CORPORATE EVENTS PERFORMANCE AND CORPORATE GOVERNANCE: BRAZILIAN EVIDENCE

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ABSTRACT
There is evidence suggesting that firms that engage in corporate events performed worse than similar firms that did not. Two main reasons for such findings rely on issues related to abnormal return estimations (imperfect matching) and potential agency problem cost. This study explores a model that consider both issues. Specifically, we expand Bessembinder and Zhang (2013) method to calculate abnormal returns by including corporate governance measures. Brazilian stock exchange has peculiar features related to corporate governance. In order to attract international investors and give them more protection, it created different levels of corporate governance where companies can engage. Thus, we can verify the effect of corporate governance in Brazilian company's returns by analyzing the difference at the listing levels in the stock exchange from event and control companies. Moreover, companies can be emit stocks in American stock exchange via American Depositary Receive (ADRs) where they are subject to stricter regulations (e.g. SEC). In detail, we created dummies to evaluate event firm's performance when they have higher, similar and lower corporate governance than their peers. For this analyze, we used data from Brazil stock exchange from 2004 to 2014 about firms that passed through IPO, M&A or SEO. The descriptive statistics suggest systematics differences between event and control firm characteristics that are known to affect return such as liquidity, volatility, and size. After controlling for differences in firms characteristics, the regressions suggest that event firms have similar short-run returns to their peers. Additionally, we verified that governance reveals itself important to evaluate some event firms' performance (M&A).

Keywords: Corporate Event performance; Corporate Governance; Firms Characteristics.

Thematic area: Mercados Financeiro, de Crédito e de Capitais.

1. INTRODUCTION

There is ample evidence suggesting that firms that engage in corporate events performed at least worse than similar firms that did not (Ritter, 1991; Loughran & Ritter, 1995; Spiess & Affleck-Graves, 1995; Betton, Ecko & Thorbum, 2008; Fu, Huang, & Lin, 2012; Marufuji, 2013). Two main reasons for such findings rely on issues related to abnormal return estimations (imperfect matching) and potential agency problem cost. While Bessembinder and Zhang (2013 - BZ hereafter) proposed an alternative approach that mitigate

imperfect matching downsides, there are still potential agency problem costs that affect corporate event performance and might explain conventional mixed evidence[1]. Therefore, the present study adds to corporate events literature by exploiting a model that consider both issues. Specifically, we approach this problem by including corporate governance measures at BZ method to calculate abnormal returns.

Corporate governance are firms' mechanisms and structures that identify rights and responsibilities among corporate agents aiming to assure stakeholder's returns on their investment (Shleifer & Vishny, 1997). These mechanisms are important firm's characteristics since it reduces the likelihood of corporate misconduct, fraud (Chhaochharia & Grinstein, 2007) and other agency costs, thus, affecting firm's valuation. For example, firms with less investor's protection could be more susceptible to empire-building and wealth transfer problems where managers seek to maximize their own utility instead of firm's profit (Ashbaugh-Skaife et al., 2006). Therefore, when considering the reasons why one firm may engage in corporate events (and its performance) it is important to evaluate firm's corporate governance.

Specifically, a large amount of effort has been given to investigate the relationship between mergers and acquisitions (M&A) and corporate governance (Gompers et al., 2003; Sundaram, 2004; Van Hoorn & Van Hoorn, 2011). Overall, their results suggest one negative relationship between shareholders protection and number of takeovers and mixed evidence about the effect of corporate governance at firms' abnormal return.

However, less attention has been given to study corporate governance and other corporate events such as Initial Public Offers (IPOs) and Seasoned Equity Offers (SEOs), which are also ways where corporate agents could benefit from asymmetric information (Francis et al., 2010).[2] For instance, shareholders could use the firm to expropriate minority holders or creditor's wealth. Forecasting it, creditors would demand better mechanisms to protect them from shareholder's perverse behavior (better corporate governance levels) or more covenants.

Following this reasoning, we could expect that firms with higher corporate governance at event date should display higher returns than firms with less investor's protection due to less agency problem and more transparency. That is, we expect that event firms with better (similar) corporate governance than (to) their peers might have non-negative abnormal returns compared to control firms (*Main Hypothesis*) (Lima et al., 2014). We test this hypothesize using data from Brazilian IPOs, SEOs and M&A from 2004 to 2014.[3]

Different from BZ, the focus of the study is in the short-run events performance since it more reliable than long-run approaches (Kothari, 2004).[4] There are 265 event firms in the sample and 265 control-firms. Specifically, our sample is made by monthly data from 92 SEOs, 68 M&A and 105 IPOs and their respective control firms. Event data were collected

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[1] We did not approach other types of events such as delisting since we are concern about studying the post-event performance.

[2] However, a growing literature is trying to understand the relationship between corporate governance and IPO underpricing (Francis et al., 2010; Mnif, 2009). This is not our case since we are not approaching first weeks transactions at IPOs. We can cite Fan, Wong and Zhang (2007) which approach post-IPO performance and corporate governance at China. However their work focus on also partially privatized firms

[3] Particularly, we focus on acquirers return. Specifically, mergers and acquisions from cross-border or cash merger or acquisition of majority stake since they are some of types of transaction known to have positive returns Loughran and Vijh (1997); Asquith et al. (1990); Sundaram (2004)

[4] We also argue that if market is efficient, then, corporate events would be quickly priced. Thus a short-run analysis would already verify possible abnormal return

via BMF&Bovespa and Capital IQ sites. Accounting data were available at *Economática* software.

