“The holiday effect in Central and Eastern European financial markets”

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The holiday effect in Central and Eastern European financial markets

Abstract

This study investigates the holiday effect in 14 emerging Central and Eastern European (CEE) markets. The authors show that the holiday effect is present in the CEE region, with a number of countries showing abnormal pre-holiday returns. In addition to previous literature, we also document abnormal post-holiday returns. The pre-holiday effect is most pronounced in the earlier years of financial market operations, and its importance is declining over time. This suggests an improvement in market efficiency in the CEE markets since the opening of stock exchanges. New Year and Christmas produce the highest returns. Liquidity before holidays goes down.

Keywords: holiday effect, market efficiency, emerging markets.
JEL Classification: G14.

Introduction

The phenomenon of abnormal returns around public holidays is known as the holiday effect and has been well documented in the US and other developed and emerging markets. For instance, Lakonishok and Smidt (1988) study returns one day before and after holidays in the US and find significant abnormal returns before holidays. Post-holiday returns are insignificant until 1952 and positive and significant from 1952 to 1986. Ariel (1990) examines intraday market returns and documents a significant pre-holiday effect. Over the pre-holiday period stock prices increase and have a much higher frequency of positive returns, particularly in the last hour. Abnormal pre-holiday returns are documented across different sizes of companies (Pettengill, 1989) and across countries, e.g., the UK and Japan (Kim and Park, 1994), Hong Kong (McGuiness, 2005) and Spain (Menue and Pardo, 2004). Unlike some other anomalies, the pre-holiday effect seems to be persistent over time (Lakonishok and Smidt, 1988).

There is little research on the pre-holiday effect in CEE markets[1]. CEE countries are transitional economies and an important question is how efficient these markets are. These markets have only opened up in the 1990s after the collapse of the Soviet Block. This means that exchanges in these countries have been operating for less than 20 years and that an understanding of financial markets could be limited.

In this study, we use daily index data for the 14 CEE countries to analyze the presence and persistence of the holiday effect over time. In addition, we examine trading volumes to better understand stock return behavior before holidays. The main findings of the study are as follows. We find evidence supportive of a holiday effect in the CEE region for the pooled sample and for 10 out of the 14 CEE markets. We document significant both pre- and post-holiday abnormal returns. The holiday effect is driven by common holidays, such as Christmas, Easter and New Year, while returns around other holidays are insignificant. Further, we document that the pre-holiday effect, while still present, is weakening over time for most markets. This indicates that overall market efficiency has improved and is consistent with previous findings of Iorgova and Ong (2008). We find no significant decrease for the post-holiday effect, however. Additional analysis of stock turnover shows less trading activity before public holidays for most companies analyzed, consistent with the so-called "gone fishin' effect" (Hong and Yu, 2009).

This study provides new evidence on the existence of a holiday effect in CEE markets and contributes to the literature on the efficiency of emerging financial markets. The findings could be relevant to investors to inform their investment decisions.

The rest of the paper is structured as follows. Section 1 provides a discussion of previous literature and proposes a behavioral explanation for the holiday effect. Section 2 describes the data while section 3 discusses our findings. The final section concludes.

1. Background

1.1. Previous literature. According to the efficient market hypothesis (EMH) by Fama (1970), stock prices follow a random walk and past information cannot be used to predict the future. Therefore, there should be no abnormal returns on special occasions such as holidays, as these holidays are: 1) predetermined; and 2) contain no relevant information for stock prices. However, evidence against the EMH is growing, and numerous studies have documented return predictability (see Ang and Bekaert, 2007; and Campbell and Motohiro, 2006), including predictability around public holidays.

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[1] Tonchev and Kim (2004) are first to investigate a number of anomalies in the following markets: Czech Republic, Slovakia and Slovenia and find weak evidence for market anomalies using four and a half years of data.

Lakonishok and Smidt (1988) document significant returns on days before US public holidays. These pre-holiday returns are two to five times higher than returns before a weekend and 23 times higher than those on normal days. These results are confirmed by several other studies, such as Pettengill (1989) and Ariel (1990). Significant pre-holiday returns also exist in other markets. For example, Meneu and Pardo (2004) find significant pre-holiday effects in Spain; Cao et al. (2009) find significant pre-holiday effects in the New Zealand market; and Marrett and Worthington (2009) document pre-holiday effect in Australia. These studies all focus on developed financial markets.

