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A Study of Bondholders' Behavior During the Covid-19 Pandemic: The Case of The Central African Stock Exchange Market (BVMAC)

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ABSTRACT: This paper studies the behavior of investors in debentures on BVMAC with the advent of the Covid-19 pandemic. We capture this behavior using three operational variables: buying securities, selling securities, and trading securities. To assess the phenomenon studied, we built a secondary database over a period of fourteen months, that is, seven months before the onset of the pandemic and seven months since the onset of the pandemic. Therefore, having two samples, we proceeded by comparative graphic analyzes and carried out paired samples "t" tests. At the end of the various analyzes, it emerges that the average purchases of debentures have dropped drastically since the advent of the Covid-19 pandemic; sales of securities have increased significantly since the onset of the health crisis; the crisis triggered an upward trend in bond trading. Bondholders tend to get rid of the securities in their possession, while Statal corporations with rising needs of financing, issue new bonds.

KEYWORDS: Stock market; Debentures; Bondholders; Trading; Purchases; Sales; Pandemic

INTRODUCTION

Speculative bubble - stock market crash - stabilization - speculative bubble: this is the cycle observed in stock markets from their advent in the 18th century to the present days. A stock market is a physical or non-physical space in which the bulk of financing needs are covered by the issue of financial securities by companies and governments, directly subscribed by investors (Vernimmen P., 2010)[1]. Their advent has changed the financing system, which previously relied solely on banks, with their string of requirements and conditions that were sometimes difficult to meet. Since then, governments and companies with a shortage of resources have been able to find the financing they need from other agents with a surplus of resources, via the financial markets.

Around the world, some one hundred countries have one or more stock exchange markets, each varying in size, trading volume and market capitalization, from giants such as the New York Stock Exchange to small local stock exchange markets. The African continent has around thirty stock exchange markets, including two sub-regional ones[2]. The Bourse Régionale des Valeurs Mobilières (BVM) based in Abidjan, which is common to eight West African countries; and the Bourse des Valeurs Mobilières d'Afrique Centrale (BVMAC) based in Cameroon, which is common to six Central African countries. These African financial markets, like all the others around the world, perform the functions of settlement, financing, savings and debt, risk management, information and conflict reduction. The Central African Stock Exchange Market, despite its young age, is working hard to fulfil these functions in the sub-region. However, the life of these exchange markets is not a long and quiet river. Their development over time has been marked by numerous crises of all kinds, leading to their fragility and sometimes their collapse.

The 2018 Ebola epidemic, although not a stock market crisis, has had an impact on stock market activity. The epidemic has manifested itself around the world in several waves, the deadliest of which was in 2013. The eighth epidemic broke out in December 2013 in West Africa and lasted more than two years, killing more than 11,300 people out of 29,000 recorded cases (Ouest France, 24/07/2018). On the stock markets, it led to a fall in the value of companies in the transport and leisure sectors. This implied a

[1] Pierre VERNIMMEN, Finance d'entreprise, Dalloz, 2010
[2] Wikipédia

withdrawal of investors who had decided to sell their shares. Companies in these sectors recorded huge losses, and their indices were labelled the "ebola" index. Nevertheless, some astute investors spotted investment opportunities, notably in pharmaceutical laboratories and developers of protection products. These companies saw their share prices rise exorbitantly as investors bought up their shares. In other words, the epidemic has been a major stake and asset for these investors.

Based on this, it is clear that crises are triggered by a loss of investor confidence and generally lead to a change in investors' behavior. In lull, three types of behaviors can be observed: hedging, speculation and arbitrage (Babagnack P., 2018). Hedging is a practice that enables investors to protect themselves against a risk they do not wish to take. In practice, investors hedge by setting up option instruments to protect their position against an upward or downward variation; the second behavior adopted by investors is speculation. Because the stock market is inherently volatile, investors anticipate increases or decreases in market prices. They buy assets at a certain price, expecting to sell them when the price has risen, and conversely, they sell assets for which they anticipate a fall in value. Finally, investors engage in arbitrage behavior, which is a combination of several transactions that require no capital outlay and no risk-taking, with the aim of making a definite profit.

However, the behavior observed during the above mentioned crises doesn't reflect the normal behavior described in the last paragraph. The 2020 global health crisis has raised questions about the fate of financial markets. In the case of BVMAC, a study carried out by Tiona Wamba et al. (2020) on its "equities" compartment, showed that its activities were not affected by the pandemic. This paper focuses on the effects of the crisis on the bond compartment of the same stock market. Hence the following formulation of the subject of this paper: a study of the behavior of bondholders during the COVID-19 pandemic.

The main objective of this paper is therefore to determine whether the COVID 19 pandemic has altered investor behavior in the BVMAC bond compartment. The specific objectives are, firstly, to assess the average change in bond flows (purchases/sales/exchange) over the study period; secondly, to compare changes in prices and coupons with stock flows over the study period; and finally, to compare bond flows before and during the pandemic to see whether the crisis has had an effect on bondholders' behavior.

This paper makes a considerable contribution in several ways. First of all, the scientific literature on the Central African stock exchange market is still in its infancy. This paper therefore amplifies the need for awareness of the fact that BVMAC, with less than five years of existence, constitutes a real field of application for scientific work. This would help to make companies more aware of the advantages of going public. Secondly, this paper will enable professionals and academics to get familiar to the stock exchange market, particularly in the context of a nascent stock market where price fluctuations are still relatively insensitive to the global economic bubble. Above all, the paper provides an insight into the behavior of investors in the sub-region during the global health crisis.