The control sample is made by firms in the same industry and similar book to market near the event date that did not engage in any corporate event in a 1 year window similar to (Bessembinder & Zhang, 2013). First, we match for industry ID using *Economática* software. Then, we looked for firms with similar (closest) book-to-market relative to event firm that had not engaged in any corporate event in one-year window. Matching through book-to-market is extensively used by corporate event studies (BZ, 2013) and, as stated by Pagano, Panetta and Zingales (1998), is the main factor affecting the probability of an IPO in the same industry.

The main idea of BZ method is to consider the variation of firm's characteristics over time when estimating abnormal returns. As the paper states: "firms characteristics, including size and book-to-market, may change after corporate events, implying that pairs of firms that are well-matched in terms of selected characteristics at a point in time may not remain so". Moreover, through descriptive analysis, they find that event firms (IPO, SEO and M&A) also differ significantly in terms of illiquidity, idiosyncratic volatility, return momentum and market beta, which are characteristic known to affect returns. By their methodology, the abnormal return is estimate as the intercept of the regression of the difference of these firms characteristics on the difference in the realized buy-and-hold returns. The intercept tells us what is the average difference between firms returns when they have the same characteristics.

However, by not considering the difference in corporate governance, their model fails to discern between firms where managers may have more probability to engage in bad projects or not. Thus, evaluating the corporate governance effect would have information relevance to both literature and investors by 1) extending corporate governance and corporate event literature and 2) studying investment strategies based on these events and firms' characteristics.

Studying the effect at governance is even more important in countries where there is less investor protection or regulatory institutions may not be effective, such as Brazil (La Porta et al., 1997). In this sense, Brazilian stock exchange has some important feature related to corporate governance. In order to attract international investors and give more protection to them, it created different levels of corporate governance where companies can engage. Thus, we can verify the effect of corporate governance in Brazilian companies by analyzing the difference at the listing levels in the stock exchange. Moreover, we also used as proxy for governance level whether firms have stocks listed at American Stock exchange via American Depositary Receive (ADRs). We expect these firms to have better governance due to stricter regulations (e.g. SOX or SEC) (Silva et al., 2014).

We start by showing that event firms systematically differ in terms of risk, liquidity, volatility, market value, return momentum and corporate governance from control firms which are variables known to affect return (Ang et al., 2006; Amihud, 2002; Jegadeesh & Titman; 1993). Hence, before inferring anything about event firms performance, one should consider these different characteristics. For example, one univariate analyze about the buy-and-hold return (Table 01, Panel A) would suggest that, on average, IPO firms underperform control firms. However, further investigation show that after controlling for the difference at firm's characteristics, the event abnormal return is not statistically significant. Particularly, our results suggest that systematic difference at firms' performance might be due to difference in firms characteristics, such as volatility and *retornum momentum*.

Ours results confirm the hypothesis that, event firms with better (similar) corporate governance event firms display non-negative abnormal returns relative to their peers. This result is consistent with Stehle et al. (2000), Camargo and Barbosa (2007) and Bessembinder and Zhang (2013). Specifically, we find that firms have similar performance despite the

difference at governance listing levels at Brazil stock exchange. However, having stocks listed at American Stock exchange via American Depositary Receive (ADRs) reveals important to evaluate some event firms' performance (M&A). This result goes hand and hand with, Van Hoorn and Van Hoorn (2011) and Fan, Wong and Zhang (2007) findings that corporate governance have non-negative impact at firm performance.

The present paper contribute to corporate governance and corporate event literature. It helps understanding about the corporate events performance and the recurrently mixed evidence listed in empirical papers by considering features related to firm's performance, e.g. governance. For example, differently from Marufuji (2013), we find that IPOs performance are not significantly worse than their benchmarks.

The rest of the paper is divided as following: Chapter 2 display literature findings about corporate event and the importance of corporate governance at firms. In Chapter 3 we discuss the methodology used and our sample. Chapter 4 we discuss descriptive statistics and regressions results and finally, in Chapter 5 we make some final considerations.

2. LITERATURE DISCUSSION

Corporate events are important events since they affect the financial and organizational structure of the company (Loughran & Vijh, 1997; Sundaram, 2004). For example, the acquisition of Ambev by Interbrew, which create one of the strongest and biggest drink company in the world: InBev. Strong ideologies of Ambev owners remodeled InBev philosophy to a more meritocratic and competitive environment, changing all organizational structure and increasing firm's results. On the other hand, Mercedes-Benz/Chrysler or AOL/Time Warner mergers show us that not all mergers result in benefits since, sometimes, corporate culture shock, limited synergies, overpayment or high expectation might be so drastic that it could reduce firm's value.

Trying to maximize stakeholder's value is one of the reasons why firms pass through those events. However, empirical literature display mixed evidences about the *ex post* event performance of the firms in the long run scenario. Table 01 summarize some of the studies and their findings.

Generally, firms try to engage in projects (IPOs SEOs or M&A in our case) that bring positive value to the firm (net present value > 0). Under that scenario, we could expect that firms would only engage in projects that give a minimum return to the stakeholders, particularly to the shareholders (Tirole, 2006). Otherwise, shareholders could easily invest in different projects that have higher return.

