TESTING THE TURN-OF-THE-YEAR EFFECT ON BALTIC STOCK EXCHANGES

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ABSTRACT. This paper is testing the presence of the Turn-of-the-year effect on Baltic stock exchanges from 2000 to 2012. The results show that on index basis, the Turn-of-the-year effect was present on Baltic stock exchanges in all years. On the level of single stocks the effect varied by years and also by lists. In terms of single stocks, many stocks showed excess return on Baltic stock exchanges during the Turn-of-the-year period. The effect provided excess returns mostly on main list stocks, but not on secondary list stocks due to high bid-ask spreads.

1. INTRODUCTION

In this study, the authors tested the Turn-of-the-year effect on Baltic stock exchanges. The Turn-of-the-year (TOY) effect refers to the phenomenon that small stocks have unusually high returns during the period beginning on the last trading day of December and continuing through January. The effect occurs with amazing regularity, and is economically significant (Ritter 1988: 701). It is one of the most widely studied calendar anomalies in the world.

Calendar effects in general indicate the inefficiency of a market in certain periods of time. Investigating calendar effects has become a topical field of research in empirical finance (Sutheebanjard, Premchaiswadi 2010: 1). The purpose of this study is to determine the presence of the Turn-of-the-year effect on Baltic stock exchanges and whether it is possible to earn excess returns around the Turn-of-the-year period. Therefore, the Turn-of-the-year effect was investigated on index basis and on single stocks basis without and with transaction costs.

The presence of calendar effects is quite well investigated on the example of large markets, but not that thoroughly analyzed in the case of smaller markets like Baltic stock exchanges. Although, calendar anomalies have been previously analyzed on index basis in CEE markets (see e.g. Heininen and Puttonen (2008), Guidi et al. (2010), Stoica and Diaconasu (2011)), the novelty of this research is the single stock approach. According to the data presented in Hearn et al (2010:26-27), the average and median bid-ask spreads are two to three times higher in CEE countries as compared to countries in Western Europe. Therefore, the existence of calendar anomalies on index level, without considering any of transaction costs, does not allow saying, that there are profitable trading strategies based on those anomalies. This is the research gap current study is aiming to fulfil. The small size of Baltic Stock Exchanges enables authors to investigate the Turn-of-the-year effect on single stocks basis and cover the total market.

The paper is structured as follows. First, the paper reviews the theoretical background of calendar effects and especially the effects that are present around the Turn-of-the-year period. A brief literature review is followed by empirical research which investigates the data of the Baltic stock exchanges. Firstly, the data is analyzed on index basis, secondly on individual stocks level without transaction costs and thirdly on individual stocks level with transaction costs. The latter demonstrates whether the investors would have earned excess returns during the review period by using the Turn-of-the-year effect as a trading strategy on Baltic stock exchanges. We also investigate how bid-ask spread impacts the profitability of trading strategy based on the Turn-of-the-year effect.

2. LITERATURE REVIEW

The asset prices do not always fully reflect the real value of companies, and the presence of calendar effects in stock markets speaks against the weak form of efficient market theory. According to the duration of the effects, calendar effects can be divided into two groups: persistent effects and unstable effects. The Turn-of-the-year effect exhibits amazing persistency and occurs regularly in many different markets. According to the study of Jacobsen and Zhang (2010), this effect can be traced back by several hundred years.

The Turn-of-the-year period includes several calendar effects. A short list of possible effects that may affect stocks returns around the Turn-of-the-year includes following:

- January effect – stocks of small market capitalization companies outperform stocks of large market capitalization companies in January (Singal 2003: 23);

- End of the year effect – stocks' prices decline during the last trading days of the year and increase during the first trading days of the year (Clark, Ziemba 1987: 811);

- December effect – stocks of large market capitalization which have previously recorded positive growth rates since January to November, outperform stocks of small market capitalization in December, because investors tend to postpone the sales in order to postpone the taxes for a year (Singal 2003: 23);

- Turn of the month effect – on average, positive rates of returns occur only first half of the month (Ariel 1987);

- End of the week effect – stocks record weaker performance than average during Mondays and stronger performance than average during Fridays (Singal 2003: 40);

- Holiday effect – stocks' performance is significantly higher compared to the average during the pre-holiday trading days (Lakonishok, Smidt 1988: 423).

