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Governance and Economic Growth in Africa

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Abstract: Good governance is essential for economic development as it enhances the effectiveness of economic policies undertaken by the government. The aim of this paper is to study the relationship between governance and economic growth in Africa. Using the World Bank governance indicators we construct a composite index to resume all the indicators in one variable that will be used to measure the impact of governance on growth. The main result of this study is that a change in the governance index of a unit is likely to produce an increase of 1.7% in real GDP. This result seems to be extremely important considering the shortage of financial resources in Africa. Improving governance seems to be the best and the less expensive way the boost economic growth. Thus, African countries need to strengthen their economic efficiency by promoting results-based fiscal management, improving their doing business environment and investing in education to improve the quality of human factor.

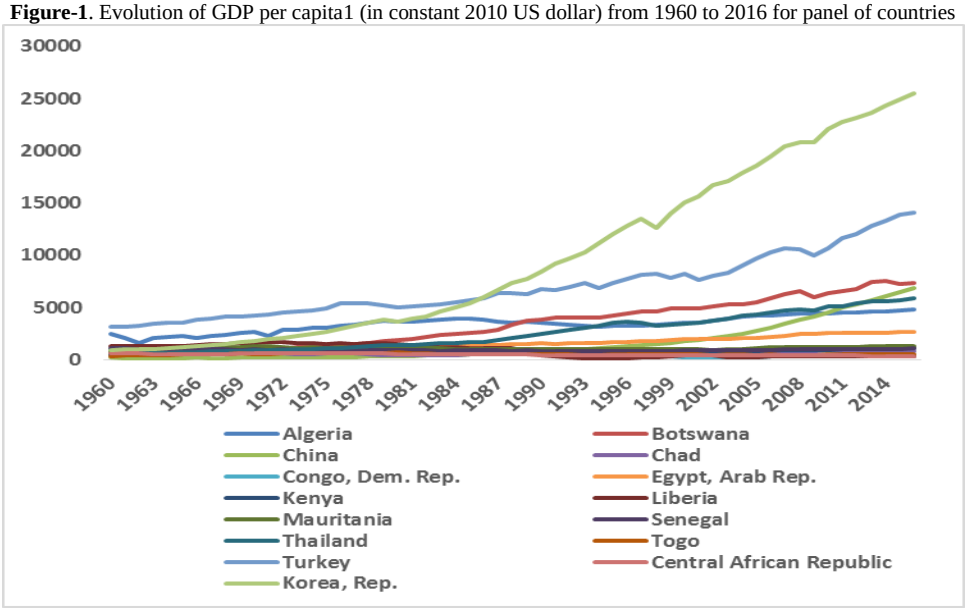
Keywords: Governance; Economic growth; Principal component analysis; Africa.

1. Introduction

Governance can be defined as the way power is exercised in the management of a country's economic and social resources. Thus, governance directly concerns the development process involving both public and private sector management, the rules and institutions that govern relations between different economic agents and more generally the general framework of economic activity.

Good governance is essential for economic development because it enhances the effectiveness of the economic policies undertaken by the government. Indeed, it has been historically proven that while many governments have undertaken similar reforms, the results have varied considerably from country to other. Several factors underlie these differences, the most important of them is governance quality.

Figure-1. Evolution of GDP per capita1 (in constant 2010 US dollar) from 1960 to 2016 for panel of countries