However, it is not easy to find which the minimum required return is. Some studies try to estimate them through models such as WACC or CAPM (Cochrane, 2001; Davis & Pointon, 1996). We use one reasonable hypothesis that the stakeholders could be winning at least the return of one similar investment.

Table 1

Summary Findings in the related literature

Table 01 display selected studies around the world of stock performance of event firms after IPOs, SEOs and M&A. It reports the sample, sample period, size, type of event, holding period and evidences. Superscript *** indicates that the mean difference between variables is statistically significant at the 1% level. Observation is the combined total observations in the test.

Authors	Sample	Sample period	Sample size	Deal Type	Holding Period	BHARs
			Panel A: IPOs			
Ritter (1991)	U.S.	1875-1984	1.526	All	3 years	-27%***
Loughran and Ritter (1995)	U.S.	1970-1990	4.753	All	5 years	-46%***
Stehle et al. (2000)	Germany	1960-1992	187	All	3 years	-5,04%
Stehle et al. (2000)	Germany	1960-1992	187	All	3 years	1,54%
Kooli e Suret (2001)	Canada	1991-1998	445	All	5 years	-15%
Drobetz et al. (2005)	Swiss	1983-2000	109	All	5 years	-26%
			Panel B: SEOs			
Loughran and Ritter (1995)	U.S.	1970-1990	3702	All	5 years	-63%***
Spiess and Affleck-Graves (1995)	U.S.	1975-1989	1247	All	3 years	-23%***
Stehle et al. (2000)	Germany	1960-1992	584	All	3 years	-9,01%
Stehle et al. (2000)	Germany	1960-1992	584	All	3 years	-3,17%
Fu, Huang, and Lin (2012)	U.S.	1980-2002	5062	All	3 years	-12.6%***
Fu, Huang, and Lin (2012)	U.S.	2003-2010	1.583	All	3 years	-4.65%***
			Panel C: M&A			
Loughran and Vijh (1997)	U.S.	1970-1989	788	All	5 years	-7%
Loughran and Vijh (1997)	U.S.	1970-1989	196	Cash	5 years	18.5%
Loughran and Vijh (1997)	U.S.	1970-1989	385	Stock	5 years	-24.2%***
Loughran and Vijh (1997)	U.S.	1970-1989	207	Mixed	5 years	-9.6%
Rau and Vermaelen (1998)	U.S.	1980-1991	2823	Mergers	3 years	-4%***
Betton, Eckbo, and Thorburn (2008)	U.S.	1980-2003	11483	All	5 years	-21.9%***

Specifically, the return of a company from the same industry and with similar characteristics (e.g. price-to-book) at the event date (Spiess & Affleck-Graves, 1995). In that sense, one investor would only invest in the company if he/she believes that the expected return from the event firm is at least as good as the alternative similar firm. In order to get to better inferences, we control for firm's differences in characteristics known to be correlated with firm's returns such as risk, size, volatility, *retornum momentum*, liquidity and price-to-book.

Different from previous researches (Bessembinder & Zhang, 2013) we are concern about the effect of corporate governance levels at event firm's performance in order to evaluate corporate event performances. Corporate governance are firms mechanism and structures that identify rights and responsibilities among corporate agents (managers, shareholders, auditors, creditors, and other stakeholders) (Chhaochharia & Grinstein, 2007) in order to pursue firms' objectives. These mechanisms attempt to align stakeholders' interests and range from monitoring manager actions until modifying firms' policies and corporate decisions aiming to reduce the likelihood of corporate misconduct, fraud (Chhaochharia & Grinstein, 2007) and other agency costs, thus, affecting firm's valuation.

Gompers, Ishii and Metrick (2003) wrote one important paper to address the relationship of corporate governance and equity value empirically[5]. Through the G index (corporate governance index) they try to quantify firms level of corporate governance and relate it to firms' equity prices and return. Their results suggest one positive relationship between shareholder rights protection and equity value. Since their work, many other researchers try to understand the effect of corporate governance and firms' performance[6]. In general, many of the studies (results) rely on the effect of corporate governance in restricting managerial private benefits. The basic idea behind those studies is that higher governance structures would guarantee managers good behavior represented as the lower probability to engage in bad projects (empire-building hypothesis) and extract private benefits from others stakeholders (wealth transfer hypothesis). Indeed, these hypotheses are directly linked with corporate events such as M&As, IPOs and SEOs since we can think about them as *projects* where stakeholders might have *different* interests (Tirole, 2006).

Specifically, a large amount of effort has been given to investigate the relationship between mergers and acquisitions (M&A) and corporate governance. For example, Gompers et al. (2003) addressed a *negative* relationship between shareholder protection and number of acquisitions. Additionally, Sundaram (2004) discuss the relationship between M&A and corporate governance (board structures) along history and the bargain power of target companies' boards and takeovers. Furthermore, Van Hoorn and Van Hoorn (2011) studied the relationship between board structure (size, independence, shares hold by board and CEO duality) and M&A performance. [7] Focusing on short-window analysis (less than 10 days), they found no significant relationship between 'size' and 'shares hold by board' and abnormal returns; In contrast, they find positive relationship between board independence and abnormal returns and negative relationship between CEO duality and abnormal returns. [8]

However, less attention has been given to study corporate governance and other corporate events such as Initial Public Offers[9] (IPOs) and Seasoned Equity Offers (SEOs), which are also ways where corporate agents could benefit from asymmetric information (Francis et al., 2010)

Fan, Wong and Zhang (2007) studied the relationship between corporate governance and post-IPO performance by evaluating partially privatized firms in China. First, they compared the performance of firms where CEO had political connection with those where CEO had not. Their result suggest that firms without political connection outperformed firms with political connection by almost 18% based on a 3-year post-IPO stock return. Additionally, their finds suggest that firms with political connection have more probability to have bureaucrats at the board of directors rather than directors with relevant professional background, which can be understood as poorer governance. Fan, Wong and Zhang (2007) results are important to highlight the importance of better corporate governance to investors' perspective and to study corporate events performance.

