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Combined Effects of Institutional Quality and Financial Development on Macroeconomic Performance in Sub-Saharan African Countries

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Abstract

The objective of this paper is to show the importance of institutional quality as a factor enhancing the contribution of financial development to macroeconomic performance in SSA. In this context, we first present the theoretical literature and the empirical debates on the subject. Next, we derive an endogenous growth model that addresses the relationship between financial development, institutional quality, and macroeconomic performance. Finally, two dynamic panel models were estimated using the GMM method over the period from 2010 to 2017 and on a sample of 38 SSA countries. The estimation results reveal that institutional quality is considered as an important factor to be taken into account in analyzing the impact of financial development on macroeconomic performance.

Keywords: Combined Effects, Quality of Institutions, Financial Development, Macroeconomic Performance, Sub-Saharan Africa

1. Introduction

Since the work of Goldsmith (1969), McKinnon (1973), King and Levine (1993a and 1993b), there has been renewed interest in the role of financial capital in explaining economic performance. However, this idea of "capital accumulation fundamentalism" alone could explain only a small part of the differences in the level of development between countries. It implies that other factors affect the productivity of financial capital and consequently macroeconomic performance. These were ultimately to be related to the quality of institutions.

In the economic literature, the analysis of the importance of sound institutions in economic activity has followed two directions. The first refers to a logic of overall macroeconomic coherence to explain the impact of the institutional environment on economic performance. In the second direction, the work proposes a theory of the

firm based on the endogenous accumulation of resources. However, it is important to note that all these theories insist on the importance of systemic effects likely to create a link between the quality of institutions and economic performance. Thus, the theories agree on the idea that good-quality institutions would further improve the productivity of production factors and thus the overall productivity of the economy, which is a guarantee of economic performance.

On this basis, most developing countries, including those in Sub-Saharan Africa (SSA), began institutional and financial reforms at the end of the 1990s, motivated by the idea that improving the financial system, by improving the efficiency of financial intermediation, will lead to more sustained economic growth (Igue, 2013). However, after the economic crisis of 2008, it became apparent that these reforms differed greatly in terms of their impact on financial and economic development. It is therefore essential to know the reasons for the success of financial reforms in some countries and the causes of failure in others. On this subject, specific empirical work show that beneficial financial reforms presuppose a sound institutional framework (Arestis et al., 2002; Rodrik and Wacziarg, 2005). Otherwise, efforts in terms of financial reforms are not a sufficient condition for ensuring economic performance if they are not accompanied by appropriate institutional reforms (Mijiyawa, 2010). On this subject, most empirical work show that financial development and institutions emerge separately as fundamental determinants of economic growth. This is why we try in this study to show the complementarity between these two factors to explain the differences in levels of economic development across SSA countries.

Indeed, this new line of thinking assumes that the financial system does not operate in a vacuum, but rather presupposes the existence of a set of quality institutions. These institutions are responsible for transparency in the functioning of markets and government activity. Therefore, our main objective is to determine the combined effect of institutional quality and financial development on macroeconomic performance in Sub-Saharan African countries. To achieve this objective, we are proceeding in stages. Thus, the first point is devoted to the literature review. At this level, after defining the concept of institutional quality and presenting its measures, we will show, theoretically, that institutional quality is considered as the main determinant of financial development. In a second step, we empirically test a Solow growth model augmented by the quality of institutions, dealing with the relationship between financial development, quality of institutions and macroeconomic performance. This approach allows us to show the direct and indirect effects (through the quality of institutions) of financial development on macroeconomic performance in SSA countries.

2. Literature review

2.1. Theoretical literature

In the theoretical literature, several doctrines explain the importance of the quality of institutions in strengthening the role of financial development in the performance of economies. These are mainly legal and financial theory, endowment theory and political theory.

Indeed, the theory of law and finance, whose precursors are La Porta et al. (1997, 1998), emphasizes the role of legal institutions in differences in levels of financial development. First, this theory argues that in countries where the legal system facilitates contracts between private agents, and protects property and investor rights, savers are more inclined to invest in firms, thereby contributing to the expansion of financial markets. Conversely, a financial system that provides little protection of property and investor rights will tend to hinder financial development. Second, legal and financial theory emphasizes that the legal origin of the judicial system may explain the differences between countries in the protection of investor rights, contracts and level of financial development. Subsequently, Levine (1999) and Thorsten et al. (2000) show that financial intermediaries develop further when the legal system allows creditors to obtain the repayment of all their loans in case of bankruptcy. However, this theory has been much contested by several authors.

