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Mergers and Acquisitions in Brazilian Higher Education Companies: Effect on Share Value

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Research Article

Abstract

Purpose: *The objective of this study is to detect and measure the occurrence of extraordinary returns to the shareholders of private higher education companies, listed on the Brazilian stock market, B3, when mergers and acquisitions occur.*

Methods: *This study uses the Event Study technique on process data from 46 merger and acquisition events, that occurred in the period of 2007- 2015, involving the three main Brazilian private higher education companies, and applies the Z-statistic to test the accumulated standard abnormal returns.*

Results: *Based on the results, it is possible to affirm that the presence of abnormal returns was not detected after merger and acquisition events. Events of this nature do not promote changes in the short-term value of the company, in the cases of large and publicly traded Brazilian private higher education companies.*

Implications: *The announcement of a merger or acquisition process has wide repercussions in the media and attracts the attention of investors that aims to gain abnormal earnings from anticipated post-merger value creation. This study showed that the potential gain in value does not always occur or is reflected in the stock prices of the companies involved, in the short term.*

Keywords: Mergers and Acquisitions; Abnormal Returns; Private Higher Education, Brazil.

1. Introduction

The present work, with its empirical approach and focus on financial returns, is inserted in the broad and complex context of Brazilian private higher education, accounting for more than 87 % of undergraduate vacancies offered in the country, according to INEP (2016).

According to law no. 9,394/1996 (BRASIL, 1996), known as the Law of Guidelines and Bases of National Education (Lei de Diretrizes e Bases da Educação Nacional – LDB, in Portuguese), higher education is the highest level of Brazilian education and can be offered by universities, polytechnic institutes, colleges, or other institutions that award an academic degree or professional diploma, whether public, private, or non-profit organizations.
Regarding the most recent period in Brazilian history, according to Chaves (2015), one of the milestones in the setting of Higher Education Institutions – HEI (Instituições de Ensino Superior – IES, in Portuguese) is due to the university reform of 1968, from the process of federalization of higher educational institutions, and the student movement.
Franca (2017) highlights LDB as another disruptive point in the evolutionary process of Brazilian higher education institutions. The law presented itself as a reordering of the entire educational system and opened a set of innovations to make access to higher education less elitist. Faria, Silva and Almeida (2016) points out that the law makes the structures of institutions that offer higher education more flexible, fostering diversification and culminating in an expansionist movement of the private sphere. Corbucci, Kubota and Meira (2016) adds, noting that the process of economic opening that Brazil experienced in the 1990s was also an accelerating factor for the conjuncture of private higher education, largely due to subsidies and financial incentives offered to institutions.
The Higher Education Census, according to INEP (2016) confirms that private higher education institutions have made substantial progress, when compared to those of public higher education, after the Brazilian economic opening and the promulgation of the LDB. In 1996, the number of private higher education institutions represented 76.5 % of the total higher education institutions in Brazil. In 2015, this number represented 87.5 %, out of a total of 2,368 HEI across the Federation. Investment possibilities, greater ease of entry into a booming market, and the application of consolidated management practices have allowed private higher education companies to leverage their numbers. As a result, the market began to observe the first processes of mergers and acquisitions (M&A) of this sector, as Pissinato and Coutinho (2019) points out.
The processes of transfer of ownership involving higher education institutions, since 2007 has become professional, becoming prominent in the financial market, with the entry of Anhanguera Educacional Participações S.A. on the stock market, with the first Initial Public Offering – IPO of the sector. In the same year, the organization acquired the total share capital of the Centro Universitário Ibero-Americano – UNIBERO for about R$16 million (CVM, 2008).
Chalencon and Mayrhofer (2018) point out that the main objective of such transactions is the creation of shareholder wealth, which is aimed at considering intermediate strategic purposes, such as the search for new markets, product portfolio diversification, and economic gains of scale, often due to the difficulty of growth only by internal opportunities. Verticalization with a guarantee of raw materials increased debt capacity, and offsetting tax losses are also motivating elements.
The announcement of a merger or acquisition process, either in the private higher education sector or any other relevant sector in the national economies, has wide repercussions in the media and attracts the attention of investors. M&A literature and economic theories present that if a firm

