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ANALYSIS OF MEDIUM AND LONG RUN STOCK MARKET PERFORMANCE OF INITIAL PUBLIC OFFERINGS: CASE OF FAMILY BUSINESSES IN MOROCCO

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ABSTRACT
This study tries to analyse the medium and long-term stock market performance of a sample of 20 Moroccan family companies listed on the Stock market of Casablanca, between 1999 and 2011 over a period of 60 months. To do it, we used two methods of analysis of the medium and long-term stock market returns namely: the method of Cumulative Abnormal Returns (CAR) and the method of Buy and Hold Abnormal Returns (BHAR). The results show that the stock market performances improve in the short term then degrade significantly in the medium and long term. The decline of the performances reaches -39.7 % over a five-year horizon after the initial public offering, by using the method of Buy and Hold Abnormal Returns (BHAR) adjusted to the returns of a sample of control-firms as a benchmark. This result seems to confirm the hypotheses moved forward by the literature concerning the stock market medium and long-term performance.
Keywords: Initial public offerings - family business – long run performance – control firm- abnormal performance.

Introduction:

In the financial literature, numerous studies highlighted the medium and long-term under-performance of companies recently listed. In its seminal article, Ritter (1991) showed over a period of three years following the initial public offering, that shares issued in the United States show a lower performance of 29 % on average to those of comparable companies. This phenomenon of underperformance of IPOs in the medium and long run performance does not seem specific to the American institutional environment, because the phenomenon was later confirmed on other financial markets.

The degradation of the stock market performance after the initial public offering received several explanations. Numerous authors defended the hypothesis of an excess of optimism of the investors who value the company in a higher price during the IPO. The share progresses beyond its value and the future decline of the performances is the result of the convergence of the optimistic and pessimistic opinions of investors. Other authors (Loughran & Ritter, 1995; Ritter, 1991) defend the hypothesis of the windows opportunity, according to whom the managers are motivated to introduce their companies during profitable periods in terms of cost of capital, and the hypothesis of a possible earnings management before initial public offering.

In Morocco, a good number of family companies made the decision to be listed in the stock market in a certain stage of their life to guarantee the financial resources for the expansion of the activity, or to offer to their shareholders a way to sell their shares in case they would prefer to liquidate them. Our paper is interested in the stock market medium and long-term performance, by measuring monthly stock market returns of 20 listed family companies. In this context, our question can

formulate in the following way: what is the impact of initial public offering on the medium and long-term stock market performance of the listed Moroccan family companies?

The paper will be organized in the following way. Section 2 presents the literature relative to the study of the medium and long-term stock market performance of listed companies. Sections 3 and 4 describe the methodology and the data used in the study. The results of the analysis are presented in the section 5.

Review of Literature:

Several interpretations were suggested to explain the phenomenon of under-performance of medium and long term of new listed companies. Daniel, Hirshleifer, & Subrahmanyam (1998) reveal that the overconfidence pulls the excess of reaction of the investors to their private information at the expense of the public information. By taking opposite positions to those dictated by the public information, they make diverge the prices of their fundamental value. Typically, they buy a share which progressed by thinking that the market did not enough value it with regard to the private information which they hold. This report was also verified in the study of (Baker & Wurgler, 2006) who deduct that the behaviour of the investors influences considerably the evaluation of the shares during the initial public offering, in particular in the presence of a strong information asymmetry.

The excess of optimism is the behavioural way which was the most validated by the empirical studies. For De Bondt & Thaler (1987), it is the strongest element of the psychology of the judgment. He is widely told at the investors who think all to understand almost the market and to anticipate its fluctuations.

Ritter (1991), as well as Loughran & Ritter (1995) move forward the hypothesis of ("Windows opportunity") as explanation of the decline of the medium and long-term stock market performance of new listed companies. They demonstrated the existence of a direct relation between the choice of the periods of IPO and the low long-term abnormal return. In the same way, Schultz (2003) bases itself on the same argument and postulates the following idea: if companies observe a period convenient to the initial public offering, they will be more inclined to get and to undergo then, the disappointments of a future fall in prices. Such an intuition is at the origin of its hypothesis which he qualifies as "pseudo market timing".

