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# Why African Companies Are Absent on the Bond Market? An Explanation through Companies Listed on the BRVM

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## Abstract

This research provides some answers to the question of the limited presence of African companies in the bond markets. Indeed, from a sample of companies listed on the BRVM and panel models tested by the Generalized Moment Method (GMM) developed by Blundell and Bond [1], we study the behavior of the variables usually retained in the work on the determinants of bond issues. We show that the reputation, renegotiability and maturity of the debt, as well as the level of wealth created, determine the debt behavior of companies. Also, any financing strategy by bond issues should take into account these determinants.

## Keywords

Bond Issue, BRVM, African Companies, Stock Market

## 1. Introduction

The development of bond markets in sub-Saharan Africa is characterized by a limited presence of companies. In this context, Mu, *et al.* [2] point out that corporate public debt accounts for 1.8% of GDP in Africa (far from 26.5%, or even 98.6% of GDP in Canada and the US) compared to 14.8% for sovereign debt in 2010. It is clear that bond issues by companies have never really taken off in this continent, despite the ever-growing number of stock exchanges that went from five (5) to twenty-three (23) between 1990 and 2010. This is the case in the UEMOA[1] and CEMAC[2] zones, where corporate public debt does not exceed 1% of GDP. Regarding UEMOA, out of the thirty-five (35) bond lines identified in

[1]Union Economique et Monétaire Ouest Africaine.
[2]Communauté Economique et Monétaire de l'Afrique Centrale.

2013 on the Regional Stock Exchange (BRVM), for an outstanding amount of nearly one thousand three hundred (1300) billion CFA francs, only six (6) belong to industrial and commercial companies. Only one (1) of them figures on the share compartment of this stock exchange. The debt structure of these companies is essentially made up of bank debts which constitute 48% of the financial resources and are divided into cash flow debt (20% short-term) and financial debt (28% long-term). It should be noted that only South Africa has a different situation with a corporate debt in 2010 at over 20% of GDP.

To explain the global weakness of bond markets in Africa, the literature focuses on the economic and institutional conditions of the markets. Eichengreen B and Luengnernemitchi [3], from a panel data study, conclude that the size of the market, the degree of corruption and the quality of the administration determine the development of bond markets. Further in their investigation in 2008, these authors highlight variables such as the size of the country, the quality of institutions, the GDP per capita, and the volatility of interest rates to explain the limits of African bond markets. Comparing developed and developing countries, Claessens S., *et al.* [4] conclude that economic factors such as the size of the financial system, the exchange rate regime, taxation, inflation, the legal framework and the opening of capital determine the development of bond markets. Similarly, Adelegan J. and Radzewiez-Bak B. [5] argue that exchange rate variability, free movement of capital, and taxation are the determining factors of the public debt market in Africa because of their correlation with the profile of country investment. These results are confirmed by Mu, etc. [2] and Timmer. Y [6], which highlight in their studies on the determinants of the development of government bond markets and companies in African countries, the role of economic and institutional factors such as GDP, trade openness, the cost of credit, the spread on interest rates, the variability of the exchange rate, taxation, the investment profile, the quality of the administration, corruption. In the specific case of corporate debt market, the authors show that the size and depth of the economy, as well as the cost of credit to the private sector, are the main determinants of bond market development.

In the case of monetary unions in Central and West Africa, Mbeng Mezui C. [7] examines the macroeconomic and microeconomic preconditions, as well as the institutional factors behind the development of bond markets. He bases his approach on an econometric analysis based on the method of generalized moments. The author shows that the member countries of these unions have many distortions in the mobilization of savings by bond markets. These distortions relate to the reaction of the State to these markets, notably through the use of funds mobilized for the purpose of financing budget deficits instead of investments. They also concern the animation of the market through too many irregular auctions of securities. Finally, these distortions are based on various institutional and regulatory factors.

It should be emphasized that most of work done on the determinants of corporate debt in bond markets focuses on macroeconomic and institutional condi-

tions. Most empirical works marginalize or ignore the economic and financial fundamentals of companies. Any bond issue lies with a managerial decision, built both on the basis of the economic and institutional environment conditions and with internal information on the economic and financial situation of the company.

To address this problem, this study highlights the role of firms' internal economic and financial factors. It aims specifically to inform the absence of bond debts in the financial structure of African companies, by studying the behavior of the variables usually used in the work on the determinants of bond issues, to deduce explanations for the absence of debts bondholders in their financial structure.

This paper is organized as follows: Section 2 is devoted to the review of the literature. Section 3 declines the methodology. Section 4 presents and discusses the results. Finally, Section 5 concludes.