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[5] We also highlight papers such as Galdi (2008), Lombardo and Pagano (2000), Lambert, Leuz and Verrecchia (2007) and Parigini et al. (2014) that somehow model the relationship between agency costs, corporate governance and(or) asset pricing.

[6] For deeper discussion see Shleifer and Vishny (1997), Brown and Caylor (2006), Lambert et al. (2007), Brown and Caylor (2006) or Masulis et al. (2007).

[7] CEO duality is when CEO and the Chairman at the board of directors are the same person. The authors expected that separating their functions should give more efficiency to M&A decisions.

[8] Only for one period analyzed at p-value>10. Their results do hold for all sample analyze.

[9] A growing literature is trying to understand the relationship between corporate governance and IPO underpricing (Francis et al., 2010; Mnif, 2009). We can cite Fan, Wong and Zhang (2007) which approach post-IPO performance and corporate governance at China. However their work focus on also partially privatized firms

In a different perspective, Krishnan et al. (2011) studied the relationship between venture capital (VC) reputation, corporate governance and post-IPO performance. Their find suggest that more reputable VCs are more involved in post-IPO corporate governance of their portfolios and this involvement is positive correlated with post-IPO firm performance. Their results suggest that investors are also concern about corporate governance dimension when they invest their money. Align to their findings, Lima et al. (2014) found that Brazilian firms with better levels of corporate governance displayed better economic performance.

Therefore, these papers, in some extend, suggest that corporate events performance and corporate governance are an issue that should be studied since it affects investment decisions and firms performance.

3. METHODOLOGY
3.1 Sample

The sample is made by monthly data from listed firms in the *BMF&Bovespa*, a Brazilian stock Exchange, between the years of 2004 and 2014 that passed through one of the event studied (IPOs, SEOs and M&A) and their control firms. The IPOs and SEOs events were collected from BMF&Bovespa site. The M&A from Capital IQ site. [10] The variables (Price-to-book, Beta, Liquity, Volatility, Size and Return) were collected from *Economática* software. The return momentum variable was calculated as the aggregate monthly return from t-8 to t-2 of t. The corporate governance variable was extracted from BMF&Bovespa site as well.

The sample has 265 event firms and 265 control firms. Of the event firms, 105 are firms that passed through IPOs, 92 through SEOs and 68 through M&A. The samples are formed by firms that passed through one corporate event only, in a 1-year window. The reason is to try to isolate the event effect and evaluate it to one short-run investor.

The control sample is made by firms of similar industry and similar book-to-market near the event date. The choice of firms of similar industry is due to unobserved characteristics that may be correlated to the industry sector. Matching through book-to-market is extensively used by corporate event studies (Bessembinder & Zhang, 2013). In fact, Pagano, Panetta and Zingales (1998) argue that market-to-book ratio at firms in the same industry are the main factor affecting the probability of an IPO. Thus, matching by this characteristic might ensure similar characteristics between event and control firm.

To create our control sample we use matching procedures similar to Lyon, Barber and Tsai (1999), Eckbo, Masulis, and Norli (2000) and Bessembinder and Zhang (2013). First, we match firms by their industry ID using *Economática 20 industry* classification. Then, we looked for firms with book to market similar (closest) to event firm that had not engaged in any corporate event in one-year window. To find event peers, We computed the difference of all book-to-market at the event date per industry at the event date. Then, we looked for the smaller difference. After that, we checked if the potential control firm did not engaged in any of the events in a one-year window before and after the event. If positive, then we look for the next smaller difference and repeat the process until we form the control sample. Others event studies usually find event peers by also matching by firm size (Bessembinder & Zhang, 2013), however, imposing more restrictions to the match process might reduce the number of control firms. Under light of that, the present study matched only by industry and book-to-market.

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[10] We focus on acquirer return. Specifically, mergers and acquisions from cross-border or cash merger or acquisition of majority stake since they are some of types of transaction known to be have positive returns Loughran and Vijh (1997); Asquith et al. (1990); Sundaram (2004)

Matching through book-to-market is extensively used by corporate event studies (Bessembinder & Zhang, 2013) and, as stated by Pagano, Panetta and Zingales (1998), is the main factor affecting the probability of an IPO in the same industry. Many studies match also by industry or combine book-to-market and size. For example, Ritter (1991) created his control firm using securities that were at some extend similar in size and industry to event firms. Spiess and Affleck-Graves (1995) matched via industry and size. On the other hand, Lougharam and Ritter (1995) matched first via size and them combining with other features. Some studies also use market index to compare with event performance (Drobetz et al., 2005; Marufuji, 2013).

