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Stock market anomalies: the day of the week effects, evidence from Borsa Istanbul

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Abstract

This study was conducted to investigate the market anomalies in the Borsa Istanbul Index (BIST). The scope of this study is to examine the Monday effects in BIST that are stock index of Turkey with an data set that contains daily stock prices between 02.01.2010 and 22.10.2014. The stock returns of the 289 companies were calculated according to the daily historical stock prices of companies. These returns were classified based on the sectors, and statistically analysed if the days of the week had any effects on Monday when the daily stock returns of Monday were fixed constant. The findings showed that the stock returns on Monday were affected by the other days. These effects were mostly negative, and varied according to the stocks and sectors. Thursday and Friday had the highest effect, whereas Tuesday had the least effect on the stocks. The results show that the stock market in Turkey has market anomaly, and BIST is not an efficient market.

Keywords: The day of week effects, Market anomalies, Market efficiency, Monday effects

Background

Turkey is located at the junction of Europe, Asia and Middle East. This strategic geographical location, combined with massive domestic market and stable macro-economic policy has enabled it to become the 16th largest economy of the world. It is a country with which large exchanges and global players wish to partner, and do business (Borsa Istanbul A Story of Transformatıon 2013; Ernst & Young, Attractiveness Survey Turkey 2013). The regulatory and supervisory authority is Capital Markets Board of Turkey (CMB) in charge of the securities markets in Turkey. All the exchange operating is done under Borsa Istanbul (BIST) in Turkey. The products of BIST are equities, exchange traded funds, warrants, options, futures, certificates, debt instruments and lease certificates (Borsa Istanbul 2016). Markets of BIST are equity market, debt securities market, derivatives market, precious metals and diamond market, and market surveillance activities (Borsa Istanbul 2016).

The day of the week effect is one of the market anomalies that has tendency to show more performance, and may give possibility for investors to make extra stock returns. Market anomalies have been reported in the developing markets, as well as in the developed markets. Getting high stock returns and predicting the behaviour of stock prices are important for investors and subjects of studies. One of the methods of the predicted returns is the detection of the day of the week effects in the stock markets.

"Week-day effect" is a specific anomaly in the behaviour of asset prices and financial indexes (Carlucci, Júnior, Lima, & Gaio, 2014). In the literature section the studies which were found the existence of the day of the week effects are indicated.

Literature

The existence of the day of the week effect was found from 1950's to 1970's for Standard & Poor's Index (Cross, 1973; French, 1980; Gibbons & Hess, 1981; Keim & Stambaugh, 1984; Lakonishok & Levi, 1982; Rogalski, 1984). Additionally, in later studies, the day of the week effect was tested for different markets and periods. These studies were grouped according to markets.

The day of the week effect in international markets

The day of week effect was investigated previously in various studies which are summarized in Table 1.

A study by Bayar and Kan Another study (Bayar & Kan, 2012) investigated the day of the week effects in stock market returns denominated in both U.S. dollars and local currencies in most of the nineteen countries for the period from July 1993 to July 1998. In local currency terms, the highest returns were on Tuesday and then Wednesday; the least returns were on Thursday and then Friday. In U.S. dollar currency, the highest returns occurred on Wednesday and then Tuesday. The lowest returns were found towards the end of the week, on Thursday and then Friday (Bayar & Kan, 2012).

Table 1 Summary of the studies about the day of the week effect in international markets

Market	Main Finding	Reference
Financial Times Stock Exchange (FTSE) 100 Index in the United Kingdom (UK)	Negative Monday and Fridays returns were different from their mid-week counterparts for the period 1991–1998	(Steeley, 2001)
Dow Jones Industrial Average Index in the United States (U.S.)	The positive Monday returns and the positive Friday returns for the period 1988–1995	(Brusa, Liu, & Schulman, 2003)
Foreign markets[a]	Negative Monday returns or no weekend effect at all for the period 1988–1995	(Brusa, et al., 2003)
Standard & Poor's 500 in the U.S., FTSE 30 in the UK and DAX 30 (German Stock Index) in the German Stock Markets	Monday effect was found in the 1970s and 1980s, Monday effect vanished in the 1990s and 2000s in all three markets	(Alt, Fortin, & Weinberger, 2011).
Bovespa Index in Brazil, Mexican Stock Exchange in Mexico and the Dow Jones in the U.S.	There were no statistically significant differences between the mean returns of each weekday for the indexes for the period 2004–2012	(Carlucci, Júnior, Lima, & Gaio, 2014)
U.S. Stock Market Indexes[c]	Reversal (from negative to positive) Monday effect in large-cap stockindexes	(Mehdian & Perry, 2001)
Eastern European emerging markets[b]	Negative Monday returns were found in markets of Estonia and Lithuania, positive Monday returns were found in the market of Russia for the period 1990s–2002	(Ajayi, Mehdian, & Perry, 2004)