A number of studies have also examined the post-holiday effect. Lakonishok and Smidt (1988) find insignificant post-holiday returns until 1952 and significant positive returns afterwards. However, Kim and Park (1994) document negative post-holiday returns for the UK, and Lee et al. (1990) for Korea and Singapore. Also, Tonchev and Kim (2004) show insignificant post-holiday returns for several CEE markets.

The magnitude and statistical significance of pre-holiday returns may vary on specific holidays. Returns prior to religious holidays tend to be higher than returns of other holidays. Chan et al. (1996) show significant pre-holiday effects before cultural holidays in Asia. More specifically, they show that in India there is a pre-holiday effect before Hindu holidays; in Malaysia there are significant returns before Islamic New Year and Vesak; Singapore sees abnormal returns before Chinese New Year; and in Thailand small companies have significant abnormal returns before Chinese New Year. In New Zealand most significant returns are before the Easter holidays (Cao et al., 2009). Bley and Saad (2010) show significant returns for the Middle Eastern religious holidays in the Middle East.

Several studies examine stock liquidity around public holidays. Meneu and Pardo (2004) analyze stock turnover of the five most traded companies in the Spanish stock market and find no significant difference between the pre-holiday and normal days.

1.2. Behavioral arguments for the holiday effect. One possible explanation for abnormal positive returns around public holidays comes from behavioral finance (Thaler, 1999). Kavanagh and Bower (1985) study the effect of happiness and sadness on human behavior and find that happier people tend to believe in more positive outcomes. This argument is supported by Hirshleifer and Shumway (2003) who suggest that the weather may have a psychological effect on investors' mood and how they perceive information. They empirically support this by establishing a link between the weather and stock market returns, where returns of 24.8% and 8.7% are documented on sunny and cloudy days respectively. This behavioral trait of investors may also explain the existence of the holiday effect, as investors' outlook can become more positive around public holidays.

2. Data

The sample contains 14 CEE countries: Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Serbia, Slovakia, Slovenia and the Ukraine. Price data for national stock indices are collected from Datastream for the period from January 1, 1991 to December 31, 2010. Table 1 provides a list of the countries and dates when index data become available. For two markets data are available from 1991 (Hungary and Poland), Slovakia and Czech Republic have data since 1993 and 1994, respectively, and Serbia has the least available data, starting from 2007. All other markets have opened in between.

Table 1. Sample countries

The table reports a list of the countries included in the sample. Specified dates indicate when data become available.

Market	Data available from	Market	Data available from
Bulgaria	October 20, 2000	Poland	April 16, 1991
Croatia	January 2, 1997	Romania	September 19, 1997
Czech Republic	April 6, 1994	Russia	September 1, 1995
Estonia	June 3, 1996	Serbia	December 25, 2006
Hungary	January 2, 1991	Slovakia	September 14, 1993
Latvia	December 31, 1999	Slovenia	March 31, 2006
Lithuania	December 31, 1999	Ukraine	October 3, 1997

We use closing prices of the national stock market index to calculate stock market returns, i.e.,

$$R_{it} = \ln(PI_{it}) - \ln(PI_{it-1}), \quad (1)$$

where R_{it} is the return on the stock market index of market i on day t and PI_{it} is the index level for market i on day t.

Holiday dates are gathered from a variety of sources. First, the 'Time and Date' website is used to create a list of holidays and their dates over time[1]. The website provides all public holidays for eight of the countries. For the other countries, we use websites of the national ministry of foreign affairs to collect the names and dates of official public holidays. In addition, we use national stock exchanges websites to check the public holidays and market closing dates for the holidays. Lastly, the Q++Studio website[2] provides news on changes and announce-

[1] http://www.timeanddate.com.
[2] http://www.qppstudio.net.

ments of public holidays. We search Q++Studio for any changes to public holidays, such as the introduction, removal or change of a public holiday[1].

We classify holidays that follow directly on to each other, such as Easter holidays (Good Friday and Easter Monday), as a single holiday. When a public holiday falls on a Monday, we use the last trading day (Friday) to compute the pre-holiday return. When a public holiday falls on a weekend then Monday becomes a day off for some of the holidays. In this case, Friday returns are considered to be pre-holiday and Tuesday returns become post-holiday returns. In some countries, such as Slovakia, the market closes for a long period during the New Year holiday. For example, index was closed starting from December 23, 2003 to January 7, 2004 (first trading day in 2004). In this case 'post-holiday' return is considered to be the 7th of January 2004.