Source: World Bank

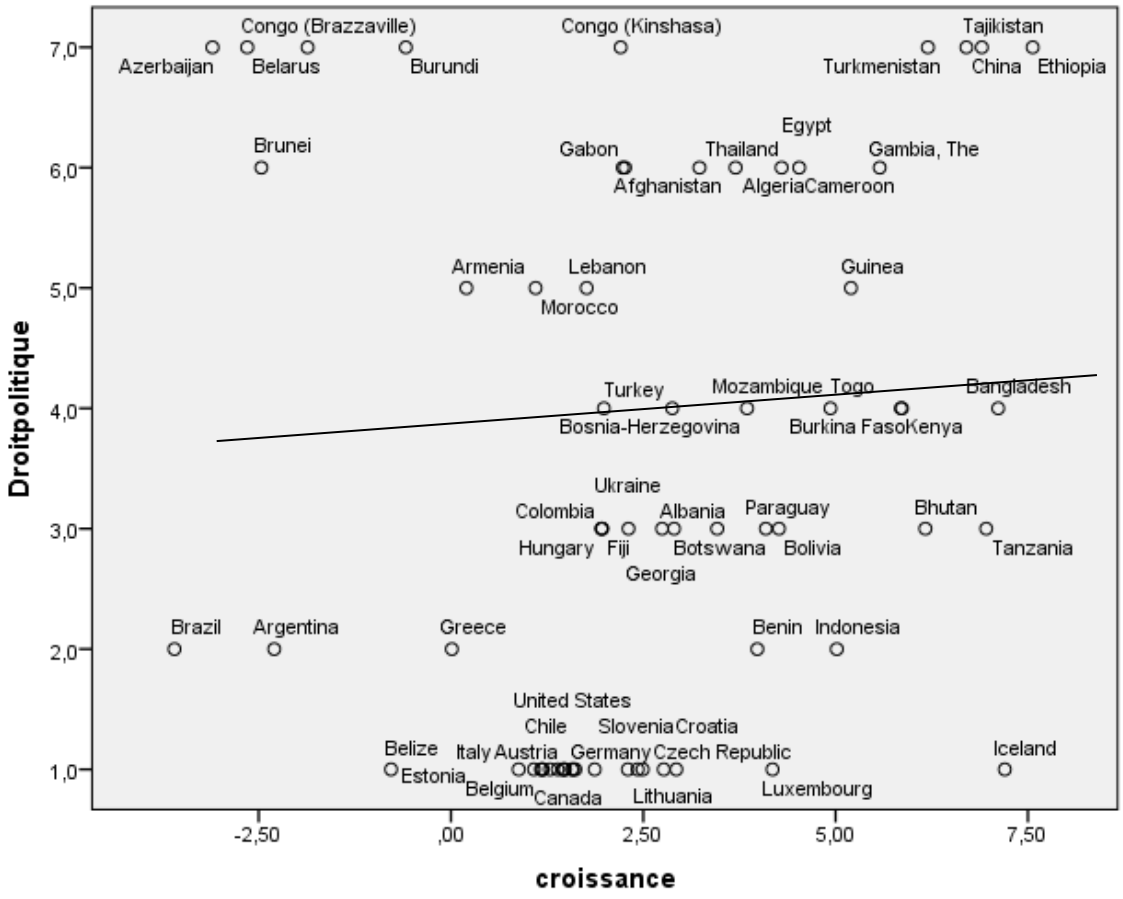
[1] Le PIB réel constant par habitant est utilisé au lieu du PIB nominal pour tenir compte de l'évolution du pouvoir d'achat dans le temps

Figure 1 shows that growth paths differ greatly from one country to another, even if the starting point is approximately the same. South Korea had a GDP (in constant 2010 dollars) of 944$ per capita in 1960. In 2016, the GDP of South Korea rises to more than 25000$. By contrast, Liberia's GDP was 1273$ per capita in 1960, today it stands at 350$. Other countries such as Senegal had a GDP of 1079$ per capita in 1960 and are now approximately at the same level (1093$).

These opposing patterns of development clearly imply that the abundance of resources (financial, mining, human ...) may not be enough on their own to ensure economic development if good governance measures are absent from political, economic and social life.

While the political component is a necessary condition for laying the foundations for sound economic development, economists focus their vision of governance on enhancing efficiency and sound management of resources. Indeed, the development experiences of countries around the world do not establish a direct and clear link between the political environment on the one hand, and rapid economic growth and social development on the other (Barro, 1996). As the following graph shows, success in economic development has occurred in countries with different political systems.

Figure-2. economic growth and political right index in a panel of countries (2015)



Source: author's calculation, Data are from the World Bank and the Freedom house database

Nonetheless, the commonalities among countries that have successfully transitioned are: maintaining macroeconomic stability, developing infrastructure, providing public goods, preventing market failures, and promoting social equity (Asian Development Bank, 1998).

Without macroeconomic stability, the economic outlook is uncertain and investment risks are high. Also, inflation and external imbalances do not provide appropriate environment for sound business decisions. An important dimension of macroeconomic stability lies in its close link with social equity. For example, the negative effects of price increases have a strong impact on the low-income segment, as they have limited capacity to reduce their consumption.

Concerning infrastructures, they play the role of locomotive promoting both public and private investment. Given the budget constraints of most African governments, the role of the private sector in infrastructure development is expected to increase further. Thus, the challenge for governments now is to design an institutional framework that allows for broader private sector participation in infrastructure development and management, while protecting the public interest. Good governance also implies the establishment of quality public services ensuring the well-being of the individual and society (essentially education and health care).

In terms of regulation, the government has the obligation to ensure that markets work effectively and that the rules are the same for all economic actors, particularly with regard to the mobility of factors of production, circulation of information about prices and competition among market participants.

