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Saša Obradović & Nenad Tomić

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The effect of presidential election in the USA on stock return flow – a study of a political event

Saša Obradović and Nenad Tomić

Faculty of Economics, University of Kragujevac, Kragujevac, Serbia

ABSTRACT

The subject of this paper is to determine the statistical significance of abnormal return that appeared on the New York Stock Exchange after the presidential election in the USA in November 2012. The analysis is focused on securities of the financial institutions listed on the New York Stock Exchange, whereby 85 companies have been included. For the purposes of the analysis a standard methodology of event study has been used. In general, parametric tests show a statistically significant negative impact of the event on stock return, whereby with the nonparametric tests there is no consistent estimation. This paper provides an interpretation of the results.

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1. Introduction

Economists are frequently asked to measure the effects of an event on the value of firms. The event itself can be an economic or non-economic one, whereby within a company, economic events can be a change of management, the issue of new shares, mergers, financial statement disclosures, acquisition or bankruptcy, and on the macroeconomic level those can be identifying macroeconomic variables, such as current account deficit, public debt, etc. Non-economic events usually occur due to political or geostrategic factors. The measurement of the effect of event is not a simple task; a methodological process, in literature known as event study, has been designed for these purposes. An event study pertains to quantitative finance, and it is used to assess the impact of events on the value of a firm (mainly on portfolio value) based on market data. Under the assumption of market rationality, it is considered that an event is immediately reflected in stock prices in the stock market, and therefore the procedure of short-term event study is adequate for the effect estimation. Without the assumption of rationality of market participants, monitoring the effect of an event on the value of a firm would require months, perhaps, even years.

Event study methodology will be applied in this paper in order to measure the effects of a political event. The event is presidential election in the United States of America, held on 6 November 2012. The presidential election in the USA is an event of a great importance.

CONTACT Nenad Tomić ntomic@kg.ac.rs

The American political system is based on a president, who, unlike in the European political systems, personally chooses members of the cabinet and has more power; therefore, the presidential election is the most important political event in the USA. Furthermore, the American political system is quite specific in that a president is elected not by the majority of total votes, but by the majority of the so-called electoral votes, whereby each of the states has a certain number of electoral votes, according to its population.

This article will quantify the effect of this political event on 85 companies of the financial sector listed on the New York Stock Exchange, and it will determine if there is a statistically significant effect. There are similar papers whose goal was to measure the effect of election results on the stock market – Vuchelen (2003) analysed a Belgium example of the effect of a coalition government on the stock market, whereby he concluded that the market reaction would depend on the political affiliation of the parties (left-wing, right-wing, or centre) that constitute the government. Shon (2010) analysed the impact of the American presidential system during the recounting of presidential ballots in Florida in 2000, which determined the outcome of the election. During this period, Shon noticed a positive abnormal return with companies that funded Bush`s campaign and a negative one with those funding Al Gore`s campaign. Herron, Lavin, Cram and Silver (1999) similarly carried out research into the effect of the elections in 1992 on various sectors in the economy, concluding that 15 out of 74 sectors sustained a statistically significant impact of the elections.

The second part of this article will discuss the process of the analysis of events, and the third part gives an overview of some of the previous studies that used event study methodology. The fourth section presents the methodology itself, and in the fifth section the results will be presented and analysed. Finally the conclusion of the research will be given.

2. The process of events analysis

The first papers on event studies appeared at the end of the 1960s, and primarily were connected to the research of the Nobel Prize winner Fama (Fama, Fischer, Jensen, & Roll, 1969). The methodology of an event study is statistically intensive and its development, as Eckbo states (2007, p. 5) was incited by the implementation of IT methods in statistics in the early 1980s. During that period, the methodology was formulated by Brown and Warner (1985), Dodd and Warner (1983) and Corrado (1989). The methodology relies on regression, parametric and nonparametric statistical tests. If we monitor one event and the securities of a group of companies, the core of event study is to determine the existence of abnormal or extra return of the observed securities during the period of the manifested effect of the monitored event. Therefore, the research requires a precise and irrevocable definition of the event, establishing if the event is expected or unexpected, separating the securities that will be under scrutiny, defining methodological categories, and finally performing statistical analysis.

