

Institutions and Financial Development in African Countries: An Empirical Analysis

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Abstract

This study empirically investigates the impact of institutional variables on financial development in 29 African countries. The Pooled Mean Group estimation method was applied to annual data covering the 2000 to 2014 period. The results show that in the short run, economic freedom has a positive impact on financial development. In the long term, democracy has a negative impact on financial development while corruption and economic freedom positively affect financial development. This suggests that promoting economic freedom is conducive to financial development. However, in African countries, democracy is not in favour of financial development.

Keywords: Legal institutions; Financial development; Financial intermediaries; Democracy.

Classification JEL: F30; N20; O43



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1. Introduction

Literature highlights the importance of political and legal institutions in promoting financial development, widely considered necessary for economic development (King and Levine, 1993; Levine and Zervos, 1998). This idea was already reflected in the theory of financial repression (McKinnon, 1973). Indeed, this theory advocates therapy in favour of freedom of choice for banks in the pricing of their intermediation services. The aim is to remove the distortions linked to interest rate administration in order to enable banks to be more efficient in mobilising savings and financing the economy. A financial system repressed by the government cannot develop according to the theory of financial repression. Many studies (Acemoglu *et al.*, 2001;2002;2005; Easterly and Levine, 2003; Rodrik *et al.*, 2004) conclude that institutional development is a precursor to financial development. Democracies would be useful in promoting economic institutions that are ultimately beneficial to financial development (Clague *et al.*, 1996). The work of Begović *et al.* (2017) confirms this intuition. Democracy is conducive to the economic growth of States insofar as it ensures the accountability and transparency of the regimes in power. In fact, democracy is characterized by popular participation, political competition for public office and institutional constraints on rules (Siegle *et al.*, 2004). Recent studies suggest that the level of financial development in sub-Saharan African countries could approach the baseline if they improved their institutions. Most previous studies have shown that the quality of institutions is one of the main factors explaining financial underdevelopment in the countries of the region. In Africa, apart from a few countries, democracy is struggling to take root. With the 2006-2015¹ data, on a scale of 10, Mauritius has a democracy index of 8.28 in 2015, Botswana has a democracy index of 7.87 and Cape Verde has a democracy index of 7.81. In South Africa, the index is 7.56 in 2015 and 3.31 in Ivory Coast. For the same year, the index is 6.08 in Senegal and 6.86 for Ghana. In Morocco, it is 4.66 for the same year. Countries with good democracy scores have developed financial systems. Mauritius has a modern and important domestic financial system. The population is highly banked, with 1.3 bank accounts per capita (IMF, 2016). Access to bank credit for small and medium-sized enterprises is very easy. The banking system is dynamic, profitable, liquid and solid. The equity ratio is close to 13% and the non-performing loans ratio does not exceed 8%. According to Honohan and Thorsten (2009), South Africa, Botswana and Mauritius have high percentages of access to banking services. According to IMF Regional Economic Outlook (2016) data, Botswana's loan-to-deposit ratio rose from 55.4% in 2009 to 82.5% in 2014. Over the same period, it rose from 67.7% to 74.9% in Mauritius, from 72.5% to 59.2% in Cape Verde and from 120.1% to 117.3% in South Africa. In Ivory Coast, the ratio rose from 80% in 2009 to 65.1% in 2014 and from 73.4 to 70.6% in Ghana over the same period. With progress in democracy, South Africa, Mauritius, Namibia and Seychelles have experienced rapid financial development since the 1980s (Honohan and Thorsten, 2009).

From the above, it is possible to question the link between institutional factors and financial development. Thus, the central problem of this study revolves around the fundamental question: to what extent do institutional factors stimulate financial development in Africa?

¹ The data are from a world perspective:

<http://perspective.usherbrooke.ca/bilan/stats/0/2012/fr/9/carte/EIU.DEMO.GLOBAL/x.html>

The main objective of this study is to analyse the impact of institutional factors on the financial development of African countries. Specifically, it will analyse the influence of democracy, corruption, economic freedoms and autocracy on the level of financial development in African countries. In relation to our objectives, we can formulate two hypotheses. The first is that democratic deficit has a negative influence on the level of financial development in African countries. The second is that corruption has a negative impact on financial development in Africa.