Finally, the government must ensure that the benefits of economic growth are equitably distributed throughout society. Tax and expenditure measures are important instruments to achieve this end. Taxation should not be excessive so as not to harm production, but it must be collected efficiently and equitably to provide adequate income for essential services while maintaining a balanced budget.

On the theoretical level, the relationship between economic growth and governance has attracted the attention of development economists and constitutes an extremely rich field of research. For example, several econometric studies such as Kaufmann *et al.* (1999) , Knack and Keefer (1997), Barro (1996) and Hall *et al.* (1999) have shown that good governance variables such as control of corruption, respect for property rights or democracy are closely related to variables such as the growth rate of GDP per capita, investment or human capital development. These studies concluded on the positive role of governance in the long-term convergence of economies.

In 2005, Kaufmann *et al.* (2005) developed a set of composite indicators covering nearly 190 governance aspects across a total of 170 countries. The objective is to build an arsenal of indicators that measure the evolution of good governance. These tools track the evolution of governance over time and space and provide an important basis for international institutions (World Bank, 2003) and researchers to strengthen good governance around the world. Empirical estimates of the study conclude that better governance has a significant positive effect on per capita income.

Khan (2007) advocated interpreting the results concerning the link between governance and economic growth with great care. He argue that the studied period of economic growth could be the consequence of the political decisions and institutional changes that were initiated during the 1950s in some countries. There is necessarily a time lag to take into account when considering the effect of good governance on economic growth; otherwise, there is a methodological bias.

2. Methodology

The main objective is to study the relationship between governance and economic growth in Africa. As there is a variety of governance indicators and each one measures governance for a specific area, we construct a synthetic indicator that represents the evolution of all the indicators and then used it to explain governance in Africa and measure its impact on growth.

To extract the composite index summarizing all the governance indicators of the World Bank, we use the principal component analysis (PCA) (Emara and Chiu, 2016). The PCA can be considered as a projection method that makes it possible to project the observations from a p-dimensional space of p variables to a k-dimensional space (k <p) such that a maximum of information is conserved.

If the information associated with the first axes represents a sufficient percentage of the total variability of the data, the variables can be represented on a 2 or 3-dimensional graph which greatly facilitates the analysis. In our case, if the first component makes it possible to extract a large part of the information contained in the data set (around 90%), then this component will allow us to obtain a vector representing the synthetic governance index.

Let X be a matrix of variable p and n observations:

$$X = \begin{bmatrix} X_{1,1} & \cdots & X_{1,p} \\ \vdots & \ddots & \vdots \\ X_{n,1} & \cdots & X_{n,p} \end{bmatrix}$$

The PCA allows to replace the variables $(X_1 \ldots . X_p)$ by a reduced number of uncorrelated components $(C_1 \ldots . C_k)$. The first component is a linear combination given by:

$C_1 = a_1X_1 + a_2X_2 + \cdots + a_pX_p$

Others components $(C_2 \ldots . C_k)$ are extracted successively knowing that the information content drops by going from C_1 to C_k.

The used data are from the World Bank database, they cover several governance indicators:

Corruption control: captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

Government effectiveness: reflects the perception of the quality of public services, the independence from political pressures, the quality of policy formulation and implementation, and credibility Commitment to such policies

Political stability and absence of violence: measures the perception of the probability of political instability and / or political motivation Violence, including terrorism.

Regulatory Quality: The quality of regulation reflects perceptions of the government's ability to formulate and implement sound policies and regulations that enable and promote private sector development.

Respect for the law: The rule of law provides insight into the extent to which agents trust and respect the rules of society, and in particular the quality of contract enforcement, property rights, police and courts, as well as the likelihood of crimes and violence.

Voice and Accountability: to understand the extent to which citizens of a country can participate in the selection of their government, as well as freedom of expression, freedom of association and free media.

The database covers almost all countries in the world (188 countries) except those for which data are not available for the years 2000 and 2015. The goal of taking two distant years is motivated by the desire to appreciate the evolution of governance over a fairly long period of time (15 years).

We use the constructed governance index as an explanatory variable for the real GDP. The coefficient obtained will act as an elasticity and will allow to deduce the impact of an improvement of governance on economic growth.