does not practice mergers and acquisitions shareholders will not experience positive abnormal earnings from anticipated value creation post-merger, according to Jallow, Masazing, and Basit (2017). Shareholders and companies can be benefitted from the mergers, where it increases market share and market power, provides economies of scale and scope, and lowers the cost of capital, according to Adnan and Hussain (2016). Naturally, the occurrence of these processes leads to changes in the investment portfolios of institutional, qualified, international, and professional investors in general. Changes in portfolios occur for various reasons, such as the existence of rules of composition, the natural re-composition of passive portfolios (which follow benchmarks) and the opportunity for extraordinary gains that an M&A can generate. Silva, Kayo, and Nardi (2016), for example, compiled studies that evaluated the occurrence of abnormal returns offered by share price variations of companies that engaged in M&A processes. The results of the studies reveal that, on average, M&A processes created value for the acquirers' shareholders, but in a sample of 249 processes, there was a high dispersion of results, including several negative or null returns.

It is into this scenario that this work fits, looking at the processes of mergers and acquisitions with private higher education companies, more specifically in the potential generation of abnormal returns for the shareholders of the acquiring companies. The period 2007-2015 was chosen because it was fertile in the M&A process in this economic sector and concentrated the largest number of events of this type. This work analyzes the effects of M&A announcements involving three large-sized, publicly traded, privately held higher education companies listed on the Brazilian stock market, B3 (Kroton Educacional S.A., Estácio Participações S.A., and Ser Educacional S.A.).

It is hoped that this work will help answer the following research question: Did the announcement of the merger and acquisition process of higher education companies between 2007 and 2015, generate abnormal returns for the shareholders of the acquiring companies? For this purpose, the present study used the Event Study technique, following the methodology proposed by Seiler (2004).

2. Literature Review

The focus of this review was the articles developed in Brazil on M&A processes, their motivations, impacts, and consequences. The approach was only domestic (Brazil), for empirical works on M&A. The review presented here included 11 works by Brazilian researchers: Rocha, Iootty and Ferraz (2001); Tanure and Cançado (2005); Brito, Batistella and Famá (2005); Camargos and Barbosa (2005); Patrocínio, Kayo and Kimura (2007); Zilber, Fischmann and Pikieny (2008); Camargos and Barbosa (2009); Sarfati and Shmartzbaum (2013); Leitão and Galli (2014); Camargos and Camargos (2015); e, Hoffmann, Vieira and Menezes (2017).

One of the great concerns of the contemporary manager is the definition of a strategy that is consistent with business positioning while providing direction and flexibility. According to Tsiligiris (2018), the definition of the strategy involves the decision-making process regarding the organization's competitive positioning about the market, evidencing its competitive advantage. Safavi and Hakanson (2018) point out that a good strategy must combine value, position,