1. LITERATURE REVIEW

1.1. Bond investment: specificities and challenges

A bond is a long-term loan divided into securities of equal nominal value called debentures and subscribed by different persons called bondholders. A bond is a negotiable instrument conferring the same debt rights for the same nominal value. Bondholders are creditors of the company. They are not involved in the management of the company and receive annual interest as determined at the time of issue, regardless of the company's performance. Bondholders are entitled to repayment of the bond.

Bonds are often seen as a less risky alternative to equities and are used to diversify a portfolio. For investors, the aim is to protect money while generating additional income.

1.1.1. Specific features of bond investment

Bonds make it possible to diversify the sources of income, alongside traditional investments in equities and real estate. It also makes it possible to diversify assets in a bond market that will not behave the same way as other markets in case of an economic crisis, hence the importance for assets management.

Bonds can be classified according to a number of criteria, the most important of which are as follows:

- Classification according to risk level;
- Classification according to the remuneration offered to the bondholder;
- Classification according to the guarantee offered by the issuer [3]

1.1.2. The challenges for investing in bonds

a. Some of the advantages of investing in bonds

One of the main advantages of investing in bonds is undoubtedly the long-term return. In fact, the financial return on assets is much higher than on a traditional bank or property investment. Also, compared with bank investments, bond investments offer an advantage in terms of interest rates, because the coupon rate is generally determined on the basis of the bank rate plus a few points.

[3] Bessette Sophie and Hasbani Marc (2016), Fundamentals of financial accounting, 4th edition, Chénelière éducation,

A comparison between bond investment and share ownership shows that bonds are less risky than shares, because in case of the issuer bankruptcy, bondholders are reimbursed before shareholders. In terms of volatility, bonds are less exposed to market volatility than equities in the short term.

A comparison with property investment shows that there is very little correlation between these two types of investments. Bond investment has the advantage of being less expensive than property. Bonds are also easier to negotiate than property products. In addition, although leases can provide short-term cash flow, the long-term uncertainty of future rental growth is a disadvantage as compared to bonds.

In addition to these advantages over other forms of long-term investment, bond investment also offers significant potential returns. These include the reimbursement premium, which is the positive difference between the reimbursement price and the nominal value. It represents a significant return when the number of bonds is large.

The benefits also include contributing to the development of governments and companies, because a government or company that issues bonds borrows money from investors to finance its growth or large-scale projects. This money can be used, for example, to expand internationally, or to launch research and development projects to create new products or improve existing products, hire new employees[4].

b. Some risks for investing in bonds

The price of a bond may be influenced by the overall economic situation, the political situation in a country or any other event that may affect the exchange rate between currencies. Investing in bonds is riskier than investing in banks, because companies issuing bonds are more likely to default than banks.

The prices of listed bonds vary according to a number of factors, all of which represent risks of downward fluctuation. The main risks are credit risk, interest rate risk and currency risk for bonds quoted in foreign currencies.

1.2. Theoretical framework of investors behavior during the covid-19 crisis

The current health crisis has plunged the global economy into a state of uncertainty that may lead stock market participants to modify their expectations.

Assoumou-Ella (2020) presents the contrasting effects of Covid-19 on stock markets. On one hand, the London and New York stock exchange markets were negatively affected, the former by the announcement of the hospitalization of the British Prime Minister and the latter by the announcement of the population confinement. On the other hand, the European stock exchange markets (Frankfurt, Milan, Paris and Madrid) welcomed this measure.

Modelled as a chock, Covid-19 is an innovation that can lead to changes in the expectations and behavior of stock market players. The latter may lower their investments, get rid of the assets of companies operating in the most affected sectors, have confidence or lose confidence in the health policy implemented by authorities to combat the pandemic, etc. (Assoumou-Ella, 2020). For example, changes in the behavior of financial players during a pandemic can lead to stress on the stock markets.

Andrianarison and Ehowe Nguem (2020) believe that the negative implications of this pandemic for economies are the direct disruption of global supply chains, a fall in final demand for imported goods and services, a complete halt in tourist flows, and a deterioration in business and consumer confidence. This slowdown in global demand, coupled with uncertainty about the spread of the pandemic, also triggered panic on the financial markets (a historic fall in the interest rate on US Treasury bonds and a fall in share prices), and a sharp fall in commodity prices, especially crude oil, with prices reaching the record levels seen more than 18 years ago.

As a result, the uncertainties associated with the pandemic will lead to irrational behaviour, for example, which may accentuate the direct effects of the disease on the economy. The disruption of the stock market may also have an impact on the government bond market, which in turn will affect the debt and financing of the economy (Andrianarison and Ehowe Nguem, 2020). There may be other effects induced by the Covid-19 shock, such as the disruption to the macroeconomic framework (inflation and monetary depreciation), which reduced aggregate demand and restricted outlets (Kibala Kuma J., 2020).

It is now important to present BVMAC as the scope of this publication and to justify the methodological choices made.

