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Stock recommendations and stock market effects

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Abstract

The aim of this study is to detect whether investors can earn abnormal returns based on market makers' recommendations in Borsa Istanbul. To test the existence of market maker effect, buy recommendations mentioned by Ak Investment Inc. and stock returns traded on Borsa Istanbul are used. The event study was conducted for combined, pre- and post-event days covering the periods from January 2019 to April 2020. To enhance and compare the results, stocks are divided into five sub-groups based on the sectors they are traded in. The results indicate that stock recommendations do not provide valuable information to investors in Borsa Istanbul. Hovewer, while stocks traded in financial institutions are affected from buy recommendations of the market makers, investment strategies based on these recommendations would not generate any abnormal returns to investors for the rest of the sectors.

Key Words: Stock Recommendations, Event Study, Borsa Istanbul

Hisse senedi tavsiyeleri ve hisse senedi piyasası üzerine etkileri

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Özet

Bu çalışmanın amacı, yatırımcıların piyasa yapıcıların verdikleri hisse senedi tavsiyelerine dayanarak aşırı getiri elde edip etmediklerini araştırmaktır. Bu kapsamda, Ak Yatırım tarafından yapılan hisse senedi "Al" tavsiyeleri ve Borsa İstanbul'da işlem gören hisse senedi getirileri kullanılmıştır. Ocak 2019 ve Nisan 2020 dönemi için olay öncesi, olay sonrası ve tüm aralıklar kullanılarak olay çalışması yöntemi uygulanmıştır. Araştırmanın sonuçlarını genişletmek ve karşılaştırma yapabilmek için, hisse senetleri faaliyet gösterdikleri sektörlere göre beş alt gruba ayrılmıştır. Araştırmanın sonuçları, Borsa İstanbul'da işlem gören hisse senetleri için yapılan tavsiyelerin hisse performanslarına önemli bir etkisinin olmadığını göstermektedir. Bununla birlikte, mali kuruluşlar kapsamında işlem gören hisse senetleri piyasa yapıcıların tavsiyelerinden etkilenirken, diğer sektörlerde işlem gören hisse senetleri için yapılan tavsiyelerin yatırımcılara aşırı getiri sağlamadıkları gözlemlenmiştir.

Anahtar Kelimeler: Hisse Senedi Tavsiyeleri, Olay Çalışması, Borsa İstanbul

Introduction

Fama (1965) has developed efficient market hypothesis and argued that investors make decisions in a rational way to hold an optimal portfolio and maximize their returns at a given level of risk. Accordingly, market is efficient and investors have all available information which is reflected in prices. Thus, the market as a whole does not deviate from rationality and all information is rapidly incorporated into stock prices that no investor can use it to earn abnormal returns (Özsu, 2015). Contrary to this traditional approach to finance, investors are affected by a particular set of information during their judgment and decision making process under uncertainty and risk and that can lead investors to obtain abnormal returns, indicating market inefficiency.

Firm-specific news, analysts' recommendations, press coverages etc. provide valuable information to investors during their decision making process. It is worth to examine whether the information obtained from these resources can help investors to earn abnormal returns. This study is the first attempt to measure abnormal return behavior in terms of a unique effect; market maker effect. In this context, whether buy recommendations of the market makers have any impact on stocks traded in Borsa Istanbul is examined. Furthermore, the results of this study enable to compare sectoral differences in terms of the effects of recommendations on stock prices.

This study, firstly, provides literature review on abnormal return behavior. Then, the purpose of the study is covered, the data is described and the methodology is explained. At last, the results of the event study are reported. The contribution and the suggestions for further research are provided in the conclusion part.

Literature Review

Many studies have attempted to investigate abnormal return behavior in terms of different determinants such as analysts recommendations, firm-specific news, press coverages etc. for different periods within different stock markets.

Tetlock (2007) has investigated the relation between the media and the stock market by using daily data from the popular column of Wall Street Journal. General Inquirer program has provided content analysis results of textual data and resulted that while high or low pessimism estimates high market trading volume, high media pessimism estimates a decrease on market prices.

Tetlock et al. (2008) have utilized DJNS and WSJ stories about S&P 500 firms from 1980 to 2004 to investigate the effect of negative words in firm-specific news on accounting earnings and stock returns of the firms. They have observed low firm earnings based on negative words in firm-specific news. Hovewer, the negative words in stories that focus on fundamentals have the largest impact on the earnings and return of the stocks.