Indeed, Enrico and Modigliani (2000) base their analysis, not on the nature of the law, but on the quality of application of the legal rules. They prove the superiority of Scandinavian civil law countries over Anglo-Saxon countries regarding the impact of the quality of application of law on financial development.

With regard to endowment theory, Thorsten et al. (2003) consider that the formation of institutions promotes financial development and depends on the hostile environment faced by Europeans during the period of colonization. Thus, countries that protect property rights have a high level of development of banks and financial markets.

As far as the political thesis is concerned, it is treated according to two approaches. First, the economic approach (the new political economy), proposed by Pagano and Volpin (2001), aims to analyze political interventionism in the financial market. Indeed, economic interests actually influence the political process which, in turn, will have an impact on the elaboration of legal rules and their application. Thus, political representatives introduce the legal reforms desired and suggested by interest groups. This can promote economic outcomes in the sense of maximizing the objectives of interest groups. Similarly, the political factor influences banking development. Political reforms aimed at increasing the legal protection of creditors may lead to a reduction in borrower selection efforts. Reforms that aim to increase the efficiency of the legal system encourage banks to reduce the frequency of verification of the performance of borrower firms.

Second, the "ideological" approach of the political thesis proposed by Roe (1999) shows that political choices, which determine investor protection and the quality of its application, are induced by ideological factors. This approach is concerned with the resolution of the problems generated by the opening up of firms' capital and by the desire to make markets more substantial, which lies in the establishment of policy and social structure for these firms. Solving these problems does not only require the establishment of a legal environment. But legal reforms must be accompanied by policy reforms to enable the development of financial markets and economic growth.

2.2. Quality of institutions in the relationship between development, finance and economic performance: Empirical debates

Since the early 1990s, most countries have embarked on financial reforms motivated by the assumption that a well-functioning financial system ensures efficient financial intermediation, which will lead to more sustained economic growth. However, in times of crisis, there appears to be a big difference in the effect of crises on financial and economic development. This leads us to wonder why financial reform ends in success in one country and failure in another. In this context, several research studies show that financial reforms presuppose a sound institutional framework (Arestis and al., 2002). Otherwise, these reforms are not a sufficient condition for reversing the trend in activity if they are not accompanied by appropriate institutional reforms.

According to the work of the New Institutional Economics (NIE) School, political and institutional factors play an important role in long-term macroeconomic performance. The NEI covers multiple areas, ranging from property rights and transaction costs to asymmetric information. NIE theorists show that the market does not operate in a vacuum, but rather requires a set of institutions.

Financial institutions and markets still pose problems for the reforms that have taken place in developing economies. Although there have been efforts to analyze these problems, experts in institutional economics have focused on improving institutions in general, while financial specialists have focused solely on financial development in particular. Thus, it has become clear that there is a close link between financial markets and institutions. According to Levine (1997), institutions are "third type" factors that provide an important structure without which improvements in the financial system could not take place. In this regard, previous attempts have been made to analyze the meaning of institutions and financial markets and the relationship between them.

The econometric study by Pistor et al. (2000), on transition countries, shows that institutional structure is important in financial markets to encourage economic growth. However, most of the work has weaknesses that can be explained by the use of different definitions of an institution and a financial market. This is clearly because institutional economics and financial market theory are separate fields of research.

Many countries do not have the institutional capacity to monitor and regulate their financial sector, or to collect the data they need to get an accurate picture of the health of their financial institutions. It has become clear that institutional shortcomings have been an obstacle to the development of nations.

In addition, a sound institutional framework is a crucial element in the success of investment projects. Thus, Dollar and Levin (2005) showed that there is a strong and significant relationship between institutional quality and project success. Similarly, Knack and Keefer, (1995) found that the two measures of institutional quality (the law measure and the democracy measure) are very significant with respect to a project's success rate. Their main finding is that political and democratic institutions facilitate political borrowing, while property rights are more important for investment borrowing. Indeed, it will be difficult to have a good public investment if the institutional structure is not favorable to economic growth. Therefore, the success of investment projects depends on the quality of the institutions in each country.

