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Institutional Quality and Financial Development in West Africa Economic and Monetary Union

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Keywords: institutional quality, financial policy development, static and dynamic panel, a composite indicator of financial development.

I. Introduction

Developing countries, particularly those from the West African Economic and Monetary Union (WAEMU), are characterized by economic, political, and social structures that do not meet the basic needs of the population. Massive poverty and low integration also characterize these countries into the global economy. The rates of economic growth in that area of Africa are relatively low and are also characterized by excess volatility.

This economic and monetary zone has a rather significant financial delay over the developing countries in general and the other countries in sub-Saharan Africa in particular although it is seen as one of the most dynamic and promising areas of the continent. Indeed, the financial sector of the WAEMU countries, notwithstanding the development it has experienced in recent years, remains characterized by a low depth, extent, and access, which impedes sustainable economic development and is harmful to the effectiveness of macroeconomic policies.

These shortcomings at the level of their financial system can be explained by shortcomings in their institutions and governance mechanisms (political, economic, social, etc.). These shortcomings jeopardize a real development process, which would be characterized by their transition from a stage of economy based on the exploitation of primary products to that of industrial transformation. In our view, an analysis of the problems experienced by these developing countries, consisting of an evaluation of financial development policies in terms of institutional factors, would be a fruitful approach to estimating the potential of Development in these countries. However, as part of our research, we found it useful to focus on the internal dynamics of development, namely the links between the institutional and the financial aspects. This study aims to answer the question on to what extent does the State or sub-regional institutional framework influences the performance of the financial system; and conditions the results of financial development policies?

Indeed, the institutional issue in an empirical approach to financial development is the subject of more and more research work in economics. Increasingly, the idea that the performance of the financial system cannot be the result of the only factor of financial liberalism is present in the literature. But these performances would be due to the interaction of a more complex set of data that does not just fall within the evolution of financial regulations. In particular, institutional policies and arrangements would play a role in the relationship between finance and growth; the quality of the institutions may even be perceived as the primary determinant of financial and economic development (Acemoglu et al., 2004; Rodrik and Subramanian, 2003).The institutional issue thus has an undeniable relevance in so far as the paradigm of development prevailing until the beginning of the 90s

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fails to explain the failure of development policies derived from its theoretical corpus. By exploring this new path of research, it becomes possible to explain to some extent the economic and especially financial difficulties of developing countries. In this perspective, an adequate institutional framework would contribute to financial development and increase the effect of the latter on growth.

Conversely, a deficient institutional system, introduces distortions in the functioning of markets and is a hindrance to the development of the economic activity. The hypothesis derived from this reasoning is based on the work of Arestis et al. 2002. It stipulates that financial reform cannot promote the development of the financial sector until the economic system is anchored in a sound, credible, and adequate legal and institutional structure. Since a developed financial system alone can guarantee a substantial effect on the real performance of the economy, institutions' development is vital towards guaranteeing this effect.

The objective of this study is to examine the effect of institutional quality on financial development based on panel data analysis across developed and west Africa countries.

This study seeks to extend the literature in three dimensions. First, the financial development indicator is built-in using the institutional and financial parameters. Secondly, a linear and nonlinear dynamic panel data models are set up to test the linear and non-linear financial development-institutional quality relationships. This can be considered as one of the pioneer empirical works that used the robust dynamic panel system GMM approach to estimate the nonlinear relationship. Thirdly, the models are estimated based on the newly assembled institutional quality measure developed by Kaufmann et al. (2008) that consists of various sets of institutional quality variables, which can assess what dimensions of the quality of institutions affect financial development.

This study seeks to validate this hypothesis by building a new composite indicator of financial development and introducing this new indicator of development in an econometric equation to explain the Financial development in the WAEMU zone between 1996 and 2016.

Also, by way of confirmation of our results, the study is remaking the same estimate on a sample of developed countries 25, all Organization for Economic Co-operation and Development (OECD). Furthermore, after obtaining results using one of the most robust methods for estimating dynamic panel data (Generalized Method of Moment System), we realize that the retarded variable of our dependent variable is not significant, and therefore we could settle for static panel estimates (Fixed-effects model or random-effect model).The question underlying this methodological approach concerns the explanatory capacity of our composite financial development indicator to reveal the shortcomings of the WAEMU financial sector. To this end, we proceed to a second econometric estimation (both static and dynamic) on a control sample, made up of countries with different characteristics from those of the WAEMU countries, that is to say, OECD countries. These results will enlighten us on how the quality of institutions contributes to the process of developing the financial sector. And at the same time, the question arises as to whether it is not the shortcomings of the institutions that need to be attributed to the blockages of the growth of the financial sector and, therefore, that of the real increase.

In our approach, we first start to create a composite indicator of financial development and then to form our two (2) databases, both for WAEMU countries (sample of 8 countries) and those of the OECD (sample of 25 countries) on the period 1996-2016. Each of the two (2) databases includes the following variables: The gross domestic product per capita, the consumer price index, an average of the indicators representing the economic institutions, and that of the political indicators, and the indicator of financial development creates. Two methods, namely that of the Generalized Method of Moment (GMM System) on dynamic panel data at first and the estimation of models with fixed effects or random effect, are used in a second time. We decide to adopt a double-estimation approach to ensure the robustness of our econometric conclusions.

The first part provides a brief overview of the institutional framework as well as a panorama of empirical studies of the relationship between the institutional framework and the development of the financial sector (and by implication, the growth of economic activity). The second part is devoted to the methodology used. The last part is devoted to the results and discussions.

II. Literature Review

In this literature review, we first highlight the first wave of work that has set out to seek the link between the quality of institutions and economic development. And in a second time, we present our work, which consisted specifically in searching the link between, on the one hand, the institutional quality and, on the other hand, the capacity of the financial system to contribute to the financing of the economy.

