Full Length Research Paper

Bank lending behavior and economy financing in CEMAC countries: Should we grease the wheel?

Eze Eze Donatien

Department of Monetary Economics and Banking, University of Ngaoundéré, Republic of Cameroon.

For the proponents of the "greasing the wheel" position, in the context of market imperfections, corruption helps in alleviating distortions in the credit market, facilitates access to bank credit and promotes the financing of the economy. The aim of this paper was to interrogate the impact of corruption on bank lending behavior in CEMAC countries, not only ranked among the most corrupt economies in the world by international institutions, but also confronted with problem of difficult access to banking services for most economic operators. To achieve this goal, an explanatory model of bank lending behavior in which corruption appears as an argument beside a set of control variables, was built. The model estimation on CEMAC countries' data shows that corruption has a significant negative effect on commercial bank credit behavior. Given the importance of bank credit in financing development, such a finding is an additional argument for integrating governance considerations into any policy targeting the emergence in community countries.

Key words: Corruption, bank, financial development, Africa.

INTRODUCTION

Since the work of Schumpeter (1911), major strands of the economic literature agree with the essential role of credit in the economic development process. The awareness of that role has sparked a growing debate on the determinants of bank lending behavior in various contexts. Recent contributions highlight the significant role of corruption in this dynamic even if the direction of the credit behavior-corruption relationship remains a subject of controversy.

Indeed, for the proponents of a negative effect of corruption on credit behavior, the increased banks uncertainty and the inability of the banker to recover funds in the case of bankruptcy due to the imperfection of the legal system have resulted in higher levels of bank credit rationing. A rising level of corruption will therefore lead to a reduced supply of credit banks with adverse consequences in the financing of the economy. For the proponents of a positive effect, given information asymmetries between lenders and borrowers, the credit will permanently be rationed (Stiglitz and Weiss, 1981). It is precisely the existence of rationing that creates a situation conducive for corruption. To obtain credit, individuals have to pay higher interest rates at the prescribed rate (Weill, 2011). Corruption has the advantage in a context of imperfect courts to allow an acceleration of the banking procedure and recovery mechanisms at the legal level. This results in easier access to credit. Individuals who have the best   chances

E-mail: ezedonat@yahoo.fr. Tel: 6 99 47 71 32.

of getting loans are those who bribed bank employees. So, in a context of market imperfections, "greasing the wheels" helps in alleviating distortions in the credit market, facilitates access to bank credit and promotes the financing of the economy.

Even though numerous studies emphasized the role of corruption in the development process, both to celebrate its virtues and to decry its perverse effects[1], papers devoted to the analysis of the phenomenon's effects on bank behavior remains mostly focused on industrialized and transition economies cases[2]. In the Economic and Monetary Community of Central Africa (CEMAC) considered by international institutions as being particularly affected by corruption, the recent decrease in oil price[3] reinforce the need for economies diversification and financing, the proportion of people accessing formal financial services remains the lowest in the world (World Bank, 2011) despite a persistent excess liquidity of banks. The question then arises on whether corruption can be a significant factor in explaining bank lending behavior in CEMAC countries?

To address this concern, an explanatory model of bank lending behavior in which corruption is a side argument of a set of control variables, was built. Both contribute to the literature on the determinants of bank credit behavior and that on the effects of corruption in the African context. If Anaere (2014) questions this relation globally in the context of sub-Saharan Africa countries, to the author's knowledge, no study has been conducted specially in the community countries to discuss the relationship between banks' lending behavior and corruption. The remainder of the paper is organized as follow:

Bank lending behavior and corruption: Theoretical considerations

There are two positions in the literature regarding corruption-bank lending behavior relationship. In the first, corruption is considered as a constraint on bank credit behavior. It also has a sand effect on bank credit behavior. In the second, corruption positively affects bank credit behavior. It also has a "greasing the wheels" effect.

Corruption as constraints on banks' lending behavior: The sand effect

Laporta et al. (1998) is amongst the pioneering

---

[1]Even if the most important part of the literature support the idea of a negative effect of corruption in the development process (Murphy and al, (1993);. Shleifer and Vishny, (1993); Mauro,(1995, 1997); Bardhan, 1997; Ehrlich et Lui, 1999; Wei, 2000 Adit, 2009)., for some researchers interested in this problem, corruption can also have a positive effect by improving the allocation of resources efficacy (Leff, 1964) or in the special case of highly regulated economies(Dreher and al(2013)

[2]See Khwaja and Mian (2005), Weill (2011), Anaere(2014) for the negative effect of corruption and Chen (2003) for the positive effect of corruption.