According to Kaufmann *et al.* (2005), the regression model will have the following form:

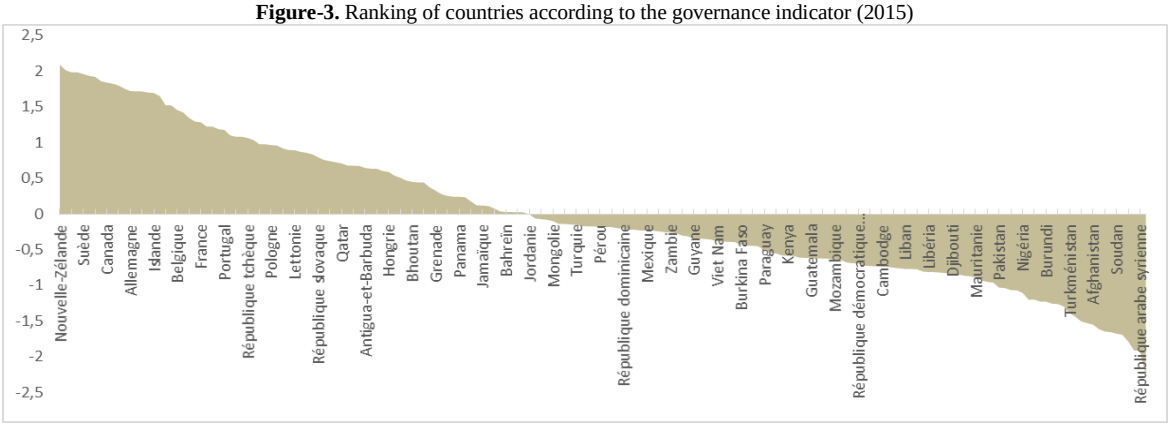
$$\Delta y_i = c + \beta \Delta gov_i + \varepsilon_i$$

With Δy_i the average growth rate between 2000 and 2015 for country i, and Δgov_i the variation of the composite governance index between 2000 and 2015 and ε_i the error term.

3. Empirical Results

The analysis of the governance indicator for 2015 shows that African countries are very poorly ranked internationally. The major part of African countries has negative value and are ranked in the last positions in the world.

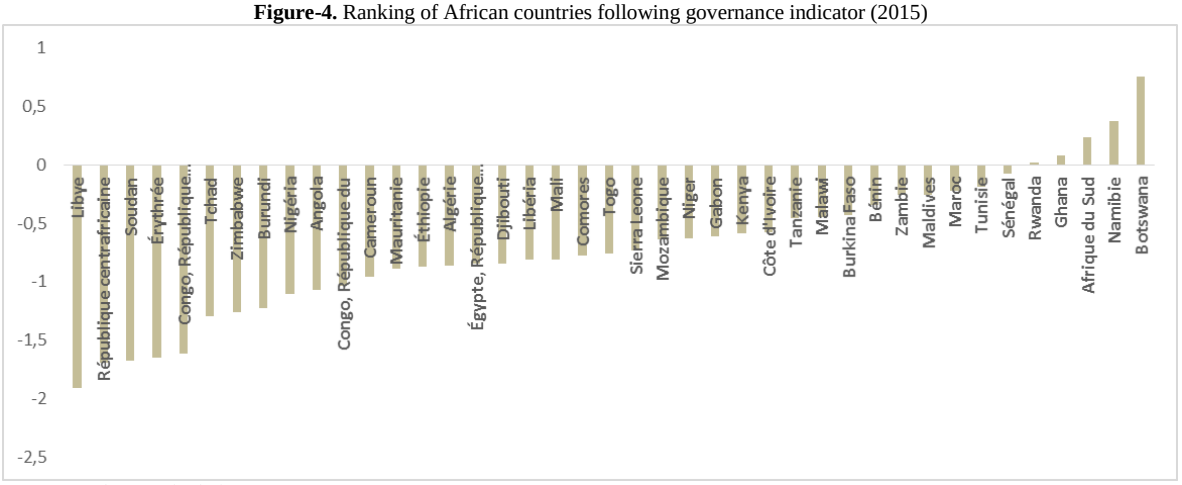
Figure-3. Ranking of countries according to the governance indicator (2015)



Source: author's calculations

At the continental level, the index shows that only South Africa and Botswana have positive values, although very low. This implies that the African continent has significant gaps in governance.