Some of these effects have the opposite impact on stock prices around the turn of the year. For example in case of December effect, investors postpone their trades into next year in order to deter income tax, which could reduce the Turn-of-the-year effect. The Turn-of-the-year effect is a well-recorded phenomenon of stock markets where the stocks of enterprises with small market capitalization earn relatively higher return when compared to the stocks of enterprises with big market capitalization on the last trading days in December and on the eight first trading days in January (Clark, Ziemba 1987: 811). The research on the Turn-of-the-year effect usually tackles with two questions: does TOY anomaly exist and if it does, what causes it.

The first evidence of calendar anomalies around the turn of the year was published already in 1970s (e.g. Rozeff and Kinney 1976). Early studies mostly used US data (e.g. Keim 1983, Reinganum 1983, Roll 1983). Later, many studies have been conducted with very broad international scope (Gutelkin and Gutelkin 1983, Agrawal and Tandon 1994, Yakob et al 2005, Darrat et al 2011). While earlier international studies mainly supported the existence of the TOY effect in different markets, later studies (Yakob et al 2005, Darrat et al 2011) provided mixed results.

Although the turn of the year effect has been studied globally several times, there are just a few researches which investigate calendar effects on Central and Eastern Europe markets. Guidi et al. (2010) investigated the weak-form market efficiency and calendar anomalies for Eastern Europe equity markets and claimed that some of these markets are not weak-form efficient and

an informed investor can make abnormal profits by studying the past prices of the assets in these markets.

Stoica and Diaconasu (2011) examined calendar anomalies on emerging Central and Eastern European stock markets and their findings confirmed the existence of the month of the year effect and January effect in Czech Republic, Croatia, Macedonia, Romania, Slovenia and Hungary. Furthermore, the anomalies registered in January are significant but the largest returns (although they are positive in January) are still not recorded in that month.

Heininen and Puttonen (2008) found that 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 average monthly return. Trading strategy based on the Halloween effect produces statistically significant abnormal returns in the Czech Republic, Estonia, Latvia, Lithuania and Russia. (Ibid)

Another stream of literature investigates the possible reasons behind the TOY effect. Four main possible reasons were brought out from the works of different authors. Chen and Singal (2004) claimed that the January effect is induced by income taxes. Ritter (1988) claims that the behaviour of the buy/sell ratio is consistent with the following interpretation: in order to realize losses for tax purposes, individuals sell stocks that have declined in price during December, but they do not immediately reinvest all of the proceeds from these sales in other stocks, however. Instead, in the aggregate they wait until January, when they invest in a broad spectrum of small stocks. This January buying may be augmented by cash infusions from year-end bonuses and from the sales of larger firms on which long-term capital gains are being realized. However, according to Thaler (1987), the international evidence suggests that while taxes seem relevant to the January effect, they are not the entire explanation. Thaler (1987) indicates that the January effect is observed in Japan where no capital gains tax or loss offsets exist, Canada had no capital gains tax before 1972, yet did have a January effect before 1972 and Great Britain and Australia have January effects, even though their tax years begin on April 1 and July 1, respectively. (Thaler 1987: 200)

Ng and Wang (2004) brought out that the activity of institutional investors, especially in terms of window dressing, around the end of the year causes the Turn-of-the-year effect. In general, taxes and institutional window dressing are considered as the main reasons for the effect, although there are papers available in which both reasons are refuted as well. For example Chen and Singal (2004) argue that there is not much support for the window dressing hypothesis and window dressing should occur more frequently than only in December. Sias and Starks (1997) research results suggest that the trading behaviour of individual investors is more important than the trading behaviour of institutional investors in causing the movement across the bid-ask spread at the calendar turn. Stocks that maintain higher levels of individual investor interest underperform stocks that maintain higher levels of institutional investor interest in late December and conversely outperform them in early January (Sias and Starks 1997: 1561). Ritter and Chopra (1989) indicated that high-beta small firms have higher excess returns than low-beta small firms in January, irrespective of whether the market return is positive or negative. This pattern is difficult to reconcile with the predictions of standard equilibrium asset pricing models, even when seasonal patterns in the betas of small firms are permitted. Ritter and Chopra (1989) finding that there is a positive relation between the excess return on small firms and beta, irrespective of the direction of the market in January, however, is consistent with the portfolio-rebalancing hypothesis. In particular, if there is buying pressure from individuals reinvesting the proceeds of December's tax motivated sales and from institutional investors shifting their portfolio allocations after year-end window dressing, then risky small stocks will outperform the market, irrespective of whether the market return is positive or negative. (Ritter and Chopra 1989: 164)