When it comes to the selection of events, it is important that a chosen event allows isolating and monitoring its effect on the return of securities. Since we need to monitor the market for a certain period of time before the event itself, it is not advisable to select an event to which other or more significant events have preceded it and which can impact the return. The example for that are two largest bankruptcies in the history of the USA, Lehman Brothers and Washington Mutual Bank, which happened in the course of just one week. Beccheti and Cicireti (2011) analysed the effect of bankruptcy of the Lehman Brothers investment bank on a few hundred other New York Stock Exchange stocks; the analysis of the bankruptcy of Washington Mutual Bank would be statistically biased, because the remains of the effect of the previous, a week old, event would interfere with this one.

The selection of the securities that will be included in the observed portfolio is another important matter. There is neither a criterion to determine the number of various companies that will be analysed, nor a criterion whose fulfilment would include a certain company in the portfolio. Under the assumption that we analyse the effect of one event on the whole market, and not on a company or an industry, it is, generally a rule that more companies to monitor is always better than fewer. There is, also, a rule stating which conditions companies should fulfil in order to become part of the analysis – the availability of stock prices data during the observed period and no long periods of stagnation in trade of stocks in the observed company (a company whose stocks are not traded for two consecutive days is not adequate for the reason of a biased statistical conclusion). In some researches, when the effect of an event is determined on a certain limited market (i.e. the effect of the discovery of a new oilfield on oil companies), only companies that do business in the defined market will enter the observed portfolio – for example, the research of Papasyriopoulos, Koulakiotis, Papadimitriou, and Kalimeris (2007), and Bushnell, Chong, and Mansur (2009). A similar method is used in the research presented in this article.

During the estimation window, a normal stock return is taken into consideration. It has already been mentioned that it is a longer period (2 to 8 months) without turbulent events that could significantly disturb market flow. Since the period is long enough, numerous events that daily or weekly affect the stocks of particular companies or groups of companies are mutually compensated – see Serra (2002, p. 2). The analysis should follow the daily return of each stock during the estimation window, as well as the daily return of the market indicator (most common the market index) in order to estimate normal return.

The event window is relatively shorter than the estimation window, but it is the most important part of the analysis. After the selection of the event itself, it is necessary to precisely define the event window in order to perform a valid analysis. The event window is asymmetric with regard to the day of event realization, and the direction of asymmetry depends on the degree of anticipation of the event. If the event is expected, the event window will include several days before it, since the effect of the upcoming event is felt before its actual realization. On the other hand, with the unexpected events, the period will comprise several days after the event, because the effect is then manifested on the market. An example of an expected event could be the announcement of withdrawal of the chairman of the board at the next conference, and the unexpected event could be a fire in a factory.

Since the estimation of abnormal return is done during the event window, the accurate defining of this frame is of utmost importance, in order to measure the effects on the market at the right time. As normal return is determined during the estimation window, so is abnormal return determined during the event window. Abnormal return does not have to be positive either – if it is about an event that reduces the value of the company, abnormal return will be negative. Abnormal return is determined as the difference between the actual return during the event window and expected return for this period (Corrado, 2010). The expected return for this period is calculated based on a constant and a regression coefficient, which have been obtained during the estimation window. This will be further discussed in the chapter on methodology.

3. Previous research

There is a significant number of previous research that used the event study method. The majority of work is about the financial market in the USA, which is the largest and most developed financial market. Bartholdy, Olson, and Peare (2007) showed on a Danish example that even smaller markets could be the subject of an analysis.

A number of researches have aimed to prove the existence of an abnormal return arising due to political events (i.e. elections). Niederhoffer, Gibbs, and Bullock (1970) analysed the market reaction to the results of the presidential election over a long period of time, concluding that the market reaction on the first day and first week after the election differs depending on whether the winner is the Republican or Democratic candidate. Their results show that, on average, the market grows after the victory of the Republican candidate and falls after victory of the Democratic candidate. Riley and Luksetich (1980) analysed the favourability of the market towards Republicans through the decades, concluding that markets grew just before the victory of the Democrats, and mainly fell after the election, while in the case of a Republican victory the market grew immediately after the election. Leblang and Bumba analysed the market in the USA (2004), and comparatively analysed the impact of the presidential election in the USA and Great Britain over a period of seven decades (2005). In this analysis, the authors do not use event study, but the GARCH method.

