The Halloween effect during quiet and turbulent times

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THE HALLOWEEN EFFECT DURING QUIET AND TURBULENT TIMES

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Abstract: *The Halloween Effect is one of the main calendar anomalies used to challenge the Efficient Market Hypothesis. It consists in significant differences between the stock returns from two distinct periods of a year: November - April and October - May. In the last decades empirical researches revealed the decline of some important calendar anomalies from the stock markets around the world. Sometimes, such changes were caused by the passing from quiet to turbulent stages of the financial markets. In this paper we investigate the Halloween Effect presence on the stock markets from a group of 28 countries for a period of time between January 2000 and December 2011. We find that geographical position has a major influence on the Halloween Effect intensity. We also find some differences between the emerging markets and the advanced financial markets. We analyze the Halloween Effect for two periods of time: the first, from January 2000 to December 2006, corresponding to a relative quiet evolution and the second, from January 2007 to December 2011, corresponding to a turbulent evolution. The results reveal, for many stock markets, major changes between the first period of time and the second one.*

Keywords: Calendar Anomalies, Halloween Effect, Stock Markets
JEL Classification: G02, G14, G15

1. Introduction

The presence of calendar anomalies on the financial markets is often used as an argument against the one of the main principles of Efficient Market Hypothesis (EMH) which stipulates the investors can't build successful strategies based on the past evolution of the financial asset prices [6].

In the last decades several researches revealed patterns of the financial markets associated with different periods of a year. Knowledge about such seasonal effects could be exploited in the investment strategies.

The analysis of the calendar anomalies approaches some aspects such as the persistence in time or the impact of the financial markets particularities. Several empirical researches found changes in time for some seasonal effects [7, 17, 19, 23].

Dimson and Marsh (1999) revealed that many calendar anomalies disappeared or reversed after investors had become aware about them [5]. Sometimes, events such as the financial crisis provoked major changes in the calendar effects [9]. The results of some empirical researches indicate differences between the calendar anomalies from the developed and from the emerging markets [3]. The geographical position could also induce some particularities to the seasonal effects [1, 18, 22].

The so called Halloween Effect is among the most controversial calendar anomalies and it consists in significant higher returns from the November - April period in comparison with the rest of the year [2, 15]. Many investors use to exploit it by applying the so called "Sell in May and Go Away" strategy [2, 11].

The purpose of this paper is to investigate the presence of the Halloween Effect on the stock markets during quiet and turbulent times. We use daily values of indexes of the stock markets from 28 countries for two periods of time: January 2000 – December 2006 which could be considered as a relative quiet period, and January 2007 – December 2011, when some circumstances (consequences of some East European countries adhesion to the European Union, real estate speculative bubbles, global crisis etc.) caused a significant instability of the financial markets.

The rest of this paper is organized as follows: the second part approaches the specialized literature on the Halloween Effect, the third part describes the data and the methodology used in our investigation, the fourth part presents the empirical results and the fifth part concludes.

2. Literature Review

The Halloween Effect was quite often approached in the behavioral finance literature. However, until now it wasn't found a unanimous accepted explanation for this calendar anomaly. Many papers revealed that May - October period included months of holidays when the investors were usually more relaxed than in the other months. Hong and Yu (2006) defined the Gone Fishin' Effect materialized in significant differences between the stock returns from the summer months and from the rest of the year [10].

Coaklley et al. (2007) introduced the School's Out Effect, consisting in falls of stock returns during the school vacations [4]. Sakakibara et al. (2011) reported a seasonal pattern for the Japanese stock market, called Dekansho-bushi Effect, which was manifested in significant positive returns in the first half of a year and significant negative returns in the other half [20]. Another explanation came from researches which approached the impact of the weather or the daylight hours on the investors' behaviors. Some papers revealed that good weather and increasing daylight hours stimulated the investors' optimism [8, 12, 13].

Investigations about the Halloween Effect led to controversial results. Bouman and Jacobsen (2002) investigated 37 developed and emerging markets for the period January 1970 – August 1998 and they found that for 36 of them the returns were higher during the November - April period than those from the May - October period [2]. Marquering (2002) discovered evidences in favor of the Halloween Effect in five developed markets [16]. However, Maberly and Pierce (2004) considered that in the case of US stock market, the results of Bouman and Jacobsen (2002) were driven by two outliers: the Crash of October 1987 and the collapse of the hedge fund Long - Term Capital Management in August 1998 [14].

