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IMPACT OF SELL-SIDE RECCOMENDATION REPORTS ON STOCK RETURNS

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ABSTRACT

Objective: this research aims to investigate the impact of sell-side analysts' reports on stock returns.
Foundation: it is inserted in equity investment analysts research contextualized in the Market Efficiency Theory which defines that in efficient markets the market prices reflects all the relevant information of its intrinsic price.
Method: this investigation is based on the event study methodology, which event date is the publication of the recommendation report. The abnormal return obtained for the event date and the cumulative abnormal return is obtained from the date of publication of the recommendation for 3 days, 1 week, 1 month, and 3 months.
Results: results obtained were consistent in signal with the first hypothesis that abnormal return is positive for each one of the terms from the event date (1 day to 3 months) for recommendation of purchase and strong purchase. On the other hand, the abnormal return was all negative with statistical significance for sale recommendations in favor of the second hypothesis which comprises that the abnormal return is negative for each of the deadlines for the sell recommendations and strong sell.

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Contribution: this work represents a contribution to the knowledge about the participation of the sell-side investment analyst in increasing the efficiency of the Brazilian capital market.

Keywords:
Recommendation report. Equity Research. Abnormal Return. Market Efficiency.

1 INTRODUCTION

The presence of sell-side investment analysts in the capital market is the object of investigation because of the high cost of maintaining the research area by brokerage firms, according to Barber et al. (2001). The sell-side analyst is a specialist in capital market valuation that, according to Brown (2015), analyzes, interprets, and disseminates information through the publication of the investment recommendation report to investors.

For the brokerage firm, the maintenance of investment analysts is justified by the expectation of revenue generation due to the decision to buy or sell assets by investor clients, in response to the report issued by sell-side analysts. However, the theoretical interest is in the role of the sell-side analyst in the presence of other agents such as buy-side investment analysts, who act in the decision-making of investment portfolios of institutional investors, independent investment agents, independent analysts, Investment advisors, among others who use their own analytical tools, in addition to the sell-side analysts' recommendation reports.

In order to understand the role of the sell-side analyst in the presence of the other players in the capital market, this research investigates the impact of the investment recommendation disclosed by investment analysts about publicly traded companies. If the analyst issues a recommendation that is followed by investors, it means that it is providing analytical and forecasting capability that is relevant to investors. In this case the sell-side analyst becomes an important participant in the investment decision process, speeding up the price adjustments by offering new information.

For Jegadeesh and Kim (2006), if the market is perfectly efficient, the presence of analysts in the capital market has no effect on asset prices. If the investment recommendation published by the analyst does not impact the price of the respective asset, the analyst can not be seen as a relevant agent by the investor, allowing the interpretation that investment analysts do not increase market efficiency.

Theoretically, the research is part of the Efficient Market Hypothesis (EMH) of Fama (1970) that defines three efficiency hypotheses: weak, semi-strong and strong. This research consists of the test of the semi-strong hypothesis that all relevant information available for price determination of an asset are embedded in the market price. That is because the analysts use the accounting information to perform the recommendation of a particular stock in addition to the information accessed with the respective company due to its direct access to the company through the investor relations area, the president, its contacts with customers, suppliers and competitors of the company as reported by Brown (2015). The semi-strong efficient market hypothesis will be tested based on the evaluation of the impact of sell-side analysts' recommendations on stock prices.

This topic contributes to the understanding about the process of stock price formation in the Brazilian capital market, the decision to train teams of investment analysts by investment banks and brokerage firms and the decision to structure investment portfolios. This research represents a contribution to the knowledge and understanding of the efficiency of the Brazilian capital market, complementing researches in the international market such as Groysberg et al. (2013), Moshirian, Ng and Wu (2009), Jegadeesh and Kim (2006) among others researches presented throughout this article (section 2.1 Empirical Evidence).

2 THEORETICAL FOUNDATIONS

The line of research on investment analysts is contextualized in the theory of market efficiency that defines that in efficient markets asset prices must reflect all relevant information. Fama (1970) defines that markets are efficient at three different levels of efficiency: weak, semi-strong and strong. The weak level asserts that current prices reflect past price information. The second, the semi-strong efficient hypothesis, assumes that prices reflect not only on past prices but also the current information published about the company. Finally, the strong efficient hypothesis, argues that prices, besides integrating past prices and published information, integrates all information about the company, including so-called private information.

In the market of semi-strong efficiency level, the analysts would have no value since the stock market prices already reflect all the published information about the companies. However, Martinez (2004) defines that investment analysts can be described as agents that transfer information from more informed segments to less informed ones, which absorb new information more slowly. If the capacity of these agents is confirmed, it can be said that analysts contribute to the increase of efficiency of the capital market.

The company coverage report issued by the analyst to the investors, clients of the brokerage firm, outlines the company's competitive advantages as well as the expected return. In order to prepare a report, the analyst must have a broad knowledge of the target company and maintain periodic contacts with its managers. You should also meet other companies in the same industry to develop a comparative analysis. This studies approach is known as a fundamentalist analysis.

