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TURN-OF-THE-MONTH AND DAY-OF-THE-WEEK PATTERNS: TWO FOR THE PRICE OF ONE? THE ROMANIAN SITUATION

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Abstract. Numerous studies investigated patters in daily stocks returns, considering many possible manifestations, like the day-of-the-week (DOW) and turn-of-the-month (TOM)effects. This study analyses the possibility that they represent the same effect, but have been described as different patterns due to the methodologies employed. The results show that both effects are present on the Romanian market. However, a profitable DOW effect is linked to the existence of the TOM effect, while the TOM effect seems to be able to also create positive returns in an individual manner. Thus, investors should base their strategies mainly on the TOM effect.

1. Introduction

Calendar patterns have been a subject for many studies in financial literature because they are of interest for different categories of people invested in the workings of capital markets. For academics, they represent a conundrum because their existence and persistence on a market are difficult to explain in the context of a well-functioning market. However, for some practitioners these patterns represent a method of developing their investment strategies, in order to increase their profit.

The analysis of calendar patterns implies discovering different patterns in the price evolution of stocks. While there are many forms for these patterns, the most studied have been the ones involving the daily returns. The day-of-the-week effect (hereafter DOW) is probably the best known, specifically the weekend effect. Also, another highly visible pattern is the turn-of-the-month effect (hereafter TOM). These have been observed in many countries, both developed and emerging, in recent history. However, as far as I know, studies conducted on this subject have not addressed the issue of whether these patterns are two representations of the same effect visible in the evolution of daily returns.

This study tries to answer this question by analyzing the evolution of the Bucharest Stock Exchange, through one of its indexes: BET Index, between January 2000 and December 2017. In other words, I try to observe if the two patterns that are present on the market can be seen in the returns of the same days and, in the days when only one pattern should be present, its impact becomes negligible. This would suggest that there is only one effect present on the market, causing the two patterns and that they might not be calendar effects, like they were described in the literature.

The results on the Romanian market find evidence of the DOW effect on both Thursdays and Fridays and the TOM effect during the last two trading days of a month and the first two from the following month. The analysis shows that, while these effects are present simultaneously in

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certain days, they can also be seen individually in others. Thus, it can be concluded that both these patterns coexist on the market.

However, the impact of the DOW effect, in the days when it appears individually, is relatively small, determining low values for the average returns (about a third of the average return observed for only the TOM effect). This suggests that trading strategies developed based only on this effect might prove unsuccessful due to the trading fees. Moreover, if only Thursdays or Fridays are taken into account for trading (as opposed to both of them), presumably to reduce the amount paid in fees, the DOW becomes statistically insignificant.

These results might provide important insight for practitioners who could use them to create profitable investment strategies. Considering that daily average returns on the market are relatively small, the impact of the trading fees on net returns can be important. Thus, it might be important for investors to see which days could give them high profits, while, simultaneously reducing the number of trades. A possible way to achieve this goal, based on this analysis, is to trade in days when both the TOM and DOW effect are present. Moreover, if investors decide to include in their strategy additional days when only one of these patters is present, they should focus on days around the turn of the month, not on Thursdays or Fridays, as these have the potential for higher returns.

Academics can also benefit from this analysis whether they are advocates of the Efficient Market Hypotheses, proposed by Fama(1970), or supporters of the Behavioral Finance Theory, as presented in De Bondt and Thaler (1995) or Shiller (2003). For the first category, the results of this analysis could prove useful, as the evidence of predictability of stock returns is a sign of a low level of informational efficiency in its weak form. Moreover, observing the true form of the pattern present on the market (whether it is linked to calendar effects like the DOW and TOM, or it is a different single cause that creates the two effects) can be used in creating the strategy that "beats the market".

The second category of academics might use this analysis in their pursuit of trying to describe and explain the investors' behavior. If both DOW and TOM are present individually on the market, it would suggest that indeed investors' behavior is influenced by multiple calendar biases (over-optimism on Fridays, over-pessimism on Mondays, trading decisions based on end-of-the-month paydays, etc.). However, if there is only one cause for the existence of multiple patterns, it might show that investors' behavior is influenced by a single factor. This, in turn, could suggest a more rational decision-making process or, at least, in would show the necessity of discovering that one important factor.