Applying a similar method, for the period October 1986 - December 2004, Siriopoulos and Giannopoulos (2006) found the Halloween Effect disappeared from the Athens Stock Exchange [21].

The results of Bouman and Jacobsen (2002) investigation indicated that Halloween Effect was presented not only in the most developed markets but also in the emerging markets. They also concluded this calendar anomaly was persistent in time [2].

3. Data and Methodology

In our investigation we employ daily closing values of the stock market indexes from 28 countries for a time period between January 2000 and December 2011. Following MSCI Index Base Dates we classify these indexes into two broad categories: developed markets and emerging markets. For each index we divide the sample of data into two sub-samples:

- first sub-sample, corresponding to a quiet period, from January 2000 to December 2006;
- second sub-sample, corresponding to a turbulent period, from January 2007 to December 2011.

For each index i we compute the return ($r_{i,t}$) by the formula:

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

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

In order to reveal the Halloween

Effects we perform, for each return, a regression with two dummy variables:

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

where:

MO_t is a dummy variable taking the value one for every trading day from the period May - 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.

We test the regressions for heteroskedasticity and autocorrelation. When we identify only heteroskedasticity we apply the White's corrections to standard errors and p-values. In the case we detect both heteroskedasticity and autocorrelation we use the Newey - West corrections.

4. Empirical Results

The Table 1 presents the results of the regression (2) performed for the emerging markets. For the period 2000 - 2006, we find relevant coefficients of NA variable for eight indexes: BUX, CROBEX, PX Index, BET-C, Jakarta Composite, Shanghai Composite, MerVal and IPC.

Table 1 Results of the regression for emerging markets

Index	*Period 2000 - 2006*		*Period 2007 - 2011*	
	MO	NA	MO	NA
BUX	0.0237899 (0.0461999)	0.112949 (0.112949**)	-0.0559601 (0.08075)	-0.0040495 (0.0790889)
CROBEX	0.0540136 (0.0442768)	0.118504 (0.0434954***)	-0.0774412 (0.0635981)	-0.0215762 (0.0701506)
PX Index	0.0305598 (0.0389308)	0.117214 (0.0469057**)	-0.109435 (0.0747785)	0.0223096 (0.0777191)
BET-C	0.122421 (0.0381118***)	0.151509 (0.0514356***)	-0.110593 (0.0803826)	0.0107699 (0.0718896)
Athex Composite Share Price Index	-0.00521823 (0.285797)	0.723835 (0.498506)	-0.170474 (0.0796801**)	-0.126932 (0.0882911)
KLSE Composite	0.00667093 (0.0253396)	0.0327086 (0.0411873)	-0.00255462 (0.0555859)	0.0577606 (0.0617875)
Seoul Composite	-0.0262554 (0.0630025)	0.0731064 (0.0645927)	-0.019215 (0.0710774)	0.0584938 (0.0646116)
Jakarta Composite	-0.00337617 (0.0471048)	0.125105 (0.0470219***)	0.029907 (0.069927)	0.0928945 (0.0677605)
Shanghai Composite	-0.0419691 (0.0400106)	0.0715839 (0.0431283*)	-0.0418874 (0.083578)	0.0100693 (0.077398)
BSE 30	0.0374125 (0.0538321)	0.0826968 (0.0510586)	0.0276703 (0.0756641)	-0.0101915 (0.0782098)
MerVal	-0.00303166 (0.075182)	0.162446 (0.0775644**)	-0.0106872 (0.0851467)	0.0345418 (0.081624)
IPC	0.0634259 (0.0450887)	0.090692 (0.0505132*)	0.00305624 (0.0659896)	0.0531724 (0.0596965)
Bovespa	0.0405766 (0.0554938)	0.0758423 (0.0716822)	-0.0200652 (0.0842185)	0.0620429 (0.0839365)
TA 100	0.0155531 (0.0457968)	0.0881406 (0.0641034)	-0.0335166 (0.0679696)	0.0468521 (0.071729)

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

Only for a single index, BET-C, it resulted a significant coefficient for the MO variable. For all these indexes we find that between 2000 and 2006 the coefficients of NA variable were bigger than the coefficients of the MO variable. For the period 2007 - 2011 it resulted that a single index, Athex Composite Share Price Index, has a significant coefficient for the MO variable, which is smaller than the coefficient for the NA variable.