The author further classifies the analysts into three categories: sell-side, buy-side and independents. Sell-side analysts act in brokerage firms by disclosing investment recommendation reports to investors, brokerage clients. They dominate most of the news of the specialized press. The buy-sides analysts are often employed by large institutional investors, such as pension funds, hedge funds and insurance companies tend to follow a larger number of stocks, produce more succinct reports, and their surveys are distributed only to the fund managers. Buy-side analysts use the reports issued by sell-side analysts for decision-making on their investment portfolio. And finally, independent analysts are professionals who are not tied to mutual funds or market institutions but who issue investment recommendations to their respective clients. These can also make use of the report published by the sell-side analyst.

Thus it can be understood the role of a relevant sell-side analyst since its report is used by the other agents of the market with potential to influence the decision making of investment portfolios. Womack and Michaely (1999) explain that there are some pressures for inclusion of biases in investment recommendations. First, it may be pressured by the brokerage firm, in which it operates, to issue more buying recommendations than selling recommendations because buying recommendations are more likely to produce commissions than the selling recommendations. Second, analysts have direct access to the company, through the relations department with investor, which may facilitate or limit access to information that is not publicly available. The company can then facilitate or restrict access according to the analyst's recommendation. Finally, analysts who work in brokers in the same financial group of investment banks may be pressured to issue optimistic reports to enable issuance mandates in the capital market, for example.

Despite these pressures, analysts are expected to produce correct and unbiased reports and are encouraged according to the maintenance of their reputation which guarantees longevity of their career. In addition, an unbiased report must be followed by the other agents, the more precise it is, and since the other agents also have their own instruments of analysis and the decision to implement the sell-side analyst's recommendation can be understood as being free from errors and biases.

2.1. Empirical Evidence about Sell-Side Analysts

Among the researches that analyze the role of investment analysts, there is the line of research that measures the accuracy of sell-side analysts' projections. As Bradshaw (2011) defines these analysts are the main intermediary between the companies that demand resources and the investors, providers of financial resources.

Brown and Rozeff (1978) were the first to document a superior accuracy of analysts' forecasts implied in the firm valuation models used for recommendation of decision making of the buy, maintenance or sell on the rejected forecasts, exclusively, for time-series to quarterly results. Then, they will simultaneously test the accuracy of the forecasts and their association with the securities returns, in order to compare the performance of the analysts with the time-series. They have shown that analysts' forecasts are more precise and modestly better associated with stock returns than the time-series forecasts based on their ability to forecast operational data for projection of future cash flow to determine the target price of the stock.

An alternative proposal is to combine analysts' forecasts with forecasts from time series. Guerard (1989) created a model that combines these two forecasts finding superior results to what would have found operating with the forecasts of each of the groups separately. The results also revealed a better association of the "combined" forecast with the securities returns in the capital market.

Lim (2001), seeking to ascertain whether, in addition to the analysts' abilities, there would be some optimism when the recommendations were issued, used the average quarterly profit estimates and found an optimism of 0.94% of the price. The bias is considerably higher; of 2.5% for small companies and 0.53% for large companies (with a high capitalization value). The bias is prevalent across the market and every year.

Richardson et al. (1999) used individual analyst forecasts and analysts' forecast errors for each month from 1983 to 1997 and indicated that although bias continues to exist, there is a significant drop in the magnitude of 0.91% of the price for 0.09% of prices, where the forecast horizon is reduced from one year to one month. On the other hand, Brown (1996), studying the period from 1974 to 1991, observes that the bias seems to have changed from optimistic to pessimistic, or at least to virtually nil over time.

In fact, studies such as Shipper (1991), Brown (1996), Beaver (2002) have evidenced the presence of optimism in analysts' forecast, although over time there seems to be a downward trend in optimism. Kothari (2001) admits at least three consistent hypotheses as factors of decline in analysts' optimism: a) analysts are learning from the past; B) the analysts' incentives have changed; and c) the quality of data used by analysts has improved.

For the analysts of Brazilian companies, the bias of optimism was also documented by Da Silva (1998) and Franco (2000). Both, although using different methodologies and databases and trying to solve different problems, equally registered the existence of optimism in the forecasts of the analysts of Brazilian companies.

Another way of understanding the role of sell-side investment analysts in the capital market consists in the impact research of the publication of the investment recommendation report of the companies on the price of the respective shares. The measure of return is the abnormal return, characterized by the remuneration beyond the risk-adjusted return of the share. In the semi-strong market efficiency hypothesis there are no opportunities for abnormal returns using available information, since stock prices encompass the information and therefore all stocks offer a return compatible with their risk (Bodie, Kane and Marcus, 2014). Even so, it is perceived that there are, in practice, many job opportunities for analysts, which, according to Barber et al. (2001) implies that the market is not efficient in the semi-strong hypothesis and the presence of analysts is necessary to increase the efficiency of the market with its reports to allow abnormal returns to investors.