The rest of the article is structured as follows. Section 2 reviews some of the financial literature existent on this subject. Section 3 describes the methodology used in the analysis, while section 4 presents the database. Section 5 discuses the results of the study and section 6 concludes.

2. Literature review

Calendar patterns have been investigated throughout financial literature in many forms. Some studies take into account daily seasonality in returns (Thaler 1987a) while others are more concerned with the intraday evolutions (Thaler, 1987b;McInish and Wood, 1992). Other articles consider that a predictable evolution can be observed in certain months (e.g. the January effect, Dragotă and Ţilică, 2014; Ţilică, 2014) or in certain weeks of the year (e.g. the holiday effect, Thaler 1987b). These patterns have been studied primarily in returns, however other market characteristics have been considered (Rossi, 2015; Patel and Sewell, 2015).

However, daily seasonality in returns is, probably, the most common studied phenomenon. The DOW effect is one of its forms (Doyle and Chen, 2009). It implies that the average daily returns in one or more of the days of the week is, consistently, positive or negative, thus making it predictable. Another form of this seasonality is the TOM effect that states that average daily returns at the turn of the month are, typically, higher than the ones from the rest of the month (Ţilică, 2015).

The DOW effect has been investigated, at first, in developed markets. Keim and Stambaugh (1984) analyzed the S&P Composite Index for a period of 55 years. The US market showed a Monday effect, in the form of a negative return, which persisted through the 5 subsequent periods the analysis was made. Kiymaz and Berumen (2003) analyzed 5 developed markets (Canada, Germany, Japan , UK and US)for a period of 14 years, starting 1988. They observed that both the mean and the variance of daily returns showed a seasonality on the US market, whereas the other markets did not present these effects.

In time, the analysis extended in other geographical regions. Brooks and Persand (2001) studied 5 Asian countries. Thailand, Malaysia and Taiwan showed the presence of the DOW effect. However, its impact diminished when the market risk was taken into account. Alagidede (2008) investigated 7 countries in Africa. In three of them, the DOW was discovered either in mean or variance. However, the influence of the market risk reduced the effect in South Africa, but this is not the case for Zimbabwe and Nigeria. Apolinario et al. (2006) studied 13 European countries, including the emerging stock market of the Czech Republic from July 1977 to March 2004. They studied the seasonality both in mean and in volatility, using both symmetric and asymmetric models. While it appears that the DOW effect is not present in mean, there are signs for an abnormal volatility for most countries.

Ajayiet al. (2004) analyzed countries from Central and Eastern Europe (CEE) starting at the opening of their markets until 2002. They found evidence of the DOW effect in Estonia, Lithuania, Russia and Slovenia, but it appeared in different days across these countries. The other countries, including the Romanian market, did not have a visible pattern. Tudor (2006) obtained the same results for Romania between 2000-2005. Guidi et al. (2011) investigated some countries from the same region (CEE), between 1999 and 2009, taking into account the moment the countries had their EU accession. In the pre-accession period, several countries presented evidence of the DOW effect (Poland, the Czech Republic, Hungary and Slovenia). However, only the Slovenian market retained the pattern after the inclusion in EU. Other countries included in the article did not show sign of this anomaly (Bulgaria, Romania, Slovakia).

The evolution of the Romanian market in the pre-crisis and post-crisis period was also studied by Diaconasu et al. (2012) and Hourvouliades and Kourkoumelis (2009). The former reported a positive Thursday and Friday effect in the pre-crisis period, but no effect during the global financial crisis. However, the latter did not observe the presence of the DOW effect both before and after the crisis.

The analysis of the TOM effect has had a similar geographical development, starting with the US and other developed markets and leading to other emerging ones. Among the first studies on this subject were Lakonishok and Smidt (1988) and Thaler (1987b). They studied the US market and found that the average returns from the last trading day of one month and the next three from the following month are consistently higher than the ones from the rest of the month. The same market is investigated by Henzel and Ziemba (1996). They show that trading based on this effect can lead to a profit. Sharma and Narayan (2014) show that the size of the companies and their location is a factor that influences this pattern, by analyzing both the mean and volatility of returns.

Some papers analyze other markets. McConell and Wu (2008) study 35 countries and find the presence of the TOM effect in most of them. They prove that this pattern is not the result of the month-end buying pressure. Kunkel et al. (2003) use both parametric and non-parametric tests to investigate this effect in 19 countries and show that 15 of them are affected by it. Ţilică (2015) takes into account the evolution of the Romanian market and shows that the pattern is present on the market.

