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Prolonged Holiday Effects on Romanian Capital Market before and after the Adhesion to EU

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Abstract: *The adhesion to the European Union represented a turning point for the Romanian capital market. Before the adhesion Bucharest Stock Exchange experienced a relatively quiet period which lasted for many years. Instead, after Romania had became member of the European Union the capital market experienced a turbulent period. After the months of optimism induced by the adhesion, Bucharest Stock Exchange was affected by the crisis from the international financial markets and the share prices dropped dramatically. In these circumstances investors' behaviors changed affecting the seasonality of shares prices. In this paper we investigate the changes occurred for three types of seasonality which are included in the category of prolonged holiday calendar anomalies: Halloween Effect, Gone Fishin' Effect and School out Effect. We employ daily values of five indexes from Bucharest Stock Exchange. We find that all of them were presented on the Bucharest Stock Exchange before the adhesion, but for some indexes the results indicate reversed forms of prolonged holiday effects. After the adhesion, the Gone Fishin' Effect and the School out Effect disappeared while the Halloween Effect decreased in intensity. We conclude that turbulent times are not favorable for these calendar anomalies.*

Keywords: *Halloween Effects, Gone Fishin' Effects, School - Out Effects, Romanian Capital Market*

JEL Classification: *G02, G14, G19*

Introduction

In the last decades, practical and theoretical motivations led to a consistent research directed on the presence of the calendar anomalies. For the investors, the knowledge about the financial markets evolution regularities could be exploited in successful trading strategies. Such strategies are in contradiction with the Efficient Market Hypothesis (EMH) which stipulated that past evolution of the stocks couldn't serve to make profits from their future evolution (Fama, 1970). In fact, because of this contradiction, the financial markets seasonality was very often used in theories that contested EMH.

Among the most documented forms of capital markets seasonality there are those grouped in the category of prolonged holiday effects. They are calendar anomalies consisting in significant differences between the stock returns from the periods when the investors are in holidays and the other seasons of the year. In such periods, named prolonged holidays, the financial markets are not closed (as in the case of public holiday) but the trading activity is reduced. In general, during the investors' holiday the returns of share prices are lower in comparison with the rest of the year. There are various forms of prolonged holiday effects which are differentiated by the periods associated with the investors' holidays:

1. **Halloween Effects**, in which the prolonged holiday is considered to be the period May – October (Levis, 1985; O'Higgins and Downs, 1990; Bouman and Jacobsen, 2002; Jacobsen and Visaltanachoti, 2006);

2. **Gone Fishin' Effects** in which the prolonged holiday is narrowed to the months of summer vacation (July – September for the Northern Hemisphere and January - March for the Southern Hemisphere) (Hong and Yu, 2009);

3. **School - Out Effects**, which refer to the periods of school vacations (Coakley et al., 2007).

The behavioral finance literature provided several explanations for the presence of the prolonged holiday effects on the capital markets. If the investors go on holidays the volume of transaction on the stock markets decreases and the stock prices fall (Hong and Yu, 2009). Usually, the investors' holidays occured in months with good weather that affect their behaviors (Hirshleifer and Shumway, 2003). The spirit of holiday that animates the investors in these periods could increase their aversion to risk (Brockman and Michayluk, 1998; Bouman and Jacobsen, 2002;

Coakley et al., 2007; Hong and Yu, 2009). During holidays the investors could be affected by the liquidity constrains because the large amount they spent, so their demand for assets decreases (Abadir et al., 2005). The activity of some sectors of economy, for example the agriculture, is affected by seasonality that is reflected in the share prices evolution (Bouman and Jacobsen, 2002). In the case of School Out Effect, the expenditures the investors have to do during the school vacations affect their transactions on the stock markets (Coakley et al., 2007). Prolonged holiday effects could be also explained by the interferences with other calendar anomalies: Monthly effects, Dekansho - bushi Effect (Lakonishok and Smidt, 1988; Sakakibara et al., 2011).

An important aspect of the calendar anomalies analysis consists in their persistence in time. If the stock prices seasonality is changing in time the strategies designed to exploit it could fail. A Murphy‘s law for the stock behaviors, proposed by Dimson and Marsh (1999), stipulated that many calendar anomalies disappeared or reversed after the investors had become aware about them. Sometimes, turbulences on the financial markets could induce changes in the calendar anomalies (Holden et al., 2005). Bouman and Jacobsen (2002) considered that the Halloween Effect didn’t suffer from Murphy‘s law described by Dimson and Marsh (1999), arguing that this anomaly persisted at least 40 years. However, other researches contested such argumentation (Marquering et al., 2006; Siriopoulos and Giannopoulos, 2006).

Investigations over prolonged holiday effects revealed some particularities of them. It was documented the size of firms influence on the behavior of their stock prices (Keim, 1983; Levis, 1985). Researches found also significant differences between the developed markets and the emerging markets (Elyasiani et al., 1996; Bouman and Jacobsen, 2002; Coakley et al., 2007; Hong and Yu, 2009).