3. Econometric approch

3.1. Theoretical model

Our objective in this section is to analyse the effects of financial development and institutions on economic growth. For this, we follow the approach of Mankiw et al. (1992) and Demetriades and Law (2006). So, consider the following Cobb-Douglas function.

$$Y_{it} = K_{it}^{\alpha} H_{it}^{\beta} (A_{it} L_{it})^{1-\alpha-\beta} \text{ avec } L_{it} = L_0 e^{n_{it}} \text{ et } A_t = A_0 e^{gt + W_{it}\theta} \tag{1}$$

In equation (1) Y is output, K the stock of physical capital, H the stock of human capital, L the labor, A the factor reflecting the technological level and efficiency of the economy, $\alpha + \beta < 1$, n the rate growth of the labor force, g the assumed constant rate of technical progress, W the vector of financial and institutional policy development and other factors affecting the level of technology and the efficiency of the economy, and the θ vector of coefficients which link these policies to the other variables and i and t are respectively the country and time indices.

Demetriades and Law (2006), show that A_t may be relevant to empirical studies on the link between financial development, institutional quality and economic development. For example, technological improvements can be the result of a developed financial system and a sound institutional framework (North, 1991). These two fields of analysis tend to increase the efficiency of the productive sector and improve investment productivity (Landesmann & Ugo, 1994).

The evolution of the economy is determined by :

$$\dot{K_t} = \frac{dK_t}{dt} = s_t Y_t - \delta K_t \text{ et } \dot{H_t} = s_h Y_t - \delta H_t \tag{2}$$

In equation (2) s_t and s_h are respectively the rate of investment in physical capital and the rate of investment in human capital. Thus, we assume that :

$\dot{K_t} = I_t - \delta K_t \text{ et } I_t = S_t$:with δ the rate of depreciation of physical capital.

It is known that the stock of physical capital per unit of effective labor and the stock of of human capital per effective unit of labor are given by :

$k_t = \frac{K_t}{A_t L_t} \text{ et } h_t = \frac{H_t}{A_t L_t}$. We can then derive their evolutions as follows :

$\dot{k_t} = \frac{d}{dt}\left[\frac{K_t}{A_t L_t}\right] \text{ and } \dot{h_t} = \frac{d}{dt}\left[\frac{H_t}{A_t L_t}\right]$. So, $\dot{k_t} = \frac{\dot{K_t}(A_t L_t) - (A_t L_t)'_t K_t}{(A_t L_t)^2}$ and $\dot{h_t} = \frac{\dot{H_t}(A_t L_t) - (A_t L_t)'_t H_t}{(A_t L_t)^2}$ with

$\frac{\dot{A}_t}{A_t} = g$ and $\frac{\dot{L}_t}{L_t} = n$. After doing all the intermediate calculations, we obtained

$$\dot{k}_t = s_t y_t - (\delta + g + n)k_t \tag{3}$$
$$\dot{k}_t = s_t y_t - (\delta + g + n)h_t \tag{4}$$

Knowing that, the gross domestic product per effective unit of labour is written as follows :

$$y_t = \frac{Y_t}{A_t L_t} = k_t^\alpha h_t^\beta \tag{5}$$

By replacing equation (5) in (3) and in (4), we get :

$$\dot{k}_t = s_k k_t^\alpha h_t^\beta - (\delta + g + n)k_t \tag{6}$$
$$\dot{h}_t = s_h k_t^\alpha h_t^\beta - (\delta + g + n)h_t \tag{7}$$

At equilibrium, the change in physical capital stock is equal to the change in human capital per unit of effective labor, equal to zero.

$$\dot{k}_t = \dot{h}_t = 0 \implies s_k k^\alpha h^\beta = (\delta + g + n)k \tag{8}$$
$$\dot{k}_t = \dot{h}_t = 0 \implies s_h k^\alpha h^\beta = (\delta + g + n)h \tag{9}$$

By making the ratio between (8) and (9), we obtain :

$$\frac{(8)}{(9)} \iff h = \frac{s_h}{s_k} k \tag{10}$$

By substituting (10) in (8) and in (9), we have :

$$k^* = \left[\frac{s_k^{1-\beta} s_h^\beta}{\delta + g + n} \right]^{\frac{1}{1-\alpha-\beta}} \tag{11}$$

$$h^* = \left[\frac{s_h^{1-\alpha} s_k^\alpha}{\delta + g + n} \right]^{\frac{1}{1-\alpha-\beta}} \tag{12}$$

Demetriades and Law (2006) indicate that relations (11) and (12) reflect the steady state of the economy. By considering relation (5), we have :

$$\left(\frac{Y_i}{A_i L_i} \right)^* = (k_i^*)^\alpha (h_i^*)^\beta \iff \left(\frac{Y_i}{L_i} \right)^* = (y_i)^* = (A_i)^* (k_i^*)^\alpha (h_i^*)^\beta \tag{13}$$

Relation (13) represents the output per unit of labor at equilibrium for each country.