Most of the studies on the earnings management before IPO, postulate that companies manage their earnings in answer to specific economic context. The initial public offering represents one of these contexts, where the managers of companies recently listed could be tried to make a commitment in the strategic management of their earnings. Their objective is to overvalue the issue price of the shares and to increase consequently funds stemming from the IPO.

So, diverse research works led in the American context (Cormier & Magnan, 1995; Teoh, Welch, & Wong, 1998) showed that the managers display considerable efforts to manage earnings before the initial public offering. Through these investigations, the researchers try to know if the managers possess the sufficient latitude to modify the accounts so as to bring the investors to adopt behaviour excessively optimistic towards the perspectives of the company.

As regards the international studies on the medium and long-term performance of initial public offerings, presented different results in the sign of the abnormal returns. Most of the studies made in the Anglo-Saxon countries show that the performance of initial public offerings degrades in the medium and long term. In comparison with the European studies, we are lacking empirical proofs which would confirm the decline of the long-term performance, while some show an improvement of the subsequent performance of the IPO.

In light of these reports, Ritter (1991) tried to verify the intuition of an under-performance of the shares on a sample of 1 526 initial public offerings over the period 1975-1984. By using several indications of adjustment of returns, he showed that the detention of the portfolio of recently listed companies leads to an average return of 34 % in the third anniversary of listing, against 62 % for control firms. The test based on the monthly recompositing of the portfolio leads to the same conclusions. A negative abnormal return appears from the third month which follows the IPO and does not stop becoming more marked.

Otherwise, Loughran & Ritter (1995) revised the results of Ritter (1991), from a more important sample containing 4 753

companies listed between 1970 and 1990. The results reveal that the detention of the portfolio of shares recently listed, offers an average gross remuneration over 3 years of 8,4 %, clearly lower than that got by the detention of shares of the portfolio of control firms equal to 35,3 %. The same report is confirmed for a period of 5 years when the return appropriate to the shares recently listed amounts to 15,7 % against 66,4 % for the sample of control firms. Over a more recent period, Ritter & Welch (2002) calculated an under-performance between 32 % and 34 % for IPOs achieved between 1980 and 2000, with the exception of the sub-period 1990-1994 when it is only 7 %.
On a sample of 169 IPOs achieved in Korea between 1985 and 1989, Kim, Krinsky, & Lee (1995) highlighted an outperformance of the initial issues. The authors imputed this result to the age of the company and to the under-pricing. on the French market, Sentis (2001) asserted the absence of negative performances over all the period of observation of its study. However, he indicates that the calculated stock market performance increases constantly over two years then begins to bend from the third year. These results were confirmed by Degeorge & Derrien (2001).

Research Methodology:

The medium and long-term stock market performance of a share recently listed, for a period of observation T, is estimated by its abnormal return over the same period. She is often analysed according to the methodology of events study, that is we try to study the impact of an event on the object of the study. The first stage consists in calculating the abnormal returns of the concerned shares. The abnormal return of a share is defined as being the difference between its "observed" return and its "theoretical" or expected return. There are several methodological approaches to estimate the expected returns. Barber & Lyon (1997) classify the approaches of evaluation of the expected return in three categories: reference portfolio, control firms and market models such as the Capital Asset Pricing Model (CAPM). In our study, we will analyse the medium and long-term return of the shares listed by using two benchmarks: control firms and the MASI (Moroccan all shares indexed) market index.
When the abnormal returns were measured for every share every date t, it is necessary to aggregate them from now on for the whole studied period. For Barber and Lyon (1997), two main methods are usually used. The first method is an additive method, which consists in calculating the ("Cumulative Abnormal Returns", CAR). The second is a multiplicative method (" Buy and Hold Abnormal Return ", BHAR).
The abnormal returns of the company i, adjusted by the returns of its benchmark, for month event t (AR i, t), are calculated according to the following equation:

$$AR_{i,t} = R_{i,t} - E(R_{i,t})$$

With:

$R_{i,t}$: Return of the company i during the month event t;

$E(R_{i,t})$: Return of its benchmark during month event t.