Womack (1996) conducted a survey of the fourteen largest brokerage firms in the United States and found that the market response about changes in the investment recommendation, positive and negative, is considerable, although most recommendations do not come out in the same day as the relevant news. In the period between 1989 and 1991, there was an abnormal cumulative return of + 3.3% in the purchasing recommendations, in a period of 3 days from the recommendation date and -4.3% in the sales recommendations for the same period. The conclusion that the author establish is that a recommendation from an analyst means that the analyst does not believe that the market price is consistent with the intrinsic value of a stock and, therefore, there is an inefficiency due to the costs of access to information. Thus, its presence in the capital market implies a reduction on the cost of access to information and, therefore, an increase in efficiency in the markets.

Barber et al. (2001) carried out another test in which they analyze the performance of the recommendations made by investment analysts using the methodology of portfolio formation from 1986 to 1996. In this survey, the portfolios are separated by the recommendation level, the assignments of banknotes to the shares of the companies vary between 1 and 5, 1 suggests the purchase and 5 the sale.

Based on the premise that investors will buy and sell shares following analysts' recommendations, investment portfolios will be formed by type of analysts' recommendation (portfolio 1 to 5, 1 is the highest purchase recommendation with daily rebalancing according to the emissions of the recommendations. The results obtained were that the portfolio of shares most recommended by analysts valued 18.8% per year, while the least recommended rose only 5.78%, while the market portfolio valued 14.5%.

Then, the method of portfolio formation was applied with rebalancing by frequency of purchases - monthly, weekly or fortnightly - instead of daily. The results indicates that the return on the most recommended portfolio decreases by 2% to 2.5%, and in the least recommended portfolio return, there is a decrease of up to 4%. Thus it can be concluded that daily purchases are an important instrument to produce abnormal returns for both the most recommended portfolios and least recommended portfolios. Still, considering the formation of portfolios of investments with frequency of daily purchases, however with a delay of one week to one month by the investors it is observed that the portfolio 1, more recommended, if the delay is less than one month, there is a 2% reduction in annual return, however if the delay is one month, there is a decrease of less than 1%.

On the other hand, the least recommended portfolio remains with negative returns regardless of the delay, from -2.5% for delays greater than 15 days, to -4% for weekly delays. This emphasizes the importance of moving quickly to buy and sell stocks to achieve the desired profit. Finally, the study analyzes the stocks based on the size of the firm. The main result obtained is that the portfolio composed of small company stocks and strong recommendation of buy (recommendation 1) shows an average return of 0.575% per month or 6.90% per year. On the other hand, the portfolio composed of small company stocks and strong recommendation of sale (recommendation 5) shows returns of -0.926% per month or -11.10% per year. This result is consistent with the results of Fama and French (1992) that identify the size of the company as a risk factor.

Interesting to also emphasize the Irvine's (2003) survey compares the performance of analysts who already covered the stocks versus the performance of analysts who are at the beginning of paper coverage. In this survey, for analysts who will start covering the company, there is the affirmation that the more positive the first recommendation is, the greater the subsequent liquidity increase. In other words, purchase recommendations and strong buying lead to a significantly greater reaction than the sale and maintenance. Another factor that the study addresses and that assists in the increase of this subsequent liquidity is the abnormal return that this first recommendation brings to the investors.

Seeking to find the value of the analysts' recommendations, Jegadeesh and Kim (2006), conduct a survey to find the value that the recommendations actually add to the stock price. This research was carried out in the G7 group (United States, Canada, France, Germany, Italy, Japan and United Kingdom). We used the event study methodology whose date of the event is the publication of the recommendation of the analyst and the measure of performance is the abnormal return to the deadlines of the event date up to six months after the date of recommendation.

The stocks with better recommendation showed average abnormal return of six months from the date of the recommendation in the United States of 4.75% which is higher than the average return for the same period of the stock portfolio with deterioration in the recommendation in value of -6.20%. The other countries had lower abnormal returns than in the United States; In Japan, for example, the average abnormal return obtained was 4.21% for better recommendation and -0.45% for deterioration in recommendation.

These results indicate that American analysts have been able to add more value than other analysts, which can be interpreted as a greater ability of American analysts to identify differences between the intrinsic value and the stock market price. Another explanation would be that the American market pays better to analysts than other countries and therefore it attracts more skillful analysts. Another possible explanation would be the fact that American analysts issues the reports in dates close to the release of the company balance sheet. Since analysts often issue buying reports if company balance sheets are positive and sales reports are negative, the fact of issuing reports close to the balance sheets could be a decisive factor for the performance of American analysts.

For each recommendation, Jegadeesh and Kim (2006) calculate the return by equation 1:

$$RA_k(T) = \prod_{t=0}^{T}(1 + R_{k,t}) - \prod_{t=0}^{T}(1 + R_{mkt,t}) \qquad \text{(eq. 1)}$$

Whereby:
$\boldsymbol{RA_k(T)}$ Is the abnormal return of the stock k recommended on date T.
$\boldsymbol{R_{k,t}}$ Is the return of the stock on date T.
$\boldsymbol{R_{mkt,t}}$ Is the market return on date T.