Roberts (1990) performed regression analysis of the impact of the presidential election outcome in 1980, and the victory of the Republican candidate Ronald Reagan on the price movements of military company stocks, concluding that there was a positive effect on stock prices. Sectoral analysis was also performed by Knight (2006), encompassing the number of sectors in the victory of George W. Bush over Al Gore analysis on the 2000 elections, however, the financial sector is not included in the analysis.

4. Methodology

For the purposes of research in this paper a five-day event period has been created, asymmetric to future (therefore, $T_{-1} - T_{+3}$) after the studies of Beccheti and Cicireti (2011). The estimation period will last 6 months, arbitrarily based on different experiences of previous research. Some researchers, such as Beccheti, Cicireti, and Hasan (2007) prefer the analysis based on different lengths of the estimation window (i.e. 2, 4, 6 and 8 months), while others choose an even longer estimation windows (8 months). There is a danger with a too short estimation window that the normal return will be heavily affected by some smaller event that is not compensated and therefore the statistical conclusion will be biased. In long estimation windows the danger lies in gathering too many of the events, thus also making estimation biased. The long duration of the estimation window is also a condition for the validity of the equation for variation measurement of different abnormal return ranks.

It has been emphasized that the core of event study is determining abnormal return during the event window, and investigating the statistical significance of that abnormal return. In order to determine the value of abnormal return it is necessary to determine normal return first. MacKinlay (1997, pp. 17–19) states that there are several models to determine normal return. Cable and Holland (1999) conduct deeper analysis of differences and the potential of each of the models, and this article will apply a market model, which is the most common in practice, and which MacKinlay himself puts in the first place. For any stock i, the market model is:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \tag{1}$$

Let R_{it} denote return of i security (stock) in period t which belongs to estimation window, R_{mt} denotes the return of the market indicator (usually the market index that is under analysis) in the same period, and ε_{it} white noise, that is the effect of residual factors (the aforementioned possibility of particular factors strongly affecting daily stock return flow), with the estimated value of $E(\varepsilon_{it}) = 0$ and variance of $var(\varepsilon_{it}) = \sigma_i^2$, that is, it has normal rank. α_i and β_i are parameters of the market model derived from the regression of market return of each stock to the return of market indicators during the estimation window.

According to Serra (2002), determining the abnormal return event window requires calculating the expected return for every given security with the market model. Once derived, the expected return $E(R_i)$ will help to determine the abnormal return:

$$AR_{it} = R_{it} - E(R_{it}) \tag{2}$$

$$Var(AR_{it}) = \sigma^2_{\varepsilon_i} \tag{3}$$

where AR_{it} is abnormal return of stock i on day t, which belongs to event window. R_{it} is the estimated return of the same stock on the same day, with the estimation done with market model. In practice, abnormal return will always appear, but the question is whether it is statistically significant. Figure 1 is especially interesting, as t in equation (1) is between T_{0+1} and T_1 (marking this period with L_1), and in equation (2) is between T_1 and T_2 (marking it L_2), whereby 0 denotes event day.

For the purposes of the analysis, the practice is to aggregate the stock rather than use individual returns. Aggregation is done in various manners: the first one is daily for the event window, whereby average abnormal return $\overline{AR}_t$ of day t can be determined:

$$\overline{AR}_t = \frac{1}{N}\sum_{i=1}^{N} AR_{it} \tag{4}$$

$$Var\left(\overline{AR}_t\right) = \frac{1}{N^2}\sum_{i=1}^{N} \sigma^2_{\varepsilon_i} \tag{5}$$

The other approach to aggregation is with individual stock through a multiple-day event period, most commonly through all days, which results in cumulative abnormal return of stock i CAR_i:

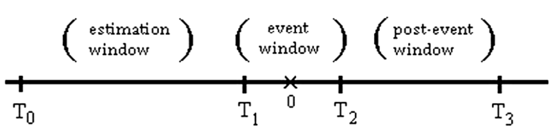

Figure 1. Event study time horizon. Source: Campbell, Lo, and MacKinlay (1997).

$$CAR_{i(t_1,t_2)} = \sum_{t=t_1}^{t_2} AR_{it}, T_1 < t_1 \leq t_2 \leq T_2 \quad (6)$$

$$Var\left(CAR_{i(t_1,t_2)}\right) = \sigma^2_{i(t_1,t_2)} = (t_2 - t_1 + 1)\sigma^2_{\varepsilon_i} \quad (7)$$

Finally, it is possible to determine average cumulative abnormal return $\overline{CAR}$. The values for CAR and $\overline{CAR}$ are not always calculated for the whole event window, but for particular two or more successive days.

$$\overline{CAR}_{(t_1,t_2)} = \frac{1}{N} \sum_{i=1}^{N} CAR_{i(t_1,t_2)} \quad (8)$$

$$Var\left(\overline{CAR}_{(t_1,t_2)}\right) = \frac{1}{N^2} \sum_{i=1}^{N} \sigma^2_{i(t_1,t_2)} \quad (9)$$

The works of Campbell, Lo, and MacKinlay (1997), Dwyers (2001) and Serra (2002) show gradually derived ranks of abnormal return on all of aggregate levels, as well as their variation measures. The condition for equations (3), (5), (7) and (9) is high value L_1, with which the variance equations add up to a given form (MacKinlay 1997, p. 21). The analysis also requires standardized cumulative abnormal return – SCAR$_i$, which is standardized for each individual stock by the fraction CAR$_i$ value with standardized deviation of given stock:

$$SCAR_{i(t_1,t_2)} = \frac{CAR_{i(t_1,t_2)}}{\sigma_i} \quad (10)$$

After identifying all abnormal return ranks, the hypotheses of its statistical significance can be tested. It should be pointed out that, commonly, two tests are used – parametric and nonparametric. The condition to apply a parametric test is the normal rank of the test statistics being fulfilled for a large enough sample (N>30). This is not a requirement for nonparametric tests, so they are recommended for the analysis of small financial markets. The paper will apply a parametric t-test, a J_1 and J_2 test, and nonparametric J_3 (Sign test) and a J_4 (Corrado test) test.

The t-test is one of the most commonly used tests in statistics, and it tests the difference between a realized and a hypothetical statistical value. The null hypothesis in a t-test is no statistically significant abnormal return, and the alternative hypothesis rejects the null one:

$$H_0: \overline{AR} = 0, \quad H_1: \overline{AR} \neq 0 \quad \text{ili} \quad H_0: CAR = 0, \quad H_1: CAR \neq 0 \quad (11)$$

It is obvious in equation (11) that the t-test allows testing of average abnormal return for every day, as well as a cumulative abnormal return of each stock. From a practical point of view it is far easier to perform a test on the former variation, since it provides a more robust test with fewer results to draw a conclusion from. Also, the t-test can be biased, that is the alternative hypothesis may, instead of an inequality sign, contain a less than or greater than sign in cases of explicit testing of whether the observed event leads to a positive or negative abnormal return. This paper will apply a two-tailed alternative hypothesis, since the existence of abnormal return is being tested without determining its sign a priori. The statistics of the t-test is:

$$t = \frac{\overline{AR}_t - AR_o}{s/\sqrt{N}} \tag{12}$$

Since hypothetical value $AR_0 = 0$, we will get the t-statistic by dividing the average abnormal return of the particular day by the quotient of the standard deviation of the complete sample during the estimation window (Samitas & Kenourgios, 2004, p. 9) and the root number of the observed stocks. Since this is a two-tailed test, the critical value for the null hypothesis rejection is ±1.96 with the confidence level of 95%.