Technological progress at equilibrium is given by :

$$A_i^* = A_{i0} e^{W_i \theta_i} \tag{14}$$

In equation (14), W_i represent the vector of variables representing the factors that can influence technological progress for country i. In this article, W_i groups together variables reflecting the levels of financial development, the quality of institutions and interaction variables between these two fields of analysis.

By substituting (11), (12) and (14) in (13), we find :

$$y^* = A_0 e^{W^* \theta} \left[\frac{s_k^{1-\beta} s_h^\beta}{\delta + g + n} \right]^{\frac{\alpha}{1-\alpha-\beta}} \left[\frac{s_h^{1-\alpha} s_k^\alpha}{\delta + g + n} \right]^{\frac{\beta}{1-\alpha-\beta}} \tag{15}$$

In order to linearize equation (15), we apply the logarithm to it.

$$Ln(y_{it}) = \ln\left(A_0 e^{W^*\theta}\left[\frac{s_k^{1-\beta}s_h^{\beta}}{\delta+g+n}\right]^{\frac{\alpha}{1-\alpha-\beta}}\left[\frac{s_h^{1-\alpha}s_k^{\alpha}}{\delta+g+n}\right]^{\frac{\beta}{1-\alpha-\beta}}\right) \tag{16}$$

By adding the time and individuals indices to equation (16) is rewritten as follows :

$$Ln(y_{it}) = Ln(A_{0i}) + \theta_i W_{it} + \frac{\alpha}{1-\alpha-\beta}Ln(s_{k_{it}}) + \frac{\beta}{1-\alpha-\beta}Ln(s_{h_{it}}) - \frac{\alpha+\beta}{1-\alpha-\beta}Ln(\delta+g+n_{it}) \tag{17}$$

Equation (17) represents the economic model which serves as a derivation of the econometric model for estimating the combined effects of financial development and the quality of institutions on economic performance.

3.2. Empirical model

As already seen in the theoretical study, levels of financial and institutional development are considered relevant factors in explaining differences in economic development across countries. However, a financial system does not operate in a vacuum, but rather presupposes a set of institutions. To this end, we will try to test the effects on economic development of the quality of institutions, financial development, and their interaction. The latter can be empirically translated by an interaction variable between the two fields of analysis (financial development and institutional development).

In order to empirically translate these ideas, the product $\theta_i W_{it}$ can be transformed as follows :
$\theta_i W_{it} = \theta_1 W_{1,it} + \theta_2 W_{2,it} + \theta_{3i} W_{3,it}$ with $W_{1,it}$, $W_{2,it}$ and $W_{3,it}$ financial development, the quality of institutions and their interaction , respectively.

From there, equation (17) is written then :

$$Ln(y_{it}) = Ln(A_{0i}) + \theta_1 W_{1,it} + \theta_2 W_{2,it} + \theta_{3i} W_{3,it} + \frac{\alpha}{1-\alpha-\beta}Ln(s_{k_{it}}) + \frac{\beta}{1-\alpha-\beta}Ln(s_{h_{it}})$$
$$- \frac{\alpha+\beta}{1-\alpha-\beta}Ln(\delta+g+n_{it}) \tag{18}$$

In the (18) equation, $Ln(A_{0i})$, $Ln(s_{k_{it}})$, $Ln(s_{h_{it}})$, n_{it}, g and δ are respectively constant by country, the reserves in physical and human capital, the rate of growth of the labor force, the growth rate of technological progress and the rate of depreciation . The rates g and δ are assumed to be constant across countries and over time and their sum is equal to 0.05 (Mankiw, Romer, and Weil, 1992).

