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IMPACT OF FSA DECISION NO. 23 FROM 5TH FEBRUARY, 2014: EVENT STUDY APPROACH

Empirical
study

Keywords

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G14, E44

Abstract

The aim of this paper is to study the impact of Romanian Financial Supervisory Authority (FSA) decision number 23, which was taken on the 5th February of, 2014. This decision canceled the measure number 11 from August 12th, 2005, through which an investment fund cannot buy other investment fund's stocks. By applying the new FSA decision, each investment fund, namely SIF 1 – Banat Crisana, SIF 2 – Moldova, SIF 3 – Transilvania, SIF 4 – Muntenia, and SIF 5 – Oltenia can buy stocks from each other. Our results show that the stocks return of the five investment funds, reacted significantly in the first day after the event, when a significant positive increase of 4.69% in the average return was recorded. Moreover, it seems that after 5 days the stock return of SIF3 has the tendency to return to pre-event values.

Introduction

In our days things are happening very fast. There are situations when nature takes us by surprise and events like hurricanes, earthquakes, floods and other similar events can cause a lot of losses, not only human losses but also financial ones, because in some situations many companies stock prices are affected. Despite this, there are events caused by man, which are affecting the stock prices of different companies. Sometimes the effect is positive and it is causing an increase in stock price (announcement of dividend payment, profit realization, and others similar events) or contrary a decrease in stock price (theorist attack, losses realization, change company management, and others similar events).

Because of this, many researchers were interested in finding the exact manner in which a stock price of a company is affected by different kind of events, to be able in the end to classify the events in two categories, as we mentioned before (events which cause an increase in stock prices and events which cause a decrease in stock prices).

Financial Supervisory Authority (FSA) from Romania, on February 5th, 2014, took the decision number 23, to cancel the measure 11 from August 12th, 2005, through which an investment fund cannot buy other investment fund's stocks. So based on this decision, starting with, February 5th each investment fund, namely SIF 1 – Banat Crisana, SIF 2 – Moldova, SIF 3 – Transilvania, SIF 4 – Muntenia, and SIF 5 – Oltenia can buy stocks from each other.

This decision eliminated the discrimination that existed between financial investment funds, regarding the investments they could make. Even if, maybe, there weren't such a strong stock market movements, the decision took by FSA is likely to have a positive impact on investors, which in short term can cause an increase in market volatility.

Through this paper we want to analyze in more detail the impact of FSA decision on stock prices movements and which was the impact on each financial investment fund. In order to achieve this we will apply event study methodology.

The paper is organized as follows: in the first section we present the main types of events for which it can be applied the event study methodology, in the second section we present all the methodological steps in more detail, in the third one we present the data used in the analysis, the fourth section highlights the main results of our research, and in the last section we conclude the paper.

1. Literature review

Researchers often try to evaluate the impact of decisions on particular companies before it is applied. One way to have an image of the way in which the stock price of a company will evolve in the case when an event occurs, it is to see the similar past events and empirically estimate their impact on affected companies.

In the literature there are researchers who tried to understand the economic and financial implication of a natural disaster such as: earthquakes, floods, cyclones, and bushfires. The general point of view regarding natural disasters is that these events caused the shutting down of most activities not only in the affected area, but also in other far areas, due to the linkage existing between clients-companies-suppliers. Moreover, when we analyze the things from the other side, we realize that these natural disasters can be considered one of the boosting factors for economy. There are situations when after big hurricanes (hurricane Andrew – 1992, hurricane Hugo – 1989 and hurricane Camille – 1969) there was recorded an outperforming of companies from construction industry (Tara Denise Barton, 2005)

Worthington and Valadkhani (2004), who analyzed 42 sever natural disasters between December 1982 and January 2002, showed that bushfires, cyclones and earthquakes have a major effect on market returns, unlike severe storms and floods.

Another kind of disaster analyzed in the literature is represented by the devastating attack against United States launched by terrorists on September 11th, 2001, by hijacking four planes of two big American Airline Company: America Airlines and United Airlines. This event had a great impact on financial markets and especially on the stock prices of airlines companies. The report wrote by Kilroy (2001) stated that, the most affected by the terrorist attack were the airline and travel industries. Only in United States commercial passenger traffic was dropping nearly 40% between September 10th and October 10th 2001. In the same time, a decrease was registered in world-wide commercial passenger traffic, but only of 18%. At that time predictions for this industry were very pessimistic, because it was believed that airline traffic would not return to pre-attack levels until nearly 2007.