2. PRESENTATION OF BVMAC

BVMAC is a regional stock exchange market based in Douala, serving the markets of Cameroon, Central African Republic, Republic of Congo, Gabon, Equatorial Guinea and Chad. Created in June the 27th 2003, following a decision in 2000 by the Economic and Monetary Community of Central Africa (CEMAC), BVMAC took five years to list its first security: a CFAF 100 billion (2007-2012, 5.5%, €152 million) Gabonese government bond financed up to CFAF 82 billion (€125 million) by sub-regional capital (Gabon 40%, Equatorial Guinea 20%, Cameroon 15%, etc.). According to banking sources, BVMAC's capital is FCFA 1,899 billion (€2.9 billion) held by banks, holding companies and insurance companies. With a primary market and a secondary

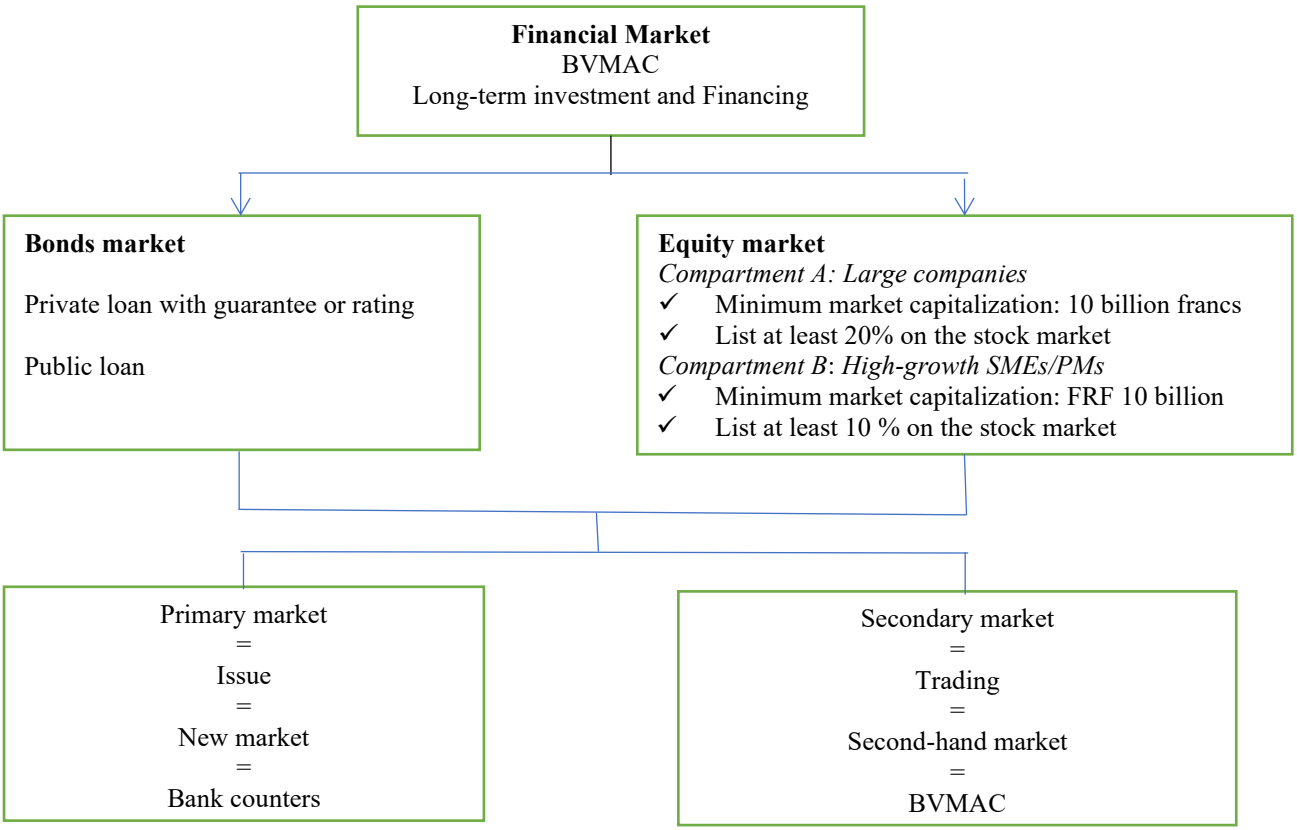
[4] www.cafédelabourse.com « investir en bourse : nos douze conseils pour débuter sur le marché » octobre 2020

market, this limited company operates as an automated stock exchange with a central headquarters linked to national branches in five of the six CEMAC member countries.

2.1. Conditions of access to BVMAC

The conditions to be met by a company before it can be listed on the stock market vary according to the compartments[5].

Diagram 1: Segmentation of the sub-regional stock market



Source : Zahra Bouba (2010) ; P: 21

The above diagram shows that BVMAC offers a wide range of products and services. Far from focusing on large companies, there is a first market and a second market. The first is for large companies and the second for small and medium-sized companies.

2.2. BVMAC Products

BVMAC is responsible for organizing the stock market and disseminating stock market information. To this end, it is responsible for the following operations: the listing of securities on the stock exchange; the quotation of securities; the publication of prices and stock market information; and the promotion and development of the securities market.

The Regional Stock Exchange is to be represented in each CEMAC Member State by a National Stock Exchange Branch.

Having completed this literary review, and given the many metronomic twists and turns observed around the world since the advent of the crisis, this paper puts forward the main hypothesis that the COVID 19 global health crisis has changed the investment behavior of BVMAC bondholders. The specific assumptions derived from this main assumption are as follows:

- - HS1: Bond fundraising has been less successful than in the past since the advent of Covid-19;
- - HS2: Bondholders have been selling their bonds or exchanging them since the onset of the crisis;

The verification of these hypotheses requires a detailed presentation of the methodological framework used to achieve the objectives set out above.