Methodologically, the study uses the Pooled Mean Group (PMG) estimator proposed by Pesaran *et al.* (1999). Unlike conventional methods (fixed effects or generalized moments), the PMG method introduces heterogeneity in certain coefficients to be estimated. Indeed, the PMG method reconciles in the same specification the usual approach imposing fixed coefficients and the one assuming specific coefficients per country. Thus, it is possible to specify that the long-term relationship between the variables is identical for all countries but that each country follows its own dynamic to converge towards this common relationship. This assumption seems reasonable for countries that belong to concentric circles but aspire to long-term integration. This paper contributes to the literature by analysing how and to what extent institutional variables influence financial dynamics in Africa over the period 2000-2014. The results of this study are as follows. In the short term, economic freedom brings out a significant coefficient. Economic freedom positively influences financial development in Africa. In the long run, economic freedoms and corruption positively affect financial development while democracy negatively affects it.

This article is organized as follows: Section 2 is devoted to the literature review on the relationship between institutions and financial development. Section 3 will present the study methodology. Section 4 will discuss empirical results, particularly the econometric analysis of the relationship between institutional variables and financial development.

2. Democracy and Financial Development: Literature Review

Economic literature emphasizes the role of economic institutions as a factor of economic growth. North (1990) argues that countries that provide more property rights and better institutions offer more opportunities to invest in physical and human capital, and to use them more effectively to achieve a high level of income. In addition, the emergence of economies is facilitated by the establishment of better institutions, which will generate trade-related gains and a rapid return on investment (Besley, 1995). But studies on the effects of institutional reforms on economic performance have produced highly controversial results. On the one hand, democracy promotes civil liberties, political stability, and protection of property rights, and discourages corruption and anarchy (Persson, 2005).

In relation to the financial system, the literature emphasizes the importance of political and legal institutions in promoting financial development, the latter being considered necessary to finance growth (King and Levine, 1993; Levine and Zervos, 1998). A legal and regulatory system ensuring the protection of property rights and the proper execution of contracts has been identified as essential for financial development. (La Porta *et al.*, 1997; La Porta *et al.*, 1998) indicate that the origins of the legal code have a significant influence on the treatment of creditors and shareholders and on the efficiency of contract enforcement. In addition, Mayer and Sussman (2001) point out that disclosure regulations, accounting standards, accepted bank practices and deposit insurance appear to have significant effects on financial development. Institutions that uphold the rule of law, respect property rights and enforce contracts are associated with higher levels of financial development (Asongu, 2011; La Porta *et al.*, 1998; Rajan and Zingales, 2003). La Porta *et al.* (2002) indicate that democratic regimes encourage financial development by refusing to practice financial repression. According to Haber and Perotti (2008), transparency and competitiveness in the political system make the financial system open and competitive (Acemoglu and Johnson, 2005). Indeed, democratic institutions can improve the efficiency of financial markets, resulting in reduced transaction costs (Wittman, 1989). Many studies find that financing costs are significantly higher in countries with inefficient judicial systems (Demirgüç-Kunt and Maksimovic, 2002; Demirgüç-Kunt and Huizinga, 1999; Francesca and Di Giorgio, 2004). In particular, Demirgüç-Kunt and Huizinga (1999) find that banks in developing countries are more profitable than their counterparts in developed countries. In addition, democratic institutions promote open markets and encourage technology transfers that benefit national firms (Acemoglu, 2003). As regards the conduct of financial reforms, Demetriades and Andrianova (2004) indicate that the success or failure of financial reforms is strongly determined by the importance of institutions, such as financial regulation and the rule of law.

Financial development would also be linked to the type of colonization practiced in developing countries. Beck *et al.* (2003) extend the settler mortality hypothesis of Acemoglu *et al.* (2001) to financial development. According to these authors, in the colonies, institutions were created ex-nihilo. The authors thus distinguish between settlements where "good" institutions are established and extractive colonies where predatory institutions reign. As a result, institutions in the extractive environment tend to block financial development, while those in settlements are more conducive to financial development. On the other hand, under pressure from different interest groups, democratic structures may suffer from inefficient decision-making and difficulty in implementing a viable policy of rapid growth. "Premature" democracy in developing countries could reduce the rate of economic growth and even lead to economic disorder, political instability and ethnic conflict (Blanchard and Shleifer, 2000). Tavares and Wacziarg (2001) show that "the overall effect of democracy on economic growth is moderately negative". Indeed, it is possible that an increase in human capital accumulation could be offset by a decrease in the physical capital accumulated during the democratization process.

