample of 15 ECOWAS countries from the Sub-Saharan African region for the period 1996-2017 is using. This period coincides with the time of both economic and institutional reforms within the region. Since 1986, more significant parts of SSA countries have executed a series of economic development programs on deepening the financial sector, additionally moving towards democratization, legal and political-institutional frameworks for greater access and, checks and balances.

The dependent variable, Economic Sustainability, is proxied by the Gross Domestic Product (current USD). Capital Formation proxies as capital. The financial development proxy with the ratio of domestic credit to the private sector that scaled by GDP. It is the most consistently utilized variable of financial development. A few authors have utilized liquid liabilities (M2 or M3, percentage of GDP) as a proxy for financial development. In any case, these variables speak with a volume in the financial sector, not financial development. Besides that, this study not utilize this variable to proxy financial development. The institutional quality is proxied by control of corruption and regulatory quality, with its estimation extending from around - 2.5 to 2.5. Data for the entire examination is from the World Bank (WDI) and World Governance Indicators.

The study at the earliest stage modeled the immediate impact of finance, including institutional quality on economic growth, which is modified to compress time fixed effects (Barro & Sala-i-Martin, 1995; Romer, 1986). The study formulates the following by determining a standard growth dynamic panel regression as beneath:

$$\Delta Y_{it} = + Y_{i, t_{-1}} + \beta_1 X_{it} + \gamma t + \varepsilon_t \qquad (1)$$

for i=1,...N and t=1,...T

Where $\Delta Y_{it}$, is the growth of GDP termed as economic sustainability, i as countries with t indicating time point t. ($t_{-1}$) is the level of GDP in the previous period. $X_{it}$ as an explanatory variable in a country i at a time point t. In this circumstance, this variable captures financial development, and institutional quality assessed by different proxies. $\gamma_t$ are the time fixed effects distributed across countries. $\varepsilon_t$ is the error term. Coefficient measures the relational condition upon the explanatory variable. From the above equation, the following equation is developed as follows:

$$\Delta GDP = + \beta_0 GDP_{i, t-1} + \beta_{1CAPit} + \beta_{2FINit} + \beta_{3LABit} + \beta_{4COCit} + \beta_{5RQEit} + \varepsilon_t \qquad (2)$$

With GDP *denoting the level of economic sustainability*, CAP as Capital Formation, FIN as Financial development, LAB as Labor Force, COC and RQE as institutional quality variables denoting control of corruption and regulatory quality. $\varepsilon$ is an individual error term.

Since the main hypothesis is to examine the effects of financial development on economic sustainability considering the roles of institutional quality, thus control of corruption and regulatory quality, the estimated coefficient proves the significance of the above model.

In estimating Equation (2), an ordinary least square (OLS) approach is not appropriate. The application of the OLS method can considerably produce biased results, it does not eliminate the unobservable country-specific effects, nor does it manage the possible endogeneity problem in the regressors. For growth models with dynamic panel determination, the generalized-method for moments (GMM) estimators of (Arellano & Bond, 1991; Arellano & Bover, 1995) is far better than other panel data estimators. The GMM panel estimators' controls for both time and country-specific effects, while utilizing proper lags of the regressors as instruments to address the endogeneity issue.

The study applied SYS-GMM estimator because it is more proficient in controlling the difficulties of the weak instrument (Arellano & Bover, 1995; Blundell & Bond, 1998). Once more, it combines both the equations in levels and first-difference as a system, whereas utilizing larger sets of instruments. In addition to the above reasons, the instruments for the level equations are the lagged differences of the regressors. Also, the validity of the additional instruments requires additional moment conditions. The first differences of the regressors in the equation are uncorrelated with the country-specific effects. The lagged values of independent variables as instruments in the model, according to (Reed, 2015) are appropriate instruments if both criteria hold – independent variables are weakly exogenous and no autocorrelation of the error term exists.

The application of the GMM model utilization comes with two diagnostic tests. In the first place, the study conducts the validity of instruments, to ascertain whether it has any connection with the residual. This estimation is possible by utilizing the Hansen J-statistic test. Secondly, the Arellano-Bond test to estimate second-order autocorrelation connections.

**Results and Discussion**

Table 1 gives descriptive measurements of the variables. The Gross domestic product has mean estimates of 2.41 and has a min and max of 2.06 and 5.68, respectively. Capital Formation has a sample of 321; however, it has a standard deviation of 1.36. The range of Financial Development remains from 0.40 to 41.40. Labor likewise has high variability as appeared high estimation of standard deviation (6481954). Its range lies somewhere in the range of 337216 and 5.90e+07. A comparable translation holds for all different variables.