Trying to show the magnitude of September 11 events, Karolyi and Martell (2005) examined the stock price impact of 75 terrorist attacks between 1995 and 2002. Their findings emphasize that the attacks in wealthier and more democratic countries are associated with larger negative share price reaction.

Mergers and acquisitions have been for a long period of time considered major events in a firm's life. Among the various points that have been studied by researchers there can be identified, the

study of motivations of mergers and acquisitions like the market power, the hubris hypothesis, the economy of scale and the economy of scope, the managerial hypothesis. Other directions followed were the short - and long-term performances for target and bidder companies, the vast merger waves, and the choice of the payment methods.

The acquisition literature starts with work on diversification and efforts to understand how and when acquisitions are beneficial (Capron and Mitchell, 1998; Vermeulen and Barkema, 2001). From the resource-dependence perspective, acquisitions are a well-recognized method for rapidly capturing desirable resources and establishing a greater degree of control over one's environment (Barney, 1988) observes that successful acquisitions are predicted either because the target had being undervalued by the market and purchased at a discount by the acquirer company, or the combination provided a unique benefit to the bidder by the synergies that can be attained subsequent to the transaction. Another important finding is that it acquirers at best break even in terms of stock market reactions, with target shareholders expropriating the majority of the abnormal returns.

In order to focus more on our topic research, we look in literature for the main papers which analyzed the impact of different kind of regulation on stock price evolution. Regarding this, one of the most analyzed regulations is represented by Securities Acts from 1933 ad 1934, as is stated by Beardsley and O'Brian (2003), and based on the previous research the disclosure requirements imposed by the Act didn't have an impact upon mean returns.

Another regulation analyzed by researchers was represented by the Regulation FD (Fair Disclosure) adopted by U.S. Securities and Exchange Commission (SEC) on August 15th, to address the selective disclosure of information by publicly traded companies. Regarding this topic, Heflin et al. (2003) were interested in finding if stock return volatility has been influenced by adoption of this new rule. Through their paper, they showed that adoption of regulation FD didn't increase return volatility, so the alarms which were raised by financial market were not founded.

FSA decision number 23 from February 5th, 2014, is very important because it affects the most important financial investment funds, regarding the investments they could make, namely SIF 1 – Banat Crisana, SIF 2 – Moldova, SIF 3 – Transilvania, SIF 4 – Muntenia, and SIF 5 – Oltenia, due to fact that starting on this date, they can buy stocks from each other. Therefore, through this paper we want to analyze empirically the effect caused by this decision, on the stocks' return of the financial investment funds mentioned above.

2. Methodology

For finding the impact of FSA decision number 23 from February 5th, 2014, on financial investment funds' stock return, we will use the event study methodology. Since the occurrence and timing of this decision was not predictable, the use of event methodology is quite warranted. The methodology used in this paper was successfully used to a variety of events, like: mergers, dividend announcement, antitrust actions, announcements of accounting rule changes, investor reactions to major catastrophes, and for evaluating the equity impacts of regulatory reform in the transportation industries, all cited by Bruning and Kuzma (1989). The event day is the day '0', February 5th, 2014. For each security we used a maximum of 250 daily returns. This choice was made based on previous studies, which sustained that, typically a value of 250 days is chosen to correspond approximately to the number of trading days in a year (Corrado, 2011; Brown and Warner, 1984). The first 229 days in the period (-239 through -11) are used to form the estimation window, and the following 21 days (-10 through +10) are used for the event window. Further, we will analyze the changes in the return of stocks around the date of event. The daily return was computed based on formula (1):

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

$$t = -239, -238, -237, \dots, +8, +9, +10$$

where R_t is the return at time t , P_t is the price at moment t and P_{t-1} is the price at time $t-1$.