Huntington (1968) referred to the negative effects of populist pressure through increased consumption. In addition, Buchanan and Tullock (1962) highlighted problems related to conflicts of interest between elected officials and the public. They also stressed the possibility of an overly large state seeking to satisfy the demands of the masses. Moreover, according to Becker (1983), democratic political systems can lead to inefficient policies since

they favour competition between different elite groups (Becker, 1983). Indeed, democratic systems can hinder economic growth because they are characterized by a greater role for interest groups that are the source of inefficient redistribution of resources. Finally, Alesina and Rodrik (1994) highlighted the role of autocratic systems in stimulating growth. According to these authors, autocratic regimes are more effective than democratic regimes in opposing pressure – with interests – to redistribute revenues and resources. Jappelli *et al.* (2005) point out that there is no conclusive relationship between institutions and bank spread even though they admit that the relationship depends on bank competition and the type of judicial reform undertaken.

In the end, the balance sheet on the link between democracy and financial development remains mixed. Calderon and Kubota (2009) find that financial systems with high institutional/legal development are the ones benefiting (on average) most from external financial liberalization. Mcdonald and Schumacher (2007) highlight the role of creditor protection in deepening the financial system. Yang (2011) tests the effect of a variation in democracy on the level of development of the financial system. It shows the presence of a positive association between democracy and the development of the banking system. However, this relationship is failing with regard to stock market development.

3. Strategy of Empirical Research and Data Description

In this section, we first present the model specification and, second, the PMG estimation methodology.

3.1. Model Specification

Within the framework of this study, we retain the following functional specification:

$$IDF_{it} = \theta_0 + \sum_{k=1}^K \theta_k X_{kit} + \gamma W_{it} + \mu_{it} \quad (1)$$

Where IDF is the dependent variable, which is a composite indicator measured by the average of liquid assets, liquid liabilities and bank credit to the private sector, related to GDP. θ_0 is a constant term, $\sum_{k=1}^K X_{kit}$ are the variants of institutional variables used and W_{it} is a vector of five control variables including the traditional determinants of financial development. As for i, t et k , these indexes respectively indicate the individual dimension ($i = 1, \dots, 29$), the time dimension ($t = 1, \dots, 15$) and the number of modalities for the institutional variables tested with $k \in [1; 4]$. μ_{it} is the error term.

The models to be estimated in this paper can be specified as follows:

$$IDF_{it} = \theta_0 + \theta_1 BANKZSCORE_{it} + \theta_2 INF_{it} + \theta_3 PIBH_{it} + \theta_4 OUV_{it} + \theta_5 DEPD65_{it} + \theta_5 VARINST_{it} + \mu_{it} \quad (2)$$

Where IDF is the financial development indicator, $BANKZSCORE$, the measurement of banking risk, INF , the inflation rate, $PIBH$, GDP per capita, OUV , the openness rate of the economy, $DEPD65$, the dependency ratio measured by the population aged 65 and over as a proportion of the active population. In addition, $VARINST$ is the institutional variable that takes several forms depending on the model. In Model 1, $VARINST$ represents democracy ($DEMOC$), in Model 2, $VARINST$ represents autocracy ($AUTOC$), in Model 3, $VARINST$ represents economic freedom ($LIBECO$) and finally, in Model 4, $VARINST$ represents corruption ($CORRU$).

3.2. The Pooled Mean Group Estimation

The estimation technique used is the one proposed by Pesaran *et al.* (1999), the PMG estimator. According to Pesaran and Shin (1999), Eq(1) can be seen as an autoregressive distributed lag model (ARDL) of the form:

$$y_{it} = \sum_{j=1}^m \lambda_{ij} y_{it-j} + \sum_{j=0}^n \delta'_{ij} x_{it-j} + \mu_i + \varepsilon_{it} \quad (3)$$