[a]The foreign markets are the All Ordinaries Shares Index of Australia, Nikkei 225 Index of Japan, Hang Seng Index of Hong Kong, CAC 40 Index of France, Financial Times Stock Exchange 100 Index of the United Kingdom, IPSA Stock Index of Chile, Bovespa Stock Index of Brazil, and Merval Stock Index of Argentina

[b]Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Slovakia, and Slovenia

[c]The Dow Jones composite (DJCOMP), the New York Stock Exchange (NYSE) composite, the Standard & Poors 500 (SP500), the National Association of Securities Dealers Automated Quotation composite (NASDAQ) and the Russell 2000 (RUSSELL)

Table 2 Summary of the studies about the day of the week effect in Turkey's market

Market	Main Finding	Reference
BIST	Friday returns were the highest but there was no evidence of a Monday or Tuesday effect for the period 1988–1996	(Demirer & Karan, 2002)
BIST 100 Index	Friday returns were the highest, Tuesday returns were the least for the period 1988–1999	(Berk Oğuzsoy & Güven, 2003)
BIST	Monday had negative returns, Thursday and Friday had positive returns for the period 1987–2005	(Dicle & Hassan, 2007)
BIST 100 Index	There were not significant differences among returns of the days for the period 2002-2005	(Tunçel, 2007)
BIST 100 Index	Negative Monday and positive Thursday and Friday returns for the period 1995–2008	(Cinko & Avci, 2011)

The day of the week effect in Turkey's market

The studies that examined the day of the week effect in Borsa Istanbul in Turkey is summarized in Table 2. The day of the week effect existed for BIST-100, BIST-50, BIST-30 and sector indexes on several studies (Berk Oğuzsoy & Güven, 2003; Cinko & Avci, 2011; Demirer & Karan, 2002; Dicle & Hassan, 2007). These studies examined whether stock returns on the days of the week are equal or not. The day of week effects were found different days for example daily returns on Friday, Tuesday and Monday were the highest; daily returns on Monday, Thursday and Friday were the least return in BIST.

On the other hand some studies were found the day of the week effect for the years 1990s. Friday and Monday effects were observed for the period from 1988 to 1996 (Metin, Muradoglu, & Yazici, 1997), and stock returns were higher in the second part of week and lower in the first two days of the week from 1988 to 1999 (Bildik, 2001).

The objective of this paper is to examine Monday effect in stock index in Turkey with an updated and extended data set that contains daily stock returns from 2010 to 2014. Previous studies were conducted before 2008. Moreover, 289 companies in Borsa Istanbul classified according to sectors were analysed.

The day of the week effects were found to be varying in the previously mentioned studies. For this reason, this study aimed to reexamine the existence of the day of the week effect in BIST when Monday returns kept constant with a larger amount of data in the BIST.

Method

Research design

The method of least squares was used to obtain the coefficients of the returns of the days of the week. Descriptive statistics were used to define the features of stock returns in the analysis. In order to determine whether there were any significant differences between the means of stock returns, the one-way analysis of variance (ANOVA) was used. This method was used for re-examines the Monday effect in the U.S. stock market, using daily returns (Mehdian & Perry, 2001)

Daily returns of BIST were calculated from the Eq. 1.

$$R_t = \ln [E_t/E_{t-1}] \quad (1)$$

Where R_t was daily logarithmic returns of the index at the time t, E_t was daily closing values at the time t, E_{t-1} was daily closing values at the time t-1 in the equation.

Equation 2 was used to analyse for there were any significant differences between the returns in different days of the week in BIST.