[3]Since 2014, the oil market is facing a decline. Crude oil barrel was halved between June 2014 and January 2015 reaching its lowest level in 2009 (45.1 dollars). First export product, it account for 35% of GDP in the subregion and 54.7 budget revenues.

contributors showing the negative impact of corruption on bank loans. In their perception, a legal system characterized by well-functioning of institutions, because it protects banks and guarantee contracts, allows the latter to increase their efficiency. A well-functioning legal system facilitates, in the case of bankruptcy, the funds lent by banks recovery procedures, and positively influences their behavior in terms of credit. Many empirical studies support this positive impact of the legal environment on bank loans. For instance, Dankov et al. (2007), showed that a legal system characterized by effective protection of the various stakeholders (shareholders, creditors and investors) and a high level of respect of contracts is associated with an increase in bank loans. Corruption is a characteristic of failed legal and institutional systems which results in increased uncertainty in banks and inability to recover funds loaned in the case of bankruptcy. Corruption will then have a negative impact on banks' lending behavior. It will negatively affect their incentive to take more risk. Thus, in a macroeconomic environment characterized by high levels of corruption, banks will be reluctant to extend credit.

Beyond the legal framework, connivance between the lender and the borrower will result in an overstatement by the lender of the feasibility of the project, or an ineffective supervision of the business of the borrower. The borrower has in such a context no incentive to achieve higher profitability of the project. A negative aspect of corruption in this case is that, the funded project will not necessarily be the most profitable, but the one proposed by the most corrupt individual. Corruption then appears in the financial sector, as a sort of rationing due to the amount of "bribe".

This theoretical position is supported by many empirical studies. For instance, Khwaja and Mian (2005), showed that companies with political connections obtain more easily, bank credit, but ends up with higher defaults rate. For Charumilind et al. (2006), studying the case of Thailand, firms with connections to politicians have better access to long term bank loans and this access less depends on collateral. Weill (2011) found a decrease in credit rates with the severity of the corruption in Russia. The result of Anaere (2014) confirms that of Weill (2014) in the African context.

Corruption and alleviation of credit markets distortions: The "greasing the wheels" effect

For the proponents of the "greasing the wheel" position, under certain conditions, corruption may also have a positive impact on banks' lending behavior. For instance, according to Weill (2003), this is particularly the case when corruption contributes to the improvement of borrower-lender relationships. In the case where an acceleration of the banking procedure requires the banker extra work, corruption can be seen as a real "lubricant" of banking. Furthermore, as suggested by

Stiglitz and Weiss (1981), given the asymmetry of information between lenders and borrowers, the credit will permanently be rationed. In such a situation, people should pay higher rates for the credit. This creates a favorable environment for corruption. Individuals who have the best chance of obtaining bank financing are those who bribe bank employees. Corruption can then promote good quality credits in a context characterized by banks' risk aversion. To the extent that financial development positively affects economic growth, corruption is thus assumed to have a positive effect on growth through the credit channel.

The paper of Chen et al. (2003) provides the supportive evidence for the greasing effect of corruption. In the case of China, Chen et al. (2003) showed that bribery enable more productive firms to be granted larger loans.

Corruption in CEMAC countries

The Economic and Monetary Community of Central Africa (CEMAC) is an organization of states of central Africa established by Cameroon, Central African Republic, Chad, Republic of Congo, Equatorial Guinea and Gabon to promote economic integration among countries that share a common currency, the CFA franc. A specificity of this group of countries is that they share a common financial regulatory and legal structure and maintain a common external tariff on imports from non CEMAC countries.

The framework of CEMAC countries seems ideal to confront the opposed theoretical positions on corruption and bank lending behavior relationship. The awareness of the extent of corruption and the will to address it has departed, in addition to efforts at the national level by the political authorities of these economies[4], towards the establishment of sub-regional structures to fight the phenomenon. First, the observatory against corruption in Central Africa (OLCAC) created in 2006 aimed, among others, to disseminate national and international legal instruments relative to the fight against corruption in Central Africa by the way of promoting the ratification of these instruments, and encouraging authorities to implement them; the ultimate goal being to strengthen the capacity of civil society and citizens, which should play a decisive role in this dynamics. Then, the network of national anti-corruption institutions (INAC) created during a workshop organized jointly by the United Nations Economic Commission for Africa, the Economic Community of Central African States, and the Advisory Board on Corruption commission of the African union, plays the role that facilitates cooperation between

national institutions for the fight against corruption at the regional level in particular through the exchange of experiences and information. Finally, the Action Group against Money Laundering in Central Africa (GABAC) created in 2000 by an additional Ndjamena Act of the Conference of Heads of States of Central Africa plays the role of promotiing standards, instruments and control standards against money laundering and thus to implicitly reduce leeway corrupt officials. The package, however, is slow to yield significant results, as depicted in Figure 1 as a result of the evolution of corruption in the CEMAC countries.

