



Long-term performance of newly listed companies on the Regional Stock Exchange

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Abstract: This paper focuses on initial public offerings on the BRVM market. The objective of this research is to examine the long-run performance of newly listed companies on this market. The study covers 9 firms with data from 1999 to 2011. The results provide empirical evidence of the existence of long-term underperformance and more specifically the performance of stocks declines over the years until the fifth year.

Keywords: IPO; Long-run performance; Underperformance; Abnormal return; BRVM.

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Introduction

Over the past few decades, financial markets around the world have witnessed a substantial increase in IPOs. An IPO is considered a significant step in the life cycle of a developing company (Celikyurt et al. 2010). There are several reasons why companies go public. The most common are the raising of external capital for future investments and the creation of a public market to facilitate exchanges between stakeholders (Ritter and Welch, 2002). Maksimovic and Pichler (2001) suggest that an IPO is a strategy to gain a "first mover advantage" in a product market, which can attract more attention and trust from potential investors, customers, creditors and other business partners, thereby adding value to the business. An IPO can improve the financial capacity of an issuer, its bargaining power with bankers, and thus increase its financial credit Rajan (1992). As a result, IPOs have access to more capital inflows and other business resources, and therefore can perform better than before.

The studies that have analyzed the listing of companies on the stock market have revealed the existence of several anomalies. One of the most crucial of these anomalies relates to their long-term performance. In particular, IPOs often generate poor performance in their first years of operation, although their price has increased significantly during initial trading.

A large number of research has shown that investors who purchase common stocks when they go public earn a large positive abnormal return early in the post-market period. However, it has been found that these gains from early price appreciation are not enough to offset the losses that occur when the price falls later. This phenomenon contradicts the efficient market hypothesis that two portfolios with the same risk should obtain the same returns. If markets are efficient, abnormal stock performance after firm-specific events should be neutral, once the event-related activities have been fully performed. The underperformance of IPOs suggests that investors should buy a portfolio of IPO stocks and sell them in the short term, in order to recapture the "money left on the table" (Loughran and Ritter, 2001) by the issuing company and avoid long-term losses.

Early studies of stock performance only examined periods of up to one year. Ritter (1991) was the first to examine a long-term window of three years. Ritter (1991) believes that long-term IPO studies incorporate the aspect of active trading where investors hold stocks for a longer period and can earn higher returns. For him, the existence of abnormal performance among IPOs indicates inefficiency in market information. An increase in the number of IPOs is a sign of a window of opportunity. Ritter (1991) asserts that high volume is generally associated with poor long-term performance. There is a cost of the IPO related to the transaction costs and the return obtained by the investor. The cost of external capital decreases when market returns are lower.

Loughran and Ritter (1995, 2000) found strong underperformance of IPOs over a period of five years after the date of issuance. According to Loughran and Ritter (2003) long-term underperformance has been observed on all markets and more particularly the American market. The latter is exemplified by long-term returns, of introduced companies, which are below an appropriate benchmark level. In this case, investors seem to lose capital while continuing to hold the shares of the companies introduced. The articles mentioned above use data on US IPOs, but other researchers (Levis, 1993; Loughran et al., 1994; Lee et al., 1996; Stehle et al., 2000) , found evidence of long-term international underperformance of IPOs.

However, some researchers also criticize the finding of long-term underperformance of IPOs. For example, Brav and Gompers (1997) and Corwin and Schultz (2003). Brav and Gompers show that stocks of IPOs perform the same or even better than their benchmark peers based on size and book-to-market ratio. Further, Corwin and Schultz argue that event-based yield analyzes may not be the right way to analyze the long-term performance of IPOs. The aforementioned articles often use long-term returns depending on the event.

This means that there is still a debate about the long-term underperformance of stocks from initial public offerings, both in the American market and in the non-American market.

In Africa, on the BRVM market, the work of Bayala (2002) shows that there are two categories of newly quoted securities, some perform well and the majority achieve poorer performance with securities performing below average over the period. Findings from NGuimeya (2014) indicate that listed companies in West Africa have generally underperformed. However, unlike the OECD markets, they saw a significant increase after the downtrend that extends into the fifth year.

This research focuses on the West African stock market and aims to answer the following question: do companies newly listed on the BRVM experience long-term under performance? The objective of this study is to empirically assess the long-term performance of companies newly listed on the BRVM. In accordance with research in this area, performance will be analyzed over a period of 5 years using the cumulative abnormal returns method.

The structure of this study is as follows: Section 1 reviews the literature on the long-term performance of IPOs. Section 2 describes the different methodologies used to carry out the research and provides an overview of the data. Section 3 focuses on the descriptive analysis and finally section 4 presents the results and the analysis of the long-term performance.

1. Literature review

This section sets out the theoretical and empirical background for long-term underperformance and provides a number of reasons for long-term IPO underperformance.

1.1. Theoretical explanation of long-term underperformance

1.1.1 Difference of opinion hypothesis

The difference of opinion hypothesis on long-term stock market performance was introduced by Miller (1977). This assumption explains that the most optimistic investors about future cash

flows and growth potential from IPOs will be the buyers. Their valuation determines the price on the first day of trading. The valuations of an optimistic investor will be higher than those of a pessimistic investor when there is uncertainty about the value of an IPO. As time passes, more information becomes available in the market. The difference of opinion between optimistic and pessimistic investors will narrow due to the availability of information. Therefore, it will lead to a reduction in the market price, resulting in long-term underperformance.

1.1.2. Impresario Hypothesis (Fashion Hypothesis)

The impresario hypothesis was introduced by Aggarwal and Rivoli (1990) following the explanation of the difference of opinion by Miller (1977). This hypothesis indicates that firms with high initial returns should have low post-trade returns. The theory holds that the IPO market is prone to fads and that investment banks underprice IPOs to create the appearance of excess demand (Ritter 1998). Conversely, many companies go public near industry-specific “fad” or “heat” periods (Álvarez and González 2005). Therefore, a negative relationship between long-term performance and initial returns can be expected. This hypothesis is also similar to the over-optimistic or over-reactive investor hypothesis (De Bondt and Thaler, 1987), because investors become overly optimistic about the value of a company during periods of downturn craze or high demand.