Table 3 The sub-hypothesis of the *t*-test in the analysis

H_0	H_1	Hypothesis	
		There is no difference between the average returns on the days of week on Monday in BIST	
$\beta = 0$	$\beta \neq 0$	Sub-hypothesis	
		There is no difference between the average returns on	Tuesday and Monday
			Wednesday and Monday
			Thursday and Monday
			Friday and Monday

$$R_t = \beta_0 + \beta_1 \text{Tuesday} + \beta_2 \text{Wednesday} + \beta_3 \text{Thursday} + \beta_4 \text{Friday} + E_i \quad (2)$$

Where R_t was daily returns of the index, β_0 was coefficient of fixed variable in the model that was coefficient of Monday, β_1–β_4 were coefficient of regression for the days, the days of Tuesday, Wednesday, Thursday and Friday were dummy variables in the equation

The *t*-tests were performed to check the means of other day returns which were statistically different from Monday returns. If there were any differences on Monday, this would contradict with the efficient-market hypothesis. The natural logarithm was used to eliminate the negative effect of extreme value in the data set. The hypotheses in the research are stated below, and sub-hypothesis is showed Table 3.

Data design

In the analysis, listed companies in equity market on the BIST were used in the period of 02.01.2010-22.10.2014. Stock returns of 289 listed companies were calculated according to daily historical stock prices of companies and were classified according to the sectors.

Results and Discussion

The daily stock returns of 289 companies that were constantly traded between 02.01.2010 and 22.10.2014 were studied, and it was analysed if the other days of the week had any effects on Monday when the daily stock returns of Monday were kept constant. The results of the statistical analysis indicated that, the day of the week effects in BIST were found. The stock returns on Monday were affected by the other days. These effects varied according to stocks that were showed in Appendix 1. The average returns of stocks on Monday had all days effects.

A group of stocks which are significant had the all-day effects on Monday stock returns. The closing day returns of these stocks were presented according to the sectors (Table 4). Monday returns were affected negatively by all other days for these stocks that were industrial textile, media, ceramics, iron steel and tourism. All day effect that was found for seven stocks was not common for all stocks. According to the analysis, there were the days of the week effects which are significant on the average stock returns and the effect of each day on stock returns were different (Table 5). According to statistically significant results, 7% of the stocks have the day of effect on Tuesday, 15% on Wednesday, 19% on Thursday, and 17% on Friday.

The day of the week effects on the stock returns were grouped according to the sectors, and the number of these stocks were classi fied as negative or positive and showed in Table 6. There were negative effects on the sectors of automotive & parts, holdings, cement and concrete, iron steel, industrial textile, ceramics, tourism, livestock, and retail trader.

Table 4 The seven stocks that have the all-day effects which are significant on Monday mean returns

Name of Stock	Sector	Mean Returns				
		Monday (Base)	Tuesday	Wednesday	Thursday	Friday
AKSA	Industrial Textile	0.490	−0.362	−0.610	−0.502	−0.439
DOBUR	Media	0.477	−0.462	−0.523	−0.769	−0.436
EGSER	Ceramics	0.671	−0.460	−0.829	−0.877	−0.481
KORDS	Industrial Textile	0.342	−0.289	−0.323	−0.465	−0.349
KRDMD	Iron Steel	0.522	−0.497	−0.399	−0.502	−0.513
KUTPO	Ceramics	0.502	−0.411	−0.764	−0.68	−0.483
MARTI	Tourism	0.506	−0.488	−0.724	−0.576	−0.760

Table 5 The quantity of stocks which have the day effects on stock returns

Day Effects	Quantity of stocks
Monday effect	49
Tuesday effect	20
Wednesday effect	44
Thursday effect	55
Friday effect	48

Conclusion

This study examines the Monday effect in listed companies in Borsa Istanbul that is one of the stock market of Turkey. The day of the week effects were found to be varying in the previously mentioned studies. For this reason, this study aimed to re-examine the existence of the day of the week effect in BIST when Monday returns kept constant with a larger amount of data in the BIST. This study covers all companies continuously listed in BIST and it is limited for the 5 years from 2010 to 2014. It is aim to present a statistical evidence of the day of the week effect in Turkey' market. The results of the statistical analysis of the daily returns on Monday were affected by the other days. These effects were mostly negative and varied according to the stocks and sectors. The sector of food showed positive effects on Monday returns compared to the other sectors on Tuesday, Thursday and Friday. On the other hand, positive effects were found on Monday returns on Tuesday and Thursday. These positive effects were not in the same sectors except for the sector of food. The sectors of airlines & ground handling services, construction, petroleum, pharmaceutical and health, furniture, integrated textile, and others were found to have the least effects. The sectors of automotive & parts, holdings, cement & concrete, and industrial textile were found to have the most effects. These statistical results confirmed the day of the week effects on Monday return for the period from 2010 to 2014 in the BIST. The results of the present study show that the day of the week effect, which is one of the indicator of inefficient stock market, may give possibility to estimate the stock returns in the Turkish emerging stock market. Furute research could be determined the relation between company size and the day of week effect.