Gabon with a score above 30 for the last decade is the less corrupt CEMAC country followed by Cameroon. Central African Republic and Congo are at an intermediate level. Chad appears to be the most corrupt CEMAC country. Only Equatorial Guinea seems to be characterized by a significant positive evolution in 2014 that takes this country almost to the same level as Cameroon. But overall, as compared to other contexts, CEMAC countries remain, despite the efforts devoted, deeply affected by the corruption[5].

If supply and demand factors can explain the situation, the existence of rent opportunities deserves adequate attention in the credit market case. Indeed, the search for treatment in a context of discrimination or credit rationing creates a breeding ground for corruption. In CEMAC countries, despite a relative improvement of the banking rate and a persistent bank excess of liquidity, the proportion of people accessing financial services remains among the lowest in the world. Even as the fall in oil products strengthens the needs of diversification and funding, the financial sector contributes very little to the financing of CEMAC's economies. Table 1 compares the number of borrowers in commercial banks per 1,000 adults in CEMAC countries to that observed in other groups of developing economies.

Access to bank credit in CEMAC countries is the lowest in Africa over the period compared notably to East and North Africa. Gabon and Cameroon have the best performance of the community regarding credit access all along the analysis period although Equatorial Guinea outreaches Cameroun in 2014. Even if one can note a positive evolution in all CEMAC countries in the table, in Chad only 9.1 per 1000 adults had access to credit in 2014. As noted in the Franc zone report (2014), the low level of bank intermediation can help in understanding this situation. Table 2 provides an overview of the number of commercial banks branches for 100 000 adults in CEMAC countries. Apart from Gabon and   Equatorial

---

[4]The Cameroon for example created on March 11, 2006 by presidential decree, the National Anti-Corruption Commission (CONAC) which is operational since March 15, 2007. Similarly in Congo since 2004 is the national commission against corruption, bribery and fraud (CNLCCF) consisted originally of ministers and general managers.

[5]The IT index, essentially a poll of polls, is the average of the results of surveys of business people and country assessment analysts from various sources regarding the prevailing levels of corruption. The procedure of averaging the results from different sources would reduce measurement error if the errors in various surveys are independent.

[6] This is the root of the legal approach that stresses the importance of the legal system for the finance growth nexus. See for instance Levine(1998), Levine(1999) Levine and Zervos(1998) Levine Loaysa and Beck(2000)
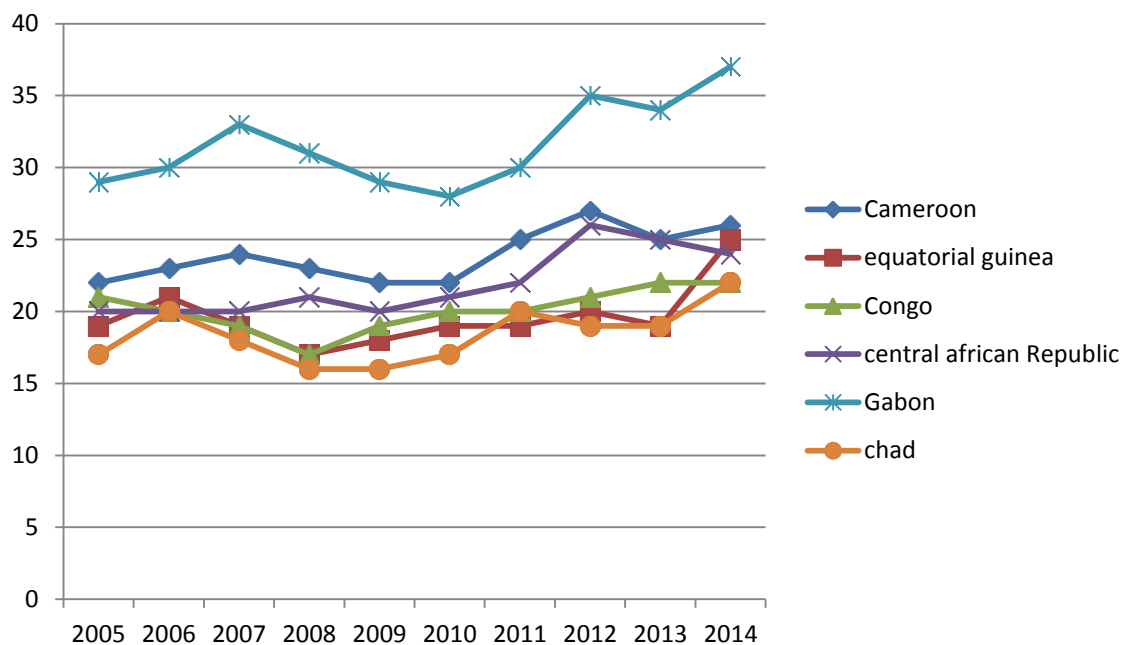
Figure 1. Evolution of corruption index in CEMAC countries. Source: Author.