It should be noted that the analysis for the role of the financial system in the growth process has been enriched by the development of theoretical models of endogenous growth integrating the financial sphere since the work of Schumpeter (1912) and Gurley and Shaw (1955). It is established that capital accumulation and technological change are not the only factors that explain the differences in the level of development

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between countries. The recent literature on growth also stresses the role of financial development and the quality of institutions, separately on the one hand and jointly, as fundamental determinants of economic growth. Also, an extensive literature has accumulated in recent years to show that macroeconomic stability and financial liberalization are insufficient for the real deepening of the financial sectors (and thus gaining growth). This literature also shows that other institutional reforms should accompany these policies. By basing their work on the gross domestic product per capita as a measure of economic development, many researchers have concluded that the differences found at the global level could be explained by the quality of the country or the study area. Growth would be high when institutions are functioning well and weak when they are deficient. By improving laws and their application, it is possible to stimulate the economic growth in particular for African countries that are experiencing real deficits in this area. This renewed interest in the institutions follows the work of the new institutional economics, notably those of Douglass North (1990). Indeed, North (1990) defines institutions as the set of rules and standards of a society or, more formally, the constraints established by men who frame and regulate behaviors. These are both formal institutions (such as rules, laws, constitutions) and informal institutions (such as unwritten social behavior standards, conventions, self-imposed codes of conduct). Based on this definition of ' ' Northienne ' ' of institutions, Daron Acemoglu et al. (2004) distinguish economic institutions from political institutions. Economic institutions would structure the rules of the economic game and concern, for example, property rights, the execution of contracts, and the transparency of contracts while political institutions include democracy, bureaucracy, and political stability. It is up to the economic and political institutions to ensure respect for the rules of law, which allow for the proper functioning of the spheres of production and exchange. They consist of formal rules of the game (constitutions, laws, property rights) and informal (customs, traditions, social capital, and rules of conduct, etc.).

The objective behind the conception of the institutions is the establishment of a certain order and, therefore, the reduction of the possible uncertainties in the exchange. They can be considered as corporate technologies in the functioning of productive economic activities (Nelson and Sampat, 2001). Many recent studies have emphasized the importance of institutional quality for an economic performance like Rodrik et al. (2004), Hall and Jones (1999), Knack and Keefer (1995), Mauro (1995), a positive relationship between the various indicators of institutional quality and the performance of the economy in general. In the same vein, Pistor et al. (1998) highlight the role of law and legal systems in economic development in Asia in an informative analysis. We now need to be interested in the part of the literature that has sought to report on the relationship between the financial sector and the level of institutional development. Few studies have looked at the exploration of this link. In particular, the current of law and finance whose intellectual leaders are the Porta et al. (1998), the work of Demetriades and Law (2006), Gregorio and Guidotti (1995), Knack and Keefer (1995), Levine and Renelt (1992), Wurgle (2000), Arestis et al. (2002) have all in their way in different studies, with various and varied theoretical and empirical research techniques supported with some close differences, that economies with a legal system that facilitates contracts between agents private and guarantees property rights, are in favor of the accumulation of private capital and the expansion of the financial markets.

And conversely, the low-level economies of a legal system suffer from a low incentive to lending activities and financial transactions. They also create a market for non-productive activities such as rent-seeking or bribery, which generate high transaction costs and poor resource allocation. Also, Demetriades and Law in 2006 concluded that, in low-income countries, institutional quality appears to be a fundamental determinant of economic development, more than financial development, and any positive effect of financial development on growth would be weakened without the existence of good institutions. And also, some work goes so far as to condition the impact of financial liberalization policies on the development of the financial system to institutional differences between countries.

More recent work such as Gani and Ngassam (2008), Girma and Shortland (2008), Lawand Azman-Sain (2008), Baida et al. (2009), Law and Habibullah (2009), Demetriades and Fielding (2009), Anayiotos and Toroyan (2009), Singh et al. (2009), Beji and Youssef (2010), highlighted the importance of institutions for finance, such as rules of law, political stability, government efficiency and the control of corruption. In these works, the authors used different samples from several countries of economic and geographical zones of the world. By using advanced quantitative techniques, they come to similar conclusions regarding the confirmation of the thesis on which the theory of law and finance rests (La Porta et al., 1998). We see through the results of these works; the institutional quality strongly influences the efficiency of the financial system. Indeed, variables such as the quality of regulation and control, corruption, political instability, protection of rights, in particular, private property rights, are elements in the process of financial development of an economy. In most of these recent studies, recourse to the application of the GMM method in the dynamic panel by the authors is noted.

Subsequently, Minea and Villieu (2010) attempted to reproduce this result in an endogenous growth model. They show that when "institutional quality"

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exceeds a certain threshold, the relationship between finance and growth is positive, while it becomes negative below the threshold. The intuitive explanation for this result is that financial development lowers transaction costs on private investment, but also reduces the revenue of seignior age usable for public investment. It is supportive of growth only if the government can obtain other revenue to finance infrastructure, that is, if the institutional quality is sufficient to allow the collection of taxes other than by tax Inflationary. If the institutional quality is too low, Seignior age's revenue loss cannot be offset by the collection of new taxes, and the infrastructure necessary for development cannot be programmed.

Our literature review concludes with the result that financial development is not conceivable without a sound institutional framework conducive to the development of economic and financial activities. This brings an additional guarantee to our idea of building from the outset of our research, an indicator of financial development that incorporates the quality of the institutions in determining the level of efficiency of the financial sector.

III. Methodology

a) Creating a new financial development indicator

We calculated our development index through two steps. First, we calculated a composite index of the quality of institutions. For this, we referred to the databases of World Governance Indicators, December 2018, built thanks to the work of Kaufman and al. This is a database with indicators relating to 6 variables of institutional development, mainly the voice and accountability, political stability and no Violence, government effectiveness, regulatory quality, the rule of law, and control of corruption. We extracted data about each of these variables from this basis to build an index successively for the quality of political institutions and then an index for the quality of economic institutions. Each variable is rated between -2.5 and +2.5.

