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IMPACT OF DEMOCRATIC ELECTORAL PROCESS ON BORSA ISTANBUL¹

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ABSTRACT

According to the Efficient Market Hypothesis, there is no possibility to predict price movements in the markets which does not allow investors to obtain return above average (abnormal return). However, deviation from the mean of stock returns is observed and patterns appeared during certain periods, so-called anomalies. In this context, the initial aim of this paper is to figure out the relationship between elections and market's movements by determining the influence of 12 elections (general elections, local elections, by-elections and referendum) that took place in Turkey after 2000 on BIST 100 Index. In the overview, negative and statistically significant abnormal returns are observed days around (-15,+15) elections that took place in Turkey after 2000 by employing Event Study methodology which is widely used in finance literature.

Keywords: BIST 100, event study, democratic elections.

JEL Classification: G14, G35

1. INTRODUCTION

The issue of efficiency of the market has been an important subject of discussion since 1950. This subject is one of the first to be put forward by Bachelier and subsequently by many scientists such as Fama, Rubinstein, Grossman and Jensen, laying the foundation for the efficient markets hypothesis at a common point. Here they have identified that the investors targeted at high-income, the information that will be used in investments can be reached easily and on the basis of the investments it is needed to make choices based on risk and earnings (Turguttopbaş, 2012). According to the efficient market hypothesis it is impossible to predict price changes occurring in the market. However, in other methods used to test the this theory of market efficiency the studies were made defending that this theory does not function correctly and it contradicts many anomalies (Mandacı, 2003). In theoretical framework it is difficult to verify the findings of servation or meaningful results are needed to explain this finding, this finding is called anomalies (Eger, Topaloglu, & Coates, 2012).

Random Walk Model and efficient-market hypothesis that Eugene Fama put forward in 1970 were divided market activities into 3 groups according to the degree by using the exchange rates in the market. These groups are; activity in weak form, activity in semi-strong form and activity in strong form. In acvivity in weak-form; because the prices have information about their earnings in the past, the analysis concerning the past prices will not provide high earnings. Semi-strong form activity provides both historical price information and public information. The strong form activity is assumed to reflect all the information that are publicly disclosed and undisclosed (Mutant & Topcu, 2009). In order to test the Fama's efficient market hypothesis that was put forward in 1970; the effect of the behavioral characteristics on the stock earnings/share earnings were

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examined. As a result of these studies; differences in stock earnings at certain periods have been found and these differences were concluded to be due to seasonal and price abnormalities. Seasonal abnormalities are about differences between stock earnings before and after a certain period such as day, week, month and year with other periods of time. The price anomalies are the anomalies indicating the status of deviation from market activity resulting from insufficient under-reaction or over-reaction reaction (Barak, 2006).

Although there are many academic studies on abnormalities in Turkey, studies about the anomalies occur around the selection period are insufficient. Whereas the risk in a period of general elections included by political risks and their negative / positive effects on stock earnings is a very important knowledge for the investors. better understanding of this situation will provide a high contribution for the investors and will help increase the profits they earn on investments.

In this study, around the dates of the democratic elections held after 2000 in Turkey, price movements occurring in BIST 100 Index was investigated by the event study method. With the help of this method in this study, 15 days before and after the elections abnormal returns were calculated and they were tested for statistical significance. In addition, cumulative abnormal returns are calculated in different search perspectives around elections. In this context, following the introduction in the second part of the study, the studies on efficient market hypothesis Turkey and in the world are referred and the literature related to the election period is mentioned. While the statistical methods used in the study and set of data are mentioned in the third section, the empirical study analyzes appears in the fourth section. In the last section of the study, results and suggestions are given.