With this it is possible to calculate for each country, to check the setbacks and advances, for each category and with different evaluation dates. Given that the variance is given by equation 2:

$$Var(\overline{AR}) = w'V_A w \qquad \text{(eq. 2)}$$

Where the $\boldsymbol{V_A}$ is the variance of the AR matrix of variance and covariance.

Still searching for validation if there is in fact an abnormal return following the recommendations of the analysts, Moshirian, Ng and Wu (2009) carry out a study focused on the emerging markets, complementing the research of Jegadeesh and Kim (2006) that was carried out in the countries of group G7 , For a sample of 13 emerging countries (Argentina, Brazil, China, Chile, Hungary, India, Indonesia, Israel, Korea, Mexico and South Africa) in a concentrated period between 1996 and 2005.

In this analysis, the methodology of Jegadeesh and Kim (2006) was applied and the means of calculations based on the standard deviations of the abnormal returns of all companies was applied to test the level of significance of the abnormal return ($AR_k(T)$) with equation 4:

$$t_{AR(T)} = AR(T)/() \quad \text{(eq. 4)}$$

Whereby:

$AR_k(T)$ is the mean abnormal return of the sample for the T days from the date of the analyst's recommendation.

$\boldsymbol{\sigma AR_k(T)}$ refers to the standard deviation of the AR(T) of the sample of *n* recommendations.

The results of Moshrian, Ng and Wu (2009) indicate that on the first day of the recommendation to buy and buy, there is an average of 2.88% in price impact, which continues to increase up to 8.83% in the thirteenth day. After this, the impact on the price decreases to 4.03% on the twentieth day (after one month) and to 2.40% on the thirtieth day (after six weeks), which may be interpreted as the value of the purchase recommendations and strong purchase after four to six weeks. Interesting to also emphasize that the impact on the long-term price is greater than that shown in the studies of Womack (1996) and Jegadeesh and Kim (2006), which indicates that analysts' recommendations are more valuable in emerging markets.

On the side of recommendations for maintenance, sale and strong sell, there is an impact on the price of -3.69% on the day of the recommendation and on the following days, there is a greater impact than the positive recommendations of purchase and strong purchase. These results are consistent with previous research by Womack (1996), Barber and Loeffler (1993), Barber et al. (2001) and Lim and Kong (2004) suggest that this greater impact of negative recommendations is due to investor risk aversion, conservatism, and overreaction to bad news.

Compared with the results of these surveys, sales recommendations have a similar impact in all of them, and they indicate that these recommendations have a greater and longer impact on prices than purchase prices. Therefore, it can be said that a quick reaction on the part of the investors can result in abnormal gains due to the greater asymmetry in the information in the emerging markets. Compared with the G7 in emerging markets, the percentage of sales recommendations is much lower in the period of the survey. The author also points out that the returns in these markets are more expansive than in the G7 countries, a phenomenon that can be explained by a higher risk premium required as investors in emerging markets deal with higher costs with information disadvantages, lower liquidity of shares and lower risk protection of the investor.

Jegadeesh and Kim (2006) also investigates the distribution of recommendation levels in each country and if it has been observed that the number of recommendations for sale and strong sell is much smaller than the purchase or strong purchase recommendations in all countries. From the group analyzed, the United States has the least sales recommendations, about four times less than the purchase price. The frequency of recommendations issued over the years and in countries is assessed and the main results are n on average, only 3.3% of the recommendations are for sale or for strong sell in the United States.

The amount of maintenance recommendation decreases during periods of market growth in the 1990s from 38.4% in 1995 to 27.8% in 2000. In this same period the recommendations of purchase or strong purchase rise from 57% to 70.1%. In other countries, buying recommendations increases in the period of 1993 and 2000, but decreases in 2001 and sales recommendations go the other way. Sales reports are less common than the purchase reports also outside of the United States, with an average of 15.3% of sales or strong sell compared to a 46.9% of purchase or strong purchase. The

literature generally attributes analysts' reluctance to issue a sale or strong sell as a conflict of interest because they wish to stay on the positive records of the companies.

This aspect was also addressed by Barber et al. (2001), who studied investment reports published by 4,340 analysts in the period from 1985 to 1996 and identified that analysts rarely report strong selling or strong buying. The strong selling and the strong buying reports summed only 5%, the purchase reports are more numerous with 54.1% of total of all recommendations while sales reports consist of only 6.5% of total recommendations.

The research by Cliff and Denis (2004) complements a study that approaches whether lower-priced initial public offerings (IPOs) attract analysts' coverage and in fact the results show that there is a positive correlation between these factors. The survey sample includes 1,050 firms that made the IPO between 1993 and 2000, in which analysts covered 839 of the cases. Of these 839 recommendations, 793 (95%) were of strong purchase or purchase. One of the possible explanations, according to the author, would be that with a greater coverage of analysts, would achieve a greater visibility of the company and consequently an increase in the liquidity of the shares and the subsequent increase of the respective prices.