Table 1. Access to bank credit in CEMAC countries (per 1,000 adults).

Countries	2010	2011	2012	2013	2014
Cameroon	11.1	17.6	20.6	21.9	20.2
Equatorial Guinea	9.6	10.3	12	15.2	28.5
Congo	1.1	1.5	3.6	3.4	4.9
Gabon	17.5	21.7	27.6	48	108.3
Chad	2.2	2.8	3.2	3.6	9.1
Subsaharan Africa	19 .9	18.3	21.5	23	
North and eastAfrica	81.1	89.5	81.6	107.8	

Source World Development Indicators, 2015.

Table 2. Bank branches per 100 000 adults in CEMAC countries.

Countries	2010	2011	2012	2013	2014
Cameroon	1.7	1.7	1.8	1.9	1.9
Equatorial Guinea	4.5	4.6	5.6	6.3	6.5
Congo	2.2	2.7	2.8	3.5	
Gabon	5	5.7	9.9	9 .9	10.4
Chad	0.6	0.7	0.7	0.7	1
Subsaharan Africa	3 4	3.5	3.6	3.8	3.9
North and East Africa	11	11	11	10.2	15.2

Source World Development Indicators, 2015.

Guinea, all CEMAC countries intermediation levels are below the average noted for sub-Saharan Africa. Moreover, observed levels are very low as compared   to North and East African countries. There is a constant improvement in the level of intermediation in all CEMAC countries on the period 2010-2014. Gabon and Equatorial

Guinea are the two countries with the higher level of intermediation although they are far below non CEMAC African countries. Chad with only one branch per 100 000 adults have the worst performance. Moreover, the contractual environment in CEMAC countries is still characterized by weak legal enforceability of financial contracts.

As reported by the World Bank databases (2015), the time required for the legal enforcement of a financial contract is above 500 days in all CEMAC countries. The number of procedures required is very high. It is for example 60 in the case of Cameroon. These considerations added to banks' inability to assess risk in a context dominated by small opaque sized companies with low informational level and insufficient guarantees and collateral mechanisms push banks to ration credit. Information on asymmetries gives bank managers in CEMAC countries, a wide scale of discretion on the credit decision. Contrary to the prospect of Akerlof (1981) where only the borrowers with bad projects seek to borrow at high interest rates, the credit market in the CEMAC, in spite of a prevalent bank excess of liquidity, imposes a competition between good and bad borrowers for access to funds. In a context of endemic corruption, such a situation creates the conditions that can allow the bankers to take private rent for credit transactions: The resultant is an increase in transaction costs and an accentuation of the difficult access to bank financing. So taking into account the literature and the reality in the CEMAC's context, our main hypothesis stated in the alternative form is:

The higher is corruption prevalence in CEMAC countries, the less are banks prone to lend to the private sector.

MATERIALS AND METHODS

To test this hypothesis, the bank lending behavior in the CEMAC countries as a function of the level of corruption and a set of control variables is expressed.

Variables and data

As in many cross countries, studies on bank lending behavior, explained that variable is bank credit defined as the ratio of total credit issued to private sector by deposit money bank to gross domestic production (GDP). Data for this variable are from the financial structure database.