We combined these institutional variables with six financial variables whose data were derived from the Global Financial Development Database (GFDD) 2017. These variables are bank credit to bank deposit, deposit money bank asset to GDP, domestic credit to the private sector, Private credit by deposit money banks and other financial institutions to GDP, Liquid liabilities to GDP, and Financial system deposits to GDP.

After ensuring the availability of data on all dimensions of our final indicator of financial development, we selected a sample of 97 countries, including countries from all continents around the world. And it's from 1996 to 2016, which is the time interval within which we obtain data. Finally, we used the Principal Component Analysis method on the XLSTAT in Excel software to get our financial indicator.

b) Estimation method in static and dynamic panel data: the fixed effects model with random effects, the GMM model in System

- The Fixed effects and random effects models
  - Fixed effects model

This model, also known as the *covariance model*, assumes that Ui and Vi are constant, non-random effects, which therefore change the value of the econometric equation constant according to the values i and t. This is an estimate that is carried out by the Ordinary Least Squares (OLS), after an addition to the explanatory variables of the indicator variables, or dummy variables, associated with individuals i and periods t (less an individual and a period to not create co linearity with the Constant. Assuming that the random cross-disturbance Wit satisfies the conventional assumptions of the OLS (i.e., they are centered, homoscedastic, independent, and normal), the estimates are optimal and allow for particular Fisher Tests to test the need for the terms U_i or V_t. The fixed-effects model is:

$$FINANCE_{it} = \alpha_i + \beta_1 INTECO_{it} + \beta_2 INSTPO_{it} + \beta_3 INSTFIN_{it} + \beta_4 INFLATION_{it} + \beta_5 RGDPC_{it} + \varepsilon_{it}$$

Where FINANCE is financial development, INTECO is economic institutions, INSTPO is political institutions, INSTFIN is financial institutions, RGDPC is real GDP per capita, the subscripts i and t index countries and time respectively. Also, the specification contains an unobservable country-specific effect α and error-term ε.

- The random-effects model

This model, also called the *compound error model*, assumes the random U_i, V_t. The basic specification assumes:

- The centered U_i, V_t, and W_{it}(zero expectation)
- The respective U_i, V_t, and W_{it} homoscedastic and standard deviation σu, σv, Σw.
- U_i, V_t, and W_{it} are not correlated and independent

The idea of this modeling is that the three no longer practice on the constant of the model, but really on the random disturbance Є. The method then aims to clarify these effects to take them into account to refine the estimate.

Under the assumptions indicated, the variance of the Єhazard is:

$$Var(\epsilon) = (\sigma_u * \sigma_u) + (\sigma_v * \sigma_v) + (\sigma_w * \sigma_w)$$

Although fixed-effects and random-effects models appear to be different, the second is generally recommended. Tests (notably Hausman) allow testing both hypotheses. And from the moment when the main

objective is the estimation of the coefficients of variables other than the constant and if they differ a bit, the question of the choice between the two models (fixed effects and random effects) loses its acuity. The random effects model is

$$FINANCE_{it} = \alpha + \beta_1 INTECO_{it} + \beta_2 INSTPO_{it} + \beta_3 INSTFIN_{it} + \beta_4 INFLATION_{it} + \beta_5 RGDPC_{it} + \mu_i + \varepsilon_{it}$$

- The Generalized Method of Moment (GMM) model in System

GMM in the dynamic panel has several virtues: they solve problems of bias of concurrency, inverse causation, and omitted variables. The GMM estimator is better than the Ordinary Least Squares (OLS) estimator. There are two (2) forms of GMM estimators in dynamic panels: The first difference GMM Estimator and the System GMM Estimator. The Arellano & Bond Model (1991) offers a first-GMM-difference estimator. It consists in taking for each period the first difference of the equation to be estimated to eliminate the country of the specific effects, and to the instrument after that the explanatory variables of the equation in first difference by their values at the level retarded of a period or more. The Blundell & Bond Model (1998) determines a system-GMM estimator that combines the first-difference equations with the level equations in which their primary differences instrument the variables. The GMM estimator in the system appears to be better than the GMM estimator since the latter gives biased results in the case of finite samples when the instruments are weak. The determination of the GMM estimator depends on the validity of the hypothesis that the error terms are not self-correlated and the validity of the instrumental variables used. To ensure the lack of self-correlation of the error terms and the validity of the instruments used, Blundell and Bond (1998) propose two essential tests: The Sargan test which allows to analyze the over-identification of the model and the validity Instruments used for the estimation and common test of lack of self-correlation for error terms, εit. Basic GMM model is:

$$FINANCE_{it} = \alpha + FINANCE_{it-1} + \beta_1 INTECO_{it} + \beta_2 INSTPO_{it} + \beta_3 INSTFIN_{it} + \beta_4 INFLATION_{it} + \beta_5 RGDPC_{it} + \mu_i + \varepsilon_{it}$$

Where FINANCE is financial development, INTECO is economic institutions, INSTPO is political institutions, INSTFIN is financial institutions, RGDPC is real GDP per capita, the subscripts i and t index countries and time respectively. Also, the specification contains an unobservable country-specific effect □□and error-term □.The data used in this study are mostly from the World Bank.

