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Financial Development, Institutional Quality and Economic Growth: Evidence from ECOWAS Countries

Michael Appiah (Corresponding author)

School of Finance & Economics, Jiangsu University, China
Dorstell Consult Ltd., Koforidua, Ghana
appiahjunior@yahoo.com
https://orcid.org/0000-0001-9314-4908

Fanglin Li

School of Finance & Economics, Jiangsu University, China
656575905@qq.com

Doreen Idan Frowne

Koforidua Technical University, Ghana
Dorstell Consult Ltd., Koforidua, Ghana
dorscon2017@gmail.com
https://orcid.org/0000-0002-5660-2786

Abstract. *Most of the literature that explored the relationship between financial development and economic growth taking into consideration the roles played by institutional quality in the ECOWAS region still debates on the roles of institutional quality on economic growth. This study used data from 1996-2017 for 15 emerging economies within the ECOWAS by applying two-step SYS GMM (SGMM) estimators. The following conclusions were developed: first, the study discovered that financial development has no significant and positive impact on economic growth in the ECOWAS region. Secondly, regulatory quality and control of corruption, which are considered as institutional quality variables, have opposing results with control of corruption reducing growth as well as regulatory quality variable increasing growth. Again, the results indicate that capital formation has a positive association with growth and labor force influencing growth negatively. 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 growth, institutional quality, system GMM, emerging countries.*

Introduction

The finance-growth connection has attracted many concerns from around the globe in recent years (Adusei, 2013; Ibrahim & Alagidede, 2018; Chaudhry et al., 2019; Durusu-Ciftci et al., 2017). 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 was made utilizing panel data on 13 Central and East European Countries (CEECs) amid transition. The results showed 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 and Trigoni (2010) utilizing the VECM recorded that the financial system does not specifically appear to affect growth within the European Union countries. The study on the finance-growth nexus in developed countries has extensively been conducted by authors including Ductor and Grechyna (2015), Omri et al. (2015), Simionescu et al. (2017).

The few investigations conducted on emerging countries also focus on country specifics without considering the countries as a whole. Odhiambo (2010) conducted research involving South Africa by applying the ARDL-bounds testing procedure. Adu et al. (2013) focused their study on Ghana, Adeniyi et al. (2015) investigated 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 and Egbetunde (2010), Polat et al. (2015), Batuo et al. (2018) all attested that indeed financial development increases growth. Other authors (Ayadi et al., 2015; Valickova et al., 2015; Ahmed, 2016), 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.

In spite of all the above, there is not much literature that considers the role of institutional quality. Studies by Effiong (2015), Omoteso and Mobolaji (2014) consider institution quality as control variables when dealing with the finance-growth nexus. Their studies employed the GMM method and the fixed and random effects method respectively and realized that institutional quality, when coupled with financial development, increases growth.

The 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, which 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 budding idea that country-specific studies should be preferred to cross-sectional panel studies (Arestis & Demetriades, 1997), yet it is hereby said that the story of Africa on finance-growth nexus is best told if more panel studies are undertaken 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 growth in ECOWAS countries considering the roles played by institutional quality by applying the system GMM method of estimation with a view to making policy recommendations.

This paper is structured as follows: Section one has introduced the study, Section two deals with the methods. Section three presents the model and methodology, Section 4 results and discussions, Section 5 presents the conclusions.

2. 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 used. This period coincides with the time of both economic and institutional reforms within the region. Since 1986, larger 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.

TABLE 1: **Variable description**

Variables	Unit of measurement	Source
GDP (Growth)	Percentage	World Bank
CAP (Capital)	Thousands	World Bank
FIN (Financial Development)	Percentage	World Bank
LAB (Labor)	Thousands	World Bank
COC (Control Of Corruption)	Index	World Bank (WGI)
RQE (Regulatory Quality)	Index	World Bank ((WGI))

Source: Composed by the authors

The dependent variable Economic growth is measured by the Gross Domestic Product (current in USD) normally adopted by most authors. Capital Formation measures as capital, Financial development as the variable of concern proxies by the ratio of

domestic credit to the private sector 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 relate with a volume in the financial sector, not financial development. Along these lines, the study did not utilize this variable to proxy financial development. For the other concerned variables, 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 taken from the World Bank (WDI) and World Governance Indicators.