Groysberg et al. (2012) analyzes the selection and performance of buy-side analysts who are in large investment companies compared with sell-side analysts. The sample was extracted from I / B / E / S in the period from 1997 to 2004, which contains evidence of different recommendations issued by buy- and sell-side analysts. In the search results, it is observed that the recommendations of buy-side analysts have an average volatility of almost half that observed in the sell-side analysts' recommendations (0.42% vs. 0.95%), and market capitalizations nearly seven times higher (USD 9.1bln versus USD 1.3bln). These results can be interpreted as a sign that, according to the authors, fund managers (buy-side analyst clients) prefer that their analysts cover less volatile and more liquid stocks in the market. The survey also shows that buy-side analysts issue less optimistic recommendations than their sell-side counterparts, a result consistent with the premise that buy-side analysts face less conflict of interest. Thus, forty-four percent of the recommendations issued by buy-side analysts in the period analyzed are strong buying or buying, versus 56% for sell-side analysts. This reflects in the frequency of issuance of sales and maintenance recommendations (14% for buy-side analysts versus 7% for sell-side analysts).

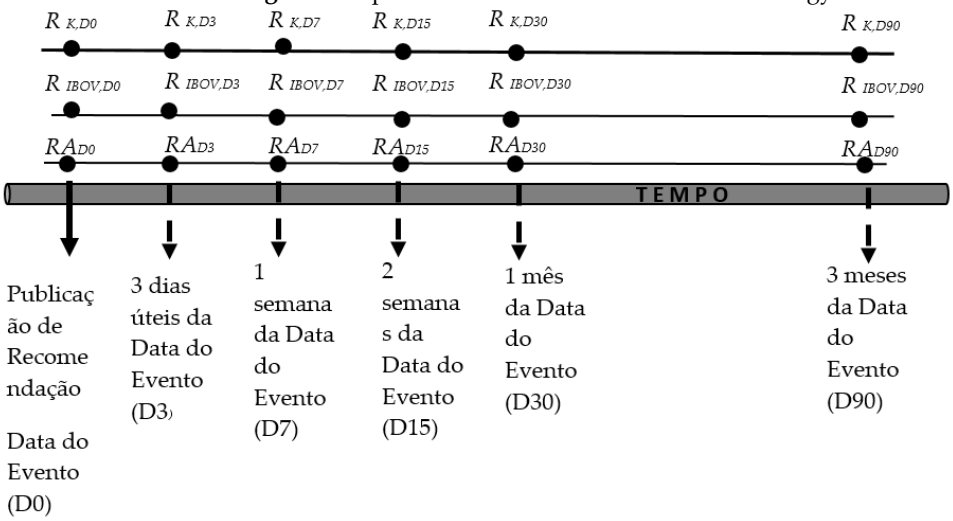
Jegadeesh and Kim (2006) also consider the volume of transactions in the reporting period. This increase in transaction volume could be an evidence of the value that analysts add to stocks in the different countries and it is observed that the volume transacted increases dramatically in the period close to the publications of analysts' reports, the volume almost doubles within two days after these publications in the United States. It should be emphasized that the United States and Japan have the largest number of investors following analysts' recommendations.

3 METHOD

To achieve the objective proposed in this article to investigate the impact of the investment analysts' recommendation of publicly traded companies, this research carries out the study of events, whose event consists in the publication of the recommendation of an analyst about a company. Shall be identified all recommendations issued by sell-side analysts of all the companies that compose the Ibovespa index between January and December 2014. It is estimated that the abnormal return obtained at the date of publication of the recommendation for the company subject to the recommendation and its accumulated abnormal returns of 3 days, 1 week, 2 weeks, 1 month and 3 months from the date of publication of the recommendation report, steady with the methodology of Jegadeesh and Kim (2006). The research uses data from recommendations from sell-side analysts of the Thomson Reuters system database I / B / E / S.

Applying equation 1 to the Brazilian market, the date of the event refers to the date of a new recommendation disclosed, and then identifies: (I) the recommendation level on the scale of 1 to 5 (1 strong purchase recommendation and 5 strong sell recommendation); (Ii) the target company of the recommendation; (Iii) the company's share price at the recommendation date of 3 days, 1 week, 2 weeks, 1 month and 3 months from the date of the recommendation and (Iv) the Ibovespa index of the company at the recommendation date, 3 days, 1 week, 2 weeks, 1 month and 3 months from the recommendation date. Finally, the return of the stock and the Ibovespa is calculated for each term: day, 3 business days, 1 week, 2 weeks and 3 months of the given recommendation and then the abnormal return is determined for each recommendation. Figure 1 below represents the date of the event and the later dates for which the abnormal returns will be calculated. In addition, the calculated return data for each of the periods is represented.