3. PRESENTATION OF THE METHODOLOGICAL APPROACH ADOPTED

The main objective of this paper is to determine whether the Covid-19 pandemic has altered investors behavior in the bond segment of BVMAC. Our scope is therefore the bond market. For this market and for the studied period, the following bonds are concerned: ECMR.03-14/19 VP; ECMR.04-16/21 VP; ECMR.05-18/23 VP; ALIOS.01-18/23 VP; ALIOS.02-14/21 VP; FAGACE/14/19 VP;

[5] BVMAC (2003)

GSEZ-18/28 VP; EOG.01-16/21 VP; EOG.02-15/20 VP; EOG.03-16/21 VP; EOG.04-17/22 VP; BGFI-13/20 VP; BGFIH.01-14/21 VP; EOG.05-19/24 VP; EOSAF 19/22 VP et EOBDE 20/27 VP.

It is important to note that at BVMAC, all listed securities are quoted three times a week, on Mondays, Wednesdays and Fridays. However, given the low fluctuation of stocks on the market, we have grouped the data into monthly series (last quotation of the month) over a period of fourteen months. We therefore have a time series that spans two periods (before Covid and during Covid).

Two software packages were used to test the hypotheses. First, the stock market data were transcribed using Excel, which also enabled us to split our database into two groups: the first representing stock flows before the pandemic, the second representing stock flows during the pandemic. In order to study changes in these variables in two specific contexts (before and during Covid), we used the 14th version of Stata software. We thus performed a t-test on paired samples to see whether or not there was a difference between the average flow of securities before and during the pandemic.

The time series was split into two separate columns: the first column representing changes in bondholder behavior indicators before the advent of the Covid-19 pandemic and the second column representing bondholder behavior indicators after the advent of Covid-19. To situate the period of the pandemic, the declarations of the various ministries of health in the countries of the sub-region were used as a reference. These various ministries reported the first cases of Covid-19 at the beginning of March 2020.

Therefore, our two samples are subdivided as follows:

- August 2019 to February 2020: period before Covid-19;
- August 2020 to February 2021: period during Covid-19.

Having presented the methodological approach and the underlying data analysis techniques, it is now important to present the results themselves.

4. RESULTS AND DISCUSSIONS

4.1. Presentation of results

The purpose of this section is to test the main hypothesis that the COVID 19 global health crisis changed the investment behavior of BVMAC bondholders. To do this, we must successively verify the specific hypotheses that make it up. In this respect, we will first check the evolution of fund-raising before and during COVID-19; then, we will check bond outflows (sales and exchanges) before and during COVID-19.

4.1.1. Comparative evolution of bond purchases on BVMAC before and during the Covid-19 pandemic

The purpose of the first sub-section is to test our first specific hypothesis, which states that bond purchases have been less successful since the onset of the crisis. To test this hypothesis, we proceeded in several stages. After splitting our sample into two sub-samples in an Excel spreadsheet, we calculated the average monthly values of bond purchases. We then used Stata v.14 software to carry out a comparative analysis of changes in securities purchases between these two periods. To verify the specific hypothesis itself, we opted for the variance ratio comparison test in order to assess whether the level of dispersion of the distribution of purchases is the same over the two periods (changes in securities purchases over the period before Covid and over the period during Covid).

Above everything, let's emphasize that the periods selected are identical for both time series (August 2019 to February 2020 for the pre-Covid-19 period and August 2020 to February 2021 for the "during Covid" period).

The results of our analysis are shown below:

Table 1: Comparative study of bond purchases on BVMAC

```
. sdtest MoyenneAcahtsAv == MoyenneAcahtsPdt

Variance ratio test
```

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Moy~tsAv	7	388.9107	248.9771	658.7314	-220.3142	998.1357
Mo~tsPdt	7	53.57143	44.0436	116.5284	-54.19937	161.3422
combined	14	221.2411	130.0596	486.6383	-59.73553	502.2177

```
    ratio = sd(MoyenneAcahtsAv) / sd(MoyenneAcahtsPdt)            f =   31.9561
Ho: ratio = 1                                     degrees of freedom =      6, 6

    Ha: ratio < 1               Ha: ratio != 1                 Ha: ratio > 1
  Pr(F < f) = 0.9997         2*Pr(F > f) = 0.0005           Pr(F > f) = 0.0003
```

Source: Our analysis

The table above depicts a Fisher of 31.9561, well above any theoretical Fisher. But what is more striking in the context of this result is the significant component of the alternative hypothesis according to which the ratio of the variance of the series before Covid is significantly greater than that of the variance of the series after Covid (p-value = 0.0003 < 0.05). This difference in variance is an

absolute proof of the difference in dispersion between the pre-pandemic stock purchase series and the during-pandemic stock purchase series. With this in mind, we retain our first hypothesis, by underlining that ***bond fundraising has fallen significantly since the advent of Covid-19***.

Since the purchase of bond securities fell considerably with the advent of the pandemic, it is now important to look at how the sale of securities evolved during the pandemic period.

