A Market Efficiency Event Study on Brazilian Investment Funds' Performance

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Extended Abstract

We analyzed the influences of market efficiency on the performance of 697 Brazilian stock investment funds classified as free by the Brazilian Association of Financial and Capital markets entities (ANBIMA), at the month of May 2017. The period was marked by an event of extreme volatility on the morning of May 18, 2017, caused by the leaking of compromising audios involving the Brazilian President and executives of large private sector companies.

We analyzed the performance of the funds in order to check for anomalies caused by the abnormal investments volume by financial market investors. The results were related mainly to the Theory of Market Efficiency and we identified the existence of abnormal investments in the period prior to the event and the rapid absorption of the news soon at the day after the public disclosure of the relevant fact, highlighting the Market Efficiency in the post event period. In this way, the results of this work confirmed the hypotheses that the greater the abnormal investments, the better the performance of the stock funds analyzed and, on the other hand, the higher the market efficiency, the worse the performance of these funds, as expected.

On the date of May 18, 2017, the São Paulo Stock Exchange (BOVESPA) had an extremely volatile reaction due to the compromising audio leak of the Brazilian President involving a large private branch entrepreneur, at the evening of May 17, 2017. In this way, an investigation of the performance behavior of the shares of free stock investment funds was carried out within five working days before and five working days after the event reported. We divided the empirical analysis of the results into two phases: the first period window was five working days before the event (T-5), until the effective day of the event (T); The second observation window was the day of the event (T), up to five working days later (T + 5). Both observation windows contemplate the day of the event (i.e. May 18, 2017).

We identified the existence of investors' abnormal investments at the period of five work days prior to the date of the event. There was, in this interval, the evolution of the abnormal accumulated returns of the quotas of the stock funds that comprised the sample. This could be explained by the fact that managers were able to have a broad view of possible

scenarios and that they also managed to have a fairer sensitivity of the correct pricing of the assets.

According to the results, it was possible to us infer that, in the time window between T-5 to T, there was an environment with the presence of the raise of abnormal returns due to the increasing consistency of abnormal average returns of performance of the funds studied in the previous period until the Date of the Event, especially when we analyzed the period between T-4 and T (-0.004 to + 0.0206). It is plausible to consider that the increasing performance of the funds can be explained by a prior adequacy of strategies for assembling portfolios of the sample funds by the managers that was preparing to go through a time of strong volatility that was shown on T-day. This result confirms the first hypothesis of the study, which states that the greater the raise of abnormal returns after the event, the better the performance of Brazilian stock investment funds.

Analyzing the second time window (T to T + 5), it was noted that the market reached peak performance and abnormality of the return precisely on 18 May (T), and also the day of greater volatility. From the day following the event (T + 1), the returns, although abnormal, considering the significance of 5%, show the rapid absorption of the news, having an adjustment of the percentage of abnormal returns in the period between T + 1 and T + 5, in that the returns came from 0.0264, in T, to 0.0006, in T + 5, with T + 1, T + 2 and T + 3 observed negative abnormal returns of -0.0020, -0.0007 and -0.0039, respectively. It is therefore inferred that this is an event of market efficiency, since, in T + 1, the adherence to the benchmark is much closer than the one observed until the day of the event T.

Another factor that suggests it was a period of market efficiency was the decrease in the range of variation of the standard deviation from T + 3 (ranging from 0.0493, in T, for 0.0061, in T + 5), and the result of the performance of the quotas has been in a smaller amplitude in the periods following T + 1. In this post event period, the volatility of the performance of the funds enters again in a more congruent amplitude with the market before the epicenter of the event analyzed, since, after the disclosure of the facts about the leaking of the audio recording and the verification of the reflections of the news, this time by all the participants of the market, there was the assimilation and the search of the fair price by the market, minimizing the distortions accentuated by the raise of abnormal returns. The huge increment of volatility measured by the standard deviation in the period between T and T + 2 signals an immediate and fair reaction of the market in relation to the public announcement of the audio leak involving the President.

Observing the average negative results of the funds in the period between T + 1 and T + 3, it is possible to infer that the managers had no more arbitration in the market after the information was not more asymmetric.

In T + 4 and T + 5 days, the accumulated abnormal returns were positive (+ 0.0022 and + 0.0006, respectively), indicating an appreciation of the quotas of the funds studied. This shows an apparent positive reaction to the market after the news that, for some time, could bring very negative consequences to the Brazilian stock market. It is inferred that, after the assimilation of the event, the market has shown a more optimistic perspective ahead.

We identified the occurrence of market efficiency in the second time window (T to T + 5). In the days following the T-event, the average return on the quotas of the funds analyzed fell dramatically, returning to the more modest levels of return. The returns in the period between T + 1 and T + 3 were below the benchmark. Managers were unable to perform above-market performance in the days of the T-event, only achieving performance above the benchmark in T + 4, but much smaller compared to the period prior to the event.

In the interval between T and T + 2, the increment of the standard deviation proved to have a volatility event that demonstrates the search for market adjustment. The high volatility confirms the reaction between the various market participants after an event that caused different expectations and forecasts in relation to the market. Finally, by means of the present study we can highlight an empirical case in which it was possible to perceive the transition from a market influenced by abnormal returns with pricing distortions, to an efficient market that fairly pricing the assets after the fair access to the relevant facts. It was therefore able to bring empirical evidence that could prove the presence of fund managers' influence and market efficiency in the event in question.