The calculation of the medium and long-term abnormal returns, according to Cumulative Abnormal Returns method, passes by the following stages:

- The abnormal returns average of a portfolio of N companies for month event t (AR t), are the arithmetic average of the abnormal returns calculated so:

$$AR_t = \frac{1}{N}\sum_{i=1}^{N} AR_t$$

With:

N: number of IPOs.

- The cumulative abnormal returns (CAR) of a portfolio of N companies during the period T (CAR_T), are defined as the sum of the average abnormal returns (AR t). They are calculated by the following equation:

$$CAR_T = \sum_{t=1}^{T} AR_t$$

With:

T: period of observation of abnormal returns.

Statistical tests of significance will be calculated, to check if the abnormal returns are significantly different from zero.

To also interpret the abnormal performance of firms over the entire study period, we take from Ritter (1991) his " wealth relative " indicator:

$$\mathrm{WR_{CAR}} = \frac{1 + \left(\frac{1}{\mathrm{N}} \sum_{\mathrm{i=1}}^{\mathrm{N}} \sum_{\mathrm{t=1}}^{\mathrm{T}} \mathrm{R_{i,t}}\right)}{1 + \left(\frac{1}{\mathrm{N}} \sum_{\mathrm{i=1}}^{\mathrm{N}} \sum_{\mathrm{t=1}}^{\mathrm{T}} \mathrm{E(R_{i,t})}\right)}$$

A wealth relative indicator (WR) greater than 1 is synonymous with outperformance of the companies surveyed relative to their benchmarks. On the other hand, when such an indicator is less than 1, newly listed shares are considered underperforming.

The calculation of medium and long-term stock market performance, using Buy and Hold Abnormal Return method, involves the following steps:

- The “Buy and Hold Abnormal Return” of the firm i adjusted to the benchmark returns during the period T, ($BHAR_{i,T}$), are defined as follows:

$$BHAR_{i,T} = \prod_{t=1}^{T} (1 + R_{i,t}) - \prod_{t=1}^{T} (1 + E(R_{i,t}))$$

The average of the abnormal "buy and hold" returns of a portfolio of N companies during the period T ($BHAR_T$), is defined by the following relation:

$$BHAR_T = \frac{1}{N} \sum_{i=1}^{N} BHAR_{i,T}$$

Statistical tests of significance will be calculated, to check if the abnormal returns are significantly different from zero.

We also refer to the indicator of " wealth relative " (WR BHAR), defined as:

$$\mathrm{WR_{BHAR}} = \frac{\left(\frac{1}{\mathrm{N}} \sum_{\mathrm{i=1}}^{\mathrm{N}} \prod_{\mathrm{t=1}}^{\mathrm{T}} (1 + \mathrm{R_{i,t}})\right)}{\left(\frac{1}{\mathrm{N}} \sum_{\mathrm{i=1}}^{\mathrm{N}} \prod_{\mathrm{t=1}}^{\mathrm{T}} (1 + \mathrm{E(R_{i,t})}\right)}$$

Sample and data

In order to determine our sample, it was considered important to define listed family businesses by reference to the criteria advanced by the literature.

According to Allouche & Amann (1998), the definitions of the family business are diverse and numerous. Three main types have been retained in the past:

1) Some authors use as a criterion the degree of ownership of capital by the family (Barnes & Hershon, 1976; Barry, 1975; Lansberg, Perrow, & Rogolsky, 1988);
2) For others, it is the degree of involvement of the family in management that is the determining factor (Beckhard & Dyer, 1983; Davis, 1983; Dyer, 1986);
3) The intention to transmit the company to the next generation is sometimes used as a criterion (Handler, 1989; Hugron, 1983).

Given that the criterion of degree of involvement of the family in the management has been verified only on a proportion of companies in our population, and the difficulty of verifying the intention to transmit the company to the next generation, it suits in our study, to adopt a quantitative criterion based on the notion of capital control by the family.