3. Results

3.1. Non-parametric tests of the holiday effect. First, we perform a non-parametric χ^2 test following Ariel (1990), to analyze the pre- and post-holiday effect in CEE markets. We compute χ^2-statistics to test whether the proportion of positive pre- or post-holiday returns is significantly different from the proportion of positive returns on normal days. Specifically,

$$\chi^2 = \frac{2(O-E)^2}{E}, \quad (2)$$

where O is the actual number of positive pre- or post-holiday returns and E is the expected number of days with positive pre- or post-holiday returns.

Table 2. Non-parametric test

The table reports the proportion of positive returns for national indices of each market for the sample period of 1991-2010. Pre-holiday is the last trading day before the public holiday and post-holiday is the first trading day after the public holiday. The table further reports the χ^2-statistic to test significance of proportion of positive pre- and post- holiday returns.

Country	% of positive total days	% of positive pre-holidays	χ^2 - stat	% of positive post-holidays	χ^2 - stat
Bulgaria	49.81%	58.97%	2.63	51.95%	0.1
Croatia	47.17%	59.33%	9.42***	53.69%	2.7
Czech Republic	48.39%	57.25%	4.48	55.07%	2.6
Estonia	51.63%	66.00%	8.00***	58.59%	1.9
Hungary	50.11%	50.61%	0.02	63.80%	12.2***
Latvia	49.67%	55.26%	0.96	52.63%	0.3
Lithuania	50.98%	66.07%	10.01***	53.57%	0.3
Poland	45.60%	50.31%	1.55	63.29%	21.7***
Romania	49.64%	66.15%	7.14***	54.69%	0.7
Russia	50.85%	64.86%	8.58***	61.82%	5.2**
Serbia	43.95%	68.42%	5.18**	50.00%	0.3
Slovakia	44.41%	55.49%	9.07***	48.17%	1
Slovenia	50.00%	61.36%	2.27	58.14%	1.1
Ukraine	50.58%	56.00%	1.16	57.58%	1.9

In Table 2, we report the results for the non-parametric tests for the 14 CEE countries. For Croatia, Estonia, Lithuania, Romania, Russia, Serbia and Slovakia we find that the trading day before holidays has a significantly higher proportion of positive return days than normal days. Hence, we find evidence of a significant pre-holiday effect for half of our sample countries. We further observe a significant post-holiday effect (where the proportion of positive return days is greater than on normal days) for 3 countries (Hungary, Poland and Russia). This is a first indication of the presence of the holiday effect in the CEE region.

3.2. Returns around public holidays. As a more formal analysis of the pre- and post-holiday effect, we follow Cao et al. (2009) and use a dummy variable regression to evaluate pre- and post-holiday returns. For each market and for all markets jointly, we estimate the following equation:

$$R_t = \alpha_0 + \alpha_1 D_t^{PRE} + \alpha_2 D_t^{POST} + \varepsilon_t, \quad (3)$$

where D_t^{PRE} and D_t^{POST} are dummy variables that equal one for a day before and after a holiday respectively, and zero otherwise; α_0 captures the average return on normal days, and the pre- and post-holiday effects are captured by α_1 and α_2, respectively. Equation (3) is estimated by OLS and standard errors are computed using Newey-West's correction. For the pooled sample, standard errors are clustered by country (see Petersen, 2009).

[1] Holiday changes over time include Russian Constitution Day (December 12) which is replaced with Unity Day on 4th of November. Defender's Day (23rd of February) became a public holiday in 2002. Czech Republic introduced St. Wencesles as a new public holiday in 2000.

Table 3. Pre- and post-holiday returns

The table reports the results for equation (3). *PreHol* and *PostHol* are coefficient estimates on the pre- and post-holiday dummy variables. We report t-statistics calculated using Newey-West corrections. Pooled sample regression is estimated by OLS with standard errors clustered by country.

Country	Normal days	T-stat	*PreHol*	T-stat	*PostHol*	T-stat
Pooled sample	0.0003***	4.61	0.002***	4.31	0.0023**	2.66
Bulgaria	0.0003	0.808	0.005 ***	2.643	0.0007	0.320
Croatia	0.0001	0.434	0.003 ***	3.004	0.0006	0.417
Czech Republic	-0.0001	-0.463	0.0015	1.208	0.0034 **	2.163
Estonia	0.0004	1.024	0.0012	1.142	0.0048 **	2.564
Hungary	0.0005 *	1.821	-0.0001	-0.135	0.0036 **	2.286
Latvia	0.0004	1.237	0.0014	0.856	0.0007	0.400
Lithuania	0.0004	1.499	0.0020 **	2.527	-0.0004	-0.387
Poland	0.0006 *	1.752	0.0013	1.086	0.004 ***	2.727
Romania	0.0004	0.952	0.0032	1.515	0.0030	0.991
Russia	0.0004	0.737	0.0053 *	1.929	0.0073 **	2.220
Serbia	-0.0008	-1.392	0.0053 *	1.946	0.0017	0.645
Slovakia	0.0003	0.878	0.0009	0.593	-0.0028 **	-2.024
Slovenia	-0.0003	-0.613	0.0023	1.276	0.0015	0.901
Ukraine	0.0004	0.781	0.0058	1.251	0.0035	0.950

