THE IMPACT OF BANKS' FINANCIAL STATEMENTS PUBLICATION ON THEIR MARKET CAPITALIZATION (THE B.S.E. CASE)

Prof. Ioan TRENCA, PhD
Adrian ZOICAŞ-IENCIU, PhD Student
University of Babeş-Bolyai, Cluj-Napoca

1. Introduction

A company listed on the stock market experiences a series of advantages related especially to a relatively cheap positive advertising, a continuous valuation made by the market or preferentially access to financial capitals. Supplementary, the company has some obligations to fulfill towards the operator of that stock market. Indifferently of different particularities of the contemporary stock markets around the globe, the concept of transparency of the issuer is found in the regulatory packages dealing with the issuer's responsibilities towards the investors. The essential part of the transparency concept is represented by the issuer obligation of furnishing relevant data regarding its economic and financial activity.

While the domestic laws in this field kept changing **(1)**, within this obligations of the issuers was situated with priority the signaling of every significant event related to the issuer activity carrying an impact upon its economic coordinates: important contracts with major clients, new working spaces, activity reduction, mortgage contracts or other real warranties which represents a certain value (over 20% from the issuers total assets) or changes in the management, significant conflicts between the unions and the executive managers. Apart from these events, somehow with an occasionally character, beginning with the year 2004, the companies listed on the Bucharest Stock Exchange (BSE) communicates to the investors the so-called financial calendar, that is they indicate the date on which their quarterly and annually financial statements will be made public. After each semester some more complex reports are communicated also. Generally, this financial calendar is send to the specialized bureau of BSE during the first month of the year or sometimes in February.

Considering the fact that these reports are made on a regulate basis and that their releasing date is known in advance by the market, the publication of quarterly financial statements becomes a very important event in the life of a listed company. And that is because, depending on the dimension of the figures corresponding to the company turnover or its profit, the share price will have a certain evolution on the stock market. In these conditions, the event is carefully managed both by the issuers (from their desire of presenting results as good as they can) and the active investors who, in the case in which their predictions are confirmed, can obtain an additional profit above the level corresponding to a naïve buy&hold strategy, the dimension of this profit being generally proportionally with the impact of that event on the market **(2)**. In the case of the commercial banks,, especially due to their essential role in the economy, the importance of these reports is even more amplified.

On the occasion of these kinds of events, significant profits can be made also by using privileged information

because the quarterly financial statements arrive with a lag of two months at the investors' disposition and their finalizing process implies too many persons and days. We would expect though a certain discretion regarding the main figures from these financial statements, rather than their communication in private assembling before the release date and without being officially communicated to all investors.
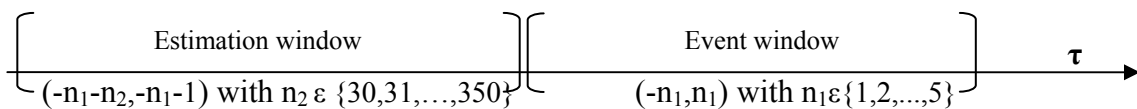
2.Methodology

The main goal of this paper is the analysis of the impact of these reports of financial statements on the stock prices of the three commercial banks listed at BSE, analysis carried out in a period lying between January 2004 and August 2007 using the event study analysis methodology (ESA). In order to do this we started with an inventory of the public release date of these statements beginning with the year 2004, the main source being communicates sent by the issuers. Thus, the date on which the financial statements are made public is considered to be the event date or the critical moment on which the information penetrates the market. But in this aspect there are significant differences between the issuers because some of them communicate the financial statements after the closing of the trading day mentioned as release date, diminishing thus the attribute of critical for this date, while other issuers are communicating these statements before the opening of the trading day.

For this reason but especially because we wished to analyze the impact of these results both before and after the date communicated to the stock exchange we used in this research an event window which includes apart from

this date a symmetrical interval formed by $2*n_1 +1$ trading days, n_1 anterior to the release date and n_1 afterwards. Each value chosen for n_1 leads to another set of results or even possibly other conclusions, in this context appearing the first contribution of this paper to the ESA methodology. More precisely, the problem of subjectivity in dimensioning the event window is solved by considering multiple choices for n_1 (in our case 5 **(3)**), followed by normal application of the ESA methodology and finally the evaluation of those results having in mind a certain conclusions convergence.