Figure 1: Representation of This Research Methodology



The hypothesis of the research consists in verifying the existence of an impact on the share price referring to the issuance of the investment recommendation report of the respective share. To test this hypothesis, we will test the means of the abnormal return series of each one of the deadlines: 1 day, 3 working days, 1 week, 2 weeks, 1 month and 3 months for each level of recommendation. The same scale from 1 to 5 will be used for the recommendation levels, with 1 referring to the strong purchase, 2, purchase, 3 maintenance, 4 sale and 5 strong sell of the I / B / I / Will be used in this research. The following statistical hypotheses are defined:

1st hypothesis: the recommendations of levels 1 and 2, of purchase and strong purchase, shows accumulated abnormal return greater than zero for the terms of 1 day, 3 days, 1 week, 2 weeks, 1 month and 3 months from the date of the issuance of the investment recommendation by the analyst. Tests of means of six sets of abnormal return will be performed: 1 day, 3 days, 1 week, 2 weeks, 1 month, 3 months. It is expected to reject the null hypothesis for each of the six tests that the abnormal return equals zero:

$$H_0: RA_T = 0$$
$$H_A: RA_T > 0$$

2nd hypothesis: the recommendations of levels 4 and 5 of sale and strong sell have an accumulated abnormal return less than zero for the terms of 1 day, 3 days, 1 week, 2 weeks, 1 month and 3 months from the date of issuance of the recommendation Investment by the analyst. Mean tests will be performed for each of the six cumulative abnormal return series. It is expected to reject the null hypothesis for each of the six tests that the abnormal return equals zero:

$$H_0: RA_T = 0$$
$$H_A: RA_T < 0$$

3rd hypothesis: maintenance level 3 recommendations have cumulative abnormal returns equal to zero for the 1 day, 3 days, 1 week, 2 weeks, 1 month and 3 months deadlines from the date of the issuance of the investment recommendation by the analyst. Mean tests will be performed for each of the six sets of abnormal returns. The non-rejection of the null hypothesis is expected for each of the six tests that the abnormal return is equal to zero:

$$H_0: RA_T = 0$$
$$H_A: RA_T \neq 0$$

Therefore, 30 average tests will be performed, as shown in the following table, and the recommendation level is represented in the columns and deadlines, in the lines and in the center the expected abnormal return value signal.

Table 1: Average value expected from abnormal returns

Value expected from abnormal returns	1 Strong purchase	2 Buy	3 Maintenance	4 Sale	5 Strong Sell
0 day	$RA_0>0$	$RA_0>0$	$RA_0=0$	$RA_0<0$	$RA_0<0$
3 days	$RA_3>0$	$RA_3>0$	$RA_3=0$	$RA_3<0$	$RA_3<0$
1 week	$RA_7>0$	$RA_7>0$	$RA_7=0$	$RA_7<0$	$RA_7<0$
2 weeks	$RA_{15}>0$	$RA_{15}>0$	$RA_{15}=0$	$RA_{15}<0$	$RA_{15}<0$
1 month	$RA_{30}>0$	$RA_{30}>0$	$RA_{30}=0$	$RA_{30}<0$	$RA_{30}<0$
3 months	$RA_{90}>0$	$RA_{90}>0$	$RA_{90}=0$	$RA_{90}<0$	$RA_{90}<0$
0 day	$RA_0>0$	$RA_0>0$	$RA_0=0$	$RA_0<0$	$RA_0<0$

4 RESULTS

As described in the methodology, the objective of this work is to test the hypothesis that there is an abnormal return by the analysts' recommendations. Once the daily closings of the 63 stocks that make up the Bovespa index during the year 2014 and compared with the recommendations of analysts belonging to the Thomson Reuters database, one can compare the hypothetical return of an investor who follows the recommendations made against the performance of the index. Table 2 below presents the descriptive statistics of the abnormal return of investment analysts' recommendations, and the recommendations are classified as 1 to 5, 1 is the recommendation of strong purchase and 5 is the recommendation of strong sell.