integration, and adaptation of activities to be able to bring competitiveness, sustainability, and offer a unique combination of value to the client.
M&A processes are the result of intense inter-organizational competition fostered by the capitalist model, whose need for productivity gains and capital accumulation intensifies the pressure to open new markets and defeat competitors. This scenario was enhanced by the professionalization of the financial market and the organization of capital in the form of corporations, which boosted M&A transactions in quantity and financial values, according to Bianconi and Tan (2019). Boling, Mayo, and Helms (2017) point out that it is assumed that synergies through the general increase in economies of scale and cost reduction increase in firm value. Jensen and Ruback (1983), in a pioneering study, found that such transactions, by using specific resources, provide shareholders with economic value that would not be achieved through other strategies.
Considering the Brazilian economic scenario and its particularities regarding the M&A processes, Rocha, Iootty, and Ferraz (2001) focused on the companies that were acquired and their accounting and financial indicators after the occurrence of the M&A process. The authors present a scenario of skepticism on the part of investors and managers of the acquired companies in describing the development of M&A processes that occurred in the 1990s. From the study, which analyzed information from 120 companies in the Brazilian industry, it can be concluded that there was no increase in profitability in the companies acquired within two years after the acquisition. Another conclusion was that the market share held by the companies before their acquisition was unchanged within the same two-year period after their acquisition, and yet there was no statistical evidence to support changes in the investment profile of the acquired companies.
Tanure and Cançado (2005) developed a survey with 106 Brazilian companies, as well as seven case studies, with data from 1995 to 2001, to demonstrate the overview of M&A operations in Brazil and the impact of cultural aspects on the development of such operations. The results indicated that the three main reasons for acquisitions in Brazil in that period were: increased holdings, benefits associated with geographic location, and penetration in new markets, respectively. This also evidenced, in the authors' view, that the executives of the acquiring companies had a greater focus on market requirements. The companies that sold their stakes, in the majority were stimulated by financial and transactional issues. Another conclusion indicated in the study was that there is a hybrid management profile in Brazil regarding M&A processes. Possibly influenced by M&A cultural aspects and specificities, there is a combination of rationalization of stages by the acquiring companies and, concomitantly, there are aspects that border on the informality of those that were acquired.
Brito, Batistella, and Famá (2005) investigated the possible occurrence of abnormal returns to shareholders of acquiring companies in M&A processes in the banking sector, using the Event Study technique. The processes from 1997 to 2003 were selected, involving the three financial institutions with the largest volumes of assets. The results showed that the shareholders of these institutions did not obtain abnormal returns from M&A.
Patrocínio, Kayo, and Kimura (2007) also conducted research on M&A and the occurrence of abnormal returns to shareholders of the companies involved, however with an analysis of the relationship between intangibility and value creation in M&A events. Two samples were

examined, one from intangible-intensive companies and one from tangible-intensive companies. The results showed differences in the economic value generation for the two company samples, revealing that acquisitions focused on incorporating intangible assets of the target companies generated more value for the acquiring company.
Through in-depth interviews with auto parts executives, Zilber, Fischmann, and Pikieny (2008) found that product portfolio diversification and market share were the main drivers of strategic decision-makers in deciding on an M&A process. It was also noted that companies that had strategies focused on medium and long-term horizons, tended to acquire companies with high market share (competitors). But companies that had short-term planning only focused the goal of their M&A processes on high-profit, high-return companies.
In a subsequent study to assess whether operating synergies resulting from M&A processes generated value for their shareholders, Camargos and Barbosa (2009) evaluated the creation of value in 76 companies that underwent M&A processes between 1996 and 2004. The authors used three variables to measure value creation: Tobin's Q, the ratio between market value and book value, and the company's value. The synergies were analyzed using four variables: EBIT margin, EBITDA generation, gross cash generation, and net revenue evolution. The authors concluded that there were positive and significant changes in the value creation variables, that is, in the wealth of their shareholders. Also, they concluded that the M&As studied resulted in operating synergies for the companies and that the acquiring companies had greater potential in value creation and synergies when compared to acquired companies.
Some articles explored the cultural and social aspects of the synergies generated by inorganic growth transactions. An example is a work of Sarfati and Shmartzbaum (2013), in which they analyzed the M&A processes of Kroton Educacional S.A., Estácio Participações S.A., and Anhanguera Educacional S.A., and concluded that there were gains in operating synergies that justified the growth strategy of M&A.
Leitão and Galli (2014) studied the influence of M&A events on the share volatilities of the companies involved. The processes that occurred between 2003 and 2007 as listed on the Brazilian stock market were examined. The study considered two reference dates (event date), the announcement date, and the completion date of the M&A process. The results showed that there were no statistically significant changes in share volatility.
Hoffmann, Vieira, and Menezes (2017) studied the behavior of efficiency indicators for 154 M&A processes in Brazil and observed that there is no differentiation between these companies and those that opted for the organic growth strategy. However, they obtained a remarkably interesting result, which indicated that companies that already had know-how in M&A processes had remarkably superior performance, suggesting that experience is crucial for identifying and gaining possible synergies when acquiring a company.
A review of the scientific literature on this topic reveals that there is no consensus on the effects of M&A processes on the behavior of share returns of the companies involved. There are also methodological variations that can sometimes make it impossible to compare results obtained in apparently similar studies. In the Brazilian scientific literature, the amount of work produced is still modest and with diverging results, as pointed out by Camargos and Camargos (2015) who

