Stock Market Efficiency in the Transition Economies through the Lens of Calendar Anomalies

Polina Heininen[i] and Vesa Puttonen[ii]

Abstract: Calendar regularities that challenge the Efficient Market Hypothesis are widely explored phenomena in the advanced economies. However, there is little research concerning the prevalence of these anomalies in the Central and Eastern European (CEE) states. This study provides empirical evidence on market efficiency and day-of-the-week, month-of-the-year, turn-of-the-month and Halloween effects in twelve transition economies. The results indicate that the CEE-countries stock markets are weakly efficient in terms of day-of-the-week and month-of-the-year anomalies. The turn-of-the-month effect is detected in Croatia, Hungary, Poland, Romania, Russia and Slovenia. In these countries the average 5-day turn-of-the-month yield accounts for 85% of the monthly return. Trading strategy based on the Halloween effect produces statistically significant abnormal returns in the Czech Republic, Estonia, Latvia, Lithuania and Russia. In general, calendar anomalies show signs of declination throughout the sample period and the market efficiency increases gradually in all examined countries.

Keywords: Calendar pattern; Seasonality; Day-of-the-Week; Month-of-the-Year; Turn-of-the-Month; Halloween; Market Efficiency; Transition Economies

---

[i] Correspondence: Polina Heininen, CEMAT, Helsinki School of Economics, P.O.BOX 1210, Finland. Tel: +358-44-3422345, Fax: +358-9-43138706, Email: polina.heininen@hse.fi.

[ii] Professor in Finance, Helsinki School of Economics (HSE)

This paper is based on a project *Calendar Anomalies in the Russian and Eastern-European Stock Markets*, led by Riitta Kosonen in the Center for Markets in Transition (CEMAT) and funded by Niilo Helander Foundation.

1. Introduction

The Central and Eastern European (CEE) stock markets have been a subject of great interest for institutional as well as retail investors during the last decade and the beginning of the 21st century. The increasing attention can be explained by a strong economic growth in these countries and soaring returns on investments that these economies have been providing in comparison with somewhat more stable returns in the mature markets. Considering the ongoing globalization of equity markets, it is necessary to understand the specific features of return generating process in the transition economies.

The Efficient Market Hypothesis (EMH)[1] states that stocks are priced efficiently to reflect all existing information about the fundamental value of the securities. Markets are considered to be weakly efficient if the stock returns are serially un-correlated and have a constant mean. Therefore no investor should be able to construct a trading rule based on past price patterns to earn abnormal proceeds. Yet, a considerable volume of academic literature has documented anomalous calendar patterns that challenge the weak form of the EMH. Thus possible presence of anomalies in stock returns is intriguing to both long-term investors and speculators.

Whereas calendar anomalies in advanced equity markets have been investigated extensively, the stock markets in the transition economies have received less attention. There are studies concentrated on some specific seasonality effect in chosen transition economies[2] but not a detailed investigation that would provide an understanding of the possible calendar anomalies phenomena in the emerging CEE stock markets as a whole. Additionally, certain studies have documented declination of seasonal abnormalities in

[1] Fama (1970) describes three different forms of market efficiency. The weak form of efficiency encloses all historical stock price information to current stock prices. The semi-strong form considers that all publicly available information is reflected and interpolated in the values of equity. The strongest form of efficiency comprises every part of available information including the insider information into stock prices.

[2] Ajayi et al. (2004) investigate the Monday anomaly in eleven emerging CEE stock markets whereas Asteriou and Kovetsos (2006) examine the January effect in eight transition economies.

the developed markets[3] but there are no research reports on the permanence of these patterns in the transition economies. There are several reasons to believe that the efficiency of capital markets should increase over time. In the first phase of a recently created market, trading is thin, the regulation imposed on firms' disclosure requirements is merely narrow whereas the chances for market partaking are neither well distributed nor thoroughly comprehended by many prospective investors. During the transformation process, the emerging stock exchanges have experienced major amendments including deregulation, the opening of the exchange membership to foreign-owned intermediaries, and switching to electronically executed trading. Furthermore, the majority of countries under investigation have accessed the European Union and as members are nowadays obliged to follow regulation applied on western capital markets. Intuitively, these measures should augment market efficiency throughout the investigation period.

In attempt to address this gap in the literature, this paper conducts empirical investigation of the day-of-the-week (DOW) and month-of-the-year (MOY) anomalies as well as turn-of-the-month (TOM) and Halloween effects using the stock market price level indices from twelve CEE countries. To reader's motivation, this study carries out a pioneering work in exploring TOM and Halloween effects in the context of transition economies. Also persistency assessment of these phenomena is a subject of particular interest enabling gradual evaluation of the accomplished level of stock market efficiency.

The study is organized into five sections. The first section initiates with the introduction. Subsequently section two reviews the literature on calendar anomalies and section three describes the data applied along with the methodology used for the study. Section four presents the findings of conducted analyses. The final section provides summary and concluding remarks.

[3] For instance Schwert (2002) shows that several anomalies have weakened or disappeared after the papers that highlighted them were published. At about the same time, practitioners began investment vehicles that implemented the strategies implied by some of these academic papers.

2. Literature review

Day-of-the-Week effect

An extensive amount of empirical results indicate that the distribution of common stock proceeds is not identical for all days of the week. A notable anomaly is the Monday effect suggesting that equity returns are negative or significantly lower on Mondays relative to other days of the week. In addition, Friday yields are positive in the US and some other countries around the world (see e.g., Lakonsihok and Smidt (1988) for the U.S financial markets and Dubois and Louvet (1996) for international evidence). The DOW patterns deviate from one country to another and in many thinner European markets statistically negative returns are documented on Tuesdays and Wednesdays.[4]

Resent studies imply that the emerging markets show evidence of mixed DOW patterns as well[5]. Ajayi et al. (2004) explore the Monday effect in eleven emerging CEE markets during the time period from 1994 to 2002. Their empirical results indicate negative Monday returns in six states and positive Monday profits in the remaining five. Yet, only two of the six negative Monday yields (Estonia and Lithuania) and only one of the five positive Monday returns (Russia) are statistically significant. Thus, researchers conclude that there is no consistent evidence to support the presence of daily patterns in the CEEs.

There are several factors used for explaining the day-of-the-week effect. The following have been suggested: *settlement regime hypothesis* (institutional features of the national stock markets such as settlement procedures delays between trading and settlement in stocks); *information processing hypothesis* (differences in timing of individual and institutional investors' asset management planning); *information release hypothesis* (divergence in patterns of information release across the weekdays); pricing

[4] For empirical confirmation on negative Tuesday and Wednesday patterns see e.g. Spain by Santamases (1986); France by Solnik and Bousquet (1990); Ireland by Lucey (1994); Finland by Martikainen and Puttonen (1996) and Greece by Lyroudi et al. (2002).

[5] Choudry (2000) discovers the day-of-the-week effect in seven emerging Asian stock markets (India, Indonesia, Malaysia, Philippines, South Korea, Taiwan and Thailand). Yakob et al. (2005) finds seasonal patterns in Asia Pacific (China, Hong Kong and Japan) as well as Mlambo and Biekpe (2006) in African countries (Botswana, the BRVM, Egypt, Ghana, Mauritius, Morocco, Namibia, Tunisia and Zimbabwe).

misquotes and measurement errors as well as dividend patterns (Martikainen and Puttonen (1996); Lakonishok and Maberly, (1990); DeFusco et al. (1993); Gibbons and Hess (1981); Draper and Paudyal (2002)).

Month-of-the-Year effect

The MOY effect indicates that there are superior months such as January delivering higher yields on average in comparison with other months of the year.[6] This effect is first of all explained by a *tax-loss selling hypothesis*. Investors sell their common stock that have performed poorly in order to realize losses against capital gains thus reducing tax liability (Branch (1977); Poterba and Weisbenner (2001); Dai (2007)). However, Ho (1990) found little supporting evidence for tax-loss selling hypothesis in the Asian Pacific markets. Only in three out of nine countries the return of the first month of the tax-year was significantly higher than the return for all the other months. According to Fountas and Segredakis (2002) in 18 emerging stock markets during 1987-1995, there was considerable evidence for seasonal effects in varying months, regardless of the tax-year timing. Whereas Asteriou and Kovetsos (2006) investigated eight CEE transition economies from 1991 to 2003 and found strong statistical evidence for the January effect in Hungary, Poland, Romania and Slovakia.

In association with the tax-loss selling hypothesis Brown et al. (1983) contemplate that January effect is related to the market capitalization of small firms. Excess returns on small firms are postulated to be either a deception caused by poor measurement of these firms' profitability or a compensation for the extra risk investors bear by holding these stocks. There is a selling pressure in December on higher volatility small cap equities for income tax purposes. In early January the investment positions are reestablished by individuals investing spare cash from year-end bonuses, holiday gifts and tax-loss selling. These fluctuations in demand inflate security prices and cause abnormally positive returns in January.

Haugen and Lakonishok (1988) attribute January effect to *window dressing hypotheses* connected to institutional investors' portfolio rebalancing activities near the

[6] For example, Gultekin and Gultekin (1983) show anomalously positive January returns in sixteen countries internationally.

end of the year. These investors are usually rigidly limited by rules and declaration duties. In order to raise portfolio performance they buy volatile and profit-making equities of distant locations and emerging markets. Risky assets are sold in the end of the year and replaced with more liquid shares to improve the impression of portfolio composition. In the following year's January these activities are reversed.

Furthermore, January effect is expounded by clustered releases of accounting information in the beginning of the year (see e.g. Penman, 1987). In a phase of a long-term economic growth the reported financial results often tend to surpass the moderate forecasts of analysts. This promotes reassessment of potential performance of companies and consequently elevates share values.

On the other hand there is a reverse side to the January effect. Asset prices and mean returns tend to be significantly lower during the summer months. This will be discussed further in the Halloween sub-section.

Turn-of-the-Month effect

The turn-of-the-month (TOM) effect designates that there are statistically significant positive abnormal returns in the beginning of the month. The identification of TOM period varies by study. The original study by Ariel (1987) defines the TOM period as the first eight trading days of the month plus the last trading day of the previous month. Lakonishok and Smidt (1988) examine this period in the US, and find that the effect is especially strong during the four day period from days -1 to + 3 beginning with the last day of the previous month. This definition of TOM period is followed by others (Agrawal and Tandon (1994); Kunkel et al. (2003)).

Kunkel et al. study (2003) includes 2153 months from 19 countries during 1988-2000. Authors find that 4-day TOM effect persists throughout the 1990s in at least 16 of the 19 countries. Furthermore, the results imply that TOM period accounts for 87% of the monthly return on average, in the stock markets of 15 countries where the TOM pattern exists.

There are several hypotheses explaining existence of a given anomaly. First of them connects the raised profitability of TOM period with increased individual investors demand for equities. According to Lakonishok and Smidt (1988) the reasoning for this is

that individual investors receive the major part of their incomes in the end of month and tend to invest them during the TOM period (*turn-of-the-month liquidity hypothesis*). Other hypothesis is based on institutional investor portfolio revision by the end of month and formation and realization of new investment ideas (*window dressing hypothesis*). Additionally, Nikkinen et al. (2007) ascribe the effect to the clustered macroeconomic news announcements that are released systematically at a certain point each month (*information release hypothesis*).

Halloween effect

Along with a popular market saying "Sell in May and Go Away", returns should be higher in the November-April period than those in May-October period and possibly offer higher profits than buy-and-hold strategy throughout the whole year. There has been an ongoing discussion in academic literature regarding the subject. Bouman and Jacobsen (2002) perform the first academic study on this anomaly and name it as Halloween effect since Halloween is annually celebrated on October31st in the US. Authors argue that this "inherited wisdom" is true in 36 of the 37 developed and emerging markets studied. Their results indicate that Halloween effect is particularly strong in European countries and robust over time. Bouman and Jacobsen (2002) find that the most likely reasoning for the anomaly is the extent and timing of vacations. However, Sullivan et al. (2001) attribute test results of Halloween effect to data mining whereas Maberly and Pierce (2004) re-examine the Bouman and Jacobsen findings and discover that the effect disappears in the US data after an adjustment for outliers.

Yet, Hong and Yu (2006) study stock markets in 51 countries and find that due to vacations and lessened investing activity asset prices, mean returns and turnovers are significantly lower during the summer (July-September) than throughout the rest of the year in the Northern Hemisphere countries. These results support the possible existence of the abnormal November-April returns. Also Lucey and Whelan (2002) obtain significant results on the existence of Halloween anomaly for the Irish equity markets.

Different explanations for the subsistence of calendar anomalies have been provided, but the results of several researchers are obviously lacking a consensus.

Nevertheless, the abundance of findings on systematic seasonal patterns in stock returns makes the subject intriguing to study.

3. Data and Methodology

The data investigated in this study consists of daily closing prices for stock market price level indices of twelve Central and Eastern European countries from January 1, 1997 to February 29, 2008. This is also the full sample period covered in the analyses (see Table 1). The first sub-period assesses data from 1.1.1997 to 31.12.2000, second sub-period from 1.1.2001 to 31.12.2004 and finally the third sub-period from 1.1.2005 to 29.2.2008. With the intention of evaluating the obtained results against other stock markets the MSCI European, World and Emerging Market indices are used as comparative benchmarks. The data is extracted from DataStream.

Table 1: Descriptive Statistics on Daily Logarithmic Returns on each Index
Descriptive statistics are for daily returns during the total sample period. Table shows number of observations (N), mean and median returns as percentages, standard deviation, maximum and minimum returns as percentages, skewness and kurtosis. Autocorrelation is tested by Durbin Watson (DW) test and heteroscedasticity of the residuals with the White's test.

Country	Index	Starting date	N	Mean return (%)	Median return (%)	Std. Dev. (%)	Min return (%)	Max return (%)	Skewness	Kurtosis	DW statistics	White's test Chi square	White's test p-value
Bulgaria	SOFIX	23.10.2000	1920	0.14	0.04	1.79	-20.90	21.07	-0.44	35.54	2.13	1.37	0.849
Croatia	CROBEX	2.1.1997	2911	0.06	0.00	1.69	-13.38	17.47	0.09	14.53	1.99	6.29	0.178
Czech Republic	PX	1.1.1997	2913	0.04	0.02	1.25	-7.08	8.08	-0.21	2.89	1.85	6.36	0.159
Estonia	HSBC	1.1.1997	2913	0.06	0.03	2.05	-23.23	14.74	-1.24	24.30	1.70	7.02	0.135
Hungary	BUX	1.1.1997	2913	0.06	0.03	1.75	-18.03	13.62	-0.90	13.07	1.94	3.22	0.522
Latvia	HSBC	1.1.1998	2652	0.03	0.02	1.98	-15.11	27.03	0.29	20.99	1.73	4.56	0.336
Lithuania	HSBC	1.1.1998	2652	0.04	0.00	1.49	-14.23	11.41	0.03	7.61	1.82	5	0.287
Poland	WIG	1.1.1997	2913	0.04	0.01	1.47	-10.29	7.89	-0.34	3.99	1.83	2.96	0.564
Romania	BET	19.9.1997	2725	0.07	0.00	1.70	-11.90	11.54	-0.04	6.29	1.52	0.91	0.924
Russia	RTS	1.1.1997	2913	0.08	0.08	2.63	-21.10	15.56	-0.53	7.05	1.77	7.04	0.129
Slovakia	SAX	1.1.1997	2913	0.03	0.00	1.28	-11.48	9.57	-0.45	7.87	2.03	0.15	0.997
Slovenia	SBI	1.1.1997	2913	0.07	0.02	0.99	-11.34	11.02	-0.23	24.12	1.57	4.84	0.305
MSCI Europe		1.1.1997	2913	0.03	0.07	1.15	-7.00	6.42	-0.27	2.62	1.95	5.68	0.224
MSCI World		1.1.1997	2913	0.02	0.06	0.88	-4.52	4.60	-0.18	2.19	1.68	4.1	0.392
MSCI Emerging Markets		1.1.1997	2913	0.02	0.11	1.12	-7.43	4.65	-0.75	3.37	1.48	7.9	0.101

Results from Durbin Watson and White's tests show neither signs of first order autocorrelation nor signs of residual heteroscedasticity in daily returns. Thus, the assumptions for classical linear regression model are met and the analyses are conducted using the Ordinary Least Square (OLS) model.

To examine whether daily seasonal effects exist in the sample countries, the following regression is estimated:

$$R_t = \alpha_1 D_{1t} + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \alpha_5 D_{5t} + e_t \quad (1)$$

where R_t is the daily logarithmic return of the index as defined earlier, D_1 through D_5 are the daily dummy variables and e_t is a random error term. If t is Monday, then D_1= 1 and D_1= 0 for all other days, and so forth. The null hypothesis is that the dummy coefficients are equal.

For any DOW effect to be a true stock market anomaly, the returns must not only be statistically different from zero, but they must deviate significantly form the proceeds during the rest of the week. Therefore, based on the results obtained from the Equation (1), the statistically significant DOW patterns are tested explicitly with the following regression:

$$R_t = c + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \alpha_5 D_{5t} + e_t \quad (2)$$

where the intercept indicates the average returns for the day under examination. For example if the regression (1) indicates that Monday returns are significantly negative as in previously assessed academic literature, then the effect is tested with Equation (2). If a given stock index exhibits a traditional Monday effect then (1) the intercept c is expected to be negative and statistically significant; (2) coefficient α_i, i = 2,…, 5, indicating the difference in returns between Monday and the ith day of the week should be significantly higher than the mean Monday returns and (3) the F-value of the regression should be statistically significant[7].

To test for the monthly seasonal effects, the regression for the following equation is analyzed:

$$R_t = \alpha_1 D_{1t} + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \ldots + \alpha_{12} D_{12t} + e_t \quad (3)$$

where R_t stands for the monthly return on index, D_1 through D_{12} are monthly dummy variables and e_t is a random error term. If t is January, then D_1= 1 and D_1= 0 for all other months, and so forth.

[7] F-test is used for testing multiple hypotheses.

As above, to test explicitly for e.g. January effects, the following regression is estimated:

$$R_t = c + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \ldots + \alpha_{12} D_{12t} + e_t \quad (4)$$

where the intercept indicates the average return for January and the coefficient $\alpha_{i,}$ i = 2,…, 12, indicates the difference in return between January and the ith month of the year. The null hypothesis to be tested here is that all dummy variables coefficients are equal or close to zero and the F-value should not be statistically significant, as previously.

The turn-of-the-month is defined as zero and consequently, the last trading day is defined as (-1) while the first trading day of the following month as (1). The 16 trading days around the TOM are examined to determine if any of the mean daily returns are significantly different from zero. The 16-day period includes most of the trading days in any month and is alike to one employed by Lakonishok and Smidt (1988), Kunkel et al. (2003), and others. To inspect the daily mean returns, following regression is estimated:

$$R_t = \beta_{-8} D_{-8,\,t} + \beta_{-7} D_{-7,\,t} + \ldots + \beta_7 D_{,7t} + \beta_8 D_{8,\,t} + e_t \quad (5)$$

where R_t is the return on day t, $D_{i,t}$ are dummy variables for the first and last eight trading days of each month, where D_{-8t} corresponds to trading day -8, $D_{-7,\,t}$ corresponds to trading day -7, continuing through $D_{8,\,t}$, which corresponds to trading day + 8. The coefficients on the dummy variables, β_{-8} to β_8, are the mean returns for the 16 trading days and e_t is the error term.

According to previous studies most significant positive returns cluster around the TOM period and specifically during the trading days -1 trough +3. However, based on the evaluation of the results obtained from regression (5), the event window of [-1, 4] is applied as in Martikainen et al. (1994). To test for the TOM effect directly TOM returns are compared to the rest-of-the-month (ROM) returns with the following regression:

$$R_t = \alpha + \beta D_{\mathrm{TOM}} + e_t \quad (6)$$

where R_t is the return on day t, α is the intercept representing the mean return for the ROM period, D_{TOM} is a dummy variable for the TOM period, the coefficient β represents the difference between the mean TOM return and the mean ROM return and e_t is the error term.

Halloween effect is analyzed as in Bouman and Jacobsen (2002) with the following regression:

$$R_t = c + \alpha_1 D_t c + e_t \quad (7)$$

where R_t is the monthly index return, D_t is a dummy variable and e_t is a random error term. D_t takes the value of 1 if month t falls within the November-April period and 0 otherwise. The intercept term c represents the monthly mean return over the May-October periods and $c + \alpha_1$ represent the monthly mean return over the November-April periods.

Furthermore, to evaluate the economic significance of the Halloween strategy annual returns of this strategy are compared with a Buy and Hold strategy:

1. *Halloween strategy*: Investor who would like to profit from the Halloween effect buys a market portfolio at the beginning of November and sells the portfolio at the end of April. This investor will then invest in a risk free asset (short-term treasury bonds)[8] from the beginning of May through the end of October.
2. *Buy and Hold strategy*: this strategy holds the stock market portfolio throughout.

To test whether mean variance efficiency of the indices can be rejected the following regression is used:

$$R_{pt} - R_{ft} = \alpha + \beta(R_{mt} - R_{ft}) + e_t \quad (8)$$

in which R_{pt} denotes the return in year t on the Halloween strategy in each country, R_{ft} is the risk free rate in year t, R_{mt} stands for the return on index in the respective country and e_t is a random error term. The null hypothesis is that α (Jensen's alpha describing how much the annual return of the strategy has exceeded the return of a corresponding index portfolio) is zero.

[8] We use annualized short term interest rates (interbank or treasury bill rates) and deposit rates for Estonia and Romania, taken from the EBRD. 3-month EURIBOR rates are employed for MSCI indices, obtained from the ECB.

4. Empirical Results

The following paragraphs of the paper will go through the outcomes of the conducted empirical analyses. Each section discusses the findings on a particular anomaly and assesses the reasoning for the results. For reader's convenience large tables containing the analyses are placed in Appendices.