## 2. Literature Review

The literature considers the decision of bond financing according to the logic of substitution of bank debt, on the one hand, compared to the idea of complementarity between bank and bond debt, on the other hand.

### 2.1. Bank vs Bond Debt

Several arguments are put forward to explain the more use of bank debt in comparison to bond debt and vice versa: agency costs, the hierarchy of financing, the advantageous posture of banks compared to bond creditors, financing schemes and culture. There are two explanatory axes of indebtedness: one, consistent with the agency hypothesis, deals with information. The other relates to the internal workings of the company [8].

On the issue regarding information, the bank would produce information at a lower cost than the market. Hence, the use of bank debt would be more beneficial to the value of the company compared to bond issues. Similarly, in connection with this informational advantage, the bank has, in a context of financial distress or liquidation, a better ability to renegotiate its debt obligation than public lenders. Finally, the private information on the company, which is more easily accessed by the bank and that has a strategic nature, leads companies to be forced to use bank debt, or even to prefer it to bond issues, in order to not communicate their investment opportunities to the public. Scientific work based on the existence of an informational advantage of the bank leads generally to the validation of the hypothesis of a hierarchy of financing which places the bank debt before the market debt [9] [10] [11] [12].

Regarding the inner workings of the company, the work concludes that the low solicitation of bond issues is based on decisions made by its managers. In the study of financial performance and characteristics of family and non-family businesses, Allouche J. *et al.* [13] conclude on the moderating role of the IPO on

family control. In other words, family businesses prefer to arbitrate between bank debt and market capital, which leads them to limit bond issues. Moreover, conventional bond issues do not seem to have a significant effect on the value of family businesses, which shows a form of indifference towards them in the financial decisions of these companies. The attractiveness of the financial mark *et al.* so determines debt decisions [14] because, according to the "debt timing" assumption [15], companies issue debts when loan conditions are favorable and conversely. This will be the case for bond debts. In this respect, in the case of bond issues of German SMEs, Petey J. [16] shows that with higher financial charges for bond issues than for bank loans, companies prefer to use bank debt. Moreover, the financial market seems to react speculatively to bonds issued by SMEs, by equating them with *junks bonds*.

In addition, the literature evokes the idea that debt is a regulating element of agency costs between internal and external stakeholders of the firm. The choice of bank or bond debt is related to the good way that will contribute most to minimize these costs. The hypothesis of a low relational cost with bank credit in comparison with bond debts is often advanced to explain the choice of bank debt versus market debt [17] [18]. However, when public information on the risk of bankruptcy is available, companies resort more to bond issues as is the case in the US compared to Europe [19]. Reputation is also a determinant of the choice between bank and bond debt. Thus, a firm with a good reputation will borrow on the bond market against another, less reputable, which will solicit exclusively the banking market. The firm with a less good reputation may nevertheless move towards the bond market when its reputation is established and the costs will be lower. In this perspective, a mixed debt structure, composed of a proportion of bank and bond debt, is characteristic of the companies' situation.

### 2.2. Bank and Bond Debt: Complementarity

Taking the hypothesis of complementarity between bank and bond debt, Bolton P and Freixas X [11] from a modeling of the financial market and corporate finance in a context of asymmetric information with no taxation, explain that a balance is possible between these two sources of financing. Companies retain bank debt as the primary source of financing for their investments as long as the associated asymmetric costs are lower than those associated with bonds. However, this reliance on financial intermediation is no less costly for the company because it generates a risk of "expropriation" of part of its profits, made possible by the monopoly of information held by the bank [20]. Also, to minimize its costs, the company will turn to the bond issue. It is therefore not surprising, in this hypothesis, to have a debt structure composed of bank and bond debts, the latter aiming to moderate asymmetric costs with the bank.

Another theoretical argument has been put forward by Holmstrom B., and Tirole J. [21] that banks' control, while limiting moral risk, acts as a moderating factor of capital demand from the market. In this case, it is the initial level of