analyzed the published scientific studies between 1994 and 2014 on this topic and concluded that the results are controversial.
Specifically, for the private higher education sector, whose presence of publicly traded companies is relatively recent, the literature review did not reveal studies relating M&A processes to generating abnormal returns on company shares. Only one survey investigated the educational sector, that of Sarfati and Shmartzbaum (2013), and even so the focus of the study was the effectiveness of operational synergies and not the effects on the market of the shares of the companies involved in the mergers and acquisitions processes. Thus, the present study seeks to contribute to filling a gap in this field of research and knowledge. To meet this purpose, the following hypotheses, null and alternate, were tested for each of the educational companies that were involved in M&E processes and were analyzed in this study:
H_0: In the period after the M&A process, there were abnormal returns generated by variations in the company's stock prices.
H_1: In the period after the M&A process, there were no abnormal returns generated by variations in the company's stock prices.

3. Material and Methods

In this study, the Event Study technique was applied to detect the occurrence of abnormal returns offered by share price variations of three publicly traded companies in the education sector, which adopted the strategy of mergers and acquisitions for their growth over the period 2007 to 2015.
After identifying the companies (Kroton Educacional S.A., Estácio Participacoes S.A., and Ser Educacional S.A.), the first step was to identify the dates of the merger and acquisition events promoted by the three companies in the period between Jan 01, 2007, and Dec 31, 2015. Information on these events was obtained through the disclosure of "Material Fact" information, published as a requirement of the CVM. Subsequently, the historical series of share prices for this nine-year interval made available by B3, the Brazilian stock market, were collected.
Once the data had been collected, the methodology proposed by Camargos and Barbosa (2003) was used in the present work. The paper of Camargos and Barbosa (2003) provides details of how the "Event Study" technique should be applied. The steps of the "Event Study" to detect the occurrence of abnormal returns are as follows:

- Identification of the date of the event: the date adopted in this study was the disclosure of the information by the CVM through the Material Fact newsletter, a date also disclosed by the companies themselves, by the Investor Relations Board.
- Definition of the time window: a time window of five working days (one calendar week) immediately after the event date was adopted.
- Defining the base period: 60 day immediately before the date of the event was adopted to calculate the normal return on the shares.
- Case selection: The selected cases or events consist of disclosures of Material Facts referring to the merger or acquisition processes undertaken by the three selected companies, which took place in the nine years from 2007 to 2015.

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- Share return calculation: the historical series of share returns of the three companies were obtained from the historical series of quotations. The logarithmic return calculated according to equation 1 was adopted.

$$R_t = Ln\left(\frac{P_t}{P_{t-1}}\right) \quad (1)$$

Where:
Rt = Return of shares between dates t and t-1;
Pt = Share price on date t;
Pt – 1 = Share price on date t-1.

- Calculation of Standard Abnormal Returns (SAR): The first step is to find the coefficients (α e β) of the share return regression relative to the market portfolio return. In this study, the Ibovespa portfolio was adopted as a proxy for the market portfolio. Abnormal returns are obtained by the difference between the actual return and the expected return. Finally, SAR is the abnormal return adjusted by the standard deviation. The equations 2, 3, 4, and 5 are as follows.

$$\bar{R}_{j,t} = \alpha_j + \beta_j R_M \quad (2)$$

Where:
$\bar{R}_{j,t}$ = Expected return of action j;
α = Linear coefficient of the regression line of Rj as a function of RM;
β = Angular coefficient of the regression line of Rj as a function of RM;
RM = Return of the market portfolio.

$$AR_{j,t} = R_{j,t} - \bar{R}_{j,t} \quad (3)$$
$$AR_{j,t} = R_{j,t} - \alpha_j - \beta_j R_M \quad (4)$$

Where:
ARj,t = Abnormal return of action j in period t;
Rj,t = Return occurring from action j in period t;
-αj-βjRM = Expected return of action j in period t, based on regression with RM;
RM = Return of the market portfolio.

$$SAR_{j,t} = \frac{AR_{j,t}}{\sqrt{S^2 AR_{j,t}}} \quad (5)$$

Where:
SARjt = Standard abnormal return of action j in period t;
ARj,t = Abnormal return of action j in period t;
S2ARj,t = Variance of abnormal returns of action j in period t.