The definition of the n_1 variable as a set of natural values ($n_1 \varepsilon \{1,2,…,5\}$) solve only partially the problem of subjectivity in the parameterization of the ESA. A floatable event window indirectly implies a floatable estimating window determined by the left limit (**$-n_1$**). Additionally, arises the question regarding what period of time should be considered when we estimate the parameters necessary to evaluate normal returns which, in other words, means that a new variable n_2 must be considered. Generally, the selection of n_2 is made considering the conflict between the case of using a relatively short period of time sustained by the possibility of isolating the local behavior of the stock price respectively the option for a longer period of time, necessary according to some authors, for the sedimentation of price evolution in a way in which it could induce a specific behavior to the price. We dealt with this problem in the same way by considering a set of values limited by a period of time considered minimal (30 days) and a maximal one (350 days) thus $n_2 \varepsilon \{30,31,…,350\}$. Graphically, the two variable n_1 and n_2 can be observed in the following figure.

Estimation window	Event window	
$(-n_1-n_2,-n_1-1)$ with $n_2 \varepsilon \{30,31,…,350\}$	$(-n_1,n_1)$ with $n_1 \varepsilon \{1,2,...,5\}$	τ

The second contribution to the ESA methodology consists in the introduction of an optimization module for the parameters used to generate the normal returns. In this study we used in parallel two methods of estimating normal returns: the method of constant average return and the market model, both of them being the most frequently used in this situation **(4)**. More precisely, the object of optimization will be the average return and the two parameters alpha and beta from the market model, all of them computed over the estimation window, the objective being the minimization of the error's variance associated with each model. In our case, when the length of the event window is situated between 1 and 11 days, for each of these 5 cases, the 300 estimation windows will be formed resulting thus 300 averages, 300 alphas and 300 betas. The optimization module will select from all these parameters those which lead to minimum variances for the errors; in this way only the values which explain the best the price behavior are selected. Supplementary, it is needed a record of all the values of these parameters because somehow a triviality problem arise for this optimization.

Following these procedures, for each event there is an estimation needed for 4.500 parameters (=5x3x300) and for the whole research which contains 54 events 243.000 estimations are necessary (=54x4.500). This effort is relatively impossible if a "manually" approach is considered especially if we want to assure a certain research quality and, in these conditions, in order to overcome this computational effort we conceived and developed, using the C programming language, a software application (EvStud 1.1) which should automates the ESA methodology. This application tends to simplify the task **(5)** conferring to the research in the same time an extended generality and enlarging the potential fields of analysis by the possibility of studying phenomena like output (abnormal returns) sensitivity to variations of the estimation parameters (average, alpha, beta) or the study of redundancy related to an oversized event window.

Because this study did not differentiate between "good" and "bad" financial results (due to the subjectivity associated with such a decision) in order to test the informational effect of the publication of the results we will use a methodology which deals with squared abnormal returns **(6)**. The first step consists in calculating the square of the abnormal returns from the event window (it can be one or more) for each stock $(RA_{j,t})$. The second step standardizes these squares by dividing them to the variance of abnormal returns from the estimation period of each event.

$$RA'_{j,t} = \frac{RA^2_{j,t}}{\sigma^2\left(RA_j\right)}$$

The average abnormal return at the t moment will be computed as an average of the standardized returns for each event which can coincide or not with a certain stock.

$$RAM'_t = \frac{1}{N} \times \sum_{j=1}^{N} RA'_{j,t}$$

A $RA'_{j,t} > 1$ value indicates that the return is superior to the normal one respectively inferior if $RA'_{j,t} < 1$. The $RA'_{j,t}$ variable is distributed according to a Fisher law of probability with 1 and T-2 degrees of freedom, where T represents the number of returns from the estimation period. For the average abnormal return, RAM'_t, a z statistics is used and it is described below:

$$z\left(RAM'_t\right) = \frac{\sum_{j=1}^{N}\left(RA'_{j,t} - 1\right)}{\sqrt{\sum_{j=1}^{N} 2 \times \left(T_j - 3\right)/\left(T_j - 6\right)}} \to N\left(0,1\right)$$

3. Data

For carrying out the research, we have analyzed the quarterly financial

statements reported by the three commercial banks listed at BSE, their stocks being among the most intensively traded stocks at BSE, a positive aspect since an acceptable liquidity represents an essential criterion for the estimation of both normal and abnormal returns.