Table 6 The quantity of stocks which had the day of the week effects on the stock returns based on the sectors

Sector	The day of week effects									
	Monday		Tuesday		Wednesday		Thursday		Friday	
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
Holdings	5			1		2		4		5
Cement & Concrete	3			1		2		4		4
Iron Steel	3		1	2		1		2		1
Industrial Textile	3			3		3		2		3
Ceramics	3			2		2		3		2
Tourism	3			2		3	1	3		1
Investment Trusts	3					4		2		2
Banking	2							1		3
Real Estate Investment Trusts	2				1	2	1	2		3
Food		2	1				3	1	1	1
Paper	2					4		1		2
Automotive & Parts	6		1			4		6		2
Agricultural Chemicals	2					2		3		1
Paint	1									2
Consumer Durables	1		1			1		1		1
Iron Steel	1							1		1
Leasing & Factoring	1					2			1	1
Airlines & Ground Handling Services	1									1
Livestock	1			1		2		1		1
Construction and Building Materials	1					2		2		1
Media	1			1		1		1		1
Marketing	1					1		1		1

Table 6 The quantity of stocks which had the day of the week effects on the stock returns based on the sectors *(Continued)*

Retail Trade	1			1		1		1		1
Glass			1					1		1
Information Machines			1			1				1
Insurance					1			2		
Electric						1		1		
Construction								1		
Technology						1		1		
Petroleum								1		
Pharmaceutical and Health								1		
Furniture										1
Integrated Textile										1
Other										1
Total	47	2	6	14	2	42	5	50	2	46

Appendix 1

Table 7 The day of the week effects on the stock returns

Stock	Sector	Mean Returns				
		Monday	Tuesday	Wednesday	Thursday	Friday
AKGRT	Insurance	0.207	0.003	−0.298	−0.438[a]	−0.291
AKSA	Industrial Textile	0.490[c]	−0.362[a]	−0.610[c]	−0.502[c]	−0.439[b]
ALCAR	Consumer Durables	0.043	0.435[a]	0.161	−0.212	0.039
ALCTL	Information Machines	0.028	0.440[a]	−0.171	−0.024	−0.330
ALKA	Paper	0.249[a]	−0.126	−0.396[a]	−0.223	−0.410[b]
ALYAG	Food	0.200	0.140	−0.014	−0.578[a]	−0.235
ARCLK	Consumer Durables	0.223	0.041	−0.103	−0.410[b]	−0.196
ARSAN	Integrated Textile	0.180	0.205	−0.185	−0.141	−0.498[a]
ASLAN	Cement & Concrete	0.401	0.080	−0.069	−0.800[a]	−0.641
ASUZU	Automotive	0.360[a]	−0.117	−0.259	−0.464[a]	−0.206
ATLAS	Investment Trusts	0.353	−0.142	−0.619[b]	−0.542[a]	−0.294
AVGYO	Real Estate Investment Trusts	0.857[c]	−0.378	−1.162[c]	−0.628	−1.500[c]
AYEN	Electric	0.188	−0.158	−0.524[b]	−0.179	−0.066
AYGAZ	Petroleum	0.121	0.071	0.084	−0.298[a]	−0.163
BANVT	Livestock	0.354[c]	−0.360[a]	−0.488[b]	−0.180	−0.627[c]
BFREN	Automotive Parts	0.146	0.505[a]	−0.462[a]	−0.102	−0.262
BIMAS	Retail Trade	0.163	−0.416[a]	−0.110	−0.271	0.098
BJKAS	Insurance	0.343	−0.303	−0.368	−0.607[a]	−0.252
BOLUC	Cement & Concrete	0.373[c]	−0.300[a]	−0.264	−0.462[c]	−0.362[b]
BRISA	Tyre Production	0.465[a]	−0.066	−0.368	−0.876[b]	−0.423
BRSAN	Iron Steel	0.412[a]	−0.159	−0.424	−0.663[b]	−0.487
BURCE	Iron Steel	0.375	0.068	−0.426	−0.433	−0.776[a]
CELHA	Iron Steel	−0.173	0.611[b]	0.281	0.259	−0.014
CIMSA	Cement & Concrete	0.165	0.143	−0.024	−0.413[b]	−0.135
CMBTN	Cement & Concrete	0.354[a]	0.054	−0.528[b]	−0.292	−0.572[b]
COMDO	Automotive Parts	0.359[b]	−0.251	−0.450[c]	−0.863[c]	−0.045
DARDL	Food	−0.633[b]	0.813[a]	0.704	0.816[a]	0.891[a]
DENCM	Glass	0.293	0.329	−0.234	−0.558[b]	−0.443[a]
DEVA	Pharmaceutical and Health	0.142	−0.145	−0.113	−0.310[a]	−0.267
DOAS	Automotive Parts	0.469[c]	−0.326	−0.387	−0.773[c]	−0.345
DOBUR	Media	0.477[c]	−0.462[a]	−0.523[b]	−0.769[c]	−0.436[a]
DURDO	Paper	0.227	−0.134	−0.481[a]	−0.311	0.048
DYOBY	Paint	0.239	−0.059	−0.248	−0.092	−0.427[a]
DZGYO	Real Estate Investment Trusts	−0.131	0.406	0.611[b]	0.256	−0.206
ECZYT	Holdings	0.246[b]	−0.107	−0.266	−0.317[a]	−0.340[a]
EGGUB	Agricultural Chemicals	0.161	−0.058	−0.245	−0.518[a]	−0.139
EGSER	Ceramics	0.671[c]	−0.460[a]	−0.829[c]	−0.877[c]	−0.481[a]
ENKAI	Construction	0.156	−0.147	−0.351[a]	−0.351[c]	0.085
ERBOS	Iron Steel	0.421[b]	−0.149	−0.252	−0.556[c]	−0.259
ESCOM	Technology	0.360	−0.228	−0.680[b]	−0.671[b]	−0.042
ETYAT	Investment Trusts	0.372[a]	−0.441	−0.564[a]	−0.388	−0.370
EUYO	Investment Trusts	0.440[b]	−0.406	−0.541[a]	−0.603[b]	−0.461