The explanatory variable of primary concern is corruption. To measure corruption in CEMAC countries, we start from the idea that the bank credit behavior can be affected not only by bank's internal corruption, but also by corruption in other sectors[6]. As in Park (2012), the level of corruption in the banking sector is expected to strongly correlate with overall corruption of the economy. Wei(2000), Mo (2001) and Adit (2009) suggest the use of corruption

perception index proposed by Transparency International (*T index*).This is a composite indice aggregating surveys based on information from risk analyst and residents. But we need to make two adjustments. First, this index ranges from zero (the most corrupt situation) to ten (the least one); we present it in the form *CI = 10- T index* to allow a higher value to be associated with a higher level of corruption. Secondly, to correct the bias linked to the diversity of methodology in Transparency International surveys all along the sample period (Lambsdorff, 2008), the CI index of year *t* in the country *j* was divided by the average CI indices in all countries for each year. The used adjusted index of corruption[7] is thus given as follows:

$$\text{Adjusted corruption} = \frac{CI_{j,t}}{\left(\sum_{j=1}^{n} CI_{j,t}\right)/n}$$

To assess the link between corruption and bank credit, the authors controlled for other potential determinants of bank credit. The authors then introduced the model bank control variables corresponding not only to bank internal factors that may affect their credit behavior, but also to proxies for the contractual environment and macroeconomic conditions.

Regarding the banking variables, we include in the model, the bank's size (bank size). Berger and Udell (2006), for example, showed that large banks tend to ration small enterprises which are dominant in the productive sectors of CEMAC countries. The logarithm of total bank assets is used as a proxy for bank size. Anaere (2014) approach was followed.

The contractual environment can also affect credit behavior. It is seized by banking regulations. If Diamond and Rajan (1999) pointed out a positive effect of capital requirements on credit growth, Borio et al. (2001) noted that banks can choose the most effective way to meet the capital requirements. Since the cost of raising new capital is generally higher for financial institutions with low capital, banks are then likely to cut lending to meet the regulatory requirement. To take into account capital requirements, the capital ratio was computed. A negative relation with bank lending behavior was expected.

We must take into account the structure of the banking market. Indeed, competition in the banking industry because it results in lower interest rates and increasing of the bargaining power of bank managers (Weill, 2011) can help to counteract the effects of corruption on loans[8]. A widely used measure of competition is the concentration ratio. In the traditional literature, higher concentration is generally linked to a lower level of competition within the banking industry (Laeven and Levine, 2009). But, concentration ratio mostly reflect the existing market structure and they may not capture the potential competition in the banking industry. Furthermore, concentration measures may endogenously reflect the market share gains of efficient firms rather than represent an exogenous measure of competition. Following Claessens and Leaven (2004), The Herfindhal index is used to measure the degree of competition in CEMAC countries banking market. Based on the premise that banks employ different pricing strategies in response to changes in input prices, depending on the market structure, Panzar and Ross

---

[6]For example, corrupt politicians may induce or instruct banks to lend credit to non-creditworthy friends, which leads to higher risks on the assets of banks, although bankers are incorruptible.

[7]This adjusted index has the particularity to indicate the level of corruption in a country over a "typical" country. A rise in the index of a country then means that the country becomes relatively more corrupt.

[8]In the presence of market power, banks are encouraged to develop customer relationships while increasing the amount of credit offered. Boot (1997) adds that even if agents incur a higher interest rate, the amount of credit available is higher. Beck et al. (2004) reported on the negative effect of concentration of bank lending behavior For a discussion on causes of corruption, see for instance Treisman(2000) or Svensson(2005).

(1987) developed the H-statistic which measures the elasticity of banks revenues relative to input prices. Under perfect competition, an increase in input prices raises both marginal costs and total revenues by the same amount, and hence the H-statistic equals 1. Under a monopoly, an increase in input prices results in a rise in marginal costs, a fall in output, and a decline in revenues, leading to an H-statistic less than or equal to 0. When H is between 0 and 1, the system operates under monopolistic competition. A negative sign of this variable is expected.

We must also consider the macroeconomic conditions and policies. Particularly, as suggested by Dell'Ariccia et al. (2006), credit behavior is procyclical. A high rate of economic growth will result in a higher growth rate of bank credit because in such a context banks tend to adopt a lax credit behavior. This is controlled by the logarithm of gross domestic production per capita. Inflation has also a role to play as pointed by Boyd et al, (2001). Demand for bank credit by firms reduces with inflation as higher inflation is related to lower productivity levels (Huybens and Smith, 1999). Inflation is defined as the consumer price index grow rate. A negative impact of this variable on the bank lending behavior is postulated.