1.1.3. Window of Opportunity Hypothesis

The window of opportunity hypothesis was introduced by Ritter (1991) and considered an extension of the mode hypothesis introduced by Aggarwal and Rivoli (1990). This hypothesis suggests that when investors become overly optimistic about a company's value, that company's stock price rises above fair price. Issuers can take advantage of this to sell their shares at a higher price, thus seizing the "window of opportunity". The window of opportunity hypothesis predicts that companies that go public during periods of high volume ("hot" periods) are more likely to be overvalued than other IPOs.

1.1.4. Profit Management Hypothesis

The earnings management hypothesis is also considered a behavioral theory of long-term performance. Normally, companies manage their profits for the following purposes: to present financial statements before the IPO, to increase executive compensation and job security, to avoid violating loan agreements, to reduce regulatory costs or to increase regulatory benefits. Beneish (2001) argued that much of the evidence for earnings management depends on firm

performance, suggesting that earnings management is likely to be present when a firm's performance is either exceptionally good or exceptionally bad. However, some IPOs manipulate their financial statements in an effort to attract investors and this "window dressing" technique is not helpful in the long run because once investors know the true value of the company, prices fall (Teoh et al., 1998).

1.1.5. Hypothesis of the choice of methodology

When calculating long-term returns, academic researchers typically use either the cumulative abnormal return measure or a buy-and-hold return strategy. Roll (1983) argues that the use of cumulative returns can be a misleading measure of long-term performance because cumulative returns represent the returns of a portfolio that is reweighted every month, and this reweighting can induce misleading abnormal returns when in reality, none is achievable. Conrad and Kaul (1993) suggest that the best measure of abnormal performance is a buy-and-hold strategy because using cumulative returns with monthly rebalancing can bias long-term returns downward. Similar arguments are presented by Barber and Lyon (1997). They also note that buy and hold returns should be used in preference to cumulative returns, although they find that buy and hold returns are strongly skewed to the right. On the contrary, Fama (1998) suggests that buy and hold returns are problematic, not only because their distribution is skewed, but also because the use of capitalization can exaggerate small initial differences. Despite these arguments, however, the choice of methodology cannot explain the underperformance of IPOs. Keloharju (1993) and Espenlaub et al. (2000) demonstrated that IPOs generate negative long-term returns, whether using cumulative return or buy-and-hold return measures to assess secondary market performance.

1.2. International evidence of the long-term underperformance of IPOs

The phenomenon of long-term underperformance was first documented by Ritter (1991). He used a large sample of 1,526 U.S. IPOs between 1975 and 1984 and showed that IPOs appeared overvalued over the long term. This phenomenon is considered a third anomaly in the IPO literature. This study found that, in the three years since their IPO, companies in the sample performed significantly worse than a set of comparable companies matched by size and industry activity. In addition, this study explains that underperformance varies significantly from year to year and from sector to sector, and that young companies that go public in high-volume years performed even worse than average.

The study by Ritter (1991) attempted to shed light on the reasons for this phenomenon of underperformance. Possible reasons included (1) poor measurement of risk, (2) bad luck, and (3) fads or over-optimism. In particular, this study investigated whether the companies in the sample underperformed solely due to bad luck or whether the market systematically overestimated IPO growth opportunities. The evidence is consistent with the notion that many companies go public at the peak of a particular industry craze. Investors in this sample were overly optimistic about corporate prospects and issuers took advantage of the "window of opportunity". These trends are consistent with an IPO market in which (1) investors are periodically overoptimistic about the earning potential of young companies and (2) companies take advantage of these windows of opportunity. This indicates that the results of the study are consistent with the impresario or fads hypothesis and the window of opportunity hypothesis. In addition, the study analyzed cross-sectional and time-series trends in IPO post-trade performance to identify possible explanations for the long-term underperformance of IPOs. Post-trade performance was ranked by initial yields, issue size, sector, age of issuer and year of issue.

The study by Nurwati et al. (2012) examines the initial and long-term price performance of IPOs in the MESDAQ market using data for the period from 2002 to 2005. Consistent with previous Malaysian studies, the results of the Raw and market-adjusted initial returns show that IPOs are significantly undervalued in the near term. However, over the long term, this study reveals that these companies underperform the market.

Nevertheless, some studies criticize the long-term underperformance of IPOs. Brav and Gompers (1997) and Brav et al. (2000) provided evidence that the underperformance of IPOs in the secondary market is not solely due to the fact that it is an IPO. Another explanation for the underperformance could be the fact that most IPOs have low book-to-market ratios. The results of both studies showed that the returns, adjusted with a size-matched portfolio of companies and the book-to-market ratio, are positive, suggesting an outperformance of the IPO portfolio compared to the benchmark reference. Furthermore, the results showed that the returns of value-weighted portfolios are of a lower magnitude than any underperformance or outperformance, indicating that the results are sensitive to the chosen weighting method.

Furthermore, Omran (2005) documented mixed results on the long-term performance of 53 equity issue privatizations in the Egyptian stock market between 1994 and 1998. Positive abnormal returns were reported for a period of one year and negative abnormal returns have

been reported for three- and five-year horizons. However, over periods of three and five years, abnormal returns were significantly affected by initial excess returns. Their empirical results are consistent with the over-optimism hypothesis.

Cai et al. (2008) reported a comparable level of underperformance on the long-term performance of IPOs in China. They found that the initial excess of optimism and the size of the offer were important explanatory variables for this underperformance. This indicates that the results are consistent with the overoptimism hypothesis and the difference of opinion hypothesis. In addition, Chinese economic reforms have affected government ownership, which supports a signal argument in relation to continued government support. Therefore, this study provides an interesting result on how the regulatory environment and economic transition influenced the long-term performance of IPOs in China.