The population responding to the criterion of ownership control (before listing) counted initially 24 listed family companies. To select the family businesses in our sample, we eliminated businesses for which a number of missing data prevented the analysis from being completed. Given these restrictions, the final sample includes 20 family-owned companies listed on the stock market over the period 1999-2011. Our investigation ended in 2011 for the following two main reasons:

- The study period chosen is five years after the IPO;
- No family business registered an IPO transaction between 2012 and 2018.

Data on family businesses listed on the Casablanca Stock market comes mainly from the database and reports published by the Casablanca Stock Exchange. The missing data were completed by consulting the official website of the listed family companies and the website of the Moroccan Capital Market Authority. This website is in principle dedicated to all information relating to companies listed as well as subsequent operations to the IPO, such as capital increases, public exchange offers, etc. We used various media and publications to build our sample and to collect the maximum amount of information needed for the study. Briefing notes, annual financial statements and stock market data were our main sources of data.

Empirical results

The results reported in the tables below highlight negative abnormal returns. In line with the conclusions of the literature (Barber & Lyon, 1997; Ritter, 1991), we observe a great disparity in the average performance of the shares of family businesses listed varying considerably between -0.153 (for cumulative abnormal returns adjusted to market returns, CARm) and -0.287 (for buy and hold abnormal returns adjusted to market returns, BHARm) over a 36-month horizon.
Regarding the average performance of 60-month-old family-owned shares, we can observe a larger disparity ranging widely between -0.049 (for cumulative abnormal returns adjusted to market returns, CARm) to -0.397 (for buy and hold abnormal returns adjusted to the returns of the control firm, BHARc).
actually, we deduce that over the 36 months following the IPO, the shares of family businesses perform on average (median) lower performance in comparison with market returns and those of control firms. Regarding the significance of the calculated returns, only the buy and hold abnormal returns adjusted to the market returns (BHARm) are significant at 5% according to the Student's test. Using the Wilcoxon rank test, abnormal returns are significant at 10% level. Adjusting this result with the interpretation of the " wealth relative (WR)" ratio, an investor who bought at the offer price and held the shares for the first three listing years would reach approximately 0.757 of his initial investment. As for the performance over a 60-month horizon after listing, the family businesses listed had, on average (median), a lower performance than the market and control companies. Regarding the significance of the calculated returns, only buy and hold abnormal returns adjusted to market returns (BHARm) are significant at the 10% level. By matching this result with the interpretation of the " wealth relative (WR)" ratio, an investor who bought at the offer price and held the shares during the five-year listing period would reach approximately 0.844 of its initial bids.

The disparity of the results obtained has often been emphasized in the literature. Ritter (1991) argues that the choice of the reference portfolio, the length of the observation window on which the performance is measured, as well as the criterion of selection of the sample may explain the divergence of the results. Barber & Lyon (1997) note that the methods of assessing expected returns and the method of calculating performance significantly affect results.

Table 1: Abnormal returns in the medium and long term on the 36th month after listing

Methods	N	WR	Average	Student's test	Median	Wilcoxon rank test
CARc	20	0,853	-0,164	-0,971	-0,123	-1,120
CARm	20	0,862	-0,153	-1,403	-0,152	-1,195
BHARc	20	0,790	-0,238	-1,251	-0,079	-0,933
BHARm	20	0,757	-0,287**	-2,228	-0,183*	-1,941