Palmon et al. (2009) have measured the effect of columnists recommendations for the period 2000-2003. For the analysis, they have utilized three business magazines of Business Week, Forbes and Fortune. Accordingly, the findings support that stock recommendations given by columnists do not have any impact on abnormal returns. Hovewer, recommendations including references to management or providing merger & acquisition related to rumors affect investor decisions.

Soon (2010), in his thesis, has investigated whether published financial news have an impact on volatility, market returns and other market characteristics. Content analysis through the General Inquirer (GI) was conducted by using the data obtained from daily news articles published in the Wall Street Journal. Accordingly, it is resulted that high negative news scores are not correlated with negative abnormal returns in the S&P 500, as expected. Hovewer, high negative news scores estimate higher market volatility.

Boudoukha et al. (2013) have measured the interactions between events relevant to companies and stock price volatility. Based on textual analysis conducted during the periods from 2000 to 2009, it can be said that fundamental firm-level information such as new product launches, lawsuits, analyst coverage, news on financial results, mergers has significant effect on stock price volatility in the S&P500.

Jory et al. (2015) have used US publicly listed firms to examine corporate scandals of both a financial and non-financial nature between 1993 and 2011. An event study has conducted and resulted that investors react adversely to such events and firms with more cash flows, and their stock returns are less likely to be affected from such scandals. Moreover, an increase is observed in stock price volatility of these affected firms after the announcement of the scandal.

Ostrovsky-Berman (2020) has attempted to investigate the effect of market perception to press coverage of public companies and media interviews with CEOs. He has used event study by utilizing press articles and interviews given by CEOs and conducted the study on 378 S&P companies. He has found that both press coverage and interviews with CEOs have significant abnormal returns. Additionally, negative news have more impact on market in comparison with positive news.

Zou et al. (2002) have used 1,075 IPOs on China's stock market for the years 2009-2016 to examine the effect of media coverage on IPO underpricing and post-IPO volatility. They have conducted a textual analysis and found that media coverage is negatively associated with IPO underpricing. Investors are affected more by media coverage in a negative way.

The existence of abnormal return behavior has also been tested in Borsa Istanbul by utilizing event study methodology. Kıymaz (2001) is one of the first studies that investigates whether stock market rumors affect stock prices or not in Istanbul Stock Exchange. He has conducted an event study by using the stock market rumors published in the HOTS column of the 'ET' weekly magazine between the periods July 21, 1996 and August 17, 1997. Especially, rumors based on earning expectations have greater impact on stock prices.

Yazıcı and Muradoğlu (2002) have studied the impact of published investment advices by Investor Ali on common stock prices during the period from 1993 to 1998 in Istanbul Stock Exchange. The event study conducted has reported that the stock recommendations do not help investors to earn excess returns.

Erdogan and Yezegel (2008) have examined the behavior of the stock returns following large price changes of the firms in the presence of no new news between the years 1998 and 2004. Findings of the event study have suggested that the daily security prices, stock split, capital increases and dividend data obtained from Istanbul Stock Exchange have decreased significantly following large price changes.

Erdogan et al. (2010) have analyzed analyst recommendations made for stocks of BIST 30 Index. The daily and monthly stock price, dividend and stock split data have been obtained from Istanbul Stock Exchange during the period between 1993 and 2005, in their study. As similar with the results of Yazıcı and Muradoğlu (2002), they have concluded that analysts recommending stocks listed in the Istanbul Stock Exchange (ISE) do not exhibit superior stock picking ability.

Eyüboğlu and Bulut (2016) have analyzed the impact of firm-specific news on stocks listed in BIST 30 Index between the years 2003 and 2012. The results of the event study have supported that investors are more sensitive to operational, financial and restructuring related announcements.

Eyüboğlu and Bulut (2017) have performed an analysis of the weekly magazine "Para" covering the period between February 2006 and December 2012 in the Istanbul Stock Exchange. The event study results have indicated that business magazine recommendations cannot help investors to earn abnormal returns from stocks, consistent with the results of Erdogan et al. (2010). In other words, investors do not gain abnormal returns from the "buy" recommendations of the business magazines.

Aim of the Study

The main purpose of this study is to examine whether investors can earn abnormal returns from market makers' buy recommendations for the stocks traded in Borsa Istanbul (BIST). As suggested by Brown and Warner (1985), the event study is conducted to analyze the effects of recommendations on the stock prices between the periods January 2019 and April 2020.