Where $y_{it} = IDF_{it}$, $x_{it} = (BANKZSCORE_{it}, INF_{it}, PIBH_{it}, OUV_{it}, DEPD65_{it}, VARINST_{it})$ is a vector (6x1) of explanatory variables, δ_{ij} is a vector (6x1) of coefficients, λ_{ij} a scalar and μ_i represents the fixed effect (country). From this model derives the long-term relationship as follows:

$$y_{it} = \theta_i x_{it} + \mu_{it} \quad (4)$$

If the variables are cointegrated, then the term ε_{it} is a stationary process. In this case, the model can be respecified as an error-correction model in which the short-term dynamics are influenced by the deviation from the long-term relationship:

$$\Delta y_{it} = \phi_i (y_{it-1} - \theta_i x_{it}) + \sum_{j=1}^{m-1} \lambda_{ij}^* \Delta y_{it-j} + \sum_{j=0}^{n-1} \delta_{ij}^* \Delta x_{it-j} + \mu_i + \varepsilon_{it} \quad (5)$$

Where ϕ_i is the adjustment coefficient, θ_i is the vector of long-term coefficients and Δ is the variation operator between two successive dates. It is expected that $\phi_i < 0$. One of the advantages of the ARDL models is that the short-term and long-term multipliers are estimated jointly. In addition, these models allow the presence of variables that can be integrated of different orders, namely $I(0)$ and $I(1)$, or cointegrated (Pesaran and Shin, 1999). The PMG estimator allows short-term coefficients and the adjustment coefficient to vary from country to country, but the long-term coefficients are the same for all countries ($\theta_i = \theta$). In this study, the PMG estimator is based on the following error-correction model:

$$\Delta IDF_{it} = \theta_0 + \phi_i S_{it-1} + \sum_{j=1}^p \gamma_{1ij} \Delta IDF_{it-i} + \sum_{j=0}^p \gamma_{2ij} \Delta BANKZSCORE_{it-i} + \sum_{j=0}^p \gamma_{3ij} \Delta INF_{it-i} + \sum_{j=0}^p \gamma_{4ij} \Delta PIBH_{it-i} + \sum_{j=0}^p \gamma_{5ij} \Delta OUV_{it-i} + \sum_{j=0}^p \gamma_{6ij} \Delta DEPD65_{it-i} + \sum_{j=0}^p \gamma_{7ij} \Delta VARINST_{it-i} + \mu_{it} \quad (6)$$

Where

$$S_{it-1} = (IDF_{it-1} - \theta_1 BANKZSCORE_{it} - \theta_2 INF_{it} - \theta_3 PIBH_{it} - \theta_4 OUV_{it} - \theta_5 DEPD65_{it} - \theta_6 VARINST_{it})$$

It was shown that the imposition of an identical coefficient for the restoring force could lead to bias (Kiviet, 1995). The MG estimator allows heterogeneity in both short-term parameters and long-term coefficients. The MG estimator estimates the equation for each country in the sample and then calculates the unweighted averages of the coefficients over the entire panel. The assumption of homogeneity of long-term coefficients is empirically tested. For this purpose, a Hausman test was applied to the difference between the MG and PMG estimators. Under the null hypothesis, this difference is not significant and the PMG estimator is then preferable.

The empirical study uses annual data from 29 African countries grouped into six subsets: West Africa, East Africa, Southern and North Africa and Central Africa countries. In West Africa, there are eleven countries, namely Ivory Coast, Senegal, Niger, Mali, Benin, Burkina Faso, Ghana, Gambia, Sierra Leone, Togo and Nigeria. In East Africa, we have Kenya, Uganda and Burundi. In Southern Africa, there are South Africa, Namibia, Mozambique, Zambia, Malawi, Botswana and Swaziland. In North Africa, we have Morocco, Egypt and Tunisia. As for Central Africa, we have Gabon, Cameroon and the Democratic Republic of Congo. In addition, there is a country in the Indian Ocean, Madagascar. Data for the financial development indicator are from Global Financial Development Data and data for INF, PIBH, OUV and DEPD65 are from the World Bank (WDI). As far as democracy and autocracy are concerned, the data come from Policy IV. The data on economic freedom are from Heritage Foundation. For corruption, data come from the VDem database (2017). The study covers the period 2000 to 2014.