**Table 1. Descriptive statistic**

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| GDP | 326 | 2.41e+10 | 7.70e+10 | 2.06e+08 | 5.68e+11 |
| CAP | 321 | 4.93e+09 | 1.36e+10 | -2.06e+07 | 8.98e+10 |
| FIN | 312 | 12.74338 | 7.632597 | .4025806 | 41.39817 |
| LAB | 326 | 6481954 | 1.09e+07 | 337216 | 5.90e+07 |
| COC | 285 | -.6921427 | .3940503 | -1.701552 | .176479 |
| RQE | 285 | -.6257557 | .4824712 | -2.023813 | 1.053121 |

Source: Author Computation

Table 2 gives a fundamental summation of the relationship between the variables utilized in running the regression model. From the results, there are positive correlations among a large portion of the variables estimated at a 5% level are positive except for the institutional quality variables, subsequently Control of Corruption and Regulatory Quality. In any case, GDP and CAP exceedingly propose conceivable multicollinearity. The study examines two separate regressors that consider the institutional quality for all nations in the study as per World Governance indicators.

**Table 2. Correlation Matrix**

| | GDP | CAP | FIN | LAB | COC | RQE |
|---|---|---|---|---|---|---|
| GDP | **1.0000** | 0.9755 | 0.0520 | 0.9098 | -0.2229 | -0.0522 |
| CAP | 0.9755 | **1.0000** | 0.0475 | 0.9523 | -0.2285 | -0.0571 |
| FIN | 0.0520 | 0.0475 | **1.0000** | 0.0456 | 0.3544 | 0.3427 |
| LAB | 0.9098 | 0.9523 | 0.0456 | **1.0000** | -0.2220 | -0.0471 |
| COC | -0.2229 | -0.2285 | 0.3544 | -0.2220 | **1.0000** | 0.6696 |
| RQE | -0.0522 | -0.0571 | 0.3427 | -0.0471 | 0.6696 | **1.0000** |

Source: Author Computation

The results show there is a direct relationship between Capital Formation (CAP) and economic growth, with the coefficient of the model significantly higher in magnitude, as shown in Table 3. Nevertheless, this growth is statistically at a significant level of 1%. In line with standard macroeconomics principles, capital formation significantly and positively increases growth. For example, a 1% increase in capital raises output growth by over 100 percent on average. This result is consistent with that of Appiah et al. (2019a), and Uneze (2013) who recorded that there is bi-directional causality between capital formation and growth, proposing that higher economic growth leads to the higher capital formation, and increases in capital formation result in higher economic growth. These results hold irrespective of whether the capital formation is a measure of the private fixed capital formation or by gross capital formation. Again, a study by Wolde-Rufael (2009) employing capital formation as a control variable discovered that capital is one of the essential factors in output growth in 15

out of the 17 countries and that it increases growth. However, he continued to stress that the results are to be understood with care, as it may not be adequately robust enough.

Surprisingly on financial development, the results show that there is a negative association with economic growth while the effect on economic growth is negative and insignificant. It is interesting to see that the marginal effect of financial development on economic growth is more apparent (a negative sign). Effiong (2015) confirmed the results contradicting the outcomes recorded by Ibrahim & Alagidede (2018) whom one way or the other stated that financial development has a positive relationship with economic growth, beneath a certain projected threshold, finance is mostly unresponsive to growth while significantly inducing economic activity for countries above the thresholds. This current study suggested that, financial development has not significantly contributed to SSA economic growth, opposite to the significant positive effect of institutional quality.

**Table 3. Two-Step SYS GMM Estimation**

| Variables | Coef. | Corrected Std. Err. | t | P>|t| | [95% Conf. Interval] | |
|---|---|---|---|---|---|---|
| GDP. L1 | .6520909 | .0307636 | 21.20 | 0.000*** | .5861095 | .7180722 |
| CAP | 2.786429 | .5383246 | 5.18 | 0.000*** | 1.631837 | 3.94102 |
| FIN | -4.30e+07 | 5.33e+07 | -0.81 | 0.433 | -1.57e+08 | 7.14e+07 |
| LAB | -852.8465 | 485.4549 | -1.76 | 0.101 | -1894.044 | 188.3506 |
| COC | -1.30e+09 | 2.26e+09 | -0.57 | 0.575 | -6.16e+09 | 3.56e+09 |
| RQE | 1.87e+09 | 2.04e+09 | 0.92 | 0.376 | -2.51e+09 | 6.25e+09 |
| Cons | 1.82e+09 | 2.04e+09 | 0.89 | 0.386 | -2.55e+09 | 6.19e+09 |

Source: Author Computation NB: *, **, & *** explains 10%, 5% and 1% significance level.

Control of corruption and regulatory quality did produce an opposing outcome; the study was expecting the institutional quality content to increase growth among ECOWAS countries. Control of corruption produced a negative relationship with growth, stating that an increase in corruption control measures substantially decreases growth. d'Agostino et al. (2016), in their examination on corruption and growth in Africa, applied the GMM method, and confirmed the results that corruption reduces growth. A contrasting view from Appiah et al. (2019b) recorded that the level of corruption control in Africa will increase growth when the correct measures undertake.

