
Munich Personal RePEc Archive

Holiday effect on the Romanian stock market

Dumitriu, Ramona and Stefanescu, Razvan and Nistor, Costel

Dunarea de Jos University of Galati, Dunarea de Jos University of Galati, Dunarea de Jos University of Galati

8 September 2011

Online at https://mpra.ub.uni-muenchen.de/41635/
MPRA Paper No. 41635, posted 01 Oct 2012 13:35 UTC

HOLIDAY EFFECT ON THE ROMANIAN STOCK MARKET

Ramona Dumitriu, Razvan Stefanescu,
Costel Nistor

Faculty of Economics and Business Administration,
University "Dunarea de Jos" Galati, ROMANIA

rdumitriu@ugal.ro, rzvn_stefanescu@yahoo.com,
costel_nistor_fse@yahoo.com

Abstract

This paper examines the holiday effect presence of on the Romanian stock market. We perform regressions with dummy variables and daily values of some from the main indexes of the Bucharest Stock Exchange. The results indicate a post-holiday effect for all the indexes and a pre-holiday effect only for some of them.

Keywords: Calendar Anomalies, Romanian Stock Market, Holiday Effect

JEL Classification: G02, G10, G14

1. INTRODUCTION

In the last decades, practical and theoretical reasons led to a large amount of papers exploring the calendar anomalies presence on the financial markets. The identification of seasonal effects on the evolution of the financial assets prices could serve in the investment decisions making. An investor who knows such seasonal effects could easy elaborate a strategy to beat the market. Calendar anomalies are among the main arguments used against the Efficient Market Hypothesis (EMH), proposed by Fama (1970), which stated that past values of the stock prices couldn't be used to predict the future values.

The holiday effect is among the main calendar anomalies identified on the financial markets. Usually, on a financial market the holidays occur on the national days, in the beginning of new years, in the religious holidays etc. There were identified two forms of the holiday effects:

- the pre-holiday effect, when the price returns of the days preceding the holidays are significant different from those in other days;
- the post-holiday effect, which consist in significant differences between the price returns from the days that follow the holidays and those from other days.

The two seasonal effects were identified in several countries. Lakonishok and Smidt (1988) studied the calendar anomalies on the Dow-Jones Industrial Average of New York Stock Exchange and they found that returns from the pre-holidays were much higher than those from other days. Ariel (1990) also identified a consistent pre-holiday effect on CRSP index. Kim and Park (1994) investigated seasonality of the capital markets from industrial countries and they found holiday effects in the United States, Japan and United Kingdom. Marrett and Worthington (2007) examined the Australian stock market and they concluded that pre-holidays returns were in average five times higher than the other days.

Some papers from the behavioral finance field explain the holiday effect by a sort of euphoria which animates the investors and makes them to buy shares before holidays (see, for example, Brockman and Michalyuk, 1998; Vergin and McGinnis, 1999). Other studies revealed significant differences between holiday effects for small and large corporations (see, for example, Kim and Park, 1994; Vergin and McGinnis, 1999).

In this paper we investigate the holiday effect presence on the Romanian stock market. After a difficult period in 1990s, the Bucharest Stock Exchange (BSE) experienced a recovery in 2000s. Romania's adhesion to the European Union in 2007 stimulated large inflows of foreign capitals which play in the present a major role in BSE activity. Since 2008, in the context of global crisis, BSE experienced a difficult period, marked by uncertainty. We employ regressions with dummy variables in order to identify pre or post-holiday effects for the main indexes of BSE.

In the next section there are described the data and the methodology employed in our investigation. The third section presents the empirical results, while the fourth section concludes.

2. DATA AND METHODOLOGY

In our investigation we employ daily closing values of six indexes from BSE:

- BET, which reflects the price movement of the most liquid 10 companies listed on the BVB regulated market;
- BET-C, which describes the evolution of all big companies listed on BSE excepting the investment funds (SIFs);
- BET-FI, which reflects the price movement of the investment funds (SIFs);
- ROTX, which describes the evolution of "blue chip" companies traded on BSE;
- BET-XT, which expresses the evolution of the most liquid 25 shares traded on the BSE, including SIFs;
- BET-NG, which describes the evolution of companies which have the main business activity located in the energy sector and the related utilities.