In this paper we analyze the impact of the adhesion to European Union on the prolonged holiday effects from the Romanian capital market. Since 2000, when the Romanian economy recovered after a difficult transition, Bucharest Stock Exchange (BSE) enjoyed a long period of moderate growth, stimulated by increased influxes of foreign capitals. This trend was interrupted by the adhesion to European Union and by the impact of the recent global crisis. We examine the presence of the prolonged holiday effects for two periods: the first (a pre-adhesion period) from January 2000 to December 2006 and the second (the post-adhesion period) from January 2007 to August 2012.

The remainder of this paper is organized as it follows: the second part describes the data and the methodology used in our investigation, the third part presents the empirical results and the fourth part concludes.

Data and Methodology

In this investigation we use daily closing values of five main indexes of BSE: BET, BET-C, BET-FI, BET-XT and BET-NG (the compositions of these indexes are presented in the Table 1). In order to reveal the changes on prolonged holiday effects caused by the adhesion we employ data from January 2000 to August 2012 and split this sample into two sub-samples:

- First sub-sample, that ends in December 2006 and it corresponds to a pre-adhesion period;

- Second sub-sample, that starts in January 2007 and it corresponds to a post-adhesion period.

For BET-FI, the first sub-sample starts in November 2000 when this index was launched. For BET-XT and BET-NG, which were launched after the adhesion, we employ data only for the second sub-sample (Table 1).

Table 1 - Compositions and sub-samples of five indexes

Index	Composition	First sub-sample (pre-adhesion period)	Second sub-sample (post-adhesion period)
BET	the most liquid 10 companies listed on the BSE regulated market	from January 2000 to December 2006	from January 2007 to August 2012
BET-C	all the big companies listed on BSE, excepting the investment funds (SIFs)	from January 2000 to December 2006	from January 2007 to August 2012
BET-FI	the five investment funds (SIFs)	from November 2000 to December 2006	from January 2007 to August 2012
BET-XT	the most liquid 25 shares traded on the BSE, including SIFs	x	from January 2007 to August 2012

BET-NG	The companies which have the main business activity located in the energy sector and the related utilities	x	from January 2007 to August 2012

The Figure 1 presents the evolution of BET index from January 2000 to August 2012. From the pre-adhesion period BET experienced an almost uninterrupted growth. Instead, the post-adhesion period was more turbulent. After a sharp increase in the months that follows adhesion to European Union, the Romanian stock market was affected by the crisis from the international financial markets. The share prices dramatically dropped for most of the year 2008. Despite some periods of recovery, the share prices were lower than the peak from 2007.

Figure 1. Evolution of BET index from January 2000 to August 2012

In our analysis we used continuous return ($r_{i,t}$), each of them being computed by the formula:

$$r_{i,t} = [\ln(P_{i,t}) - \ln(P_{i,t-1})] * 100 \qquad (1)$$

where $P_{i,t}$ and $P_{i,t-1}$ are the closing prices of index i on the days t and t-1, respectively.

The prolonged holiday effects are revealed by regressions with dummy variables corresponding to the holiday periods and the other seasons.

For the Halloween Effects the regression has the form:

$$r_{i,t} = \alpha * MO_t + \beta * NA_t + \varepsilon_t \qquad (2)$$

where: MO_t is a dummy variable taking the value one for every trading day from the period March - October and zero otherwise;

NA_t is a dummy variable taking the value one for every trading day from the period November - April and zero otherwise.

In the case of Gone Fishin' Effects we perform the regression:

$$r_{i,t} = \alpha * JS_t + \beta * OJ_t + \varepsilon_t \qquad (3)$$

where: JS_t is a dummy variable taking the value one for every trading day from the period July - September and zero otherwise;

OJ_t is a dummy variable taking the value one for every trading day from the period October - June and zero otherwise.

For revealing the School - Out Effects we employ the regression:

$$r_{i,t} = \alpha * Sch\_Out_t + \beta * Sch\_In_t + \varepsilon_t \qquad (4)$$

where: Sch_Out_t is a dummy variable taking the value one for every trading day from the period of school vacations and zero otherwise;

Sch_In_t is a dummy variable taking the value one for every trading day from the period of school and zero otherwise.

In the case of regressions applied to time series it is recommended to test heteroskedasticity and autocorrelation. If only heteroskedasticity is identified we transform standard errors and p-values by the White's corrections. When we detect both heteroskedasticity and autocorrelation we apply the Newey - West corrections.

Empirical Results

The Table 2 presents the results of the regressions for Halloween Effects. For the pre-adhesion period we found significant regression coefficients for all the three available indexes. For BET FI the coefficient of MO variable is higher than the coefficient of NA variable. The results for the post-adhesion period indicate significant coefficient (with negative values) only for BET FI and BET XT.