- Calculation of accumulated standard abnormal returns (ASAR): In this step, we obtain for each action the accumulated abnormal return over the entire temporal window.
- Determination of Statistical Significance: For this purpose, the first step is to obtain the Z-statistic of the sum value of the SAR, called SSAR. Based on the Z statistic, and the p-value at the 95 % level of statistical significance, the null hypothesis of the occurrence of abnormal returns is tested. Equation 6 is as follows.

$$Z_t = \frac{SSAR_t}{\sqrt{\sum_{j=1}^{N} \frac{D_j - 2}{D_j - 4}}} \qquad (6)$$

Where:
Zt = Z statistic for each window day;
SSARt = Sum of standard abnormal returns in period t;
Dj = Number of days calculated (base period + window);
N = Number of companies.
For ASAR, it is necessary to adjust the Z statistic calculation (equation 7):

$$Z(a)_t = \left(\frac{1}{\sqrt{N}}\right) \frac{\sum_{T_1}^{T_2} SAR_{j,t}}{(T_2 - T_1 + 1)(\frac{D_j - 2}{D_j - 4})} \qquad (7)$$

Where:
Z(a)t = Z statistic for accumulated returns in period t;
SARj,t = Standard abnormal return of action j in period t;
Dj = Number of days calculated (base period + window);
T1 = First day of period t;
T2 = Last day of period t;
N = Number of companies.

4. Results and Discussion

During the study period, there were 20 merger and acquisition events involving Kroton Educacional S.A., 21 events involving Estácio Participações S.A. and five events involving Ser Educacional S.A.

Table 1 shows the descriptive statistics of the SAR (standard abnormal returns) obtained for the company Kroton Educacional S.A. for each of the 20 events. The first column contains the dates of the events, the announcements of which were published as required by the CVM, and the other columns represent respectively, the mean, median, standard deviation, maximum, and minimum values of SAR, and the number of observations.

For each event, several observations were obtained, which in almost all cases is 66 days. However, for the event on December 18, 2007, the number of observations was limited to 46 days, as the company had recently gone public when it announced the acquisition.

Mention should be made of the standard deviation value of 2.16156 % (much higher than for all other events) and the minimum value of -16.67344 % (much lower than for all other events) achieved by standard abnormal returns for the acquisition operation that occurred on April 23, 2013. This operation was the largest acquisition made by Kroton Educacional S.A. in the period in question. The company acquired was Anhanguera S.A., which, due to its size and market share, generated huge repercussions in the media and the stock market.

Table 1 - Descriptive statistics of the SAR of shares of the Kroton Educacional S.A.

Date	Mean	Median	Standard Deviation	Maximum	Minimum	Obs
18/09/2007	0,007093	-0,111690	0,706718	2,880409	-1,262182	46
11/12/2007	-0,153150	-0,108210	0,484412	0,739239	-1,656681	66
12/12/2007	-0,154900	-0,108210	0,485508	0,739239	-1,656682	66
14/12/2007	-0,154640	-0,108210	0,480949	0,739239	-1,656682	66
18/01/2008	-0,184810	-0,154490	0,551913	1,161982	-1,656688	66
24/01/2008	-0,217940	-0,168380	0,574286	1,161982	-1,656687	66
28/03/2008	-0,062470	-0,021460	0,631937	1,294954	-1,409456	66
07/04/2008	-0,056750	0,037481	0,612560	1,294954	-1,409457	66
14/04/2008	0,018026	0,059972	0,653639	1,664877	-1,409458	66
29/04/2008	0,102911	0,109457	0,625854	1,664877	-1,409454	66
13/06/2008	0,096016	0,067428	0,527785	1,664877	-1,216114	66
26/08/2008	-0,170120	-0,092740	0,613753	1,129576	-2,874705	66
12/03/2010	0,041894	0,074686	0,400559	1,362806	-1,066760	66
14/07/2011	-0,003460	-0,007590	0,338242	0,913471	-1,178978	66
19/07/2011	0,004624	-0,007550	0,335708	0,913471	-1,178977	66
21/09/2011	-0,001380	-0,020650	0,530062	1,76035	-1,390466	66
16/12/2011	-0,009050	-0,009190	0,363171	0,894757	-1,135218	66
27/04/2012	0,139776	0,132463	0,352964	0,848141	-0,561799	66
29/05/2012	0,107236	0,088724	0,418933	1,217345	-1,046205	66
23/04/2013	-0,134780	0,089484	2,116156	1,809265	-16,67344	66