Jacobsen and Zhang (2010) study on the Turn-of-the-year effect was based on UK stock market historical data for a very long period. They observed a period of 300 years and found that the Turn-of-the-year effect is caused by holidays. Jacobsen and Zhang's (2010) work

differs from others as the review period is significantly longer and the authors of that paper claim that the effect has been present for centuries, furthermore, starting at the same time as Western civilization started to celebrate Christmas as a holiday. Anderson et al. (2005) examined people's behaviour at the end of the year and at the beginning of the year and claimed that the Turn-of-the-year effect can be caused by psychological factors. Anderson's et al. (2005) approach can be considered as one of the latest and most innovative, reckoning investors' psychological factors. Anderson's et al. (2005) carried out two well-known auction experiments in December and January and considered that the prices in the January were systematically higher than those in December, which provided significant support to judgement that psychological factors might be the reasons for January effect.

Although the Turn-of-the-year effect is an anomaly which has been studied extensively, there is still no consensus what the reasons behind it are, and does this anomaly even exist in every stock market.

3. DATA AND METHODOLOGY

The dataset used in this paper consisted of two subsets. First, the daily closing prices for three market indexes on Baltic markets from 16.12.1999 to 30.03.2012 were used. There are three main stock markets indexes for Baltic States: OMX Tallinn (OMXT), OMX Riga (OMXR) and OMX Vilnius (OMXV). The data covers 13 Turn-of-the-year periods, which in its turn makes 39 observations in case all three indexes are analysed together. These indexes include all the shares listed on the Main and Secondary lists of the Baltic exchanges (except for stocks, where one shareholder controls over 90% of shares) and are calculated as gross indexes to reflect the true performance of market. And the second subset of data, covering the same time period, contains daily closing prices for 87 companies that were listed on Baltic stock exchanges at the end on 2012. The stocks which were withdrawn from the market were excluded. In total there were 731 observations.

In order to test the Turn-of-the-year effect, index or stock return (R) during the Turn-of-the-year period is compared to index or stocks returns in other (non-overlapping) periods of the same length during the rest of the year using the following regression equation:

$$R_t = \alpha_t + \beta_t \cdot TY + \varepsilon_t \tag{3.1}$$

where α describes the average return during the period with the length of t days outside the event window, β describes the additional return during the Turn-of-the-year period compared to the rest of the periods and ε_t is the error term. TY is the dummy variable, which assigns the value of 1 if it is the Turn-of-the-year period and 0 during the rest of the periods. Basically, the similar methodology has been used e.g. by Chui and Wei (1998) and Kunkel et al 2003. In order to prove the presence of the Turn-of-the-year effect, the β must be different from 0 and statistically significant. Rate of returns were calculated by using formula:

$$R_{[2y]} = \ln\left(\frac{P_{+y}}{P_{-y}}\right) \tag{3.2}$$

where P_{+y} denotes the value of the index (or stock) y days after the turn of the year and P_{-y} is the value of the index (or stock) y days before the turn of the year.

As literature does not state the optimal length of the Turn-of-the-year period, event windows of different lengths (from one to ten days – i.e. from -1...+1 to -10...+10) were tested around the turn of the year to investigate the presence of TOY effect in stock market indexes. In case of single stock approach, the event window was set to be 10 trading days (event window -5...+5), corresponding to two trading weeks if public holidays are excluded.