wealth of the company that will determine the proportion of bond debt in the debt structure. Thus, in case of small capitalization from the outset, the company would benefit from combining its demand for financing by borrowing in both markets (banking and financial). On the other hand, for firms that are better capitalized initially, direct financing on the financial market is the best choice. In any case, the company comes out with a mixed debt structure. Frédéric Lobez, *et al.* [22] complete the theoretical explanation of the complementarity between bank and bond debt by a signalling model in a context of information asymmetry. In this respect, they consider the share of the debt as the signal given to the market on the quality of the company. Also, is a high proportion of bank debt considered as a signal of good quality of the company addressed to the market, and conversely in the case of a small portion of bank debt? In the first case, the company opens the possibility of supplementing its financing with bond issues because it is favorably perceived by the market. By the way, in a context of high concentration of banking, the company would be interested in further soliciting of the bond debt in order to reduce the costs of the banking monopoly on its interest rates. If, in practice, it does not generally replace bank debt, the bond debt often consists of a mixture with it. Therefore, a mixed debt structure would be considered more efficient than another composed solely of bank debt. In this sense, the introduction of a significant proportion of bond debt into the debt structure of African companies would be a sign of their relative good quality.

### 2.3. The Determinants of Bond Debt: The Results of Empirical Studies

Empirical studies on bond issues looked at the internal characteristics of companies, considering that they will affect the volume of transactions on these securities as well as the spread. Maggie, *et al.* [23] show the uncertainty of the company's internal decisions has a long-term effect on the liquidity of the bonds. Similarly, the amount requested, the rating of the company and its identity will determine the cost of the bond.

External factors, including macroeconomic, institutional and cultural factors also impact corporate bond debt. Dung Quang, *et al.* [24] show the influence of macroeconomic factors on corporate bonds in both developed and developing countries from 1970 to 2013. They mobilize for this purpose, a model of regression with the method of generalized moments. More specifically, the study examines the effect of exchange rate variability as well as the degree of economic openness on the issuance of corporate bonds.

Timmer Y. [6] shows the effects of monetary policy on bond yields issued by companies in emerging countries. Interest rates are the main drivers of these effects, because of the impact they may have on corporate borrowing conditions. For instance, if the Federal Reserve raises its key rate, this may lead to a depreciation of the currencies of emerging countries against the dollar, thus affecting the costs of bond issues in these countries. Moreover, the behavior of bond buyers seems different depending on whether they are natural or legal persons. Wei

[25] indicates that retail investors have behavioral biases in contrast to institutional investors who are better equipped to process securities information before making purchases.

In the specific case of Africa, the empirical work demonstrates that the corporate bond market remains determined by the size of the country, its level of development as well as its institutional framework [26] on one hand, the variability of the rates exchange and the constitutional system [27] on the other hand. While investors are generally in favor of bonds issued by African companies, they are afraid of inflation, the absence or weakness of market makers, and the inadequacy of corporate ratings [28].

## 3. Methodology

It is divided into three stages: the specification of the models, the presentation of the variables and that of the data.

### 3.1. Models Specification

We use the work of Colot, O., *et al.* [29] [30] to identify the factors influencing the structure of corporate debt, both long-term [*model* 1] and short-term [*model* 2].

To make the choice of the empirical model, we first check if there are problems of endogeneity in order to use an estimator to correct it. To do this, we carry out the Granger causality tests to see if some explanatory variables can be caused by the variables that will be considered endogenous. The synthetic result is shown in **Table 1**.

The Granger causality test (see **Table 1**) reveals that the variables explained in models (1) and (2) cause some explanatory variables of these models. In this context, it is recommended to use an estimation method that can correct this endogeneity problem. To this end, we estimate a dynamic panel using the GMM method using the system developed by Blundell R. and Bond S [1]. This estimator has the advantage of combining the first difference equations with those of the level variables in order to correct the endogeneity and omitted variables bias. We apply the Sargan test to check the validity of the instruments. Finally, we verify the absence of autocorrelation of the residues. The two systems of estimated equations are presented below:

**Table 1.** Granger causality/block exogeneity Wald tests.

| Dependent variables | deb_fin | deb_tres | reg | mst2 | reneg |
|---|---|---|---|---|---|
| deb_fin | - | - | 0.0168 | - | - |
| deb_cash | - | - | 0.0042 | 0.0659 | 0.8604 |
| reg | 0.4358 | 0.8821 | - | - | - |
| mat2 | - | 0.6768 | - | - | - |
| reneg | - | 0.0238 | - | - | - |

$$\begin{cases} \Delta \text{DEB\_FIN}_{i,t} = \beta \Delta \text{DEB\_FIN}_{i,t-1} + \beta \Delta \text{REPUT}_{i,t-1} + \theta \Delta X_{i,t} + \Delta v_t + \Delta \varepsilon_{i,t} \\ \Delta \text{DEB\_FIN}_{i,t} = \beta \text{DEB\_FIN}_{i,t-1} + \theta X_{i,t} + v_t + \varepsilon_{i,t} \end{cases} \quad (1)$$

$$\begin{cases} \Delta \text{DEB\_CASH}_{i,t} = \beta \Delta \text{DEB\_CASH}_{i,t-1} + \theta \Delta X_{i,t} + \Delta v_t + \Delta \varepsilon_{i,t} \\ \Delta \text{DEB\_CASH}_{i,t} = \beta \text{DEB\_FIN}_{i,t-1} + \theta X_{i,t} + v_t + \varepsilon_{i,t} \end{cases} \quad (2)$$