Table 2 shows the descriptive statistics of the SAR (standard abnormal returns) obtained for the company Estácio Participações S.A. for each of the 21 events. The first column contains the dates of the events, the announcements of which were published as required by the CVM, and the other columns represent respectively, the mean, median, standard deviation, maximum, and minimum values of SAR, and the number of observations.

For each event, several observations were obtained, which in almost all cases is 66 days. However, for the event on August 20, 2007, the number of observations was limited to 21 days, as the company had recently gone public when it announced the acquisition.

Mention should be made of the standard deviation value of 3.805499 % (much higher than for all other events) and the minimum value of -30.67100 % (much lower than for all other events) achieved by the standard abnormal returns for the acquisition operation that occurred on June 17, 2013. This operation was the largest acquisition made by Estácio Participações S.A. in the period in question. The company acquired was Uniseb S.A., a major player in the Brazilian educational market, which generated huge repercussions in the media and the stock market.

Table 3 shows the descriptive statistics of the SAR (standard abnormal returns) obtained for the company Ser Educacional S.A. for each of the five events. The first column contains the dates of the events, the announcements of which were published as required by the CVM, and the other columns represent respectively, the mean, median, standard deviation, maximum, and minimum values of SAR, and the number of observations.

Table 2 - Descriptive statistics of the SAR of shares of the Estácio Participações S.A.

Date	Mean	Median	Standard Deviation	Maximum	Minimum	Obs
20/08/2007	0,003204	-0,111445	1,076728	2,745021	-2,277419	21
29/02/2008	-0,204021	-0,139965	0,698527	2,108701	-2,022320	66
04/06/2008	0,338221	0,141005	1,253387	8,698366	-1,365627	66
14/08/2008	0,069722	-0,004256	0,579248	1,566117	-1,216484	66
07/11/2008	-0,039002	-0,074383	1,425964	5,240539	-4,892574	66
18/10/2010	0,081220	-0,003662	0,761136	3,115313	-2,521496	66
22/02/2011	-0,014211	-0,050572	0,520737	1,348696	-1,510502	66
07/04/2011	-0,047210	-0,112524	0,591031	2,062962	-1,133481	66
12/04/2011	-0,025000	-0,091797	0,594521	2,062966	-1,133481	66
06/02/2012	0,023402	0,024881	0,572953	1,631669	-1,380261	66
28/05/2012	0,128134	0,112158	0,482743	0,883220	-1,411948	66
26/06/2012	0,149817	0,123088	0,456072	0,883226	-1,173586	66
01/08/2012	0,054409	0,092845	0,451079	0,858260	-1,173539	66
05/04/2013	0,070703	0,148974	0,448239	0,871733	-1,124430	66
17/06/2013	-0,407320	0,080735	3,805499	1,199632	-30,67100	66
12/09/2013	-0,003022	-0,021499	0,493747	1,085036	-1,304929	66
01/07/2014	0,102920	0,097077	0,419177	1,471795	-0,786846	66
07/08/2014	0,037311	0,024191	0,552935	1,471795	-1,879343	66
18/11/2014	0,030023	-0,030860	0,625427	2,917268	-1,219166	66
07/07/2015	-0,018003	0,037965	0,695821	1,492579	-1,626683	66
17/11/2015	0,119901	0,095621	0,830141	2,628285	-2,110402	66

Table 3 shows that the first acquisition event of Ser Educacional S.A. also had a smaller number of observations (a total of 43), since the company went public in less than 66 days, the time window adopted for the other events.