Thus, given the assumption made for taking into account the quality of institutions in explaining the contribution of financial development to economic performance, two models (M1) and (M2) are estimated :

$$(M1): Ln(y_{it}) = \alpha_i + \beta_1 Lnk_{it} + \beta_2 Lnh_{it} + \beta_3 LnL_{it} + \beta_4 DF_{it} + \beta_5 QI_{it} + \mu_{it} \tag{19}$$

In the model (M1), the aim is to estimate the individual effects of financial development and institutional quality on economic performance.

$$(M2): Ln(y_{it}) = \alpha_i + \beta_1 Lnk_{it} + \beta_2 Lnh_{it} + \beta_3 LnL_{it} + \beta_4 (DF_{it} * QI_{it}) + \mu_{it} \tag{20}$$

In (M2), the purpose is to assess both the individual effects of financial development and institutional quality and their combined effect.

In equations (19) and (20), y is the real GDP per capita, α_i the individual effect, FD the financial development, QI the quality of institutions, (DF*QI) the combined effect of DF and QI, β_i the parameters to be estimated with i ranging from 1 to 6 and μ the error term of zero mean and equal variance σ_μ^2. It is important to specify that the QI variable is composed of several components that we present following the article.

3.3. Presentation of variables

Our endogenous variable is represented by the real gross domestic product per capita. Indeed, GDP per capita is used as an indicator of macroeconomic performance.

The explanatory variables include:
The stock of physical capital per capita (capi**) :** We calculate the stock of physical capital using the perpetual inventory method described by Van (1997). Thus, the stock of physical capital K in year t is equal to its stock in $t-1$ adjusted by a depreciation rate plus investment I in t: $K_t = I_t + (1 - \delta) K_{t-1}$ where I_t is gross fixed capital formation (GFCF) and δ is the depreciation rate ($\delta = 6\%$) (Hall and Charles, 1999). The stock of initial physical capital K_0 is equal to the initial investment I_0 divided by the sum of the annual growth rate ρ of investment I_t and the depreciation rate δ of physical capital: $K_0 \frac{I_0}{(\rho + \delta)}$. The physical capital stock per capita is the ratio of the calculated physical capital stock to the total population.

Human capital stock per capita (ch): In economic theory, exogenous and endogenous growth models emphasize the importance of human capital in explaining the development of an economy. The work of Barro (1991), Mankiw et al (1992), Mankiw et al. (1992), clearly suggest that developing countries must be equipped with a skilled workforce, i.e. human capital capable of assimilating foreign technology. The work of Mankiw et al (1992) uses the growth rate of the gross secondary school enrolment rate as a proxy for human capital. However, given the lack of data on the gross enrolment rate for most SSA countries, this paper uses the composite indicator proposed by Islam (1994) to measure human capital. Indeed, this indicator highlights the importance of education and thus of human capital on the level and variation of GDP per capita in a sample of African countries based on panel data.

Labor force (ft): it represents all workers and is measured by the active population.

Financial development (df): Several indicators are used in the economic literature to measure financial development. These indicators can be grouped into two categories. First, there are indicators relating to the size and efficiency of bank activity and second, there are indicators relating to the functioning of financial markets. Because of the low level of financial market development in developing countries in general, it is more appropriate to use the first category. Like King and Levine (1993), credit to the private sector as a percentage of (GDP) is used as an indicator of financial development in this work.

Institutional quality: This is a composite variable. Based on the indicators of Kaufmann, et al. (2010), the variables used are: rule of law and control of corruption (rdcc), good governance (eg), political stability and absence of violence and terrorism (spavt), regulatory quality (qr) and citizen responsibility (rc). Good institutions are likely to lead to a more competitive economy, which is a positive sign.

3.4. Data Sources

The data used in this article are annual secondary data and come exclusively from the World Bank database except for the institutional quality variables which come from the World Governance Indicator (WGI) database. The data cover the period from 2010 to 2017, i.e. seven (07) years, and are related to 38 SSA countries. The choice of this period was essentially guided by the availability of data on the variables.

3.5. Estimation method

The estimation of the model (19) is done using the generalized method of moments (GMM). The choice of this method is linked to the fact that the number of individuals in the model exceeds the number of individuals in the period. This method provides solutions to problems of simultaneity bias and controls for specific effects. In addition, it solves the problem of endogeneity of one or more explanatory variables, in particular the presence of the lagged dependent variable.