The remaining two parametric tests J_1 and J_2 provide a uniform result over the whole event window, J_1 tests the $\overline{CAR}$ value, and J_2 the $\overline{SCAR}$, whereby this value is the average of all SCAR values for all observed stocks. The null hypothesis suggests that variables $\overline{CAR}$ and $\overline{SCAR}$ do not statistically differ from 0. The alternative hypothesis rejects the null one.

$$H_0: \overline{CAR} = 0, \quad H_1: \overline{CAR} \neq 0, \quad \text{and} \quad H_0: \overline{SCAR} = 0, \quad H_1: \overline{SCAR} \neq 0 \tag{13}$$

$$J_1 = \frac{\overline{CAR}_{(t_1,t_2)}}{\sqrt{\overline{\sigma}^2_{i(t_1,t_2)}}} \tag{14}$$

$$J_2 = \sqrt{\left(\frac{N\,(L_1 - 4)}{L_1 - 2}\right)}\,\overline{SCAR}_{(t_1,t_2)} \tag{15}$$

For t_1 and t_2, any given day during the event window may be taken, however, this research will use the first and the last day of the event period, that is J_1 and J_2 tests will be applied for the whole event window. Critical values for these tests are also ±1.96 with a confidence level of 95%, since the tests are two tailed.

The research will apply nonparametric sign test and Corrado test, often found in the literature as J_3 and J_4. It is worth mentioning some other nonparametric tests such as G-Rank T, or G-Rank Z tests, which have often been applied in nonparametric testing (Luoma, 2011b).

The sign test or J_3, according to Luoma (2011a), investigates the distribution of the observed statistics around the medians. The null hypothesis states that there is an even distribution of positive and negative values of the observed statistics around the median, and the alternative hypothesis rejects the null one, concluding an asymmetric sign disposition around the median.

$$H_0: Me = 0.5, \quad H_1: Me \neq 0.5 \tag{16}$$

The statistics of interest in this case are cumulative abnormal return, that is CAR values. For all of the stocks in the analysis, CAR values should be in ascending order, computing the median CAR value by $(N+1)/2$ where N is the number of observations. The equation for J_3 calculation is:

$$J_3 = \left(\frac{N^{+(-)}}{N} - 0.5\right)\frac{\sqrt{N}}{0.5} \tag{17}$$

where N represents the total of the observed stocks, and $N^{+(-)}$ the number of positive or negative statistical value (in this case the number of positive CAR). Usually the number of positive ones is considered, except in the case of the one-tailed tests where we investigate if the observed event leads to negative abnormal return. The critical value of the test is ±1.64, for a two-tailed test, which will be applied in this research.

The Corrado test or J_4 test investigates scaled ranks of the return for each of the observed companies. For the observation period we take the estimation window with a part of event window together with the realization day. The advantage to the previous test is that analysis now only considers return rank, without its sign, thus eliminating the impact of extreme values on the test result. The null hypothesis is, just as in case of the J_3 test, an even distribution of positive and negative values of the statistics around the median, while the alternative hypothesis rejects the null one, concluding that the distribution is not even. The equation for J_4 could be found in the works of Cowan (1992) and Kolari and Pynnonen (2008).

$$J_4 = \frac{1}{N}\sum_{i=1}^{N}\left(K_{i0} - \frac{L_2+1}{2}\right)/S\,(L_2) \tag{18}$$

$$S(L_2) = \sqrt{\frac{1}{L_2}\sum_{t=T_0+1}^{T_2}\left(\frac{1}{N}\sum_{i=1}^{N}\left(K_{it} - \frac{L_2+1}{2}\right)\right)^2} \tag{19}$$

where $(L_2 + 1)/2$ stands for mean rank, K_{io} represents return rank on the event day, $S(L_2)$ standard return rank deviation, K_{it} return rank of stock i observed day t, $t \in L_2$. The critical value of the test is ±1.64 in the case of the two tailed test, which will be applied in this paper. Nonparametric tests are arguable in terms of constant adjustment of procedure or test methodology; in effect, for the Corrado test, Ataulah, Song, and Tippet (2011, pp. 590–596) offer methodology modification with the so-called Edgeworth expansion, which could be the subject of some future research.