3.2 Corporate Governance Measures

One common limitation to corporate governance studies is how it is measured. Specially because as (Bebchuk, Cohen, & Ferrell, 2009; Brown & Caylor, 2006) verified, different corporate governance dimensions may have different effects at firms' return or firms' characteristics. In this sense, Brazilian stock exchange has one important feature related to corporate governance. In order to attract international investors and give more protection to them, it created different levels of corporate governance where companies can engage. Thus, we can verify the effect of corporate governance in Brazilian companies by analyzing the difference at the listing levels in the stock exchange.

Briefly, Brazilian stock exchange has several listing levels where firms can engage, namely '*Tradicional, Nível 1, Nível 2, Novo Mercado, Bovespa Mais and Bovespa Mais Nível 2'*. Specifically, in this study we are interested only in the first four since the last two are designed to lower capital capitalization.

In order to one firm be list in one of these levels, the company needs to fulfill some corporate governance requirements, for example minimum free float levels, administrative board independence, shares types and others. It is important to highlight that one firm cannot be listed in higher levels of governance (i.e. *Novo Mercado > Nível 2 > Nível 1 > Tradicional*) if it doesn't satisfy lower listing levels. Thus, by studying the difference between firms listing levels is possible to understand the relationship between higher corporate governance mechanisms and firm's performance. Appendix A details more about listing levels requirements.

Particularly, we approach this problem by including dummies to measure firm at different levels of corporate governance. Under the papers' principal assumption, we expect that if corporate governance is positively correlated with performance, then, event firms with better corporate governance than their peers (D_Gov^+ = 1) should perform at least as good as event firms with similar governance than their peers. On the other hand, firms with poorer corporate governance than their peers (D_Gov^- = 1) might perform worse than event firms with similar corporate governance level as control firms. We strengthen this expectation through a standard logic: At event date, market will evaluate firm's capacity to generate cash flows. In that point, we should expect that firms with less agency problem (better governance) should have higher stock demand, increasing prices and, consequently, 'bringing' higher returns to shareholders. This is consistent with Fan, Wong and Zhang (2007) findings.

The model intercept tells us what is the average difference in return of event firm and control firm when firms they are similar in terms of risk, liquidity, volatility, price-to-book, *return momentum*, size and corporate governance. Under our principal hypothesis, we should expect that event firms with similar corporate governance to control firms to have non-negative abnormal returns.

Brazilian companies can also emit American Depositary Receive (ADRs), which are equivalent to company stocks but are negotiated in United States of America and are subject

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to SEC regulation. Consequently, we expect these firms to have better governance due to stricter regulations (Silva et al., 2014). Therefore, we also used the fact that the firms have ADRs or not as proxy for governance level.

Analogously to our previous metric, we created dummies to indicate whether event firm has ADR but his/her peer doesn't D_ADR^+; and to indicate whether event firm doesn't have ADR but his/her peer has (D_ADR^-). Consequently, the intercept is going to tell us what the performance of event firms with similar governance practices and other characteristics to their peers is.

The paper measure of corporate governance, though reasonable and intuitive, is not perfect, since companies with similar corporate governance levels can have different corporate governance structures. For example, our corporate governance measure is constant over time, which is not entirely true for companies. However, we argue that it is entire feasible for short-run analysis such as ours.

3.3 Model

We calculated the difference in monthly realized returns of the firms using the strategy buy-and-hold-abnormal returns (BHAR). We expect that the difference in returns to be function of the difference on the firms characteristics. In that sense, we estimated (equation 1) the difference of the realized returns on the difference of the characteristics via pooled[11]. This estimation procedure gives equal weight to each event and, as BZ (2013) states, is pertinent 'if the amount of capital committed to the trading strategy varies proportionate to the number of events that occur' .Our interest relies at the model intercept, which tells us what is the average return difference when event firm and control firm have similar characteristics. As stated by BZ (2013), this regression-based method offers some advantages over normal BHAR method. First, it allows variation in firm characteristics, other than those used to select control firms. Second, it permit variation across time in firm characteristics. Third, by estimating return as the difference in monthly log returns we guarantee better statistical properties due to distributions features.

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\begin{aligned}
\Delta R_{i,t+1} ={}& \alpha + \beta_1\, D_{Gov^+} + \beta_2\, D_{Gov^-} + \beta_3\left(\Delta\frac{Price}{Book}_{i,t}\right) + \beta_4\big(\Delta liquidity_{i,t}\big) + \beta_5\big(\Delta Volatility_{i,t}\big) \\
&+ \beta_6\big(\Delta Rmomentum_{i,t}\big) + \beta_7\big(\Delta Beta_{i,t}\big) + \beta_8\big(\Delta Size_{i,t}\big) + \beta_9\, D_{ADR^+} \\
&+ \beta_{10}\, D_{ADR^-} + \varepsilon_{it}
\end{aligned}
$$

The dependent variable $\Delta R_{i,t+1}$ is the difference on the event and control monthly realized return. [1] We regress (t+1) difference in return in (t) characteristic in order to avoid endogeny caused by simultaneity. Beta is estimated as the covariance of the stock with the Market; $\Delta Beta_{i,t}$ is one proxy for the difference of firms' systematic risk levels. $\Delta Size_{i,t}$ is measured as the difference of firms' market value; $\Delta B/P_{i,t}$ is measured as the difference of firms' book-to-market , where book is the last book value (t-1) while market is the current