This study is the first attempt to evaluate market makers' effect on the stock returns through their buy recommendations in Borsa Istanbul. Furthermore, this study enables to compare sectoral differences in terms of the effects of recommendations on stock returns.

Data & Methodology

An event study has been conducted to detect the reactions of market makers' recommendations to the stock market returns, in this study. In this case, initial sample consists of 21,250 observations for buy recommendations over the period from January 2019 to April 2020. Ak Investment Inc. has been selected as market maker and daily recommendations have been obtained from the official website of Ak Investment Inc. The reason to examine is that Ak Investment Inc. is one the most reviewed and followed members listed on Borsa Istanbul equity market members eligible for market making. Furthermore, daily data of the stock prices traded in BIST 100 Index for both the estimation period and event period have been utilized from the official website of Finnet which is the Electronic Publishing Data Communications Co. Ltd. Then, the net sample related to buy recommendations of market makers has been dividen into groups according to the sectors that stocks traded. They are sectors of manufacturing, technology, wholesale and retail trade, mining and quarrying and financial institutions. While banks and holding and investment companies are included within financial institutions, textile, wearing apparel and leather companies are included within manufacturing sector through Borsa Istanbul classification.

The event study allows researchers to test the effects of an event such as firm-specific or financial news or analyist recommendation etc. on stock performance (Palmon et al., 2009). As in Brown and Warner (1985)'s study, a maximum of 250 daily return observations for the given period has been used for each stock. Accordingly, for the hypothetical event, while the 'estimation period' starts at day - 244 and ends at day-6 in this period, the following 11 days (- 5 through + 5) is accepted as the 'event period'. For a stock to be taken into consideration for the analysis, the entire 250 day period is needed and in case of no missing return data in the last 20 days, the stock is included in a sample.

As reported in Brown and Warner (1985), market adjusted returns were used to test short run abnormal returns, in this study. To be used in this abnormal return estimation method, firstly, daily closing prices were converted to daily logarithmic returns, as in Özsu (2015). The following formula was used to calculate returns:

$$R_{i,t} = ln(P_{i,t}/P_{i,t-1})$$

where $R_{i,t}$ is the return of stock *i* at time *t,* $P_{i,t}$ is the closing price of stock *i* at time *t,* and $P_{i,t-1}$ is the closing price of stock *i* on the day before.

To estimate market adjusted abnormal return for each stock during the event period, the following procedure was used:

$$AR_{i,t} = R_{i,t} - R_{m,t}$$

where $R_{m,t}$ is the market return at day *t*. $AR_{i,t}$ is the abnormal return which is defined as the difference between the return on stock *i* and the return on the market at day *t*.

To conduct an event study, average abnormal returns and average cumulative abnormal returns were calculated for event days and taken into account for the analysis (Eyüboğlu and Bulut, 2017). Average abnormal returns *(AAR)* on *n* stocks at day *t* can be measured as dividing abnormal return for each stock by number of stocks analyzed, as seen in the following equation:

$$AAR_t = \frac{\sum_{i=1}^{N} AR_{i,t}}{N}$$

For *n* stocks, cumulative average abnormal return (CAAR) is the sum of average abnormal return of the stocks used during the period. Thus, *CAAR* for the period between $T_1$and T_2 is defined as:

$$CAAR_T = \sum_{t=1}^{T} AAR_t$$

In this study, an event window that starts on day t = - 5 and ends on t = 5 is taken into consideration for the analysis and the t-tests are carried out for this event window.

Average abnormal returns and cumulative average abnormal returns are expected to be around zero during pre-event periods, if stock returns are not affected by recommendations. Hovewer, in case of a valuable information related to a stock during pre-event period, it will be possible to observe positive average abnormal returns and thus, cumulative average abnormal returns will begin to increase (Eyüboğlu and Bulut, 2017; Keown ve Pinkerton, 1981).

Empirical Findings

Following Brown and Warner (1985), the event study methodology was employed to analyze the effects of buy recommendations of market makers on stock returns. The daily average abnormal returns (*AARs)* for all buy recommendations were computed for analysis period to relative to the event day. Table 1 provides the summary statistics of average abnormal returns during event days from *-5* to *+5*. The t-statistics tests the null hypothesis that the average abnormal returns are equal to zero.

As shown on Table 1, for all periods which extend from day *−5* to *+5*, average abnormal returns have negative values and findings are statistically insignificant at 5% level. Furthermore, average abnormal returns are around zero during pre- and post-event periods. Thus, it can be concluded based on *AARs* values that no recommendation given by market makers related to a stock affects investors while making a decision.