The explained variable in Equation (1) is the financial debt (DEB_FIN), Δ the first difference, $X$ the matrix of the explanatory variables which includes: the renegotiation of the debt (RENEG), the limitation of the information on the enterprise (INFOR), the wealth of the enterprise (WEALTH), the maturity of the medium-long-term debt (MAT1), the size of the company (SIZE), the reputation of the company (REPUT), and the attractiveness of the market (ATTRACT). $v_t$ is the vector of the country-specific effects not observed and $\varepsilon\_(i, t)$ that of the specific errors observed. Finally, $t$ is the time and $i$ the country index. The Equation (2) has for explained variable, the cash debt. It has the same explanatory variables as Equation (1) apart from the maturity of the medium-long-term debt (MAT1) which is replaced by the maturity of the short-term debt (MAT2).

In the previous two models, the independent variables are not automatically used as the instruments and are all considered as exogenous. Thus, they are included in the list of variables whose first differences will be instruments for the first difference equation. The delays of the variables in level are used as GMM type instruments for the first difference equation. In addition, the 1st order delay of endogenous or explained variables are used to create GMM type instruments for the equation containing the variables at the level. Only the first-order delay is used because the moments using higher delays are redundant [1] [31].

### 3.2. Overview of Variables

We distinguish successively the endogenous variables, on one hand, the exogenous variables, on the other hand.

Due to a financial structure composed mainly of bank debt on the one hand, and in relation to our research objective to explain the absence of bond debt by studying the behavior of the variables usually retained in the work on the determinants bond issues on the other hand, the endogenous variables used to characterize the debt structure are: long-term corporate bank debt (DEB_FIN) and short-term bank debt (DEB_CASH).

Based on the company's balance sheet data, the first endogenous variable is measured by the financial debts report on the total balance sheet liability. The second variable is measured by the ratio of cash liabilities on the total balance sheet liability.

Exogenous variables from the literature on the determinants of bond issues are taken into account. These exogenous variables are: the reputation of the company (REPUT), the renegotiability of the debt (RENEG), information asymmetry (INFOR), the financing regime (REG), the level of wealth of the company (WEALTH), the size of the company (SIZE), the attractiveness of the company in the market (ATTRACT) and the maturity of the debt (MAT2).

According to Diamond D W [17], a firm with a good reputation (REPUT) will borrow on the bond market, unlike another, less reputable one, which will solicit exclusively the banking system. The latter may move into the bond market as its reputation is established and costs are lower. Reputation is therefore the negative or positive signal that gives the company access to market debt. Due to the absence of bond issues in their financial structure, it can be argued that African companies have a low reputation. In addition, in the event of a good reputation, African companies may have an interest in soliciting bond markets.

Renegotiation (RENEG) is a key element in choosing the type of debt. Indeed, because of its greater concentration on a single lender, bank debt seems more easily renegotiable than bond debt, and its maturity, on average shorter, reinforces this advantage. Therefore, firms value this renegotiation option, either because they have a higher probability of having to do so or because they have more to lose in case of liquidation [32]. Moreover the fact that the rules enacted by the banking regulator facilitate the renegotiation process of bank debt [33] contrary to those defined by the financial market regulator. The renegotiability of the debt is then a determinant of the decision to include a proportion of bond debt in the corporate debt structure.

Information asymmetry (INFOR) leads to problems of moral hazard and anti-selection that impact the decision of financing companies. They can be reduced by the share of tangible assets held by the company. This is composed of physical assets on the company's balance sheet and whose positive relationship with indebtedness is confirmed in the literature, insofar as tangible assets act as guarantee and provides security for lenders in the event of financial distress [34]. Thus, firms have an incentive to issue bank or market debt when they have significant tangible assets and vice versa in case of dominant intangible assets. It can therefore be said that the choice of bank debt is explained by the importance of the tangible assets that these companies offer as guarantee. If this assumption is verified, then these companies can also open themselves to bond debt by relying on the same type of guarantee for public creditors.