4.1.2. Comparative evolution of bond sales and trading on BVMAC before and during the Covid-19 pandemic

The purpose of this sub-section is to test our second hypothesis, according to which bondholders have been selling their bonds or exchanging them since the advent of the crisis. To do so, using an approach strictly identical to that employed for the first specific hypothesis, we also carried out an analysis of variance ratios on paired samples (one before Covid and the other since the advent of the pandemic). We thus proceeded in two phases: the first consisted in studying the evolution of bond sales on the BVMAC market; the second aimed at assessing the evolution of securities trading over the same period.

a. Sales of securities on the BVMAC in response to the pandemic

A descriptive analysis showed that the supply of securities by bondholders increased considerably between the two studied periods (by more than 11,707%). The purpose here is to determine the significance of this variation over the study period. To do this, we once again carried out a comparative analysis of variance ratios. The results are shown below:

Table 2: Comparative study of bond sales on BVMAC

```
. sdtest MoyenneVentesAv == MoyenneVentesPdt

Variance ratio test
```

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Moy~esAv	7	397.0625	252.7422	668.693	-221.3754	1015.5
Mo~esPdt	7	5045.027	4836.983	12797.45	-6790.644	16880.7
combined	14	2721.045	2414.408	9033.886	-2494.966	7937.055

```
    ratio = sd(MoyenneVentesAv) / sd(MoyenneVentesPdt)            f =   0.0027
Ho: ratio = 1                                     degrees of freedom =     6, 6

    Ha: ratio < 1               Ha: ratio != 1                 Ha: ratio > 1
  Pr(F < f) = 0.0000         2*Pr(F < f) = 0.0000           Pr(F > f) = 1.0000
```

Source: Our analysis

The table above shows a Fisher of 0.0027, which is almost zero. The Fisher is very small indeed, but what is striking about this result is the significant component of the alternative hypothesis according to which the ratio of the variance of the series before Covid is significantly lower than that of the variance of the series after Covid (p-value = 0.0000 < 0.05). This difference in variance is an evidence of the difference in dispersion between the pre-pandemic sales series and the during-pandemic sales series. In other words, average bond sales before the pandemic are significantly lower than average bond sales during the pandemic. ***Bondholders are tending to dispose of securities acquired before the pandemic on a massive scale***.

What about the trading of shares over the period?

b. Evolution in the trading of securities on the BVMAC in response to the pandemic

The descriptive statistics in the appendices show that the average share exchange increased slightly with the advent of the pandemic. The purpose of this paragraph is to discover the significance of this trend. To this end, we have once again measured the variance ratio over the two periods.

The result is shown below:

Table 3: Comparative study of bond trading trends

```
. sdtest MoyenneTransigAv == MoyenneTransigPdt

Variance ratio test
```

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Moye~gAv	7	.4464286	.4464286	1.181139	-.6459428	1.5388
Moy~gPdt	7	8.928571	8.928571	23.62278	-12.91886	30.776
combined	14	4.6875	4.452681	16.66041	-4.931932	14.30693

```
    ratio = sd(MoyenneTransigAv) / sd(MoyenneTransig~t)           f =    0.0025
Ho: ratio = 1                                     degrees of freedom =     6, 6

    Ha: ratio < 1               Ha: ratio != 1                 Ha: ratio > 1
  Pr(F < f) = 0.0000         2*Pr(F < f) = 0.0000           Pr(F > f) = 1.0000
```

Source: Our analysis

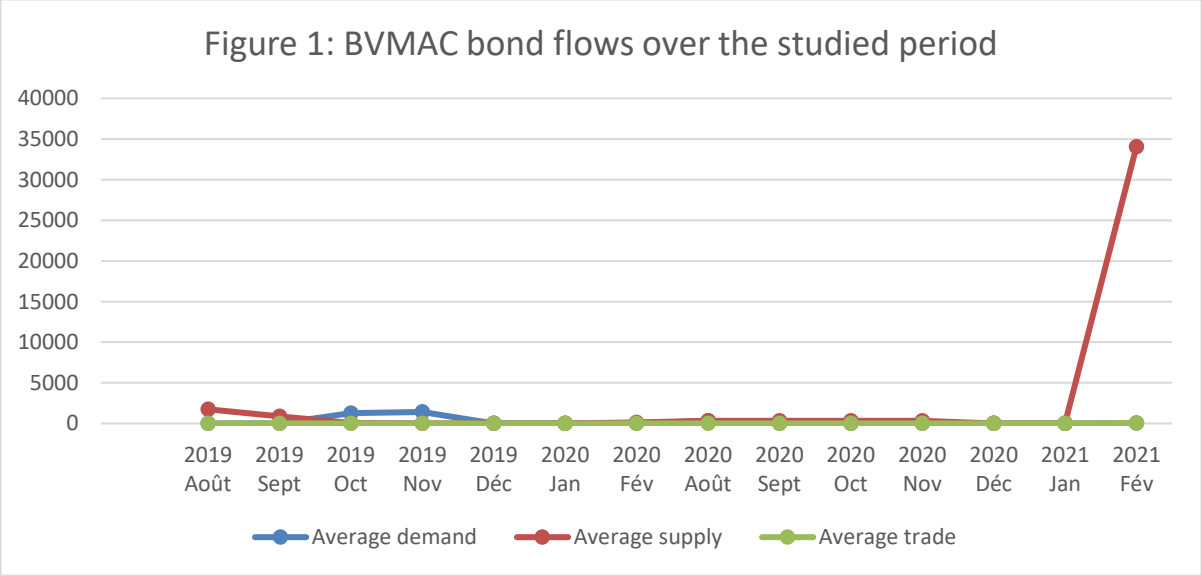
The table above shows a Fisher of 0.0025, which is almost zero, as is the table showing changes in sales of securities. The Fisher is very small, but what is still striking about this result is that, once again, the alternative hypothesis is significant on the left. That is, the ratio of the variance of the series before Covid is significantly lower than that of the variance of the series after Covid (p-value = 0.0000 < 0.05). This difference in variance is a proof of the difference in dispersion between the pre-pandemic securities trading series and the during-pandemic securities trading series. In other words, average bond trading before the pandemic is significantly lower than average bond trading during the pandemic. This confirms the observation that bondholders are tending to dispose massively of securities acquired before the pandemic.