For these issuers, an important difficulty was the identification of the communicates which contain the financial calendar because during a year an issuer sends tens or even hundreds of such communicates identified only through their publication date. But even more time consuming is the identification process of the changes of the data communicated initially because these modifications can arrive all along the year imposing in consequence a sequential search in the content of all communicates. It is worth mentioning that some companies publish the dates of reporting the financial results not as a distinct day but as an interval consisting of 3 to 8 days making it thus more difficult the isolation of the event date but justifying the usage of an event windows.

The monitored period of the evolution of these three banks varies with the trading history of each of them. Thus, the left extremity of the interval is 06.09.2004 (1,003 observations) in the case of Banca Comercială Carpatica (BCC), 01.15.2001 (1,638 observations) for BRD respectively 01.05.2000 (1,897 observations) in the case of Banca Transilvania (TLV).

Another issue that must be stressed is the weak trading activity of these three stocks during certain periods, especially between 2000 and 2003, phenomenon manifested by few displayed orders for the stock and even by the absence of trades during a trading session. The problem of missing closing price is partially solved by adopting a reference price, which is the price of the last active day. If on an absolute level, of the price, this solution proves itself an acceptable one, we cannot consider likewise when we deal with the returns because they will be null during the whole inactivity period causing unwanted effects from the tendency of beta to move to zero to the formation of biased probability distribution for the returns. But it is important to emphasize that by chousing only the most "active" stocks these dysfunctions were at least minimized.

For these 3 issuers we inventoried in the period January 2004 – August 2007 a total number of 54 report dates as they were extracted from the financial calendars send to the specialized compartment at BSE.

4. Empirical results and conclusions

The results obtained after the software application was run are very diverse allowing, as we mentioned before, the development of a complex set of analysis. In the following sections we will present only the most important directions, stressing, in a manner which will allow a further practical usage, the main resulted conclusions.

4.1 General results

After running the ESA methodology on the whole sample formed by the 54 reporting dates, the abnormal returns from table number 1 resulted, the value of the z statistic being also displayed with the probability of rejecting the null hypothesis, H_0: $RAM_t=0$. As we can easily observe, H_0 is rejected for the whole event windows with a probability comfortably above 99%, as well for the constant mean return model and the market model.

As a consequence, the following conclusion results: the impact of the publication of the three commercial banks' financial statements upon their stock prices is a significant one and it is manifested both prior and after the publication date. Following this, the hypothesis of an informational efficient market, in the semi strong sense, is categorically rejected for the BSE.

Table 1: Squared average abnormal returns associated with the event window (the whole sample - 54 events)

Day t	Constant mean return			Market model		
	RAM_t	$z(RAM_t)$	Prob-H_0	RAM_t	$z(RAM_t)$	Prob-H_0
-5	1.8784	135.40	1.00	1.9207	141.93	1.00
-4	1.4652	71.71	1.00	1.8968	138.24	1.00
-3	1.6021	92.82	1.00	1.8843	136.32	1.00
-2	1.8301	127.97	1.00	1.9952	153.42	1.00
-1	1.2817	43.43	1.00	1.8140	125.48	1.00
0	1.7905	121.85	1.00	1.9999	154.14	1.00
1	2.6506	254.44	1.00	3.0753	319.91	1.00
2	2.2686	195.56	1.00	2.5558	239.82	1.00
3	1.8347	128.66	1.00	2.0202	157.27	1.00
4	1.7268	112.05	1.00	2.0940	168.65	1.00
5	2.1278	173.85	1.00	2.3816	212.97	1.00

Analyzing the level of the average returns (RAM_t) it can be noticed that in both cases the +1 day from the event window, which is the first day following the publication date, exhibits the greatest value, 2.65 and 3.07, both of the levels exhibiting maximum values for the z statistic also. In a decreasing hierarchy, the +2 and +5 days follow as a sign of the persistence of the impact on the stock market. The high values obtained for RAM_t can be attributed to a better identification of the abnormal returns respectively to a stronger differentiation of these from the return recorded in the event date. In the case of the constant mean model, the event date (day 0) does not seems to be a special one when compared to the others, recording a rather low abnormal average return of 1.72, phenomenon observed in the case of the market model also. It results thus that the issuer usually communicates their financial results after the closing of the trading session, postponing the impact for the following trading session.