*** significant at the 1% level; ** significant at the 5% level; * significant at the 10% level

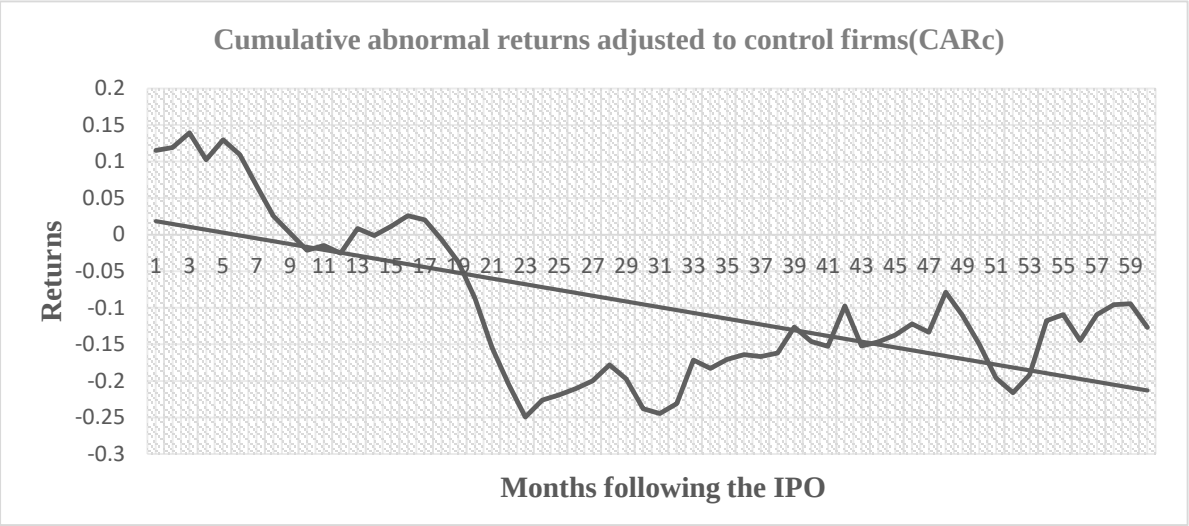
Table 2: Abnormal returns in the medium and long term the 60th month after listing

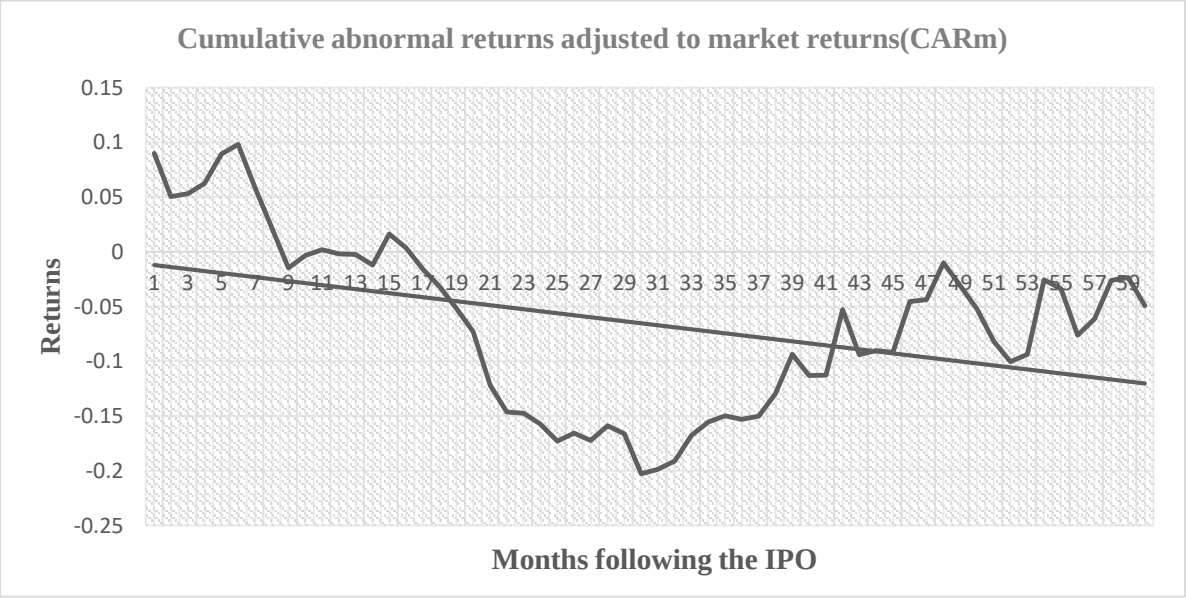
Methods	N	WR	Average	Student's test	Median	Wilcoxon rank test
CARc	20	0,888	-0,127	-0,569	0,100	-0,187
CARm	20	0,953	-0,049	-0,366	-0,127	-0,597
BHARc	20	0,696	-0,397	-1,257	0,087	-0,224
BHARm	20	0,844	-0,168*	-1,732	-0,336*	-1,717