Table 2: Data on Analysts Recommendation and Abnormal Return Statistics

Level of recommendation	N (Qtde de Recomendações)	RA máx	RA min	RA médio	Mediana	Desvio padrão	Curtose	Assimetria
Rec 1 (0)	93	0.10	-0.08	0.0051	0.0040	0.02728	2.576	0.000
Rec 1 (3)	93	0.13	-0.09	0.0047	0.0038	0.03803	1.320	-0.086
Rec 1 (7)	92	0.23	-0.09	0.0031	0.0014	0.04597	5.470	1.424
Rec 1 (15)	88	0.18	-0.12	0.0054	0.0060	0.05595	0.754	0.236
Rec 1 (30)	84	0.27	-0.19	0.0125	0.0053	0.07555	1.241	0.640
Rec 1 (90)	58	0.47	-0.31	-0.0037	-0.2220	0.14330	1.390	0.595
Rec 2 (0)	286	0.07	-0.06	0.0045	0.0041	0.01952	0.703	0.279
Rec 2 (30)	283	0.11	-0.12	0.0055	0.0059	0.03583	0.785	-0.770
Rec 2 (7)	281	0.15	-0.11	0.0052	0.0032	0.04328	0.637	0.332
Rec 2 (15)	270	0.19	-0.17	0.0031	0.0029	0.05793	0.284	0.155
Rec 2 (30)	252	0.27	-0.23	0.0080	0.0080	0.07782	0.535	0.078
Rec 2 (90)	170	0.38	-0.37	-0.0140	-0.0058	0.14960	-0.372	-0.007
Rec 3 (0)	392	0.20	-0.08	-0.0031	-0.0030	0.02474	12.598	1.671
Rec 3 (3)	392	0.15	-0.18	-0.0029	-0.0048	0.03744	2.313	0.009
Rec 3 (7)	390	0.17	-0.50	-0.0068	-0.0056	0.05262	19.877	-2.052
Rec 3 (15)	373	0.97	-0.22	-0.0038	-0.0064	0.07988	58.687	4.770
Rec 3 (30)	348	0.27	-0.33	-0.0191	-0.0148	0.08792	0.725	-0.168
Rec 3 (90)	247	0.36	-0.44	-0.0359	-0.0382	0.13367	0.362	0.052
Rec 4 (0)	114	0.05	-0.18	-0.0099	-0.0089	0.02911	9.910	-1.900
Rec 4 (3)	114	0.13	-0.19	-0.0116	-0.0117	0.04098	3.857	-0.308
Rec 4 (7)	112	0.15	-0.20	-0.0147	-0.0129	0.05094	2.394	-0.497
Rec 4 (15)	111	0.24	-0.26	-0.0159	-0.0164	0.07121	2.897	-0.050
Rec 4 (30)	99	0.35	-0.32	-0.0199	-0.0239	0.09824	2.066	0.134
Rec 4 (90)	74	0.27	-0.40	-0.0302	-0.0143	0.13344	0.126	-0.240
Rec 5 (0)	15	0.04	-0.03	-0.0027	-0.0071	0.02017	0.311	0.695
Rec 5 (3)	15	0.13	-0.06	0.0026	-0.0085	0.05086	1.835	1.349
Rec 5 (7)	15	0.12	-0.09	-0.0044	-0.0126	0.05275	1.641	1.086
Rec 5 (15)	15	0.12	-0.14	-0.0086	0.0067	0.06978	-0.210	-0.022
Rec 5 (30)	15	0.17	-0.20	-0.0038	-0.0060	0.09802	-0.029	0.069
Rec 5 (90)	8	0.07	-0.29	-0.0929	-0.1089	0.12451	-0.696	-0.222

From the sample collected it is possible to confirm that 10.33% of the 900 recommendations refer to the strong purchase (1), 31.78% refers to level 2, 43.56% refers to maintenance, 12,67 % Refers to level 4 and only 1.67% refers to strong sells recommendation. These data indicate that there are

many more recommendations for strong purchase and buy than symmetrical recommendations for strong sell and sale.

It is also possible to observe that the recommendations, 1 and 2, strong purchase and purchase, presented positive average abnormal returns for all terms from 1 day to 2 months from the recommendation date. For recommendations 4 and 5, for sale and strong sale, negative returns are also observed for the terms from 1 day to 2 months from the date of the recommendation. These data point to the hypothesis of the relevance of analysts in the capital market.

Table 3 presents the average tests results of each abnormal cumulative return series. For the strong purchase recommendations (1), an average abnormal return was obtained for the day of recommendation of 0.51%, t = 1.797. For this period, it is possible to reject the null hypothesis at the 95% level of significance. For the other periods, mean positive accumulated abnormal returns were obtained, but without statistical significance: 3 days from the recommendation date, the average abnormal return was 0.47%, 1 week, 0.23%, 2 weeks, 0.54 %, 1 month was 0.12%. In the period of 3 months from the date of the recommendation, the accumulated abnormal return was negative: -0.37%.

Purchase recommendations, type 2, are very common (32% of all recommendations). The mean abnormal return for the day of recommendation for the cumulative of 3-day and 1-week values is 0.45%, 0.55% and 0.52%, respectively, with statistical significance (t = 3.933, 2.573 et = 2,017, respectively). The abnormal return had positive signs (2 weeks: 0.29%, 1 month = 0.8% and 3 months = 0.14%), but without statistical significance.

Tabela 3: Results of average tests

		FORTE COMPRA	COMPRA	MANUTENÇÃO	VENDA	FORTE VENDA
Prazo		1	2	3	4	5
1 DIA	Retorno Anormal Acumulado Médio	0,51%	0,45%	-0,31%	-0,99%	-0,27%
	Estatísitca t	1,797	3,933	-2,514	-3,633	-0,512
3 DIAS	Retorno Anormal Acumulado Médio	0,47%	0,55%	-0,29%	-1,16%	0,26%
	Estatísitca t	1,193	2,573	-1,553	-3,028	0,199
1 SEMANA	Retorno Anormal Acumulado Médio	0,31%	0,52%	-0,68%	-1,47%	-0,44
	Estatísitca t	0,648	2,017	-2,535	-3,061	-0,324
2 SEMANAS	Retorno Anormal Acumulado Médio	0,54%	0,29%	-0,38%	-0,16%	-0,86%
	Estatísitca t	0,913	0,876	-0,914	-2,36	-0,475
1 MÊS	Retorno Anormal Acumulado Médio	1,25%	0,80%	-1,48%	-1,99%	-0,38%
	Estatísitca t	1,5147	1,636	-1,048	-2,02	-0,15
3 MESES	Retorno Anormal Acumulado Médio	-0,37%	-1,40%	-3,59%	-3,02%	-9,29%
	Estatísitca t	0,196	-1,218	-4,221	-1,946	-2,11