IV. Results

In this part, we will first give the results of our composite financial indicator and then the results of our econometric model with all its tests.

a) Composite indicator of financial development

To obtain this index, we proceed by applying the Principal Component Analysis method to achieve a weighting that reflects the reality of contributions from different dimensions of financial development. This Principal Component Analysis work focuses on data from institutional and financial variables such as the *Voice and accountability, Political Stability and no Violence, Government Effectiveness, regulatory quality, rule of law, Control of Corruption, bank credit to bank deposit, deposit money bank asset to GDP, Domestic credit to private sector, Private credit by deposit money banks and other financial institutions to GDP, Liquid liabilities to GDP and Financial system deposits to GDP. The software used XLSTAT* when applying the PCA gives us a table of contribution to the different variables to the construction of the different axes. It is the contributions of the various variables that we use as a weighting in the calculation of our synthetic indicator for the quality of institutions.

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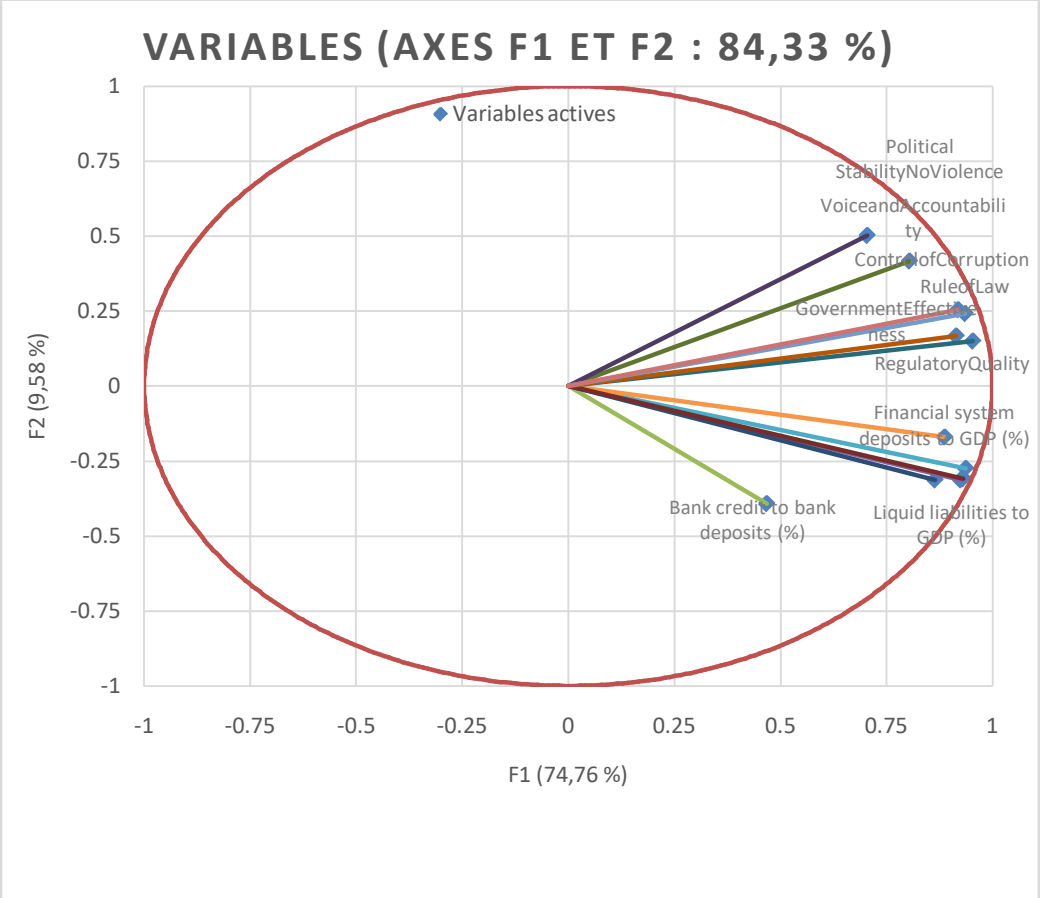

Source: Author

Figure1: Circle of correlation

Table 1: Contributions of variables

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12
Bank credit to bank deposits (%)	0.573	15.814	51.152	12.470	13.716	1.541	1.898	0.002	0.077	2.509	0.239	0.009
Deposit money banks' assets to GDP (%)	9.419	10.680	0.003	1.251	1.224	0.124	67.543	3.522	3.306	2.103	0.625	0.201
Domestic credit to private sector (% of GDP)	9.526	9.528	0.503	7.556	11.760	1.509	9.133	1.361	0.184	1.332	0.398	47.211
Financial system deposits to GDP (%)	7.017	2.772	29.006	4.271	2.904	0.991	7.573	0.000	2.067	41.375	1.979	0.044
Liquid liabilities to GDP (%)	7.229	9.242	14.819	12.769	9.921	0.516	0.178	0.043	3.111	38.977	2.974	0.221
Private credit by deposit money banks and other financial institutions to GDP (%)	9.627	9.158	0.468	7.756	12.941	0.262	6.407	1.108	0.000	0.365	0.023	51.885
Voiceand Accountability	6.578	18.489	0.555	0.831	1.046	71.181	0.244	0.335	0.403	0.027	0.116	0.196
Political Stability No Violence	6.859	7.593	1.076	47.864	34.606	0.762	0.000	1.107	0.064	0.017	0.034	0.017
Government Effectiveness	11.319	2.079	0.595	1.253	1.443	7.463	0.369	0.874	69.399	3.846	1.359	0.002
Regulatory Quality	10.556	3.813	0.419	3.297	4.604	6.075	5.717	41.591	11.899	5.198	6.768	0.063
Rule of Law	10.942	4.409	0.937	0.639	2.613	6.321	0.027	1.757	4.243	2.556	65.514	0.042
Control of Corruption	10.355	6.422	0.468	0.043	3.224	3.255	0.911	48.300	5.245	1.694	19.971	0.111