In order to include transaction costs into the analysis, the stock return during the Turn-of-the-year period is calculated using the following equation:

$$r = \ln\left(\frac{P_{x+5}^{bid} \cdot (1-f)}{P_{x-5}^{ask} \cdot (1+f)}\right) \tag{3.3}$$

where P_{x+5}^{bid} is bid price five trading days after the turn of the year period, P_{x-5}^{ask} is ask price five trading days before the turn of the year and is broker's commission fee. As broker's commission varies by different brokers and countries, authors decided to use commission fee of 0.25% in the analysis. This was the lowest commission fee for individual investors in Estonia in 2003 (Karma and Sander 2003). In Latvia and Lithuania commission fees have been usually a little bit higher. Currently, it is possible to get even lower fees (around 0.2%) when trading in Baltic Stock Exchanges. However, considering the time period under consideration, a commission fee of 0.25% was chosen for all years and countries.

4. RESULTS OF EMPIRICAL ANALYSIS

Firstly, in order to examine the presence of the effect on the basis of indexes, the authors analyzed three Baltic indexes: OMXT, which describes the movements of stocks on Tallinn Stock Exchange; OMXR, which describes the prices of stocks on Riga Stock Exchange and OMXV, which reflects the prices of stocks on Vilnius Stock Exchange. Although there are no ETFs or future contracts that would reflect the movements of these indexes (indexes are not tradable), the index based analysis provides the first sign whether there could be any wide spread Turn-of-the-year effect on Baltic stock exchanges.

Table I. Additional return regarding Turn-of-the-year effect (t-statistics given in parentheses)

Event window	OMXT	OMXR	OMXV	Baltic (joint)
-1...+1	0,0184***	0,0067	0,0020	0,0090***
	(3,6109)	(1,0457)	(0,4104)	(2,8486)
-2...+2	0,0299***	0,0128	0,0166**	0,0198***
	(3,8204)	(1,3388)	(2,3445)	(4,1695)
-3...+3	0,0387***	0,0227*	0,0291***	0,0302***
	(3,8732)	(1,7405)	(2,9704)	(4,751)
-4...+4	0,0472***	0,0332**	0,0345***	0,0383***
	(3,8881)	(2,5151)	(2,7997)	(5,3088)
-5...+5	0,0471***	0,0367***	0,0347**	0,0395***
	(3,3428)	(2,6374)	(2,5096)	(4,936)
Event window	OMXT	OMXR	OMXV	Baltic (joint)
-6...+6	0,0485***	0,0364***	0,0410***	0,0419***
	(3,129)	(2,0019)	(2,6509)	(4,4565)
-7...+7	0,0485***	0,0392**	0,0415**	0,0431***
	(2,6247)	(2,0077)	(2,3919)	(4,0687)
-8...+8	0,0502**	0,0330*	0,0455**	0,0429***
	(2,5366)	(1,7402)	(2,3093)	(3,848)
-9...+9	0,0606***	0,0405*	0,0506**	0,0506***
	(2,9069)	(1,9173)	(2,4578)	(4,2464)
-10...+10	0,0705***	0,0358	0,0515**	0,0526***
	(3,2076)	(1,6007)	(2,2823)	(4,1349)

*** statistically significant at 0,01 level, ** statistically at 0,05 level, * statistically at 0,1 level.

Table I shows betas from the regression model (see Eq. 3.1) and their statistical significance in terms of all three indexes separately as well as all three indices jointly. From Table I we can see that calendar anomaly related to the turn of the year is the strongest in Tallinn Exchange (and the weakest in Riga Exchange), but statistically significant Turn-of-the-year effects exist in all the three markets. In Riga Stock Exchange the effect becomes statistically significant (on significance level 0.05) when the event window exceeded 8 trading days (event window -4...+4)

and turns insignificant when review period exceeded 16 trading days (event window -8...+8). In Vilnius Stock Exchange the effect is statistically insignificant only when the event window is a very short and in Tallinn Stock Exchange the effect is statistically significant in case of all event windows analysed.