Table 1. Average abnormal returns (AARs) based on stock recommendations

Days	AARs	t-values
-5	-0,004	-0,628
-4	-0,003	-0,504
-3	-0,003	-0,504
-2	-0,003	-0,527
-1	-0,001	-0,172
0	-0,001	-0,118
1	-0,004	-0,657
2	-0,004	-0,713
3	-0,004	-0,629
4	-0,004	-0,638
5	-0,000	-0,065

* Significance at 5%.

The average cumulative abnormal returns (*CAARs*) for all recommendations are reported on Table 2. Event windows are divided into three sub-periods: combined period *((-1, +1), (-2, +2), (-3, +3), (-4, +4), (-5, +5)),* pre-event *((-5, -4), (-5, -3), (-5, -2), (-5, -1))* and post-event *((+1, +2),(+1, +3),(+1, +4),(+1, +5))* periods.

The results indicate that stocks experience negative insignificant average abnormal returns during all event periods when BIST 100 Index is used as a proxy for the market. Based on these results, it can be supported that stock recommendations do not provide valuable information to investors. Trading based on these recommendations would provide statistically insignificant average abnormal returns. In other words, continued negative gains after post-event periods would support the view that trading based on the recommendations would not benefit to investors and information obtained from market makers does not have any value. These insignificant average abnormal returns are consistent with the results of Yazıcı and Muradoğlu (2002), Erdogan et al. (2010) and Eyüboğlu and Bulut (2017).

Despite of these negative values, the *CAARs* present the highest abnormal returns in combined periods. Especially, highest returns (*-0,026* and *-0,030*) are reported for *(-4, +4)* and *(-5, +5)* combined days, respectively. In addition, the values of post-event periods are higher than the values of pre-event periods, and furthermore, the *CAARs* are constantly increasing compared to the previous ones. Consistently, even if there is no significant reaction during post-event periods after the recommendation, *t-values* are closer to *1.96* which is the significance value; *-1,154, -1,318* and *-1,208* for the periods of *(+1, +3), (+1, +4), (+1, +5),* respectively. Thus, it can be said that investors may tend to take into consideration of market makers' recommendations and buy stocks based on their comments, even if they are not affected at most.

Table 2. Cumulative average abnormal returns (CAARs) based on stock recommendations

Windows	CAARs	t-values
	Combined periods	
-1, +1	-0,005	-0,546
-2, +2	-0,013	-0,978
-3, +3	-0,019	-1,255
-4, +4	-0,026	-1,487
-5, +5	-0,030	-1,554
	Pre-event periods	
-5, -4	-0,007	-0,800
-5, -3	-0,009	-0,944
-5, -2	-0,013	-1,081
-5, -1	-0,014	-1,044
	Post-event periods	
+1, +2	-0,008	-0,969
+1, +3	-0,012	-1,154
+1, +4	-0,015	-1,318
+1, +5	-0,016	-1,208

* Significance at 5%.

For further analysis, the differences in stock price reaction with respect to the sectors, the sample was classified into five sub-groups including manufacturing, technology, wholesale and retail trade, financial institutions and mining and quarrying sectors. The event study methodology was used to examine the effects of buy recommendations of market makers on stock returns based on these sectoral differences. The summary statistics of average abnormal returns during event days are reported on Table 3. Accordingly, when the pre-event period is examined, manufacturing and wholesale and retail trade sectors have positive values. For example, stocks traded in manufacturing sector provide average abnormal returns of *0,00108* and *0,00107* on days *−4* and *−2*, respectively. Hovewer, both findings are statistically insignificant at 5% level. Similarly, the *AARs* are *0,005, 0,006, 0,001* and *0,004* for the days *−5, −3, −2* and *−1,* respectively for the stocks traded in wholesale and retail trade sector. Any of the groups do not show any statistically significant specific patterns during event days. In the period following the buy recommendations of the market maker, the *AARs* are mostly negative and statistically insignificant. The *AAR* value is positive (*0,001*), only for the manufacturing sector, at the day of *t=0* (event day), indicating the existence of market maker effect on stock returns on the event day (*t=0*). Furthermore, average abnormal returns are around zero during pre- and post-event periods.