Source:Author

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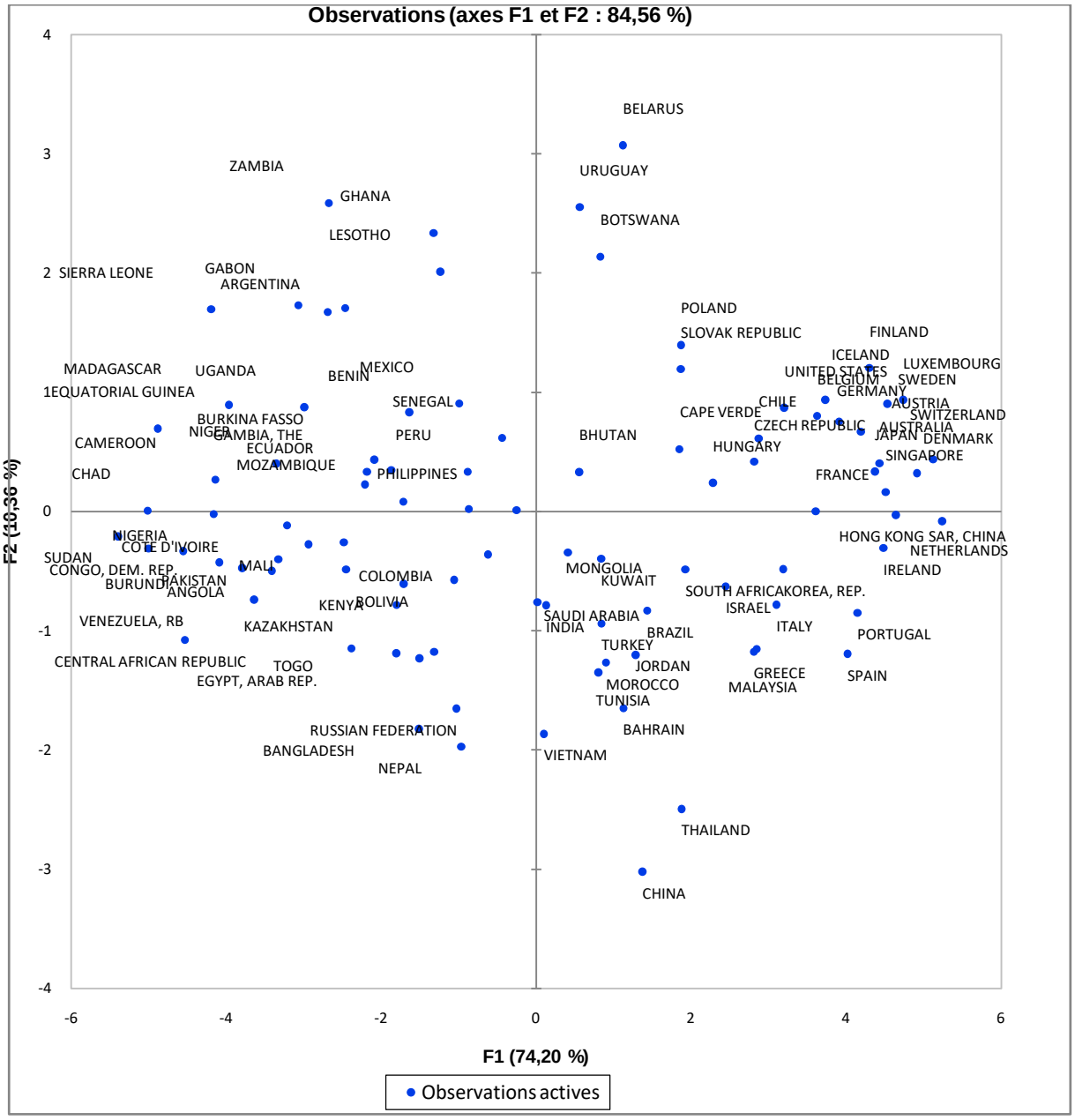
We have deducted the following weighting from the results of our application:

- Bank credit to bank deposits (0.573%)
- Deposit money banks' assets to GDP (9.419%)
- Domestic credit to the private sector (9.526%)
- Financial system deposits to GDP (7.017%)
- Liquid liabilities to GDP (7.229%)
- Private credit by deposit money banks and other financial institutions to GDP (9.627%)
- Voice-and-Accountability (6.578%),
- Political Stability-No-Violence (6.859%),
- Government-Effectiveness (11.319%),
- Regulatory-Quality (10.556%),
- Rule-of-Law (10.942%),
- Control-of-Corruption (10.355%)



Source: Author

Figure 2: The Principal Component Analysisgraph

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The results show us that finance, growth, and the quality of institutions are correlated variables. The idea that countries with better institutions are also those with the highest levels of GDP per capita, a more efficient financial sector. and our composite indicator of financial development is involved in confirming these results, precisely as it is highly correlated with the variables mentioned above. This gives relevance to this indicator about its ability to reveal the economic, institutional, and financial situation of the 97 countries in our sample.

Besides, the analysis of the data tells us once again that the OECD developed countries and some countries in Asia and South America, are a group of leading countries, characterized by high capita GDP, a level of inflation relatively correct, an institutional framework conducive to the development of financial activities. And then there is a group of countries, most of which are less economically and financially developed, some of which show encouraging signs and others, including many African countries, which are experiencing real difficulties and must make significant efforts to improve their institutions, to hope for stronger growth and more improved indicators of financial development.

By analyzing our results (taking the most recent date, 2016), we find that out of the 97 countries in our sample, 38 of them have an above-average index of 28.12, and symmetrically 59 countries are classified as having a lower than the sample average. When we look closer, the ranking shows that the leading countries are Hong Kong, followed by Luxembourg, Japan, Switzerland, China, Denmark with indices of 113.38 respectively; 83.61; 77.83; 77.35; 64.43; 60.58; 77.73; 73.04 show top-notch performance according to our calculations, and whose indices indicate a deviation from the average of the sample The United States (53.57) occupies the 12th position, France (42.72) is in 21st position. Generally, in these countries, agents do not experience a financial constraint framework in these financial systems. Financial intermediation is effective, and firms and households can finance their projects. These systems ful fill the six main financial functions: the legal and regulatory framework, risk-sharing, and investment monitoring are conducive to economic agents; the information available is sufficient for decision making. Among the countries of the African continent, it can be seen that South Africa (42.94), Morocco (34.71), Cape Verde (34.04), Tunisia (32.90) are the best performing in Africa with higher indices than the average.