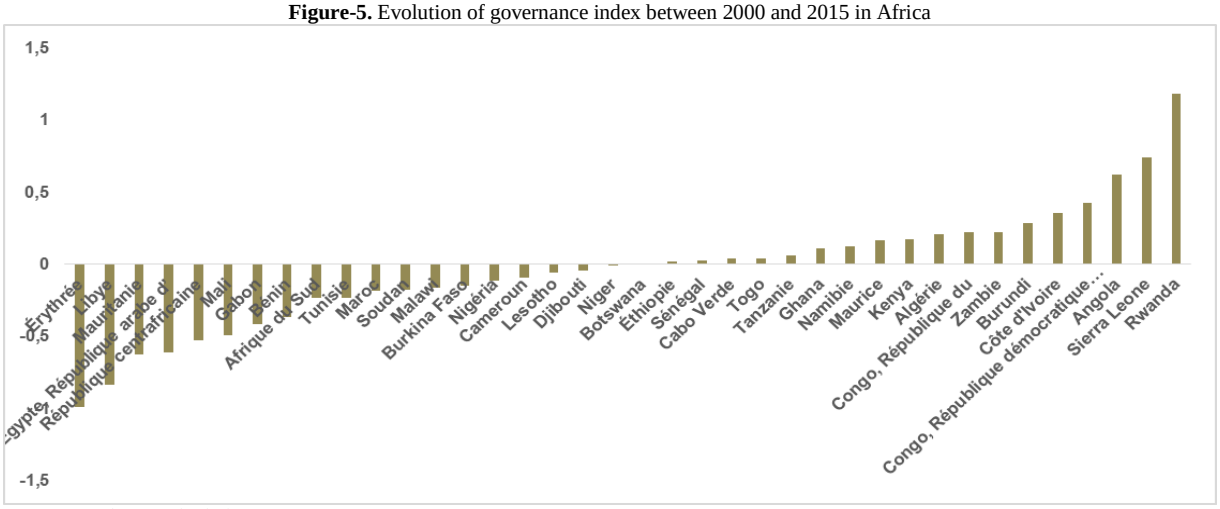
Figure-4. Ranking of African countries following governance indicator (2015)



Source: author's calculations

Regarding the variation of the index between 2000 and 2015, several African countries show remarkable improvement including Rwanda, Angola, the RDC and Sierra Leone.

Figure-5. Evolution of governance index between 2000 and 2015 in Africa



Source: author's calculations

It should be noted that some important countries on the African continent have experienced a decline in governance during the same period of time, especially Nigeria, Morocco and South Africa.

To estimate the model, we used only the data corresponding to the African countries (44 countries). The considered variables are: the average growth of real GDP between 2000 and 2015, and the variation (2015 value minus 2000 value) of the constructed index of governance. The model estimation is given by the following equation:

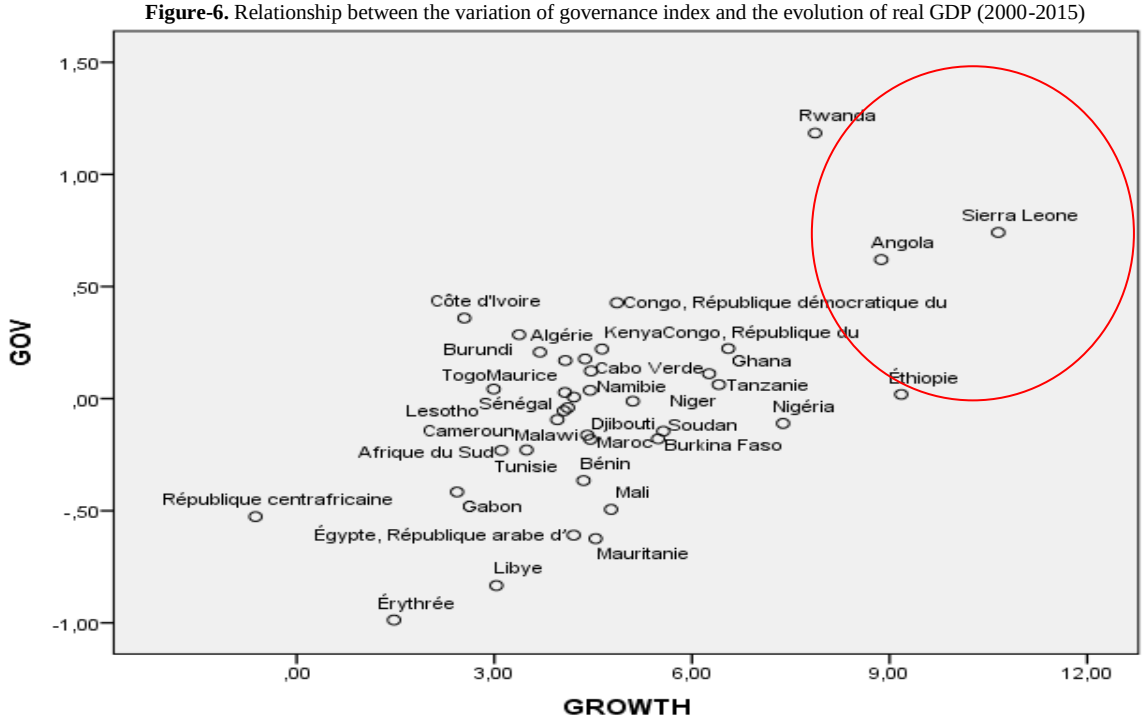
$$\Delta y_i = 4.73^{**} + 1.77^{*}\Delta gov_i + \varepsilon_i$$