There are, however, two variants of the GMM estimator. The first is the first difference estimator of Arellano and Bond (1991) which consists in taking for each period the first difference in the equation to be estimated and eliminating the individual effects and then instrumenting the explanatory variables of the first difference equation by their level values lagged one or more periods. The second version is the system estimator of Blundell and Bond (1998). This estimator is an improved version of the first and consists of combining the first difference equation with level equations in which the variables are instrumented by their first differences. As a result, the GMM in system is more efficient than the GMM in first difference.

Thus, in the estimation of our model, we use the GMM in system in one step in order to take advantage of the robustness it offers, notably the absence of simultaneity and autocorrelation bias. Before moving on to estimation, we perform tests to ensure the efficiency of our results. Thus, we perform the preliminary model specification tests, the unit root test, the overall significance test, the Sargan/Hansen over-identification test, and the Arellano and Bond error autocorrelation test.

4. Estimations results and discussions

4.1. Presentation of estimation results

Before presenting the results of the combined effects of institutional quality and financial development on macroeconomic performance, we first present the results of the baseline tests.

The result of the model specification test gave a fisher statistic of $F_{(37, 242)} = 95.03$ and P-value greater than F = 0.0003. At the 5% threshold, this empirical evidence makes it possible to reject the null hypothesis of the absence of individual effects. The coefficients of the model are then homogeneous and this indicates that the data support the panel structure chosen. Moreover, Pesaran's (2004) inter-individual dependency test concluded that autocorrelation was present at the 1% threshold. This result made it possible to carry out the series stationarity test using Pesaran's (2007) second generation test. Table 1 presents the results of the stationarity test.

Table 1: unit root t ests in panel on the variables

Variables	CPIS *	Differentiation level	Decision
peme	-1.699	0	Stationary at 5%
df	-1.343	0	Stationary at 1%
capi	-2.675	0	Stationary at 5%
Ch	-0.959	0	Stationary at 5%
ft	-2.390	0	Stationary at 5%
rdcc	-1.981	0	Stationary at 5%
eg	-1.921	0	Stationary at 5%
spavt	-2.454	0	Stationary at 5%
qr	-1.983	0	Stationary at 5%
rc	1,700	1	Stationary at 5%

Source: Author's calculation using data from (World Bank, 2020a and 2020b).

As can be observed, the results of the stationarity test show that apart from citizen responsibility, which is stationary in first difference, all other variables are stationary in level.
The results of these preliminary tests allow us to estimate the models (M1) and (M2)

Table 2: effects of financial development and institutional quality on the economic performance of SSA countries

Variables	Coefficients	Standard deviations	t-student
Delayed economic performance	0.0512768 **	0.01949 7	2.63
Capital	0.5803041 **	0.269048	2.16
Human capital	0.1118391 **	0.0414794	2.7
Workforce	0.8457145 **	0.4130228	2.05
Financial development	0.1644856 **	0.064252 2	2.56
Corruption	- 0.517668 **	0.206242	-2.51
Good governance	0.3175408 **	0.1373801	2.31
Political stability / absence of terrorism	0.131504 **	0.0558355	2.36
Regulatory quality	0.1747689	6.326427	0.03
Responsibility of citizens	0.753196	1.394068	0.54
Constant	0.1201483 ***	0.0372797	3.22
AR (1)	-1.84	Prob> chie2 = 0. 11 7	
AR (2)	-0.07	Prob> chie2 = 0.944	

Source : Author, using data from (World Bank, 2020a and 2020b).

Table 3: effects of the combination of financial development and institutional quality on the economic performance of SSA countries

Variables	Coefficients	Standard deviations	t-student
Delayed economic performance	0, 0491656 **	0.018414	2.67
Capital	0.5 796 04 2 **	0.2658734	2.1 8
Human capital	0.1 09 839 4 **	0.039941 2	2.75
Workforce	0, 58771 32 **	0.27335 5	2.15
Comb1	- 0.7501647 **	0.32474 7	-2.31
Comb2	0, 8071201 **	0.35872	2, 25
Comb3	0, 4425172 **	0.187507	2.36
Comb4	0, 6312568 **	0.318816	1.98
Comb5	0.412147 **	0.16226 3	2.54
Constant	0.784235 ***	0.249756	3.14
AR (1)	-0.96	Prob> chie2 = 0.339	
AR (2)	-0.05	Prob> chie2 = -0.05	

, * indicate respectively a significance at 5% and 1 %.
Source : Author, using data from (World Bank, 2020a and 2020b).