Table 7 The day of the week effects on the stock returns *(Continued)*

FFKRL	Leasing & Factoring	0.235	0.080	−0.506[b]	−0.279	0.042
FNSYO	Investment Trusts	0.316[b]	−0.184	−0.502[b]	−0.167	−0.542[b]
FONFK	Leasing & Factoring	−0.256	0.300	0.318	0.198	0.455[a]
FVORI	Tourism	0.474	−0.937[b]	−0.820[a]	−0.535	−0.310
GENYH	Holdings	1.075[c]	−1.017[c]	−0.836	−0.660	−0.972[a]
GUBRF	Agricultural Chemicals	0.548[c]	−0.452	−0.542[a]	−0.618[b]	−0.970[c]
HEKTS	Agricultural Chemicals	0.280[b]	0.047	−0.315[a]	−0.396[b]	−0.197
IEYHO	Holdings	0.631[b]	−0.478	−0.805[b]	−0.670[a]	−1.032[b]
INTEM	Construction and Building Materials	0.186	0.322	−0.096	−0.520[b]	−0.145
ISFIN	Leasing & Factoring	0.235[a]	−0.012	−0.364[a]	−0.192	−0.536[c]
ISGYO	Real Estate Investment Trusts	0.159	0.005	−0.212	−0.225	−0.343[a]
ISYAT	Investment Trusts	0.072	−0.024	−0.064	0.015	−0.309[a]
IZMDC	Iron Steel	0.313[a]	−0.441[a]	−0.348	−0.384	−0.058
IZOCM	Construction and Building Materials	0.336[b]	−0.189	−0.377[a]	−0.444[b]	−0.453[b]
KAPLM	Paper	0.374	−0.374	−0.588[a]	−0.337	−0.616[a]
KARSN	Automotive	0.321[b]	−0.391	−0.427[a]	−0.394[a]	−0.259
KARTN	Paper	0.466[b]	0.028	−0.779[c]	−0.512[a]	−0.377
KCHOL	Holdings	0.248[b]	0.008	−0.672	−0.318[a]	−0.218
KONYA	Cement & Concrete	0.434[b]	0.281	−0.955[c]	−0.557[b]	−0.208
KORDS	Industrial Textile	0.342[c]	−0.289[a]	−0.323[b]	−0.465[c]	−0.349[b]
KOZAA	Other	0.155	−0.164	−0.085	−0.160	−0.541[b]
KRDMD	Iron Steel	0.522[c]	−0.497[b]	−0.399[a]	−0.502[b]	−0.513[b]
KUTPO	Ceramics	0.502[c]	−0.411[a]	−0.764[c]	−0.680[c]	−0.483[b]
MAALT	Tourism	0.331[a]	−0.054	−0.391	−0.480[a]	−0.348
MAKTK	Construction and Building Materials	0.285	−0.189	−0.559[a]	−0.425	−0.111
MARTI	Tourism	0.506[c]	−0.488[a]	−0.724[c]	−0.576[b]	−0.760[c]
METRO	Holdings	0.227	−0.053	−0.597[b]	−0.148	−0.558[b]
METUR	Tourism	−0.250	0.234	−0.025	0.587[b]	0.283
MGROS	Retail Trade	0.224	0.007	−0.295	−0.371[a]	−0.302
MRDIN	Cement & Concrete	0.056	−0.014	−0.021	−0.100	−0.229[a]
MRSHL	Paint	0.436[c]	−0.197	−0.126	−0.427	−0.662[b]
MRTGG	Food	−0.277	0.519	0.006	0.628[a]	−0.060
MUTLU	Automotive Parts	0.231	0.189	−0.220	0.053	−0.451[a]
NETAS	Communication Materials	0.415	−0.295	−0.626[a]	−0.402	−0.861[b]
NUGYO	Real Estate Investment Trusts	0.428[a]	−0.325	−0.836[b]	−0.221	−0.206
OZGYO	Real Estate Investment Trusts	−0.213	0.397	−0.125	0.555[b]	0.308
PETUN	Food	0.127	−0.014	−0.128	0.158	−0.276[a]
PRKME	Electric	0.259	−0.137	−0.144	−0.396[a]	−0.305
RAYSG	Insurance	−0.217	0.310	0.417[a]	0.084	0.018
SANKO	Marketing	0.293[b]	−0.074	−0.333[a]	−0.399[b]	−0.432[b]
SASA	Industrial Textile	0.369[b]	−0.371[a]	−0.517[b]	0.073	−0.427[a]
SELGD	Food	−0.533[a]	0.588	0.575	0.780[a]	0.534
SKBNK	Banking	0.150	−0.113	0.064	−0.295	−0.355[a]
SKPLC	Livestock	0.379	−0.288	−0.583[a]	−0.726[b]	−0.520
SNGYO	Real Estate Investment Trusts	0.209	−0.081	−0.309	−0.362[a]	−0.535[a]