The literature has proposed for the TOM effect three posible explanations. Ogden (1990) and Booth et. al (2001) show that the receiving of different cash-flows (wages, dividends) at the end of the month could lead to higher volumes of trading, thus increasing the returns in this period. Nikkinen et al. (2007) and Jalonen et al. (2010) suggest that the announcement of important macroeconomic news at the beginning of the month could be the explanation for this effect. Thaler (1987b) provides the third explanation in the form of "window dressing", meaning that managers of large funds want to increase the value of their portfolios at the end of the month, before presenting them to their clients. Thus, they would sell the stocks with high loses and buy the ones with high profits.

3. Methodology

This article studies if the TOM and DOW effects are present on the market. And, if both of them are observed, it investigates if they appear only on the same days, thus making them representations of the same effect, or if they also have an impact in different days, which would lead to the conclusion that they are caused by different causes.

The first step is to determine the daily returns, based on the value of the index, as shown in equation 3.1:

$$R_t = \frac{P_t}{P_{t-1}} - 1 \tag{3.1}$$

where P_t and P_{t-1} represent the values of the index in day t and day $t-1$, respectively.

Based on these returns, dummy variables are used to investigate whether the DOW effect is present on the market, as shown in equation 3.2 and if the TOM is visible, as shown in equation 3.3.

$$R_t = \sum_{j=1}^{5} \alpha_j D_{jt} + \varepsilon_t \tag{3.2}$$

where Rt represents the daily return, D_{1t} to D_{5t} represent dummy variables such that $D_{1t} = 1$ if day t is Monday and 0 otherwise and so forth. α_1 to α_5 are coefficients that represent the average returns from Monday to Friday and ε_t is an error term.

$$R_t = \alpha + \beta \times D_{1t} + \varepsilon_t \tag{3.3}$$

where R_t represents the daily return, D_{1t} represents a dummy variable that is 1 if day t is a day at the turn-of-the-month and 0 otherwise. β represents the average returns for the days at the turn of the month and α represents the average returns for the other days and ε_t is an error term.

All the results are tested for serial correlation using Ljung-Box statistic (Box and Pierce, 1970). Also, they are tested for heteroskedasticity using both ARCH LM test (Engle, 1982) and White's test (White, 1980). If both serial correlation and heteroskedasticity are present, the residuals are corrected using the Newey-West correction (Newey and West, 1987) or, if only heteroskedasticity was observed, using the White correction. These tests and corrections are performed also for the results of the equations that follow.

If any of the coefficients for the dummy variables in equation 3.2 is statistically significant then the DOW effect is present on the market in that day, so there is a seasonality in returns. Similarly, if the β coefficient is statistically significant then the TOM effect is visible on the market.

Based on the previous results, it is investigated if both DOW and TOM patterns are present in the same days or in different ones, as shown in equation 3.4.

$$R_j = \alpha + \beta_1 \times D_{wt\ j} + \beta_2 \times D_{w\ j} + \beta_3 D_{t\ j} + \varepsilon_j \tag{3.4}$$

where R_j is the daily return, D_{wtj} represents a dummy variable that is 1 if in day j both the DOW and TOM are present and 0 otherwise, D_{wj} represents a dummy variable that is 1 if in day j the DOW is present, but TOM is not and D_{tj} represents a dummy variable that is 1 if in day j the DOW is not present, but TOM is visible. α represents the average return for the days where both DOW or TOM are not present, β_1 is the average returns in days with both patterns, β_2 is the average returns in days with only DOW effect and β_3 is the average returns in days with only TOM pattern.

If β_1 is statistically significant then, in some days, both DOW and TOM patterns have a visible impact on returns. If either β_2 or β_3 are statistically significant then, in other days, one of the patterns is present. In other words, one of the patterns is observed individually, meaning that it forms a separate effect.