For the first four indexes our sample covers a time period from January 2002 to September 2011, while for the last two indexes, which appeared more recently, we use values from January 2007 to September 2011. We calculate the returns of these indexes using the formula:

$$R_t = \ln (P_t) - \ln (P_{t-1}) \qquad (1)$$

where:

- R_t is the return on the day t;
- P_t is the closing market index price in the day t.

Table 1 - Descriptive Statistics of the Indexes Returns

Returns	Mean	Median	Std. Dev	Skewness	Ex. kurtosis	Jarque-Bera Test
BET	0.0730984	0.0896214	3.36719	1.60683	434.770	1.92029e+007***
BET-C	0.0705999	0.106390	2.82670	1.39818	414.709	1.74714e+007***
BET-FI	0.0756478	0.000000	4.32611	0.995933	269.195	7.36173e+006***
ROTX	0.0867996	0.0927038	3.65118	1.11274	457.379	2.11902e+007***
BET-XT	-0.078321	0.0223701	4.82448	1.32891	248.500	3.08539e+006***
BET-NG	-0.042854	-0.032865	4.02049	1.68975	164.683	1.35547e+006***

The descriptive statistics of the indexes returns revealed some significant differences among them (Table 1). The last two indexes, which are composed only since 2007 show negative means of returns. For every index, the results of Jarque-Bera test indicate the null hypothesis of a normal distribution of the values can be rejected.

In Romania the system of holidays for BSE suffered some changes in the last decade. In general, it included the National Day (December 1), the Labor Day, the first day of the year and some religious holidays. We compare the means and medians of the returns from pre-holidays and post-holidays with the returns from other trading days. We use the non parametric Wilcoxon Rank-Sum Test, in which we formulate the hypothesis that medians of two variables are equal. In our attempt to identify the pre or the post-holiday effects we also perform regressions with dummy variables:

$$R_t = \gamma_0 + \gamma_1 \, PRE\_HOL + \gamma_2 \, POST\_HOL + \varepsilon_t \qquad (2)$$

where:

- PRE_HOL is a dummy variable taking the value one for the trading day before a public holiday and zero otherwise;
- POST_HOL is a dummy variable taking the value one for the trading day after a public holiday and zero otherwise.

In the case of autocorrelation and heteroskedasticity identified in such regressions we use autoregressive terms to correct them.

3. EMPIRICAL RESULTS

We split our sample of data in three sub-samples corresponding to pre-holidays, post-holidays and in the other trading days. We calculate means and medians of the returns for every sub-sample. The results, presented in the Table 2, indicate some significant differences. In general, the returns from pre-holidays or post-holiday are in average much higher than those from the other trading days. However, in the case of BET-FI returns from pre-holidays are in average negative, while those from the other trading days are positive. The Wilcoxon Rank-Sum test suggests that for all the six indexes we could reject the null hypothesis that medians from pre-holidays are equal with the medians from other trading days. In the case of post-holidays, the null hypothesis is rejected only for four indexes: BET, BET-FI, ROTX and BET-XT.

Table 2 - Means and medians of the returns in pre-holidays, post-holidays and in the other trading days

Return		**Mean**	**Median**	**Wilcoxon Rank-Sum Test**
BET	Pre-holidays	0.567728	0.685005	2.20344 [0.0275635]
	Post-holidays	0.605633	0.720880	2.19765 [0.0279739]
	The other days	0.0548858	0.0731281	
BET-C	Pre-holidays	0.605008	0.496416	2.10275 [0.0354876]
	Post-holidays	0.457312	0.315394	1.55429 [0.120116]
	The other days	0.0545812	0.0900365	

BET-FI	Pre-holidays	-0.280961	0.595578	1.7768 [0.0756019]
	Post-holidays	1.60915	1.73786	2.24897 [0.0245143]
	The other days	0.0563356	0.000000	
ROTX	Pre-holidays	0.756832	0.516776	2.27297 [0.0230281]
	Post-holidays	0.723885	0.703352	2.18824 [0.028652]
	The other days	0.0657081	0.0750679	
BET-XT	Pre-holidays	-0.061955	0.711744	1.77311 [0.0762104]
	Post-holidays	0.260764	0.605833	2.18824 [0.028652]
	The other days	-0.085392	0.00571226	
BET-NG	Pre-holidays	0.972442	0.597292	2.11848 [0.0341344]
	Post-holidays	-0.340704	-0.432818	-0.53588 [0.592042]
	The other days	-0.056273	-0.0368787	

Note: The p-values of statistical tests are within the squared brackets.