2. LITERATURE REVIEW

The researchers in most of the national and international studies, have tried to determine whether there is a predictable trend in stock returns over a certain period. In some of these studies, during certain periods there are claims that these movements existed when in others it has been claimed that the market is active. some studies investigating these allegations that holds a large place in the finance literature are;

Wachtel (1942), in the capital markets in the United States, has calculated the average monthly returns of stocks and has determined in January the average returns are higher than in other months. Similarly, Mehdi and Perry (2002) have found that in the United States 3 of the major stock indexes were the highest in January. Also Alrabadi and Al-Qudah (2012) , in their work, on the Amman stock market in 2002 - 2011 period by using OLS and GARCH models have investigated the effects of the day of the week and the month of the year using and have revealed the existence of January.

If we look at the studies carried out in Turkey, the Dicle and Hasan (2007) in their event study examined the effects of days of the week and they have resulted the importance of the negative returns especially on Monday in a statistically meaning. Erdogan and Elmas (2010), have carried out survey work based on different cities in Turkey and contrary to the Efficient Market Hypothesis they have indicated that the investors achieved the high returns in January whether different techniques were applied. As a support to this study; Ege, Topaloglu and Coşkun (2012) in their research, using power ratio analysis in the IMKB 30 and IMKB 50 indexes, have studied the effects of January and have concluded that the returns are higher than the other months in January. Abdioğlu and Değirmenci (2013) and similarly Ergül Akel and Dumanoglu (2009) investigated the effects of days of the week and confirmed that the lowest return is on Wednesdays while the highest return is on Fridays. Also Aytakin and Sakarya (2014) using power ratio method and one-way variance analysis, in their results; in the basal period, monthly returns of the indices is different from each other, and the occurrence of abnormalities in January was determined.

In contrast to the above studies in the literature there seems the studies defending the markets are active. One of these studies; Atakan (2008), in his work has analyzed whether there are anomalies of the day of the week and January and found as a result that in a meaningful way there is no differentiation in returns in January in IMKB. The same year Hamarat and Tufan (2008) examined Tourism Sector Index returns using daily and monthly closing prices of IMKB. They have found that the abnormalities seen in the days of the week, while the results of the study were able to identify whether the abnormalities seen in January. Küçüksille (2012) has investigated the effect January in index of IMKB and has observed the January effect in the IMKB-100 and

XUSIN indexes while in the XUGIDA, XUMALI and XUHOLD had no January effect. In another study in the same year, Tunçel (2012) based on the IMKB-100 index. Tunçel has studied the effect of the month in his study but according to the findings of his study, he/she has determined that the effect of the month has not identified. A different study, Yılcı (2013), where the effect of the Halloween is investigated in IMKB 100 National indexes monthly closing prices of the stocks data have been analyzed by the least squares method. His research concluded that abnormal increases as a result of the Halloween effect on stock returns in January has not been identified.

When the general of the studies in the literature is considered, one can see that indexes in BIST are not active and the presence of many anomalies that disrupt the market efficiency is evident. It is obvious that as a result of these anomalies the investors will get high returns and all anomalies that have been found care a great importance for the investors. The researches and results above will help us in our work, to observe whether there are differences in stock returns in Turkish stock price during the election period and to show the negative/positive effects of the election atmosphere. In addition, data sets and the results obtained in the model, will be able to provide information about the positions of market participants in the next election. If the election results can not be predicted, investors are pulled from the market, and the market is dominated by a recession. However, the election results can be estimated, investors will try to take advantage of anomalies that will occur in order to ensure higher profits and will do a quick access to the market. Thus, this uncertainty can be eliminated that is formed after the announcement of election results.

When the Turkish literature is viewed, a study examining the relationship between stock returns stands out as the only study. Mandacı, in his study has examined abnormal price movements in IMKB in 2003 before and after the general elections and concluded that some days during the period one can achieve abnormal returns with statistical significance. This study, in order to remedy the deficiencies in the literature, in the days around the election date between the years 2000-2014, examines the price movements of the BIST 100 Index.

When the literature is reviewed, although there are so many studies investigating the effect of economic factors such as GSMH, inflation, interest rates, exchange rates and growth rates on the market are the impact on the market, there are so few studies concerning the both national and international arena investigating the effects of the political risk on the market. It has been observed that studies on the impact of political risk on the market is done in developed countries like the United States more than in developing countries that this was the work of a small number next to nothing. In the researches made emerging political risks; it is noticeable that this effect is less in developed countries and is higher in developing countries, Perotti and Oijen (2001), Kim and Me (2001), Bilson and others (2002).