The results of the regression (2) for the developed markets are presented in the Table 2.

Table 2 Results of the regression for developed markets

Index	*Period 2000 - 2006*		*Period 2007 - 2011*	
	MO	*NA*	*MO*	*NA*
Swiss Market	0.00441371 (0.0370337)	0.0140617 (0.043906)	-0.0334084 (0.0580824)	-0.0281614 (0.0531521)
AEX General	-0.0373611 (0.0527705)	0.00427779 (0.0474233)	-0.0762824 (0.0721642)	0.00595351 (0.0638513)
DAX	-0.0456012 (0.0566451)	0.0435198 (0.0513501)	-0.0389094 (0.070706)	0.0227437 (0.0637634)
BEL-20	0.00703579 (0.0380794)	0.0239093 (0.0405251)	-0.103141 (0.0685726)	-0.0113807 (0.0568226)
CAC 40	-0.0345634 (0.049692)	0.0278132 (0.0458829)	-0.0732059 (0.0757018)	-0.0133385 (0.0647884)
ATX	0.00986711 (0.0328509)	0.145064 (0.0324412***)	-0.126141 (0.0872268)	-0.0100577 (0.0803194)
All Ordinaries	0.0410575 (0.022163*)	0.0213154 (0.024752)	-0.0271516 (0.058711)	-0.022697 (0.0503555)
Taiwan Weighted	-0.0895374 (0.0551029)	0.0846674 (0.0549724)	-0.0518933 (0.0633994)	0.0380862 (0.0601869)
Hang Seng	0.00349656 (0.0439075)	0.0155607 (0.045053)	0.0112772 (0.0761912)	-0.0244068 (0.0883256)
Nikkei 225	-0.0455891 (0.0471228)	0.0371785 (0.048723)	-0.106927 (0.0719705)	-0.00776751 (0.0778012)
Straits Times	-0.00449287 (0.0375187)	0.0262441 (0.038289)	-0.0256195 (0.0585501)	0.00736305 (0.0619405)
FTSE 100	-0.0178463 (0.0393091)	0.0063935 (0.0369039)	-0.030277 (0.0648738)	0.0128936 (0.057924)
S&P TSX Composite	0.00521324 (0.0328311)	0.0434341 (0.0366809)	-0.0325387 (0.0648325)	0.0207036 (0.0578206)
Standard & Poor's	-0.0113521 (0.0387787)	0.00756505 (0.037412)	-0.035776 (0.0701149)	0.0176204 (0.0638472)

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

For the period 2000-2006 the results indicate a significant positive coefficient of MO variable for All Ordinaries Index and a significant positive coefficient of NA variable for ATX Index. For the period 2000 - 2006 we find no significant coefficient of the two variables.

5. Conclusions

In this paper we investigated the presence of the Halloween Effects on the stock markets from 28 countries. Our results indicate significant changes from the relative quiet period of January 2000 – December 2006 and from the turbulent period of January 2007 – December 2011. For the first period we identify the presence of the Halloween Effects on nine stock markets and a reversal of this calendar anomaly for one capital market. For the second period we find a single Halloween Effect, with negative returns, for the stock market from Greece, a country heavily affected by the global crisis. This evolution suggests that influence of the factors responsible for the Halloween Effect (relaxation during holidays, good weather, increasing daylight etc.) was annihilated by the high instability of the financial markets.

Our investigation revealed significant differences between the emerging markets and the developed markets for the period January 2000 – December 2006. Eight from the fourteen emerging markets displayed Halloween Effects. Instead, for the fourteen developed markets, we find this calendar anomaly only for one, while for another it resulted the reversal. We could explain this situation by the Murphy Law of market anomalies proposed by Dimson and Marsh (1999): once the investors became aware about the Halloween Effect from the developed markets, this anomaly disappeared or went to reversal.

We found some particularities of the Halloween Effect in link with the geographical position of the stock markets. From the seven developed markets from the West Europe, only one displayed this calendar anomaly. Instead, all the five Eastern European stock markets exhibited Halloween Effect in one of the two periods. From the ten stock markets from Asia and Australia, we identified this seasonality for three of them and the reversal effect for one of them. We found Halloween Effects for two of the three South-American capital markets and for no one of the two North-American capital markets. This situation suggests that some factors such as cultural particularities or daylights associated with the period May-October could influence the Halloween Effect.

This investigation could be extended by including other emerging and developed markets.

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