Notes: *** is 1% significance, ** is 5% significance, and * is 10% significance.

In Table 3, we report the results of equation (3). Normal day, pre- and post-holiday returns along with their robust t-statistic are reported for a pooled sample and for each country. In the pooled sample, we find significant evidence for both a pre- and post-holiday effect, where we find positive effects for both. When we break the sample down into specific countries, we find that Bulgaria, Croatia, Lithuania, Russia and Serbia exhibit positive and significant pre-holiday returns. The insignificance of the pre-holiday effect in Czech Republic, Slovakia and Slovenia is in line with Tonchev and Kim (2004). For the post-holiday returns, we find that the Czech Republic, Estonia, Hungary, Poland and Russia have positive and significant returns, while the Slovakia has negative significant returns. In contrast to Tonchev and Kim (2004), we find significant post-holiday returns for Czech Republic and Slovakia[1]. Overall, for 10 stock markets we find significant pre- or post-holiday effects and, in general, our findings confirm prior empirical evidence on the existence of the holiday effect.

Research by Chan et al. (1996) and Cao et al. (2009) shows that some holidays lead to higher returns than others. To test this, we extend equation (3) by including dummies for specific holidays,

$$R_t = \alpha_0 + \beta_j D_t^{j,PRE} + \gamma_j D_t^{j,POST} + \varepsilon_t, \quad (4)$$

where $D_t^{j,PRE}$ and $D_t^{j,POST}$ are dummy equals one for a day before/after a specific holiday j and zero otherwise; α_0 captures the average return on normal days, and the pre- and post-holiday effects for the specific holiday j are captured by β_j and γ_j, respectively.

Table 4. Specific holiday effect

The table reports results for the specific holidays in CEE stock markets (see equation (4)). The regression is estimated for the pooled sample by OLS and standard errors are clustered by country.

Holidays	Returns	T-stat
Christmas (pre-holiday)	0.006***	4.30
Christmas Orthodox (pre-holiday)	0.006	0.31
Easter (pre-holiday)	0.002**	2.49
Easter Orthodox (pre-holiday)	0.014	1.47
New Year (pre-holiday)	0.007***	2.99
Other holidays (pre-holiday)	0.0002	0.57
Christmas (post-holiday)	0.004*	1.76
Christmas Orthodox (post-holiday)	0.006	1.19
Easter (post-holiday)	0.003**	2.23
Easter Orthodox (post-holiday)	0.004	1.02
New Year (post-holiday)	0.008**	2.75
Other holidays (post-holiday)	0.001	1.29
Normal days (intercept)	0.0003***	4.65

Notes: *** is 1% significance, ** is 5% significance, and * is 10% significance.

In Table 4, we report results for equation (4) including return coefficient and robust (Newey-West) t-statistics[2]. From this table, we can observe that there is a significant pre- and post-holiday effect for three main holidays: Christmas, Easter and New Year.

[1] Since our methodology is similar to the methodology used by Tonchev and Kim (2004), the difference in the findings on the post-holiday effect could be attributed to the differences in the samples. In particular, we employ significantly longer time series compared to Tonchev and Kim (2004). For example, the sample in Tonchev and Kim (2004) includes observations for Czech Republic and Slovakia from January 1999 and for Slovenia from July 2000 and until June 2003 for all three markets.

[2] To conserve space we only report results for the pooled sample. Results for individual countries are available upon request.

This suggests that the holiday effect in CEE markets is driven by these three common holidays. Holidays celebrated exclusively in the region do not produce significant abnormal returns.

As a further robustness test, we follow Cao et al. (2009) and examine the persistence of the holiday effect over time. We test this by adding a time trend to equation (3), i.e.

$$R_t = \alpha_0 + \alpha_1 D_t^{PRE} + \delta_1 D_t^{PRE} \times t + \alpha_2 D_t^{POST} + \delta_2 D_t^{POST} \times t + \varepsilon_t, \quad (5)$$

where δ_1 and δ_2 capture the persistence of the pre- and post holiday effects, respectively.