Finally, interest rate in the model was included. Indeed, a recent strand of the literature consider that monetary policy may constrains the ability of banks to make new loans, making credit less available to borrowers who depend on bank financing.

Moreover, according to the lending view of bank credit channel of the monetary policy, the volume of new loans should decline and loans rate should rise relative to market rates when monetary policy is tightened.

Some studies use a short term interest rate such as treasury bill rate to measure policy action. Others use a record of dates of significant monetary policy actions developed by Romer and Romer(1989). In this study, monetary policy is measured by the first order difference in central bank intervention rate (TIAO) as it is reported to be highly correlated with the lending conditions of banks[9]. A positive value implies a contractionary monetary policy and a negative value an expansionary monetary policy adopted by the central bank. A lower interest rate due to expansionary monetary policy may have a positive effect on bank lending behavior. A negative relation between bank lending behavior and interest rate dynamics is expected.

Benchmark model and data

Based on the above discussion, to explore the impact of corruption on bank lending behavior, it is assumed that a bank lending response in country i at the time j can be represented as follows:

$$Bank\ lending_{ij} = a_0 + a_1 corruption_{ij} + a_2 bank\ size_{ij} + a_3 competition_{ij}$$

$$+ a_4 inflation_{ij} + a_5 capitalratio_{ij} + a_6 GDP_{ij} + a_7 interestrate_{ij} + v_i + u_{it}$$

Where v_i is time invariant country specific effect and u_{it} is the idiosyncratic error.

The dataset used in this study is compiled from three main sources on the period 2010-2014: The world development indicators (inflation, GDP per capita), the international monetary fund database (interest rate) and the reports of the Banking Commission of Central Africa (COBAC) for banking variables. Table 3 identify data sources and provides descriptions and expected signs of key variables.

EMPIRICAL RESULTS

Specification tests and estimation

To perform estimations, the approach taken was followed, in most econometric analysis to convert variables into log forms to remove heteroskedicity from the analysis. panel regressions was implemented. But, to decide whether to use fixed or random effects should be considered. The Hausman test suggests the use of fixed effects because the regressors are correlated with time invariant country specific variables[10].

The issue of endogeneity is limited as we do not observe bribing behavior at the individual level. Individual willingness to bribe is unlikely to affect the results. Moreover, countries were controlled for fixed effects and thereby remove all unobservable time invariant variables that can potentially contribute to reversing the causality between corruption and credit. The results of the panel regressions are shown in Table 4.

The most important finding is that corruption hampers bank credit behavior in CEMAC countries. As can be seen in the table, the coefficient of corruption is the negative and statistically significant at 5% level. The results suggest that, when corruption increases by 1%, the supply of credit to the economy by CEMAC's commercial banks decreases by 20%. The judicial system seems to be the mechanism through which corruption hinders loans in the area. This result confirms the findings of Weill (2011) for Russia and Anaere (2014) for sub-Saharan African countries and strongly supports this theoretical hypothesis that more corruption is associated with less private sector bank lending in CEMAC countries.

Also consistent with these predictions, the market structure contributes significantly to explain the studied phenomenon. The coefficient of competition is negative and statistically significant at 5% level. Furthermore, the level of economic activity (GDP) positively affects banks' lending behavior as expected. The estimate coefficient is statistically significant at 1% level. However, a significant relationship between Interest rates or inflation rate and bank lending behavior was not found. This can respectively be explained by the prevalent excess liquidity in the CEMAC's banking system that prevents commercial banks to depend on the central bank for credit operations and the rigidity of the franc CFA guarantee mechanism that maintain a relative stable and low inflation rate in the community.

Robustness tests

To test the robustness of findings, other various

---

[9]Bank lending rate may adjust asymmetrically to an increase or a decrease in monetary policy rate or money market rate for more on the effect of monetary policy see for instance (Leuvenn Steijn, Sorensen, Bikker and Van Rrextel(2013) (Leuven et al., 2013)

[10] Results of the Hausman test are presented in Annex 1

Table 3. Explanatory variables of the econometric model.

Explanatory variables	Symbols	Expected sign	Data sources
Corruption	Corruption	Negative	Transparency international
Monetary policy	Interest rate(first order difference)	Negative	IMF
Bank market structure	Competition	Negative	Author's calculations
Regulation	Capital ratio	Negative	Author's calculations
Economic activity	GDP	Positive	WDI
Inflation	Inflation	Negative	WDI
Bank size	Bank size	Negative	COBAC data

Table 4. Corruption and lending behavior of banks in CEMAC.