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[11] The estimation via pooled is similar to cross-section ordinary least squares (Greene, 2003)

stock value (t); liquidity[12] and volatility[13] are measured via *Economática*. We measure Corporate governance through 2 dummies. First, D_Gov^+ is equal 1 if event-company is listed in the higher corporate governance levels than control-firms and 0 otherwise. D_Gov^- equals 1 if event-company is listed in lower corporate governance levels than control-firms and 0 otherwise. By separating in this way, our intercept tells us what the average return difference is between event and control firms with similar characteristics and similar corporate governance level. Therefore, D_Gov^+ coefficient indicates the effect of event better corporate governance at firms' performance. Similarly, the D_Gov^- coefficient indicates the effect of event poorer corporate governance at firms' performance. Analogously to our previous metric, we created dummies to indicate whether event firm has ADR but his/her peer doesn't D_ADR^+; and to indicate whether event firm doesn't have ADR but his/her peer has (D_ADR^-). Consequently, the intercept is going to tell us what the performance of event firms with similar governance practices and other characteristics to their peers is.

We expect that firms with higher risk (beta), return momentum (Jegadeesh & Titman, 1993) and market value have higher returns. On the other hand, firms with higher liquidity (Amihud, 2002), idiosyncratic volatility[14] (Ang et al., 2006) and price to book should have lower returns.

In Chapter 4 we start by analyzing the mean difference between firm's characteristics. Corporate Governance, in this analyze, is measured by two different dimensions. First, governance is measured as the difference in firm's stock exchange list level. It range between -3 to 3 where higher values means that event firm is listed in higher levels than control firms. Second, governance is measured via ADRs dummies. Specifically, as the difference between dummies whether firms (event – control) have stock listed in American stock exchange and range from -1 to 1 meaning, for example, 1 when event firm has ADR but control firm does not. We winsorized our data both at 1 percent.

4. RESULTS
4.1 Descriptive Statistics

Table 02 display our variables 1 year means per event and per sample. Return refers to the monthly average firm return. Beta refers to the covariance of firms return and market performance. Liquidity is a function of stocks volume trade and day's trade .Volatility is measured as the monthly standard deviation of firm stock price. Price-to-book is measured as firm market value divided by last quarter book value. Return Momentum (R.M.) is calculated

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[12] Liquidity = 100*p/P*sqrt(n/N*v/V) where:
p = number of days that the stock was traded;
P = total number of days of the chosen period;
n = number of trades with the stock in the period;
N = number of trades of all stocks in the period;
v = stock's cash volume in the chosen period;
 V = all stock's cash volume in the chosen period.

[13] Volatility = sqrt(Sum((Si – Sm)^2))/n*PPA) where:
Si = nepterian logarithm of (Di/Di-1) where 'Di' is the closed cotation at day 'i'.
Sm = average of de S1, S2, ... Sn.
PPA = Periods per year (example: 252 if using closing prices per working days, 52 if using weekly closing prices)

[14] We use our volatility variable as proxy to idiosyncratic volatility. Since we already included beta in our model, volatility explanation power reflects the non-systematic risk.

as the cumulative return from t-8 to t-2 where t is the month in question. Market value is calculated as the firm price at month t. Governance (Gov.) is measured as the difference between firm's governance listing levels and range from -3 to 3 meaning, for example, 3 when event firm is listed three levels above control firm. Analogous, ADR is measured as the difference between dummies whether firms have stock listed in American stock exchange and range from -1 to 1 meaning, for example, 1 when event firm has ADR but control firm does not. T-statistic is calculated in a two sample unpaired and unequal variance test for the 1 year sample. Superscript *** indicates that the mean difference between variables is statistically significant at the 1% level; ** indicates significance at 5% and * indicates significance at 10%, Observation is the combined total observations in the test.

Table 02

Mean comparison test for the entire window (unpaired unequal)

	Return	Beta	Liquidity	Volatility	Price-to-Book	R.M.	Market value	Gov.	ADR
Panel A: IPO									
Event	-0,007	0,96	0,3665	8,17	15,22	1,1122	1.35e+07	2,5	0,067
Match	0,005	0,78	0,1695	7,499	2,4	1,2994	6093078	1,5	0,047
Difference	-0,1***	0,172	0,19***	0,67***	12,82	-0,18***	7388702***	1***	0,02**
T statistic	-2,2	0,93	5,60	2,34	1,53	-7,0	4,7	21,5	2,23
Observation	2058	1993	2691	2045	2021	1863	2257	2522	2704
Panel B: SEO									
Event	0,006	0,703	0,3415	7,55	2,66	1,1313	1.35e+07	2,3	0,18
Match	0,011	0,71	0,241	7,28	2,45	1,21	1.17e+07	1,5	0,09
Difference	-0,004	-0,007	0,29***	0,27	0,20	-0,08***	1799139	0,8***	0,08***
t statistic	-0,78	-0,01	3,16	0,87	1,20	-3,2	1	16,2	6.15
Observ.	1699	1644	2380	1685	1676	1609	1909	2159	2354
Panel C: M&A									
Event	-0,004	0,78	0,3377	8,733	4,09	1,022402	9313147	2,4	0,07
Match	-0,003	0,57	0,3531	7,255	2,43	1,073	1.29e+07	1,9	0,1
Difference	-0,0022	0,207	-0,01546	1,47***	1,65***	-0,05*	-3632831***	0,5***	-0,02**
t statistic	-0,51	1,45	-0,51	4,19	2,37	-1,82	-3	9,2	-2,18
Observ.	1337	1312	1768	1329	1341	1305	1557	1651	1768

We start the analysis by testing whether samples differ in firms characteristic in the 1 year period after the event. For that, we compared samples' mean (Table 02). The results suggest that firms are systematically different in terms of risk, liquidity, return momentum, market value and corporate governance which are characteristics known to be related to returns.