IPO investors are very concerned about obtaining prospectus information before buying shares, and managers are strongly motivated to declare their managed profits in order to increase the offering proceeds (Bhabra and Pettway 2003; Chaney and Lewis 1995; Rangan 1998; Teoh et al., 1998). Loughran and Ritter (1997) showed that if an IPO increases its current earnings before issuing shares, it may lead to lower stock returns after issuance, as investors may overvalue new issues due to a misinterpretation of the high reported profits. However, investors may be disappointed due to the decline in post-operation performance (earnings), which may have a negative effect on the long-term performance of the IPO.

2. Research methodology

In this section we intend to present the methodology used and the source of our data.

2.1 Methodology

In the financial literature, there are several approaches to evaluating the performance of companies initially listed on the stock market. The performance can be apprehended over different periods, namely the short term, the medium term and the long term. To deal with long-term performance, two main approaches are used. These are the event-time approach and the calendar-time approach. The calendar-time approach highlights two main methods, namely the method of the monthly average "Calendar-Time Abnormal Returns" (CTAR) and the three-factor model of Fama-French (1992, 1993). For the event-time approach, there are also two main methods. These are the Cumulative Abnormal Returns (CAR) method and the Buy-and-hold Abnormal Returns (BHAR) method. This last approach is the one used in this study and

the data will be processed according to the cumulative abnormal returns method as recommended by Fama (1998) and Brav et al. (2000) for the calculation of long-term profitability. Through this method, we seek to verify that the average abnormal return at the end of the event period is significantly different from zero.

This method consists in comparing the yields of the securities of the companies introduced with a portfolio of securities of comparable companies already listed (reference portfolio or benchmark). Monthly returns for each security are adjusted to market returns. The long-term abnormal return, AR_{it} adjusted by the normal performance of the rate of return, for company i in month t of the calendar after the first month of trading, is calculated by the following relationship:

$$AR_{it} = R_{it} - E(R_{benchmark, t}) \quad \text{or} \quad E(R_{benchmark, t}) = \frac{I_t - I_{t-1}}{I_{t-1}}$$

With,

AR_{it} : The abnormal return of stock i in month t

R_{it} : Return on security i in month t

$(R_{benchmark, t})$: The normal performance of the benchmark's rate of return over the same period t .

I_t : The value of the market index at period t

I_{t-1} : The value of the market index at period $t - 1$

The average adjusted return of a portfolio made up of n securities for the event month t is calculated as follows:

$$AR_t = \sum_{i=1}^{n_t} \frac{1}{n_t} AR_{it}$$

The cumulative abnormal return between event month q until event month s is the sum of the adjusted average returns of the benchmark:

$$CAR_{q,s} = \sum_{t=q}^s AR_t$$

The last step consists in verifying the statistical significance of the cumulative average abnormal returns. Several tests take place over several periods so as to submit the significance of the results at the time of the announcement. The use of the Student's test (Student's t) is the

most widespread and the most frequently used. It is done under the assumption of the independence of the individual abnormal returns of the sample.

The *t-student* statistic carried out on the cumulative abnormal returns under the hypothesis

$CAR_t = 0$ is obtained using the following formula:

$$t_{CAR_t} = \frac{CAR_t}{\sigma(CAR_t)/\sqrt{n_t}}$$

Where, (CAR_t) represents the standard deviation of abnormal returns for the sample of n companies and nt is the number of IPO bids in month t .

Tests are applied to the various average abnormal returns, adjusted or not to the benchmarks (BRVM C and BRVM 10 indices) in order to verify the significance of these returns. The determination of the significance of abnormal returns is assessed by considering the statistical table of Student's law. When the calculated Student's t is greater than the t read on the statistical table ($|t_{cal}| > t_{lu}$), then the abnormal return is significant.

2.2. Data

The data is taken from information published by the statistical department of the BRVM (Financial Data Base of the BRVM – BDFIN) and covers the period from 1999 to 2011. They relate to 9 companies² having carried out IPO operations in the period from 1999 to 2011. Data relate to changes in share prices. In this study, it is a question of evaluating the performance of companies over 5 years, i.e. 60 months of listing.

3. Findings and discussion

3.1 Descriptive analysis of yields

This section devoted to the descriptive analysis of returns focuses on the analysis of statistics relating to long-term performance. These are those on unadjusted average returns and those adjusted by the benchmark (BRVM C and BRVM 10 indices).

3.1.1 Average returns adjusted to BRVM C

BOA Burkina-Faso is the company with the highest unadjusted average return (i.e. 4.59%) over the 60 months of listing after IPO and it is also this company that has the average return adjusted to the highest BRVM C index (i.e. 3.44%).

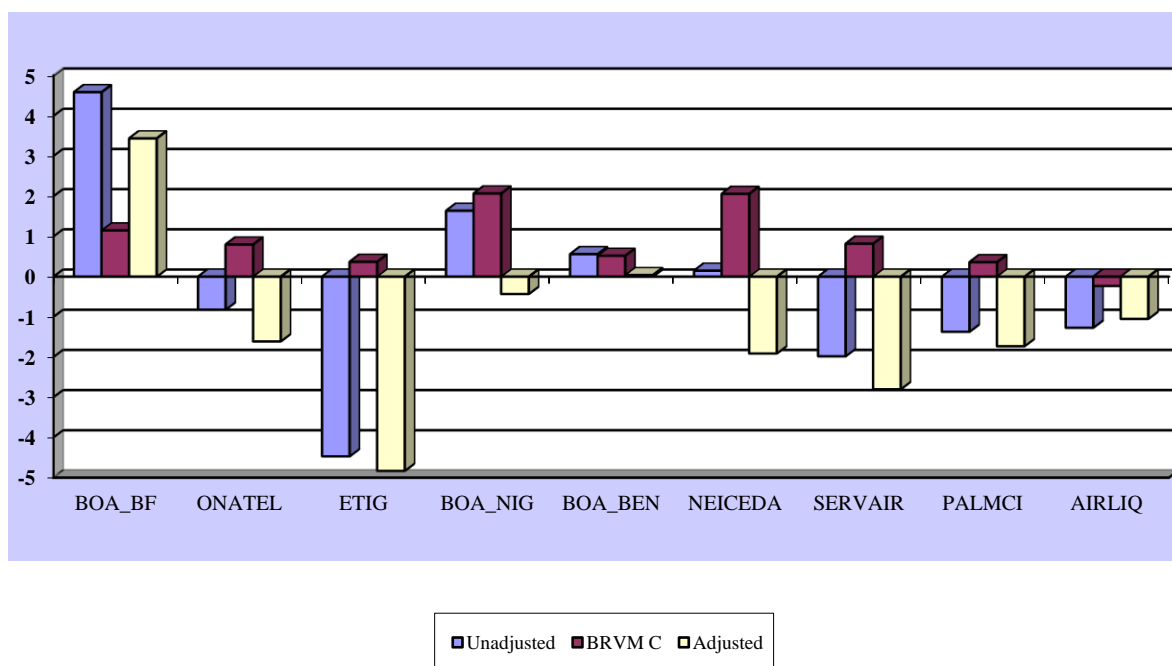
Table N°1: Average returns adjusted to BRVM C