*** significant at the 1% level; ** significant at the 5% level; * significant at the 10% level

The analysis of the evolution of the abnormal returns in the medium and long term over the period of the study shows that the date of the decline of the abnormal monthly returns differs according to the method used, as well as the benchmark used. Indeed, the monthly abnormal returns begin to fall from the 10th month, by calculating the cumulative abnormal returns adjusted to the control firms (CARc = -0.022, WR = 0.980), increase slightly the 15th month, then fall on all the period from the 18th month. While cumulative abnormal returns adjusted to market returns begin to deteriorate from the 9th month (CARm = -0.015, WR = 0.986). This leads to the conclusion that after a 10-month listing period, family-owned companies have a disappointing performance compared to the already-listed companies and the market index.

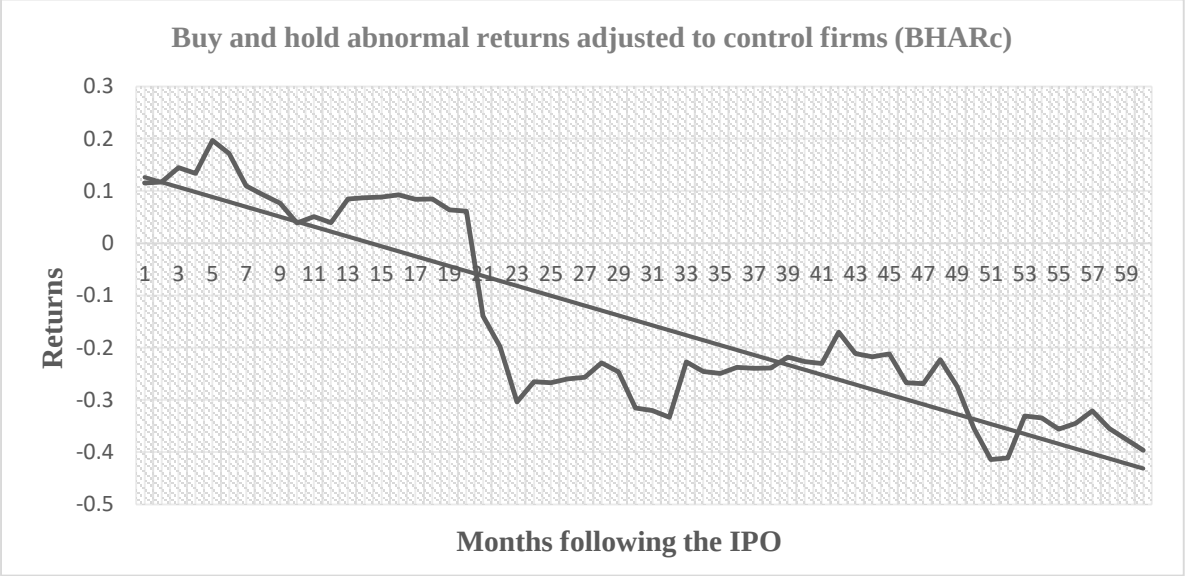
Figure 1: Evolution of cumulative abnormal returns