Table 5. Persistence of the holiday effect

The table reports the results for equation (5). *PreHol* (*PostHol*) is the coefficient on the pre-(post-)holiday dummy variable and *PreHol Trend* and *PostHol Trend* capture the time trends. The table reports t-statistics (in parentheses) calculated using the Newey-West correction. The pooled sample regression is estimated by OLS with standard errors clustered by country.

Country	Normal days	*PreHol*	*PreHol trend*	*PostHol*	*PostHol trend*
Pooled sample	0.0003*** (4.62)	0.006*** (4.21)	-0.0003*** (-3.28)	0.003** (2.46)	-0.0001 (-0.59)
Bulgaria	0.0004 (0.92)	0.01 (1.50)	-0.0007 (-1.02)	0.003 (0.72)	-0.0003 (-0.51)
Croatia	0.0001 (0.44)	0.006** (2.31)	-0.0003 (-1.29)	0.005 (0.96)	-0.0005 (-0.99)
Czech Republic	-0.0001 (-0.47)	0.004 (1.28)	-0.0002 (-0.68)	-0.0004 (-0.11)	0.0003 (0.96)
Estonia	0.0004 (1.04)	0.008*** (2.68)	-0.0007*** (-2.71)	0.010* (1.64)	-0.0005 (-1.07)
Hungary	0.0005* (1.83)	0.005 ** (2.03)	-0.0004 ** (-2.15)	0.0006 (0.15)	0.0002 (0.78)
Latvia	0.0004 (1.21)	-0.0003 (-0.09)	0.0002 (0.44)	0.005 (1.18)	-0.0006 (-0.96)
Lithuania	0.0004 (1.56)	-0.001 (-0.49)	0.0004* (1.81)	0.001 (0.55)	-0.0002 (-0.80)
Poland	0.001* (1.77)	0.002 (0.56)	-0.0001 (-0.27)	0.008** (1.95)	-0.0003 (-1.11)
Romania	0.0004 (0.96)	-0.0008 (-0.12)	0.0004 (0.67)	0.014* (1.88)	-0.001 (-1.26)
Russia	0.0004 (0.74)	0.017** (2.09)	-0.001* (-1.75)	0.008 (0.87)	-0.0001 (-0.07)
Serbia	-0.0008 (-1.46)	0.003 (0.70)	0.0004 (0.37)	0.010 (1.02)	-0.002 (-0.80)
Slovakia	0.0003 (0.91)	0.004 (0.83)	-0.0003 (-0.82)	-0.003 (-0.75)	0.00005 (0.12)
Slovenia	-0.0003 (-0.61)	-0.0005 (-0.19)	0.001 (1.27)	0.003 (0.93)	-0.0003 (-0.49)
Ukraine	0.0004 (0.77)	0.021 (1.61)	-0.001 (-1.58)	0.011 (1.11)	-0.001 (-0.81)

Note: *** is 1% significance, ** is 5% significance and * is 10% significance.

In Table 5, we report the results for equation (5). For the pooled sample we find that, in addition to the existence of the pre-holiday effect, there is a significant negative time trend, i.e., the pre-holiday effect is decreasing. For the post-holiday effect, we also find that the post-holiday effect is present; however, although being negative, the time trend is insignificant. At the country-level we find that the pre-holiday effect is still significant in the Bulgaria, Croatia, Czech Republic, Estonia, Hungary and Russia. In total 9 out of 14 markets show negative trend coefficients. However, only Estonia, Hungary, Lithuania and Russia show significant decreases. For the post-holiday effect, we find that although most of the trend coefficients are negative, none of them are significant. Overall, the negative trend of the pre-holiday returns suggests that the effect is slowly decreasing, and that the markets in these countries may become more efficient.

3.3. Liquidity effects. To look deeper into what may cause the holiday effects, we consider the liquidity of stocks in these markets on pre-holiday days. As liquidity of indices cannot be assessed we use company-level data. Following Meneu and Pardo (2004), we analyze the trading patterns before holidays. We examine liquidity of individual stocks using turnover by volume for 6 countries: Czech Republic, Hungary, Poland, Russia, Romania and Slovenia[1]. For

[1] The other countries do not have enough data for any meaningful analysis.

each country, the five largest companies are selected and volume data are collected from Datastream[1]. We calculate turnover as the number of shares traded on a day divided by the number of outstanding shares. Following Meneu and Pardo (2004), normalized turnover by volume is calculated as:

$$DV_{it} = \frac{V_{it}}{AV_{it}}, \quad (6)$$

where DV_{it} is the normalized turnover for a stock i on a day t, V_{it} is the trading volume for stock i and AV_{it} is the average trading volume for stock i.