Explanatory variables	Coefficient	Standard error	T	Probability
Constant	6.352391***	1.338296	4.75	0.000
Regulation	0.5509406 ***	0.1294424	4.26	0.000
Monetary policy	0.364769	0.571674	0.64	0.526
Bank market structure	-0.2391474 **	0.1012601	-2.36	0.021
Corruption	-0.1900143 **	0.0923942	-2.06	0.044
GDP	0.8527611 ***	0.1989162	4.29	0.000
Inflation	-0.17016*	0.099558	-1.71	0.092
Bank size	-1.317038***	0.0884527	-14.89	0.000

Number of obs = 78 Number of groups = 6; R-sq: within = 0.7984 Obs per group: min = 13; between = 0.1777 avg = 13.0; overall = 0.4887 max = 13; $F_{(5,67)}$ = 53.05; corr(u_i, Xb) = -0.4375 Prob> F = 0.0000; sigma_u 1.2399345; sigma_e 0.6554244; rho .78160801 (fraction of variance due to u_i); F test that all u_i=0: $F(5, 67)$ = 20.78 Prob> F = 0.0000; Source : Author; *Significant at 10 per cent level; **Significant at 5 per cent level; ***Significant at 1 per cent level.

Table 5. Corruption and bank credit relationship in other econometric specifications.

Dependent variable: bank credit	Random effects	Fixed effects with IV	PraisWinsten
Corruption	-0.167466*	-0.062024***	-0.172765**
	(0.085)	(0.006)	(0.030)
R square	0.2157	0.1111	0.2458

Source: Author ; P-value in parentheses ; *Significant at 10 per cent level ; **Significant at 5 per cent level ; ***Significant at 1 per cent level.

econometric methodologies were adopted to test if they will render consistent results.

Firstly, as suggested by Wooldridge (2010), fixed effect estimator can lead to imprecise estimates when the key variable in regressors do not vary much over time. In our estimation, the corruption is the key variable and it does not vary enough all over the period of interest (2010-2014). So, in spite of the result of the Hausman test, the estimation by the random effects estimator was also presented. The coefficient of corruption is still negative and significant.

Although endogeneity is limited, it was not possible to test it as the number of observations is insufficient to realize the endogeneity Hausman test. To check if results are consistent, instrumental variable (IV) estimator was employed. This finding is still consistent with the negative and significant effect of corruption on bank lending behavior.

The Prais Winsten estimator which is the generalized least squares method when errors are assumed to follow an AR(1) process, was employed.

The coefficient of corruption is still negative and significant.

In Table 5, the coefficient of corruption in the different approaches was presented.

Conclusion

If the argument according to which corruption may

hamper bank credit shows that bank official exploits his power in loan granting by demanding a bribe in exchange, which increase the cost of loan, for a significant strand of the literature, corruption may also be beneficial for bank credit in some cases. The borrower may be inclined to give a bribe to the bank official to enhance his chances to obtain a loan. In such a case, corruption has a greasing effect on the bank credit behavior and by this mean, improves the financing of development needs.

This paper examines the role of corruption on bank lending behavior in the CEMAC countries. To reach this target, an explanatory model of commercial bank credit behavior in the CEMAC countries in which corruption is an argument was built beside a set of control variables. The model is estimated using panel regression techniques. To check the robustness of these findings, alternative econometric methods were used.

The results indicates that corruption does not have a greasing effect on CEMAC countries. There is evidence to support a sand effect of corruption on bank lending behavior in these countries. The study reveals that CEMAC's bank lending behavior is negatively and significantly affected by the prevailing corruption.

Consequently, monetary and banking authorities in this group of countries, if targeting an optimal financing of their economies, should pay attention to the creation of a safe institutional and contractual bank environment. Among reforms to be undertaken, rule of law relative to time required to adjudicate a case, number of cases on the docket and other measures of judicial effectiveness should go together with the necessary internal mobility of bank staff to prevent occurrence of corruption and create a friendly market financial environment.

As suggested by Djankov et al. (2007), information sharing can also play a significant role in decreasing the lending corruption. Private credit bureaus should then complete the existing public risk registry of the central bank of community countries to help alleviate the phenomenon.

Conflicts of Interests

The author has not declared any conflict of interests.