Foest and Scmitz (1997) in their work investigating the effects of Political risk which the most important risk factor in the selection process on the financial market, in US they have examined the 4-year election cycle. As a result of their study they have observed that the returns for the first two years is lower than the third and fourth years. Herbst and Sleinkman (1984) and Huang (1985) in their general work, they have found that election periods for stock returns are uncertain and usually the stock returns are negative in election periods, but the next years the stck returns have been found positive. Also Pantzalis and others (2000) between the 1974-1995 years, they have been studying the impact on stock returns in general elections in 33 countries and has determined a positive anomaly two weeks before the election week. Based on these results, the financial markets in Turkey (BIST 100) between 2000-2014 years were considered and discussed and considered to be an important contribution to the literature in terms of providing guidance to investors.

3. DATA AND METHODOLOGY

In our study, to determine the effects of the selection periods to the stock returns and their reactions, in the Republic of Turkey after the year 2000, the General Election, Search Public Election, Local Election and Presidential Elections were evaluated in this context. The possible positive or negative impacts of the elections, which is used as the benchmark for the stock market index Located in Istanbul, has been investigated in BIST 100 Index. To provide the related analysis data needed were obtained by Datastream & Eiko program. Table 1 shows the dates and kinds of the elections that took place after 2000 in the Republic of Turkey.

Table 1: Elections in Republic of Turkey After 2000

16-May-00	Presidential Election
3-Nov-02	General election
9-Mar-03	Search public election
28-Mar-04	Local selection
22-Jul-07	General election
29-Aug-07	Presidential Election
21-Oct-07	Referendum
29-Mar-09	Local selection
12-Sep-10	Referendum
12-Jun-11	General election
30-Mar-14	Local Elections
10-Aug-14	Presidential Election

Source: https://tr.wikipedia.org/wiki/T%C3%BCrkiye'de_se%C3%A7imler

The Event Study that is used in the literature for measuring the measure the impactof the selection period and after, is preferred. In this context, for each election period, the range between (-5 + 15) was taken as "event window"and the range between (-15, -360) is selected as "calculation period" . In our study, mean-adjusted return method was used which assumes that the average of past returns are equal to the averag of expected returns. The reason for this is, the market adjusted return is used in to share and analyze the importance of the direction of deviation in stock returns, while in the index- based analysis the adjusted average yield method is preferred. The methodology sequence used is as follows:

- The following formula is used to calculate the deviation of the average return and the daily returns for a specified time.

$$Ln = \left(\frac{P_t}{P_{(t-1)}} \right) \quad (1)$$

In the formula, " P_t ", refers to the BIST 100 closing price at time t, while " $P_{(t-1)}$ " the "t" represents the closing price for the previous day.

- The following formula is used to calculate the abnormal returns showing deviation from the average return:

$$AR_t = R_t - R_i \quad (2)$$

Concerning; AR_t , refers to the abnormal returns in the "t" day, the R_t refers to return on "t" day and "i" refers to each selection, R_i , refers to the average index return covering 15 and 360 days before the election date (-15, -360) period. For example; the average returns of the BIST 100 indexes for the 15 and 360 days period before May 16, 2000 elections, was calculated.

- Abnormal returns of the BIST 100 Index for any "t" day is calculated by the subtraction of the (-15, -360) days period before elections index return averages from the returns of the "t" day. These formula is standardised as below;

$$AR_t = (R_t - R_i) / \sigma R_i \quad (3)$$

- In our study, to see the differences that may occur in different search windows, the cumulative abnormal returns are calculated in order. For example, the following formula is used for calculating cumulative abnormal returns consisting the period from the -5th to the +5th.

$$CAR = 1/N[\sum_{t=-5}^{t=+5}(AR_t)] \quad (4)$$

4. FINDINGS AND DISCUSSIONS

As a result of the Evenst Study concerning the effects of General Election, Search Public Election, Local Election and Presidential Elections occurred after year 2000 in the Republic of Turkey on BIST 100 indexes, it is concluded that the findings of the reactions of the market participants to the election period were meaningful around different days in a statistically perspective.