On the other side, the outcome of Regulatory Quality posits that an increase in regulatory quality increases growth. The study explained further that there exists a direct connection between regulatory quality and growth. Statistically, the magnitude of the coefficient indicates that when the adhering to rules and regulations of institutions increases growth. In a study involving developing countries, Jalilian et al. (2007) asserted the results of this study, stating that the results based on two different methods of estimation suggest a robust causal link between regulatory quality and economic performance. At the same vein, Omoteso & Ishola Mobolaji (2014) indicated that the implementation of positive regulatory

quality indicators has more positive effects on economic growth in the African region. They are continuously expressing that all indicators should implement simultaneously.

From the outcome of the estimation, it can realize that there is also a negative connection between labor and growth. Explaining this, an increase in labor reduces growth by a wider margin. This condition can be a result of the lack of equipment, duplication of functions by employees, and other factors. The outcome of this study is consistent with an examination conducted by Appiah et al. (2019c); they posit that labor reduces growth in some African countries. Their study was conducted on developing African countries and applied the Panel ARDL method of estimation, and it records that both the long run and short-run results indicate that an increase in labor reduces growth. (Kapsos, 2005) gives the opposite results recording that there is a connecting increasing effect between labor and economic performance.

Overall, the control effect of corruption control and regulatory quality did produce an opposing view as well as financial development producing a negative and insignificant effect. This evidence suggests the existing institutions have not enhanced the finance-growth relationship in the region. Therefore, improving institutions' quality is relevant to the financial sector is desired.

**Table 4. Diagnostic Estimations**

| Arellano-Bond test for AR (1) in first differences: z = -0.99 Pr > z = 0.325 | | | | | | |
|---|---|---|---|---|---|---|
| Arellano-Bond test for AR (2) in first differences: z = -1.05 Pr > z = 0.294 | | | | | | |
| Sargan test of overid. restrictions: chi2 (13) = 237.50 Prob > chi2 = 0.000 | | | | | | |
| Hansen test of overid. restrictions: chi2 (13) = 7.72 Prob > chi2 = 0.996 | | | | | | |
| Number of obs = 252 | Number of Instruments = 28 | Prob > F = 0.000 | Number of groups = 15 | Obs per group: min = 13 | Obs per group: avg = 16.80 | Obs per group max = 18 |

Source: Author Computation

This examination continues to test some diagnostic statistics to research the validity of the two-stage framework of the GMM method. True to form, in all details, the AR (1) test discards the null hypothesis of the non-appearance of 1st Order Serial Autocorrelation. Additionally, the AR (2) test does not recognize any proof of the 2nd Order Serial relationship. Nonetheless, as supported by Roodman (2009), the multiplication of instruments prompts finite test bias and may break the validity of the Hansen J-test. Along these lines, the paper limit the number of lags to one and utilize the "collapsed option" strategy actualized in Stata by (Roodman, 2009). The Hansen trial of over-identifying restriction dismissed the null hypothesis that the instruments are substantial (for example, not related to the error term). Finally, the study rejects the invalid speculation of the distinction in-Hansen test of heterogeneity. Curiously, the outcomes in regards to the role of institutional quality on economic sustainability just as the role of financial development are steady with different authors. For instance, Nawaz (2015) likewise utilizing framework GMM to find that in Asia, political solidness and brutality evasion are generally irrelevant for clarifying long-run growth.

## Conclusion

Financial development is one of the significant factors of economic growth in both the developed and undeveloped world. With this current study, there was an emphasis placed on the significance of financial development on economic sustainability, taking into consideration the role of institutional quality in the ECOWAS region throughout 1996-2017. According to most literature, 'institutional quality determinants like political instability, democratic accountability, and other factors are determinants of economic growth. Hence, the level of political risk can help increase or decrease investor confidence and improvement of growth.

Most of this contribution emphasized the institutional factors having a positive effect on growth. The two-step system GMM with IV techniques and the collapse option estimation recorded that the variables of concerns have opposing results with control of corruption reducing growth as well as regulatory quality increasing growth within the ECOWAS. The study found that due to the lack of proper corruption control systems in the region, growth could not improve. Financial development, besides, decreases growth. Again, the study discovered that capital formation increases growth with the labor force, reducing growth irrespective of these situations.

Overall, the outcome sends strong signals to governments and administration of countries in the ECOWAS regarding the importance of institutional quality on the economy as well as improving financial development. Therefore, ECOWAS countries should do everything possible to improve the institutional quality framework and structures because good institutions reduce the level of political turmoil, which is an excellent determinant of growth and investment.

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