REFERENCES

Adit T (2003). Corruption, Institutions and development. Oxford Rev. Eco. Policy 25(2):271-291.
Akerlof G (1970).The Market for "Lemons": Quality Uncertainty and *the* Market Mechanism. The Quarterly J. Eco. 84(3):488-500.
Anaere C (2014). Effect of corruption on bank lending; Evidence from sub-Saharan Africa. J. Int. Eco. Bank. 2:15-27.
Bardhan P (1997). Corruption and Development: A review of the Issues. J. Eco. Lit. 35:1320-1346.

Berger AN, Udell GF (2006). A More Complete Conceptual Framework for SME Finance. J. Bank. Financ. 30:2945-2966.
Borio FC, Lowe P (2001). Procyclicity of the financial system and financial stability issue and policy options. BIS Paper.
Boyd JH, Levine R, Smith BD (2001). The impact of inflation on financial sector performance J. Monetary Econ. 47(2):221-248.
Charumilind DCRK, Wiwattakantang Y (2006). Connected Lending: Thailand Before the Financial Crisis. J. Bus. 79(1):181-218.
Chen YM, LIU YS (2011), Greasing the wheels of bank lending; Evidence from private firms in china. J. bank. Finance. 37(7):2533-2545.
Claessens S, Laeven L (2004). What drives bank competition? Some international evidence. J. Money, Credit, and Bank. 36(3):563-583.
Djankov S, McLiesh C, Shleifer A (2007). Private Credit in 129 Countries. J. Financ. Eco. 84(2):299-329.
Djankov S, McLiesh C, Shleifer A (2007). Private Credit in 129 Countries. ,J. Financ. Eco. 84(2):299-329.
Dreher A, Gassebner M (2013). Greasing the wheels? The impact of regulation and corruption on firm entry. Public Choice 155(3-4):413-432.
Erhlich I, LUI F (1999). Bureaucratic corruption and endogenous growth. J. polit. Eco. 107(6):270-293.
Huybens E, Smith BD (1999). Inflation, financial markets and long run real activity J. Monetary Econ. 43(2):283-315.
IMF (2013) .Central African Economic and monetary community; Staff report on common policies for member countries. Country report 13/322.
Khwaja A, Mian A (2005). Do Lenders Favor Politically Connected Firms? Rent Provision in an Emerging Financial Market. Quarterly J. Eco. 120(4):1371-1411.
Laeven L, Levine R (2009). Bank governance regulation and risk taking. J. Finance. Eco. 93(2):259-275.
Leuvensteijn MV, Sorensen CK, Bikker JA, van Rixtel ARJM (2013). Impact of bank competition on the interest rate pass-through in the euro area. Appl. Eco. 45(11):1359-1380.
Laporta RI, Lopez-de-Silanes F, Shleifer A, Vishny RW (1998) .Legal Determinants of External Finance. J. Financ. 52:1131-1150.
Lambsdorff J (2003). How Corruption Affects Productivity. *Kyklos* 56(4):457-474.
Leff N (1964). Economic development through bureaucratic corruption. Am. Beh. Sci. 82(2):337-341.
Levine R (1998). The Legal Environment, Banks and Long-Run Economic Growth. J. Money, Credit Bank. 30(3):596-620.
Levine R (1999). Law, Finance and Economic Growth. J. Financ. Intermediation 8:8-35.
Levine R, Zervos S (1998).Stock Markets, Banks, and Economic Growth. Am. Eco. Review 88(3):537-558.
Levine R, Loayza N, Beck T (2000). Financial Intermediation and Growth: Causality and Causes. J. Monet. Eco. 46:31-77.
Mauro P (1995). Corruption and Growth. Q. J. Eco. 110(3):681-712.
Romer CD, Romer DH (1989) . Does monetary policy policy matter? A new test in the spirit of Friedman and Schwartz.*NBER* Macroeconomics annual pp. 121-170.
Shleifer A, Vishny R (1993). Corruption. Q. J. Eco. 108(3):599-617.
Stiglitz J, Weiss A (1981). Credit Rationing in Markets with Imperfect Information. Am. Eco. Rev. 71:393-410.
Svensson J (2005). Eight Questions about Corruption. J. Eco. Perspectives 19(3):19-42.
Treisman D (2000).The Causes of Corruption: A Cross-National Study. J. Public Eco. 76(3):399-457.
Udell GF (1989). Loan quality, commercial loan review and loan officer contracting. J. Bank. Financ. 13:367-382
Wei SJ (2000). How taxing is corruption on international investissors . Rev. Eco. Stat. 82(1):1-11.
Weill L (2011). How corruption affects bank lending in Russia. Eco. Syst. 35(2).