Table 3 - Descriptive statistics of the SAR of shares of the Ser Educacional S.A.

Date	Mean	Median	Standard Deviation	Maximum	Minimum	Obs
23/12/2013	0,276743	0,259411	0,455440	1,645050	-0,512712	43
21/07/2014	0,120331	0,100806	0,581178	1,380912	-1,045120	66
15/12/2014	0,136118	0,122122	0,770031	3,778322	-1,542700	66
26/03/2015	-0,352093	0,010431	1,950264	3,719263	-6,971609	66
30/06/2015	0,092306	0,094927	0,853276	2,043416	-1,980374	66

Mention should be made of the standard deviation value of 1.950264 % (higher than all other events) and the minimum value of -6.971609 % (lower than all other events) achieved by the standard abnormal returns for the acquisition operation that occurred on March 26, 2015.

Table 4 shows the values of the ASAR (accumulated standard abnormal returns) obtained in the events of the company Kroton Educacional S.A., their respective Z statistics, and the indication of rejection or non-rejection of the null hypothesis of occurrence of abnormal returns in the time window of each event.

Table 4 - Validation of the hypothesis of significant ASAR (Kroton Educacional S.A.)

Date	ASAR	Z Statistic	No significant ASAR (5% level)
18/09/2007	0,326	0,0034	Hypothesis not rejected
11/12/2007	-10,108	-0,0753	Hypothesis not rejected
12/12/2007	-10,223	-0,0762	Hypothesis not rejected
14/12/2007	-10,206	-0,0761	Hypothesis not rejected
18/01/2008	-12,197	-0,0909	Hypothesis not rejected
24/01/2008	-14,384	-0,1072	Hypothesis not rejected
28/03/2008	-4,123	-0,0307	Hypothesis not rejected
07/04/2008	-3,745	-0,0279	Hypothesis not rejected
14/04/2008	1,190	0,0089	Hypothesis not rejected
29/04/2008	6,792	0,0506	Hypothesis not rejected
13/06/2008	6,337	0,0472	Hypothesis not rejected
26/08/2008	-11,228	-0,0837	Hypothesis not rejected
12/03/2010	2,765	0,0206	Hypothesis not rejected
14/07/2011	-0,229	-0,0017	Hypothesis not rejected
19/07/2011	0,305	0,0023	Hypothesis not rejected
21/09/2011	-0,092	-0,0007	Hypothesis not rejected
16/12/2011	-0,597	-0,0045	Hypothesis not rejected
27/04/2012	9,225	0,0687	Hypothesis not rejected
29/05/2012	7,078	0,0527	Hypothesis not rejected
23/04/2013	-8,896	-0,0663	Hypothesis not rejected

Table 4 shows that for all events, no abnormal returns were detected, considering the 5 % statistical significance level offered by the share price variations of Kroton Educacional S.A., in the period (time window) considered.

Table 5 shows the values of the accumulated standard abnormal returns (ASAR), caused by the variations in share prices that occurred in the events of mergers and acquisitions of Kroton Educacional SA, their respective Z statistics, and the indication of the rejection or non-rejection of the null hypothesis of occurrence of abnormal returns in the time window of each event.

The data shown in Table 5 show that for all events, no abnormal returns were detected, considering the 5 % statistical significance level offered by the share price variations of Estácio Participações S.A., in the period (time window) considered.

Table 6 shows the values of the accumulated standard abnormal returns (ASAR), caused by the variations in share prices that occurred in the events of mergers and acquisitions of Ser Educacional SA, their respective Z statistics, and the indication of rejection or non-rejection of the null hypothesis of occurrence of abnormal returns in the time window of each event.

The data shown in Table 6 show that for all events, no abnormal returns were detected, considering the 5 % statistical significance level offered by the share price variations of the company Ser Educacional S.A., in the period (time window) considered.

Table 5 - Validation of the hypothesis of significant ASAR (Estácio Participações S.A.)