Day-of-the-Week effect

Tables 6-13 in Annex 1 illustrate the return statistics of the regression analyses based on the Equations (1) and (2) for the total sample and each sub-period. The DOW patterns that would qualify as seasonal regularities are presented below.

Table 2: Summary of the Day-of-the-Week Patterns

	1997-2008 total period	1997-2000 sub-period 1.	2001-2004 sub-period 2.	2005-2008 sub-period 3.
Monday				Estonia (-)*
Tuesday	Slovenia(-)***	Slovenia(-)***	Russia (+)**	
Wednesday	Slovenia(+)***	Slovenia(+)***	Russia (-)**	Bulgaria (+)*
Thursday	Lithuania (+)* Slovenia(+)***	Hungary (-)* Slovenia(+)***	Russia (+)**	Slovenia(+)***
Friday	Russia(+)* Slovenia(+)***	Slovenia(+)***		Lithuania (+)** Slovenia (+)***

Notes: (+) stands for positive and (-) for negative daily mean returns. ***, ** and * indicate statistical significance for multiple hypotheses F-test at the 1%, 5% and 10% level respectively.

Generally, negative returns appear in the CEE-countries during the beginning of the week (Monday and Tuesday) while positive yields cluster towards the end of the week (Thursday and Friday), although not significantly so whilst utilizing the F-test. There are also some scattered and statistically significant DOW patterns in Bulgaria, Estonia, Hungary, Lithuania and Russia. These findings could be mostly attributed to the *information processing and the settlement regime hypotheses*. Individual and institutional investors' tend to perform strategic asset allocation planning and portfolio evaluation throughout the weekend and the beginning of the week. The execution of buying orders occurs during the second part of the week and thereupon trading volumes and prices diverge across the weekdays.

The results designate that Slovenia is most inclined to violating the weak form of EMH (at least on 1% significance level). For that reason weekday returns, to some extent, could be predicted on the basis of past performance. Though, after 2000 the Slovenian DOW effect has diminished. There is no evidence of significant weekday patterns in the second sub-period and during the third sub-period patterns have decreased from four significant days (in the first sub-period) to two abnormally positive weekdays (Thursday and Friday). At first hand, this fact could be accounted for Slovenia's accession to the EU in 2004 and gradually escalating stock market efficiency along with amendments in regulation. However, the trading volumes have been constantly declining in the country since 2001. Hence, the diminution of the DOW patterns is rather caused by lessened trading.

Because the discovered DOW effects are not robust to different time periods and they are not persistent in a long-run with an exception of Slovenia, we conclude that examined countries do not provide consistent evidence to support the presence of any significant daily patterns in stock market returns of the CEE-countries. The obtained results are corresponding to those reported by Ajayi et al. (2004). Moreover, considering capitalization on the day-of-the-week effect, the trading rules in all probability will not give an investor a positive return in the presence of trading costs because of the frequent trading the investment strategy would demand.

Month-of-the-Year effect

Tests for seasonalities in monthly returns and the Equations (3) and (4) are shown in Annex 2, Tables 14-21. On the whole, it appears that most profitable months occur during October-February period and losses are rather bunched during the summer months from May to September. These patterns are in compliance with Hong and Yu (2006), suggesting that summer returns are lower due to vacation periods and the reduced risk with absence of noise (liquidity) traders. For the different time periods, MOY effect is distinguished as presented in Table 3. In Estonian, Hungarian and Slovenian markets in addition to the MSCI Europe index the null hypothesis of equal monthly returns is rejected at some point during the investigation sample. However, in nine countries there are no signs of monthly abnormalities.

Table 3: Summary for the Month-of-the-Year Patterns

	1997-2008 total period	1997-2000 1. sub-period	2001-2004 2. sub-period	2005-2008 3. sub-period
January	Slovenia(+)**	Slovenia(+)**	Hungary (+)**	
February			Hungary (-)**	
March	Estonia (+)*			
April				
May		Estonia (-)*		
June			Hungary (-)**	
July	Slovenia(+)**	Slovenia(+)**		
August	Estonia (+)*	Estonia (+)* Slovenia(+)**	Hungary (+)**	
September	Estonia (-)* MSCI Europe (-)*	Estonia (-)*	MSCI Europe (-)*	
October	MSCI Europe (+)*		Hungary (+)** MSCI Europe (+)*	
November			MSCI Europe (+)*	
December	MSCI Europe (+)*			

Notes: (+) stands for positive and (-) for negative monthly mean returns. ***, ** and * indicate statistical significance for multiple hypotheses F-test at the 1%, 5% and 10% level respectively.

The obtained results are fairly incoherent to Asteriou and Kavetsos (2006) who found strong evidence on presence of January effect in Hungarian, Polish, Romanian and Slovakian stock markets (during 1991 to May 2003). There is an indication of superior January returns for Slovenia during the whole time-period and the first sub-period. Also Hungary shows signs of January pattern but only in the second sub-period. Thus, there is no constant evidence in support of *tax-loss selling hypothesis*. Though, the investigated period used in this study is more concentrated on the 21st century whereas Asteriou and Kavetsos study is rather based on the 1990's. Additionally, the methodology used is slightly different. These results could moreover imply that if the anomalies existed in the sample period in which they were first identified, the activities of market participators who implemented strategies to capitalize on the January effect have caused anomaly to disappear. Hence, these markets have become more informationally efficient.

Furthermore, the evaluation of monthly patterns reveals that in many countries December offers relatively large returns throughout the investigation time scale, even though not significantly so when employing the F-test (with an exception of the MSCI Europe index for the whole sample period). In accordance with the EMH hypothesis, these results could entail that investors are exploiting previously documented market trends by acquiring equities in December and therefore the markets have adjusted for the January anomaly.

Overall, there is not much lucid empirical evidence that the CEE stock markets are violating the weak form of market efficiency in terms of month-of-the-year anomaly. Even though some mentionable monthly patterns exist, they are not persistent and disappear through the investigated time-periods either because of the EU accession or purely due to controversial procedures of market participants. Observed deviations from weak form market efficiency can be argued to be relatively unimportant and infrequent in scope of the totality of market transactions. Therefore, there is some support to the informational efficiency aspect of the market efficiency hypothesis. In this concurrence, it does not seem reasonable to discuss any investment strategies based on the month-of-the-year effect.

Turn-of-the-Month-effect

First we inspect the 16 trading days around the turn-of-the-month to determine if any of the mean daily returns are significantly different from zero. The results for Equation (5) are presented in Annex 3, Table 22. An examination of the proceeds shows that most significant positive returns cluster around the TOM period, trading days -1 through +4. Over this 5-day TOM period nine countries and all MSCI benchmark indices have at least one return that is positive and significantly different from zero, and five countries in addition to the MSCI Europe and the Emerging Market indices have two to four days that are meaningfully positive. Only in five states there is a suggestion of negative returns during the 5-day TOM period, none of which is significant.

Having established, than an apparent TOM pattern exists, TOM effect is tested directly by comparing TOM returns to the rest-of-the-month (ROM) returns with Equation (6). Returns over the TOM period are in general larger than ROM proceeds. Typically the ROM returns are close to zero, or even negative. Only in Bulgaria and Latvia the average ROM returns outperform the TOM proceeds. The TOM pattern is most pronounced in Croatia, Hungary, Poland, Romania, Russia, Slovenia and all MSCI indices as presented in Table 4.

Table 4: Summary for the Turn-of-the-Month Patterns

1997-2008 total period	1997-2000 1. sub-period	2001-2004 2. sub-period	2005-2008 3. sub-period
			Czech Republic*
Croatia*	Croatia**		
Hungary***	Hungary**	Hungary***	
Poland**	Poland**		
Romania**			Romania*
Russia***	Russia**	Russia*	Russia*
Slovenia **	Slovenia **		
MSCI Europe***	MSCI Europe***	MSCI Europe**	
MSCI World***	MSCI World**	MSCI World**	
MSCI Emerging Markets***	MSCI Emerging Markets***	MSCI Emerging Markets***	MSCI Emerging Markets**

Notes: ***, ** and * indicate statistical significance for multiple hypotheses F-test at the 1%, 5% and 10% level respectively.

The effect is recognized to be most persistent in Russia, Hungary and the benchmark indices (at least on 10% significance level). In Hungary, the effect disappears after ownership structure reorganization, when Austrian banks acquired majority stake in Budapest Stock Exchange in 2004. The results are somewhat mixed for Croatia, Poland, and Slovenia (no signs of the anomaly after 2000) as well as for Romania. So there is some evidence on the predictability of returns in the transition economies based on the TOM pattern. The obtained outcomes are rather accordant to previous international studies (Ariel, 1987; Martikainen et al., 1994; Kunkel et al., 2003). We find that during the whole sample period, the 5-day TOM period accounts for 85% of the monthly return, on average, across six stock markets where the TOM pattern exists. The effect is even stronger for the benchmark indices.

Markedly, anomaly shows evidence of declination in most states from 2001 onwards. Thus accession of the EU and amendments in stock market regulation may have had some positive impact on price generation process and market efficiency as a whole in the CEE-countries. The fact that Russia (not being an EU member) demonstrates evidence on persistence of the TOM anomaly throughout the sample period supports this suggestion. Though, the statistical significance of the pattern seems to be diminishing in Russia as well. However, there might be also other factors (such as liquidity and information release issues) explaining the anomalous behavior of returns in Russia that will be discussed subsequently.

Considering the reasonings for the existence of the TOM effect, we are inclined to argue that it is mostly associated with the *turn-of-the-month liquidity* and *window*

dressing hypotheses. First of all, the countries exhibiting the anomalous TOM effect e.g. Hungary, Russia and Poland could be considered as those markets with the most eminent presence of international investors via mutual funds.[9] Individual investors in the western markets have saving and investment schemes, which contribute assets on a regular basis to mutual funds from their monthly salaries. Thus, the pattern is somewhat a spill over effect from the more developed markets. In comparison to other sample countries, Russian stock markets have lured a grand amount of investment funds placing capital in the region. Consequently, the TOM pattern might be more permanent in Russian markets. Secondly, the aforesaid equity markets have been showing for the most part steadiest and strongest market capitalization growth. Lacking a doubt, this expansion could not be achieved without the contribution of local individual investors, hence more or less ordinary local wage earners. Therefore, the TOM anomaly could be ascribed to investors' unevenly distributed capital inflows.

The *window dressing hypotheses* associates the anomaly with institutional investors' portfolio revision by the end of the month, which is a logical continuation to the *liquidity hypothesis*. In western stock markets, the role and participation of institutional investors constitutes extensively to the equity price formation process. The analyses carried out reveal, that MSCI Europe index demonstrate fairly permanent TOM pattern. For that reason institutional investors' behavior can be a constituent factor for this calendar pattern.

Apart from these, *information release hypothesis* and predominantly economic news publication could provide a justification for the existence of depicted TOM patterns. Testing for such a hypothesis in the CEE stock markets would require obtaining data about historical economic news, which may be a good topic for future research.

Taking into consideration the profit opportunities to capitalize on the existence of this effect, there could be some buying and selling patterns suggested. For active traders

[9] These are more mature markets in terms of market capitalization, market capitalization as percentages of GDP and trading volumes (liquidity). Furthermore, Birg and Lucey (2006) perform an integration analysis in eight CEEs and find that Hungarian as well as Polish stock markets are becoming increasingly integrated with both regional European and international equity markets. Authors conclude that the results indicate the dominance of sophisticated international investors over the countries' equity markets.

the strategy based on the purchase of stocks or index tracking funds during the last 7 days of the month (exempt trading day -1) and especially during the event window of [-4,-2] while selling them throughout [-1, 4] might be a profitable timing strategy. We do not conduct an examination of this strategy in presence of trading costs. However, Listola (2004) analyzes the returns of a trading strategy based on a similar pre-holiday calendar effect, and concludes that sophisticated computerized trading programs produce statistically significant abnormal return close to one percent even after the adjustment for the trading costs. Furthermore, small investors could benefit from the TOM effect as sellers or buyers by obtaining better prices employing the above mentioned timing strategy.

Halloween effect

The results for the Halloween effect and Equation (7) are presented in Annex 4, Table 27. The outcomes of the analysis are mixed across countries and to mostly coherent with previous research (Bouman and Jacobsen, 2002; Lucey and Wheelan, 2002). The monthly mean return over May-October period is lower than average November-April yield in eight out of twelve countries. Moreover, May-October average return is negative in five countries and in all MSCI comparative benchmark indices. Nevertheless May-October return is significantly different from zero only in case of Bulgaria and Slovenia at 1% and 5% risk level respectively and for these countries it is also higher than November-April return. The coefficients for the November-April dummies statistically outperform the comparative constant in Estonia and Russia at 5% level. The compounded average 6 months November-October proceeds in Russia amount to 25% (-8% for May-October period) and to 18% and -6% for Estonia correspondingly. This pattern is less pronounced for Croatia and Lithuania at 10% level.

To estimate the economic importance of the Halloween strategy against holding the market index portfolio throughout the year, we form a Halloween portfolio with six months investment in short term interest rates. Now, trading costs of 0.5% for a single transaction are included two times a year[10]. Unfortunately, the assessment of taxation on

[10] Bouman and Jacobsen (2002) argue that certain managers charge transaction costs only once when an investor switches funds in stead of two times 0.5% when buying and selling. Moreover, they state that large

short-term capital gains is beyond the scope of the study since they have been altering for several times in each country. Therefore, inclusion of taxation expenses could affect the significance of obtained results and would be a logical extension for future research. Table 5 contains the average annual returns and standard deviations of the Buy and Hold and the Halloween strategy. These results show that the Halloween strategy outperforms the Buy and Hold strategy in Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland and Russia as well as for all MSCI indices. The standard deviation of the Halloween strategy is substantially lower in comparison to the Buy and Hold strategy in all countries and benchmark indices.

Table 5: Average Annual Returns and Standard Deviations of a Buy and Hold and the Halloween Strategy for the Total Sample Period

Country	Buy and Hold Strategy		Halloween Stategy	
	Mean	Std.Dev.	Mean	Std.Dev.
Bulgaria	40.16	22.93	16.40	21.62
Croatia	18.01	22.20	24.20	18.84
Czech Republic	10.86	21.35	14.64	16.21
Estonia	14.95	46.64	33.09	36.86
Hungary	16.99	25.23	24.97	20.05
Latvia	8.97	53.61	15.67	19.92
Lithuania	10.14	37.69	18.47	16.70
Poland	11.79	20.27	21.22	13.56
Romania	25.10	37.52	18.22	21.28
Russia	22.21	74.58	42.45	46.98
Slovakia	8.34	30.54	6.98	23.60
Slovenia	18.45	18.41	12.68	15.79
MSCI Europe	8.01	18.52	13.21	10.58
MSCI World	6.18	16.46	9.20	10.40
MSCI Emerging Markets	6.54	30.95	15.79	14.45

Furthermore, we test whether we are able to reject the mean variance efficiency of the indices in different countries. The estimation results and statistical significance for Equation (8) are reported in Annex 4, Table 28. The alpha coefficients (Jensen's alpha describing how much the annual return of the strategy has exceeded the return of a corresponding index portfolio) are positive and significantly different from zero in case of Estonia, Hungary, Poland, Russia and all the MSCI indices. Alpha coefficients amount to 21.8%, 12%, 10.1% and 23.8% in respective countries. However, the p-value of F-

institutional investors, e.g. the Robeco Group estimates transaction costs in France 0.3%, the US 0.25%, and the Netherlands 0.3%. These estimates give an indication, and are not precisely accurate due to complexity of tax and commission systems.

statistic is not significant for the regressions in Hungary and Poland and consequently the null hypothesis of alpha being zero is rejected only for Estonia and Russia as well as all the MSCI indices. Bouman and Jacobsen (2002) argue that the Halloween effect is particularly strong in European countries. Such a statement is confirmed in this study by highly significant excess alpha returns 8.1% (at 1% risk level) for the MSCI Europe index. Thus for abovementioned indices, there is a clear indication of market timing ability. These outcomes are in line with previous results. In Bulgaria and Romania, Jensen's alpha is negative, suggesting that the Halloween strategy is not offering superior returns in these countries. Accumulated May-October profits in these states have been relatively high and therefore Halloween strategy's asset allocation in to a risk free rate during these months is inferior to investment in the market indices.

As seen from Table 28, the estimates for β coefficients, the measure of volatility of a Halloween portfolio in relation to the market indices are well below 1. In the Czech Republic, Estonia, Latvia, Lithuania and Russia as well as MSCI indices significantly so, at least on 10% level. In Latvia and Lithuania Jensen's alphas are positive, but not significant while the level of volatility is meaningfully beneath 0.37, subsequently raising the p-values of the F-statistics. These results lead to a conclusion, that the Halloween strategy is substantially less risky than investing in the market index in the respective countries. Therefore, the "Halloween" rule could be especially suited to the risk-averse investors, as it seems to remove unrewarding risk. If wrong, the disadvantage is an opportunity cost – the compensation is halved as well as the risks.

What comes to the implementation of the strategy, it might be difficult to mimic stock indices in practice. Bouman and Jacobsen (2002) suggest that firstly, one could employ this trading strategy using index futures. In that case the transaction costs are considered to be much lower[11]. Secondly, they suggest that the trading strategy could be exercised by using index-tracking funds that have an extremely high correlation with market indices.

Considering rather short sample period (i.e. $N = 11$) we do not test for the persistence of the anomaly. The small sample size also sets limitations on the generalization of the results. One more consideration remains regarding the Halloween

[11] For instance, Solnik (1993) estimates round-trip transaction costs of 0.1% on futures contracts.

strategy implementation in different market circumstances. Equity markets have been mostly soaring during the period under investigation. Thus, it remains unsolved how the strategy would perform under bear markets. However, Bouman and Jacobsen (2002) state that on average the Halloween strategy does well when judged on its ability to time bear and bull markets.

5. Conclusions

The assumption that stock prices are random is basic to the Efficient Market Hypothesis (EMH) and capital asset pricing models. This study has presented evidence focusing on the weak form efficiency and calendar anomalies that violate the EMH. This paper examined four different calendar anomalies: day-of-the-week, month-of-the-year, turn-of-the-month and Halloween effects in the stock markets of Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Slovakia and Slovenia. The study commenced with an assessment of the methodologies applied. Subsequently, study employed the Ordinary Least Square (OLS) regression analyses to determine whether the studied calendar anomalies existed in the selected countries. To assess the persistency of the anomalous phenomena patterns were studied as a full sample period and three sub-periods and the obtained results were evaluated against comparative MSCI benchmark indices.

The major conclusions of this paper are that some scattered day-of-the-week and monthly patterns are discovered. However, the constancy analyses showed that the findings were not robust to different time-periods and therefore CEE stock markets are weakly efficient in terms of day-of-the-week and month-of-the-year anomalies. There was yet evidence that stock returns in several countries were predictable based on the turn-of-the-month (Croatia, Hungary, Poland, Romania, Russia and Slovenia) and Halloween (the Czech Republic, Estonia, Latvia, Lithuania and Russia) calendar patterns. In other words, investors could take advantage of information accessible in this study. Nonetheless, the analyses show that in compliance with Schwert (2002), the anomalous calendar effects are becoming less pronounced. This evolvement can be attributed to the EU accession, the growing awareness of the importance of standards of corporate governance, gradual integration with the developed capital markets or else purely to

controversial procedures of market participants. Consequently the weak form efficiency has increased steadily during the sample period in all examined countries.

The extant patterns seem to be explained by the combination of various factors such as settlement procedures, liquidity issues, window-dressing, information processing and last but not the least, measurement errors. While this study provides additional insights into behavior of stock market returns in the transition economies, stock returns seasonality is still not fully understood. No explanation yet is completely sufficient for these phenomena by providing direct evidence. Therefore, further research should be undertaken not only to conform the results of the present study but also to investigate alternative justifications and refine the existing factors that keep the calendar anomalies alive in stock markets thus far.

References

Agrawal, A., and Tandon, K. (1994). "Anomalies or illusions? Evidence from stock markets in eighteen countries", *Journal of International Money and Finance*, Vol.13 (1), 83-106.

Ajayi, R.A., Mehdian, S. and Perry, M.J. (2004). "The Day-off-the Week effect in Stock Returns", *Emerging Markets Finance and Trade,* Vol. 40 (4), 53-62.

Ariel, R. (1987). "A monthly effect in stock returns", *Journal of Financial Economics*, Vol. 18 (1), 161–174.

Asteriou, D. and Kavetsos G. (2006). "Testing for the existence of the January effect in transition economies", *Applied Financial Economic Letters*, Vol.2 (6), 375-381.

Birg, G. and Lucey, B. (2006). "Integration of smaller European equity markets: a time-varying integration score analysis", *Applied Financial Economic Letters*, Vol.2 (6), 395-400.

Branch, B. (1977). "A tax loss trading rule", *Journal of Business*, Vol. 50 (2), 198-207.

Brown, P., Keim, D.B., Kleidon, A.W. and Marsh, T.A. (1983)."Stock Return Seasonalities and the Tax-Loss-Selling-Hypothesis: Analysis of the Arguments and Australian Evidence", *Journal of Financial Economics*, 12 (1): 105-127.

Bouman, S. and Jacobsen, B. (2002). "The Halloween Indicator, 'Sell in May and Go Away': Another Puzzle", *American Economic Review*, Vol. 92 (5), 1618-1635.

Choudry, T. (2000). "Day of the week effect in emerging Asian stock markets: evidence from the GARCH model", *Applied Financial Economics*, Vol. 10 (3), 235-242.

Dai, Q. (2007). "Tax-loss Selling and the Turn-of-the-Year Effect: New Evidence from Norway", *EFMA 2003* Helsinki meeting. Available at: [http://docentes.fe.unl.pt/~qdai/paper/loss%20selling%20200707.pdf]

De Fusco, R.A., McCabe G.M. and Yook, K.C. (1993). "Day-of the-Week-Effect: A Test of the Information Timing Hypothesis", Journal of Business Finance and Accounting, Vol. 20 (6), 835-842.