5. Results

In the analysis of the effects of American election day – 6 November 2012, on the return flow of leading financial companies on the New York Stock Exchange, we applied an asymmetric event window $T_{-1} - T_{+3,}$ with T_0 as event day 6 November. For market flow estimation a six-month period has been used, starting on 7 May 2012. Since this date is the beginning of the week, historic data considered Friday 4 May, for the returns to start on Monday 7 May 2012. The results provide both, historical and accumulated data for post-window to the end of November. For the market flow indicator, the SP 500 Index was taken, which is more frequently used than the Dow Jones since it covers a wider portion of the market (500 companies compared with 30).

The subjects of the analysis were stocks of the most important financial sector companies in the USA (in total, 85 banks, investment banks and insurance companies). Sectoral analysis was selected in order to isolate the election effect of a small segment of NYSE stocks. The specific selection of the financial sector is due to two reasons: first, the financial sector traditionally contributes the largest share of funds for presidential campaigns through donations,[1] and second, it is a sector that has been more inclined to Republicans[2] in the past, whose candidate was defeated in the election. Historic data were downloaded from Yahoo!Finance, and all the statistical derivations were done in IBM SPSS 20. For return estimation, adjusted closing prices were used each day, since the adjustment was very distinctive.

After downloading data we performed the regression analysis of the return flow of each observed stock in the estimation period relative to return flow SP 500. The results of the regression analysis for each stock are constant and coefficient, which are used for determination of expected return for these stocks, for the entire period subjected to the analysis. The difference of historic value and anticipated value based on regression between market indicators represents a residual return of each individual day. The subject of the study analysis is this residual return over the event window; that is, abnormal return.

Observing abnormal return over the event window allows us to perform statistical tests, the t-test, J_1 and J_2 of parametric tests, and J_3 and J_4 of nonparametric tests. The statistics of these tests are given in Table 1.

The t-test measures the value of the average abnormal return of each day of the observed event window. Comparing the results of the test with the critical values, we conclude that day T_{+1} shows statistical significance from the delivered abnormal return; the test statistics if very high, negative and it counts −4.15318. The conclusion is that on day T_{+1} of the event window, the impact on return was negative – after the election the market had a negative response. The t-test statistics for the rest of the period show no statistically significant abnormal return – besides the fact that 4 or 5 days of the event window the t-statistic was negative.

J_1 and J_2 are, unlike the t-test, performed on variables that describe the whole event window, which provides uniform test statistics. The statistics of these two tests are −10.6274 and −11.2469, and they both, in comparison, reject the null hypothesis, that is present the statistical significance of average cumulative abnormal return and standardized cumulative abnormal return. In addition, both statistics are negative, which points to a notable decline of the observed stocks over the event window.[3]

J_3 and J_4 also present uniformed statistics for the whole event. J_3 relates to the sign of CAR for the all observed stocks; the test statistics are more extreme than critical value that denotes CAR variables to be polarized – a negative test statistic value demonstrates a larger number of values with a negative sign (62 negative values, only 23 positive); that is, this

Table 1. Performed tests statistics.

Event window	t-test	J_1	J_2	J_3	J_4
T_{-1}	−0.95807	−10.6274	−11.2469	−4.23014	0.5906
T_0	−0.28329				
T_{+1}	−4.15318				
T_{+2}	−0.53841				
T_{+3}	0.36612				

Based on performed tests.

Table 2. Types of tests, set hypothesis, derived conclusions.

Test	Hypotheses	Test results
t-test	$H_0: \overline{AR_t} = 0$ $H_1: \overline{AR_t} \neq 0$	Null hypothesis rejected and alternative accepted for = T_{+1}
J_1	$H_0: \overline{CAR_t} = 0$ $H_1: \overline{CAR_t} \neq 0$	Null hypothesis rejected and alternative accepted
J_2	$H_0: \overline{SCAR_t} = 0$ $H_1: \overline{SCAR_t} \neq 0$	Null hypothesis rejected and alternative accepted
J_3	$H_0: M_e = 0.5$ $H_1: M_e \neq 0.5$	Null hypothesis rejected and alternative accepted
J_4	$H_0: M_e = 0.5$ $H_1: M_e \neq 0.5$	No evidence for null hypothesis rejection