Although according to Table I, the excess return, as a rule, increases jointly with the length of the event window; investors need to take into account opportunity costs which are associated with longer investment period (which is not analysed in this paper) and different risk indicators. Table II presents cumulative annualized returns what investors could earn, if the stock was purchased t trading days before the turn of the year (i.e. –t days) and sold t days after turn of the year (i.e. +t days) for the whole period (1999-2012).

Table II. Annualized cumulative return in Turn-of-the-year period and the share of not profitable periods on Baltic stock exchanges from 1999 to 2012.

Event window	Cumulative annualized rate of return			Share of unprofitable trades			
	OMXT	OMXR	OMXV	OMXT	OMXR	OMXV	Total
-1…+1	244,8%	94,7%	33,5%	23,1%	30,8%	23,1%	25,6%
-2…+2	199,0%	89,9%	112,7%	7,7%	30,8%	7,7%	15,4%
-3…+3	172,5%	103,2%	129,5%	0,0%	15,4%	15,4%	10,3%
-4…+4	157,2%	113,7%	114,7%	0,0%	7,7%	15,4%	7,7%
-5…+5	127,3%	100,4%	93,7%	0,0%	7,7%	7,7%	5,1%
-6…+6	110,4%	84,5%	91,6%	0,0%	0,0%	7,7%	2,6%
-7…+7	95,6%	78,3%	80,0%	15,4%	7,7%	7,7%	10,3%
-8…+8	87,5%	62,0%	77,5%	15,4%	15,4%	15,4%	15,4%
-9…+9	92,5%	64,3%	74,9%	15,4%	7,7%	15,4%	12,8%
-10…+10	95,0%	55,1%	71,5%	15,4%	30,8%	7,7%	17,9%

According to cumulative annualized returns, the most profitable investment period related to the Turn-of-the-year effect in Estonia is very short (2 trading days), whereas in Lithuania and Latvia it is somewhat longer (accordingly 6 and 8 trading days). However, in a real life transaction costs significantly reduce the annualized returns of very short term investment periods. For example, if transaction costs were 1% of investments on both buying and selling transactions, then the investor would make a loss in case of 2 trading days period both in Estonia and in other Baltic states while the best result would be achieved with the trading period of 8 days.

In addition to returns, investors should consider the risk related to the Turn-of-the-year effect investment strategy. If investors want to decrease the number of unprofitable trades, then they should have preferred trading periods from 6 to 12 days in Estonia, 10 to 14 trading days in Lithuania and 12 trading days in Latvia. In next sections, authors use the investment period of 10 trading days (event window -5...+5).

Table III. Additional return regarding Turn-of-the-year effect (single stock approach without transaction costs)

	Tallinn	Riga		Vilnius	
List		Main	Secondary	Main	Secondary
No. of stocks	15	5	26	18	15
Slope	0,056***	0,027***	0,030***	0,029***	0,043***
T-stat	8,253	2,701	3,506	4,475	4,166

*** statistically significant at 0,01 level

Secondly, in order to examine the presence of the effect on the basis of single stocks, the authors analysed single stocks in the main and secondary lists of Tallinn, Riga and Vilnius stock exchanges. At first, authors did not consider any transaction costs. The results clearly demonstrated the existence of the Turn-of-the-year effect on the main and secondary lists of

Baltic stock exchanges. Table III presents betas from the regression model (see Eq. 3.1) which on average are positive (and statistically significant) across different lists.

Without considering transaction costs, we cannot argue, that successful trading strategy could be formed based on TOY effect on Baltic Markets. However, we can argue based on the results presented in Table III that there are strong incentives to wait until the arrival of New Year before selling the stocks. This is especially true if the market price of the stock exceeds the cost basis. In that case postponing the sale of stocks for couple of days or weeks in order to push the transaction into the following year allows postponing the income tax liability for almost one year. Relying on the basic principle of time value of money, it can be stated that postponing tax liability is profitable for investors. In addition to this, postponing the selling might be profitable in the case of declining tax rates. For example, the income tax rate of capital gains in Estonia declined from 26% to 24% in 2005, to 23% in 2006, to 22% in 2007 and to 21% in 2008. Beginning with 2015, the income tax on capital gains in Estonia has set to decrease to 20% according to the current law (Tulumaksuseadus).