Table 6. Stock turnover

The table reports normalized stock turnover for normal days and pre-holidays. T-statistics are used to test the equality of means between normal days and pre-holidays.

Chez Republic					
Company	CEZ	ERS	KOM	STE	NWR
Normal days	0.9661	0.9715	0.9685	0.9113	0.9708
Pre-holiday	0.8792	0.8874	0.8766	0.8833	0.7821
t-statistic	1.266	0.959	1.184	0.309	1.636
Hungary					
Company	EGI	MMG	MTK	OTP	RIC
Normal days	0.9151	0.9419	0.9732	0.9575	0.9557
Pre-holiday	0.9329	0.9240	0.9786	0.9110	0.9865
t-statistic	-0.185	0.253	0.077	0.536	-0.373
Poland					
Company	KGH	PKA	PKB	PLK	TP
Normal days	0.9717	0.9577	0.9532	0.9794	0.9683
Pre-holiday	0.8398	0.9168	0.8602	0.8604	0.8425
t-statistic	1.678 *	0.423	0.986	1.820 *	0.163
Romania					
Company	BRD	TEL	TGN	TLV	SNP
Normal days	0.9147	0.8928	0.9075	0.9004	0.8602
Pre-holiday	0.8811	0.5517	0.6689	0.9269	1.2695
t-statistic	0.277	2.748 **	2.144 **	-0.217	-2.085 **
Russia					
Company	GAZ	GMK	LKO	SBE	RSF
Normal days	0.9954	0.9782	0.9767	0.8984	0.9814
Pre-holiday	0.7654	0.7690	0.7966	0.7947	0.8620
t-statistic	3.217 ***	2.602 **	2.390 **	0.705	1.173
Slovenia					
Company	KRK	MER	NOE	PET	TEL
Normal days	0.8763	0.7197	0.7263	0.7908	0.9288
Pre-holiday	0.7430	0.8911	0.8849	0.6275	0.8455
t-statistic	1.766 *	-0.745	-0.726	2.610 **	0.660

Note: *** is 1% significance, ** is 5% significance and * is 10% significance.

Table 6 presents the results of the stock turnover analysis. More specifically, normalized stock turnover is reported for normal days and pre-holidays for the five largest companies. T-tests are performed to examine the equality of turnover of normal days and pre-holidays. We test whether turnover is equal for normal days and pre-holidays. The results show that 23 out of 30 companies have lower volumes a day before holidays. This is consistent with Cao et al. (2009) and Meneu and Pardo (2004) who show that there is less trading before holidays. Significantly lower turnover can be seen in three Russian and Romanian companies, and two Polish and Slovenian companies. This is consistent with the "gone fishin' effect" (Hong and Yu, 2009).

Conclusion

This study examines the holiday effect in the emerging markets of Central and Eastern Europe for the period from 1991 to 2010. We use a sample of fourteen CEE countries to analyze pre-holiday and post-holiday returns. We additionally examine stock market returns around specific public holidays and the persistence of the holiday effect. Lastly, we evaluate stock liquidity before holidays.

[1] The chosen five largest stocks for each country make up a significant proportion of the total index capitalization. For example, the five Polish companies contribute 55% of capitalization of the total Polish market, while the Hungarian companies make up 96% of total market capitalization.

Our study confirms the presence of significantly positive pre- and post- holiday returns. The pre-holiday results are in line with e.g., Cao et al. (2009) and Meneu and Pardo (2004). The post-holiday results contrast the findings of Tonchev and Kim (2004), who employed significantly shorter time period for three of CEE markets, and Lee et al. (1990), who investigated developed markets in the 1980s; both of these studies find no significant post-holiday effect. Our study contributes to the existing evidence on the holiday effect as it provides new evidence on post-holiday stock market returns. Further analysis by specific holidays shows that the holiday effect in CEE markets is driven by abnormal returns around common holidays: Christmas, New Year and Easter. Pre-holiday returns decrease over time for most markets. We interpret this as CEE markets becoming more efficient. Company-level analysis shows that stock turnover decreases before holidays. Overall this study contributes to our understanding of the efficiency of CEE financial markets.

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