On the other hand, the second half of the classification, that is, the countries of Sub-Saharan Africa, massively occupy its lower extremity. With exceptions such as Argentina (7.76), Pakistan (12.23) at the level of the last 20 positions are only African countries (South of Sahara). Malawi (6.00), Sierra Leone (5.11), Chad (4.44), Sudan (4.30), and Congo Democratic Republic (2.80) have the five least developed and worst-performing financial systems in our sample. Firms and households in these countries face significant financial constraints. Economic agents do not operate within an institutional (economic and political) framework sufficiently conducive to business, and governments do not provide effective law enforcement, property, and regulations for framework good economic practice.

For the WAEMU countries of the zone, namely Togo (18.73), Senegal (16.51), Burkina Faso (12.85), Benin (12.47, Ivory Coast (11.78), Mali (10.97), Niger (7.85), Guinea-Bissau (7.17). They are characterized by a lower-than-average index of the sample indices, which indicates a significant delay in the financial system of the countries in this WAEMU economic zone, which is manifested by inadequacies in both purely financial indicators, as well as institutional indicators.

b) The results of the econometric analysis

i. *Estimation in dynamic panel (GMM)*

a. The WAEMU zone

Our results, obtained after the use of Stata software (Version Stata 12) are shown in the following table:

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Table 2: GMM model regression (The 8 WAEMU countries)

FINANCE	Coef.	Std.Err.	t	P > |t|
FINANCE(t-1)	0.004	0.004	1.04	0.331
RGDPC	-0.481	0.276	-1.75	0.124
INFLATION	-1.753	1.103	-1.59	0.156
INTECO	-0.732	0.198	-3.70	0.008***
INSTPOL	-0.484	0.053	-9.12	0.000***
INSTFIN	2.094	0.032	65.01	0.000***
CONSTANT	4.572	2.428	1.88	0.102
Hansen test for overid. restrictions	chi2 (97) = 0.03		prob>chi2 = 1.000	
Arellano-Bond test for AR (1)	z = -0.78		pr> z = 0.438	
Arellano-Bond test for AR (2)	z = -0.35		pr> z = 0.727	
Prob> F = 0.000 ***		F(5, 7) = 1,14e+06		

Source: Author

*Notes: INTECO= Economic Institutions; INSTPOL =Political Institutions; INSTFIN= Financial Institutions; RGDPC = Gross Domestic Product per capita. The Arenallo and Bond dynamic panel system GMM estimations (Stata xtabond2 command) is used to estimate this model. P-value *** indicates 1% of the significance level. The Hansen test is accepted the over-identification restrictions. The null hypothesis of the absence of first-order serial correlation (AR1) andsecond-order serial correlation (AR2) are also accepted.*

These results show us that our new composite indicator of financial development had a positive and significant impact on development. Economic institutions and political institutions have taken in isolation have negative and significant coefficients, which we explain by the fact that in our opinion, the quality of the institutions will only have a real and significant impact on the financial sphere when there is an interpenetration of institutional performance with financial variables.

- Regarding the delayed variable of finance and the price, the level has insignificant coefficients. This can be explained by the fact that the problems of endogeneity that were suspected are not proven, and we could, therefore, have estimated our equation with a static panel model (what we do later in this work).
- The gross domestic product (GDP) per capita and inflation have negative and insignificant coefficients, so we will avoid giving them an interpretation.

Our composite indicator of financial development has a positive coefficient (+ 2.09) and significant. As a result, our assumption, according to which the financial development indicator we have built, is sufficiently relevant to explain that the evolution and development process of the financial system tends to be reinforced by the positive and significant sign in its coefficient in econometric estimates.

The WAEMU countries are among the countries that are experiencing difficulties in their economic development. On the one hand, these difficulties are remarkable because of the inefficiency that characterizes their financial system. We believe from the results we have obtained during our research (theoretical and empirical) that institutional quality plays a very significant role in the functioning and capacity of the financial sphere to enable the emergence of a financial system efficient in an economy. We also believe that the positive impact of our composite indicator of development (unlike the coefficients of economic and political institutions indicators taken in isolation) shows its consistency in its ability to measure financial development.

We found it interesting to replicate the same method to see if the results that support the relevance of our composite indicator of financial development to countries with characteristics quite different from those of the WAEMU countries, namely 25 OECD countries.

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b. The OECD zone

The table below shows the results:

Table 3: GMM model regression (the 25 OECD countries)

FINANCE	Coef.	Std.Err.	t	P > |t|
FINANCE (t-1)	-0.003	0.002	-1.31	0.203
RGDPC	-0.896	0.718	-1.25	0.224
INFLATION	0.052	0.140	0.37	0.716
INTECO	-.0.502	0.225	-2.23	0.036**
INSTPOL	-0.199	0.116	-1.72	0.098*
INSTFIN	2.063	0.007	314.03	0.000***
CONSTANT	3.625	2.626	1.38	0.180
Hansen test for overid. restrictions	chi2 (98) = 22.20		prob>chi2 = 1.000	
Arellano-Bond test for AR (1)	z = -0.46		pr> z = 0.648	
Arellano-Bond test for AR (2)	z = -2.13		pr> z = 0.033**	
Prob> F = 0.000***		F(5, 24) = 662886.55		

Source: Author

Notes: INTECO= Economic Institutions; INSTPOL =Political Institutions; INSTFIN= Financial Institutions; RGDPC = Gross Domestic Product per capita. The Arenallo and Bond dynamic panel system GMM estimations (Stata xtabond2 command) is used to estimate this model. P-value, **, *** indicate respectively 10%,5%and 1%, of significance levels. The Hansen test is accepted the over-identification restrictions. The null hypothesis of the absence of first-order serial correlation (AR1) is accepted, but the absence of second-order serial correlation (AR2) is rejected.*

These results show us that in the OECD, as in the WAEMU countries, the signs and the significance of the different variables are similar. The results are similar in detail to those obtained above. Indeed, as in the WAEMU zone, the new indicator has its relevance as to the impact it has on the functioning of the financial sector.