Thus, the volume of bond trading and sales has increased considerably since the onset of the health crisis. We therefore retain our second hypothesis, stating that ***the advent of the crisis triggered significant sales and trading of securities on the BVMAC bond market***.

At the end of the preceding analysis, it appears that average bond purchases have fallen drastically since the advent of the Covid-19 pandemic; bond sales have increased significantly since the advent of the health crisis; and the crisis has triggered an upward trend in bond trading: we therefore retain our general hypothesis by emphasising that ***the global health crisis of COVID-19 has significantly modified the investment behaviour of BVMAC bondholders***.

4.2. Results discussions

The results of this paper show that bond flows (purchases, sales and trading) have been significantly affected since the advent of the Covid-19 health crisis. An overview of the fluctuations in the purchase-sale-trade of these securities over the studied period is given in the graph below:



According to the graph above, average bond trading has always been a timid phenomenon on the Central African sub-regional stock market. On the other hand, a reading of the above chart shows that bond buying is an undeniable reality in September, October and November 2019. But between August 2020 and February 2021, the average demand for bonds is virtually nil. In fact, demand for this category of securities was literally weighed down by the onset of the crisis, which is absolutely the opposite for the sale of securities.

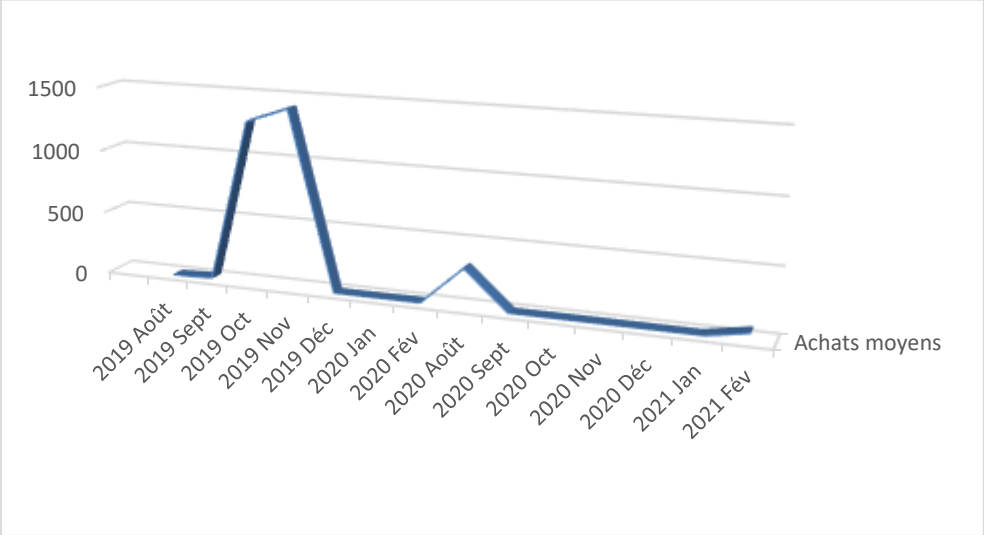
Rather, before the crisis (between August and October 2019), the sale of securities was more or less timid; but between December 2020 and February 2021, we can see a boom in the sale of securities by bondholders who are massively getting rid of the securities in their possession. There are many reasons for this behavior, which are set out in the following sub-sections.

4.2.1. Falling demand for bonds with the advent of the crisis

One logical explanation is that, as the majority of bondholders are banks, the onset of the crisis led to a fall in the level of savings and an increase in the level of withdrawals from the various branches. The corollary of this was a reduction in banking products and, as a result, in order to comply with prudential standards, the refraction of ancillary activities within the limits required the COBAC.

This drastic drop of over 86% in bond purchases prompted us to look at the evolution of these purchases over the entire study period. The results are shown in the figure below:

Figure 2: Average trend in securities purchases in response to the pandemic



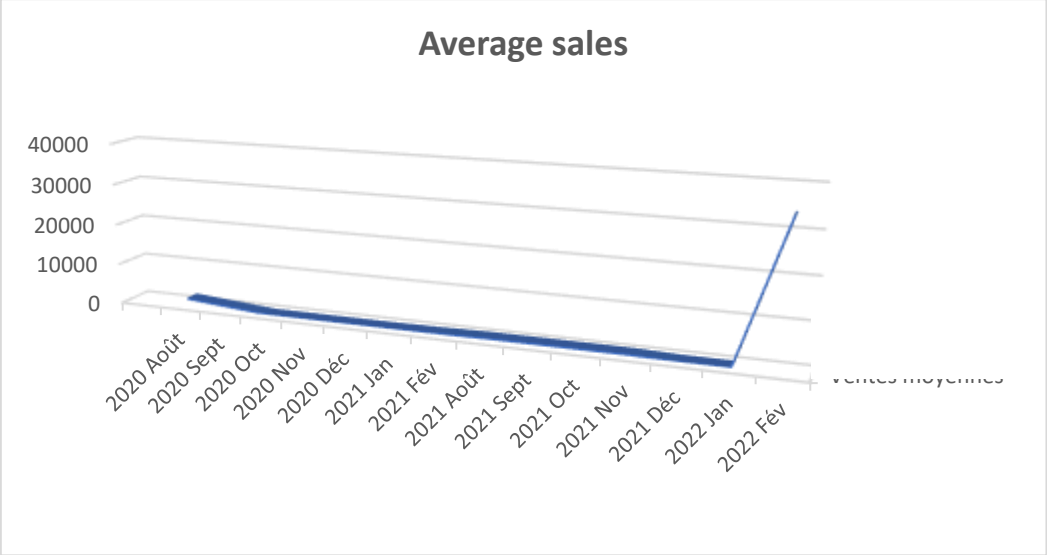
Source: Our analysis

The chart above confirms that bond buying peaked in November 2019 and fell back to its pre-crisis low in February 2020. However, there was a slight upturn in bond buying in August 2020, with the average fluctuating around 300. But overall, bond buying was flat until February 2021. This suggests that the outbreak of the pandemic will have a significant effect on bond buying on the BVMAC. Potential bondholders, anticipating that public spending will be directed towards the fight against the pandemic, tend to question the ability of governments to meet repayment deadlines and the terms of government bonds issued. Given that the majority of bond issuers are public companies, it is easy to understand why bond buying fell drastically during the crisis.

4.2.2. Increase in bond sales with the advent of the crisis

Indeed, as expected, the onset of the crisis gave rise to a huge sale of securities on the bond market. The overall average number of securities sold rose to 5,045, an increase of more than 11,707%. There are several reasons why bondholders were so keen to get rid of the securities in their possession. Most bondholders (institutional investors, companies and individuals) are experiencing cash flow problems; a crisis of confidence in the issuing companies is gradually growing among bondholders, who fear that the issuing companies will redirect the funds received towards the fight against the pandemic rather than towards the development projects initially motivated. In addition, the slowdown in economic activity caused by the outbreak of the pandemic may give rise to fears among bond investors.

Figure 3: Average trend in bond sales in the face of the pandemic



Source: Our analysis

Looking at the graph above, the sale of bonds was timid in the period before the pandemic. But with the onset of the pandemic, a crisis of confidence coupled with cash flow pressures seems to have overtaken investors, who are massively keen to get rid of the bonds in their possession (545,000 EOBDE 20/27 bonds put up for sale in February 2021). Bondholders therefore have an increasing need to get rid of recently purchased bonds.

But did the bonds sold find takers? In other words, do bond purchases since the outbreak of the pandemic depend on the availability of securities sold and not issued? In order to answer this question, we carried out a regression test to check whether the volume of securities purchased is a function of the securities sold over the period following the outbreak of the pandemic. The results are shown below:

Table 4: Comparison of average purchases and sales of securities during the pandemic

```
. regress MoyenneAcahtsPdt MoyenneVentesPdt
```

Source	SS	df	MS	Number of obs	=	7
				F(1, 5)	=	0.01
Model	114.106564	1	114.106564	Prob > F	=	0.9365
Residual	81359.1077	5	16271.8215	R-squared	=	0.0014
				Adj R-squared	=	-0.1983
Total	81473.2143	6	13578.869	Root MSE	=	127.56

MoyenneAcahtsPdt	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
MoyenneVentesPdt	.0003408	.0040693	0.08	0.937	-.0101197	.0108012
_cons	51.85226	52.40242	0.99	0.368	-82.85246	186.557

Source: Our analysis

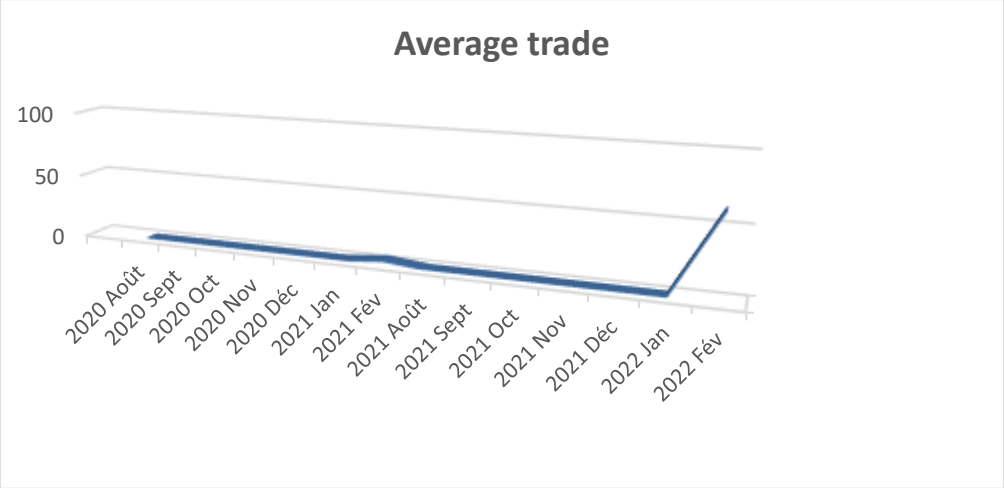
A look at the table above shows that the calculated Student's t is 0.08 and the associated significance is 0.937 > 0.05. In other words, the effect of selling securities does not explain the purchase of securities in the period after the pandemic occurred. The securities purchased during this period were not those put up for sale, but rather those newly issued by the companies. The sale of securities therefore reflects the reality of a cash flow crisis in the bond compartment of the stock exchange with the advent of the pandemic.

We now turn our attention to the securities traded over the study period.