The fixed costs of bond issues have to be considered. Companies may be concerned that bond issues involve significant costs related to syndication and rating compared to fixed bank costs. However, Blackwell D W and Kidwell D S [35] conclude that the public issue of bonds is preferable to the use of private debt, if the size of the loan exceeds a certain level to amortize the fixed costs of the issue. Then, we expect the fixed costs to be higher than the bank loan application fees.

For Baker, M., and Wurgler, J. [36], companies issue shares when market prices are high and buy back their stocks when their value is low in the market. It appears then that the financial structure of the company results, not from the conscious choice of a target debt/shareholders equity ratio, but from the accumulation of decisions made in the past according to the financial context of the moment: issue of shares when valuations are quite high and the stock market context is good; debt issuance and share buy-back when stocks are low and the

stock market depressed. The conditions of the financial market are therefore significant factors in the decision to finance companies in addition to the reference frameworks that are the theory of compromise and that of the hierarchy. With regard to bond issues, adjustments to the debt structure of companies in their favor seem possible as soon as the attractiveness conditions (ATTRACT) necessary come out of the market. Besides that, unattractive conditions on the market will strengthen the bank financing of companies.

The level of self-financing of the company, in addition to the information it provides on the debt mix, is a determinant of a company's financing regime (REG). Actually, the weight of self-financing installs a form of routine in the decisions of indebtedness because these last ones constitute the unique alternative in case of insufficiency of self-financing. We postulate then a correlation between the level of self-financing and that of bank debt, thus favoring a routine (regime) of financing unfavorable to bond financing. In this respect, Kartobi S E [15] mentions three schemes or financing agreements: the self-financing regime based on the self-financing of activities, the debt regime that aims to use debt to finance assets, and the overdraft regime. By confirming the existence of a financing regime for BRVM companies, *i.e.* an agreed financing behavior, bond issues, as a component of this debt regime, need to be legitimized as a choice, so that they become a recurring funding practice. Arbitration in their favor will only be possible if internal and external conditions are met to make it a new financing routine.

The responses are mixed in terms of the impact of rentability or profitability on the debt decision [37]. Some studies conclude that the impact is negative, confirming Myers' theory of hierarchical financing and the idea that profitable companies have sufficient funds to be self-financing and thus to use less debt to finance their activities. However, authors such as Gaud Philippe and Jani Elion [38] note that these results contradict the predictions of compromise theory, which suggests a positive relationship between profitability and indebtedness. Early on, Modigliani F and Miller M H [39] conclude that debt adds value to the business primarily for tax purposes. These predictions are confirmed by Rajan Raghuram & ZINGALES Luig [40] [41] [42]. As part of this research, it is assumed that the wealthier (WEALTH) level is correlated to the firm's financing mode. In other words, the richer is the company, the more it will mobilize the debt and vice versa. Wealth offers growth opportunities that are often hidden by company managers, who do not always want to communicate them to the public because of the private benefits they derive from them. Thus, the higher the potential for growth opportunities, the more these will not be included in public communication, particularly in the case of bond issues where they are mandatory. Finally, will have access to growth opportunities, only those of stakeholders, like banks, which access on private information the company. Therefore, companies that have high growth opportunities will not issue public debt with the risk of suffering the phenomenon of "holdup" associated with banking supervi-

sion of their activity. They will thus move more towards bank debt to better retain their sensitive information [43], their technological advantage [44], as well as their ability to negotiate bilaterally [45]. Conversely, low growth opportunities limit the possibility of their capture by the bank. They open the door to a solicitation of public creditors, especially when, faced with this level of risk, the bank applies higher interest rates than those of the market. We expect a positive relation between growth opportunities and the corporate debt structure.

Finally, the size of the company (SIZE) is likely to provide information on the existence of a size effect in the choice of debt. Fama E F [46] states that bank debts are cheaper for smaller firms, whereas large companies can issue bonds much more easily. The size of the company would then be an arbitration factor of the debt structure. We expect a relation between size and the level of bank indebtedness of the companies studied. The expected sign is positive because if bank debt is their main source of external financing, it is explained by the fact that it does not have the appropriate size to raise bonds.

Table 2 presents the synthesis of the exogenous variables of the models as well as the measurement indicators of these variables.