On an event such as the one from February 5th, 2014, we would expect R_t to react significantly. In such situation, the value of R_t can be expressed in two manners: R_t as normal or expected return and R_t as abnormal return. We approximate the expected return with market model, in a regression in the form presented by formula (2):

$$(2) E(R_t) = \alpha + \beta \times R_{Mt},$$

$$t = -10, -9, -8, \dots, +8, +9, +10$$

where α and β are obtained by running the regression between the return of each stock and the market return, based on formula (3):

$$(3) R_t = \alpha + \beta \times R_{Mt},$$

$$t = -239, -238, -237, \dots, -13, -12, -11$$

In formula (3), R_{Mt} is the return of the market at moment t , and usually it is estimated as the return on a broad-based market index. In our case the market index is BET-C, because all companies

listed at Bucharest Stock Exchange are included in the index composition.

Further, the abnormal or unexpected return is defined as the difference between the actual return and expected return, according to formula (4):

$$(4) \quad Ab_t = R_t - E(R_t), \\ t = -10, -9, -8, \dots, +8, +9, +10$$

Another useful statistic is the Cumulative Abnormal Return (CAR), because it is very helpful in indicating a pattern in which the stock reacts to an event, being defined by formula (5):

$$(5) \quad CAR_t = \sum_{k=-10}^t Ab_k$$

First hypothesis tested if there were significant average abnormal returns as reaction to the FSA decision. Specifically, we will test if the average abnormal return of financial investment funds for the day i , ($i = -10$ to $+10$) is statistically significant different by 0. In order to achieve this, we will use a two-tailed t-test, based on the hypothesis denoted by formula (6):

$$(6) \quad \begin{aligned} H_0 : \overline{Ab}_i &= 0; \\ H_1 : \overline{Ab}_i &\neq 0. \end{aligned}$$

Rejection of null hypothesis will reveal that the market viewed the decision took by FSA as having major implication for the financial investment funds. We expect significantly positive abnormal returns for the immediate period after February 5th, 2014.

To determine whether the market reaction was positive, by recording a significant increase in returns, we use a one tailed t-test, based on the following hypothesis:

$$(7) \quad \begin{aligned} H_0 : \overline{Ab}_i &\leq 0; \\ H_1 : \overline{Ab}_i &> 0. \end{aligned}$$

Another thing we want to identify, is to see if the event created a persistent response in each SIF's stock returns. Regarding this we split the 10 days period after the event in two sub-periods and we will test if the average cumulative abnormal return is the same for both sub-periods. The hypothesis is stated as follows:

$$(8) \quad \begin{aligned} H_0 : \overline{CAR}_{1-5} &= \overline{CAR}_{6-10}; \\ H_1 : \overline{CAR}_{1-5} &\neq \overline{CAR}_{6-10}. \end{aligned}$$

Acceptance of null hypothesis will reveal that the effect of decision number 23 took by FSA had a

persistent effect in the stock return of each SIF, while the rejection of null hypothesis indicates a significant difference between the two sub-periods. In this case it is necessary another test to see if the average cumulative abnormal return for the second sub-period is higher or smaller than the value recorded for the first sub-period. To determine this, we use one tailed t-test, based on the following hypothesis:

$$(9) \quad \begin{aligned} H_0 : \overline{CAR}_{1-5} &\leq \overline{CAR}_{6-10}; \\ H_1 : \overline{CAR}_{1-5} &> \overline{CAR}_{6-10}. \end{aligned}$$

Even if there is recorded a significant difference between the average of cumulative abnormal returns for the two sub-periods, in the case when the average is higher for second period (6-10 days after the event) this still means that the decision number 23 took on February 5th, 2014 had a persistent impact of stock returns. Otherwise, if the average for the second sub-period is smaller compared to the first sub-period, we can state that the decision took by FSA has not had persistence in the stock returns.

3. Data collection and descriptive statistics

In the analysis we include the most important financial investment funds, namely: SIF 1 – Banat Crisana, SIF 2 – Moldova, SIF 3 – Transilvania, SIF 4 – Muntenia and SIF 5 – Oltenia, because these were directly targeted by the FSA decision number 23 from February 5th, 2014. We used daily data starting with February 21st, 2013 until February 19th, 2014. All the data were obtained from Bucharest Stock Exchange web site.