4. Database

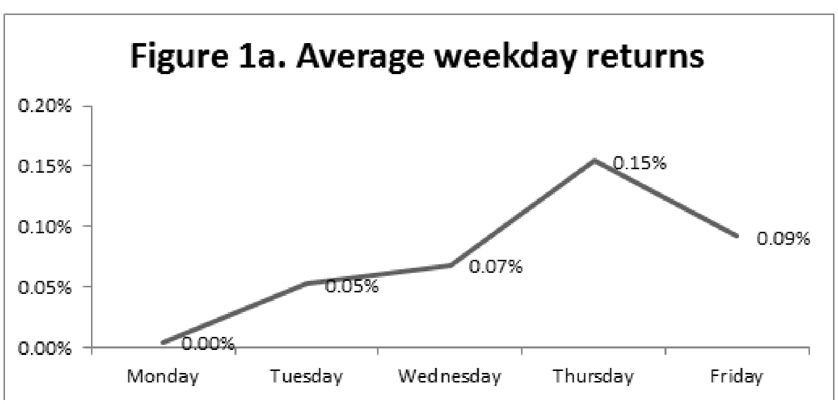
The previously presented methodology is employed on the Bucharest Stock Exchange, through one of its indexes, the BET index. I chose this index because it is based on the 10 most liquid stocks on the market, which means that it can be a good proxy for the market because it incorporates its movements (through the high number of transactions and volume) and because the constituents are from different industry sectors. Thus, the results should not be specific to a certain sector, but they may be generalized to the market. Also, this index is one of the indexes which has been calculated for a longer period of time. Thus, the analysis period is January, 5th, 2000 - December, 29th, 2017, containing 4497 observations. Based on the values of this index, I determined the daily returns. Some descriptive statistics for the returns are presented in Table I. Additional information can be found in Appendix 1, including some statistics regarding the dummy variables used in the analysis.

Table I. Descriptive statistics

Average	Median	Maximum	Minimum	Standard deviation	Skeweness	Kurtosis
0.07%	0.06%	11.14%	-12.29%	0.0155	-0.2558	83.846

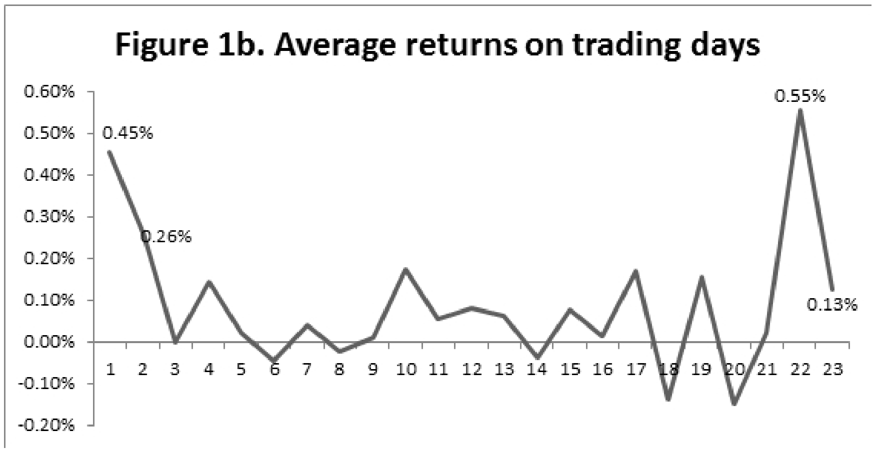
Source: own calculation

From these returns, the daily average returns were determined based on the days of the week and on the number of the trading day in the month. This provides a preliminary view for the existence of the DOW and TOM effects on the Romanian market. Figure 1a presents the average daily returns for each day of the week.



Source: own calculation

Figure 1b. presents the values of the average daily returns for every trading day in a month, starting with the first trading day and ending with the last one in a month (which will be the 22nd or 23rd, depending on the length of a month).



Source: own calculation

These preliminary results show that it seems that the average returns on all weekdays, with the exception of Monday, are positive, though not very high (Figure1a). Similarly, Figure 1b provides evidence that, at the beginning and end of the trading month, the daily returns appear to be higher than the ones recorded inside the trading month. Thus, it seems that the DOW and TOM effect are visible on the market. Further tests will show if these results are also statistically significant.

5. Results

The methodology is employed on the daily returns of the BET Index. Because the exact form of the TOM effect varies in financial literature, three possible patterns were tested. Thus, I considered that the period at the turn of the month consists of four days (in accordance with previous literature), which are divided as follows. In the first case, it consists of the last trading day from a month and the next 3 days from the following month. This is the first form observed for this pattern by Lakonishok and Smidt (1988). In the second case, it starts with the last 2 days from a month and the next 2 days from the following month. In the last case, the patterns consists of the first 4 trading days from the month. These two forms were chosen based on the results of the preliminary analysis, presented in Figure 1b.