Descriptions	Average returns (%)			Designation for adjusted returns			
	Unadjusted	BRVM C	Adjusted	Median	Min	Max	Standard deviation
BOA_BF	4,59	1,15	3,44	0,52	-106,27	141,27	43,89
ONATEL_BF	-0,82	0,80	-1,61	-0,82	-94,06	25,23	13,86
ETIG	-4,47	0,37	-4,83	-2,08	-59,71	21,58	14,60
BOA_NIG	1,64	2,07	-0,43	0,43	-30,78	44,42	10,15
BOA_BEN	0,56	0,52	0,04	0,53	-18,53	17,09	5,35
NEICEDA	0,15	2,06	-1,91	-0,91	-71,21	99,23	22,35
SERVAIR_CI	-1,98	0,82	-2,80	-1,88	-19,59	19,28	6,51
PALMCI	-1,37	0,36	-1,73	-1,88	-19,59	19,28	6,51
AIRLIQUIDE	-1,27	-0,23	-1,05	-0,93	-21,38	21,55	8,50
Total Sample (9 Companies)							
Average	-0,33	0,88	-1,21				
Median	-0,82	0,80	-1,61				
Minimum	-4,47	-0,23	-4,83				
Maximum	4,59	2,07	3,44				
Standard deviation	2,53	0,77	2,25				

Source : Author's calculation based on BRVM data

Over the 60 months of listing after IPO, ETIG Togo has the lowest unadjusted average return with -4.47% and also the lowest average return adjusted to the BRVM C index with -4.83 %. The unadjusted average return is -0.33% and the average return adjusted to the BRVM C index is -1.21% for the sample. ONATEL Burkina-Faso is on the median of the average unadjusted and BRVM C index-adjusted returns of the sample (respectively -0.82% and -1.61%).

Note that, while BOA Burkina-Faso, BOA Niger, BOA Benin and NEICEDA have positive unadjusted average returns (respectively 4.59% ; 1.64%; 0.56%; 0.15%), only BOA Burkina -Faso and BOA Benin have average returns adjusted for the BRVM C index which are positive (3.44% and 0.04% respectively). Chart 1 perfectly illustrates the observations of Table 1.

Graph N°1 : Histograms of average returns adjusted to the BRVM C index

Source: The author based on BRVM data

Considering the monthly adjusted returns to the BRVM C index for the 60 months of listing after IPO of each company, BOA Burkina-Faso has the lowest adjusted monthly return with -106.27%; also the highest with 141.27%. The standard deviation of the latter company is the highest with a value of 43.8; followed by NEICEDA with a value of 22.35 and BOA Benin has the lowest standard deviation with a value of 5.35. Note that BOA Benin has the highest median (0.53%), followed by BOA Burkina-Faso (0.52%) and ETIG Togo has the lowest median (-2.08%).

3.1.2 Average returns adjusted to BRVM 10

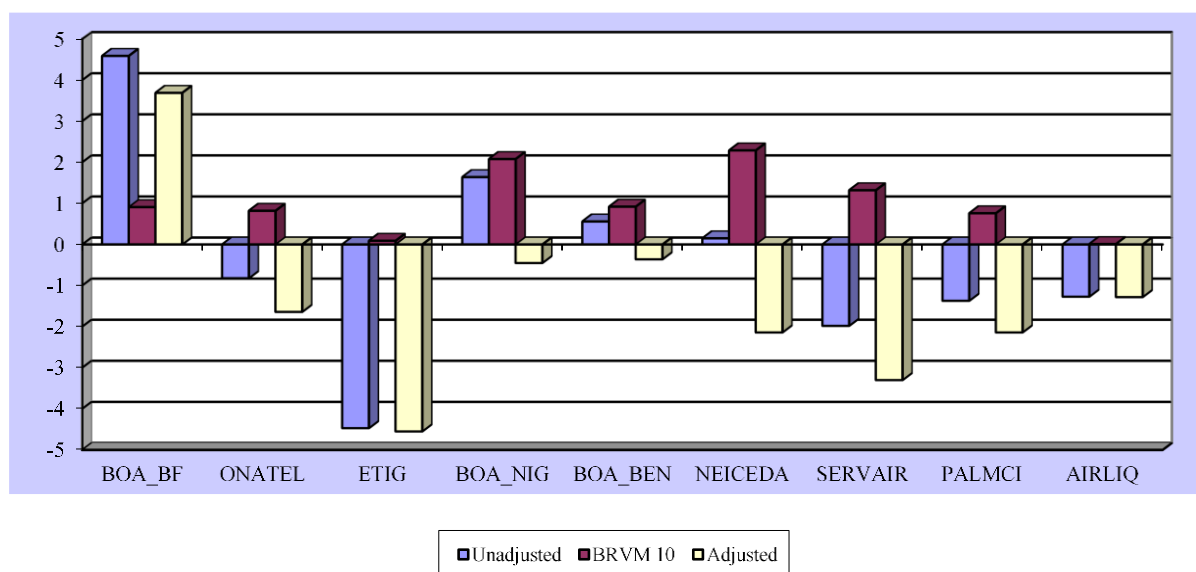
Table 2 presents the same characteristics as Table 1 with a few differences. Indeed, here again, BOA Burkina-Faso has the average return adjusted this time to the BRVM 10 index, the highest (3.69%), but the only positive adjusted average return; it is also ETIG Togo which has the lowest adjusted average return (-4.47%); and it is still ONATEL Burkina-Faso which is on the median of the sample (-1.64%). Chart 2 provides a good illustration of this.