3. Model & Methodology

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

$$\Delta Y_{it} = \alpha + \delta Y_{i, t-1} + \beta_1 X_{it} + \gamma_t + \varepsilon_t \dots \dots \quad (1)$$

for $i = 1, \dots N$ and $t = 1, \dots T$

where ΔY_{it} is the growth of GDP termed as economic growth, i represents countries with t indicating time point t. (t_{-1}) is the level of GDP in the previous period. X_{it} is an explanatory variable in a country i at a time point t. In these circumstances, this variable captures financial development and institutional quality assessed by different proxies. γ_t are the time fixed effects distributed across countries. ε_t is the error term. Coefficient δ measures the relational condition upon the explanatory variable. From the above equation, the following equation is developed as follows:

$$\Delta GDP = \alpha + \beta_0 GDP_{i, t-1} + \beta_{1CAP it} + \beta_{2FIN it} + \beta_{3LAB it} + \beta_{4COC it} +$$
$$\beta_{5RQE it} + \varepsilon_t \dots \quad (2)$$

with GDP denoting the level of economic growth, CAP representing Capital Formation, FIN – Financial development, LAB – Labor Force, COC and RQE – institutional quality variables denoting control of corruption and regulatory quality. ε is an individual error term.

Since the main hypothesis examines 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 and Bond (1991), Arellano and Bover (1995) is far better than other panel data estimators. The GMM panel estimators control for both time and country-specific effects while utilizing proper lags of the regressors as instruments to address the endogeneity issue.

The study applied the 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, however, 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 are satisfied – independent variables are weakly exogenous and no autocorrelation of the error term exists.

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 is possible by utilizing the Hansen J-statistic test. Secondly, the Arellano-Bond test is run to estimate second-order autocorrelation connections.

4. Results and Analysis

TABLE 2. **Descriptive Statistics**

Variable	Obs.	Mean	Std. Dev.	Min	Max
GDP	326	2.41	7.70	2.06	5.68
CAP	321	4.93	1.36	-2.06	8.98
FIN	312	12.74	7.63	.40	41.39
LAB	326	6,481,954	1.09	337,216	5.90
COC	285	-.69	.39	-1.70	.17
RQE	285	-.62	.48	-2.02	1.05

Source: Authors' computation

Table 2 gives descriptive measurements of the variables. The Gross Domestic Product has a mean estimate of 2.41 and 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 ranges from 0.40 to 41.40. Labor likewise has high variability as demonstrated by high estimation of standard deviation (6,481,954). Its range lies

somewhere in the range of 337,216 and 5.90. A comparable translation holds for all different variables.

TABLE 3. **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: Authors' computation

Table 3 gives a fundamental summation of the relationship between the variables utilized in running the regression model. From the results, the correlations among a large portion of the variables estimated at a 5% level are positive except for the institutional quality variables Control of Corruption and Regulatory Quality. The study conducts an examination on two separate regressors that consider the institutional quality for all nations in the study as per World Governance indicators.

TABLE 4. **Two-Step SYS GMM Estimation**

Variables	Coef.	Corrected Std. Err.	t	P>|t|	[95% Conf. Interval]
GDP. L1	.6520909	.0307636	21.20	0.001***	.5861095
CAP	2.786429	.5383246	5.18	0.001***	1.631837
FIN	-4.30e+07	5.33e+07	-0.81	0.433	-1.57e+08
LAB	-852.8465	485.4549	-1.76	0.101	-1894.044
COC	-1.30e+09	2.26e+09	-0.57	0.575	-6.16e+09
RQE	1.87e+09	2.04e+09	0.92	0.376	-2.51e+09
Cons	1.82e+09	2.04e+09	0.89	0.386	-2.55e+09

*Source: Authors' computation. NB: *, **, & *** explains 10%, 5% and 1% significance level.*

Turning to the estimation results, 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 4. Nevertheless, this growth is statistically important at a significance 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. (2019) 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, which results 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 most important 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 interpreted with care, as they may not be robust enough.