(**,* significance at 1% and 5% respectively)

All the details of the estimation procedure and all the statistical test are summarized in the appendix.

The model indicates that, on average, a change in the governance index of a unit is likely to lead to a 1.7% increase in real GDP. This result seems to be extremely important in view of the shortage of financial resources in Africa. Improving governance seems to be the best and the less expensive way the boost economic growth. Thus, African countries need to strengthen their economic efficiency by promoting results-based fiscal management, promoting their doing business environment and investing in human capital to improve its quality.

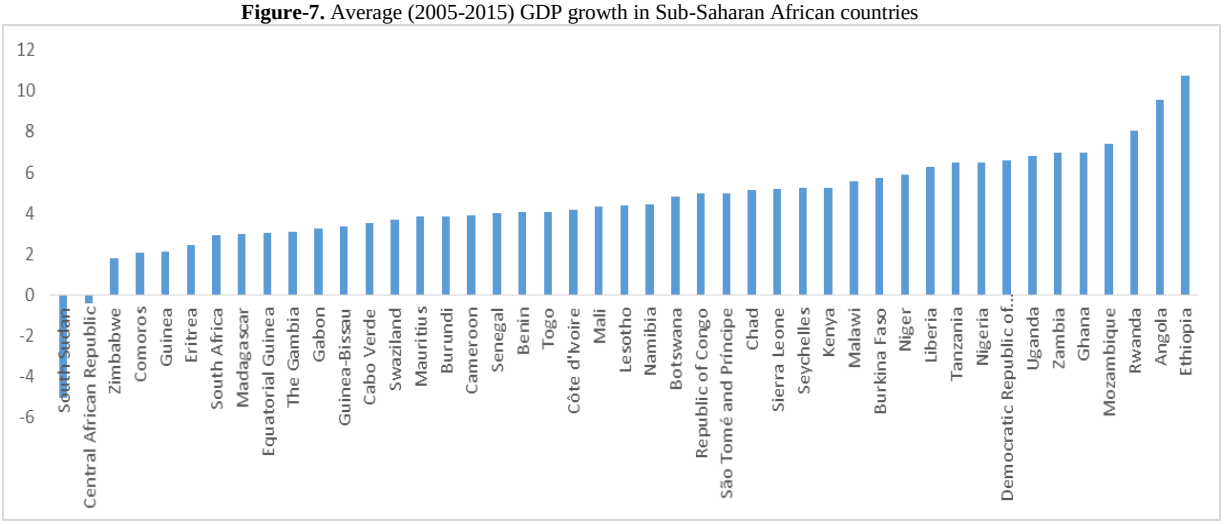
Figure-6. Relationship between the variation of governance index and the evolution of real GDP (2000-2015)



Source: author's calculations

The economic facts corroborate the results of our study. The countries that display the best the best governance indicators (Ruanda, Angola, Ethiopia ...) are those that show spectacular economic results in recent years.

Figure-7. Average (2005-2015) GDP growth in Sub-Saharan African countries



Source: IMF (world economic outlook data base)

4. Conclusion

This study has shown the crucial role of governance in the development process of African economies. The empirical results indicate the existence of a lack in governance in comparison with the developed countries. During the period of the study (2000-2015) the countries that have experienced the best macroeconomic results are those how registered important progression in their governance indicators. Also, the main finding is that an improvement of 1 % in governance will lead to an increase of 1.7% in real GDP.

Thus, African countries need to promote good governance as it seems to be the best and the cheapest way to enhance economic growth. To do so, they have to maintain macroeconomic stability, develop infrastructure, invest in human capital, prevent market failures, and promote social equity to strengthen their economic efficiency and accelerate their economic convergence.