Date	ASAR	Z Statistic	No significant ASAR (5% level)
20/08/2007	0,068	0,1318	Hypothesis not rejected
29/02/2008	-13,451	0,0592	Hypothesis not rejected
04/06/2008	22,323	0,0670	Hypothesis not rejected
14/08/2008	4,597	-0,1733	Hypothesis not rejected
07/11/2008	-2,542	0,0454	Hypothesis not rejected
18/10/2010	5,362	0,0015	Hypothesis not rejected
22/02/2011	-0,898	-0,1002	Hypothesis not rejected
07/04/2011	-3,079	0,1663	Hypothesis not rejected
12/04/2011	-1,656	0,0343	Hypothesis not rejected
06/02/2012	1,546	-0,0189	Hypothesis not rejected
28/05/2012	8,457	0,0400	Hypothesis not rejected
26/06/2012	9,886	-0,0067	Hypothesis not rejected
01/08/2012	3,593	-0,0229	Hypothesis not rejected
05/04/2013	4,665	-0,0123	Hypothesis not rejected
17/06/2013	-26,838	0,0115	Hypothesis not rejected
12/09/2013	-0,196	0,0630	Hypothesis not rejected
01/07/2014	6,792	0,0737	Hypothesis not rejected
07/08/2014	2,460	0,0268	Hypothesis not rejected
18/11/2014	1,980	0,0348	Hypothesis not rejected
07/07/2015	-1,197	-0,2000	Hypothesis not rejected
17/11/2015	7,917	-0,0015	Hypothesis not rejected

Table 6 - Validation of the hypothesis of significant ASAR (Ser Educacional S.A.)

Date	ASAR	Z Statistic	No significant ASAR (5% level)
23/12/2013	11,899	0,1318	Hypothesis not rejected
21/07/2014	7,941	0,0592	Hypothesis not rejected
15/12/2014	8,986	0,0670	Hypothesis not rejected
26/03/2015	-23,262	-0,1733	Hypothesis not rejected
30/06/2015	6,094	0,0454	Hypothesis not rejected

In summary, none of the measurements made were able to detect the occurrence of abnormal returns with share price variations of the three companies when mergers and acquisitions occurred.

5. Conclusions

Given the results obtained in the present study, it is possible to affirm that the presence of abnormal returns promoted by the variations in the share prices of companies of the private higher education sector was not detected after M&A events from 2007 to 2015. The main conclusion that the results allow being made, considering the methodology employed and the events, companies, and data considered, is that events of this nature do not promote changes in the short-term value of the company, in the cases of large and publicly traded companies in the Brazilian private higher education sector.

The results and conclusions obtained here are aligned, in a certain way, with those of Rocha, Iootty, and Ferraz (2001), who do not find an increase in the profitability of companies that have gone through the M&A processes; with those of Brito, Batistella, and Famá (2005), who did not detect abnormal returns offered by the variations in stock prices of companies involved in M&A processes; and those of Leitão and Galli (2014) who did not detect a significant change in the volatility of the shares of the companies involved in the M&A process in the subsequent period. All these studies showed evidence that M&A processes do not affect the performance (by different performance approaches) of the companies involved. In this same sense, the results and conclusions obtained here are not in line with those obtained in the studies by Camargos and Barbosa (2009) and Sarfati and Shmartzbaun (2013), which identified gains in economic value and synergies in the aftermath of M&A processes.

By opting for inorganic growth, companies primarily aim for medium to long-term gains through operational synergies and increased market share. This study did not intend to characterize the growth strategy through M&A processes as viable or not, since it focused on short-term share price changes, without considering medium and long-term corporate performance indicators. The aim was to detect immediate changes in value, as a function of market expectations and their process of disseminating and evaluating information, which may ultimately represent opportunities for extraordinary gains from short and very short-term shares.

6. Direction for further studies

Given that this study aimed only to detect possible occurrences of extraordinary returns in negotiations with the actions of educational companies involved in M&A processes, but without worrying about identifying the reasons for the results obtained, future work may raise and explore the reasons for the results obtained here.

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