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

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. (2019) recorded that the level of corruption control in Africa will increase growth when the correct measures are undertaken.

On the other hand, the outcome of Regulatory Quality posits that an increase in regulatory quality results in an increase in growth. The study explained further that there exists a direct connection between regulatory quality and growth. Statistically, the magnitude of the coefficient indicates that adhering to rules and regulations of institutions increases growth. Jalilian et al. (2007) study based on two different methods of estimation involving developing countries suggests a strong causal link between regulatory quality and economic performance, which is in line with our study.

Further explaining this, Mobarak et al. (2018) by employing Panel Smooth Transition Regression (PSTR) model dismiss the linearity hypothesis of institutional quality and growth, and estimate a model with two regimes that proposes a threshold at institutional quality indicators of 0.1627 and 0.625 for the countries in the study. It is illustrated that the factor of rule of law incorporates a positive impact on economic growth; in any case, this impact is higher within the second regime. The results also indicate that in both administrations, the variables of institutional quality indices, economic freedom,

human capital and other control variables have a positive impact on economic growth. Additionally, the intensity of the variables affecting the changes in both groups escalates when institutional quality improves. The studies of Nguyen et al. (2018) and Maruta et al. (2019) also confirm that institutional quality influences growth positively. They applied the panel 2SLS estimate and System Generalized Method of Moments (SGMM) to realize this result.

TABLE 5. **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 =13	Prob. > F = 0.000	Number of groups = 15	Obs. per group: min =13	Obs. per group: avg. = 16.80

Source: Authors' computation

From the outcome of the estimation, it can be realized that there is also a negative connection between labor and growth. It seems that an increase in labor reduces growth by a wider margin. This can be a result of the lack of equipment, duplication of functions by employees, etc. The outcome of this study is consistent with an examination conducted by Appiah et al. (2019), who posit that labor reduces growth in some African countries. Their study conducted on developing African countries applying the Panel ARDL method of estimation recorded that both the long-run and short-run results indicate that an increase in labor reduces growth. Kapsos (2005) and Khan (2005) give 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 showing that financial development produces a negative and insignificant effect. This evidence suggests that the existing institutions have not enhanced the finance-growth relationship in the region. Therefore, improving institutions' quality is relevant to the the development of the financial sector.

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 limits the number of lags to one and furthermore utilizes 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 theHansen test of heterogeneity. Curiously, the outcomes in regard to the role of institutional quality on economic growth just as the role of financial development are steady with different authors. For instance, Nawaz (2015) utilized the framework GMM to find that in Asia, political solidness and brutality evasion are generally irrelevant for clarifying long-run growth.

5. Conclusions

Financial development is one of the major 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 growth taking into consideration the role of institutional quality in the ECOWAS region over a period of 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.

The initial section of this literature investigated the empirical and theoretical additions on the subject matter. Most of this contribution laid emphasis on the institutional factors having a positive effect on growth. The second section of the paper dealt with examining the impact of financial development on economic growth and the role of institutional quality in the ECOWAS region from 1996-2017. The study employed regulatory quality with control of corruption as factors of institutional quality and domestic capital of GDP as financial development. The two-step system GMM with IV techniques and the collapse option estimation recorded that the variables of concern have opposing results, with control of corruption reducing growth and 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, in addition, decreases growth. Again, the study discovered that capital formation increases growth, with 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 in 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 a great determinant of growth and investment.

Limitations of this approach

There are some limiting factors hindering the study. This study only dealt with West African Countries, which does not speak for the entire Africa Continent. Again, there was a problem of data availability for some countries under discussion. Selection of factors and variables differ from other research studies and became a limitation since there were no data available for such variables and countries. Lack of funds for purchase of data other than what is available from international organizations was another limiting factor. Some unanswered questions have been visible in this study, such as the connection between human development and economic growth. Finally, some recommendations are not applicable to some developing African countries because of different economic situations.

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