Table 7 The day of the week effects on the stock returns *(Continued)*

TEKST	Banking	0.313[a]	−0.156	−0.344	−0.180	−0.433[b]
TEKTU	Tourism	0.375[a]	−0.074	−0.925[c]	−0.524[a]	−0.420
THYAO	Airlines & Ground Handling Services	0.276[a]	−0.033	−0.305	−0.284	−0.526[b]
TOASO	Automotive	0.303[a]	0.115	−0.237	−0.396[a]	−0.394[a]
TRKCM	Glass	−0.090	0.379[b]	0.143	−0.011	0.210
UNYEC	Cement & Concrete	0.163	0.008	−0.170	−0.104	−0.363[b]
USAK	Ceramics	0.467[b]	−0.427	−0.499	−0.764[b]	−0.421
VAKBN	Banking	0.335[b]	−0.217	−0.340	−0.570[c]	−0.366[a]
VAKKO	Retail Trade	0.364[c]	−0.283	−0.500[a]	−0.171	−0.492[a]
VESTL	Consumer Durables	0.366[b]	−0.250	−0.369[a]	−0.234	−0.398[a]
YATAS	Furniture	0.176	0.014	−0.236	−0.165	−0.636[b]
YAZIC	Holdings	0.275[b]	−0.234	−0.023	−0.355[b]	−0.337[a]
YKGYO	Real Estate Investment Trusts	0.288	−0.143	−0.305	−0.738[c]	−0.139

The mean returns are shown at [a]90% confidence level, [b]95% confidence level, [c]99% confidence level. In the table statistically significant stock returns are showed according to sectors

Abbreviations

ANOVA: The One-way Analysis of Variance; BIST: Borsa Istanbul Index; CMB: Capital Markets Board of Turkey; DAX: German Stock Index; Eq: Equation; FTSE: Financial Times Stock Exchange; U.S.: United States; UK: United Kingdom

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Authors' contributions

HC carried out literature survey, the data analysis and drafted the manuscript while OB and AHB guided data collection, coordinated the research and carried out the data analysis, and GD collected data and carried out the data analysis. All authors read and approved the final manuscript.

Competing interests

The authors declare that they have no competing interests.

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