Draper, P. and Paudyal K. (2002). "Explaining Monday Returns", *Journal of Financial Research*, Vol. 25 (4), 507-520.

Dubois, M. and Louvet, P. (1996). "The day-of-the-week effect: The international evidence", *Journal of Banking & Finance*, Vol. 20 (9), 1463-1484.

EBRD, European Bank for Reconstruction and Development (2008). [http://www.ebrd.com/index.htm]. (2.8.2008)

ECB, The European Central Bank (2008). [http://www.ecb.int/ecb/html/index.fi.html]. (3.15.2008)

Fama, E.F. (1970). "Efficient Capital Markets: A Review of Theory and Empirical Work", *Journal of Finance,* Vol. 25 (2), 383-417.

Fountas, S. and Segredakis, K. (2002). "Emerging stock market return seasonalities: The January effect and the tax-loss selling hypothesis", *Applied Financial Economics*, Vol.12 (4), 291-299.

Gibbons, M. and Hess, P. (1981). "Day of the week effects and asset returns", *Journal of Business,* Vol. 54 (4), 579-596.

Gultekin, M. and Gultekin B. (1983). "Stock Market Seasonality: International evidence", *Journal of Financial Economics*. Vol. 12 (4), 469-481.

Haugen, R. A., and, Lakonishok, J. (1988). "*The Incredible January Effect",* Dow Jones Irwin, Homewood, Illinois.

Ho, Yan-ki, (1990). "Stock Return Seasonalities in Asia Pacific markets", *Journal of International Financial Management and accounting*, Vol.2(1), 47-77.

Hong, H. and Yu, J. (2006) "Gone Fishin: Seasonality in Trading Activity and Asset Prices", USC FBE Finance Seminar paper. Available at:

[http://www.usc.edu/schools/business/FBE/seminars/papers/F_4-7-06_HONG-GoneFishin.pdf]

Kunkel, R.A., Compton, W.S. and Beyer, S. (2003). "The turn-of-the-month effect still lives: The international evidence", *International Review of Financial Analysis*, Vol. 12 (2), 207-221.

Lakonishok, J. and Maberly, E. (1990). "The Weekend Effect: Trading Patterns of Individual and Institutional Investors", *Journal of Finance*, Vol. 45 (1), 231-243.

Lakonishok, J. and Smidt, S. (1988). "Are Seasonal Anomalies Real? A Ninety Year Perspective", *Review of Financial Studies*, 1, 403-425.

Listola, S. (2004). "Holiday Effect in the Finnish Stock Market", *Master Thesis*, Helsinki School of Economics.

Lucey, B.M. (1994), "Some Empirics of the ISEQIndex", *Economic and Social Review,* Vol. 25, 157–77.

Lucey, B. and Whelan, S. (2002). "A promising timing strategy in equity markets", *Journal of the Statistical and Social Inquiry Society of Ireland*, Vol. 31, 74-110.

Lyroudi, K, Subeniotis, D. and Komisopoulos, G. (February 25, 2002). "Market Anomalies in the A.S.E: the Day of the Week Effect", Working paper, University of Macedonia, EFMA 2002 London Meetings.

Maberly, E. and Pierce R., (2004). "Stock market efficiency withstands another challenge: Solving the 'Sell in May/Buy after Halloween' Puzzle. *Econ Journal Watch*, Vol.1(1), 29-46.

Martikainen, T., Perttunen J. and Ziemba W.T. (1994). "The Turn-of-the-Month Effect in the World's Stock Markets", *Financial Markets and Portfolio Management*, 8, 41–49.

Martikainen, T. and Puttonen, V. (1996). "Finnish day-of-the-week effects", *Journal of Business Finance & Accounting*, 23 (7), 1019-1032.

Mlambo, C. and Biekpe, N. (2006). "Seasonal Effects: Evidence from Emerging African Stock Markets", *South African Journal of Business Management*, Vol. 37 (3), 41-52.

Nikkinen, J., Sahlström, P. and Äijö J. (2007). "Turn-of-the-month and intramonth effects: Explanation from the important macroeconomic news announcements", *Journal of Futures Markets.* Vol. 27 (2), 105-126.

Penman, S. (1987). " The distribution of earnings news over time and seasonalities in aggregate stock returns", *Journal of Financial Economics*, Vol. 18 (2), 199-228.

Poterba J.M. and Weisbenner S.J. (2001). "Capital Gains Tax Rules, Tax Loss Trading and Turn-of-the-Year Returns", *Journal of Finance*, 56 (1), 353-368.

Santamases, M. (1986). "An Investigation of the Spanish Stock Market Seasonalities", *Journal of Business Finance & Accounting***,** Vol. 13 (2), 267-276.

Schwert, G.W. (2002). "Anomalies and Market Efficiency." *NBER Working Paper Series*. Working Paper 9277. [http://www.nber.org/papers/w9277]

Solnik, B. (1993). "The performance of international asset allocation strategies using conditioning information", *Journal of Empirical Finance*, Vol 1, (1) 33-55.

Solnik, B. and L. Bousquet (1990), "Day-of-the-Week Effect on the Paris Bourse", *Journal of Banking and Finance,* Vol. 14 (2/3) , 461-46.

Sullivan, R., Timmermann, A. and White, H. (2001). "Dangers of data mining: the case of calendar effects in stock returns." *Journal of Econometrics*, Vol.105 (1), 249-286.

Yakob, N.A., Beal, D., and Delpachitra, S. (2005). "Seasonality in the Asia Pacific stock markets", *Journal of Asset Management*, Vol. 6 (4), 298-318.

Appendices

Annex 1: Tests for the Day-of-the-Week Effect

Table 6: Day-of-the-Week Effect during the Whole Sample Period 1997-2008

Results for the regression $R_t = \alpha_1 D_{1t} + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \alpha_5 D_{5t} + e_t$ are presented for the whole sample period 1997-2008. For each index estimated coefficient, t-value and p-value are shown.

Country		Monday	Tuesday	Wednesday	Thursday	Friday	F-statistic	p-value
Bulgaria	coefficient	0.043	0.090	**0.242** ***	0.054	**0.264** ***	**3.406** ***	0.005
	t-statistic	0.474	0.990	2.658	0.597	2.898		
	p-value	0.636	0.322	0.008	0.551	0.004		
Croatia	coefficient	-0.052	**0.130** *	0.096	0.051	0.072	1.481	0.193
	t-statistic	-0.736	1.854	1.361	0.729	1.021		
	p-value	0.462	0.064	0.173	0.466	0.307		
Czech Republic	coefficient	0.008	0.070	-0.020	0.077	0.048	1.017	0.406
	t-statistic	0.164	1.347	-0.395	1.495	0.924		
	p-value	0.870	0.178	0.693	0.135	0.356		
Estonia	coefficient	-0.128	0.103	**0.182** **	0.073	0.048	**1.886** *	0.093
	t-statistic	-1.510	1.209	2.149	0.864	0.569		
	p-value	0.131	0.227	0.032	0.388	0.570		
Hungary	coefficient	**0.151** **	0.045	0.003	-0.017	0.116	1.464	0.198
	t-statistic	2.078	0.620	0.048	-0.240	1.600		
	p-value	0.038	0.535	0.962	0.810	0.110		
Latvia	coefficient	0.010	0.055	-0.097	0.045	0.135	0.891	0.486
	t-statistic	0.118	0.644	-1.126	0.519	1.578		
	p-value	0.906	0.519	0.260	0.603	0.115		
Lithuania	coefficient	-0.021	-0.023	-0.035	**0.163** **	0.105	**1.920** *	0.088
	t-statistic	-0.324	-0.356	-0.548	2.529	1.636		
	p-value	0.746	0.722	0.584	0.012	0.102		
Poland	coefficient	0.068	0.001	-0.062	0.067	**0.132** **	1.650	0.143
	t-statistic	1.126	0.011	-1.027	1.103	2.170		
	p-value	0.260	0.991	0.304	0.270	0.030		
Romania	coefficient	0.005	0.073	0.046	0.101	**0.145** **	1.450	0.203
	t-statistic	0.070	0.993	0.630	1.388	1.983		
	p-value	0.945	0.321	0.529	0.165	0.047		
Russia	coefficient	0.120	0.051	-0.136	0.075	**0.289** ***	**2.103** *	0.062
	t-statistic	1.103	0.471	-1.246	0.694	2.654		
	p-value	0.270	0.637	0.213	0.488	0.008		
Slovakia	coefficient	-0.005	-0.013	-0.006	0.069	**0.112** **	1.253	0.281
	t-statistic	-0.093	-0.248	-0.116	1.306	2.116		
	p-value	0.926	0.804	0.907	0.192	0.034		
Slovenia	coefficient	-0.011	**-0.103** *	**0.099** **	**0.165** ***	**0.177** ***	**9.437** ***	<0.001
	t-statistic	-0.269	-2.512	2.412	4.043	4.317		
	p-value	0.788	0.012	0.016	<0.001	<0.001		
MSCI Europe	coefficient	0.003	0.038	-0.034	0.064	0.063	0.939	0.454
	t-statistic	0.058	0.799	-0.714	1.337	1.325		
	p-value	0.954	0.424	0.475	0.181	0.185		
MSCI World	coefficient	0.010	0.028	0.020	0.023	0.017	0.320	0.901
	t-statistic	0.286	0.780	0.541	0.622	0.478		
	p-value	0.775	0.435	0.589	0.534	0.633		
MSCI Emerging Markets	coefficient	-0.034	0.033	0.021	-0.007	**0.101** **	1.207	0.303
	t-statistic	-0.737	0.712	0.446	-0.150	2.182		
	p-value	0.461	0.476	0.655	0.881	0.029		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 7: Tests for the Explicit Day-of-the-Week Patterns for the Whole Sample Period

Results for the regression $R_t = c + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \alpha_5 D_{5t} + e_t$, where the shaded area represents intercept, c, e.g. Monday and non shaded columns stand for the coefficients α_i, $i = 2,\ldots, 5$, indicating the difference in returns between e.g. Monday and the ith day of the week.

Country		Monday	Tuesday	Wednesday	Thursday	Friday	F-statistic	p-value
Hungary	coefficient	*0.151*	-0.106	-0.148	-0.169	-0.035	0.987	0.413
	t-statistic	*2.077*	-1.030	-1.435	-1.639	-0.339		
	p-value	*0.038*	0.303	0.151	0.101	0.735		
Croatia	coefficient	**-0.182** *	***0.130*** *	-0.035	-0.079	-0.059	0.957	0.430
	t-statistic	-1.831	*1.854*	-0.348	-0.795	-0.589		
	p-value	0.067	*0.064*	0.728	0.427	0.556		
Slovenia	coefficient	0.092	-0.103	*0.201*	0.000	0.000	8.599 ***	<0.001
	t-statistic	1.586	-2.512	*3.482*	0.000	0.000		
	p-value	0.113	0.012	*0.001*	<0.001 ***	<0.001 ***		
Bulgaria	coefficient	-0.199	-0.152	*0.242* ***	-0.188	0.022	1.355	0.247
	t-statistic	-1.543	-1.180	*2.658*	-1.458	0.170		
	p-value	0.123	0.238	*0.008*	0.145	0.865		
Estonia	coefficient	**-0.311** ***	-0.080	*0.182*	-0.109	-0.134	1.819	0.122
	t-statistic	-2.587	-0.663	*2.149*	-0.909	-1.118		
	p-value	0.010	0.507	*0.032*	0.363	0.264		
Slovenia	coefficient	**-0.110** *	**-0.201** ***	*0.099*	0.067	0.078	**8.599** ***	<0.001
	t-statistic	-1.895	-3.482	*2.412*	1.153	1.347		
	p-value	0.058	0.001	*0.016*	0.249	0.178		
Lithuania	coefficient	**-0.184** **	**-0.186** **	**-0.199** **	***0.163*** **	-0.058	1.969	0.097
	t-statistic	-2.017	-2.040	-2.176	*2.529*	-0.633		
	p-value	0.044	0.041	0.030	*0.012*	0.527		
Slovenia	coefficient	**-0.176** ***	**-0.268** ***	-0.067	*0.165*	0.011	**8.599** ***	<0.001
	t-statistic	-3.048	-4.634	-1.153	***4.043*** ***	0.194		
	p-value	0.002	0.000	0.249	*<0.001*	0.846		
Bulgaria	coefficient	**-0.221** *	-0.174	-0.022	-0.210	***0.264*** ***	1.355	0.247
	t-statistic	-1.713	-1.349	-0.170	-1.628	*2.898*		
	p-value	0.087	0.177	0.865	0.104	*0.004*		
Poland	coefficient	-0.063	-0.131	**-0.194** **	-0.065	***0.132*** **	1.490	0.202
	t-statistic	-0.738	-1.526	-2.261	-0.755	*2.170*		
	p-value	0.461	0.127	0.024	0.451	*0.030*		
Romania	coefficient	-0.140	-0.072	-0.099	-0.043	***0.145*** **	0.529	0.714
	t-statistic	-1.352	-0.700	-0.957	-0.421	*1.983*		
	p-value	0.176	0.484	0.339	0.674	*0.047*		
Russia	coefficient	-0.169	-0.237	**-0.424** ***	-0.213	***0.289*** ***	**1.953** *	0.099
	t-statistic	-1.096	-1.543	-2.758	-1.386	*2.654*		
	p-value	0.273	0.123	0.006	0.166	*0.008*		
Slovakia	coefficient	-0.117	**-0.125** *	-0.118	-0.043	*0.112*	1.127	0.342
	t-statistic	-1.562	-1.671	-1.579	-0.573	*2.116*		
	p-value	0.119	0.095	0.115	0.567	*0.034*		
Slovenia	coefficient	**-0.188** ***	**-0.279** ***	-0.078	-0.011	***0.177*** ***	**8.599** ***	<0.001
	t-statistic	-3.242	-4.828	-1.347	-0.194	*4.317*		
	p-value	0.001	<0.001	0.178	0.846	*<0.001*		
MSCI Emerging Markets	coefficient	**-0.136** **	-0.068	-0.081	**-0.108**	***0.101*** **	1.207	0.305
	t-statistic	-2.064	-1.039	-1.227	-1.649	*2.182*		
	p-value	0.039	0.299	0.220	**0.099** *	*0.029*		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 8: Day-of-the-Week Effect during the first sub-period 1997-2000

Results for the regression $R_t = \alpha_1 D_{1t} + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \alpha_5 D_{5t} + e_t$ are presented for the period 1997-2000. For each index the estimated coefficient, t-value and p-value are shown.

Country		Monday	Tuesday	Wednesday	Thursday	Friday	F-statistic	p-value
Bulgaria	coefficient	-0.464	-0.459	-0.578	**1.092** *	1.061	1.537	0.198
	t-statistic	-0.733	-0.726	-0.913	1.726	1.676		
	p-value	0.467	0.471	0.366	0.091	0.101		
Croatia	coefficient	-0.001	0.105	0.139	-0.135	-0.016	0.412	0.841
	t-statistic	-0.009	0.682	0.903	-0.877	-0.101		
	p-value	0.993	0.495	0.367	0.381	0.919		
Czech Republic	coefficient	-0.090	0.128	-0.058	-0.074	0.036	0.793	0.555
	t-statistic	-0.964	1.370	-0.619	-0.792	0.387		
	p-value	0.335	0.171	0.536	0.429	0.699		
Estonia	coefficient	-0.238	-0.002	**0.376** *	0.050	-0.070		
	t-statistic	-1.120	-0.007	1.777	0.234	-0.333	0.916	0.470
	p-value	0.263	0.994	0.076	0.815	0.739		
Hungary	coefficient	0.254	0.016	0.214	**-0.312** *	0.137	1.737	0.123
	t-statistic	1.570	0.099	1.324	-1.934	0.847		
	p-value	0.117	0.921	0.186	0.053	0.397		
Latvia	coefficient	0.013	0.087	0.015	**-0.466** ***	-0.022	1.406	0.220
	t-statistic	0.075	0.487	0.086	-2.601	-0.125		
	p-value	0.941	0.626	0.932	0.009	0.901		
Lithuania	coefficient	-0.007	-0.135	-0.024	0.166	-0.017	0.498	0.778
	t-statistic	-0.051	-0.986	-0.174	1.212	-0.124		
	p-value	0.959	0.325	0.862	0.226	0.902		
Poland	coefficient	0.088	0.006	-0.119	-0.017	0.147	0.529	0.755
	t-statistic	0.678	0.050	-0.926	-0.132	1.143		
	p-value	0.498	0.960	0.355	0.895	0.253		
Romania	coefficient	-0.124	-0.181	0.008	-0.119	0.065	0.497	0.779
	t-statistic	-0.752	-1.108	0.048	-0.727	0.399		
	p-value	0.452	0.268	0.962	0.468	0.690		
Russia	coefficient	-0.107	0.049	-0.197	-0.242	0.336	0.697	0.626
	t-statistic	-0.422	0.193	-0.778	-0.954	1.326		
	p-value	0.673	0.847	0.437	0.341	0.185		
Slovakia	coefficient	-0.033	-0.110	**-0.187** *	-0.028	0.037	0.896	0.483
	t-statistic	-0.309	-1.032	-1.768	-0.268	0.348		
	p-value	0.758	0.302	0.077	0.789	0.728		
Slovenia	coefficient	-0.094	**-0.216** ***	**0.141**	**0.143** *	**0.171** **	**3.860** ***	0.002
	t-statistic	-1.171	-2.675	1.756	1.780	2.127		
	p-value	0.242	0.008	0.079	0.075	0.034		
MSCI Europe	coefficient	0.060	**0.138** *	-0.039	-0.027	0.089	1.148	0.333
	t-statistic	0.793	1.819	-0.522	-0.360	1.184		
	p-value	0.428	0.069	0.602	0.719	0.237		
MSCI World	coefficient	0.061	**0.119** *	-0.006	-0.056	0.073	1.375	0.231
	t-statistic	0.985	1.916	-0.101	-0.902	1.188		
	p-value	0.325	0.056	0.919	0.367	0.235		
MSCI Emerging Markets	coefficient	-0.111	0.024	-0.027	**-0.209** **	0.056	1.658	0.142
	t-statistic	-1.294	0.286	-0.312	-2.451	0.655		
	p-value	0.196	0.775	0.755	0.014	0.512		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 9: Tests for the Explicit Day-of-the-Week Patterns for the First Sub-Period 1997-2000

Results for the regression $R_t = c + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \alpha_5 D_{5t} + e_t$, where the shaded area represents intercept, c, e.g. Monday and non shaded columns stand for the coefficients α_i, $i = 2,\ldots, 5$, indicating the difference in returns between e.g. Monday and the ith day of the week.

Country		Monday	Tuesday	Wednesday	Thursday	Friday	F-statistic	p-value
Slovenia	coefficient	0.121	***-0.216*** ***	**0.357** ***	**0.359** ***	**0.387** ***	**4.658** ***	0.001
	t-statistic	1.063	*-2.675*	3.134	3.150	3.396		
	p-value	0.288	*0.008*	0.002	0.002	0.001		
MSCI Europe	coefficient	-0.078	***0.138*** *	**-0.177** *	-0.165	-0.048	1.012	0.400
	t-statistic	-0.726	*1.819*	-1.656	-1.542	-0.452		
	p-value	0.468	*0.069*	0.098	0.123	0.652		
MSCI World	coefficient	-0.058	***0.119*** *	-0.125	**-0.175** **	-0.045	1.245	0.290
	t-statistic	-0.659	*1.916*	-1.428	-1.994	-0.518		
	p-value	0.510	*0.056*	0.154	0.046	0.605		
Estonia	coefficient	**-0.614** **	-0.378	***0.376*** *	-0.327	-0.447	1.129	0.341
	t-statistic	-2.048	-1.260	*1.777*	-1.091	-1.492		
	p-value	0.041	0.208	*0.076*	0.275	0.136		
Slovakia	coefficient	0.155	0.078	***-0.187*** *	0.159	0.224	0.661	0.619
	t-statistic	1.030	0.518	*-1.768*	1.061	1.497		
	p-value	0.303	0.604	*0.077*	0.289	0.135		
Slovenia	coefficient	-0.236 **	-0.357 ***	*0.141* *	0.002	0.030	4.658 ***	0.001
	t-statistic	-2.069	-3.134	*1.756*	0.017	0.263		
	p-value	0.039	0.002	*0.079*	0.987	0.793		
Bulgaria	coefficient	**-1.562** *	**-1.551** *	**-1.669** *	***1.092*** *	-0.031	1.810	0.144
	t-statistic	-1.681	-1.714	-1.845	*1.706*	-0.034		
	p-value	0.100	0.094	0.072	*0.095*	0.973		
Hungary	coefficient	**0.566** **	0.328	**0.526** **	***-0.312*** *	**0.449** **	**1.990** *	0.094
	t-statistic	2.477	1.436	2.304	*-1.934*	1.966		
	p-value	0.013	0.151	0.021	*0.053*	0.050		
Latvia	coefficient	**0.479** *	**0.553** **	**0.481** *	***-0.466*** ***	**0.444** *	1.542	0.188
	t-statistic	1.892	2.184	1.900	*-2.601*	1.754		
	p-value	0.059	0.029	0.058	*0.009*	0.080		
Slovenia	coefficient	**-0.238** **	**-0.359** ***	-0.002	***0.143*** *	0.028	**4.658** ***	0.001
	t-statistic	-2.086	-3.150	-0.017	*1.780*	0.246		
	p-value	0.037	0.002	0.987	*0.075*	0.806		
MSCI Emerging Markets	coefficient	0.099	**0.234** *	0.183	***-0.209*** **	**0.265** **	1.587	0.175
	t-statistic	0.815	1.933	1.513	*-2.451*	2.196		
	p-value	0.416	0.053	0.131	*0.014*	0.028		
Slovenia	coefficient	**-0.266** **	**-0.387** ***	-0.030	-0.028	***0.171*** **	**4.658** ***	0.001
	t-statistic	-2.332	-3.396	-0.263	-0.246	*2.127*		
	p-value	0.020	0.001	0.793	0.806	*0.034*		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 10: Day-of-the-Week Effect during the Second Sub-Priod 2001-2004

Results for the regression $R_t = \alpha_1 D_{1t} + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \alpha_5 D_{5t} + e_t$ are presented for the period 2001-2004. For each index the number the estimated coefficient, t-value and p-value are shown.