4. Results of Empirical Research

The empirical analysis follows the following approach. First, we present descriptive statistics for all variables. This is recorded in Table 1. The Pearson correlation coefficient matrix is summarized in Table 2. Second, we apply unit root tests to the series in order to study the stationarity of the variables. Third, we estimate long-term coefficients, using the PMG estimator. The order of integration of variables is tested according to the tests of Im *et al.* (2003), Breitung (2000) and Maddala and Wu (1999). Table 2 indicates that the variables are moderately correlated. Among the explanatory variables, the pairs financial development (IDF) and banking risk (BANKZSCORE), and financial development (IDF) and dependency ratio (DEPD65) have the highest correlation coefficients of 0.5621 and 0.5620 respectively.

Table-1. Descriptive Statistics

Variables	Obs.	Mean	Std.Dev.	Min	Max
IDF	435	25.521	20.635	1.7504	94.784
BANKZSCORE	435	9.552	7.632	-12.024	43.743
INF	435	10.508	35.147	-35.836	513.906
PIBH	435	1679.393	2060.627	106.017	11530.15
OUV	435	35.436	12.959	10.482	86.265
DEPD65	435	6.104	1.523	4.549	11.006
DEMOC	435	0.059	18.672	-88	9
AUTOC	435	-1.882	18.153	-88	9
LIBECO	435	55.961	6.084	24.3	72
CORRU	435	0.659	0.203	0.153	0.933

Source: Authors, from the data of WDI (2016) and VDem database (2017).

Table-2. Matrix of Pearson Correlation Coefficients

Variables	IDF	BANK ZSCORE	INF	PIBH	OUV	DEPD65	DEMOC	AUTOC	LIBECO	CORRU
IDF	1									
BANK ZSCORE	0.5621*	1								
INF	-0.144*	-0.045	1							
PIBH	0.386*	0.233*	-0.095*	1						
OUV	0.087	0.100*	0.041	0.196*	1					
DEPD65	0.5620*	0.429*	-0.085	0.497*	0.130*	1				
DEMOC	-0.011	-0.030	0.024	0.013	-0.006	-0.081	1			
AUTOC	-0.008	0.032	0.052	0.048	0.043	-0.006	0.960*	1		
LIBECO	0.377*	0.169*	-0.193*	0.203*	0.043	0.201*	0.088	0.022	1	
CORRU	-0.3191*	-0.143*	0.086	-0.150*	-0.204*	0.050	-0.069	0.0328	-0.547*	1

Source: Authors, from the data of WDI (2016) and VDem database (2017).

Note: * means statistically significant at 5%.

The results in Table 3 indicate that with the exception of the financial development indicator and corruption, all other variables are stationary in level, according to all tests. When the variables are considered at first difference,

they all appear stationary. The application of the Hausman test indicates that the assumption of homogeneity of long-term coefficients cannot be rejected. In this case, the results will be interpreted using the PMG method. The short and long-term PMG estimates are presented in Tables 4 and 5. We can now interpret the short and long-term coefficients.

In the short term, for Model 1, banking risk and GDP per capita are significant at the 5% threshold. Both variables are negatively associated with the financial development indicator. As a result, increased banking risk is detrimental to the financial development of African countries. If this result is in line with our expectations, the negative effect of living standards on financial development is surprising. Non-financial agents might not seek to request banking services once their level rises. Indeed, the higher the living standards, the less economic agents request bank loans, for instance. For Model 2, the only significant variable is GDP per capita at the 10% threshold. Here too, it is negatively associated with the financial development indicator. In the short run, it might be that the higher the living standards, the less non-economic agents request bank loans, for instance. On Model 3, the variables that are significant are GDP per capita and economic freedom at the 10% threshold. The positive sign of the coefficient associated with economic freedoms indicates that they are beneficial to banking development. Indeed, economic freedom is associated with private sector development, which benefits banking development. Here too, living standards are negatively associated with the financial development indicator.