Thirdly, the authors included transaction costs to the analysis and, as expected, the results changed quite significantly. While betas (from Eq. 3.1) are still positive and mostly statistically significant (see Table IV), in case of constructing short term trading strategy absolute return should be considered.

**Table IV.** Additional return regarding Turn-of-the-year effect (single stock approach with transaction costs)

	Tallinn	Riga		Vilnius	
List		Main	Secondary	Main	Secondary
No. of stocks	15	5	26	18	15
Slope	0,058***	0,021*	0,043**	0,056**	0,200***
T-stat	7,620	1,737	2,134	2,551	5,075

*** statistically significant at 0,01 level, ** statistically at 0,05 level, * statistically at 0,1 level.

Average 10 day return around TOY period was positive in Tallinn and Vilnius (1,82% and 1,19% respectively), but negative in Riga (-2,01%). There are only 5 stocks listed in the main list of OMX Riga and the trading activity is also quite low. The average difference between returns without costs and with costs is about three percentage points of main lists stock of Baltic stock exchanges. In secondary lists stocks the same figure is many times larger.

It came out from Singal's research (2003) that the January effect appears in case of very small capitalization enterprises and that it is a long-term effect because trading small enterprises do not offer additional returns compared to average returns due to high trading expenses. The same happened in Baltic stock exchanges – due to big bid-ask spread, the stocks of secondary lists do not actually offer additional returns to investors during the Turn-of-the-year periods.

Even in the main lists some stocks exhibit negative after-cost 10 days return around the TOY period (see Fig. 1). Returns presented in Figure 1 show that average returns of main list stocks of OMXT (Estonia) were 1,8%. The worst performing OMXT main list stock average return around the TOY period was -1,4% across the review period (2000 to 2012) and best performing stock average return was 6,3%. The average probability that randomly selected stock would have earned positive return around the Turn-of-the-year period in OMXT was 49%. The average return of OMXR (Latvian Stock Exchange) main list stocks around the Turn-of-the-year period was -2% and the probability that randomly chosen stock would have posted positive return was only 29%. The worst performing OMXR main list stock average return was -4,4% around the TOY period across the review period and best performing stock respective figure was 3,1%. The average return of Lithuanian Stock Exchange main list stocks around the Turn-of-the-year period was 1,2% and the probability that randomly chosen stock would have earned positive return was 60%. The worst performing OMXV main list stock average return around the TOY period was -9,3% across the review period and best performing stock posted 8,1% return respectively.
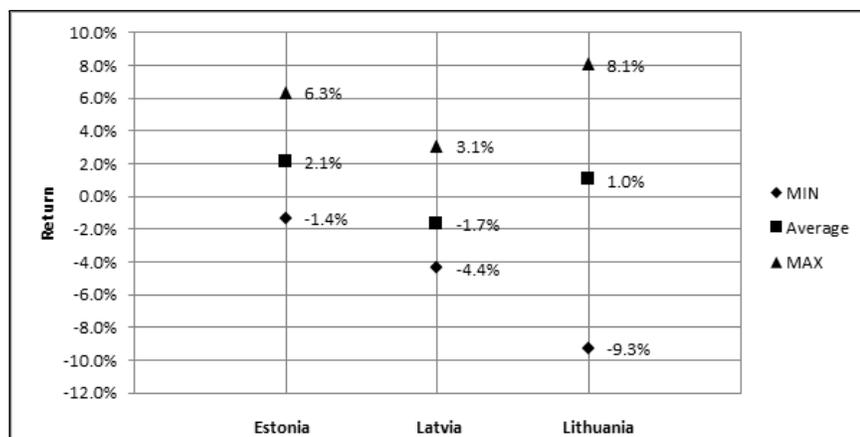
Figure 1. Main lists stocks returns of ten trading days around the Turn-of-the-year period.