Descriptive statistics of daily returns expressed in percentages are presented in Table 1. All financial investment funds and BET-C have a positive average return for the analyzed period, except SIF2 (Moldova) and SIF3 (Transilvania), which have a negative average return. Despite this, we show that these average values are close to 0, so the SIF's stock were not so profitable over the last 250 trading days. The highest value of 0.11% is recorded by SIF5 (Oltenia), which seems to be the most profitable financial investment fund over the analyzed period. Based on standard deviation, investors had the lowest risk if they had chosen to invest in SIF1 (Banat Crisana) and highest risk if they invested in SIF5 (Oltenia). The financial data present negative skewness (except SIF1) and excess kurtosis higher than 15 (except BET-C).

Through this paper we want to see if the FSA decision had an impact on stock return of the main financial investment funds. In Figure 1 we presented the stock return evolution for the analyzed SIF's for period January 22nd – February 19th.

At a first glance we can see a significant increase in returns on the day following the day when FSA adopted the decision. Regarding this, we found that on February 6th, it was recorded an increase between 3.25% (SIF5) and 7.23% (SIF1) in returns.

4. Results

Before applying the event study methodology, we check if all the series are stationary. Based on Augmented Dickey-Fuller test, we obtained that all series are stationary at 1% significance level. Further, we estimated the regression equation between each SIF's stock return and market return, based on which we computed the expected return during the event window. Using the abnormal return, computed as the difference between the real return and expected return for the event window, we compute the average abnormal return for each day, and test if these values are different by 0 and further if these values are greater than 0. The results for two side t-test and one side t-test are presented in Table 2.

At a first glance we can see that before the record of the event there was a significant negative abnormal return, which was replaced in the first day after the event, with a significant positive abnormal return.

Based on these results we can see that stock returns of the five investment funds, reacted significantly in the first day after the event (February 6th, 2014), by recording a significant positive increase of 4.69% in the average return.

Further we used a paired sample t-student test, in order to find if the event created a persistent response in each SIF's stock returns. Regarding this, the results are presented in table 3. For the first hypothesis of equality between the average cumulative abnormal returns for 1-5 days and 6-10 days, we found that only for SIF1 (Banat Crisana) and SIF3 (Transilvania) there is a significant difference. In order to see the evolution of the average cumulative abnormal return, based on a one side t-student test we obtained that only for SIF3, the average cumulative abnormal return for period 6-10 days is lower than the average cumulative abnormal return for the first 5 days after event. The stock return of SIF3, after 5 days, has the tendency to return to pre-event values.

For SIF1, we found that the average cumulative abnormal return for sub-period 6-10 days was higher than sub-period 1-5 days. This shows the greatest event impact on SIF1's stock returns, and moreover, we can conclude that the stock return of SIF1 was the most affected by the decision took by FSA on February 5th, 2014.

The same evolution can be seen on figure 2, but moreover, we can see that the event impact on SIF1, SIF2 and SIF4 was higher than average

impact, while the event impact on SIF3 and SIF5 was lower than average impact.

5. Conclusion

The findings presented in this paper show that the stock price of the five financial investment funds, namely: SIF 1 – Banat Crisana, SIF 2 – Moldova, SIF 3 – Transilvania, SIF 4 – Muntenia and SIF 5 – Oltenia, reacted in the first day after the Financial Supervisory Authority took the decision number 23 from February 5th, 2014. We found that the average abnormal return for the first day after the event was 4.69%. This can be considered a great impact, if we take into account the average abnormal return for 10 days before the event (January 22nd – February 4th), which was 10 times smaller (0.5%). We expected to find an increase in return after the event, because through the decision took by Financial Supervisory Authority, which states that each SIF can buy stocks from each other, it was created an extra demand for the stocks of financial investment funds.

Even if we have shown that the event had a significant impact on SIF's stocks return, we want further to see if there is persistence in this impact. In order to check this we used a paired sample t-test, through which we compared the average cumulative abnormal return for the sub-period 1-5 days and sub-period 6-10 days after the event. Further, we wanted to find if the average cumulative abnormal return for second period is higher or lower compared to values recorded in first sub-period.