Table-3. Results of Panel Unit Root Tests

Variables	LLC (2002)		Breitung (2000.)		MW (1999)	
	Level	Diff (1)	Level	Diff (1)	Level	Diff (1)
IDF	-4.460*** (0.000)	-6.087 *** (0.000)	1.631 (0.948)	-5.709*** (0.000)	41.858 (0.945)	154.176*** (0.000)
BANKZSCORE	-3.460*** (0.0003)	-8.966*** (0.000)	-0.012 (0.495)	-5.996*** (0.000)	134.749*** (0.000)	536.867*** (0.000)
INF	-43.166*** (0.000)	-19.866 (0.000)	-4.417 (0.000)	-9.252*** (0.000)	295.177*** (0.000)	631.047 (0.000)
PIBH	-5.120*** (0.000)	-10.960*** (0.000)	-0.416 (0.338)	-6.031*** (0.000)	154.477*** (0.000)	275.043*** (0.000)
OUV	-4.961*** (0.000)	-10.433*** (0.000)	-1.309* (0.095)	-6.215*** (0.000)	82.881** (0.017)	93.251*** (0.000)
DEPD65	-5.425*** (0.000)	-4.367*** (0.000)	8.000 (1.000)	1.688*** (0.954)	34.422 (0.994)	53.467 (0.6443)
DEMOC	-81.127*** (0.000)	-43.999*** (0.000)	-1.245 (0.106)	-4.680*** (0.000)	126.777*** (0.000)	279.157*** (0.000)
AUTO	(-2.3e+02)*** (0.000)	-1.3e+02*** (0.000)	-0.815 (0.207)	-3.905*** (0.000)	85.657** (0.010)	186.086 (0.000)
LIBECO	-1.795** (0.036)	-5.013*** (0.000)	0.120 (0.548)	-4.702*** (0.000)	131.836*** (0.000)	467.910 (0.000)
CORRU	0.152 (0.560)	1.882 (0.970)	2.556 (0.994)	-4.22*** (0.000)	101.009*** (0.000)	357.239*** (0.000)

Note. IPS, MW and Breitung are the Im, Pesaran and Shin (2003) and Maddala and Wu (1999), Breitung panel unit test. Values in parentheses are p-value. * (**) (***) mean rejection of the unit root hypothesis at the (10%), 5% and 1% level.

As for Model 4, the variables that are significant are bank risk and GDP per capita at the 5% threshold. Here too, living standards and banking risk are negatively associated with the financial development indicator. As a result, banking risk appears unfavourable to the development of banking activity in Africa. Moreover, the higher the living standard, the less economic agents request bank loans. They might prefer self-financing.

Table-4. Pooled Mean Group Estimates (Short Term Relationship)

Variables	PMG			
	Model (1)	Model (2)	Model (3)	Model (4)
ΔBANKZSCORE	-0.386** (0.142)	-0.221 (0.199)	-0.223 (0.157)	-0.306** (0.121)
ΔINF	-0.015 (0.0036)	-0.022 (0.049)	0.023 (0.037)	0.014 (0.034)
ΔPIBH	-0.004** (0.001)	-0.007* (0.004)	-0.012* (0.006)	-0.003** (0.001)
ΔOUV	-0.039 (0.028)	-0.027 (0.038)	0.040 (0.027)	0.042 (0.029)
ΔDEPD65	2.108 (8.131)	2.400 (9.328)	13.554 (9.580)	-6.792 (8.793)
ΔDEMOC	0.151 (0.213)	-	-	-
ΔAUTO	-	-0.105 (0.161)	-	-
ΔLIBECO	-	-	0.137* (0.083)	-
ΔCORRU	-	-	-	-23.134 (15.528)
Coefficient of adjustment	-0.306*** (0.068)	-0.138** (0.062)	-0.176*** (0.046)	-0.117** (0.054)

Source: Authors, from the data of WDI (2016) and VDem database (2017).

Note: ***, ** and * respectively stand for 1%, 5% and 10% levels of significance.

In the long term, for Model 1, the variables that are significant are banking risk, GDP per capita, openness rate and democracy, at the 5% threshold. The first three variables are positively associated with financial development while democracy negatively affects financial development. As for the openness rate and GDP per capita, the results are in line with our expectations. Indeed, as living standards rise, the demands of growth lead to the development of new financial products. External openness is also conducive to financial development. Since African countries derive most of their income from abroad, their integration into the world economy can be assimilated to an income increase which, in the last resort, is beneficial for the financial sector.