Table 4 reports the results of *CAAR*s for combined, pre, and post event periods based on five different sector groups.The t-statistics tests the null hypothesis that the cumulative abnormal returns are equal to zero. Accordingly, statistically significant t-values are observed only for financial institutions for

all three periods. Furthermore, the *CAARs* begin to increase after buy recommendations of the market makers, in other words, increased *CAARs* (*-0,006, -0,011, -0,018* and *-0,026*, for *(+1, +2), (+1, +3), (+1, +4)* and *(+1, +5),* respectively) are observed during post-event periods. Thus, it can be concluded that stocks traded in financial institutions are affected from buy recommendations of the market makers and investors earn abnormal returns by using these recommendations for the stocks traded in this sector. The rest of the groups do not show any statistically significant specific patterns.

Hovewer, consistent with the results of financial institutions, almost all the t-values are reported higher than the value of *1,50 (*closer to *1.96)* for wholesale and retail trade and technology sectors during post-event days, even if negative *CAARs* are observed for these sectors. For example; technology sector experiences t-values of *1.60* and *1.80* during *(+1, +4)* and *(+1, +5)* windows, respectively, while stocks traded in wholesale and retail trade have t-values of *1.56* and *1.45* in the same time period. Thus, it can be said that investors may tend to be affected from market markers' buy recommendations and they tend to earn abnormal returns. As a matter of fact, the tendency of increased *CAARs* may also support the existence of a market maker effect on an investment decision in wholesale and retail trade and technology sectors. Moreover, the sector of technology shows the highest average abnormal returns in combined, pre-event and post-event periods, following financial institutions.

To sum up, stocks traded in financial institutions have greatest impact on stock returns, while others have statistically insignificant effects. Overall, the empirical results support the existence of statistically significant abnormal returns in combined, pre- and post-event periods for financial institutions. On the other hand, the findings for the stocks traded in other sectors, show that there are statistically insignificant negative abnormal returns. This suggests that recommendations of the market makers would not generate any abnormal returns to investors who may use information for their trading. In other words, information provided by market makers does not have any value at all for investors while making an investment decision, contrary to the results of financial institutions.

Table 3. Summary statistics of average abnormal returns (AARs) based on sector groups

	MANUFACTURING		TECHNOLOGY		WHOLESALE AND RETAIL TRADE, RESTAURANTS AND HOTELS		MINING AND QUARRYING		FINANCIAL INSTITUTIONS	
Days	**AARs**	**t-value**	**AARs**	**t-value**	**AARs**	**t-value**	**AARs**	**t-value**	**AARs**	**t-value**
-5	-0,015	-0,625	-0,004	-0,253	0,005	0,621	0,003	0,291	-0,002	-0,564
-4	0,001	0,046	0,005	0,376	-0,006	-0,725	-0,000	-0,036	-0,006	-1,538
-3	-0,010	-0,399	-0,007	-0,516	0,006	0,648	-0,009	-0,733	-0,004	-1,075
-2	0,001	0,045	-0,006	-0,450	0,001	0,088	0,000	0,010	-0,005	-1,419
-1	-0,006	-0,238	-0,002	-0,132	0,004	0,481	-0,000	-0,032	-0,003	-0,852
0	0,001	0,060	-0,010	-0,710	-0,003	-0,379	-0,004	-0,302	-0,001	-0,345
1	-0,002	-0,080	-0,019	-1,311	-0,011	-1,283	-0,003	-0,280	-0,002	-0,507
2	-0,002	-0,095	-0,007	-0,519	-0,007	-0,816	-0,001	-0,124	-0,004	-1,158
3	-0,001	-0,062	0,000	0,018	-0,002	-0,211	-0,003	-0,254	-0,004	-1,119
4	-0,061	-0,004	-0,020	-1,389	-0,007	-0,816	-0,003	-0,237	-0,004	-1,047
5	-0,001	-0,024	-0,012	-0,833	-0,001	-0,125	-0,005	-0,407	-0,002	-0,426

* Significance at 5%.