Appendix 1 and Appendix 1 (Cont.) show the abnormal returns and their significance levels subjected to the analysis around 12 days during democratic election was held. The present period has 3 General Selections, 1 Search Public Elections, 3 Local Elections, 3 Presidential Elections and 2 Referandums held in Turkey.

As can be seen from the Tables shown int appendix, although 15 days before and 15 days after the elections both positive and negative abnormal returns have occurred, only some negative abnormal returns showed statistically signficancy. For example, the last business before the 2002 General Elections 5% level of significant abnormal returns emerged, but significant positive abnormal returns were not identified in the first business day following the same election. It was observed that concerning the 30 day period before and after the selections negative abnormal returns have been emerged as the general atmosphere of the lead. However, excess of the statistically significant positive abnormal returns formed after the 2002 elections should not be ignored.

BIST 100 Index reaction in the local election process appears to be similar. immediately before and after the local elections (-1, 1), excluding after 2009, positive abnormal returns were formed but statistically significant results could not be obtained. On the other hand, while a majority abnormal returns were negative, consisting only of positive abnormal returns in 2009 were seen in the local election process.

Considering presidential elections, excess of negative and significant abnormal returns stands out in 3 selection processes. In particular, after the the 15 day period of 2014 presidential elections 8 negative abnormal returns were found, in 6 of them have been found to be statistically significant. In addition, before each of the 3 selections, similarly, negative abnormal returns have been observed. The reactions of the markets which occurred during 2 referendum and the election processes after year 2000 also show similarities. Before both referendums significant negative abnormal returns observed while positive abnormal returns occurred before the Search Public Elections do not carry statistically meaning. In addition, following the first day of the referendums, positive perception occurred while the negative abnormal returns are outstanding after 2002 Search Public election.

Cumulative abnormal returns formed in election periods from different search windows are shown in Table 2. The CAR values occuring between [-1,1] range were positive during the 7 of the 12 elections, and negative in the other 5 of them, 3 of the negative values are statistically significant. The CAR values occuring between the range of [-15.15] were positive during 6 of the 12 elections and negative in the other 6 of them. For Example; considering the two elections in the year 2014, the positive perception has been occurred in the same range while dg the business days before and after the Presidential Election negative approach in the market has become evident. On the other hand, in the presidential elections held in 2007. [1.15] range formed a positive perception, after the presidential election held in 2014, negative approach in the market trading days has become evident.

As Table 2 examined generally, the dominance of the negative cumulative abnormal returns ' statistical significance are outstanding. In this case the selection process can not be welcomed by the market as positive (for many elections) can be interpreted.

Table 2: Cumulative Average Abnormal Returns (CAR)