Table N°2: Average returns adjusted to BRVM C

Descriptions	Average returns (%)			Designation for adjusted returns			
	Unadjusted	BRVM 10	Adjusted	Median	Min	Max	Standard deviation
BOA_BF	4,59	0,91	3,69	0,93	-106,00	140,85	43,91
ONATEL_BF	-0,82	0,82	-1,64	-1,35	-92,79	26,32	13,95
ETIG	-4,47	0,09	-4,55	-2,09	-61,19	19,94	14,50
BOA_NIG	1,64	2,08	-0,45	0,07	-30,41	44,15	10,56
BOA_BEN	0,56	0,92	-0,36	-0,17	-18,41	15,41	5,82
NEICEDA	0,15	2,29	-2,14	-1,53	-69,50	98,09	23,24
SERVAIR_CI	-1,98	1,32	-3,30	-1,72	-25,55	19,89	7,11
PALMCI	-1,37	0,76	-2,14	-0,77	-50,52	87,72	14,60
AIRLIQUIDE	-1,27	0,01	-1,28	-0,97	-22,49	20,21	8,55
Total sample (9 Companies)							
Average	-0,33	1,02	-1,35				
Median	-0,82	0,91	-1,64				
Minimum	-4,47	0,01	-4,55				
Maximum	4,59	2,29	3,69				
Standard deviation	2,53	0,78	2,31				

Source: Author's calculation based on BRVM data

When we consider the monthly adjusted returns to the BRVM 10 index for the 60 months of listing after IPO of each company, we have almost the same characteristics in Table 2 as in Table 1. BOA Burkina-Faso is still the one with the lowest adjusted monthly return with -106.00% and the highest with 140.85%. The standard deviation of the latter company is the highest with a value of 43.91; followed by NEICEDA with a value of 23.24 and BOA Benin has the lowest standard deviation with a value of 5.82. Here, it is BOA Burkina-Faso which has the highest median (0.93%), followed by BOA Niger (0.07%) and it is still ETIG Togo which has the lowest median (-2.09%).

Chart N°2 : Histograms of average returns adjusted to the BRVM 10 index


Source: The author based on BRVM data

3.1.3 Cumulative Abnormal Returns

Table 3 presents the adjusted average cumulative abnormal returns over the 60 months of listing after IPO.

Table 3: Cumulative abnormal returns

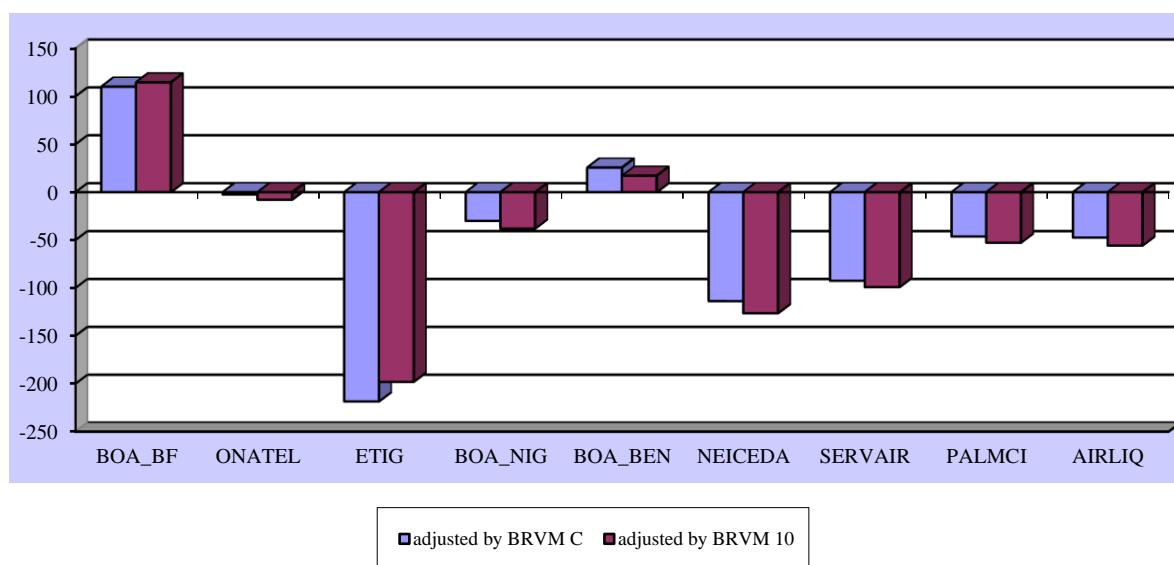
Descriptions	CARit (%)									
	adjusted by BRVM C	adjusted by BRVM 10	adjusted by BRVM C				adjusted by BRVM 10			
			Median	Min	Max	Standard deviation	Median	Min	Max	Standard deviation
BOA_BF	110,20	114,70	132,09	-60,15	210,79	79,63	136,28	-60,23	223,83	83,76
ONATEL_BF	-2,34	-7,81	4,40	-98,76	24,56	27,62	-4,13	-99,75	27,00	27,46
ETIG	-218,42	-198,00	-258,70	-300,39	-13,74	84,86	-232,18	-283,22	-1,33	83,73
BOA_NIG	-29,93	-37,93	-31,17	-77,61	3,35	23,79	-40,30	-82,42	3,97	26,32
BOA_BEN	25,73	17,24	27,63	-0,12	40,61	10,64	21,47	-23,76	35,04	14,03
NEICEDA	-113,67	-126,35	-137,19	-263,68	5,49	82,05	-146,59	-274,19	4,84	87,75
SERVAIR_CI	-92,38	-99,09	-114,79	-168,00	1,82	53,67	-122,02	-198,09	2,72	60,68
PALMCI	-46,17	-52,69	-40,97	-104,01	31,50	24,96	-43,47	-128,21	28,26	29,21
AIRLIQUIDE	-47,37	-55,77	-39,88	-98,22	4,02	22,55	-49,91	-110,76	2,86	25,83
Total sample (9 Companies)										
Average	-46,04	-49,52								
Median	-46,17	-52,69								
Minimum	-218,42	-198,00								
Maximum	110,20	114,70								
Standard deviation	92,31	89,27								