The results obtained for testing the presence of the DOW and TOM effects on the market, as in equation 3.2 and 3.3 are shown in Table II and Table III, respectively. Additional information regarding the corrections used to obtain these results are presented in Appendix 2.

Table II. DOW effect

Effect	variable	coefficient	probability
	D_1	0.00%	0.9386
DOW effect	D_2	0.05%	0.3085
$R^2 = 0.001009$	D_3	0.07%	0.1616
	D_4	0.15%	0.0027
	D_5	0.09%	0.0746

Source: own calculation

The results in Table II show that the DOW effect is present on the Romanian market on Thursdays and Fridays. Both days have positive average returns, but the one from Thursday is almost twice the value of the one from Fridays. Also, the returns from both days are statistically significant at a 10% level of significance, but at a 5% or 1% level of significance, Friday returns become insignificant. For the rest of the analysis, the DOW effect is considered to be present in both days.

Table III. TOM effect				
Effect	variable	coefficient	probability	R^2
$TOMeffect_1$(-1;+3)	constant	0,03%	0,2226	0.002943
	D tom	0,21%	0,0009	
$TOMeffect_2$(-2;+2)	constant	0,02%	0,4189	0.004738
	D tom	0,27%	0,0000	
$TOMeffect_3$(0;+4)	constant	0,04%	0,1208	0.001783
	D tom	0,17%	0,0042	
Source: own calculation				

Table III shows that the TOM effect is present in the evolution of the BET Index and it seems that the second form is the most appropriate one from the ones tested to describe it, namely the turn of the month period consists of the last 2 trading days from a month and the first 2 from the next one. This is the form that is used in the following analysis.

The level of R2 is low for all the tested forms of the TOM and for the DOW, but the purpose of these regressions was to observe if the effects are present on the market, not to find determinants of the return. Thus, this low level is expected.

Further, equation 3.4 was used to test if the DOW and TOM effect appear simultaneously on the market or if, in certain periods, only one of them is present. Because the DOW is present in 2 days, namely Thursday and Friday, the simultaneous presence of TOM with DOW was tested three fold: first the appearance of TOM with the DOW from day 4 (Thursday), then with DOW in day 5 (Friday) and, finally, with DOW from both days 4 and 5 (Thursday and Friday). The results are shown in Table IV. Additional information regarding the corrections used to obtain these results are presented in Appendix 2.

Table IV. DOW and TOM simultaneous effects			
	variable	coefficient	probability
Model1.DOW(day4)-TOM	constant	0,00%	0,8840
$R^2 = 0.005348$	D_{w4t}	0,37%	0,0006
	D_{w4}	0,09%	0,1154
	D_t	0,27%	0,0002
Model2.DOW(day5)-TOM	constant	0,01%	0,6858
$R^2 = 0.005048$	D_{w5t}	0,19%	0,0751
	D_{w5}	0,05%	0,4119
	D_t	0,30%	0,0000
Model3.DOW(day4,5)-TOM	constant	-0,02	0,5873
$R^2 = 0.005649$	D_{w45t}	0,26%	0,0016
	D_{w45}	0,10%	0,0324
	D_t	0,31%	0,0001
Source: own calculation			

The results show that for all three models, the days in which both DOW and TOM is present have statistically significant average returns. This conclusion is not surprising considering that both patterns determine positive average returns on their own. However, the average return obtained in these days in model 1 is the highest compared to the other two.

The results also show that, in the Thursdays and Fridays, taken individually (model 1 and 2), that do not also have the impact of the TOM effect, the DOW effect almost disappears by becoming statistically insignificant. This means that, if an investor wants to take advantage of the higher mean return obtained in model 1 for days with both DOW and TOM effects, than he cannot also benefit from the DOW effect from the other days. Thus, the existence of a profitable DOW effect can be linked to the period around the turn of the month.

However, when Thursdays and Friday are taken together (model 3), the DOW pattern is significant, but with a very low average return. In other words, it seems to be necessary to invest both on Thursday and on Friday to be able to obtain a profit. However, this profit will be quite low, especially considering that the returns do not take into account the trading fees. At the same time, the return obtained in this model for the days with both patterns is about one third lower than the one from model 1.