- The coefficient of the new indicator is positive (+ 2.06) and significant.
- As for the gross domestic product and inflation, their coefficients are not significant, as in the estimate on the countries of the WAEMU zone. Therefore, they cannot be interpreted reliably.
- And finally, as with the WAEMU area, with OECD countries, we get a coefficient of the delayed variable of non-significant financial development. At this level, too, the GMM system model could have been replaced by the techniques for estimating static panel models (what we do after that).

After using the GMM System model estimation method and obtaining results showing the non-significance of the delayed variable coefficient, weconcluded that a static panel estimation technique could have estimated our model. The next part will be devoted to this task.

ii. *Static panel estimation (fixed and random effects model)*

a. The WAEMU Zone

We have obtained results that support those obtained during our regressions by the GMM System method. First of all:

- Global significance tests of both models (Fixed Effects and Random Effects) show that both models are significant.
- The signs of the coefficients for the two (2) models are almost identical.
- Apart from the Economic Growth variable, whose significance is only certain at a threshold of 10%, all other variables are significant.

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Table 4: The fixed-effect model

FINANCE	Coef.	Std.Err.	t	P > |t|
RGDPC	-0.460	0.257	-1.79	0.076*
INFLATION	2.104	0.007	312.57	0.000***
INTECO	-0.492	0.052	-9.39	0.000***
INSTPOL	-0.464	0.083	-5.60	0.000***
INSTFIN	-1.395	0.232	-6.02	0.000***
CONSTANT	3.961	0.788	5.02	0.000***
sigma_u	0.109			
sigma_e	0.098			
rho	0.552			
Prob> F = 0.000***F test that all u_i F(7, 131) = 6.81				

Source: Author

Notes: INTECO= Economic Institutions; INSTPOL =Political Institutions;INSTFIN= Financial Institutions; RGDPC = Gross Domestic Product per capita. P value and *** indicate respectively 10% and 1%, of significance levels.*

Table 5: The random effects model

FINANCE	Coef.	Std.Err.	z	P > |z|
RGDPC	-0.315	0.122	-2.58	0.010***
INFLATION	2.093	0.006	356.30	0.000***
INTECO	-0.487	0.046	-10.52	0.000***
INSTPOL	-0.540	0.0722	-7.47	0.000***
INSTFIN	-1.210	0.217	-5.58	0.000***
CONSTANT	3.276	0.531	6.17	0.000***
sigma_u	0.051			
sigma_e	0.098			
rho	0.213			
Prob> chi2 = 0.000	wald chi2 (5) = 351754.94			

Source: Author

*Notes: INTECO= Economic Institutions; INSTPOL =Political Institutions;INSTFIN= Financial Institutions; RGDPC = Gross Domestic Product per capita. P value *** indicates 1%, of significance level.*

Table 6: Test Hausman and Test of Breusch-Pagan

Test of Breusch-Pagan		Test Hausman	
Chi2 (1)	9.37	Chi2 (5)	16.88
Prob> chi2	0.0022	Prob> chi2	0.0047

Source: Author

Test Hausman: H0: difference in coefficient not systematic

Because the probability of Hausman's test (0.0047) is less than 5%, the fixed-effect model is preferable to the random effects model.

Test of Breusch-Pagan: This test decides between a random effects regression and a simple OLS regression. The probability of Breusch- Pagan test (0.0022) is less than 5%, so the null hypothesis is accepted, and the random effect is appropriate.

b. The OECD Zone

As in our previous results, we achieved results almost similar to those obtained in our regressions for the WAEMU countries. First of all:

- Global significance tests of both models (Fixed Effects and Random Effects) show that both models are significant
- The signs of the coefficients for the two (2) models are almost identical.
- Apart from the Inflation variable, all other variables are significant. The significance of the "Economic growth" variable is only at the 10% threshold.

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Table 7: The fixed_effect model

FINANCE	Coef.	Std.Err.	t	P > |t|
RGDPC	-0.353	0.135	-2.62	0.009***
INFLATION	2.056	0.001	3751.16	0.000***
INTECO	-0.228	0.059	-3.87	0.000***
INSTPOL	-0.697	0.060	-11.58	0.000***
INSTFIN	-0.0367	0.048	-0.76	0.449
CONSTANT	1.627	0.529	3.07	0.002***
sigma_u		0.232		
sigma_e		0.100		
rho		0.843		
Prob> F = 0.000*** F test that all u_i F(24, 420) = 87.75				

Source: Author

*Notes: INTECO= Economic Institutions; INSTPOL =Political Institutions; INSTFIN= Financial Institutions; RGDPC = Gross Domestic Product per capita. P value *** indicates 1%, of significance level.*

Table 8: The random effects model

FINANCE	Coef.	Std.Err.	z	P > |z|
RGDPC	-0.326	0.119	-2.73	0.006***
INLATION	2.056	0.001	3808.95	0.000***
INTECO	-0.217	0.0568	-3.81	0.000***
INSTPOL	-0.691	0.0581	-11.89	0.000***
INSTFIN	0.0296	0.046	0.64	0.520
CONSTANT	3.276	0.461	3.26	0.001***
sigma_u		0.051		
sigma_e		0.098		
rho		0.213		
Prob> chi2 = 0.000		wald chi2 (5) = 2.56e+07		

Source: Author

*Notes: INTECO= Economic Institutions; INSTPOL =Political Institutions;INSTFIN= Financial Institutions; RGDPC = Gross Domestic Product per capita. P value *** indicates 1%, of significance level.*

Table 9: Test Hausman and Test of Breusch-Pagan

Test of Breusch-Pagan		Test Hausman	
Chi2 (1)	2404.82	Chi2 (5)	5.55
Prob> chi2	0.0000	Prob> chi2	0.3521

Source: Author

Test Hausman: H0: difference in coefficient not systematic

Because the probability of Hausman's test (0.3521) is high than 5%, the random-effect model is preferable to the fixed-effects model.