Source: Author's calculation based on BRVM data

BOA Burkina-Faso has the highest average cumulative returns adjusted respectively by the BRVM C index and the BRVM 10 index (i.e. 110.20% and 114.70% respectively). ETIG Togo has the lowest average cumulative returns adjusted respectively by the BRVM C index and the BRVM 10 index with respectively -218.42% and -198%. The average cumulative return adjusted to the BRVM C index is -46.04% and the average return adjusted to the BRVM 10 index is -49.52% for the sample. PALMCI is on the median of the average cumulative returns adjusted by the BRVM C index and by the BRVM 10 index of the sample (respectively -46.17% and -52.69%).

BOA Burkina-Faso and BOA Benin are the companies with positive adjusted average cumulative returns (respectively 110.20% and 25.73% by the BRVM C index and 114.70% and 17.24% by the BRVM 10). Chart 3 provides a good illustration of this.

Graph N°3: Histograms of cumulative abnormal returns



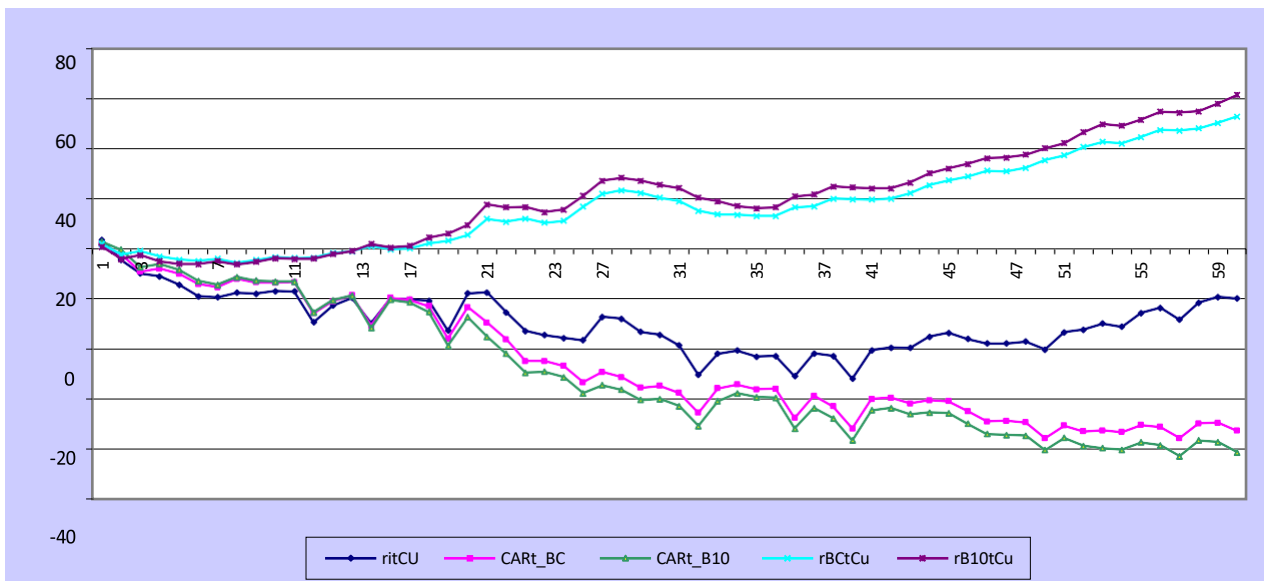
Source: The author based on BRVM data

3.2 Findings and discussion

Table 5 (see appendices) presents the non-adjusted returns, the adjusted returns and the cumulative abnormal returns for the 60 months of listing after the IPO. Monthly unadjusted returns range from -12.27% (at 12th month) to 14.77% (at 20th month). The tests applied to unadjusted returns show that the maximum significant value (at 10%) is 5.41% at the 55th month and the minimum significant value (at 10%) is -8.07% at the 37th month. The monthly return adjusted to the BRVM C index (the monthly return adjusted to the BRVM 10 index)

ranges from -12.92% in the 19th month to 12.57% in the 20th month (-13.42% in the 19th month to 11.36% in the 20th month). The tests applied to the adjusted returns show that the maximum significant value (at 10%) is 3.33% in the 8th month for the monthly return adjusted to the BRVM C index and significant (at 10%) is -4, 09% in the 47th month for the monthly return adjusted to the BRVM 10 index. The minimum value for the monthly return adjusted to the significant BRVM C index (at 5%) is -11.58% in the 37th month and for the monthly return adjusted to the significant BRVM 10 index (at 5%) is -12.35%. We observe in Table 5 (see appendices) that the cumulative abnormal returns become negative from the 2nd month and keep this same sign until the 60th month of trading. The tests show significance at the 15th month of listing (at 10%), at the 19th month of listing (at 5%), at the 26th month of listing (at 10%) and at the 40th month of listing (at 10%) for the return adjusted to the cumulative BRVM C index. We also observe that the return adjusted to the cumulative BRVM 10 index is significant in the 15th month (at 10%), in the 19th month (at 5%), in the 26th month (at 10%), in the 37th month (at 10%), at the 40th month (at 10%) and at the 50th month (at 10%) of listing.

Graph N°6: Cumulative abnormal return curves



Source: The author based on BRVM data

Chart 6 represents the unadjusted cumulative return, the cumulative index returns and the cumulative abnormal returns. We note that the curves representing the cumulative returns of the indices are increasing and have the same appearance and pass definitively over the bar from 0 to the 17th month. The unadjusted cumulative return is almost negative over the 60 months. The curve representing the unadjusted cumulative return descends until the 40th month and

then begins a slight rise until the 60th month. The curves of cumulative abnormal returns are descending with the same pace and below 0.