4.2 Results conditioned by the issuers

Running the application allowed us to carry on an analysis of the ESA results when each issuer is considered individually and thus we could identify some particularities of financial reporting related stock behavior. A first observation for these results was the reduction of the probability of rejection of H_0 for certain days of the event window implying thus, that at an issuer level, the publication of the results have not a significant impact on the whole surrounding interval of the event date. A second observation relates to the fact that the RAM_t values resulted after using the two models of determining the normal returns (the constant mean model respectively the market model) tend to be very similar, but a superior quality associated with the market model is maintained. A third observation deals with the behavior of the abnormal returns variance when different days from the event window are considered, a direct relation being noticed between the level of the abnormal return for a day and the associated volatility. Yet, this result is not a very surprising one but stresses the fact that for these days significant departures from normality are recorded.

When compared with the other issuers, Carpatica commercial bank's stock (BCC) does not seem to be significantly affected by the publication of the financial results with the exception of a 3 day interval closing on the event date; in the rest of the event window the abnormal returns are recording low values, in some cases even the rejection

of the null hypothesis being challenged (days -3 and +5). In the case of BRD-GSG (BRD), the most significant impact is recorded in first following day after the publication of the financial statements, the effects maintaining themselves during day +2.

Table 2: Study results in the case of BRD and BCC

BRD Day t	Constant mean RAM_t	z	Pr.	Market model RAM_t	z	Pr.	BCC Ziua t	Constant mean RAM_t	z	Pr.	Market model RAM_t	z	Pr.
-5	1.5888	1.79	0.96	2.4248	4.34	1.00	-5	1.3106	0.87	0.81	1.2151	0.60	0.73
-4	1.6898	2.10	0.98	2.1648	3.55	1.00	-4	0.7007	-0.83	0.20	1.3720	1.04	0.85
-3	0.5460	-1.38	0.08	1.8702	2.65	1.00	-3	0.2933	-1.97	0.02	0.7053	-0.82	0.21
-2	0.4133	-1.78	0.04	0.8162	-0.56	0.29	-2	1.9415	2.62	1.00	2.4056	3.91	1.00
-1	0.5613	-1.33	0.09	0.8125	-0.57	0.28	-1	1.1748	0.49	0.69	0.7743	-0.63	0.26
0	0.6608	-1.03	0.15	1.3983	1.21	0.89	0	1.9044	2.52	0.99	1.6114	1.70	0.96
1	3.2100	6.72	1.00	3.3524	7.17	1.00	1	0.8945	-0.29	0.38	0.6497	-0.98	0.16
2	2.2949	3.94	1.00	1.9235	2.81	1.00	2	1.1988	0.55	0.71	1.0884	0.25	0.60
3	1.0879	0.27	0.61	0.9776	-0.07	0.47	3	1.4917	1.37	0.91	0.7724	-0.63	0.26
4	0.7550	-0.75	0.23	1.1318	0.40	0.66	4	1.3462	0.96	0.83	2.1024	3.07	1.00
5	1.5192	1.58	0.94	1.0234	0.07	0.53	5	0.4369	-1.57	0.06	0.8888	-0.31	0.38

A special case is being represented by Transivania bank's stock (TLV) which exhibits the lowest abnormal returns within the event window which could mean that the publication of the financial results does not represent a significant surprise for the investors. What could be stressed is a higher volatility in the day preceding the event date but even here, the rejection of the null hypothesis is done with a probability of just 85%. We can conclude from these observations that the market for the TLV stock is exhibiting the highest level of informational efficiency in the semi-strong sense, its market anticipating relatively correctly the bank's financial results. But some additional details are required regarding this conclusion and firstly there is the possibility that information regarding the main financial figures to be reported could transpire in the market and the significant movements of the price, expected for the event date, to be

Table 3: Study results in the case of Banca Transilvania

TLV Day t	Constant mean RAM_t	z	Pr.	Market model RAM_t	z	Pr.
-5	#####	-0.65	0.26	1.5154	1.56	0.94
-4	#####	-0.07	0.47	0.6930	-0.93	0.18
-3	#####	-0.39	0.35	0.5258	-1.44	0.08
-2	#####	-0.36	0.36	0.4706	-1.60	0.05
-1	#####	1.04	0.85	1.2128	0.64	0.74
0	#####	-2.02	0.02	1.0982	0.30	0.62
1	#####	-0.95	0.17	1.1806	0.55	0.71
2	#####	-0.28	0.39	1.3043	0.92	0.82
3	#####	0.54	0.71	1.7562	2.29	0.99
4	#####	-0.08	0.47	1.0810	0.25	0.60
5	#####	1.34	0.91	1.5597	1.69	0.95

realized prior. And secondly, a greater volatility of the price may be the effect of other events gravitating in the period in which financial statements reports was scheduled. This hypothesis tend to verify especially in April-May when, along with the publication of the financial statements for the first quarter, the decisions taken by the shareholders regarding the distribution of last year profit are made also publicly. And the last ones tend to have a much heavier impact on the stock price.