Based on paired sample t-test, we were able to find that in case of SIF2 (Moldova), SIF4 (Muntenia) and SIF5 (Oltenia) there is no difference between the average cumulative abnormal returns for this two sub-periods. This means that the stock price of these three SIFs incorporates the event impact, and moreover this effect was a persistent one, due to fact that after 10 days, there is not recorded any significant difference in the cumulative abnormal returns.

Regarding the others two SIFs, Banat-Crisana and Transilvania, we found a significant difference between these two sub-periods. This wasn't a satisfactory result, because we were not able to say anything about the direction of cumulative abnormal return evolution. In order to solve this issue, we used a one side t-test, based on which we obtained that only for SIF3, the average cumulative abnormal return for period 6-10 days is lower than the average cumulative abnormal return for the first 5 days after event. This indicates that after 10 days the stock return of SIF3 has the tendency to return to pre-event values, so in the end the decision took by FSA affected only for a few days the stock price of SIF3, because after 10 days the event impact has the tendency to disappear.

For SIF1, we found a significant difference between the average cumulative abnormal returns, but the two side t-test, revealed that the average value for sub-period 6-10 days was higher than sub-period 1-5 days. This highlights the fact that the event had a great and persistent impact on SIF1's stock returns. It seems that the stock return of SIF1 was the most affected by the decision took by FSA, fact revealed starting with the first day after the event, when the higher increase in abnormal return of 7.23% was recorded by SIF1.

As far as we know, this is the first paper in literature, which tries to identify more specifically the impact caused by the decision took by Financial Supervisory Authority on February 5th, 2014. This research can be the starting point for further paper, through which we will analyse if this increase in the SIF's stock returns had another causes, such as the fact that each SIF have bought stocks from the others, and the number of stocks they bought.

These results are very important when we take into consideration the financial side. Not only the financial investment funds, but instead the national authorities, especially the institution which are responsible with financial supervision, can use this information when we talk about applying other kind of regulations on financial market.

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Tables and figures

Table 1
Descriptive statistics for analyzed variable

Variable	Mean	Median	Max.	Min.	St. dev.	Skewness	Kurtosis
SIF1	0.0001	0.0000	0.1170	-0.0967	0.0174	0.92	15.10
SIF2	-0.0001	0.0000	0.0906	-0.1969	0.0206	-3.43	39.08
SIF3	-0.0006	0.0000	0.0441	-0.2845	0.0217	-8.84	117.94
SIF4	0.0002	0.0000	0.5838	-0.5852	0.0539	-0.04	110.79
SIF5	0.0011	0.0000	0.7202	-0.7236	0.0656	-0.12	118.19
BET-C	0.0002	0.0001	0.0193	-0.0185	0.0058	-0.03	3.09

Table 2
Statistical significance testing for abnormal returns

Event day	Average abnormal return	$H_0 : \overline{Ab}_i = 0;$ $H_1 : \overline{Ab}_i \neq 0.$		$H_0 : \overline{Ab}_i \leq 0;$ $H_1 : \overline{Ab}_i > 0.$	
		t-statistic	p-value	t-statistic	p-value
-10	0.0030	1.575	0.190	1.575	0.095
-9	-0.0094	-4.791***	0.009	-4.791	0.995
-8	-0.0141	-3.440**	0.026	-3.440	0.986
-7	-0.0090	-4.878***	0.008	-4.878	0.995
-6	0.0070	4.736***	0.009	4.736***	0.004
-5	-0.0085	-4.600***	0.010	-4.600	0.994
-4	-0.0118	-3.668**	0.021	-3.668	0.989
-3	-0.0147	-4.442**	0.011	-4.442	0.994
-2	-0.0093	-2.611*	0.059	-2.611	0.970
-1	0.0101	18.265***	0.000	18.265***	0.000
0	0.0029	1.017	0.367	1.017	0.183
1	0.0469	5.815***	0.004	5.815***	0.002
2	-0.0014	-0.271	0.800	-0.271	0.600
3	-0.0039	-1.203	0.295	-1.203	0.852
4	0.0082	2.471*	0.069	2.471**	0.034
5	0.0053	1.344	0.250	1.344	0.125
6	-0.0073	-1.788	0.148	-1.788	0.925
7	-0.0009	-0.472	0.662	-0.472	0.669
8	-0.0035	-0.755	0.492	-0.755	0.753
9	-0.0049	-2.420*	0.073	-2.420	0.963