	[-15,15]	[-15,-1]	[-10,1]	[-5,5]	[-1,1]	[1,3]	[1,5]	[1,10]	[1,15]
2000 Presidential Election	-5.470	-2.384	-4.339	-4.978	-1.582	-0.432	-1.653	-3.597	-4.043
	0.000***	0.000***	0.000***	0.000***	0.062*	0.545	0.000***	0.000***	0.000***
2002 General Election	13.169	3.797	3.601	7.762	5.677	2.107	10.222	8.325	11.960
	0.987	0.945	0.998	0.992	0.986	0.558	0.987	0.989	0.994
2003 Search Public Election	-6.728	-0.742	-3.482	-7.777	-0.446	-0.158	-1.157	-5.578	-8.140
	0.000***	0.041**	0.000***	0.000***	0.206	0.945	0.000***	0.000***	0.000***
2004 Local Election	-0.657	2.109	2.089	-0.186	-1.028	0.616	-1.216	-1.337	-3.719
	0.000***	0.992	0.987	0.145	0.000***	0.966	0.002***	0.000***	0.000***
2007 General Election	3.539	6.666	6.221	-0.793	1.697	2.435	-0.499	-1.691	-2.905
	0.987	0.945	0.986	0.075***	0.614	0.943	0.417	0.002	0.000***
2007 Presidential Election	2.843	-3.785	-2.352	4.832	0.138	0.159	2.496	1.855	1.529
	0.000***	0.000***	0.000***	0.992	0.577	0.155	0.945	0.986	0.994
2007 Referendum	-0.876	-0.908	-1.011	-1.883	0.014	0.171	2.274	2.500	2.401
	0.000***	0.000***	0.003***	0.000***	0.483	0.269	0.992	0.987	0.973
2009 Local Election	11.319	5.533	3.590	5.215	0.849	-0.229	2.035	2.048	5.156
	0.994	0.984	0.987	0.992	0.927	0.201	0.986	0.945	0.979
2010 Referendum	2.471	-0.115	1.493	1.783	1.496	1.414	2.607	2.877	2.516
	0.945	0.134	0.986	0.992	0.825	0.924	0.948	0.992	0.984
2011 General Election	-0.115	-0.085	0.855	-2.424	-1.759	-0.232	-3.042	-3.238	-2.336
	0.000***	0.370	0.999	0.000***	0.000***	0.977	0.000***	0.000***	0.000***
2014 Local Election	9.416	5.583	5.859	6.928	3.271	2.325	2.083	2.883	3.999
	0.967	0.986	0.992	0.994	0.979	0.945	0.987	0.998	0.999
2014 Presidential Election	-1.521	0.901	3.095	2.410	0.973	0.004	1.382	1.377	-1.674
	0.000***	0.987	0.945	0.986	0.421	0.067*	0.994	0.992	0.000***

*,** and *** refer 1%, %5 and 10% statistically significance respectively

5. CONCLUSION

The trends that are needed by the market participants generate revenue on average or the presence of predictable movements reveal the anomalies. In this perspective, the relationship between the direction of selection process and market direction is of importance. In our study, the response of the BIST 100 Index to the 3 General Elections, 1 Search Public Election, 3 Local Elections, 3 Presidential Elections and 2 Referendums in Turkey after the year 2000 were investigated. To measure the impact of before and after period of selection process on the BIST 100 index Event Study Method is preferred which is commonly used in the literature.

Under the constraints of data set and methods used, in generally speaking, negative statistically significant abnormalities have been occurred around during general, local, presidential selections and referendums after the year 2000 in Turkey. These results can be interpreted as the selection atmosphere is a period that needs to be treated deliberately by the market. In result, in the context of the efficiency market hypothesis, BIST 100 index was observed to be not effective. The findings of this study can be used to gain returns above average by the participants of the market.

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APPENDIX

Appendix 1: Abnormal Return Days Around the Elections Held After 2000 in Republic of Turkey