The long-term underperformance of stocks can be explained by the fact that the IPO market is hyped and IPOs are undervalued to give the appearance of excess demand. After strong demand, passing fads begin to decline and expectations become rational again (Ritter, 1998); which leads to a decrease in the share price and a poor performance. The overreactions of market participants can also explain this phenomenon of underperformance of long-term securities (De Bondt et al., 1987). Indeed investors have a very short-sighted view and ignore the long-term trend of average profitability. This is because they place too much weight on improving operational performance before the IPO. Consequently, the prices of the first days of transactions are high; and these transitory earnings improvements are considered by investors to be a permanent improvement. But over time, with the availability of information on IPOs, there is a downward adjustment of the initial estimates of future profitability causing, thus, a decrease in the price of shares over the long term.

Our findings corroborate those of Ritter (1991) on the long-term performance of IPOs in the American market with a significant deterioration during the long term of the performance of IPOs of companies. Miloud (2002) also finds the same results on a sample of 277 European companies introduced on the stock exchange in the period 1991-1999 and a sample of 277 equivalent American companies introduced on the Nasdaq during the same period. The study shows the existence of a long-term underperformance (three years) for the Euro.NM sample as well as for the Nasdaq sample because the cumulative abnormal returns become negative over the months.

Kirilov (2016) examines the long-term performance of IPOs over 36 months in Europe across the various markets of France, Germany, Italy, Spain and Sweden. The analysis is based on 978 IPOs across the five markets during the period 1992-2012. Consistent with the literature on long-term initial public offerings, 3-year abnormal returns exhibit underperformance. The cumulative average abnormal return (CAR) has a value of -19.23% compared to companies of the same size (benchmark). The abnormal buy-hold returns (BHAR) estimates are -16.1% and -6.49%, respectively.

Conclusion

Many studies focus on the stock market performance of listed companies. Much of the work relates to initial public offerings carried out on the American and European markets. Increasingly, works are interested in the markets of emerging and underdeveloped countries

and our study is in this dynamic. This research focused on determining the stock market performance of newly listed companies on the BRVM market. The methodology used determined the abnormal profitability in order to analyze the stock market performance of those companies between 1999 and 2011. The findings results obtained in this work allow us to suggest that the performance of the companies' securities declines over the years until the fifth year. These findings are similar to studies carried out on the American market (Jain and Kini, 1994; Mikkelson, Partch and Shah, 1997), on the Asian market (Kim et al., 2002 and Kutsuna et al., 2002), on the French (Sentis, 2001) and on the African market (Bayala, 2002; NGuimeya, 2014). This work, compared to that already carried out on the same BRVM market, comes together (Bayala, 2002 and NGuimeya, 2014). Like Bayala (2002) and NGuimeya (2014), the findings affirm the existence of medium and long-term underperformance for the securities of these companies up to 3 years for Bayala (2002) (study carried out over 3 years) and up to 5 years for our work (study carried out over 5 years) and that of NGuimeya, (2014) (study carried out over 10 years). The latter finds that after the first five years, there is a significant improvement and for the following years, up to the ten-year horizon that focused his study. Thus, the stock market performance of companies listed on the BRVM regional stock exchange attests to the existence of long-term underperformance.

This research contributes to the explanation of the phenomenon of the underperformance of newly listed companies on the BRVM market and therefore enriches the previous work carried out on that market. However, this study has limitations. The first is related to the number of companies selected. Indeed, due to the number of companies listed on the BRVM, we have only selected 9 newly listed companies in this study. The second limitation is related to the duration of our study.

As a research perspective, we wish to use another method to analyze long-term performance, namely the calendar approach. Also, we plan to carry out a comparative study to analyze the long-term performance between the BRVM and another African stock exchange.