Table 2 - Results of the regressions for Halloween Effects

$$r_{i,t} = \alpha * MO_t + \beta * NA_t + \varepsilon_t$$

Index	Pre-adhesion period		Post-adhesion period	
	MO	NA	MO	NA
BET	0.158619 (0.0457798) [0.00054***]	0.175167 (0.0601651) [0.00364***]	-0.112672 (0.0789586) [0.15380]	0.0449803 (0.0694597) [0.51736]
BET C	0.122421 (0.0381118) [0.00134***]	0.151509 0.0514356 [0.00327***]	-0.112169 (0.0725798) [0.12246]	0.0286484 (0.0642318) [0.65565]
BET FI	0.302631 (0.0783575) [0.00012***]	0.241333 (0.0896144) [0.00716***]	-0.254894 (0.109235) [0.01976**]	0.125257 (0.10534) [0.23461]
BET NG	x	x	-0.130881 (0.0831789) [0.11583]	0.0641563 (0.0707352) [0.36456]
BET XT	x	x	-0.165377 (0.0847636) [0.05125*]	0.0601062 (0.0749641) [0.42280]

Notes: Standard Errors are within round brackets; p-values are within squared brackets; ***, **, * mean significant at 0.01, 0.05, and 0.1 levels, respectively

The results of the regressions for Go Fishin' Effects are presented in the Table 3. They indicate, for all the three available indexes, significant coefficients before the

adhesion. For BET and BET FI the results indicate reversed forms of the calendar anomaly. We find no Go Fishin' Effect after the adhesion.

Table 3 - Results of the regressions for Gone Fishin' Effects

$$r_{i,t} = \alpha * JS_t + \beta * OJ_t + \varepsilon_t$$

Index	Pre-adhesion period		Post-adhesion period	
	JS	OJ	JS	OJ
BET	0.166335 (0.0629967) [0.00836***]	0.166588 (0.0458644) [0.00029***]	-0.0650928 (0.10854) [0.54879]	-0.0257574 (0.060832) [0.67205]
BET C	0.124385 (0.0519977) [0.01686**]	0.140591 (0.0388765) [0.00031***]	-0.0502721 (0.0966092) [0.60289]	-0.0413627 (0.0566354) [0.46531]
BET FI	0.414685 (0.109708) [0.00016***]	0.223035 (0.070724) [0.00164***]	-0.0674159 (0.141629) [0.63414]	-0.0709174 (0.0900211) [0.43095]
BET NG	**x**	**x**	-0.0434344 (0.107507) [0.68626]	-0.033416 (0.0645478) [0.60475]
BET XT	**x**	**x**	-0.0750717 (0.109266) [0.49216]	-0.0488993 (0.0666629) [0.46335]

Notes: Standard Errors are within round brackets; p-values are within squared brackets; ***, **, * mean significant at 0.01, 0.05, and 0.1 levels, respectively

As in the case of Gone Fishin' Effects, the regressions for School-Out Effects revealed, in the pre-adhesion period, significant coefficients for all the three available indexes. The results indicate reversed form of the calendar anomaly for BET and BET FI. We found no School-Out Effect for the post-adhesion period (Table 4).

Table 4 - Results of the regressions for School-Out Effects

$$r_{i,t} = \alpha * Sch\_Out_t + \beta * Sch\_In_t + \varepsilon_t$$

Index	Pre-adhesion period		Post-adhesion period	
	Sch_Out	Sch_In	Sch_Out	Sch_In
BET	0.200406 (0.0641511) [0.00181***]	0.154394 (0.0455006) [0.00071***]	-0.0532152 (0.111132) [0.63212]	-0.0297152 (0.0606656) [0.62434]
BET C	0.13419 (0.0523533) [0.01046**]	0.13707 (0.0386453) [0.00040***]	-0.061058 (0.100536) [0.54373]	-0.0373424 (0.0562426) [0.50683]
BET FI	0.390343 (0.106982) [0.00027***]	0.231805 (0.0713968) [0.00119***]	-0.0410427 (0.158545) [0.79577]	-0.0805731 (0.0877034) [0.35841]
BET NG	**x**	**x**	-0.0673336 (0.109626) [0.53918]	-0.0246007 0.0643418 0.70226
BET XT	**x**	**x**	-0.0596629 (0.114513) [0.60244]	-0.0542713 (0.0659635) [0.41079]

Notes: Standard Errors are within round brackets; p-values are within squared brackets; ***, **, * mean significant at 0.01, 0.05, and 0.1 levels, respectively

Conlusions

In this paper we investigated the presence of the prolonged holidays effects on BSE before and during Romania's adhesion to European Union. We found, for the pre-adhesion period, significant effects or their reversed forms. For the post-adhesion period we found only Halloween Effects for two indexes: BET FI and BET NG. The first of them, BET FI, evoluated from the reversal to the classical form of Halloween Effect. Instead, Gone Fishin' Effect and School Out Effect disappeared after the adhesion.

In the case of Halloween Effect the results of regressions revealed the differences between the behavior of stock prices of investment funds (SIFs) or energy sector and the other industries.

Our investigation didn't confirm the hypothesis regarding the persistence in time of the prolonged holiday effects. Partially, this fact could be explained by the development of Romanian capital market accompanied by an increasing influence of the international financial markets. However, we couldn't neglect the impact of turbulences. We could speculate that the actual global crisis anihilated the spirit of holiday among the investors so their behaviors during the vacations is not so different from their working life.

This investigation could be extended to prolonged holiday effects from other emerging markets.

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