Efficiency of GMM estimates in both models

First, the instrument used in our regression is valid because Sargan's tests and Hansen's tests failed to reject the hypothesis of validity of the job lagged variable at level as an instrument. In addition, there is no first- and second-order autocorrelation of first-difference errors because Arellano and Bond's first-order AR (1) and second-order AR (2) autocorrelation tests validated the hypothesis of no autocorrelation of errors. Sargan and Hansen's tests allow us to conclude that at the 5% threshold, we do not reject the null hypothesis of an overidentification of models. Thus, it is possible to conclude that the models are well specified. In order to eliminate the presence of heteroskedasticity, we estimate the model by the GMM method in a one-step system

using the robust option and then correct the student t-statistics for heteroskedasticity. Therefore, we can conclude that all our results are robust.

4.2. Discussion of results

The results of model estimates (M1) and (M2) show, on the one hand, that financial development and the quality of institutions significantly affect macroeconomic performance in SSA countries at the 5% threshold (Table 2) and, on the other hand, that the combination of financial development and the variables making up the quality of institutions positively and significantly affect macroeconomic performance with higher elasticities. (Table 3).

Indeed, Table 2 presents the results of the estimation of the M1 model. They indicate that, in addition to performance lagged by one period, human capital, labor force, capital, and financial development positively and significantly affect macroeconomic performance in SSA countries. Concerning financial development, its elasticity is 0.16. Regarding the variables of institutional quality, only good governance and political stability/absence of terrorism have positive effects on macroeconomic performance. These variables are significant at the 5% threshold and the respective elasticities are 0.31 and 0.13. The corruption variable is significant at the 5% threshold and admits an expected negative effect with an elasticity of -0.51. This confirms Mauro's (1996) idea, which showed that corruption is considered as the main cause of the failure of the majority of investment projects. The financing of these projects is guaranteed by the banking sector, which dominates most financial systems in developing countries.

In the second table, instead of analyzing the individual effects of the variables, we combined financial development with all the variables of institutional quality. The M2 model estimates in table 3 confirm those found in the first table 2. Indeed, the terms of interaction between financial development and good governance, political stability/absence of terrorism, regulatory quality, and citizen accountability show significant and positive effects at the 5% threshold on macroeconomic performance. Regarding the combination of financial development and corruption, it remains significant and negative, but the elasticity is lower than that obtained in Table 2. All these results confirm those obtained by Hasan and al. (2009).

Another important aspect that deserves to be stressed is that the combination of financial development and the quality of institutions allows the former to better support economic activity and ensure its development. This is because all the elasticities obtained are higher than those obtained in Table 2. These results confirm those of Dollar and Levin (2005) and Mijiyawa (2010). For these authors, a sound and efficient institutional framework allows financial development to better contribute to the performance of the economy.

5. Conclusion

The objective of this work is to assess the effect of the combination of financial development and institutional quality on macroeconomic performance in SSA. Having shown through the existing literature that a financial system presupposes a sound institutional framework with low levels of corruption, a more efficient judiciary, and better bureaucracy, we have shown that the elements of good governance provide an enabling environment for financial development and hence macroeconomic performance.

These theoretical analyses are empirically confirmed by the estimation of an endogenous growth model that allowed us to find a significant effect between financial development via a sound institutional framework.

In any case, these conclusions confirm the hypothesis that financial development admits more marked effects on the performance of the economy when there is a sound and efficient institutional framework, allowing a more consequent mobilization of the credit granted by banking and non-banking financial institutions for the financing of development projects and programs.

Notes
The variables : comb1 = Financial development*Corruption ; Comb2 = Financial development*Good governance ; Comb3 = Financial development*Political stability / absence of terrorism ; Comb4 = Financial development*Regulatory quality ; Comb5 = Financial development*Responsibility of Citizen.

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Appendix A

Table A: List of the 18 SSA countries in the sample

Country	
Angola	Guinea
Benin	Guinea-Bissau
Botswana	Madagascar
Burkina Faso	Liberia
Ghana	Malawi
Kenya	Mali
Burundi	Niger
Cameroon	Nigeria
Centrafrique	Mozambique
Chad	Mauritania
Congo, Dem. Rep.	Namibia
Gabon	Rwanda
Djibouti	Senegal
Cote d'Ivoire	Sierra Leone
Congo, Rep.	South Africa
Gambia	Tanzania
Lesotho	Togo
Comoros	Uganda
Ethiopia	Zimbabwe