Based on performed tests.

polarization was caused by the event effect. The statistics of J_4 or the Corrado test depend on the rank of the residual return on the event day, compared with all of the residual returns – since the beginning of the estimation to the event day. The test statistic is 0.5906 and it is lower than the critical value, so null hypothesis cannot be rejected. The low value of this statistics is caused by the nature of the residual returns on the event day – they are highly variable, so the numerator ratio stays relatively low.[4]

Different results were obtained by non-parametric tests due to various key performances of the test statistics for these two tests. Test statistic J_3 depends solely on the sign of the variable of interest (in this case, the cumulative abnormal return – CAR), while the test statistic J_4 depends on the ranks of returns sorted in ascending or descending order. In the case of J_3, the test statistics obtained a high value due to a clear polarization of CAR values (as many as 62 of the 85 values had a negative value). In the case of the J_4 test, the rank of return on the event day has particular importance for the value of test statistics, while it is not essential if a string is formed in ascending or descending order – the key is that the ranks of return on the event day are polarized away from the middle, to one side or the other. Owing to the high variability of return ranges for different stocks, the obtained numerator in the formula had a low value so that the test statistics remained below the critical value.[5] Table 2 presents a list of the set hypothesis as well as the results derived from the research.

6. Conclusion

The overall conclusion is that a parametric test rejects the null hypothesis (provisionally for the t-test, since it does not reject all days), while a nonparametric test does not provide a consistent conclusion of null hypothesis rejection – the J_3 test rejects null hypothesis, whereby the J_4 test does not prove rejection. The reason for this is the absence of absolute values in the nonparametric test, which relies on the value sign, that is rank, unlike the parametric test where absolute values are a norm. The conclusion is that the event of a presidential election in the USA held on 6 November 2012 affected the return flow of the observed stocks on the New York Stock Exchange. That effect had statistical significance – which was not confirmed by all the performed tests, although a sufficient number of tests did confirm it.

Possible restrictions of this research are due to the selection of the stocks in the portfolio, which was subjected to the event effect research, as well as the construction of the event itself. In order to estimate a complete event effect on the market the analysis should be performed on a market portfolio, which is impossible for objective reasons. Sectoral analysis may be interesting from the point of view of comparing the impact of an event on different sectors within one economy. An analysis of the impact on other sectors would provide results that could be inconsistent with the results obtained in the financial sector analysis. Another option that remains for future research is to monitor the reactions of the financial sector to the election, over a long period of time, in several successive electoral processes. It is possible that a redefined portfolio would provide diverse results in both parametric and nonparametric tests. The reason for this portfolio lies in the explanation of the event itself. Further research could include G-Rank nonparametric tests into the analysis, and changes in the construction of the event itself, which would provide more extreme values for the statistics of the J_1 and J_2 tests.

Notes

1. http://dollarspeak.com/tag/republicans/
2. http://www.washingtonpost.com/wp-dyn/content/article/2010/02/23/AR2010022305537.html
3. Parametric tests lead to the same conclusion that Niederhoffer et al. (1970), and Riley and Luksetich (1980) gave before of the negative response of the market in the days immediately following victory of the Democrats.
4. Results of the parametric test directly rely on the sample statistics (ideally on population parameters) which are calculated and exact. The nonparametric test, however, relies on rank position or the sign of the value of interest. Although the best solution for an analysis is to obtain consistent results of all parametric and nonparametric tests, which would strongly encourage a general conclusion, there is no working paper in event study literature that states that all tests must lead to the same conclusion. Parametric tests are expected to produce consistent results. As nonparametric tests rely on the data that have no interconnection, different results could be obtained. One could imagine a possible situation of all negative signs of return in the sample during the observed period, but with the ranks from 1 to N where the J_4 test does not have to lead to the same conclusion as the J_3 test at all.
5. After reviewers' complaints about the inconsistency, the authors have repeated the J_4 test for the day following the event day (T_{1+1}, although this is not a general standard for the J_4 test) and obtained a statistically significant value of test statistics => −2.26.

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ORCID

Saša Obradović http://orcid.org/0000-0001-9918-7271

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