### 3.3. Data

They are derived from the financial statements and stock market information of a sample of companies listed on the BRVM. The latter is a sub-regional stock exchange created in 1996 in the dynamics of economic, financial and institutional framework reforms undertaken in the countries of the West African Economic

Table 2. Exogenous variables.

| Authors | Exogenous variables | Proxy | Mesured |
|---|---|---|---|
| Diamond [17] | Company reputation | Value of the company in the market compared to its book value | Average annual price/Earnings per share |
| Chemanur and Fulghieri [32] | Renegotiability of the debt | Degree of concentration of short-term debts | Cash flows of the liabilities/Financial debts |
| Diamond [9], Anderson and Makhija [10], Bolton and Frexia [11] | Growth opportunities | | (Total Assets-Equity) + Market Capitalization/Total Balance Sheet |
| Diamond [9], Anderson and Makhija [10], Sabrina [12], Maggie [23] | limitation of information on the company | Degree of information asymmetry | Total Intangible Assets/Total Tangible Assets |
| Kartobi [15] | Financing regime | Degree of self-financing | Equity/Total Assets |
| Diamond [17], Houston and James [18], Fiorella De Fiorey [19] | Fixed costs of bond issues | Pricing of transaction on BRVM | Structuring/arrangement commission = 1.5% to 2% of the amount raised (a)<br>Investment commissions = 1.5% to 1.75% of the amount invested (a) |
| Rajan and Zingales [40], Fama and French [41], Delcoure [42] | Level of corporate wealth | Profitability of the company | Net accounting results/Total Assets |
| Fama [46] | The size of the company | | Neperian logarithm Turnovers |
| Hautcoeur [14], Kartobi [15], Baker and Wurgler [36] | Attractiveness of the market | | Neperian logarithm BRVM' Composite Index |

Source: Author from the literature review. (a) Information collected from the BRVM SA firm.

and Monetary Union (UEMOA). It has now thirty-eight (38) shares in the equity compartment, an increase of 21% since its creation. The bond compartment included thirty-five (35) lines in 2013. Listed companies are required to make publicly available financial information, including financial statements, which have facilitated the collection of such information for this study. Likewise, the brokerage firm BRVM SA regularly publishes information on the rating. In total, our study sample is made up of twenty-three (23) industrial and commercial companies out of the thirty-eight (38) firms listed on the BRVM's equity compartment, for which financial and stock market data are available from 1998 to 2011, whether 14 years. The companies studied are in agriculture (12%), distribution (24%), industry (40%), public sectors (16%) and transport (8%).

## 4. Results and Discussion

We first present the descriptive statistics before discussing the results of the study.

### 4.1. Descriptive Statistics and Econometric Results

Table 3 presents the descriptive statistics relating to the exogenous variables of the models.

Table 3 shows that company reputation, growth opportunities and market attractiveness are high. Indeed, the average price weighs sixteen (16) times the earnings per share, while the average economic profitability is 33%, all of which reflects a relatively high level of wealth, which we consider to be characteristic of strong growth opportunities. The financing regime of these companies is based

Table 3. Descriptive statistics.

| Exogenous variables | Moyenne | Ecart-type |
|---|---|---|
| Company reputation | 16.08 | 17.23 |
| Renegotiability of the debt | 2.3 | 6.47 |
| Growth opportunities | 3.23 | 3.52 |
| Limitation of information on the company | 0.064 | 0.10 |
| Financing regime | 0.52 | 0.54 |
| Fixed costs of bond issues | Higher cost than banking fees when applying for a loan. Bank charges are not proportional to the amount requested. | |
| Level of corporate wealth | 0.33 | 0.83 |
| Size of the company | 24.15 | 1.28 |
| Attractiveness of the market | 4.68 | 0.19 |
| Maturity of the debt | 231 days<br>128 days | |

Source: Author from the data collected.

on self-financing and the bank debts, composed mainly of cash debts. Equity represents more than 50% of total liabilities, while bank debt accounts for 48% of the corporate financing structure. Long-term debts represent nearly 1.5 times the cash debts, but with a fairly low maturity. A comparison between the costs of bank loans and those of bond issues reveals that public debts have a higher cost. As a matter of fact, the fixed costs of bond issues are proportional to the amounts requested, which can lead to significant costs when the amounts to be raised on the market are also, while the fixed costs of banking records do not depend on the amount of the debt. The application for a bond loan must then be justified in order to finance major investment transactions or, for companies that have an appropriate size to bear this cost. However, because of the stability of the logarithm turnovers over our study period, we can say that the BRVM companies do not have the appropriate size to support the fixed costs of bond issues. In order to mitigate these costs, the BRVM considers, since 2013, that financial ratings are part of public information disseminated to guide investors in their choices, but also as substitutes for collateral.