Country		Monday	Tuesday	Wednesday	Thursday	Friday	F-statistic	p-value
Bulgaria	coefficient	0.050	**0.269**	**0.342** **	-0.038	0.223	**2.168** **	0.056
	t-statistic	0.332	1.795	2.285	-0.253	1.490		
	p-value	0.740	0.073	0.023	0.800	0.136		
Croatia	coefficient	-0.135	0.080	0.042	0.155	0.129	1.258	0.280
	t-statistic	-1.308	0.772	0.407	1.502	1.250		
	p-value	0.191	0.440	0.684	0.133	0.212		
Czech Republic	coefficient	0.068	0.026	0.050	**0.191** **	0.033	1.359	0.237
	t-statistic	0.827	0.316	0.617	2.339	0.402		
	p-value	0.408	0.752	0.537	0.020	0.688		
Estonia	coefficient	0.030	**0.255** ***	**0.139** *	0.084	0.120	**3.104** ***	0.009
	t-statistic	0.368	3.074	1.675	1.008	1.452		
	p-value	0.713	0.002	0.094	0.313	0.147		
Hungary	coefficient	0.074	0.074	-0.104	**0.220** **	0.038	**1.889** *	0.094
	t-statistic	0.850	0.846	-1.194	2.527	0.440		
	p-value	0.396	0.398	0.233	0.012	0.660		
Latvia	coefficient	-0.079	0.099	-0.145	**0.284** **	0.115	1.420	0.214
	t-statistic	-0.580	0.725	-1.070	2.092	0.847		
	p-value	0.562	0.469	0.285	0.037	0.397		
Lithuania	coefficient	-0.074	0.030	0.053	**0.187** *	0.053	0.929	0.461
	t-statistic	-0.735	0.296	0.530	1.859	0.529		
	p-value	0.462	0.767	0.596	0.063	0.597		
Poland	coefficient	0.044	-0.022	-0.087	**0.138** *	0.118	1.331	0.249
	t-statistic	0.544	-0.274	-1.077	1.721	1.470		
	p-value	0.587	0.784	0.282	0.086	0.142		
Romania	coefficient	**0.162** *	**0.221** **	0.129	**0.304** ***	**0.180** **	**5.292** ***	<0.001
	t-statistic	1.789	2.442	1.426	3.362	1.989		
	p-value	0.074	0.015	0.154	0.001	0.047		
Russia	coefficient	**0.372** ***	**0.101** *	**-0.228** *	**0.272**	0.179	**3.384** ***	0.005
	t-statistic	2.763	0.749	-1.693	2.020	1.332		
	p-value	0.006	0.454	0.091	0.044	0.183		
Slovakia	coefficient	-0.014	0.074	**0.144** *	**0.172**	**0.236** ***	**3.041** **	0.010
	t-statistic	-0.168	0.859	1.678	2.011	2.753		
	p-value	0.866	0.391	0.094	0.045	0.006		
Slovenia	coefficient	**0.127** **	-0.056	0.074	**0.124**	**0.154** **	**3.384** ***	0.005
	t-statistic	2.069	-0.909	1.207	2.018	2.507		
	p-value	0.039	0.363	0.228	0.044	0.012		
MSCI Europe	coefficient	-0.022	-0.068	-0.102	**0.156** *	0.031	1.034	0.396
	t-statistic	-0.252	-0.760	-1.149	1.756	0.353		
	p-value	0.801	0.448	0.251	0.079	0.725		
MSCI World	coefficient	-0.036	-0.031	-0.002	0.087	-0.039	0.494	0.781
	t-statistic	-0.530	-0.456	-0.024	1.283	-0.580		
	p-value	0.596	0.649	0.981	0.200	0.562		
MSCI Emerging Markets	coefficient	-0.021	0.066	0.017	0.068	0.090	0.759	0.580
	t-statistic	-0.305	0.959	0.243	0.994	1.317		
	p-value	0.760	0.338	0.808	0.320	0.188		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 11: Tests for the Explicit Day-of-the-Week Patterns for the Second Sub-Period 2001-2004

Results for the regression $R_t = c + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \alpha_5 D_{5t} + e_t$, where the shaded area represents intercept, c, e.g. Monday and non shaded columns stand for the coefficients α_i, $i = 2,\ldots, 5$, indicating the difference in returns between e.g. Monday and the ith day of the week

Country		Monday	Tuesday	Wednesday	Thursday	Friday	F-statistic	p-value
Czech Republic	coefficient	*0.068*	-0.042	-0.017	0.123	-0.035	0.686	0.602
	t-statistic	*0.827*	-0.362	-0.148	1.069	-0.301		
	p-value	*0.408*	0.718	0.882	0.285	0.764		
Romania	coefficient	*0.162*	0.059	-0.033	0.142	0.018	0.555	0.695
	t-statistic	*1.789*	0.462	-0.257	1.112	0.141		
	p-value	*0.074*	0.644	0.797	0.266	0.888		
Russia	coefficient	***0.372*** ***	-0.271	**-0.600** ***	-0.100	-0.193	**2.893** **	0.021
	t-statistic	*2.763*	-1.425	-3.151	-0.526	-1.012		
	p-value	*0.006*	0.155	0.002	0.599	0.312		
Slovenia	coefficient	***0.127*** **	**-0.182** **	-0.053	-0.003	0.027	1.855	0.116
	t-statistic	*2.069*	-2.106	-0.610	-0.036	0.310		
	p-value	*0.039*	0.035	0.542	0.971	0.757		
Bulgaria	coefficient	-0.219	***0.269*** *	0.073	-0.307	-0.046	1.114	0.349
	t-statistic	-1.034	*1.795*	0.346	-1.448	-0.215		
	p-value	0.301	*0.073*	0.729	0.148	0.830		
Estonia	coefficient	-0.224	***0.255*** ***	-0.116	-0.171	-0.134	1.009	0.402
	t-statistic	-1.914	*3.074*	-0.989	-1.461	-1.147		
	p-value	0.056	*0.002*	0.323	0.144	0.252		
Romania	coefficient	-0.059	***0.221*** **	-0.092	0.083	-0.041	0.555	0.695
	t-statistic	-0.462	*2.442*	-0.719	0.651	-0.320		
	p-value	0.644	*0.015*	0.473	0.515	0.749		
Bulgaria	coefficient	-0.292	-0.073	***0.342*** **	**-0.380** *	-0.119	1.114	0.349
	t-statistic	-1.380	-0.346	*2.285*	-1.794	-0.562		
	p-value	0.168	0.729	*0.023*	0.073	0.574		
Estonia	coefficient	-0.108	0.116	*0.139*	-0.055	-0.018	1.009	0.402
	t-statistic	-0.925	0.989	*1.675*	-0.472	-0.158		
	p-value	0.355	0.323	*0.094*	0.637	0.875		
Russia	coefficient	**0.600** ***	0.329	***-0.228*** *	**0.500** ***	**0.407** **	**2.893** **	0.021
	t-statistic	3.151	1.727	*-1.693*	2.626	2.140		
	p-value	0.002	0.085	*0.091*	0.009	0.033		
Croatia	coefficient	-0.123	-0.165	-0.141	***0.191*** **	-0.158	0.686	0.602
	t-statistic	-1.069	-1.430	-1.217	*2.339*	-1.369		
	p-value	0.285	0.153	0.224	*0.020*	0.171		
Hungary	coefficient	-0.146	-0.146	**-0.323** ***	***0.220*** **	-0.181	1.759	0.135
	t-statistic	-1.186	-1.189	-2.631	*2.527*	-1.476		
	p-value	0.236	0.235	0.009	*0.012*	0.140		
Latvia	coefficient	-0.363	-0.186	**-0.430** **	***0.284*** **	-0.169	1.572	0.180
	t-statistic	-1.889	-0.966	-2.235	*2.092*	-0.880		
	p-value	0.059	0.334	0.026	*0.037*	0.379		
Lithuania	coefficient	-0.260	-0.157	-0.133	***0.187*** *	-0.133	0.854	0.491
	t-statistic	-1.834	-1.105	-0.940	*1.859*	-0.940		
	p-value	0.067	0.270	0.348	*0.063*	0.347		
Poland	coefficient	-0.095	-0.160	**-0.225** **	***0.138*** *	-0.020	1.379	0.239
	t-statistic	-0.832	-1.410	-1.978	*1.721*	-0.177		
	p-value	0.405	0.159	0.048	*0.086*	0.860		
Romania	coefficient	-0.142	-0.083	-0.175	***0.304*** ***	-0.124	0.555	0.695
	t-statistic	-1.112	-0.651	-1.369	*3.362*	-0.971		
	p-value	0.266	0.515	0.171	*0.001*	0.332		
Russia	coefficient	0.100	-0.171	**-0.500** ***	***0.272*** **	-0.093	**2.893** **	0.021
	t-statistic	0.526	-0.899	-2.626	*2.020*	-0.486		
	p-value	0.599	0.369	0.009	*0.044*	0.627		
Slovakia	coefficient	-0.187	-0.099	-0.029	***0.172*** **	0.064	1.258	0.285
	t-statistic	-1.541	-0.814	-0.235	*2.011*	0.525		
	p-value	0.124	0.416	0.814	*0.045*	0.600		
Slovenia	coefficient	0.003	**-0.179** **	-0.050	***0.124*** **	0.030	1.855	0.116
	t-statistic	0.036	-2.070	-0.574	*2.018*	0.346		
	p-value	0.971	0.039	0.566	*0.044*	0.729		
MSCI Europe	coefficient	-0.179	**-0.224** *	**-0.259** **	***0.156*** *	-0.125	1.292	0.271
	t-statistic	-1.420	-1.779	-2.054	*1.756*	-0.992		
	p-value	0.156	0.076	0.040	*0.079*	0.321		
Romania	coefficient	-0.018	0.041	-0.051	0.124	***0.180*** **	0.555	0.695
	t-statistic	-0.141	0.320	-0.398	0.971	*1.989*		
	p-value	0.888	0.749	0.691	0.332	*0.047*		
Slovakia	coefficient	**-0.250** **	-0.162	-0.092	-0.064	***0.236*** ***	1.258	0.285
	t-statistic	-2.066	-1.339	-0.760	-0.525	*2.753*		
	p-value	0.039	0.181	0.447	0.600	*0.006*		
Slovenia	coefficient	-0.027	**-0.209** **	-0.080	-0.030	***0.154*** **	1.855	0.116
	t-statistic	-0.310	-2.416	-0.920	-0.346	*2.507*		
	p-value	0.757	0.016	0.358	0.729	*0.012*		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 12: Day-of-the-Week Effect during the Third Sub-Period 2005-2008

Results for the regression $R_t = \alpha_1 D_{1t} + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \alpha_5 D_{5t} + e_t$ are presented for the period 2005-2008. For each index the estimated coefficient, t-value and p-value are shown.

Country		Monday	Tuesday	Wednesday	Thursday	Friday	F-statistic	p-value
Bulgaria	Coefficient	0.063	-0.103	**0.165 ***	0.108	**0.267 ****	**3.395 *****	0.005
	t-statistic	0.733	-1.197	1.925	1.262	3.116		
	p-value	0.463	0.232	0.055	0.207	0.002		
Croatia	Coefficient	-0.010	**0.226 *****	0.109	**0.155 ***	0.123	**3.076 *****	0.009
	t-statistic	-0.123	2.772	1.335	1.904	1.508		
	p-value	0.902	0.006	0.182	0.057	0.132		
Czech Republic	Coefficient	0.058	0.052	-0.063	0.124	0.082	0.729	0.602
	t-statistic	0.612	0.558	-0.672	1.324	0.869		
	p-value	0.540	0.577	0.502	0.186	0.385		
Estonia	Coefficient	**-0.191 ****	0.041	-0.008	0.090	0.107	1.642	0.146
	t-statistic	-2.276	0.491	-0.097	1.074	1.275		
	p-value	0.023	0.623	0.923	0.283	0.203		
Hungary	Coefficient	0.119	0.046	-0.127	0.055	**0.189 ***	1.202	0.307
	t-statistic	1.094	0.420	-1.164	0.508	1.738		
	p-value	0.274	0.675	0.245	0.612	0.083		
Latvia	Coefficient	0.120	-0.030	-0.141	**0.224 ***	**0.311 ***	**2.076 ***	0.066
	t-statistic	0.906	-0.223	-1.064	1.689	2.351		
	p-value	0.365	0.824	0.288	0.092	0.019		
Lithuania	Coefficient	0.033	0.016	-0.158	0.131	**0.288 ****	**2.519 ****	0.028
	t-statistic	0.329	0.163	-1.580	1.306	2.874		
	p-value	0.742	0.871	0.115	0.192	0.004		
Poland	Coefficient	0.076	0.022	0.040	0.083	0.130	0.688	0.633
	t-statistic	0.790	0.231	0.421	0.869	1.352		
	p-value	0.430	0.818	0.674	0.385	0.177		
Romania	Coefficient	-0.061	0.148	-0.019	0.073	0.183	0.801	0.549
	t-statistic	-0.479	1.164	-0.153	0.575	1.437		
	p-value	0.632	0.245	0.878	0.566	0.151		
Russia	Coefficient	0.088	-0.008	0.060	**0.228 ***	**0.367 ****	**2.545 ****	0.027
	t-statistic	0.701	-0.067	0.477	1.830	2.942		
	p-value	0.483	0.946	0.633	0.068	0.003		
Slovakia	Coefficient	0.042	-0.002	0.033	0.062	0.051	0.357	0.878
	t-statistic	0.581	-0.021	0.461	0.861	0.704		
	p-value	0.561	0.983	0.645	0.390	0.482		
Slovenia	Coefficient	-0.080	-0.020	0.076	**0.246 *****	**0.213 ****	**5.318 *****	<0.001
	t-statistic	-1.203	-0.302	1.138	3.690	3.184		
	p-value	0.229	0.763	0.255	<0.001	0.002		
MSCI Europe	Coefficient	-0.038	0.047	0.059	0.061	0.070	0.487	0.786
	t-statistic	-0.466	0.578	0.736	0.762	0.871		
	p-value	0.641	0.564	0.462	0.446	0.384		
MSCI World	Coefficient	0.005	-0.010	0.079	0.040	0.018	0.570	0.723
	t-statistic	0.099	-0.193	1.463	0.739	0.336		
	p-value	0.921	0.847	0.144	0.460	0.737		
MSCI Emerging M	Coefficient	0.045	0.003	0.086	**0.154 ***	**0.173 ****	1.644	0.146
	t-statistic	0.515	0.033	0.979	1.759	1.975		
	p-value	0.607	0.974	0.328	0.079	0.049		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 13: Tests for the Explicit Day-of-the-Week Patterns for the Third Sub-Period 2005-2008

Results for the regression $R_t = c + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \alpha_5 D_{5t} + e_t$, where the shaded area represents intercept, c, e.g. Monday and non shaded columns stand for the coefficients α_i, $i = 2,\ldots, 5$, indicating the difference in returns between e.g. Monday and the ith day of the week

Country		Monday	Tuesday	Wednesday	Thursday	Friday	F-statistic	p-value
Estonia	coefficient	**-0.191** **	**0.233** *	0.183	**0.282** **	**0.299** **	**2.042** *	0.087
	t-statistic	-2.276	1.957	1.541	2.369	2.511		
	p-value	0.023	0.051	0.124	0.018	0.012		
Croatia	coefficient	**-0.236** **	**0.226** ***	-0.117	-0.071	-0.103	1.110	0.350
	t-statistic	-2.047	2.772	-1.016	-0.614	0.539		
	p-value	0.041	0.006	0.310	-0.894	0.371		
Bulgaria	coefficient	-0.183	-0.008	-0.008	0.098	0.115	**2.539** **	0.039
	t-statistic	-1.541	0.416	-0.097	0.828	0.970		
	p-value	0.124	0.677	0.923	0.408	0.332		
Croatia	coefficient	-0.165	0.071	-0.046	**0.155** *	-0.032	1.110	0.350
	t-statistic	-1.433	0.614	-0.402	1.904	-0.280		
	p-value	0.152	0.539	0.688	0.057	0.779		
Latvia	coefficient	-0.104	-0.253	**-0.364** *	**0.224** *	0.088	1.926	0.104
	t-statistic	-0.554	-1.352	-1.947	1.689	0.468		
	p-value	0.580	0.177	0.052	0.092	0.640		
Russia	coefficient	-0.141	-0.237	-0.169	0.228 *	0.139	1.451	0.215
	t-statistic	-0.798	-1.341	-0.956	1.830	0.786		
	p-value	0.425	0.180	0.339	0.068	0.432		
Slovenia	coefficient	**-0.327** ***	**-0.267** ***	**-0.170** *	**0.246** ***	-0.034	**4.530** ***	0.001
	t-statistic	-3.460	-2.823	-1.805	3.690	-0.358		
	p-value	0.001	0.005	0.071	<0.001	0.720		
MSCI Emerging Markets	coefficient	-0.109	-0.152	-0.069	**0.154** *	0.019	0.671	0.612
	t-statistic	-0.880	-1.221	-0.552	1.759	0.152		
	p-value	0.379	0.222	0.581	0.079	0.879		
Bulgaria	coefficient	**-0.204** *	**-0.370** ***	-0.102	-0.159	**0.267** ***	**2.539** **	0.039
	t-statistic	-1.685	-3.050	-0.843	-1.311	3.116		
	p-value	0.092	0.002	0.400	0.190	0.002		
Hungary	coefficient	-0.070	-0.144	**-0.316** **	-0.134	**0.189** *	1.165	0.3249
	t-statistic	-0.456	-0.932	-2.052	-0.870	1.738		
	p-value	0.649	0.352	0.040	0.384	0.083		
Latvia	coefficient	-0.191	**-0.341** *	**-0.452** **	-0.088	**0.311** **	1.926	0.104
	t-statistic	-1.021	-1.820	-2.415	-0.468	2.351		
	p-value	0.307	0.069	0.016	0.640	0.019		
Lithuania	coefficient	**-0.255** *	**-0.272** *	**-0.447** ***	-0.157	**0.288** ***	**2.671** **	0.031
	t-statistic	-1.800	-1.917	-3.149	-1.109	2.874		
	p-value	0.072	0.056	0.002	0.268	0.004		
Russia	coefficient	-0.280	**-0.376** **	**-0.308** *	-0.139	**0.367** ***	1.451	0.215
	t-statistic	-1.584	-2.128	-1.742	-0.786	2.942		
	p-value	0.114	0.034	0.082	0.432	0.003		
Slovenia	coefficient	**-0.293** ***	**-0.233** **	-0.137	0.034	**0.213** ***	**4.530** ***	0.001
	t-statistic	-3.102	-2.465	-1.447	0.358	3.184		
	p-value	0.002	0.014	0.148	0.720	0.002		
MSCI Emerging Markets	coefficient	-0.128	-0.170	-0.087	-0.019	**0.173** **	0.671	0.612
	t-statistic	-1.032	-1.373	-0.704	-0.152	1.975		
	p-value	0.302	0.170	0.482	0.879	0.049		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Annex 2: Tests for the Month-of-the-Year Effect

Table 14: Test for the Monthly Effect during the Whole Sample Period 1997-2008

Results for the regression $R_t = \alpha_1 D_{1t} + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + ... + \alpha_{12} D_{12t} + e_{t\,t}$ are presented for the period 1997-2008. For each index the number of observations (N) and the estimated coefficient, t-value and p-value are shown.