Additionally, for all cases, in the days that are at the turn of the month, but are not on Thursday and Friday, the average returns are positive and statistically significant. Moreover, they are around three times higher than the ones obtained for the Thursdays and Friday, which are not impacted by the TOM. This shows that the TOM effect is visible on the market also in other weekdays. Thus, its evolution is not linked to the days of the week.

6. Conclusion

Calendar anomalies have been studied, both on developed and emerging markets, in numerous articles in financial literature. They appear both as pattern in the evolution of returns, considered daily, intra-daily, monthly, or in the evolution of other market characteristics (volatility, number of trades, trading volume, etc.).

This article studies the evolution of daily returns on the Bucharest Stock Exchange between 2000 and 2017. The results show that both the DOW and TOM effects are present on the market in this period. The DOW effect appears in the form of positive average returns on Thursdays and Fridays. The TOM effect determines positive returns in the last 2 trading days from a month and the first 2 from the following month.

Additionally, this study investigates if these patterns appear in the same days during the analysed period, which would mean that the market is influenced only by a single effect, but the methodology of analysis created two separate patterns. The results show that the TOM effect maintains a visible impact on the market, even when the influence of the days with both effects is separated. However, in a similar situation, the impact of the DOW effect decreases, until the average return, although still positive and significant, has a low value (when the DOW effect is considered simultaneously in Thursdays and Fridays) or it even becomes insignificant (when the DOW effect is considered separately in these days).

These results show that it would be hard for investors to obtain profit if their investment strategies would be based only on the DOW effect, in the days not at the turn of the month. However, if they take into account both patterns, they might be able to have profitable portfolios, provided that they maintain their trading fees at a sufficiently low level. Another idea would be to maintain their trades at a minimum number so that the amount paid as trading fee is minimum. For this, investors should choose to trade on the Thursdays which are also at the turn of the month.

The trading fees are relatively high on the market, as seen in Appendix 3, so, in order to benefit from these effects, investors should have high value portfolios (to have access to lower trading fees) and/ or opt for intraday transactions to further lower their fees. Thus, choosing, for example, to buy when the market opens on a Thursday, at the turn of the month, and selling in the same day, near the closing of the market might be a successful strategy. If they would try to benefit from the DOW effect from both Thursdays and Fridays, both at the turn at the month, as the results showed the chance to obtain higher returns (see Table IV), investors might register loss, as this strategy consists in a higher number of transactions.

The results of this study suggest that the existence of a profitable DOW effect can be linked in a certain way to the existence of the TOM effect. However, the same cannot be said for the TOM effect, which seems to also exist in an individual manner on the Romanian market. As future directions of study, it would be interesting to see if the evolution of these patterns is the same during periods of market decline (financial crisis) and market increase. Also, other markets should be taken into account to observe if these findings can be generalized to the evolution of emerging markets or, even, developed ones.

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Appendix 1

Table 1.1. Descriptive statistics for the variables used to test the presence of the TOM and DOW effects

Variables	RETURN	D1	D11	D12	W1	W2	W3	W4	W5
Mean	0,0748%	0,1917	0,1917	0,1917	0,1948	0,2017	0,2015	0,2015	0,2006
Median	0,0566%	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
Maximum	11,1427%	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000
Minimum	-12,2929%	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
Std. Dev.	0,0155	0,3937	0,3937	0,3937	0,3961	0,4013	0,4011	0,4011	0,4005
Skewness	-0,2557	1,5665	1,5665	1,5665	1,5413	1,4869	1,4886	1,4886	1,4955
Kurtosis	11,3740	3,4541	3,4541	3,4541	3,3755	3,2108	3,2159	3,2159	3,2365
Jarque-Bera	13188,33	1877,96	1877,96	1877,96	1806,84	1665,28	1669,53	1669,53	1686,73
Probability	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
Sum	3,3634	862,0000	862,0000	862,0000	876,0000	907,0000	906,0000	906,0000	902,0000
Sum Sq. Dev.	1,0750	696,7690	696,7690	696,7690	705,3582	724,0672	723,4703	723,4703	721,0785
Observations	4497	4497	4497	4497	4497	4497	4497	4497	4497

Return represents the daily return of the index, D1 is the dummy variable used to test the existence of the TOM effect in the first form (last trading day from a month and the following 3 trading days), D11 is the dummy variable used to test the existence of the TOM effect in the second form (last 2 trading days from a month and the following 2 trading days), D12 is the dummy variable used to test the existence of the TOM effect in the third form (the first 4 trading days from a month), W1, W2, W3, W4 and W5 are the dummy variables used to test the presence of the DOW effect.