The estimation of models (1) and (2) gives the results below:

All p-values of the Sargan test are greater than 0.05 in both models. As a result, the null hypothesis H0 of instrument validity cannot be rejected. In other words, the instruments chosen are valid. In addition, the AR (1) effect of the residues is accepted because the probability is 0.01 in the first model and 0.02 in the second. Also, the AR (2) effect is rejected. The probability is equal to 0.55 in the first model and 0.74 in the second. It can therefore be concluded that there is no autocorrelation of the residues.

Table 4 shows that the determinants of long-term debt relate to the reputation, wealth and attractiveness of the firm, while those of short-term debt, in addition to the foregoing factors, are based on renegotiable nature and the maturity of this debt. In terms of reputation, we have chosen to introduce the delay of the one-year "company reputation" variable into the medium-long-term debt model. Indeed, we believe that the reputation of a company the previous year could influence the decision of the partners to lend him money; this could affect the structure of its medium-term debt. It appears (Table 4) that this variable is significant and positive ($REPUT_{it-1}$), which means that increasing the variable increases the debt, and conversely. The effect of reputation has a positive effect on short- and long-term debt in the companies studied.

Regarding the level of corporate wealth, it has a negative effect on firms' debt. The level of corporate wealth appears to be a limiting factor for indebtedness. Also, in case of high wealth, the company will solicit less debt to finance its activities, and conversely in case of low wealth.

Lastly, the presence of the companies studied in the BRVM's equity compartment negatively impacts their short, medium and long-term debt, due to the significant and negative nature of the variable ($ATTRACT_{it}$). To be clear, the increase in the attractiveness of these companies in this market negatively affects their bank indebtedness.

Table 4. Results of estimations.

| | DEB_FIN | DEB_CASH |
|---|---|---|
| $DEB\_FIN_{it-1}$ | 0.45*** | - |
| | (0.04) | - |
| $DEB\_CASH_{it-1}$ | - | 0.05** |
| | - | (0.029) |
| $REPUT_{it}$ | 0.001 | 0.001* |
| | (0.001) | (0.001) |
| $REPUT_{it-1}$ | 0.01** | - |
| | (0.01) | - |
| $RENEG_{it}$ | −0.001 | 0.001* |
| | (0.001) | (0.001) |
| $INFOR_{it}$ | −0.054 | −0.101* |
| | (0.07) | (0.058) |
| $WEALTH_{it}$ | −0.01* | −0.014*** |
| | (0.006) | (0.005) |
| $MLT1_{it}$ | 0.01 | - |
| | (0.001) | - |
| $MST2_{it}$ | - | 0.001*** |
| | - | (0.001) |
| $SIZE_{it}$ | 0.01 | 0.06*** |
| | (0.013) | (0.001) |
| $ATTRACT_{it}$ | −0.04** | −0.03* |
| | (0.021) | (0.016) |
| CST | −0.05 | −1.23*** |
| | (0.325) | (0.23) |
| Obs | 299 | 299 |
| Nb of groups | 23 | 23 |
| Sargan test (p-value) | 0.29 | 0.4 |
| AR(1) | 0.01 | 0.02 |
| AR(2) | 0.55 | 0.74 |

Standard errors in parentheses. ***p < 0.01, **p< 0.05, *p < 0.1.

## 4.2. Discussion

Two main factors emerge as determinants of the debt behavior of companies: there is the reputation on one hand, and the structuring of the debt on the other hand.

Because it helps to reduce the asymmetry of information companies, the degree of reputation allows access to bank credit. This implies that these companies improve their reputation or even correct it if they suffer from a bad image, in order to win the trust of creditors.

Regarding the link between reputation and bond issues, Diamond D W [17] argues that companies have an interest in increasing their level of reputation if they want to evolve into the bond market. In the case of African companies, this

factor will also be decisive for their access to bond debt because of its contribution to reducing an information asymmetry prejudicial to creditor confidence in bonds issued by African companies.

Figure 1 suggests that the companies studied are not reluctant to finance their investments by using debt. Indeed, the increase in investments, appreciated through the evolution of fixed assets recorded in the balance sheet of companies, is accompanied by an increase in bank debts. However, there is a significant gap between the external sources of financing mobilized, mainly from the banking system and those that the company is required to mobilize itself, and finance its investments. In this sense, the proportion of bank debts is very low compared with its own resources.