Our results highlight Bessembinder and Zhang (2013) statement that firms have different characteristics that need to be included when evaluating firms performance. Moreover, it verifies that firms once matched may not remain so. Finally, this first analyze contributes to their paper findings by showing systematically difference in corporate governance levels through all events. One Interesting point to note is that, differently from Gompers et al. (2003) and similarly with Sundaram (2004), our results suggest that event firms have some better corporate governance than their peers.[15] If poor governance are

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[15] We highlight that, similarly to Gompers et al. (2003), we find that some event firms have poorer governance if measured only by ADR proxy.

positively correlated with the probability of one firm engaging in corporate events, then, we should expect that event firms should display poorer governance (on average) than their peers. But that it is not the case here.

As our next step, we estimated the effect of these differences at firm's characteristics on returns' difference. With this method, we can study which part of the performance is explained by firm's characteristics and which could be related to the corporate event.

4.2 Model Analysis

We estimated the model (equation 01) via pooled clustering by firm since standard errors of pooled OLS are incorrect (Schmidheiny, 2014). Our objective is to analyze the post-event performance of firms in a 1-year window (Table 03).
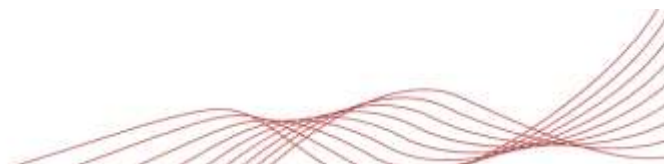
Table 03
Event performance per event

$$\Delta R_{i,t+1} = \alpha + \beta_1 D_{Gov^+} + \beta_2 D_{Gov^-} + \beta_3 \left(\Delta \frac{Price}{Book_{i,t}}\right) + \beta_4 (\Delta liquidity_{i,t}) + \beta_5 (\Delta Volatility_{i,t}) +$$

$$\beta_6 (\Delta Rmomentum_{i,t}) + \beta_7 (\Delta Beta_{i,t}) + \beta_8 (\Delta Size_{i,t}) + \beta_9 D_{ADR^+} + \beta_{10} D_{ADR^-} + \varepsilon_{it} \qquad (1)$$

We estimated equation 1 where the difference in event and control BHAR realized monthy returns is function of the difference of firms characteristic. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1 Δbeta refers to the difference between firm's β. ΔVolatility is equal to the difference between firms volatility. ΔMarketValue is equivalent to the difference between firms Market value in time t. $\Delta Price - to - book$ measures the difference between firms price to book at t.. Δliquidity refers to firms difference in liquidity . D_Gov^+ is 1 if event firm has better corporate governance level than the control firm, 0 otherwise. That is, if event firm is listed at higher levels of corporate governance at Brazilian exchange. Similarly, D_Gov^- is 1 if event firm has poorer governance than the control firm, 0 otherwise. D_ADR^+ is 1 if event firm has ADR but his/her peer doesn't, 0 otherwise; D_ADR^- is 1 when event firm doesn't have ADR but his/her peer has. First column display IPO estimations for the 1 year window. Column 2 to SEO estimations and column 3 to M&A. Chapter 3 explain how each variable is calculated. Robust standard errors is evidenced in parenthesis below each coefficient.

VARIABLES	(1) IPO	(2) SEO	(3) M&A
ΔBeta	-0.0184	-0.0116	-0.000218
	(0.0112)	(0.0175)	(0.0138)
ΔLiquidity	-0.0906	-0.0887	-0.0792
	(0.0704)	(0.0694)	(0.0530)
ΔPrice-to-book	-0.00506	0.0133	-0.0126
	(0.00780)	(0.0171)	(0.00917)
ΔVolatility	-0.0130***	-0.00237	-0.0154***
	(0.00322)	(0.00590)	(0.00347)
ΔSize	0.0360	0.0681*	-0.0128
	(0.0293)	(0.0383)	(0.0262)
ΔReturn Momentum	0.189***	0.207**	0.282***
	(0.0626)	(0.0857)	(0.0700)
D_Gov^+	-0.0764	-0.0481	-0.107
	(0.0729)	(0.111)	(0.0948)
D_Gov^-	0.0675	0.115	-0.0384
	(0.110)	(0.133)	(0.141)
D_ADR^+	-0.195	-0.217	-0.0451
	(0.124)	(0.144)	(0.0807)
D_ADR^-	0.000409	0.148	-0.276**
	(0.115)	(0.204)	(0.135)
Constant	0.0585	0.000696	0.0529
	(0.0537)	(0.0818)	(0.0828)

Observations	497	459	422
R-squared	0.237	0.222	0.348
Prob F > 0	0.000	0.010	0.000

The results are consistent with our main hypothesis suggesting that event firms performance is similar to their peers, after controlling for the difference of firms characteristics. That is, the model tell us that event and control firms with similar characteristics and similar governance listing level have similar returns in a 1-year window after the month of the event (non-negative abnormal returns). Our results also suggest that event firm's performance is significantly lower than their peers when the event firm (acquirer or merged firm) does not have ADR (American Depositary Receive) while their peers have. This result is consistent with Gompers et al. (2003).