Country	N		January	February	March	April	May	June	July	August	September	October	November	December	F-statistic	p-value
Bulgaria	88	coefficient	2.391	**5.445** *	**-3.650** *	1.859	-0.580	**6.889** **	**7.124** **	2.693	**6.333** *	3.826	2.106	2.778	**2.140** **	0.024
		t-statistic	0.852	1.941	-1.217	0.620	-0.193	2.297	2.375	0.898	2.112	1.275	0.702	0.990		
		p-value	0.397	0.056	0.227	0.537	0.847	0.024	0.020	0.372	0.038	0.206	0.485	0.325		
Croatia	134	coefficient	**6.319** **	0.545	1.381	0.890	-1.147	0.512	1.438	-3.180	1.435	1.184	**4.826** *	3.148	0.973	0.479
		t-statistic	2.292	0.198	0.480	0.309	-0.398	0.178	0.476	-1.104	0.498	0.411	1.676	1.093		
		p-value	0.024	0.844	0.632	0.758	0.691	0.859	0.635	0.272	0.619	0.682	0.096	0.277		
Czech Republic	134	coefficient	1.581	1.396	1.729	-0.015	-0.295	-2.157	2.466	-0.396	-1.070	2.615	-1.947	**3.603** *	0.850	0.599
		t-statistic	0.804	0.710	0.842	-0.007	-0.144	-1.050	1.145	-0.193	-0.521	1.274	-0.948	1.755		
		p-value	0.423	0.479	0.401	0.994	0.886	0.296	0.254	0.847	0.603	0.205	0.345	0.082		
Estonia	134	coefficient	4.164	3.614	**6.152** *	0.237	-5.267	-2.021	4.056	**5.566** *	**-6.276** *	-1.896	-0.855	4.611	**1.693** *	0.076
		t-statistic	1.341	1.163	1.896	0.073	-1.624	-0.623	1.192	1.716	-1.935	-0.584	-0.264	1.421		
		p-value	0.183	0.247	0.060	0.942	0.107	0.534	0.236	0.089	0.055	0.560	0.793	0.158		
Hungary	134	coefficient	3.965	-0.409	-0.433	3.133	-1.616	0.601	3.034	-2.868	-1.951	2.755	-0.305	**6.392** **	1.207	0.286
		t-statistic	1.582	-0.163	-0.165	1.197	-0.617	0.230	1.105	-1.096	-0.745	1.053	-0.117	2.442		
		p-value	0.116	0.871	0.869	0.234	0.538	0.819	0.271	0.275	0.458	0.295	0.907	0.016		
Latvia	122	coefficient	2.161	-0.030	0.723	1.943	-4.454	-0.411	4.314	0.029	-1.077	0.305	1.994	1.630	0.516	0.901
		t-statistic	0.734	-0.011	0.246	0.660	-1.513	-0.140	1.390	0.010	-0.366	0.104	0.678	0.554		
		p-value	0.464	0.991	0.806	0.510	0.133	0.889	0.167	0.992	0.715	0.918	0.499	0.581		
Lithuania	122	coefficient	**4.323** *	3.426	1.811	1.967	-3.270	2.057	2.690	-1.281	0.370	-3.385	-0.104	2.561	0.983	0.470
		t-statistic	1.660	1.380	0.695	0.755	-1.256	0.790	0.980	-0.492	0.142	-1.299	-0.040	0.983		
		p-value	0.100	0.171	0.488	0.452	0.212	0.431	0.329	0.624	0.887	0.197	0.968	0.328		
Poland	134	coefficient	2.965	0.442	-0.045	1.934	-0.469	0.048	1.435	-0.832	-2.349	2.648	-0.925	3.553	0.658	0.788
		t-statistic	1.337	0.199	-0.019	0.835	-0.202	0.021	0.591	-0.359	-1.014	1.143	-0.399	1.534		
		p-value	0.184	0.842	0.985	0.405	0.840	0.983	0.556	0.720	0.313	0.255	0.690	0.128		
Romania	134	coefficient	**6.954** **	1.596	-3.955	0.465	1.380	4.775	3.572	-2.217	0.517	3.167	-1.698	2.812	0.991	0.462
		t-statistic	2.163	0.497	-1.173	0.138	0.409	1.416	1.005	-0.658	0.153	0.939	-0.528	0.875		
		p-value	0.033	0.620	0.243	0.891	0.683	0.159	0.317	0.512	0.878	0.350	0.598	0.384		
Russia	134	coefficient	1.636	7.165	4.255	4.486	-4.918	3.134	0.796	-3.323	-5.104	3.022	-0.344	**8.121** *	0.949	0.501
		t-statistic	0.369	1.617	0.919	0.969	-1.063	0.677	0.164	-0.718	-1.103	0.653	-0.074	1.754		
		p-value	0.713	0.109	0.360	0.334	0.290	0.500	0.870	0.474	0.272	0.515	0.941	0.082		
Slovakia	134	coefficient	-1.389	1.978	-0.557	-2.075	-2.197	-0.026	3.102	3.907	0.288	0.706	1.787	2.704	1.114	0.355
		t-statistic	-0.743	1.059	-0.286	-1.063	-1.126	-0.013	1.516	**2.002** **	0.148	0.362	0.916	1.386		
		p-value	0.459	0.292	0.776	0.290	0.262	0.990	0.132	0.048	0.883	0.718	0.362	0.168		
Slovenia	134	coefficient	**5.038** ***	-2.186	0.255	2.534	0.383	-0.534	**5.003** ***	**3.318** **	0.645	0.378	0.316	1.714	**2.617** ***	0.004
		t-statistic	3.356	-1.456	0.163	1.616	0.244	-0.341	3.043	2.117	0.411	0.241	0.202	1.093		
		p-value	0.001	0.148	0.871	0.109	0.807	0.734	0.003	0.036	0.682	0.810	0.841	0.276		
MSCI Europe	134	coefficient	-1.701	-0.364	0.390	1.909	-0.577	0.157	-1.055	-0.915	-1.688	**2.788** **	1.743	**3.391** **	1.594	0.102
		t-statistic	-1.324	-0.283	0.291	1.422	-0.430	0.117	-0.749	-0.681	-1.258	2.077	1.299	2.526		
		p-value	0.188	0.777	0.772	0.158	0.668	0.907	0.455	0.497	0.211	0.040	0.196	0.013		
MSCI World	134	coefficient	-0.636	-0.920	0.468	1.414	-0.258	0.477	-1.256	-1.175	-1.449	**2.101** *	1.495	1.719	1.062	0.398
		t-statistic	-0.553	-0.800	0.389	1.177	-0.214	0.397	-0.997	-0.978	-1.206	1.749	1.244	1.431		
		p-value	0.581	0.426	0.698	0.242	0.831	0.692	0.321	0.330	0.230	0.083	0.216	0.155		
MSCI Emerging Markets	134	coefficient	0.369	1.171	-0.345	0.776	-2.031	0.640	-0.950	-2.605	-1.368	1.500	2.267	3.274	0.617	0.825
		t-statistic	0.179	0.566	-0.160	0.360	-0.941	0.297	-0.420	-1.207	-0.634	0.695	1.050	1.517		
		p-value	0.858	0.572	0.873	0.720	0.349	0.767	0.675	0.230	0.527	0.489	0.296	0.132		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 15: Tests for the Explicit Month-of-the-Year Patterns for the Whole Sample Period 1997-2008

Results for the regression $R_t = c + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \ldots + \alpha_{12} D_{12t} + e_t$ where the shaded area represents the intercept, c, e.g. January and non shaded columns stand for coefficients α_i, $i = 2,\ldots, 12$, indicating the difference in return between e.g. January and the ith month of the year.

Country		January	February	March	April	May	June	July	August	September	October	November	December	F-statistic	p-value
Croatia	coefficient	*6.319* **	-5.774	-4.939	-5.429	-7.466 *	-5.808	-5.564	-9.499 **	-4.884	-5.135	-1.493	-3.172	0.781	0.659
	t-statistic	*2.296*	-1.484	-1.241	-1.364	-1.876	-1.459	-1.398	-2.387	-1.227	-1.290	-0.375	-0.797		
	p-value	*0.023*	0.140	0.217	0.175	0.063	0.147	0.165	0.019	0.222	0.199	0.708	0.427		
Lithuania	coefficient	*4.323* *	-0.897	-2.512	-2.356	-7.593 **	-2.265	-1.985	-5.604	-3.953	-7.707 **	-4.426	-1.762	0.927	0.517
	t-statistic	*1.666*	-0.250	-0.684	-0.642	-2.069	-0.617	-0.541	-1.527	-1.077	-2.100	-1.206	-0.480		
	p-value	*0.099*	0.803	0.495	0.522	0.041	0.538	0.590	0.130	0.284	0.038	0.230	0.632		
Romania	coefficient	*6.954* **	-5.357	-10.909 **	-6.489	-5.574	-2.179	-4.580	-9.171 *	-6.437	-3.787	-8.652 *	-4.142	0.844	0.597
	t-statistic	*2.162*	-1.178	-2.341	-1.392	-1.196	-0.467	-0.983	-1.968	-1.381	-0.812	-1.902	-0.911		
	p-value	*0.033*	0.241	0.021	0.167	0.234	0.641	0.328	0.052	0.170	0.418	0.060 **	0.364		
Slovenia	coefficient	*5.038* ***	-7.224 ***	-4.783 **	-2.504	-4.655 **	-5.572	-0.087	-1.720	-4.393 **	-4.660	-4.722	-3.324	2.052 **	0.029
	t-statistic	*3.370*	-3.417	-2.213	-1.159	-2.154	-2.578	-0.040	-0.796	-2.032	-2.156	-2.184	-1.538		
	p-value	*0.001*	0.001	0.029	0.249	0.033	0.011	0.968	0.428	0.044	0.033	0.031	0.127		
Bulgaria	coefficient	-3.054	*5.445* *	-9.095 **	-3.586	-6.025	1.444	1.679	-2.752	0.888	-1.620	-3.339	-2.668	1.115	0.362
	t-statistic	-0.770	*1.941*	-2.215	-0.873	-1.467	0.351	0.409	-0.670	0.216	-0.394	-0.813	-0.672		
	p-value	0.444	*0.056*	0.030	0.385	0.147	0.726	0.684	0.505	0.829	0.694	0.419	0.503		
Estonia	coefficient	-1.988	-2.538	*6.152* *	-5.914	-11.419 **	-8.173 *	-2.037	-0.586	-12.428 ***	-8.048 *	-7.006	-1.541	1.761 *	0.068
	t-statistic	-0.444	-0.567	*1.904*	-1.294	-2.499	-1.789	-0.446	-0.128	-2.720	-1.761	-1.533	-0.337		
	p-value	0.658	0.571	*0.059*	0.198	0.014	0.076	0.656	0.898	0.007	0.081	0.128	0.737		
Bulgaria	coefficient	-4.498	-1.444	-10.539 **	-5.030	-7.468 *	*6.889* **	0.235	-4.196	-0.556	-3.063	-4.783	-4.111	1.115	0.362
	t-statistic	-1.095	-0.351	-2.485	-1.186	-1.761	*2.297*	0.055	-0.989	-0.131	-0.722	-1.128	-1.001		
	p-value	0.277	0.726	0.015	0.239	0.082	*0.024*	0.956	0.326	0.896	0.472	0.263	0.320		
Bulgaria	coefficient	-4.733	-1.679	-10.774 **	-5.265	-7.704 *	-0.235	*7.124* **	-4.431	-0.791	-3.298	-5.018	-4.346	1.115	0.362
	t-statistic	-1.152	-0.409	-2.540	-1.241	-1.816	-0.055	*2.375*	-1.045	-0.186	-0.778	-1.183	-1.058		
	p-value	0.253	0.684	0.013	0.218	0.073	0.956	*0.020*	0.300	0.853	0.439 **	0.241	0.293		
Slovenia	coefficient	0.087	-7.136 ***	-4.696 **	-2.417	-4.568 **	-5.485 **	*4.951* ***	-1.633	-4.306 *	-4.572	-4.635 **	-3.237	2.052 **	0.029
	t-statistic	0.040	-3.302	-2.127	-1.095	-2.069	-2.484	*3.171*	-0.739	-1.950	-2.071	-2.099	-1.466		
	p-value	0.968	0.001	0.035	0.276	0.041	0.014	*0.002*	0.461	0.053	0.040	0.038	0.145		
Estonia	coefficient	-1.402	-1.952	0.586	-5.329	-10.833 **	-7.587 *	-1.452	*5.566* *	-11.842 **	-7.462	-6.421	-0.955	1.761 *	0.068
	t-statistic	-0.313	-0.436	0.128	-1.166	-2.371	-1.660	-0.318	*1.723*	-2.592	-1.633	-1.405	-0.209		
	p-value	0.754	0.663	0.898	0.246	0.019	0.099	0.751	*0.087*	0.011	0.105	0.162	0.835		
Slovakia	coefficient	-5.296 *	-1.929	-4.464	-5.982	-6.104 **	-3.932	-1.180	*3.907* **	-3.619	-3.201	-2.120	-1.203	1.067	0.393
	t-statistic	-1.965	-0.716	-1.622	-2.173	-2.217	-1.429	-0.429	*2.007*	-1.315	-1.163	-0.770	-0.437		
	p-value	0.052	0.475	0.107	0.032	0.028	0.156	0.669	*0.047*	0.191	0.247	0.443	0.663		
Slovenia	coefficient	1.720	-5.504 **	-3.063	-0.785	-2.935	-3.852 *	1.633	*3.318* **	-2.673	-2.940	-3.002	-1.604	2.052 **	0.029
	t-statistic	0.796	-2.546	-1.387	-0.355	-1.329	-1.745	0.739	*2.125*	-1.211	-1.331	-1.360	-0.726		
	p-value	0.428	0.012	0.168	0.723	0.186	0.084	0.461	*0.036*	0.228	0.186	0.176	0.469		
Bulgaria	coefficient	-3.942	-0.888	-9.983 **	-4.474	-6.913	0.556	0.791	-3.640	*6.333* **	-2.508	-4.227	-3.556	1.115	0.362
	t-statistic	-0.960	-0.216	-2.354	-1.055	-1.630	0.131	0.186	-0.858	*2.112*	-0.591	-0.997	-0.866		
	p-value	0.340	0.829	0.021	0.295	0.107	0.896	0.853	0.394	*0.038*	0.556	0.322	0.389		
Estonia	coefficient	10.440 **	9.890 **	12.428 ***	6.514	1.009	4.255	10.391 **	11.842 **	*-6.276* *	4.380	5.421	10.887 **	1.761 *	0.068
	t-statistic	2.334	2.211	2.720	1.426	0.221	0.931	2.274	2.592	*-1.943*	0.959	1.187	2.383		
	p-value	0.021	0.029	0.007	0.157	0.826	0.354	0.025	0.011	*0.054*	0.340	0.238	0.019		
MSCIEurope	coefficient	-4.489 **	-3.152 *	-2.398	-0.879	-3.366 *	-2.631	-3.843 **	-3.703 *	-4.477 **	*2.788* **	-1.045	0.603	1.695 *	0.082
	t-statistic	-2.426	-1.703	-1.269	-0.465	-1.780	-1.392	-2.033	-1.959	-2.368	*2.086*	-0.553	0.319		
	p-value	0.017	0.091	0.207	0.643	0.078	0.167	0.044	0.052	0.019	*0.039*	0.582	0.750		
MSCI World	coefficient	-2.738	-3.021 *	-1.634	-0.688	-2.359	-1.624	-3.389 **	-3.276 *	-3.550 **	*2.101* *	-0.607	-0.382	1.166	0.318
	t-statistic	-1.653	-1.824	-0.966	-0.406	-1.394	-0.960	-2.003	-1.936	-2.098	*1.756*	-0.359	-0.226		
	p-value	0.101	0.071	0.336	0.685	0.166	0.339	0.047	0.055	0.038	*0.082*	0.721	0.822		
Croatia	coefficient	1.493	-4.281	-3.445	-3.936	-5.973	-4.314	-4.070	-8.006 *	-3.391	-3.642	*4.826* *	-1.678	0.781	0.659
	t-statistic	0.375	-1.076	-0.847	-0.968	-1.469	-1.061	-1.001	-1.969	-0.834	-0.896	*1.679*	-0.413		
	p-value	0.708	0.284	0.398	0.335	0.144	0.291	0.319	0.051	0.406	0.372	*0.096*	0.680		
Czech Republic	coefficient	-2.022	-2.207	-1.874	-3.618	-3.898	-5.760 **	-0.898	-3.999	-4.673	-0.988	-5.551 *	*0.859*	0.859	0.583
	t-statistic	-0.714	-0.779	-0.648	-1.250	-1.347	-1.991	-0.310	-1.382	-1.615	-0.342	-1.918	*0.583*		
	p-value	0.477	0.437	0.518	0.214	0.180	0.049	0.757	0.169	0.109	0.733	0.057	*0.680*		
Hungary	coefficient	-2.428	-6.801 *	-6.825	-3.260	-8.008 **	-5.791	-2.737	-9.260 **	-8.343 **	-3.637	-6.698 *	*6.392* **	1.196	0.297
	t-statistic	-0.671	-1.880	-1.847	-0.882	-2.167	-1.567	-0.741	-2.506	-2.258	-0.984	-1.813	*2.446*		
	p-value	0.503	0.062	0.067	0.379	0.032	0.120	0.460	0.014	0.026	0.327	0.072	*0.016*		
Russia	coefficient	-6.484	-0.956	-3.866	-3.634	-13.039 **	-4.987	-8.498	-11.443 *	-13.225 **	-5.098	-8.464	*8.121* *	0.916	0.527
	t-statistic	-1.013	-0.149	-0.591	-0.556	-1.995	-0.763	-1.300	-1.751	-2.023	-0.780	-1.295	*1.757*		
	p-value	0.313	0.882	0.555	0.579	0.048	0.447	0.196	0.082	0.045	0.437	0.198	*0.081*		
MSCI Europe	coefficient	-5.092 ***	-3.755 **	-3.001	-1.482	-3.968 **	-3.234 *	-4.446 **	-4.306 **	-5.079 ***	-0.603	-1.647	*3.391* **	1.695 *	0.082
	t-statistic	-2.751	-2.029	-1.587	-0.784	-2.099	-1.710	-2.352	-2.277	-2.687	-0.319	-0.871	*2.537*		
	p-value	0.007	0.045	0.115	0.435	0.038	0.090	0.020	0.024	0.008	0.750	0.385	*0.012*		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 16: Test for the Monthly Effect during the First Sub-Period 1997-2000

Results for the regression $R_t = \alpha_1 D_{1t} + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \ldots + \alpha_{12} D_{12t} + e_{t\,t}$ are presented for the period 1997-2000. For each index the estimated coefficient, t-value and p-value are shown.

Country		January	February	March	April	May	June	July	August	September	October	November	December	F-statistic	p-value
Croatia	coefficient	11.200	0.549	2.036	-2.446	-2.933	-0.966	-0.460	-13.187	1.265	-0.653	8.890	6.566	0.749	0.696
	t-statistic	1.594	0.078	0.290	-0.348	-0.417	-0.138	-0.065	-1.876	0.180	-0.093	1.265	0.934		
	p-value	0.120	0.938	0.774	0.730	0.679	0.891	0.948	0.069	0.858	0.926	0.214	0.356		
Czech Republic	coefficient	2.205	2.268	2.819	-1.349	-0.651	-2.965	4.989	-5.673	-3.245	1.674	**-7.922** *	6.790	0.935	0.525
	t-statistic	0.512	0.526	0.654	-0.313	-0.151	-0.688	1.158	-1.317	-0.753	0.389	-1.839	1.576		
	p-value	0.612	0.602	0.517	0.756	0.881	0.496	0.254	0.196	0.456	0.700	0.074	0.124		
Estonia	coefficient	7.080	7.305	10.847	-2.359	**-14.351** *	-4.257	11.737	**14.162** *	**-17.818** **	-4.785	-6.350	3.017	**1.787** *	0.090
	t-statistic	0.955	0.985	1.463	-0.318	-1.935	-0.574	1.583	1.910	-2.403	-0.645	-0.856	0.407		
	p-value	0.346	0.331	0.152	0.752	0.061	0.569	0.122	0.064	0.022	0.523	0.397	0.687		
Hungary	coefficient	7.885	-0.874	-0.468	1.586	-3.023	3.408	6.990	**-11.577** *	-5.012	5.221	-4.315	**15.133** **	1.431	0.198
	t-statistic	1.369	-0.152	-0.081	0.275	-0.525	0.592	1.214	-2.011	-0.870	0.907	-0.749	2.628		
	p-value	0.179	0.880	0.936	0.785	0.603	0.558	0.233	0.052	0.390	0.371	0.458	0.013		
Latvia	coefficient	8.598	2.006	-1.159	3.159	-6.042	-9.247	-2.736	-7.845	-4.394	-1.229	2.782	2.193	0.411	0.943
	t-statistic	0.917	0.262	-0.151	0.413	-0.789	-1.207	-0.357	-1.024	-0.574	-0.161	0.363	0.286		
	p-value	0.369	0.796	0.881	0.684	0.438	0.240	0.724	0.316	0.572	0.874	0.720	0.777		
Lithuania	coefficient	12.790	6.378	5.044	0.242	-4.905	-0.733	-3.104	-4.188	-2.568	-8.143	2.441	6.477	0.756	0.686
	t-statistic	1.687	1.030	0.815	0.039	-0.792	-0.118	-0.501	-0.676	-0.415	-1.315	0.394	1.046		
	p-value	0.105	0.314	0.424	0.969	0.436	0.907	0.621	0.505	0.682	0.201	0.697	0.306		
Poland	coefficient	6.579	5.198	-1.693	0.836	-3.487	1.358	-0.106	-6.053	-2.565	-2.014	-2.397	**8.175** *	0.815	0.634
	t-statistic	1.428	1.128	-0.367	0.181	-0.757	0.295	-0.023	-1.314	-0.557	-0.437	-0.520	1.774		
	p-value	0.162	0.267	0.716	0.857	0.454	0.770	0.982	0.197	0.581	0.665	0.606	0.084		
Romania	coefficient	8.777	1.796	-6.442	-2.919	2.785	5.848	-4.023	**-16.735** *	-3.134	2.042	-4.614	0.893	0.539	0.868
	t-statistic	0.986	0.202	-0.724	-0.328	0.313	0.657	-0.452	-1.881	-0.352	0.230	-0.599	0.116		
	p-value	0.333	0.842	0.476	0.746	0.757	0.517	0.655	0.071	0.728	0.820	0.555	0.909		
Russia	coefficient	-2.491	11.629	6.934	5.007	-12.585	4.273	4.481	**-20.212** *	-17.463	5.706	-6.260	12.831	0.840	0.611
	t-statistic	-0.214	1.001	0.597	0.431	-1.083	0.368	0.386	-1.739	-1.503	0.491	-0.539	1.104		
	p-value	0.831	0.324	0.554	0.669	0.286	0.715	0.702	0.091	0.142	0.626	0.593	0.277		
Slovakia	coefficient	-4.211	-0.719	-1.069	-4.091	-6.384	-3.358	3.152	4.167	-3.121	-2.371	-2.893	2.115	1.073	0.411
	t-statistic	-1.260	-0.215	-0.320	-1.225	-1.911	-1.005	0.943	1.247	-0.934	-0.710	-0.866	0.633		
	p-value	0.216	0.831	0.751	0.229	0.064	0.322	0.352	0.220	0.356	0.482	0.392	0.531		
Slovenia	coefficient	**11.228** ***	-2.666	-2.888	-0.095	-1.660	-2.504	**8.390** ***	0.984	-1.384	-1.828	-2.065	2.887	**2.300** **	0.027
	t-statistic	3.809	-0.904	-0.980	-0.032	-0.563	-0.849	2.846	0.334	-0.469	-0.620	-0.700	0.979		
	p-value	0.001	0.372	0.334	0.974	0.577	0.401	0.007	0.740	0.642	0.539	0.488	0.334		
MSCI Europe	coefficient	-1.114	1.878	3.027	0.715	-0.741	1.890	-0.068	**-3.932** *	-0.929	1.492	-0.138	**5.830** **	1.225	0.306
	t-statistic	-0.506	0.854	1.376	0.325	-0.337	0.859	-0.031	-1.787	-0.422	0.678	-0.063	2.650		
	p-value	0.616	0.399	0.177	0.747	0.738	0.396	0.976	0.082	0.675	0.502	0.950	0.012		
MSCI World	coefficient	-0.087	0.517	2.805	0.816	-1.103	3.333	-0.746	**-4.149** *	-0.913	2.112	-0.078	3.157	0.848	0.603
	t-statistic	-0.038	0.224	1.216	0.354	-0.478	1.445	-0.324	-1.798	-0.396	0.916	-0.034	1.368		
	p-value	0.970	0.824	0.232	0.726	0.635	0.157	0.748	0.080	0.695	0.366	0.973	0.180		
MSCI Emerging Markets	coefficient	-2.170	2.379	2.232	-0.290	-5.286	1.845	-2.282	**-10.830** **	-1.884	-2.114	-1.461	3.681	0.832	0.619
	t-statistic	-0.493	0.541	0.508	-0.066	-1.202	0.419	-0.519	-2.463	-0.428	-0.481	-0.332	0.837		
	p-value	0.625	0.592	0.615	0.948	0.237	0.677	0.607	0.019	0.671	0.634	0.742	0.408		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 17: Tests for the Explicit Month-of-the-Year Patterns for the First Sub-Period 1997-2000

Results for the regression $R_t = c + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \ldots + \alpha_{12} D_{12t} + e_t$ where the shaded area represents the intercept, c, e.g. January and non shaded columns stand for coefficients α_i, $i = 2,\ldots, 12$, indicating the difference in return between e.g. January and the ith month of the year.