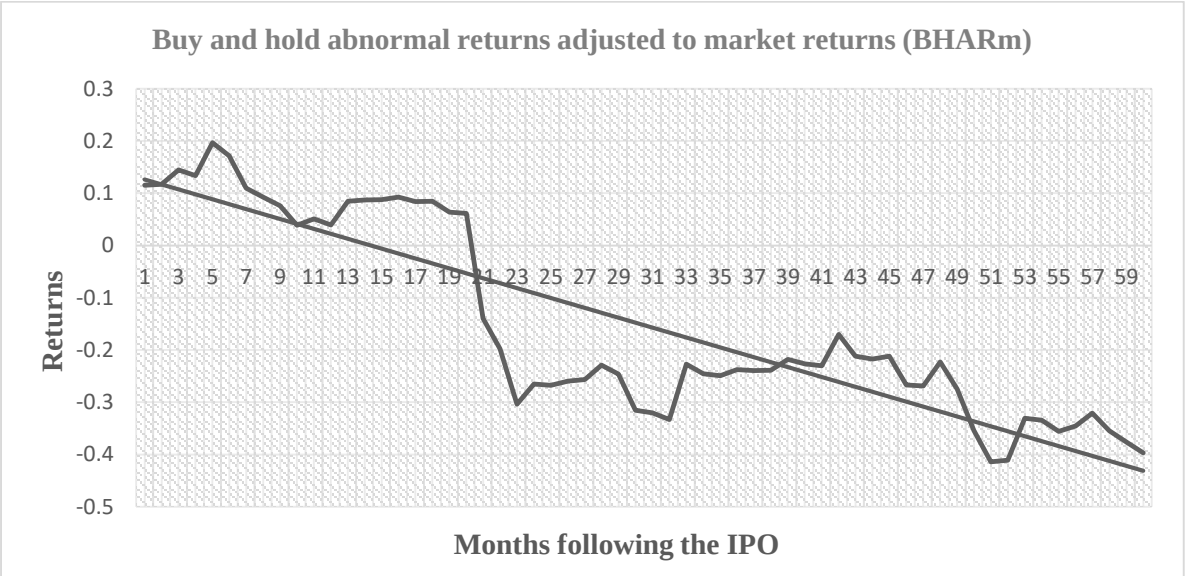




For buy and hold abnormal returns, the decline starts from the 21st month for the adjusted returns to the control firms (BHARc = -0.140, WR = 0.876). For buy and hold abnormal returns adjusted to market returns, degradation begins in the 19th month up to the 60th month (BHARm = -0.007, WR = 0.994). although in periods of decline, not all abnormal returns were significant, wealth relative ratios (WR) are all less than 1; which corroborates the significance of the average of abnormal returns.

Figure 2: Evolution of buy and hold abnormal returns





Compared with the literature, our results corroborate most previous studies. In the United States, Ritter (1991) reports that the average return of newly listed companies on the New York Security Exchange "NYSE" is 34% in the third year of listing versus 62% for the control sample over the same period (underperformance of -28% on average). Still on the American market, Loughran & Ritter (1995) reveal an underperformance of -26.9% using a control sample. In the Canadian market, Jog (1997) confirms the results found on the American market. It reports abnormal returns of -35.15% and -43.66% respectively compared to two benchmarks. In another study of the Canadian market, Kooli & Suret (2004) confirm the results of Jog (1997) and report a less severe underperformance of -9.39% to -19.96% over the three years following date of the IPO. Finally, on the Tunisian stock market, Ben Naceur & Ghanem (2001) found that the underperformance over 3 years for 16 IPOs is -22% compared to the Tunindex index.

Concluding

This study analyses the medium and long-term stock market performance of family-owned companies listed on the stock market. These performances are measured using the cumulative abnormal returns (CAR) method and "buy and hold abnormal returns" (BHAR) using two benchmarks: the Moroccan All-Indexes (MASI) and a sample of firms matched on the basis of size measured by market capitalization. Over a period of three years following the IPO, medium- and long-term returns are in the order of -16.4% and -15.3%, while over a period of five years after listing, returns in the medium and long term are in the order of -12.7% and -4.9% by calculating respectively the cumulative abnormal returns adjusted to the control companies (CARc) and the cumulative abnormal returns adjusted to the market returns (CARm). In addition, the medium and long-term returns reached the respective values of -23.8% and -28.7% three years after listing and -39.7% and -16.8% five years after listing by the application of the buy and hold abnormal returns adjusted to control firms (BHARc) and buy and hold abnormal returns adjusted to market returns (BHARm). In the continuity of this research it could be interesting to explain such a performance evolution based on the different explanations proposed by the literature.

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