4.2.3. Upward trend in bond trading with the advent of the crisis

If they are not sold, some shares will be traded on the stock exchange. But it should be remembered that this trend would have been low if trading had not risen suddenly in February 2021, as shown in the diagram below:

Figure 4: Average change in securities traded in response to the pandemic



Source : Our analysis

The diagram above shows that the volume of securities traded did not change significantly over the study period, but the trend in demand for securities trading has been upwards since the onset of the crisis. In other words, the trading of securities on the bond market is slightly up, but timid overall.

At the end of the preceding analyses, it appears that average bond purchases have fallen drastically since the advent of the Covid-19 pandemic; bond sales have increased significantly since the advent of the health crisis; the crisis has triggered an upward trend in bond trading: we therefore conclude that ***the global health crisis of COVID 19 has significantly modified the investment behaviour of BVMAC bondholders***.

CONCLUSION

The purpose of this study was to answer the following main question: What is the impact of the COVID 19 pandemic on the behavior of investors in the bond compartment of the BVMAC?

To answer this question, we divided our work into two parts. The first part presented the need to study investor behavior. This part enabled us to carry out a conceptual study of investor behavior. This study elucidated the notions of investment decision and bond investment. We then studied the theoretical framework of investor behavior in times of crisis. A review of the existing literature enabled us to identify two approaches to investor behavior, namely the classical approach to finance, which is based on the assumptions of investor rationality and market efficiency. The second approach complements the first by presenting the limits of the supposed rationality of investors. The latter is replaced by the hypothesis of bounded rationality, because investors' decisions are affected by their beliefs and emotions. This bounded rationality was supported by prospect theory, according to which investors fear losses more than they welcome gains. It is the so called theory of mental accounting.

The second part of our work enabled us to observe all these notions, which had been theoretical up until then. We applied investor behavior to BVMAC, which we presented in terms of access conditions, products, services, functions and institutional players. Then, on the basis of the literature observed in the first part, we formulated hypotheses that were to be tested with investors. However, as the investor space is a highly protected area within this institution, we limited ourselves to the information available on the official BVMAC website. Based on the information gathered on this site, we created a secondary database using Excel. Then, using Stata-14 data processing software, we analyzed and verified our hypotheses.

From the verification of the research hypotheses, it emerged that average bond purchases had fallen drastically since the advent of the Covid-19 pandemic; bond sales had increased significantly since the advent of the health crisis; and the crisis had triggered an upward trend in bond trading. Bondholders are tending to get rid of the securities in their possession, while state-owned companies, increasingly in need of financing, are issuing new bonds.

REFERENCES

1. Andrianarison F. et Ehowe Nguem B. (2020), Effets socioéconomiques potentiels du Covid-19 au Cameroun Une évaluation sommaire PNUD
2. Assoumou-Ella G. (2020), Covid-19 et stress financiers : modélisation de la dynamique des principales bourses européennes et de New York
3. Babagnack P., (2018), Marchés financiers de l'Afrique centrale : changements structurels et performances. *Gestion et Management*. Université Paul Valéry - Montpellier III, 2018. Français. ffNNT : 2018MON30012ff. fftel-01921507

4. Balvay A. (2021), Crise des subprimes en bref, *Encyclopaedia Universalis*, CRISE DES SUBPRIMES, en bref - Encyclopædia Universalis
5. Bateman J. (2018), Actualité des Marchés, *Les Echos* Investir, in ¨[REACTIONS] *Chute en bourse : ce qu'en pensent les économistes et les analystes*¨ mis à jour le 06/02/2018, [REACTIONS] Chute en Bourse : ce qu'en pensent les économistes et les analystes, Analyses et opinions - Investir-Les Echos Bourse
6. Bessette Sophie et Hasbani Marc (2016), Fondements de la comptabilité financière, 4ème Édition, *Chénelière Éducation* ;
7. Fay P. (2015), Pourquoi la peur fait son retour sur les marchés financiers, *In* LesEchos, Mise à jour du 11 mai 2015, Pourquoi la peur fait son retour sur les marchés financiers | Les Echos
8. Gargouri Ines et Komlan Sedzro (2019), Fondements de la gestion financière, *Chénelière Éducation*
9. Jovène J. (2015), « 2015 : Perspectives et stratégie d'investissement en bourse », *Morningstar du 05/01/2015*, 2015: perspectives et stratégie d'investissement en... | Morningstar
10. Kibala Kuma J. (2020), L'économie mondiale face a la pandémie de la covid-19 : état des lieux, analyses et perspectives
11. Nedelec G. (2020), Coronavirus : de Paris à New York, les Bourses essuient des chutes historiques, *In* LesEchos, Mise à jour du 12 mars 2020 à 21:56, Coronavirus : de Paris à New York, les Bourses essuient des chutes historiques | Les Echos
12. TIONA WAMBA J. H., FOFACK B., FEUMBIE KAMGA C. A. et EYENGA MEKE C. (2020), Comportement des investisseurs face à la Pandémie de la covid-19 : cas des investisseurs de la Bourse des Valeurs Mobilières d'Afrique Centrale, *Journal of Academic Finance*, Vol. 11 N°2
13. Vernimmen P. (2010), Finance d'Entreprise, 8ème édition Dalloz, Paris
14. Zahra Bouba (2010), Le marché financier de la CEMAC : cas de la Bourse des Valeurs Mobilières d'Afrique Centrale (BVMAC), Mémoire rédigé en vue de l'obtention du Master en Gestion d'Entreprise