Country		January	February	March	April	May	June	July	August	September	October	November	December	F-statistic	p-value
Slovenia	coefficient	*11.228* ***	-13.894 ***	-14.116 ***	-11.323 *	-12.888 ***	-13.732 ***	-2.838	-10.244 **	-12.612 ***	-13.056 ***	-13.293 ***	-8.341 *	2.447 **	0.021
	t-statistic	*3.809*	-3.333	-3.386	-2.716	-3.092	-3.294	-0.681	-2.457	-3.025	-3.132	-3.189	-2.001		
	p-value	*0.001*	0.002	0.002	0.010	0.004	0.002	0.500	0.019	0.005	0.003	0.003	0.053		
Estonia	coefficient	21.431 **	21.656 **	25.198 **	11.992	*-14.351*	10.094	26.088 **	28.513 ***	-3.467	9.566	8.001	17.368	1.947 *	0.065
	t-statistic	2.044	2.065	2.403	1.144	*-1.935*	0.963	2.488	2.719	-0.331	0.912	0.763	1.656		
	p-value	0.048	0.046	0.022	0.260	*0.061*	0.342	0.018	0.010	0.743	0.368	0.450	0.106		
Slovenia	coefficient	2.838	-11.056 **	-11.278 *	-8.486 **	-10.050 **	-10.894	*8.390*	-7.406 *	-9.774 **	-10.218 **	-10.455 **	-5.504	2.447 **	0.021
	t-statistic	0.681	-2.652	-2.706	-2.036	-2.411	-2.613	*2.846*	-1.777	-2.345	-2.451	-2.508	-1.320		
	p-value	0.500	0.012	0.010	0.049	0.021	0.013	*0.007*	0.084	0.025	0.019	0.017	0.195		
Croatia	coefficient	24.387 **	13.736	15.223	10.741	10.254	12.221	12.728	*-13.187* *	14.452	12.534	22.077 **	19.753	0.802	0.638
	t-statistic	2.454	1.382	1.532	1.081	1.032	1.230	1.281	*-1.876*	1.454	1.261	2.221	1.987		
	p-value	0.019	0.175	0.134	0.287	0.309	0.227	0.209	*0.069*	0.155	0.215	0.033	0.055		
Estonia	coefficient	-7.082	-6.857	-3.314	-16.521	-28.513 *	-18.419 *	-2.425	*14.162* *	-31.979 ***	-18.946 *	-20.512 *	-11.145	1.947 *	0.065
	t-statistic	-0.675	-0.654	-0.316	-1.575	-2.719	-1.756	-0.231	*1.910*	-3.050	-1.807	-1.956	-1.063		
	p-value	0.504	0.517	0.754	0.124	0.010	0.088	0.818	*0.064*	0.004	0.079	0.058	0.295		
Hungary	coefficient	19.462 **	10.704	11.109	13.163	8.554	14.985 *	18.568 **	*-11.577* *	6.566	16.798 *	7.263	26.710 ***	1.510	0.171
	t-statistic	2.390	1.315	1.364	1.617	1.051	1.840	2.280	*-2.011*	0.806	2.063	0.892	3.280		
	p-value	0.022	0.197	0.181	0.115	0.300	0.074	0.029	*0.052*	0.425	0.046	0.378	0.002		
Romania	coefficient	25.512 *	18.531	10.292	13.816	19.520	22.583 *	12.712	*-16.735* *	13.600	18.777	12.120	17.628	0.562	0.842
	t-statistic	2.027	1.472	0.818	1.098	1.551	1.794	1.010	*-1.881*	1.081	1.492	1.030	1.497		
	p-value	0.053	0.153	0.421	0.282	0.133	0.084	0.322	*0.071*	0.290	0.148	0.313	0.146		
Russia	coefficient	17.721	31.841 *	27.146	25.219	7.627	24.485	24.693	*-20.212* *	2.749	25.918	13.952	33.043 *	0.913	0.539
	t-statistic	1.078	1.938	1.652	1.535	0.464	1.490	1.503	*-1.739*	0.167	1.577	0.849	2.011		
	p-value	0.288	0.061	0.107	0.134	0.645	0.145	0.142	*0.091*	0.868	0.124	0.401	0.052		
MSCI Europe	coefficient	2.819	5.810 *	6.959 **	4.647	3.192	5.822 *	3.865	*-3.932* *	3.003	5.424 **	3.794	9.762 ***	1.238	0.299
	t-statistic	0.906	1.868	2.237	1.494	1.026	1.871	1.242	*-1.787*	0.965	1.743	1.219	3.138		
	p-value	0.371	0.070	0.032	0.144	0.312	0.069	0.222	*0.082*	0.341	0.090	0.231	0.003		
MSCI World	coefficient	4.062	4.666	6.953 **	4.965	3.046	7.482 **	3.402	*-4.149* *	3.236	6.261 **	4.071	7.306 **	0.880	0.567
	t-statistic	1.245	1.430	2.131	1.522	0.934	2.293	1.043	*-1.798*	0.992	1.919	1.248	2.239		
	p-value	0.221	0.161	0.040	0.137	0.357	0.028	0.304	*0.080*	0.328	0.063	0.220	0.031		
Estonia	coefficient	24.897 **	25.123 **	28.665 *	15.459	3.467	13.561	29.555 ***	31.979 ***	*-17.818* **	13.033	11.467	20.834 *	1.947 *	0.065
	t-statistic	2.374	2.396	2.734	1.474	0.331	1.293	2.818	3.050	*-2.403*	1.243	1.094	1.987		
	p-value	0.023	0.022	0.010	0.149	0.743	0.204	0.008	0.004	*0.022*	0.222	0.281	0.055		
Czech	coefficient	10.127	10.189	10.740 *	6.573	7.271	4.956	12.911 **	2.249	4.677	9.596	*-7.922* *	14.712 **	1.020	0.450
	t-statistic	1.662	1.672	1.763	1.079	1.193	0.813	2.119	0.369	0.768	1.575	*-1.839*	2.415		
	p-value	0.105	0.103	0.086	0.288	0.241	0.421	0.041	0.714	0.448	0.124	*0.074*	0.021		
Hungary	coefficient	-7.248	-16.007 **	-15.601 *	-13.547	-18.156 **	-11.725	-8.143	-26.710 ***	-20.145 **	-9.912	-19.448 **	*15.133* **	1.510	0.171
	t-statistic	-0.890	-1.966	-1.916	-1.664	-2.230	-1.440	-1.000	-3.280	-2.474	-1.217	-2.388	*2.628*		
	p-value	0.379	0.057	0.063	0.105	0.032	0.159	0.324	0.002	0.018	0.231	0.022	*0.013*		
Poland	coefficient	-1.596	-2.978	-9.868	-7.340	-11.663 *	-6.817	-8.282	-14.229 **	-10.740	-10.190	-10.572	*8.175* *	0.884	0.563
	t-statistic	-0.245	-0.457	-1.514	-1.126	-1.790	-1.046	-1.271	-2.183	-1.648	-1.564	-1.622	*1.774*		
	p-value	0.808	0.650	0.139	0.267	0.082	0.302	0.212	0.036	0.108	0.127	0.113	*0.084*		
MSCI Europe	coefficient	-5.851	-1.302	-1.449	-3.971	-8.967	-1.836	-5.963	-14.511 **	-5.565	-5.795	-5.142	*3.681*	0.805	0.635
	t-statistic	-0.941	-0.209	-0.233	-0.639	-1.442	-0.295	-0.959	-2.333	-0.895	-0.932	-0.827	*0.837*		
	p-value	0.353	0.835	0.817	0.527	0.158	0.769	0.344	0.025	0.377	0.358	0.414	*0.408*		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 18: Test for the Monthly Effect during the Second Sub-Period 2001-2004

Results for the regression $R_t = \alpha_1 D_{1t} + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \ldots + \alpha_{12} D_{12t} + e_{t\,t}$ are presented for the period 2001-2004. For each index the estimated coefficient, t-value and p-value are shown.

Country		January	February	March	April	May	June	July	August	September	October	November	December	F-statistic	p-value
Bulgaria	coefficient	3.686	3.445	-4.698	4.550	-1.823	**11.756** ***	**7.307** *	2.104	5.153	4.315	5.089	4.628	**1.880** *	0.072
	t-statistic	0.923	0.863	-1.176	1.139	-0.456	2.943	1.829	0.527	1.290	1.080	1.274	1.158		
	p-value	0.362	0.394	0.247	0.262	0.651	0.006	0.076	0.602	0.205	0.287	0.211	0.254		
Croatia	coefficient	1.504	1.251	0.247	2.314	-1.412	0.520	-1.233	2.625	-1.168	3.015	**6.795** ***	-0.008	1.165	0.345
	t-statistic	0.643	0.534	0.105	0.989	-0.603	0.222	-0.527	1.122	-0.499	1.289	2.904	-0.003		
	p-value	0.524	0.596	0.917	0.329	0.550	0.825	0.601	0.269	0.621	0.206	0.006	0.997		
Czech Republic	coefficient	4.512	-0.180	1.633	1.259	2.168	**-4.951** *	1.548	2.026	-1.385	4.323	4.150	1.237	1.084	0.402
	t-statistic	1.630	-0.065	0.590	0.455	0.783	-1.788	0.559	0.732	-0.500	1.562	1.499	0.447		
	p-value	0.112	0.948	0.559	0.652	0.439	0.082	0.579	0.469	0.620	0.127	0.143	0.658		
Estonia	coefficient	**6.079** **	2.065	1.003	2.738	**4.927** *	-2.338	-1.119	1.781	-1.406	3.389	**4.933** **	**7.311** **	**1.959** *	0.060
	t-statistic	2.227	0.757	0.368	1.003	1.805	-0.857	-0.410	0.652	-0.515	1.242	1.807	2.679		
	p-value	0.032	0.454	0.715	0.322	0.079	0.397	0.684	0.518	0.610	0.222	0.079	0.011		
Hungary	coefficient	**4.873** *	**-4.528** *	1.572	5.205	0.150	**-5.471** **	-0.569	**4.749** *	-2.105	**5.803** **	3.685	0.037	**2.279** **	0.029
	t-statistic	1.908	-1.773	0.616	2.038	0.059	-2.142	-0.223	1.860	-0.824	2.272	1.443	0.014		
	p-value	0.064	0.085	0.542	0.049	0.953	0.039	0.825	0.071	0.415	0.029	0.158	0.989		
Latvia	coefficient	0.879	0.346	1.347	1.312	0.218	-0.411	**7.762** **	1.389	-3.459	2.644	1.591	0.839	0.562	0.857
	t-statistic	0.242	0.095	0.371	0.361	0.060	-0.113	2.137	0.383	-0.952	0.728	0.438	0.231		
	p-value	0.810	0.925	0.713	0.720	0.952	0.911	0.039	0.704	0.347	0.471	0.664	0.819		
Lithuania	coefficient	5.843	4.092	-1.309	3.050	-2.545	2.810	**6.093** *	-1.828	-0.339	-1.178	-0.048	-1.690	0.788	0.659
	t-statistic	1.633	1.143	-0.366	0.852	-0.711	0.785	1.702	-0.511	-0.095	-0.329	-0.013	-0.472		
	p-value	0.111	0.260	0.717	0.400	0.482	0.437	0.097	0.613	0.925	0.744	0.989	0.640		
Poland	coefficient	3.623	-3.773	-0.976	2.662	2.472	-3.877	-0.560	4.866	-5.413	**8.128** **	-0.367	0.962	1.376	0.223
	t-statistic	1.107	-1.153	-0.298	0.813	0.755	-1.184	-0.171	1.486	-1.653	2.483	-0.112	0.294		
	p-value	0.276	0.257	0.767	0.422	0.455	0.244	0.865	0.146	0.107	0.018	0.911	0.770		
Romania	coefficient	**7.054** *	1.597	2.658	5.343	3.810	4.567	2.946	6.098	1.497	4.822	1.758	5.136	1.230	0.302
	t-statistic	1.810	0.410	0.682	1.371	0.978	1.172	0.756	1.565	0.384	1.237	0.451	1.318		
	p-value	0.079	0.684	0.499	0.179	0.335	0.249	0.455	0.126	0.703	0.224	0.655	0.196		
Russia	coefficient	**8.201** *	4.322	4.811	4.276	4.145	1.414	**-9.249** **	7.130	-0.266	2.287	0.982	5.064	1.314	0.255
	t-statistic	1.835	0.967	1.077	0.957	0.927	0.316	-2.070	1.596	-0.060	0.512	0.220	1.133		
	p-value	0.075	0.340	0.289	0.345	0.360	0.754	0.046	0.119	0.953	0.612	0.827	0.265		
Slovakia	coefficient	-0.377	0.751	-1.322	-0.381	3.555	3.026	0.739	4.638	4.568	3.738	**10.114** ***	4.996	**1.802** *	0.087
	t-statistic	-0.121	0.242	-0.426	-0.123	1.145	0.974	0.238	1.493	1.471	1.204	3.257	1.609		
	p-value	0.904	0.810	0.673	0.903	0.260	0.336	0.813	0.144	0.150	0.237	0.002	0.116		
Slovenia	coefficient	2.154	-2.336	2.872	2.397	0.929	-0.686	1.721	**5.980** ***	2.956	2.002	3.053	0.240	**1.944** *	0.063
	t-statistic	1.120	-1.215	1.493	1.247	0.483	-0.357	0.895	3.109	1.537	1.041	1.588	0.125		
	p-value	0.270	0.232	0.144	0.221	0.632	0.723	0.377	0.004	0.133	0.305	0.121	0.902		
MSCI Europe	coefficient	-2.337	-3.210	-2.999	3.284	-0.304	-1.439	-3.247	0.226	**-5.033** **	**5.101** **	**4.426** *	2.265	1.715	0.106
	t-statistic	-0.951	-1.306	-1.220	1.336	-0.124	-0.586	-1.321	0.092	-2.048	2.075	1.800	0.921		
	p-value	0.348	0.200	0.230	0.190	0.902	0.562	0.195	0.927	0.048	0.045	0.080	0.363		
MSCI World	coefficient	-0.732	-2.859	-1.800	2.095	0.406	-1.438	-2.842	0.025	**-4.701** **	2.878	**3.457** *	1.024	1.409	0.208
	t-statistic	-0.360	-1.405	-0.884	1.029	0.199	-0.707	-1.396	0.012	-2.310	1.414	1.698	0.503		
	p-value	0.721	0.169	0.383	0.310	0.843	0.484	0.171	0.990	0.027	0.166	0.098	0.618		
MSCI Emerging Markets	coefficient	4.486	-1.366	-2.741	1.182	0.795	-1.508	-3.465	2.664	**-5.994** **	4.608	**6.162** **	2.938	1.567	0.147
	t-statistic	1.554	-0.473	-0.949	0.409	0.275	-0.522	-1.200	0.923	-2.076	1.596	2.134	1.018		
	p-value	0.129	0.639	0.349	0.685	0.785	0.605	0.238	0.362	0.045	0.119	0.040	0.316		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 19: Tests for the Explicit Month-of-the-Year Patterns for the Second Sub-Period 1997-2000

Results for the regression $R_t = c + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \ldots + \alpha_{12} D_{12t} + e_t$ where the shaded area represents the intercept, c, e.g. January and non shaded columns stand for coefficients α_i, $i = 2,\ldots, 12$, indicating the difference in return between e.g. January and the ith month of the year.