Test of Breusch-Pagan: This test decides between a random effects regression and a simple OLS regression. The probability of Breusch- Pagan test (0.0000) is less than 5%, so the null hypothesis is accepted, and the random effect is appropriate.

Our results in this static panel regression game show us that:

- When working with the Panel of Eight (8) WAEMU countries, the Hausman test tells us that the fixed-effect model should be retained, while with the sample of the OECD countries, the Hausman test does not allow us to decide between the two models (fixed Effects and Random Effects).
- In both samples and regardless of the estimated model, the coefficients are almost identical. Namely: A positive and significant effect of the new composite indicator of financial development. And the other institutional variables taken in isolation show negative and significant coefficients on the phenomenon of financial development.

V. Conclusion

The WAEMU countries are characterized by what is called financial underdevelopment in literature. This work aimed to show that the quality of (political and economic) institutions has an influence on the process

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of financial development in this part of the world on the one hand and to bring a new composite indicator of financial development into the financial development debate on the other hand.

This work tells us first that when a financial system works effectively, it results in mobilization and adequate allocation of available economic resources. We have developed a new composite indicator of financial development, built for 97 countries between 1996 and 2016. It brings together several aspects of financial development. This is a more comprehensive and accurate indicator of the real financial development of countries.

Acronyms and abbreviations

FD: Financial Development
INST: Institution
INTECO: Economic Institutions
INSTFIN: Financial Institutions
INSTPO: Political Institutions

References Références Referencias

1. Acemoglu, D., Johnson, S., Robinson, J., and Thaicharoen, Y. (2004), "Institutional Causes, Macroeconomic Symptoms: Volatility, Crises, and Growth," Journal of Monetary Economics, Vol. 50, N°1, pp. 49-123.
2. Anayiotos G. C. & Toroyan H. (2009), "Institutional Factors and Financial Sector Development: Evidence from Sub-Saharan Africa," IMF Working Paper WP/09/258. 7, 197–208.
3. Blundell, R. and Bond, S., (1998), "Initial Conditions and Moment Restrictions in Dynamic Panel Data Models," Journal of Econometrics, 87:115-143.
4. Kaufmann D., Kraay A., Mastruzzi M. (2003), «Governance Matters III; Governance Indicators for 1996- 2002», World Bank Policy Research Working Paper, n°2772, Washington D.C.
5. Kaufmann, D., Kraay, A. and Zoido-Lobaton, P. (1999), "Aggregating Governance Indicator," World Bank Policy Research Working Paper No. 2195, Washington, D. C.
6. Kaufmann, Kray, Zoido-Lobation (2002), "Governance Matters II: Updated Indicators for 2000-01", World Bank Policy Research Working Paper No. 2772
7. Kaufmann, D., Kraay, A.and M. Mastruzzi (2008), "Governance Matters VI: Governance Indicators for 1996-2006", World Bank Policy Research wp, No. 4280.
8. Kuipou, T, C., Nembot N, L., Tafah O, E., (2012), « Financial Development and Economic Growth in CEMAC Countries », Global Journal of Management and Business Research, volume XII version 1.
9. La Porta, R., F. Lopez-de-Silanes, A. Shleifer et R. W. Vishny, (1998), "Legal Determinants of External Finance," Journal of Finance, 52: 1131-1150.

Secondly, through our econometric work, we have achieved results. Indeed, estimating our static panel model gives us results that validate the relevance of our composite indicator of financial development. Indeed, as in our regressions (Dynamic and Static Panel), the coefficient of the new composite indicator is "positive and significant." Indeed, all of these results reinforce the idea that our new composite indicator of financial development has its relevance (Relevance that we capture by its ability to measure the performance of financial systems for different countries).

GDP: Gross Domestic Product
GFDD: Global Financial Development Database
GMM: Generalized Method of Moment
OECD: Organization for Economic Co-operation and Development

10. La Porta R., Lopez-de-Silanes F., Shleifer A. &Vishny R. (1998), "Law and Finance," Journal of Political Economy, 106(6), 1113–1155.
11. Law S. H. & Azman-Saini W. (2008), the Quality of Institutions and Financial Development. MPRA Paper, (12107).
12. Singh R. J., Kpodar K. & Ghura D. (2009), "Financial Deepening in the CFA Franc Zone: The Role of Institutions," IMF Working Paper WP/09/113.
13. Solow, R. (1956), "A contribution to the theory of economic growth," The Quarterly Journal of Economics 70, 65.
14. Stiglitz J. (1994), "The role of the state in financial markets" Proceedings of the World Bank Annual Conference on Development Economics, 1993, Supplement to the World Bank Economic Review and the World Bank Research Observer, pp. 19-52.
15. World Bank, [2007] World Development Indicators, Washington DC
16. World Bank, [2007] Doing Business 2008, Washington DC
17. World Bank, [2008] Worldwide Governance Indicators: 1996-2007, Washington, D.C.
18. Wurgler J. (2000), "Financial Markets and the Allocation of Capital," Journal of Financial Economics, 58(1-2), 187–214.

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