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ANNEXES

The CAR method

Table 5: Cumulative abnormal returns tests

Month s	Nb of Firms	Yields (%)									
		Unadjusted		Adjusted by BRVM Composite				Adjusted by BRVM 10			
		Ri	t-student	AR	t-student	CAR	t-student	AR	t test	CAR	t-student
1	9	3,62	3,59 ^a	1,68	0,68	1,68	0,68	2,81	1,53	2,81	1,53
2	9	-8,10	-1,60	-3,95	-1,04	-2,27	-0,40	-3,21	-0,85	-0,40	-0,08
3	9	-5,38	-2,20 ^c	-6,77	-2,49 ^b	-9,04	-1,28	-6,90	-2,40 ^b	-7,30	-1,13
4	9	-1,11	-0,29	1,08	0,28	-7,96	-0,93	1,27	0,34	-6,03	-0,82
5	9	-3,36	-1,56	-2,05	-1,10	-10,01	-1,04	-2,29	-1,18	-8,32	-0,97
6	9	-4,61	-0,95	-4,10	-0,78	-14,11	-1,02	-4,46	-0,85	-12,78	-1,05
7	9	-0,32	-0,16	-1,20	-1,03	-15,31	-1,11	-1,50	-1,17	-14,29	-1,17
8	9	1,72	1,54	3,33	1,93 ^c	-11,98	-0,90	3,06	1,62	-11,23	-0,97
9	9	-0,36	-0,68	-1,48	-0,58	-13,46	-0,93	-1,39	-0,52	-12,62	-0,97
10	9	1,07	1,20	-0,08	-0,04	-13,53	-0,87	-0,38	-0,19	-13,00	-0,96
11	9	-0,20	-0,09	0,24	0,17	-13,30	-0,90	0,03	0,02	-12,97	-1,02
12	9	-12,27	-1,29	-12,37	-1,34	-25,67	-1,51	-12,33	-1,34	-25,30	-1,71
13	9	6,68	0,55	4,70	0,38	-20,97	-1,13	4,84	0,40	-20,46	-1,26
14	9	3,09	1,40	2,48	1,13	-18,49	-0,98	1,83	0,73	-18,64	-1,13
15	9	-10,14	-1,00	-12,22	-1,16	-30,70	-1,89 ^c	-12,91	-1,23	-31,55	-2,18 ^c
16	9	9,85	0,78	11,15	0,92	-19,56	-0,98	11,21	0,93	-20,33	-1,15
17	9	-0,35	-0,29	-0,70	-0,25	-20,26	-1,00	-1,02	-0,34	-21,36	-1,19
18	9	-0,56	-0,41	-2,68	-1,22	-22,94	-1,09	-3,85	-1,36	-25,21	-1,33
19	9	-11,87	-1,06	-12,92	-1,20	-35,86	-2,35 ^b	-13,42	-1,27	-38,63	-3,06 ^b
20	9	14,77	1,01	12,57	0,85	-23,30	-1,08	11,36	0,74	-27,27	-1,33
21	9	0,36	0,20	-6,06	-1,08	-29,36	-1,27	-7,80	-1,10	-35,07	-1,47
22	9	-7,85	-1,21	-6,65	-0,98	-36,01	-1,33	-6,80	-0,98	-41,87	-1,55
23	9	-7,45	-1,17	-8,73	-1,36	-44,74	-1,40	-7,53	-1,18	-49,40	-1,60
24	9	-1,66	-0,79	0,01	0,00	-44,73	-1,44	0,43	0,13	-48,97	-1,65
25	9	-1,16	-0,35	-1,98	-0,62	-46,71	-1,48	-2,17	-0,70	-51,13	-1,71
26	9	-0,87	-0,06	-6,48	-0,39	-53,19	-1,86 ^c	-6,37	-0,38	-57,51	-2,13 ^c
27	9	9,28	0,53	4,13	0,22	-49,06	-1,39	3,17	0,17	-54,34	-1,57
28	9	-0,73	-0,16	-2,10	-0,47	-51,16	-1,31	-1,86	-0,42	-56,19	-1,47
29	9	-5,22	-1,82	-4,24	-1,75	-55,39	-1,38	-4,02	-1,71	-60,21	-1,54
30	9	-1,21	-1,54	0,71	0,53	-54,68	-1,38	0,36	0,24	-59,85	-1,56
31	9	-4,19	-1,58	-2,72	-1,06	-57,40	-1,45	-2,85	-1,11	-62,70	-1,66
32	9	-11,72	-1,23	-7,94	-0,96	-65,34	-1,47	-7,93	-0,97	-70,63	-1,65
33	9	8,34	0,72	9,73	0,86	-55,61	-1,39	9,82	0,88	-60,81	-1,60
34	9	1,33	0,54	1,48	0,31	-54,13	-1,42	3,25	0,70	-57,56	-1,58
35	9	-2,36	-1,06	-1,85	-0,74	-55,98	-1,40	-1,56	-0,57	-59,12	-1,55
36	9	0,17	0,17	0,17	0,11	-55,82	-1,40	-0,20	-0,12	-59,32	-1,55
37	9	-8,07	-1,93 ^c	-11,58	-2,88 ^b	-67,39	-1,70	-12,35	-2,95 ^b	-71,66	-1,85 ^c
38	9	9,13	1,66	8,76	1,81	-58,63	-1,43	8,28	1,70	-63,39	-1,59

39	9	-1,06	-0,68	-4,11	-2,31 ^b	-62,75	-1,49	-4,21	-2,25 ^c	-67,59	-1,65
40	9	-9,07	-1,38	-8,83	-1,36	-71,58	-1,87 ^c	-8,72	-1,37	-76,31	-2,05 ^c
41	9	11,45	0,97	11,66	0,99	-59,92	-1,31	11,92	1,00	-64,39	-1,42
42	9	1,01	1,28	0,60	0,66	-59,32	-1,30	0,92	0,85	-63,47	-1,40
43	9	-0,15	-0,11	-2,32	-0,96	-61,64	-1,36	-2,45	-1,01	-65,92	-1,46
44	9	4,47	1,34	1,25	0,45	-60,40	-1,39	0,74	0,28	-65,18	-1,49
45	9	1,60	0,86	-0,33	-0,16	-60,73	-1,37	-0,28	-0,15	-65,46	-1,47
46	9	-2,50	-2,02 ^c	-3,99	-2,44 ^b	-64,72	-1,48	-4,31	-2,43 ^b	-69,77	-1,59
47	9	-1,80	-0,66	-4,10	-2,20 ^c	-68,81	-1,54	-4,09	-2,16 ^c	-73,87	-1,65
48	9	-0,02	-0,01	0,23	0,14	-68,58	-1,53	-0,29	-0,18	-74,15	-1,65
49	9	0,84	0,50	-0,61	-0,35	-69,20	-1,54	-0,27	-0,15	-74,43	-1,66
50	9	-3,22	-1,27	-6,30	-2,51 ^b	-75,50	-1,74	-5,80	-2,46 ^b	-80,22	-1,86 ^c
51	9	6,91	1,63	5,04	1,24	-70,46	-1,51	4,88	1,21	-75,34	-1,61
52	9	1,06	0,63	-2,27	-0,82	-72,73	-1,53	-3,24	-1,00	-78,58	-1,64
53	9	2,35	0,62	0,27	0,06	-72,46	-1,50	-0,89	-0,19	-79,47	-1,62
54	9	-1,22	-0,75	-0,63	-0,34	-73,09	-1,52	-0,66	-0,34	-80,13	-1,65
55	9	5,41	2,25 ^c	2,86	0,85	-70,23	-1,47	3,03	0,79	-77,10	-1,59
56	9	2,06	0,91	-0,77	-0,43	-70,99	-1,49	-1,17	-0,61	-78,27	-1,63
57	9	-4,75	-0,43	-4,43	-0,38	-75,42	-1,64	-4,33	-0,37	-82,60	-1,79
58	9	6,83	1,03	5,89	0,84	-69,53	-1,53	6,29	0,89	-76,31	-1,66
59	9	2,37	1,03	0,18	0,04	-69,35	-1,52	-0,72	-0,15	-77,04	-1,65
60	9	-0,64	-0,29	-3,20	-1,18	-72,55	-1,61	-4,03	-1,36	-81,06	-1,76

^a : significant at 10% ; ^b : significant at 5% ; ^c : significant at 10%

Source : Author's calculation based on BRVM data