Days	2000 Presid. E.		2002 Gen. E.		2003 Sear. Pu.E.		2004 Local E.		2007 Gen. E.		2007 Presid. E.	
	AR	P-Val.	AR	P-Val.	AR	P-Val.	AR	P-Val.	AR	P-Val.	AR	P-Val.
-15	1.479	0.980	-1.082	0.000***	0.918	0.982	0.573	0.977	0.772	0.998	1.508	0.955
-14	0.870	0.950	1.070	0.993	1.477	0.985	-0.082	0.293	1.136	0.955	-2.390	0.000***
-13	-0.342	0.134	-0.376	0.001***	-0.569	0.117	0.525	0.966	0.933	0.987	-0.938	0.000***
-12	1.013	0.967	1.999	0.999	0.159	0.898	-0.871	0.000***	0.429	0.911	1.238	0.953
-11	-0.390	0.076*	0.790	0.918	0.229	0.934	-0.102	0.235	0.045	0.383	-0.472	0.022***
-10	0.381	0.987	0.370	0.417	-1.191	0.000***	0.245	0.991	1.583	0.959	-2.582	0.000***
-9	-0.650	0.001***	0.534	0.661	-0.428	0.237	-0.466	0.000***	-0.834	0.000***	-4.077	0.000***
-8	-1.883	0.000***	-0.680	0.000***	0.025	0.794	-0.122	0.185	-0.587	0.001***	2.644	0.934
-7	-0.063	0.776	1.612	0.957	0.594	0.997	0.543	0.989	2.211	0.965	-0.554	0.010**
-6	-1.417	0.000***	0.123	0.125	0.243	0.940	0.714	0.956	0.082	0.445	-1.136	0.000***
-5	0.910	0.956	0.117	0.121	-4.966	0.000***	0.200	0.976	-0.357	0.022**	2.003	0.912
-4	-0.491	0.017**	0.026	0.064*	1.698	0.958	-0.034	0.453	-0.155	0.124	0.599	0.965
-3	0.041	0.928	-1.039	0.000***	0.650	0.998	0.232	0.988	-0.609	0.001***	-0.713	0.002***
-2	-0.735	0.000***	0.432	0.512	0.052	0.819	0.161	0.948	2.453	0.987	1.306	0.998
-1	-1.107	0.000***	-0.099	0.023**	0.367	0.976	0.593	0.976	-0.434	0.009***	-0.219	0.133
1	0.675	0.953	2.206	0.959	-0.526	0.148	0.023	0.653	2.869	0.954	0.378	0.847
2	-1.150	0.000***	3.570	0.945	-0.287	0.406	-1.644	0.000***	-0.738	0.000***	-0.021	0.343
3	-1.017	0.000***	0.105	0.112	-0.490	0.178	0.231	0.988	-0.113	0.165	2.463	0.945
4	-0.160	0.543	4.341	0.989	0.145	0.889	0.175	0.960	-2.517	0.000***	-0.323	0.069*
5	-0.542	0.007***	-0.661	0.000***	-0.254	0.450	0.231	0.988	-1.068	0.000***	0.089	0.496
6	-1.401	0.000***	-1.236	0.000***	-4.166	0.000***	-0.353	0.002***	-0.124	0.154	-0.730	0.002***
7	0.291	0.999	-1.965	0.000***	4.011	0.955	-0.176	0.083*	1.512	0.983	0.188	0.635
8	0.792	0.975	0.980	0.983	-2.354	0.000***	-0.504	0.000***	-1.709	0.000***	-0.665	0.003***
9	-0.918	0.000***	1.623	0.987	-1.147	0.001***	-1.252	0.000***	0.098	0.473	-0.614	0.006***
10	-0.232	0.354	1.752	0.983	-0.960	0.006***	0.096	0.852	-0.778	0.000***	0.860	0.997
11	-0.378	0.088*	1.245	0.999	-2.113	0.000***	-0.546	0.000***	-0.337	0.026**	-0.095	0.252
12	0.661	0.959	-1.763	0.000***	1.169	0.988	-0.373	0.001***	0.311	0.801	0.500	0.928
13	0.867	0.989	-0.238	0.006***	0.839	0.999	-0.918	0.000***	1.531	0.956	1.060	0.934
14	-0.612	0.002***	1.427	0.937	0.600	0.997	-0.050	0.398	-2.393	0.000***	-0.117	0.227
15	0.037	0.924	-0.804	0.000***	0.190	0.916	1.085	0.978	-0.931	0.000***	-0.062	0.291

, * and * refer 1%, 5% and 10% statistically significance respectively

Appendix 1 (Con't): Abnormal Return Days Around the Elections Held After 2000 in Republic of Turkey