4.3 Results conditioned on type of financial reports

A natural question is if the quarter for which the financial report is made does not differently affect stock prices, especially in the case of the fourth quarter which is associated with the annual financial statements, statements which have superior informational content compared to the others quarters. On the other hand, it is possible that this annual financials will bring no additionally information on the market because, before their communication with two-three months, the preliminary results, which represents, historically speaking, good approximations of the final statements are published **(7)**. In consequence, we could state that there are at least two main factors which affect in opposite directions the level of the abnormal returns determined by the publication of the annual financial statements, the evolution of returns within the event window being the results of the action of these two forces.

Another important influencing factor is the general trend of the market in the moment in which the financial statements of the companies are published. Intuitively, when these reports are communicated during a bull market (or an upward trended market) it is very possible that relatively good financial results to have an amplified effect on the market, acting perfectly as an essential motivation for strengthening the buying decision regarding a stock. When the

reported results are somehow below expectations it is possible that the enthusiasm existing in the market to attenuate this negative effect, the final result being again a combination of higher respectively lower abnormal returns as a normal situation would require. The market reacts in an analogue way when the main trend of it is downward but this time the effects of "good" financials statements is sub dimensioned while poor financials are leading to amplified stock price corrections.

In conclusion, the market trend can have a significant influence on the level of abnormal returns only when the research differentiate between financial results above expectations (qualified as good news) respectively bellow expectations (poor results). Because this study did not considered this differentiation (we remind that such delimitation are highly subjective, the real problem being what we understand by rational expectations regarding the financial results) we will not analyze very profoundly these influences but we will restrain our analysis for the abnormal returns associated to the preliminary results reports and those for the first quarter. We choose these two categories because the preliminary annual results usually intervene during February and March months which were, at least between 2004 and 2007, the peak of upward tendencies at BSE while the reports for the first quarter intervene in April-May, a classical now correction period.

In order to answer to all these questions, we have restructured the ESA results forming five new samples of events associated with the five categories of financial reports: the first, the second, the third and the fourth quarter plus the annual preliminary results. The resulted data are presented in table number 4.

Table 4: The event study results – conditioned on the type of the financial report

	Quart I (11 even.)			Quart II (11 even.)			Quart III (10 even.)			Quart IV (11 even.)			Prelim.(12 even.)		
Day t	RAM_t	z	Pr.	RAM_t	z	Pr.	RAM_t	z	Pr.	RAM_t	z	Pr.	RAM_t	z	Pr.
-5	1.1980	1.11	0.87	1.3524	2.01	0.98	3.2035	10.78	1.00	2.2458	7.00	1.00	1.7165	4.06	1.00
-4	1.2297	1.29	0.90	1.1323	0.75	0.77	1.2327	1.14	0.87	2.0527	5.92	1.00	1.6325	3.58	1.00
-3	1.5325	2.99	1.00	1.0402	0.23	0.59	2.5793	7.72	1.00	0.7963	-1.14	0.13	2.2945	7.33	1.00
-2	1.5236	2.94	1.00	1.1272	0.72	0.77	2.5365	7.52	1.00	0.5694	-2.42	0.01	3.5521	14.46	1.00
-1	0.9137	-0.48	0.31	0.7243	-1.57	0.06	2.2240	5.99	1.00	1.3689	2.07	0.98	1.4103	2.32	0.99
0	1.6532	3.67	1.00	1.4376	2.49	0.99	3.6413	12.92	1.00	0.5650	-2.44	0.01	2.0887	6.17	1.00
1	1.7419	4.17	1.00	2.7343	9.87	1.00	5.7811	23.38	1.00	1.1544	0.87	0.81	2.5625	8.85	1.00
2	2.1239	6.31	1.00	1.7984	4.54	1.00	2.4870	7.27	1.00	2.9993	11.24	1.00	2.0033	5.68	1.00
3	2.2656	7.11	1.00	1.9671	5.50	1.00	1.3899	1.91	0.97	2.2480	7.01	1.00	1.2058	1.17	0.88
4	1.7173	4.03	1.00	1.1002	0.57	0.72	1.9724	4.76	1.00	1.8514	4.78	1.00	2.0638	6.03	1.00
5	2.0702	6.01	1.00	1.2443	1.39	0.92	2.1791	5.77	1.00	2.0340	5.81	1.00	3.1347	12.09	1.00