Country		January	February	March	April	May	June	July	August	September	October	November	December	F-statistic	p-value
Estonia	coefficient	6.079 **	-4.015	-5.076	-3.341	-1.152	-8.417 **	-7.198 *	-4.299	-7.485 *	-2.691	-1.146	1.232	1.260	0.286
	t-statistic	2.227	-1.040	-1.315	-0.866	-0.298	-2.181	-1.865	-1.114	-1.939	-0.697	-0.297	0.319		
	p-value	0.032	0.305	0.197	0.392	0.767	0.036	0.070	0.273	0.060	0.490	0.768	0.751		
Hungary	coefficient	4.873 *	-9.401 **	-3.301	0.332	-4.723	-10.344 ***	-5.442	-0.124	-6.978	0.930	-1.188	-4.837	2.277 **	0.031
	t-statistic	1.908	-2.603	-0.914	0.092	-1.308	-2.864	-1.507	-0.034	-1.932	0.258	-0.329	-1.339		
	p-value	0.064	0.013	0.367	0.927	0.199	0.007	0.141	0.973	0.061 *	0.798	0.744	0.189		
Hungary	coefficient	9.401 **	-4.528 *	6.100 *	9.733 **	4.678	-0.943	3.959	9.277 **	2.423	10.331 ***	8.213 **	4.564	2.277 **	0.031
	t-statistic	2.603	-1.773	1.689	2.695	1.295	-0.261	1.096	2.569	0.671	2.861	2.274	1.264		
	p-value	0.013	0.085	0.100	0.011	0.203	0.796	0.280	0.015	0.507	0.007	0.029	0.214		
Estonia	coefficient	1.152	-2.862	-3.924	-2.189	4.927 *	-7.265 *	-6.046	-3.147	-6.333	-1.539	0.006	2.384	1.260	0.286
	t-statistic	0.298	-0.742	-1.017	-0.567	1.805	-1.882	-1.566	-0.815	-1.641	-0.399	0.002	0.618		
	p-value	0.767	0.463	0.316	0.574	0.079	0.068	0.126	0.420	0.110	0.693	0.999	0.541		
Bulgaria	coefficient	-8.070	-8.311	-16.454 ***	-7.206	-13.579 **	11.756 ***	-4.449	-9.652 *	-6.603	-7.441	-6.667	-7.128	1.068	0.413
	t-statistic	-1.428	-1.471	-2.913	-1.275	-2.404	2.943	-0.787	-1.709	-1.169	-1.317	-1.180	-1.262		
	p-value	0.162	0.150	0.006	0.210	0.022	0.006	0.436	0.096	0.250	0.196	0.246	0.215		
Czech Republic	coefficient	9.463 **	4.770	6.583	6.209	7.119 *	-4.951 *	6.499	6.976 *	3.566	9.273 **	9.101 **	6.187	0.919	0.533
	t-statistic	2.417	1.219	1.682	1.586	1.818	-1.788	1.660	1.782	0.911	2.369	2.325	1.580		
	p-value	0.021	0.231	0.101	0.121	0.077	0.082	0.106	0.083	0.368	0.023	0.026	0.123		
Hungary	coefficient	10.344 ***	0.943	7.043 *	10.675 ***	5.621	-5.471 **	4.902	10.220 ***	3.366	11.274 ***	9.156 **	5.507	2.277 **	0.031
	t-statistic	2.864	0.261	1.950	2.956	1.556	-2.142	1.357	2.830	0.932	3.122	2.535	1.525		
	p-value	0.007	0.796	0.059	0.005	0.128	0.039	0.183	0.008	0.358	0.004	0.016	0.136		
Bulgaria	coefficient	-3.621	-3.862	-12.005 **	-2.757	-9.130	4.449	7.307 *	-5.204	-2.155	-2.993	-2.218	-2.680	1.068	0.413
	t-statistic	-0.641	-0.684	-2.125	-0.488	-1.616	0.787	1.829	-0.921	-0.381	-0.530	-0.393	-0.474		
	p-value	0.526	0.499	0.041	0.628	0.115	0.436	0.076	0.363	0.705	0.600	0.697	0.638		
Latvia	coefficient	-6.882	-7.415	-6.414	-6.449	-7.543	-8.172	7.762	-6.372	-11.220 **	-5.117	-6.170	-6.923	0.494	0.895
	t-statistic	-1.340	-1.444	-1.249	-1.256	-1.469	-1.591	1.096	-1.241	-2.185	-0.996	-1.201	-1.348		
	p-value	0.189	0.157	0.220	0.217	0.151	0.120	0.280	0.223	0.035	0.326	0.237	0.186		
Lithuania	coefficient	-0.250	-2.002	-7.402	-3.043	-8.638 *	-3.283	6.093 *	-7.921	-6.432	-7.271	-6.141	-7.783	0.760	0.675
	t-statistic	-0.049	-0.395	-1.462	-0.601	-1.707	-0.649	1.702	-1.565	-1.271	-1.437	-1.213	-1.538		
	p-value	0.961	0.695	0.152	0.552	0.097	0.521	0.097	0.126	0.212	0.159	0.233	0.133		
Russia	coefficient	17.450 ***	13.571 **	14.060 **	13.524 **	13.394 **	10.663 *	-9.249 *	16.379 **	8.983	11.535 *	10.231	14.313 **	1.017	0.452
	t-statistic	2.761	2.147	2.225	2.140	2.119	1.687	-2.070	2.592	1.421	1.825	1.619	2.265		
	p-value	0.009	0.039	0.032	0.039	0.041	0.100	0.046	0.014	0.164	0.076	0.114	0.030		
Hungary	coefficient	0.124	-9.277 **	-3.177	0.456	-4.599	-10.220 ***	-5.318	4.749 *	-6.853 *	1.054	-1.064	-4.712	2.277 **	0.031
	t-statistic	0.034	-2.569	-0.880	0.126	-1.273	-2.830	-1.472	1.860	-1.898	0.292	-0.295	-1.305		
	p-value	0.973	0.015	0.385	0.900	0.211	0.008	0.150	0.071	0.066	0.772	0.770	0.200		
Slovenia	coefficient	-3.825	-8.316 ***	-3.108	-3.582	-5.050 *	-6.666 **	-4.259	5.980	-3.023	-3.978	-2.927	-5.740 **	1.193	0.326
	t-statistic	-1.407	-3.057	-1.143	-1.317	-1.857	-2.451	-1.566	3.109	-1.112	-1.462	-1.076	-2.110		
	p-value	0.168	0.004	0.261	0.196	0.072	0.019	0.126	0.004 **	0.274	0.152	0.289	0.042		
MSCI Europe	coefficient	2.696	1.824	2.035	8.317 **	4.729	3.594	1.786	5.259	-5.033 **	10.135 ***	9.459 *	7.298 **	1.858 *	0.080
	t-statistic	0.776	0.525	0.585	2.392	1.360	1.034	0.514	1.513	-2.048	2.915	2.721	2.099		
	p-value	0.443	0.603	0.562	0.022	0.182	0.308	0.610	0.139	0.048	0.006	0.010	0.043		
MSCI World	coefficient	3.969	1.842	2.901	6.796 **	5.107 *	3.263	1.859	4.726	-4.701 **	7.579 **	8.158 ***	5.725 *	1.500	0.174
	t-statistic	1.379	0.640	1.008	2.361	1.774	1.133	0.646	1.642	-2.310	2.633	2.834	1.989		
	p-value	0.176	0.526	0.320	0.024	0.085	0.265	0.523	0.109	0.027	0.012	0.007	0.054		
MSCI Emerging Markets	coefficient	10.480 **	4.628	3.253	7.176 *	6.789	4.486	2.529	8.658 **	-5.994 **	10.602	12.156 ***	8.932 **	1.654	0.125
	t-statistic	2.567	1.134	0.797	1.758	1.663	1.099	0.619	2.121	-2.076	2.597	2.977	2.188		
	p-value	0.015	0.264	0.431	0.087	0.105	0.279	0.540	0.041	0.045	0.014 **	0.005	0.035		
Hungary	coefficient	-0.930	-10.331 ***	-4.231	-0.599	-5.653	-11.274 ***	-6.372 *	-1.054	-7.908 **	5.803 **	-2.118	-5.767	2.277 **	0.031
	t-statistic	-0.258	-2.861	-1.172	-0.166	-1.565	-3.122	-1.764	-0.292	-2.190	2.272	-0.586	-1.597		
	p-value	0.798	0.007	0.249	0.869	0.126	0.004	0.086	0.772	0.035	0.029	0.561	0.119		
Poland	coefficient	-4.504	-11.901 **	-9.104 *	-5.466	-5.656	-12.004 **	-8.688 *	-3.262	-13.541 ***	8.128 **	-8.495 *	-7.166	1.459	0.190
	t-statistic	-0.973	-2.571	-1.966	-1.181	-1.222	-2.593	-1.876	-0.705	-2.925	2.483	-1.835	-1.548		
	p-value	0.337	0.014	0.057	0.246	0.230	0.014	0.069	0.486	0.006	0.018	0.075	0.130		
MSCI Europe	coefficient	-7.438 **	-8.311 **	-8.100 **	-1.818	-5.405	-6.541 *	-8.348 **	-4.875	-10.135 ***	5.101 **	-0.676	-2.837	1.858 *	0.080
	t-statistic	-2.140	-2.391	-2.330	-0.523	-1.555	-1.881	-2.401	-1.402	-2.915	2.075	-0.194	-0.816		
	p-value	0.039	0.022	0.026	0.604	0.129	0.068	0.022	0.169	0.006	0.045	0.847	0.420		
Estonia	coefficient	1.146	-2.868	-3.930	-2.195	-0.006	-7.271 *	-6.052	-3.153	-6.339	-1.545	4.933 *	2.378	1.260	0.286
	t-statistic	0.297	-0.743	-1.018	-0.569	-0.002	-1.884	-1.568	-0.817	-1.642	-0.400	1.807	0.616		
	p-value	0.768	0.462	0.315	0.573	0.999	0.068	0.126	0.419	0.109	0.691	0.079	0.542		
Slovakia	coefficient	-10.491 **	-9.363 **	-11.436 **	-10.495 *	-6.559	-7.088	-9.375 **	-5.476	-5.546	-6.375	10.114 ***	-5.118	1.055	0.422
	t-statistic	-2.389	-2.132	-2.604	-2.390	-1.493	-1.614	-2.135	-1.247	-1.263	-1.452	3.257	-1.165		
	p-value	0.022	0.040	0.013	0.022	0.144	0.115	0.040	0.221	0.215	0.155	0.002	0.252		
MSCI Europe	coefficient	-6.763 *	-7.635 **	-7.424 **	-1.142	-4.730	-5.865 *	-7.673 **	-4.200	-9.459 *	0.676	4.426 *	-2.161	1.858 *	0.080
	t-statistic	-1.945	-2.196	-2.136	-0.328	-1.361	-1.687	-2.207	-1.208	-2.721	0.194	1.800	-0.622		
	p-value	0.060	0.035	0.040	0.744	0.182	0.100	0.034	0.235	0.010	0.847	0.080	0.538		
MSCI World	coefficient	-4.189	-6.316 **	-5.257 *	-1.362	-3.051	-4.895 *	-6.299 **	-3.432	-8.158	-0.579	3.457	-2.434	1.500	0.174
	t-statistic	-1.455	-2.194	-1.826	-0.473	-1.060	-1.701	-2.188	-1.192	-2.834	-0.201	1.698	-0.845		
	p-value	0.154	0.035	0.076	0.639	0.296	0.098	0.035	0.241	0.007	0.842	0.098 *	0.403		
MSCI Emerging Markets	coefficient	-1.676	-7.528 *	-8.903 **	-4.980	-5.368	-7.671 *	-9.628 **	-3.498	-12.156 ***	-1.554	6.162 **	-3.224	1.654	0.125
	t-statistic	-0.411	-1.844	-2.181	-1.220	-1.315	-1.879	-2.358	-0.857	-2.977	-0.381	2.134	-0.790		
	p-value	0.684	0.073	0.036	0.230	0.197	0.068	0.024	0.397	0.005	0.706	0.040	0.435		
Estonia	coefficient	-1.232	-5.246	-6.308	-4.573	-2.384	-9.649 **	-8.430 **	-5.530	-8.717 **	-3.923	-2.378	7.311 **	1.260	0.286
	t-statistic	-0.319	-1.359	-1.634	-1.185	-0.618	-2.500	-2.184	-1.433	-2.258	-1.016	-0.616	2.679		
	p-value	0.751	0.183	0.111	0.244	0.541	0.017	0.036	0.161	0.030	0.316	0.542	0.011		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 20: Test for the Monthly Effect during the Third Sub-Period 2005-2008

Results for the regression $R_t = \alpha_1 D_{1t} + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \ldots + \alpha_{12} D_{12t} + e_{t\,t}$ are presented for the period 2005-2008. For each index the estimated coefficient, t-value and p-value are shown.

Country		January	February	March	April	May	June	July	August	September	October	November	December	F-statistic	p-value
Bulgaria	coefficient	1.095	**7.445** *	-2.253	-1.729	1.078	0.399	6.879	3.479	7.907	3.173	-1.872	1.643	0.751	0.691
	t-statistic	0.254	1.728	-0.453	-0.348	0.217	0.080	1.383	0.699	1.589	0.638	-0.376	0.330		
	p-value	0.801	0.096	0.654	0.731	0.830	0.937	0.179	0.491	0.124	0.529	0.710	0.744		
Croatia	coefficient	6.254	-0.164	2.020	3.440	1.589	2.472	5.028	2.424	5.133	1.193	-3.218	2.797	0.589	0.830
	t-statistic	1.548	-0.041	0.433	0.738	0.341	0.530	1.078	0.520	1.101	0.256	-0.690	0.600		
	p-value	0.134	0.968	0.668	0.467	0.736	0.601	0.291	0.608	0.281	0.800	0.496	0.554		
Czech Republic	coefficient	-1.974	2.101	0.405	0.066	-3.105	2.647	1.203	3.410	2.249	1.592	-2.113	2.509	0.417	0.942
	t-statistic	-0.662	0.705	0.118	0.019	-0.902	0.769	0.349	0.990	0.653	0.463	-0.614	0.729		
	p-value	0.514	0.487	0.907	0.985	0.375	0.449	0.730	0.331	0.519	0.648	0.545	0.473		
Estonia	coefficient	-0.668	1.471	6.755	0.365	-6.748	1.383	0.929	-0.848	2.618	-5.091	-1.245	3.137	0.598	0.823
	t-statistic	-0.173	0.381	1.516	0.082	-1.514	0.310	0.208	-0.190	0.588	-1.142	-0.279	0.704		
	p-value	0.864	0.706	0.142	0.935	0.142	0.759	0.837	0.851	0.562	0.264	0.782	0.488		
Hungary	coefficient	-0.863	4.175	-3.058	2.432	-2.094	4.954	4.842	-1.411	2.336	-4.596	-0.280	3.213	0.701	0.736
	t-statistic	-0.253	1.222	-0.775	0.617	-0.531	1.256	1.227	-0.358	0.592	-1.165	-0.071	0.815		
	p-value	0.802	0.233	0.445	0.543	0.600	0.220	0.231	0.723	0.559	0.255	0.944	0.423		
Latvia	coefficient	0.223	-1.934	1.772	1.569	**-9.097** *	8.424	4.528	6.090	5.415	-1.280	1.744	2.123	0.870	0.586
	t-statistic	0.052	-0.447	0.355	0.314	-1.821	1.686	0.906	1.219	1.084	-0.256	0.349	0.425		
	p-value	0.959	0.659	0.726	0.756	0.080	0.104	0.373	0.234	0.288	0.800	0.730	0.674		
Lithuania	coefficient	-1.431	0.547	2.739	2.248	-2.604	3.844	2.771	2.354	4.254	-1.569	-2.722	4.313	0.347	0.971
	t-statistic	-0.342	0.131	0.567	0.465	-0.539	0.796	0.574	0.488	0.881	-0.325	-0.564	0.893		
	p-value	0.735	0.897	0.575	0.645	0.594	0.433	0.571	0.630	0.386	0.748	0.578	0.380		
Poland	coefficient	-1.308	-0.097	3.394	2.429	-0.365	3.535	5.005	-1.467	2.024	1.557	0.295	0.845	0.342	0.972
	t-statistic	-0.374	-0.028	0.841	0.602	-0.090	0.876	1.240	-0.363	0.501	0.386	0.073	0.209		
	p-value	0.711	0.978	0.408	0.552	0.929	0.389	0.226	0.719	0.620	0.703	0.942	0.836		
Romania	coefficient	5.486	1.446	-10.286	-2.655	-3.266	3.980	8.009	1.214	2.861	2.086	-2.419	2.271	0.727	0.713
	t-statistic	1.136	0.299	-1.844	-0.476	-0.586	0.714	1.436	0.218	0.513	0.374	-0.434	0.407		
	p-value	0.266	0.767	0.077	0.638	0.563	0.482	0.163	0.829	0.612	0.711	0.668	0.687		
Russia	coefficient	-0.801	5.544	-0.060	4.073	-6.780	3.907	4.974	5.259	4.923	0.425	5.776	5.915	1.128	0.382
	t-statistic	-0.209	1.447	-0.014	0.921	-1.533	0.883	1.125	1.189	1.113	0.096	1.306	1.337		
	p-value	0.836	0.160	0.989	0.366	0.137	0.385	0.271	0.245	0.276	0.924	0.203	0.193		
Slovakia	coefficient	0.421	**5.902** *	1.145	-1.645	-4.284	0.348	4.813	2.585	-0.873	0.767	-3.076	0.434	0.799	0.648
	t-statistic	0.143	2.012	0.338	-0.485	-1.265	0.103	1.421	0.763	-0.258	0.226	-0.908	0.128		
	p-value	0.887	0.055	0.738	0.631	0.217	0.919	0.167	0.452	0.799	0.823	0.372	0.899		
Slovenia	coefficient	1.731	-1.556	0.957	**6.220** *	2.378	2.294	4.671	2.881	0.266	1.154	-0.159	2.116	0.791	0.655
	t-statistic	0.636	-0.572	0.305	1.979	0.757	0.730	1.486	0.917	0.085	0.367	-0.051	0.673		
	p-value	0.530	0.573	0.763	0.058	0.456	0.472	0.149	0.368	0.933	0.716	0.960	0.507		
MSCI Europe	coefficient	-1.652	0.239	1.392	1.669	-0.724	-0.024	0.552	1.589	1.759	1.433	0.676	1.640	0.354	0.968
	t-statistic	-0.877	0.127	0.640	0.767	-0.333	-0.011	0.254	0.730	0.809	0.659	0.311	0.754		
	p-value	0.388	0.900	0.528	0.450	0.742	0.991	0.802	0.472	0.426	0.516	0.758	0.458		
MSCI World	coefficient	-1.091	-0.417	0.375	1.303	-0.015	-0.776	0.063	1.191	2.173	1.051	0.975	0.731	0.372	0.962
	t-statistic	-0.738	-0.282	0.220	0.764	-0.009	-0.455	0.037	0.698	1.274	0.616	0.572	0.428		
	p-value	0.467	0.780	0.828	0.452	0.993	0.653	0.971	0.491	0.214	0.543	0.573	0.672		
MSCI Emerging Markets	coefficient	-1.208	2.498	-0.586	1.657	-1.457	1.898	3.059	1.337	5.488	2.172	2.045	3.180	0.527	0.877
	t-statistic	-0.394	0.814	-0.165	0.468	-0.411	0.536	0.864	0.377	1.549	0.613	0.577	0.898		
	p-value	0.697	0.423	0.870	0.644	0.684	0.597	0.396	0.709	0.133	0.545	0.569	0.378		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 21: Tests for the Explicit Month-of-the-Year Patterns for the Third Sub-Period 2005-2008

Results for the regression $R_t = c + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \ldots + \alpha_{12} D_{12t} + e_t$ where the shaded area represents the intercept, c, e.g. January and non shaded columns stand for coefficients α_i, $i = 2,\ldots, 12$, indicating the difference in return between e.g. January and the ith month of the year.

Country		January	February	March	April	May	June	July	August	September	October	November	December	F-statistic	p-value
Bulgaria	coefficient	-6.349	*7.445* *	-9.697	-9.174	-6.367	-7.046	-0.565	-3.966	0.462	-4.272	-9.317	-5.801	0.557	0.845
	t-statistic	-1.042	*1.728*	-1.473	-1.394	-0.967	-1.071	-0.086	-0.603	0.070	-0.649	-1.416	-0.881		
	p-value	0.307	*0.096*	0.153	0.175	0.342	0.294	0.932	0.552	0.945	0.522	0.169	0.386		
Slovakia	coefficient	-5.481	*5.902* *	-4.757	-7.547	-10.186 **	-5.554	-1.089	-3.317	-6.775	-5.136	-8.978 *	-5.469	0.825	0.617
	t-statistic	-1.321	*2.012*	-1.062	-1.684	-2.273	-1.239	-0.243	-0.740	-1.512	-1.146	-2.004	-1.220		
	p-value	0.198	*0.055*	0.298	0.104	0.032	0.226	0.810	0.466	0.143	0.262	0.056	0.233		
Slovenia	coefficient	-4.489	-7.776 *	-5.263	*6.220* *	-3.842	-3.926	-1.549	-3.339	-5.954	-5.066	-6.379	-4.104	0.478	0.900
	t-statistic	-1.080	-1.870	-1.184	*1.979*	-0.864	-0.883	-0.349	-0.751	-1.340	-1.140	-1.435	-0.923		
	p-value	0.290	0.073	0.247	*0.058*	0.395	0.385	0.730	0.459	0.192	0.265	0.163	0.364		
Latvia	coefficient	9.320	7.163	10.870	10.666	*-9.097*	17.521 **	13.625 *	15.187 **	14.512 *	7.817	10.841	11.220	0.845	0.600
	t-statistic	1.410	1.084	1.538	1.510	*-1.821*	2.480	1.928	2.149	2.054	1.106	1.534	1.588		
	p-value	0.751	0.183	0.111	0.244	*0.080* *	0.020	0.065	0.041	0.050	0.279	0.137	0.124		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Annex 3: Tests for the Turn-of-the-Month Effect

Table 22: Test for the 16-day Period around the Turn-of-the-Month during the Whole Sample Period 1997-2008

Results for the regression $R_t = \beta_{-8}D_{-8,t} + \beta_{-7}D_{-7,t} + \ldots + \beta_7 D_{,7t} + \beta_8 D_{8,t} + e_t$ are presented for the period 1997-2008. For each index the estimated coefficient, t-value and p-value are shown.