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Appendix

1. Principal Components Analysis

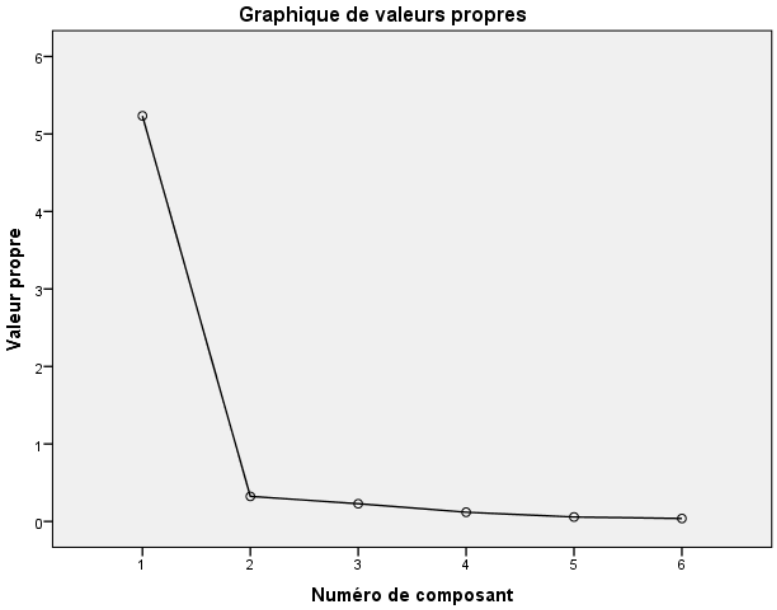
	Initial	Extraction
ControlofCorruption	1,000	,907
GovernmentEffectiveness	1,000	,955
PoliticalStability	1,000	,990
RegulatoryQuality	1,000	,926
RuleofLaw	1,000	,945
VoiceandAccountability	1,000	,834

Méthode d'extraction : Analyse en composantes principales.

Variance totale expliquée

component	Valeurs propres initiales			Extraction Sommes des carrés des facteurs retenus		
	Total	% de la variance	% cumulés	Total	% de la variance	% cumulés
1	5,234	87,231	87,231	5,234	87,231	87,231
2	,323	5,389	92,619	,323	5,389	92,619
3	,229	3,809	96,428			
4	,119	1,982	98,411			
5	,057	,956	99,367			
6	,038	,633	100,000			

Méthode d'extraction : Analyse en composantes principales.

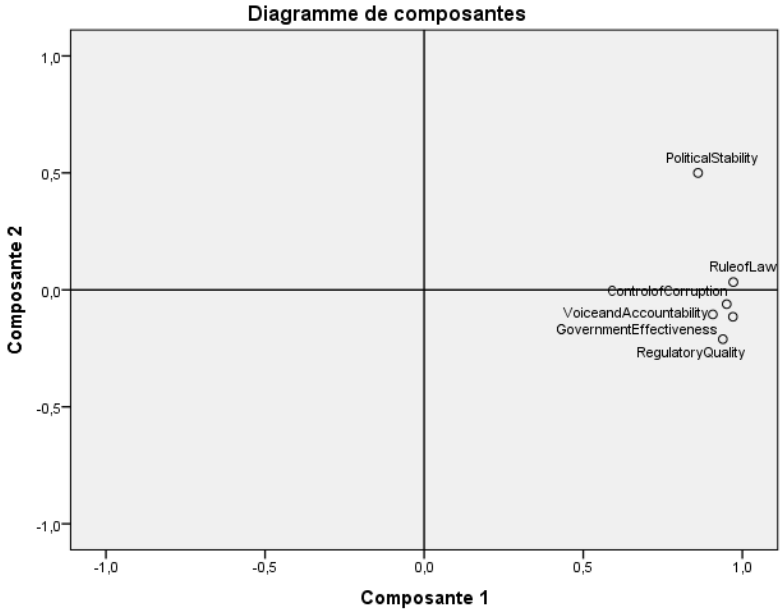


Matrice des composantes[a]

	Composante	
	1	2
ControlofCorruption	,951	-,061
GovernmentEffectiveness	,970	-,115
PoliticalStability	,861	,500
RegulatoryQuality	,939	-,211
RuleofLaw	,972	,033
VoiceandAccountability	,907	-,105

Méthode d'extraction : Analyse en composantes principales.

a. 2 composantes extraites.