As we can observe from the above table, the highest abnormal returns are generated by the financial results associated with the third quarter followed by the preliminary results. Regarding this hierarchy we noticed the average abnormal return from day +1 of 5.78 (Q3) and 2.56 (preliminary results), the null hypothesis being rejected in both cases with a probability above 99.99%. Usually, November is the month during which the third quarter financial reports are communicated but it is also a month of price appreciations at BSE **(8)**, fact which can explain the level of the found abnormal returns.

The weakest influence is recorded for the financial statements associated to the second quarter because this report intervenes usually in August, a month with a turnover bellow the annual average. Consequently, an explanation for these weak influences associated with half-year financial statements could be a lower presence and activity of the investors during this time of the year. Regarding the abnormal returns determined by the financial statements of the first and fourth quarter of the year, both having the same magnitude, we could notice some significantly different from zero values in the whole post event period and in the

case of the annually reports a higher volatility in days -5 and -4 which indicates the fact that these reports are seriously considered by the investors. It is also true that the publication of annually financial results is made usually after the ordinary and extraordinary shareholder's meetings fact which could imply some powerful influences through the decisions taken with such occasions, influences which can distort the effects induced by the publication of annually financial statements.

Notes:

(1) A current situation of the obligations held on the companies listed at the Bucharest Stock Exchange (BSE) can be found in the C.N.V.M. regulatory rule number /2006, chapter III (Reporting requirements), section 2, article 113, published in the O.M. nr. 312/06.04.2006.

(2) Especially for this purpose, some "active" investors are behaving somehow "unhealthy" (in our opinion) within the trading session right away after a stock is traded after being suspended for the financial statements publication. And by unhealthy we meant inducing an artificially created hysteria state by posting and/or executing market orders, sometimes with huge amount of shares,

but rapidly modifying these orders from an evident fear.

(3) Of course, in the case of an informational inefficient market considering $n_1>0$ is justified but still, the manifestations of these inefficiency can be reasonably restrained within a period of 11 days centered in the event date.

(4) An comparative analysis regarding statistical characteristics of these two models was rigorously developed in Campbell, J.Y., Lo A.W, MacKinlay A.C., - "The Econometrics of Financial Markets", Princeton University Press, New Jersey, 1996 .

(5) Using a significant number of functions, the software still requires a significant execution time especially because of the over solicitation of the memory stack determined by constant appeals of the functions' codes. Thus, depending on the number of the parameters and the length of the report which must be generated, the execution of the operations for a stock which contains 19 events can take between 1'50'' and 24' for a 0.9 GHz processor.

(6) Beaver (1968) (see References [2]); the methodology has been used on the Romanian market also, see Todea A., - „The Informational Efficiency of Capital Markets", Ed. Casa Cărţii de Ştiinţă, Cluj-Napoca, 2005.

(7) This situation, frequently verified on the BSE is explainable because when the preliminary annually financial results are published, the main elements recorded in accounting were already made, some differences being possible from adjustments, error corrections or accounting rules.

(8) Unfortunately (!), November (2007) constitutes an exception from this "thumb rule".

REFERENCES

Ball, R., Kothari, S.P., Watts R.L.	*Economic Determinants of the Relation between Earnings and Stock Returns*, *The Accounting Review*, Vol. 68, nr. 3, p. 622-638, 1993;
Beaver, William H	*The Informational Content of Annual Earnings Announcements*, *Journal of Accounting Research*, Vol. 6, (Supliment), p. 67-92, 1968;
Dyckman T., Philbrick D., Stephan J.,	„A Comparison of Event Study Methodologies Using Daily Stock Returns: A Simulation Approach", *Journal of Accounting Research*, Vol. 22, pag 1-30, 1984;
Henderson G.V. Jr.	„Problems and Solutions in Conducting Event Studies", *Journal of Risk and Insurance*, Vol. 57, nr. 2, p. 282-306, 1990;
MacKinlay, A.C.,	"Event Studies in Economics and Finance", *Journal of Economic Literature*, Vol. 35, nr. 1, p. 13-39, 1997;
McWilliams A., Siegel D	„Event Studies in Management Research: Theoretical and Empirical Issues", *The Academy of Management Journal*, Vol. 40, p. 626-657, 1997,