Table 1.2. Descriptive statistics for the variables used to test the simultaneous presence of the TOM and DOW effects

Variables	Model 1.			Model 2.			Model 3.		
	DW4T	DW4	DT	DW5T	DW5	DT1	DWT	DW45	DT2
Mean	0,0414	0,1601	0,1503	0,0394	0,1612	0,1523	0,0807	0,3627	0,1110
Median	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
Maximum	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000
Minimum	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
Std. Dev.	0,1991	0,3667	0,3574	0,1945	0,3678	0,3594	0,2724	0,4808	0,3141
Skewness	4,6066	1,8538	1,9569	4,7379	1,8425	1,9351	3,0784	0,5712	2,4773
Kurtosis	22,2206	4,4365	4,8293	23,4478	4,3950	4,7447	10,4762	1,3263	7,1368
Jarque-Bera	85126,78	2962,26	3497,06	95168,06	2909,14	3376,96	17575,60	769,45	7806,19
Probability	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
Sum	186,0000	720,0000	676,0000	177,0000	725,0000	685,0000	363,0000	1631,0000	499,0000
Sum Sq. Dev.	178,3069	604,7231	574,3820	170,0334	608,1165	580,6582	333,6985	1039,4590	443,6295
Observations	4497	4497	4497	4497	4497	4497	4497	4497	4497

Model 1: DW4T represents a dummy variable that is 1 if in day 4 both the DOW and TOM are present and 0 otherwise, DW4 represents a dummy variable that is 1 if in day 4 the DOW is present, but TOM is not and DT represents a dummy variable that is 1 in the days when the DOW is not present, but TOM is visible.

Model 2: DW5T represents a dummy variable that is 1 if in day 5 both the DOW and TOM are present and 0 otherwise, DW5 represents a dummy variable that is 1 if in day 5 the DOW is present, but TOM is not and DT1 represents a dummy variable that is 1 in the days when the DOW is not present, but TOM is visible.

Model 3: DWT represents a dummy variable that is 1 if both the DOW (either in day 4 or 5) and TOM are present and 0 otherwise, DW45 represents a dummy variable that is 1 if in day 4 or day 5 the DOW is present, but TOM is not and DT2 represents a dummy variable that is 1 in the days when the DOW is not present, but TOM is visible.

Appendix 2. Probabilities of tests used to determine if serial correlation and/or heteroskedasticity is presentand the corrections used in these cases

Test	Regression for :						
	DOW	TOM1	TOM2	TOM3	DOW4-TOM	DOW5-TOM	DOW4,5 -TOM
Ljung-Box	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ARCH LM	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
White test	0.1551	0.9584	0.3035	0.6399	0.5992	0.5618	0.5137
Used correction	Newey-West	Newey-West	Newey-West	Newey-West	Newey-West	Newey-West	Newey-West

DOW represents equation 3.2, used to test the presence of the DOW effect,

TOM1, TOM2 and TOM3 represent equation 3.3 used to test the presence of the TOM effect in three forms,

DOW4-TOM, DOW5-TOM and DOW4,5-TOM represent equation 3.4 used to test the simultaneous presence of the DOW and TOM in day 4, day 5 and days 4 and 5, respectively.

Appendix 3. Examples of trading fees for some intermediaries on the Bucharest Stock Exchange

Intermediary	Fee interval
ALPHA	0.6%
BCR	0,5%- 1%
BT	0,4%-0,8%
TRADEVILLE	0,3%-0,65%
BRK FINANCIAL GROUP	0.3%-0.6%
IFB FINWEST	0.8%-1.5%
ESTINVEST	0,5%-0,8%
PRIME TRANSACTION	0.39%-1%

These fees vary depending on the traded volume or the value of the whole portfolio an investor has brokered by the intermediary. Thus, a higher value leads to a lower level of fees. Additionally, most intermediaries offer to lower even further (even to its half) the demanded fee for intraday transactions.