Table 4. Summary statistics of cumulative average abnormal returns (CAARs) based on sector groups

	MANUFACTURING		TECHNOLOGY		WHOLESALE AND RETAIL TRADE, RESTAURANTS AND HOTELS		MINING AND QUARRYING		FINANCIAL INSTITUTIONS	
Windows	**CAARs**	**t-value**	**CAARs**	**t-value**	**CAARs**	**t-value**	**CAARs**	**t-value**	**CAARs**	**t-value**
					Combined periods					
-1, +1	-0,006	-0,149	-0,031	-1,243	-0,010	-0,681	-0,007	-0,354	-0,006	-0,984
-2, +2	-0,007	-0,137	-0,045	-1,396	-0,017	-0,853	-0,009	-0,326	-0,019	-1,975*
-3, +3	-0,018	-0,290	-0,052	-1,368	-0,013	-0,556	-0,020	-0,649	-0,024	-2,448*
-4, +4	-0,017	-0,242	-0,067	-1,544	-0,026	-1,004	-0,024	-0,664	-0,034	-3,020*
-5, +5	-0,032	-0,415	-0,082	-1,724	-0,022	-0,759	-0,025	-0,634	-0,038	-3,030*
					Pre-event periods					
-5, -4	-0,014	-0,409	0,002	0,087	-0,001	-0,074	0,003	0,180	-0,008	-1,486
-5, -3	-0,023	-0,564	-0,006	-0,227	0,005	0,314	-0,006	-0,276	-0,012	-1,834
-5, -2	-0,022	-0,466	-0,012	-0,422	0,005	0,316	-0,006	-0,234	-0,017	-2,298*
-5, -1	-0,027	-0,523	-0,014	-0,436	0,010	0,498	-0,006	-0,224	-0,021	-2,437*
					Post-event periods					
+1, +2	-0,004	-0,124	-0,026	-1,294	-0,018	-1,484	-0,005	-0,285	-0,006	-1,178
+1, +3	-0,006	-0,137	-0,026	-1,046	-0,020	-1,333	-0,008	-0,380	-0,011	-1,608
+1, +4	-0,006	-0,121	-0,046	-1,600	-0,027	-1,563	-0,011	-0,447	-0,018	-2,316*
+1, +5	-0,006	-0,119	-0,058	-1,804	-0,028	-1,454	-0,016	-0,582	-0,026	-2,563*

*Significance at 5 %.

Conclusion

In this study, the performance of market makers' recommendations made for stocks is investigated in Borsa Istanbul. The sample covers daily stock returns and market maker buy recommendations between the periods January 2019 and April 2020. BIST 100 Index was used as a proxy for the market. While the daily data was collected from the official website of Finnet, Ak Investment Inc. was selected as the market maker. For further analysis, to test market maker effect on different sectors, the study was divided into five different sub-groups. Thus, the sample enables to compare stock returns listed in financial institutions, manufacturing, technology, wholesale and retail trade, mining and quarrying sectors.

To examine whether investors can earn abnormal returns by using the recommendations of the market makers, the event study methodology is used, as suggested by Brown and Warner (1985). Through this analysis, average abnormal returns and cumulative average abnormal returns were calculated for event days. In the presence of the market maker effect on investors, while abnormal returns are expected to be increased, t-values are expected to be higher than *1.96* during post-event days.

The results of the event study indicate that stock recommendations do not provide valuable information to investors during combined, pre- and post-event periods. Trading based on these recommendations would provide statistically insignificant average abnormal returns for BIST 100 Index, similar with the results of Yazıcı and Muradoğlu (2002), Erdogan et al. (2010) and Eyüboğlu and Bulut (2017). Hovewer, average abnormal returns around zero support that investors may tend to take into account of stock recommendations, even if they are not affected at most.

As stated earlier, for further analysis, the differences in stock price reaction with respect to the sectors, the sample was classified into five sub-groups including manufacturing, technology, wholesale and retail trade, financial institutions and mining and quarrying sectors. Findings support that stocks traded in financial institutions are affected from buy recommendations of the market makers and investors earn abnormal returns by using these recommendations for the stocks traded in this sector. The rest of the groups do not show any statistically significant specific patterns. This suggests that investment decisions based on the recommendations of the market makers would not generate any abnormal returns to investors, contrary to the results of financial institutions. Furthermore, the sector of technology shows the highest average abnormal returns in combined, pre-event and post-event periods, following financial institutions.

We believe that our findings will be useful for both individual and institutional investors who trade on Borsa Istanbul and will contribute to the finance literature as a reference for further studies. In this context, for further studies, it would be suggested to measure long run abnormal returns. Because of the possibility of poor performance of the stocks in the short run, buy recommendations of the market makers might be profitable in the long run. This study does not take into account any other resources that may direct investors to act. Thus, the effects of firm-specific news, analysts recommendations, press coverages etc. on stock returns might be examined. It woud provide a more comprehensive analysis to evaluate investor behavior by examining the effects of other determinants on abnormal returns.

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