Matrice des coefficients des coordonnées des composantes

	Composante	
	1	**2**
ControlofCorruption	,182	-,188
GovernmentEffectiveness	,185	-,356
PoliticalStability	,164	1,546
RegulatoryQuality	,179	-,652
RuleofLaw	,186	,103
VoiceandAccountability	,173	-,325

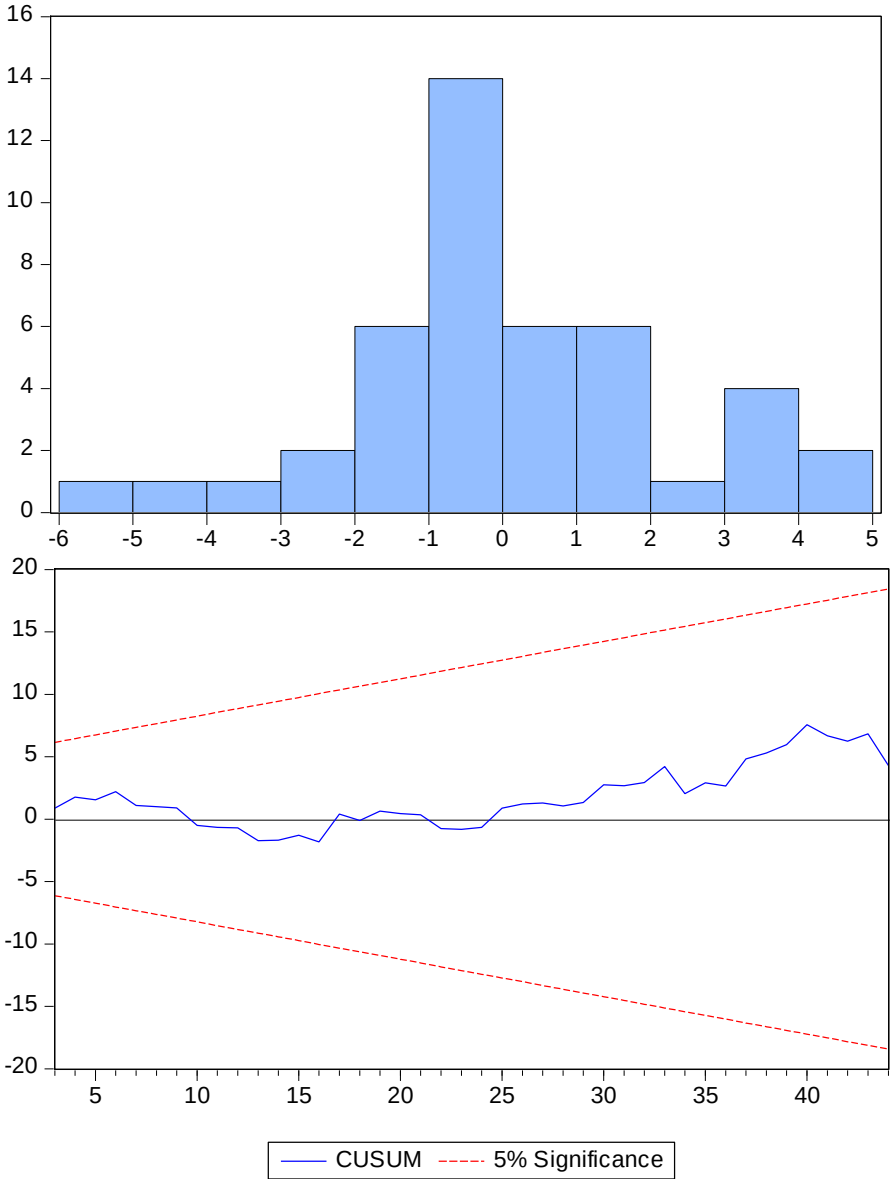
Méthode d'extraction : Analyse en composantes principales.

.

2-Model Estimation

Dependent Variable: GROWTH
Method: Least Squares
Date: 11/03/17 Time: 22:44
Sample: 1 44
Included observations: 44

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
GOV	1.770168	0.776089	2.280882	0.0277
C	4.730764	0.331984	14.24999	0.0000
R-squared	0.110215	Mean dependent var		4.673946
Adjusted R-squared	0.089030	S.D. dependent var		2.300726
S.E. of regression	2.195922	Akaike info criterion		4.455470
Sum squared resid	202.5271	Schwarz criterion		4.536570
Log likelihood	-96.02035	Hannan-Quinn criter.		4.485546
F-statistic	5.202425	Durbin-Watson stat		2.136205
Prob(F-statistic)	0.027693			



Series: Residuals
Sample 1 44
Observations 44

Mean	-4.44e-16
Median	-0.411482
Maximum	4.607728
Minimum	-5.569989
Std. Dev.	2.170238
Skewness	0.016455
Kurtosis	3.274309
Jarque-Bera	0.139936
Probability	0.932424