Our result indicate that for constructing profitable trading strategy on TOY effect one should not choose stocks randomly, but instead use some criteria for selecting stocks with biggest return potential around TOY period. Previous literature has suggested the company size (Singal 2003), as well as beta (systematic risk) (Richter and Chopra 1989) as such criteria. In this paper bid-ask spread was chosen as the selection criteria. Next figure 2. shows the 10-day return around TOY period for equally-weighted portfolio consisting of five lowest bid-ask spread stocks in the Baltic market.
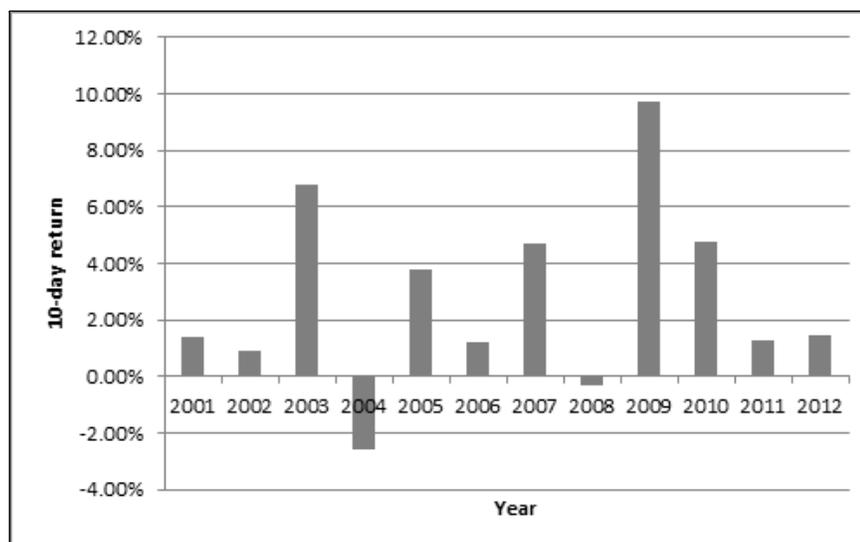
Figure 2. 10 day return around the TOY period of equally weighted portfolio consisting of five lowest bid-ask spread stocks in the Baltic market in 2000 to 2012.

Average 10-day return over the review period for such portfolio is 2,76% and only in two years out of 12 the return for portfolio was negative. While 2,76% may not sound as high, one should consider that this return is achieved investing just for 10 trading days. The potential of the strategy is more outstanding when comparing it with cash deposits interest rates, which are currently under 1% on annual basis.

To sum up, it can be stated that there is the Turn-of-the-year effect on Baltic stock exchanges but in order to use this anomaly for earning profit, one cannot choose stocks randomly, but instead select low bid-ask spread stocks from the main lists. While the clear evidence of the presence of the Turn-of-the-year effect is presented, the reasons of the effect remain unclear. The trading activity is relatively low in Baltic stock exchanges and there are stocks with very low trading activity and wide bid-ask spread in main lists, which may distort the results.

5. CONCLUSION

This paper investigated the Turn-of-the-year effect both on index basis and on single stock basis without and with transaction costs. On index basis, the calendar anomaly related to the turn of the year is the strongest in Tallinn Exchange and the weakest in Riga Exchange. However, the statistically significant Turn-of-the-year effects exist in all three markets. The best results (in respects of both returns as well as risk) were obtained with the event window of 8 to 12 days. On single stock basis, the results (using 10 day event window) demonstrated the existence of the Turn-of-the-year effect on the main and secondary lists of Baltic stock exchanges. The practical implication from this result is that investor who is considering selling his shares in the second half of December should postpone the transaction until the arrival of New Year. While also after-cost returns around TOY period were statistically significantly higher than during the rest of the year, our results suggest that in order to achieve positive return from short-term trading strategy based on TOY anomaly, one should carefully choose stocks entering the portfolio. In case of Baltic markets, main list stocks with low bid-ask spread show high potential for this strategy. The 10-day return of the portfolio consisting of 5 lowest bid-ask spread stocks was 2,76% on average during 2000 to 2012. Therefore, the Turn-of-the-year anomaly is suitable for creating profitable short-term trading strategy in Baltic markets.

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