***, **, * - the null hypothesis is rejected at 1%, 5%, respectively 10% significance level

Table 3.
Paired sample t-test results for cumulative abnormal returns

SIF	Average cumulative abnormal return 1 – 5 days	Average cumulative abnormal return 6 – 10 days	$H_0 : \overline{CAR}_{1-5} = \overline{CAR}_{6-10};$ $H_1 : \overline{CAR}_{1-5} \neq \overline{CAR}_{6-10}$		$H_0 : \overline{CAR}_{1-5} \leq \overline{CAR}_{6-10};$ $H_1 : \overline{CAR}_{1-5} > \overline{CAR}_{6-10}$	
			t-statistic	p-value	t-statistic	p-value
SIF1	-0.0036	0.0168	-3.126**	0.035	-3.126	0.982
SIF2	0.0075	0.0129	-0.436	0.685	-0.436	0.657
SIF3	-0.0325	-0.0692	5.057***	0.007	5.057***	0.003
SIF4	0.0350	0.0253	1.224	0.288	1.224	0.144
SIF5	-0.0377	-0.0445	2.032	0.112	2.032*	0.056

***, **, * - the null hypothesis is rejected at 1%, 5%, respectively 10% significance level

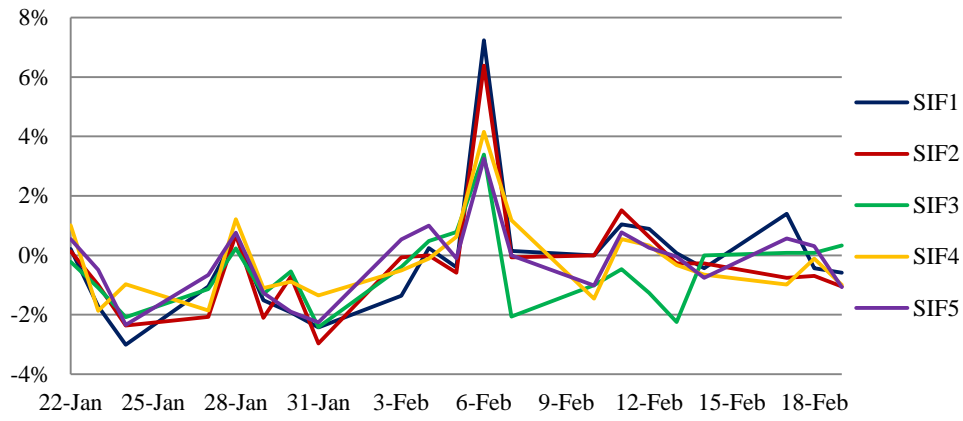


Figure no. 1. SIF's daily returns

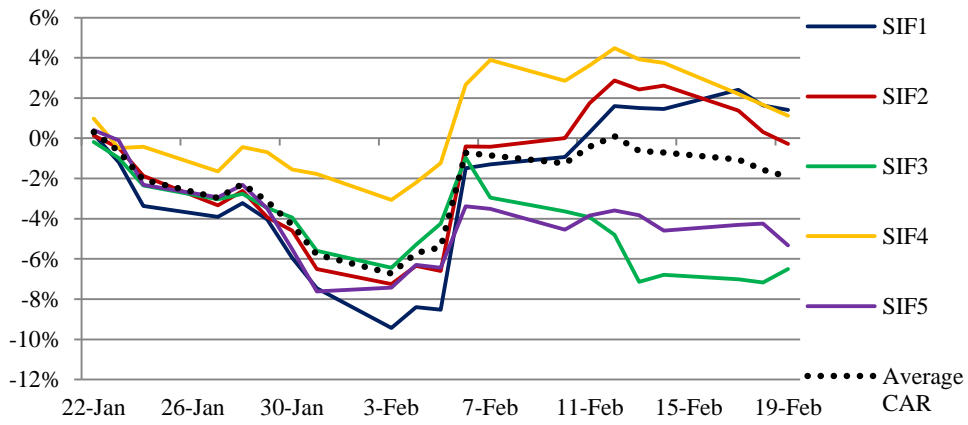


Figure no. 2. SIF's daily cumulative abnormal returns (CAR)