We perform regressions with dummy variables in order to identify pre and post-holidays effects. Since Breusch - Godfrey and White tests indicated the presence of autocorrelation and heteroskedasticity for all the indexes we introduced autoregressive terms. The results, presented in the Table 3, indicate significant post-holidays effects for all the six indexes. We also found relevant pre-holiday effects for four indexes: BET, BET-C, BET-XT and BET-NG.

Table 3 - Estimated coefficient of regression

Index	**Const.**	**PRE_HOL**	**POST_HOL**
BET	0.0317652 (0.0270862) [0.24090]	-0.457241 (0.188521) [0.01529**]	-0.710372 (0.161047) [0.00001***]
BET-C	0.0959235 (0.0210632) [0.00001***]	0.374014 (0.150613) [0.0130**]	0.362815 (0.250510) [0.1475]
BET-FI	0.0546504 (0.0357372) [0.1262]	0.370139 (0.249978) [0.1387]	1.19994 (0.509174) [0.0184 **]
ROTX	0.0551977 (0.0437781) [0.20736]	0.538685 (0.44673) [0.22788]	-1.11066 (0.25076) [0.00001***]
BET-XT	0.0408098 (0.0554016) [0.46136]	-0.90671 (0.314119) [0.00390***]	-1.79968 (0.348278) [0.00001***]
BET-NG	0.0222717 (0.0493111) [0.65152]	1.23391 (0.314933) [0.00009***]	-1.44566 (0.314933) [0.00009***]

Notes: Standard Errors are within round brackets; The p-values of statistical tests are within the squared brackets.

4. CONCLUSIONS

In this paper we investigated the holiday effect presence on BSE. We found evidences of this calendar anomaly for all the six main indexes of BSE. For most of them, the returns from pre or post-holidays are much higher than those from the other days. Such results could invalidate the hypothesis of an efficient Romanian capital market.

The regressions results indicate consistent post-holidays effects for all the six indexes but only four of them exhibited significant pre-holiday effects. For two indexes: BET-FI, which contains only the investment funds (SIFs) and ROTX, which contains "blue chip" companies, we couldn't identify significant pre-holiday effects. We could speculate that for the stocks of such corporations the investors' behavior is different in comparison with other stocks.

The sample of data we used includes the period of time from 2008 to 2011, when BSE was affected by the global crisis. However, we found no evidence of changes induced by the global crisis on the holiday effects.

This investigation could be extended to the stock markets from other Eastern Europe countries. We could also include in our analysis other components of the Romanian capital market.

References

Ariel, R. (1990), High stock returns before holidays: Existence and evidence on possible causes, *Journal of Finance* 45(5): 1611 – 1626;

Brockman, P. and Michalyuk D. (1998), The persistent holiday effect: additional evidence, *Applied Economics Letter*, 5(2): 205-209;

Cadsby, C. B. and M. Ratner (1992), Turn-of-the-month and pre-holiday effects on stock returns: Some international evidence, *Journal of Banking and Finance* 16(3): 497 – 509;

Fama E. (1970), Efficient capital markets: a review of theory and empirical work, *Journal of Finance*, No: 25, 383-41;

Fama, E. (1998), Market Efficiency, Long-Term Returns and Behavioural Finance, *Journal of Financial Economics*, 49, pp. 283-306;

Kim, C.W. and Park, J. (1994), Holiday Effects and Stock Returns: Further Evidence, *Journal of Financial and Quantitative Analysis*, 29, 145-157;

Lakonishok, J. and Smidt, S. (1988), Are Seasonal Anomalies Real? A Ninety-Year Perspective, *Review of Financial Studies*, 1, 403-25;

Marrett, G. and Worthington, A. C. (2007), An empirical note on the holiday effect in the Australian stock market, 1996-2006, *University of Wollongong, Faculty of Commerce – Papers*;

Pettengill, G.N. (1989), Holiday Closings and Security Returns, *Journal of Financial Research*, 12, 57-67;

Vergin, R. C. and J. McGinnis (1999), Revisiting the holiday effect: Is it on holiday? *Applied Financial Economics* 9(3): 477 - 482.