The maintenance recommendations, type 3, present the highest frequency of those that were published in 2014 with 43% of the total. The average abnormal return accumulated for the trading day is negative, -0.3%, with statistical significance (statistic t = -2.514). For the longer periods: 1 month and 3 months from the recommendation date, this result is repeated: -1.48% for the 1-month

period and -3.59% for the 3-month period (statistic t = -4.048 and -4.221, respectively). For the other periods, the average abnormal returns accumulated were negative, but without statistical significance (3 days = -0.29%, 1 week = -0.68%, 2 weeks = -0.38%), as expected.

The sales recommendations, type 4, represent 13% of those made in 2014 and are much less frequent when compared to those of purchase. The mean abnormal return for the day of recommendation is -0.99% with statistical significance (t = -3.633 statistic). The result is repeated for all other periods of 3 days, 1 week, 2 weeks, 1 month and 3 months from the recommendation date: average cumulative abnormal return is -1.16%; -1.47%; -1.59%; -1.99% and -3.02%, respectively (t = -0.28, -3.061, -2.36, -2.02 and -1.946, respectively).

Finally, the type 5 recommendations, strong sales, represent the smallest share of all types of recommendations with only 2%, being consistent with surveys conducted in other countries and at other times converging on the idea that analysts avoid issuing this type Recommendation. The cumulative average abnormal returns were negative for all the terms of the recommendation date (1 day = -0.27%, 1 week = -0.44%, 2 weeks = -0.86%, 1 month = -0.38 % Except for the period of 3 days (cumulative mean abnormal return of 0.26%, statistic t = 0.199), but with no statistical significance. The cumulative abnormal return for the 3-month period from the recommendation date was -9.29% and statistically significant (t = 2.11).

5 CONCLUSION

This work contributes to the further development of the capital market in Brazil by investigating the impact of the sell-side investment analyst on the disclosure of the investment recommendation report in the Brazilian capital market. The Sell-side analysts are capital market agents who specialize in introducing relevant information about the company into the company's pricing model, in addition to projecting future results. If investors follow investment recommendations from analysts, it is because their recommendation reports have some value and that investors can not do it by themselves. The market-efficiency hypothesis, in its semi-strong level, market prices incorporate all the published information about the assets and if this hypothesis is valid, the analysts' recommendations would not impact asset prices.

To perform the research on the role of the sell-side analyst in the capital market, this work used as a database all the 900 recommendations of the I / B / E / S database in the Thomson Reuters system from the year of 2014 about the 63 stocks that make up the Ibovespa.

With the results obtained it is possible to infer that the Brazilian market presents many similarities with the international markets. The results presented here converge to previous studies that there is a greater amount of recommendations of strong purchase and buy as observed by Jegadeesh and Kim (2006), a fact that can be related to some analysts' optimism as observed by Lim (1998).

Another factor that may be related to analysts' optimism is the result of the fact that all maintenance recommendations present negative averages of returns, although they are very close to zero. This may indicate some resistance from analysts to publish strong sell and sall recommendations as noted in the Barber et al. (2001).

The average of the abnormal returns were convergent with the expectations of the analysts, that is, the purchase recommendations had positive averages and the sales recommendations had negative averages, except for the recommendations of strong purchase and buy in the period of 3 months and in the recommendation of strong sale in the period of 3 days. For the period of 3 months, we could argue that a lot of time has passed since the issuance of the recommendation and that many events could interfere with returns and expectations.

Here were defined three statistical hypotheses that were tested with the average test applied to each of the series of abnormal returns accumulated. The first hypothesis is the positive return for

each of the terms (0 day to 3 months) from the issuance of recommendation of buy and strong purchase. The results obtained were signal consistent, in other words, positive abnormal returns for all time periods except for the 3-month period, with no statistical significance. The only results that presented statistical significance were the terms of 1 day, 3 days and 1 week for purchase recommendations.

The second hypothesis consists of the negative return for each of the deadlines for the recommendations of sale and strong sell. The results were all negative with statistical significance in the sales recommendations. The recommendations of strong sale were not statistically significant. And, finally, the third hypothesis that consists of the return of zero to the maintenance recommendations. The results indicated negative returns, with the returns of the terms of 3 days, 2 weeks and 1 month from the date of the recommendation did not reject the hypothesis that the return is null, as expected. The deadlines of the day and 1 week of the recommendation date were statistically significant, rejecting the null hypothesis, unlike what was to be expected.

Finally, the results obtained favorably the relevance of investment analysts to increase the efficiency of the Brazilian market. In future studies, this research may be expanded to other periods.

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