Days	2007 Ref.		2009 Local E.		2010 Ref.		2011 Gen. E.		2014 Local E.		2014 Presid. E.	
	AR	P-Val.	AR	P-Val.	AR	P-Val.	AR	P-Val.	AR	P-Val.	AR	P-Val.
-15	0.492	0.999	-0.189	0.000***	0.012	0.219	-0.133	0.200	-0.319	0.000***	-1.414	0.000***
-14	-0.616	0.000***	0.549	0.920	-0.424	0.000***	1.447	0.996	0.328	0.564	0.420	0.923
-13	0.708	0.934	0.041	0.007***	-0.501	0.000***	-1.076	0.000***	0.196	0.236	-0.148	0.192
-12	1.793	0.956	0.538	0.907	0.689	0.998	0.126	0.799	0.098	0.084*	-0.030	0.567
-11	-0.542	0.001***	0.226	0.145	0.167	0.843	-1.533	0.000***	-0.042	0.01***	-0.649	0.000***
-10	1.518	0.945	0.106	0.024**	-0.138	0.006***	-1.071	0.000***	0.858	0.996	0.493	0.938
-9	-0.512	0.002***	-0.189	0.000***	0.522	0.949	1.714	0.994	1.253	0.934	1.430	0.953
-8	0.557	0.987	0.173	0.072**	0.604	0.938	0.163	0.860	-0.058	0.008***	-0.292	0.017**
-7	-0.045	0.459	0.896	0.932	0.048	0.359	-0.160	0.156	-0.182	0.001***	0.073	0.857
-6	0.123	0.822	0.215	0.125	-0.001	0.178	-0.375	0.008***	-0.593	0.000***	-0.014	0.621
-5	-1.037	0.000***	1.543	0.912	-0.033	0.098*	0.752	0.991	-0.770	0.000***	0.249	0.995
-4	0.664	0.938	0.230	0.151	-0.503	0.000***	1.001	0.994	0.912	0.988	1.081	0.945
-3	-1.639	0.000***	0.948	0.976	-0.282	0.000***	-0.467	0.001***	2.686	0.954	-0.199	0.095*
-2	-0.810	0.000***	-0.102	0.000***	-0.138	0.006***	-0.471	0.001***	-0.571	0.000***	0.271	0.997
-1	-1.561	0.000***	0.549	0.920	-0.138	0.006***	-0.002	0.505	1.787	0.967	-0.369	0.003***
1	1.732	0.912	-0.778	0.000***	1.552	0.912	-0.230	0.071*	0.537	0.941	0.372	0.998
2	-0.156	0.217	1.078	0.967	0.082	0.512	-1.527	0.000***	0.947	0.945	-0.075	0.409
3	0.043	0.668	0.375	0.530	0.779	0.949	-1.454	0.000***	-0.154	0.001***	0.421	0.984
4	0.655	0.987	1.359	0.999	0.193	0.903	0.169	0.868	0.753	0.999	0.665	0.945
5	-0.045	0.459	-0.114	0.000***	-0.011	0.150	0.649	0.954	0.857	0.934	-0.017	0.612
6	0.271	0.966	0.127	0.034**	0.281	0.990	-0.845	0.000***	-0.057	0.008***	0.011	0.700
7	0.760	0.923	-0.317	0.000***	-0.299	0.000***	1.133	0.923	1.177	0.967	-1.499	0.000***
8	-0.278	0.064*	1.996	0.956	0.208	0.930	-0.962	0.000***	-1.189	0.000***	-0.376	0.002***
9	-0.540	0.001***	1.375	0.938	-0.418	0.000***	0.389	0.995	0.596	0.975	-0.418	0.001***
10	-0.811	0.000***	0.506	0.859	-0.090	0.026**	0.512	0.945	-0.312	0.000***	-0.836	0.000***
11	0.770	0.912	-0.452	0.000***	0.238	0.965	-0.170	0.141	0.844	0.954	0.078	0.868
12	-0.848	0.000***	-0.309	0.000***	0.791	0.965	0.937	0.934	-1.046	0.000***	0.534	0.992
13	-0.946	0.000***	0.330	0.394	-0.175	0.002***	0.170	0.869	-0.013	0.017**	0.250	0.996
14	-1.524	0.000***	1.763	0.956	0.075	0.479	0.261	0.957	0.946	0.987	-1.078	0.000***
15	0.356	0.990	-0.008	0.002***	-0.996	0.000***	-0.041	0.406	-0.049	0.009***	-0.422	0.001***

, * and * refer 1%, 5% and 10% statistically significance respectively