Table-5. Pooled Mean Group Estimates (Long Term Relation)

PMG				
Variables	Model (1)	Model (2)	Model (3)	Model (4)
BANKZSCORE	0.258 *** (0.066)	-1.987*** (0.217)	-0.049 (0.167)	2.046*** (0.146)
INF	-0.025 (0.026)	-0.032 (0.045)	-0.310*** (0.079)	-0.003 (0.013)
PIBH	0.005*** (0.0004)	0.004 *** (0.0006)	0.015 *** (0.001)	0.005 *** (0.0002)
OUV	0.359*** (0.046)	0.592 *** (0.046)	-0.090** (0.045)	0.190*** (0.053)
DEPD65	-2.328 (0.922)	11.124*** (1.551)	-8.231*** (2.107)	22.376*** (2.224)
DEMOC	-0.102*** (0.006)	-	-	-
AUTO	-	-0.006 (0.024)	-	-
LIBECO	-	-	0.450 *** (0.093)	-
CORRU	-	-	-	30.938*** (7.174)
HAUSMAN TESST	0.02 1.00	0.01 1.00	0.20 1.00	0.20 1.00

Source: Authors, from the data of WDI (2016) and VDem database (2017).

Note: ***, **, and * respectively stand for 1%, 5% and 10% levels of significance.

As for democracy, it negatively affects banking development. Indeed, too much democracy could render decisions in this area ineffective, which may ultimately be detrimental to banking services and banking activity. For example, a greater democracy within the central bank could constitute a blockage within that institution. At the level of the decision-making procedure, a distinction is made between monetary policy committees which make individual or collective decisions. A collegial procedure may be thought to produce better results on average, but a personalised procedure may be more readable by the private sector.

For Model 2, the variables that are significant are banking risk, GDP per capita, openness rate and dependency ratio, at the 5% threshold. The last three variables are positively associated with financial development while banking risk negatively affects financial development. As regards the dependency ratio, the result indicates that the higher the weight of older people in the active population, the more beneficial this is for financial development. Indeed, the banking and financial sector will be able to increase the number of financial services and offer products adapted to this segment of the population. As far as banking risk is concerned, it is detrimental to the development of the banking sector in Africa.

Concerning Model 3, the variables that are significant are the inflation rate, GDP per capita, the openness rate and the dependency rate and economic freedom at the 5% threshold. GDP per capita and economic freedoms are beneficial to banking development. On the other hand, the inflation rate, the openness rate and the dependency rate have a negative impact on banking development. Regarding the inflation rate, the financial repression theory indicates that a high inflation rate is detrimental to banking development. For the openness rate, greater economic freedom could lead to a trade deficit in relation to the export structure of African countries. In a context of economic freedom, the weight of older people in the working population is not beneficial to banking development. Indeed, the lack of mobility and inventiveness of seniors does not offer opportunities for the development of the banking sector.

For Model 4, the variables that are significant are banking risk, GDP per capita, openness rate, dependency ratio and corruption at the 5% threshold. Here, banking development is positively associated with all these variables. In the long term, banking risk and corruption would be favourable to banking development. This could be explained by the fact that permanent risk and entrenched corruption are anticipated by the banking sector in such a way that they do not negatively influence banking development. As for living standards and the rate of openness, their positive impact is due to a banking sector that adapts to economic developments and the requirements of external openness.

5. Concluding Remarks

In this study, our objective was to analyze the effect of institutional variables on loan supply in 29 African countries over the period 2000 to 2014. In the short term, the results indicate that banking risk is detrimental to the financial development of African countries. In addition, GDP per capita has a negative impact on the financial development indicator. In the short term, the higher the living standards, the less economic agents request bank loans, for instance. Studies have shown that in Africa, the primary source of financing remains self-financing (Prao, 2009). Regarding institutional variables, economic freedoms are beneficial to banking development.

In the long term, the openness rate and GDP per capita are favourable to credit supply to the private sector in the WAEMU zone. Indeed, as living standards rise, the demands of growth lead to the development of new financial products. External openness is also conducive to financial development. Since African countries derive most of their income from abroad, their integration into the world economy can be assimilated to an income increase which, in the last resort, is beneficial to the financial sector. Another important result is the adverse effect of democracy on credit supply. Greater democracy could render monetary policy decisions ineffective, which may ultimately be detrimental to banking services and banking activity. For example, a greater democracy within the central bank could constitute a blockage within the central bank. As for the dependency ratio, it is favourable to the supply of credit when it is associated with an environment where economic freedoms are promoted. However, when it is associated with democracy, it has a negative impact on credit supply.

In total, these results provide a number of policy implications. First, the policy to reduce banking risks must be promoted to help banks finance the private sector in the WAEMU area. Secondly, economic freedoms should be encouraged to foster not only private sector activities but also bank financing.

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