It is then important to change the financing routine by inserting a proportion of bond debt into a bank-market mix. Frédéric Lobez, *et al.* [22] show that a proportion of bond debt is possible according to the quality of the companies, which is evaluated in relation to the weight of bank debt. With a 48% share of bank debt in the BRVM's corporate financing structure, we can say that they are a relatively good quality. In this case, issuing bonds by considering that the bank signal will serve to give confidence to public creditors is possible. This perspective is desirable as these companies have a high level of wealth in terms of their economic profitability and that this can be a favorable signal for the market [21]. Moreover, the current context of the BRVM, which encourages the financial rating of companies by replacing it with collateral, strengthens this proposal. Thus, because of the rating attributed to it by the Wara agency, the Ivorian agro-industrial Sifca raised thirty-six (36) billion FCFA at a rate of 6.9% over the period 2013-2021, without having to produce a guarantee of 2% to 3% of the amount raised. The prospect of additional bond debt is also conditioned by major investment programs for these companies, which lead them to mobilize both banking and market resources. It must be said that the need to invest in infrastructure is not just States' concern, as is often argued for the mobilization of resources through bond issues [47]. It also concerns African enterprises constrained by policies and economic competition to increase their production capacities, to diversify into sub-regional markets or to fill the technological gap. However, it remains, that the variable size has shown the need for companies to

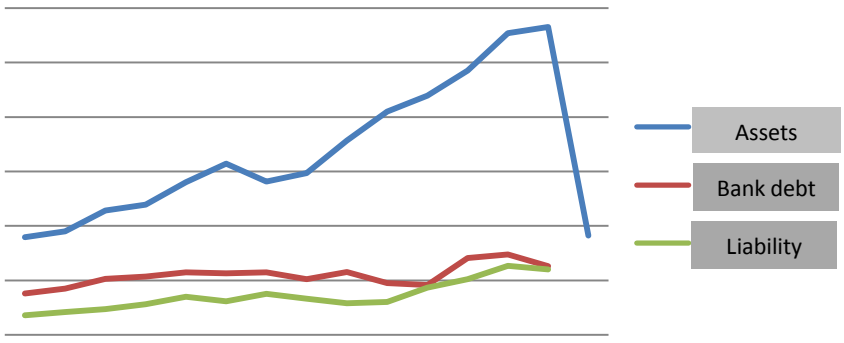


**Figure 1.** Evolution of fixed assets and debt. Source: Author from the data collected.

present a critical size to obtain the confidence of creditors. In fact, in a context where the costs of bond issues are not competitive with those of access to bank credit, the choice of the bond issue will have to relate to coherent investment projects to ensure the amortization of the costs of issuing.

With regard to debt structure, it refers to the sensitivity of companies to renegotiability and maturity of debt. In this respect, it can be seen that short-term debt is widely acclaimed by the banking system because of a low maturity that ensures periodic renegotiation. This is why African bankers seem more inclined to grant short-term credits, even if they renew them periodically after an evaluation which is followed by a negotiation phase. After all, the structuring of companies debt is therefore an element on which creditors are sensitive. In terms of bond issues, the maturity and renegotiability of the debt will be important variables to ensure the attractiveness of the bond product. Legal-financial engineering will therefore have to offer renegotiation and maturity prospects for bonds in relation to the level of risk acceptable by investors in African corporate bonds.

## 5. Conclusions

Based on the identification of the determinants of corporate debt in the bond market in Africa, this research provides insights into the limited presence of firms in this market. In this respect, it relies on a sample of companies listed on the BRVM, and the estimation of two dynamic panel models by the generalized method of moments developed by Blundell R. and Bond S. [1]. The results show that the determining factors of debt are: company reputation and structuring of company debt. This leads us to discuss the issue of bond issues to the extent that it appears that companies of the BRVM may have an interest in using this method of financing. There are at least two reasons to justify this proposal: firstly, the use of corporate bond financing can help reduce the "expropriation costs" that they incur from banks, given their level of wealth and opportunities of growth that they present. Secondly, this financing modality allows companies to make better use of their relative good quality in a new context where the financial rating is considered as a substitute for collaterals. This is all the more desirable since, like African States that have to invest heavily in infrastructure, companies are also expected to invest in order to diversify and develop their activities in the sub-regions.

In addition, the results suggest conducting a contingent analysis of the relationship between issuers and creditors, as the reduction of agency and information asymmetry costs may prove to be an important element in the shift towards the dynamics of bond. More specifically, it aims to deepen the reflection on the conditions of a legal and financial engineering adapted to the context of emerging stock exchanges like the BRVM. The relationship of wealth created by the company and the public debt must also constitute a perspective of fruitful reflection. Indeed, this report questions the potential multiplier effect of wealth for the

benefit of the shareholders because of the possible leverage effect in a bank and bond financing mix.

## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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