Country		-8	-7	-6	-5	-4	-3	-2	-1	1	2	3	4	5	6	7	8	F-statistic	p-value
Bulgaria	coefficient	-0.046	0.295	0.212	0.315	0.188	0.403	0.262	**0.667** ***	-0.165	0.141	-0.221	0.084	0.111	0.199	0.313	-0.165	**2.040** ***	0.009
	t-statistic	-0.238	1.523	1.093	1.628	0.971	2.084	1.353	3.448	-0.845	0.726	-1.135	0.430	0.573	1.020	1.616	-0.854		
	p-value	0.812	0.128	0.274	0.104	0.332	0.037	0.176	0.001	0.398	0.468	0.257	0.667	0.567	0.308	0.106	0.393		
Croatia	coefficient	0.077	0.090	0.190	0.046	-0.059	-0.058	0.096	**0.286** **	-0.109	0.216	0.110	0.243	-0.021	-0.068	0.019	0.012	0.856	0.621
	t-statistic	0.534	0.624	1.318	0.317	-0.413	-0.403	0.669	1.985	-0.749	1.490	0.760	1.684	-0.146	-0.469	0.135	0.081		
	p-value	0.593	0.533	0.188	0.751	0.680	0.687	0.503	0.047	0.454	0.136	0.447	0.092	0.884	0.639	0.893	0.935		
Czech Republic	coefficient	-0.102	0.048	0.167	0.127	0.065	-0.049	-0.083	0.082	0.141	0.049	-0.054	**0.188** *	0.030	0.063	-0.003	-0.060	0.792	0.696
	t-statistic	-0.952	0.449	1.558	1.184	0.609	-0.453	-0.769	0.764	1.308	0.459	-0.501	1.751	0.280	0.590	-0.031	-0.562		
	p-value	0.341	0.653	0.119	0.237	0.543	0.651	0.442	0.445	0.191	0.646	0.616	0.080	0.780	0.555	0.975	0.574		
Estonia	coefficient	-0.115	0.089	0.037	0.196	-0.053	0.026	0.004	-0.040	0.138	0.279	0.055	0.203	0.163	0.104	0.298	-0.167	0.732	0.764
	t-statistic	-0.654	0.505	0.209	1.114	-0.302	0.146	0.025	-0.231	0.783	1.585	0.315	1.157	0.928	0.590	1.701	-0.952		
	p-value	0.513	0.614	0.835	0.265	0.763	0.884	0.980	0.818	0.434	0.113	0.753	0.247	0.353	0.555	0.089	0.341		
Hungary	coefficient	-0.010	-0.103	0.110	0.057	0.137	0.126	-0.082	0.174	0.206	0.213	**0.257** *	**0.328** **	0.083	0.133	-0.183	-0.214	1.242	0.227
	t-statistic	-0.063	-0.676	0.723	0.371	0.900	0.826	-0.537	1.139	1.339	1.390	1.683	2.150	0.546	0.870	-1.208	-1.404		
	p-value	0.949	0.499	0.470	0.710	0.368	0.409	0.591	0.255	0.181	0.165	0.092	0.032	0.585	0.384	0.227	0.160		
Latvia	coefficient	-0.030	0.004	0.178	0.135	0.222	-0.118	-0.066	-0.066	0.162	-0.118	0.072	0.250	0.112	0.209	0.210	0.017	0.662	0.834
	t-statistic	-0.167	0.020	1.009	0.765	1.259	-0.669	-0.373	-0.375	0.904	-0.663	0.407	1.414	0.635	1.180	1.191	0.094		
	p-value	0.867	0.984	0.313	0.445	0.208	0.504	0.709	0.708	0.366	0.507	0.684	0.157	0.526	0.238	0.234	0.925		
Lithuania	coefficient	0.003	0.076	0.104	-0.114	0.009	0.068	-0.080	0.019	0.019	-0.013	0.100	**0.246** *	**0.310** **	0.088	0.146	**-0.259** **	1.094	0.354
	t-statistic	0.023	0.573	0.792	-0.866	0.068	0.514	-0.605	0.145	0.143	-0.095	0.762	1.866	2.350	0.665	1.114	-1.962		
	p-value	0.982	0.566	0.428	0.386	0.946	0.607	0.545	0.884	0.886	0.925	0.446	0.062	0.019	0.506	0.265	0.050		
Poland	coefficient	0.006	**0.228** *	0.060	-0.061	0.010	0.121	**-0.320** **	0.047	**0.214** *	**0.253** **	0.044	**0.223** *	0.197	0.112	0.000	**-0.274** **	**1.840** **	0.022
	t-statistic	0.048	1.816	0.476	-0.489	0.077	0.961	-2.545	0.377	1.689	2.002	0.347	1.776	1.564	0.891	-0.001	-2.179		
	p-value	0.962	0.069	0.634	0.625	0.939	0.337	0.011	0.706	0.091	0.045	0.729	0.076	0.118	0.373	1.000	0.029		
Romania	coefficient	-0.083	0.028	0.093	0.002	**-0.277** *	-0.039	0.241	**0.283** *	**0.279** *	0.179	0.117	0.196	0.089	-0.044	-0.191	0.014	1.199	0.260
	t-statistic	-0.546	0.187	0.615	0.010	-1.831	-0.255	1.596	1.873	1.825	1.173	0.770	1.292	0.588	-0.292	-1.260	0.091		
	p-value	0.585	0.852	0.538	0.992	0.067	0.799	0.111	0.061	0.068	0.241	0.441	0.196	0.556	0.770	0.208	0.928		
Russia	coefficient	-0.177	0.251	0.233	0.007	**-0.393** *	-0.142	**-0.387** *	0.363	0.182	**0.550** **	0.333	**0.582** ***	0.051	0.193	-0.072	-0.299	**1.910** **	0.016
	t-statistic	-0.794	1.127	1.045	0.032	-1.761	-0.634	-1.734	1.625	0.811	2.457	1.490	2.607	0.230	0.865	-0.323	-1.339		
	p-value	0.427	0.260	0.296	0.974	0.078	0.526	0.083	0.104	0.418	0.014	0.136	0.009	0.818	0.387	0.747	0.181		
Slovakia	coefficient	0.041	-0.014	-0.020	0.055	-0.035	0.067	**-0.191** *	0.138	0.035	0.009	0.096	0.116	0.139	-0.154	0.074	0.060	0.734	0.761
	t-statistic	0.370	-0.125	-0.180	0.501	-0.315	0.608	-1.734	1.251	0.317	0.081	0.875	1.056	1.259	-1.393	0.676	0.542		
	p-value	0.712	0.900	0.857	0.616	0.753	0.543	0.083	0.211	0.751	0.936	0.382	0.291	0.208	0.164	0.499	0.588		
Slovenia	coefficient	0.043	0.076	**0.241** ***	**0.227** ***	0.005	0.046	0.046	**0.193** **	0.022	**0.186** **	**0.170** *	**0.187** **	**0.202** **	0.040	-0.138	**-0.168** *	**2.865** ***	<0.001
	t-statistic	0.497	0.875	2.768	2.610	0.055	0.523	0.533	2.219	0.253	2.128	1.956	2.146	2.316	0.455	-1.595	-1.934		
	p-value	0.620	0.382	0.006	0.009	0.956	0.601	0.594	0.027	0.801	0.033	0.051	0.032	0.021	0.649	0.111	0.053		
MSCI Europe	coefficient	**-0.166** *	-0.022	-0.011	0.036	0.092	0.152	0.041	**0.176** *	**0.255** **	0.216 **	-0.044	0.153	0.039	**-0.195** **	-0.082	-0.209 **	**2.043** ***	0.008
	t-statistic	-1.677	-0.218	-0.110	0.369	0.934	1.533	0.415	1.782	2.558	2.180	-0.446	1.545	0.399	-1.975	-0.829	-2.116		
	p-value	0.094	0.827	0.912	0.712	0.350	0.125	0.678	0.075	0.011	0.029	0.656	0.122	0.690	0.048	0.407	0.034		
MSCI World	coefficient	-0.120	-0.017	-0.073	0.037	0.047	0.077	0.066	0.051	**0.279** ***	0.069	0.011	0.094	0.004	-0.090	**-0.136** *	**-0.140** *	**1.921** ***	0.015
	t-statistic	-1.599	-0.226	-0.973	0.499	0.628	1.023	0.878	0.679	3.691	0.922	0.144	1.251	0.047	-1.194	-1.817	-1.864		
	p-value	0.110	0.821	0.331	0.618	0.530	0.307	0.380	0.497	<0.001	0.357	0.886	0.211	0.963	0.232	0.069	0.062		
MSCI Emerging Markets	coefficient	-0.093	-0.049	-0.050	0.008	-0.094	-0.002	-0.002	**0.235** **	**0.293** ***	**0.396** ***	**-0.058**	**0.185** **	0.141	-0.029	-0.091	**-0.300** ***	**3.355** ***	<0.001
	t-statistic	-0.991	-0.525	-0.529	0.087	-1.001	-0.026	-0.023	2.502	3.095	4.190	-0.611	1.971	1.503	-0.312	-0.976	-3.188		
	p-value	0.322	0.600	0.597	0.931	0.317	0.979	0.982	0.012	0.002	<0.001	0.541	0.049	0.133	0.755	0.329	0.001		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 23: Test for the Turn-of-the-Month Effect during the Whole Sample Period

Test for the turn-of-the-month (TOM) effect. Third column represents the intercept in regression $R_t = \alpha + \beta D_{\text{TOM}} + e_t$, the percentage mean daily return for the rest-of-the-month (ROM) period (trading days -8 through -2 and +5 through +8). Forth column stands for the difference between the mean daily TOM return (trading days -1 through +4) and the mean daily ROM return. For each index the estimated coefficient, t-value and p-value are shown.

Country	N		ROM		TOM		F-statistic		p-value
Bulgaria	1593	coefficient	**0.173**	***	-0.069		0.458		0.499
		t-statistic	3.201		-0.677				
		p-value	0.001		0.499				
Croatia	2407	coefficient	0.013		**0.138**	*	**3.282**	*	0.070
		t-statistic	0.316		1.811				
		p-value	0.752		0.070				
Czech Republic	2410	coefficient	0.026		0.055		0.962		0.327
		t-statistic	0.870		0.981				
		p-value	0.384		0.327				
Estonia	2410	coefficient	0.022		0.105		1.287		0.257
		t-statistic	0.453		1.134				
		p-value	0.651		0.257				
Hungary	2410	coefficient	-0.015		**0.250**	***	**9.725**	***	0.002
		t-statistic	-0.351		3.118				
		p-value	0.725		0.002				
Latvia	2193	coefficient	0.069		-0.009		0.010		0.922
		t-statistic	1.407		-0.098				
		p-value	0.160		0.922				
Lithuania	2193	coefficient	0.036		0.039		0.307		0.579
		t-statistic	0.992		0.554				
		p-value	0.321		0.579				
Poland	2410	coefficient	-0.004		**0.159**	**	**5.774**	**	0.016
		t-statistic	-0.104		2.403				
		p-value	0.917		0.016				
Romania	2254	coefficient	0.009		**0.202**	**	**6.377**	**	0.012
		t-statistic	0.218		2.525				
		p-value	0.828		0.012				
Russia	2410	coefficient	-0.061		**0.464**	***	**15.554**	***	<0.001
		t-statistic	-0.993		3.944				
		p-value	0.321		<0.001				
Slovakia	2410	coefficient	0.019		0.060		1.071		0.301
		t-statistic	0.627		1.035				
		p-value	0.531		0.301				
Slovenia	2410	coefficient	**0.049**	**	**0.103**	**	**4.972**	**	0.026
		t-statistic	2.043		2.230				
		p-value	0.041		0.026				
MSCI Europe	2410	coefficient	-0.025		**0.176**	***	**11.332**	***	0.001
		t-statistic	-0.905		3.366				
		p-value	0.366		0.001				
MSCI World	2410	coefficient	-0.028		**0.128**	***	**10.507**	***	0.001
		t-statistic	-1.345		3.241				
		p-value	0.179		0.001				
MSCI Emeging Markets	2410	coefficient	**-0.053**	**	**0.263**	**	**27.999**	***	<0.001
		t-statistic	-2.027		5.291				
		p-value	0.043		<0.001				

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 24: Turn-of-the-Month Effect during the First Sub-Period 1997-2000

Third column represents the intercept in regression $R_t = \alpha + \beta D_{\text{TOM}} + e_t$, the percentage mean daily return for the rest-of-the-month (ROM) period (trading days -8 through -2 and +5 through +8). Forth column stands for the difference between the mean daily TOM return (trading days -1 through +4) and the mean daily ROM return. For each index the estimated coefficient, t-value and p-value are shown.

Country		ROM	TOM	F-statistic	p-value
Bulgaria	coefficient	0.117	0.077	0.009	0.926
	t-statistic	0.291	0.094		
	p-value	0.773	0.926		
Croatia	coefficient	-0.118	**0.381** **	**4.838** **	0.028
	t-statistic	-1.308	2.200		
	p-value	0.191	0.028		
Czech Republic	coefficient	-0.033	0.021	0.039	0.843
	t-statistic	-0.592	0.198		
	p-value	0.554	0.843		
Estonia	coefficient	-0.022	0.125	0.294	0.588
	t-statistic	-0.182	0.542		
	p-value	0.855	0.588		
Hungary	coefficient	-0.128	**0.487** ***	**7.250** ***	0.007
	t-statistic	-1.345	2.693		
	p-value	0.179	0.007		
Latvia	coefficient	-0.105	0.173	0.770	0.380
	t-statistic	-1.020	0.878		
	p-value	0.308	0.380		
Lithuania	coefficient	-0.019	0.094	0.430	0.512
	t-statistic	-0.247	0.656		
	p-value	0.805	0.512		
Poland	coefficient	-0.084	**0.293** **	**4.322** **	0.038
	t-statistic	-1.138	2.079		
	p-value	0.256	0.038		
Romania	coefficient	-0.152	0.188	1.081	0.299
	t-statistic	-1.612	1.040		
	p-value	0.107	0.299		
Russia	coefficient	-0.301	**0.855** ***	**9.825** ***	0.002
	t-statistic	-2.097	3.134		
	p-value	0.036	0.002		
Slovakia	coefficient	-0.081	0.133	1.364	0.243
	t-statistic	-1.346	1.168		
	p-value	0.179	0.243		
Slovenia	coefficient	0.001	**0.171** *	**3.557** *	0.060
	t-statistic	0.030	1.886		
	p-value	0.976	0.060		
MSCI Europe	coefficient	-0.028	**0.231** ***	**7.721** ***	0.006
	t-statistic	-0.643	2.779		
	p-value	0.520	0.006		
MSCI World	coefficient	-0.030	**0.162** **	**5.830** **	0.016
	t-statistic	-0.845	2.414		
	p-value	0.398	0.016		
MSCI Emeging Markets	coefficient	**-0.158** ***	**0.334** ***	**13.268** ***	<0.001
	t-statistic	-3.281	3.643		
	p-value	0.001	<0.001		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 25: Turn-of-the-Month Effect during the Second Sub-Period 2001-2004

Third column represents the intercept in regression $R_t = \alpha + \beta D_{\text{TOM}} + e_t$, the percentage mean daily return for the rest-of-the-month (ROM) period (trading days -8 through -2 and +5 through +8). Forth column stands for the difference between the mean daily TOM return (trading days -1 through +4) and the mean daily ROM return. For each index the estimated coefficient, t-value and p-value are shown.

Country		ROM	TOM	F-statistic	p-value
Bulgaria	coefficient	**0.215** **	-0.115	0.459	0.498
	t-statistic	2.401	-0.677		
	p-value	0.017	0.498		
Croatia	coefficient	0.041	0.042	0.173	0.677
	t-statistic	0.768	0.416		
	p-value	0.442	0.677		
Czech Republic	coefficient	0.092	-0.014	0.025	0.874
	t-statistic	1.965	-0.158		
	p-value	0.050	0.874		
Estonia	coefficient	**0.109** **	0.058	0.391	0.532
	t-statistic	2.245	0.625		
	p-value	0.025	0.532		
Hungary	coefficient	-0.129	**0.486** ***	**7.284** ***	0.007
	t-statistic	-1.354	2.699		
	p-value	0.176	0.007		
Latvia	coefficient	**0.182** **	**-0.269** *	**3.411** *	0.065
	t-statistic	2.379	-1.847		
	p-value	0.018	0.065		
Lithuania	coefficient	0.095	-0.074	0.437	0.509
	t-statistic	1.618	-0.661		
	p-value	0.106	0.509		
Poland	coefficient	0.023	0.064	0.520	0.471
	t-statistic	0.503	0.721		
	p-value	0.615	0.471		
Romania	coefficient	**0.145** ***	0.103	1.123	0.290
	t-statistic	2.834	1.060		
	p-value	0.005	0.290		
Russia	coefficient	0.030	**0.260** *	**3.085** *	0.079
	t-statistic	0.380	1.756		
	p-value	0.704	0.079		
Slovakia	coefficient	**0.124** **	-0.021	0.047	0.828
	t-statistic	2.454	-0.217		
	p-value	0.014	0.828		
Slovenia	coefficient	**0.079** **	0.040	0.320	0.571
	t-statistic	2.128	0.566		
	p-value	0.034	0.571		
MSCI Europe	coefficient	-0.080	**0.204** **	**4.388** **	0.036
	t-statistic	-1.566	2.095		
	p-value	0.118	0.036		
MSCI World	coefficient	**-0.075** *	**0.171** **	**5.230** **	0.022
	t-statistic	-1.896	2.287		
	p-value	0.058	0.022		
MSCI Emeging Markets	coefficient	-0.045	**0.259** ***	**12.195** ***	0.001
	t-statistic	-1.145	3.492		
	p-value	0.252	0.001		

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 26: Turn-of-the-Month Effect during the Third Sub-Period 2005-2008

Third column represents the intercept in regression $R_t = \alpha + \beta D_{\text{TOM}} + e_t$, the percentage mean daily return for the rest-of-the-month (ROM) period (trading days -8 through -2 and +5 through +8). Forth column stands for the difference between the mean daily TOM return (trading days -1 through +4) and the mean daily ROM return. For each index the estimated coefficient, t-value and p-value are shown.

Country		ROM		TOM		F-statistic		p-value
Bulgaria	coefficient	**0.114**	**	-0.024		0.063		0.801
	t-statistic	2.296		-0.252				
	p-value	0.022		0.801				
Croatia	coefficient	**0.115**	**	-0.028		0.100		0.752
	t-statistic	2.446		-0.316				
	p-value	0.015		0.752				
Czech Republic	coefficient	0.012		**0.184**	*	**3.403**	*	0.066
	t-statistic	0.224		1.845				
	p-value	0.823		0.066				
Estonia	coefficient	-0.024		0.110		1.371		0.242
	t-statistic	-0.484		1.171				
	p-value	0.629		0.242				
Hungary	coefficient	0.068		0.094		0.605		0.437
	t-statistic	1.068		0.778				
	p-value	0.286		0.437				
Latvia	coefficient	0.077		0.142		0.970		0.325
	t-statistic	1.008		0.985				
	p-value	0.314		0.325				
Lithuania	coefficient	0.015		0.115		1.072		0.301
	t-statistic	0.248		1.035				
	p-value	0.804		0.301				
Poland	coefficient	0.062		0.131		1.516		0.219
	t-statistic	1.103		1.231				
	p-value	0.270		0.219				
Romania	coefficient	-0.013		**0.293**	**	**4.510**	**	0.034
	t-statistic	-0.176		2.124				
	p-value	0.861		0.034				
Russia	coefficient	**0.122**	*	**0.231**	*	**2.736**	*	0.099
	t-statistic	1.658		1.654				
	p-value	0.098		0.099				
Slovakia	coefficient	0.016		0.062		0.583		0.446
	t-statistic	0.365		0.763				
	p-value	0.715		0.446				
Slovenia	coefficient	0.071		0.089		1.408		0.236
	t-statistic	1.803		1.187				
	p-value	0.072		0.236				
MSCI Europe	coefficient	0.050		0.080		0.808		0.369
	t-statistic	1.076		0.899				
	p-value	0.282		0.369				
MSCI World	coefficient	0.036		0.040		0.446		0.504
	t-statistic	1.160		0.668				
	p-value	0.246		0.504				
MSCI Emeging Markets	coefficient	0.064		**0.209**	**	**4.946**	**	0.026
	t-statistic	1.300		2.224				
	p-value	0.194		0.026				

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Annex 4: Tests for the Halloween Effect

Table 27: Tests for the Halloween Effect during the Whole Sample Period

Table shows the number of observations, monthly mean returns and standard deviations as percentages. Sixth column represents the intercept in regression $R_t = c + \alpha_1 D_t\, c + e_t$, the monthly percentage mean return for the May to October period. Seventh column stands for the difference between the mean November-April return and the mean monthly May- October return. Consequently p-value of regressions F-statistic is reported.

Country	N	Mean (%)	Std. Dev. (%)		May-October	November-April dummy	F-statistic p-value
Bulgaria	88	0.00	0.00	coeffcient	4.381 ***	-2.445	0.155
				t-statistic	3.573	-1.434	
				p-value	0.001	0.155	
Croatia	134	1.42	9.45	coeffcient	-0.073	2.942 *	0.071 *
				t-statistic	-0.064	1.818	
				p-value	0.949	0.071	
Czech Republic	134	0.66	6.75	coeffcient	0.234	0.837	0.475
				t-statistic	0.281	0.717	
				p-value	0.779	0.475	
Estonia	134	1.05	11.05	coeffcient	-0.963	3.977 **	0.037 **
				t-statistic	-0.718	2.110	
				p-value	0.474	0.037	
Hungary	134	1.09	8.74	coeffcient	0.096	1.953	0.197
				t-statistic	0.090	1.297	
				p-value	0.929	0.197	
Latvia	122	0.50	9.04	coeffcient	-0.328	1.708	0.302
				t-statistic	-0.280	1.036	
				p-value	0.780	0.302	
Lithuania	122	0.81	8.23	coeffcient	-0.529	2.877 *	0.053 *
				t-statistic	-0.506	1.958	
				p-value	0.613	0.053	
Poland	134	0.69	7.53	coeffcient	0.028	1.304	0.318
				t-statistic	0.030	1.002	
				p-value	0.976	0.318	
Romania	134	1.36	10.55	coeffcient	1.666	-0.551	0.774
				t-statistic	1.214	-0.288	
				p-value	0.227	0.774	
Russia	134	1.52	15.28	coeffcient	-1.261	5.486 **	0.037 **
				t-statistic	-0.679	2.105	
				p-value	0.498	0.037	
Slovakia	134	0.65	6.47	coeffcient	0.901	-0.496	0.659
				t-statistic	1.127	-0.442	
				p-value	0.262	0.659	
Slovenia	134	1.40	5.40	coeffcient	1.523 **	-0.241	0.798
				t-statistic	2.284	-0.257	
				p-value	0.024	0.798	
MSCI Europe	134	0.32	4.56	coeffcient	-0.215	1.053	0.182
				t-statistic	-0.384	1.341	
				p-value	0.701	0.182	
MSCI World	134	0.15	4.00	coeffcient	-0.265	0.815	0.239
				t-statistic	-0.540	1.182	
				p-value	0.590	0.239	
MSCI Emerging Markets	134	0.21	7.04	coeffcient	-0.853	2.091 *	0.086 *
				t-statistic	-0.992	1.732	
				p-value	0.323	0.086	

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.

Table 28: Test for the Mean Variance Efficiency of Stock Indices

Estimation for the regression $R_{pt} - R_{ft} = \alpha + \beta(R_{mt} - R_{ft}) + e_t$, where α describes how much the annual return of the Halloween strategy has exceeded the return of a corresponding index portfolio and β is a measure of volatility of a Halloween strategy in relation to the respective market indices. Regressions are based on annual observations over the period 1997-2007.

Country		α		β		F-statistic		p-value
Bulgaria	coefficient	**-16.717**	*	**0.810**	***	**27.444**	***	0.003
	t-value	-2.473		5.239				
	p-value	0.056		0.003				
Croatia	coefficient	12.934		0.393		1.098		0.322
	t-value	1.669		1.048				
	p-value	0.129		0.322				
Czech Republic	coefficient	6.585		**0.510**	**	**8.801**	**	0.016
	t-value	1.536		2.967				
	p-value	0.159		0.016				
Estonia	coefficient	**21.812**	***	**0.638**	***	**24.829**	***	0.001
	t-value	3.531		4.983				
	p-value	0.006		0.001				
Hungary	coefficient	**12.049**	*	0.285		1.796		0.213
	t-value	2.214		1.340				
	p-value	0.054		0.213				
Latvia	coefficient	8.453		**0.364**	*	**4.614**	*	0.069
	t-value	1.396		2.148				
	p-value	0.205		0.069				
Lithuania	coefficient	8.952		**0.318**	*	**4.209**	*	0.079
	t-value	1.799		2.052				
	p-value	0.115		0.079				
Poland	coefficient	**10.079**	**	0.214		2.000		0.191
	t-value	2.758		1.414				
	p-value	0.022		0.191				
Romania	coefficient	**-13.125**	***	**0.985**	***	**101.569**	***	<0.001
	t-value	-4.103		10.078				
	p-value	0.005		<0.001				
Russia	coefficient	**23.816**	*	**0.446**	***	**12.191**	***	0.007
	t-value	2.175		3.492				
	p-value	0.058		0.007				
Slovakia	coefficient	-1.970		**0.421**	*	**4.977**	*	0.053
	t-value	-0.298		2.231				
	p-value	0.773		0.053				
Slovenia	coefficient	-1.809		**0.691**	***	**23.888**	***	0.001
	t-value	-0.555		4.888				
	p-value	0.592		0.001				
MSCI Europe	coefficient	**8.106**	***	**0.389**	**	**9.941**	**	0.012
	t-value	3.443		3.153				
	p-value	0.007		0.012				
MSCI World	coefficient	**4.656**	*	**0.437**	***	**10.886**	***	0.009
	t-value	2.106		3.299				
	p-value	0.064		0.009				
MSCIEmerging Markets	coefficient	**11.658**	*	**0.255**	*	**4.654**	*	0.059
	t-value	3.169		2.157				
	p-value	0.011		0.059				

Notes: ***, **, and * indicate statistical significance for a two-tailed t-test at the one, five and ten percent level respectively.