The paper main result is that contrary to *conventional findings* that corporate events (especially mergers and acquisitions – see paper table 01) in general underperform control firms, our paper results suggest that these differences at firms performance may be due the differences in firms characteristics such as volatility and *return momentum*. This result is consistent with Stehle et al. (2000), Camargo and Barbosa (2007) and Bessembinder and Zhang (2013).

Furthermore, the paper contributes to the literature by evaluating corporate events performance considering important feature related to corporate governance which are known to direct (or indirect) affect the firms value. Specifically we focus on the effect of corporate governance at event abnormal returns estimations. We measure corporate governance though two dimensions. First, by comparing governance listing levels at Brazilian stock exchange through dummies. Second, by comparing whether firms have American Depositary Receive (ADRs) listed in United States stock exchange, where they are submit to SEC requirements and demands in order to guarantee transparency and protection to investors. Overall, our results suggest that firms similar to their peers have to similar performance.It also suggest that some governance dimensions reveals itself important when evaluating some event performances (M&A).

One interpretation to these results are that the market correctly prices corporate governance, therefore, investors are not able to create investment strategies that beat the market (market efficiency hypothesis – Fama, 1970). This result contrast, for example, with Fan, Wong and Zhang (2007) findings that evidenced positive abnormal returns to post-IPO firms with better corporate governance. One explanation for their results rely on the fact that their sample is made mainly by partially privatized firms. On the other hand, this result goes hand and hand with, Van Hoorn and Van Hoorn (2011) findings that corporate governance have non-negative impact at firm performance

An alternative explanation for our results about the effect of corporate governance at firms performance are due to the limitation of our proxy. Specially the non-variance aspect. Further researchers should be directed in order to better exploit this relationship.

The present paper contribute to corporate governance and corporate event literature. It helps understanding about the corporate events performance and the recurrently mixed evidence listed in empirical papers by considering features related to firm's performance, e.g. governance. For example, differently from Marufuji (2013), we find that IPOs performance are not significantly worse than their benchmarks.

5. FINAL CONSIDERATIONS

This research restudy the corporate event performance by considering features related to imperfect matching and considering important features related to agency costs that might

explain literature mixed findings. Specifically, we extend Bessembinder and Zhang (2013) regress model approach using a sample of 265 Brazilian firms from 2004 and 2014 to study the relationship between corporate event performance and corporate governance.

The match sample was made by firms from same industry (*Economática classification)* and similar (closest) book-to-market near the event date. Findings from mean comparisons confirm that event firms have systematically different characteristics compared to their peers. Additionally, it ratify Bessembinder and Zhang (2013) suspicions that firms once well matched may not remain so (along the time), highlighting the importance of considering time variability to control these effects at firms return.

Regression analysis confirm that after controlling for differences in firms characteristics, the average difference in returns are not significant different from zero independent of event type or corporate governance level. That is, event and control firms with similar characteristics (risk, volatility, liquidity, size, retornum momentum and price to book) have similar performance independent of differences at corporate governance and event type. Our results also suggest that event firm's performance is significantly lower than their peers when the event firm (acquirer or merged firm) does not have ADR (American Depositary Receive) while their peers have. This result is consistent with Gompers et al. (2003).

This study intends to expand and improve event studies debate by considering important new characteristics at firms performance. Further researches should be made in order to expand our understand about those events and their implications not only at firms characteristics, but also at firm's policies and at the economy efficiency as a whole. New characteristics, events and models with better fit should also be object of future researches. Finally, is important to highlight that data quality (such as missing values) and sample size are limitations of the present work.

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APPENDIX A – Brazilian stock exchange listing levels and requirements

Appendix A brings the comparison between Brazilian stock exchange listing levels related to many dimensions (column 1).

	NOVO MERCADO	NÍVEL 2	NÍVEL 1	TRADICIONAL
Characteristics of Shares Issued	Only Ordinary stocks	Allow ON and PN (with additional rights)	Allow ON and PN (following the legislation)	
Minimum percentage of outstanding shares (free float)	Minimum 25% of free float			No rule
Public offerings	Efforts to share dilution			No rule
Sealing the statutory provisions	Limitation of voting less than 5 % of the capital , qualified quorum and " foundation stones " Limitation of voting less than 5 % of the capital , qualified quorum and " foundation stones "		No rule	
Composition of the Board of Directors	5 members minimum, which at least 20% must be independent with unified mandate of until 2 years		3 members minimum (following legislation), with unified mandate of until 2 years	3 members minimum (following legislation)
Prohibition of accumulation of positions	Chairman and chief executive officer or chief executive by the same person (grace period of 3 years from accession)			No rule
Obligation of the Board of Directors	Response to any public offer to purchase company shares		No rule	
Financial Statements	English traduction		Following legislation	
Annual public meeting	Mandatory			Optional
Calendar of corporate events	Mandatory			Optional
Additional disclosure of information	Policy trading securities and code of conduct			No rule
Tag Along granting	100% to ON shares	100% to ON and PN shares	80% to ON shares (following legislation)	
Public offering of shares at least the economic value	Mandatory in case of delisting or segment output		Following legislation	
Adherence to the Market Arbitration Chamber	Mandatory		Optional	

¹ ON = Ordinary stock: Shares with voting right

² PN = Preferential stock: Shares with priority to receive dividends.