

THE IMPACT OF BUY – SELL RECOMMENDATIONS ON BANKS' STOCK RETURNS*

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Abstract. The aim of this research was to investigate the impact of stock buy-sell recommendations of brokerage houses on the stock returns of banks operating in Borsa Istanbul (BIST). Accordingly, it has been attempted to assess if investors can receive abnormal returns in accordance with the recommendations of brokerage houses using the case study technique. The validity of the semi-strong effective form of investors who made a buying-selling decision based on brokerage house recommendations was investigated. The returns of the banks' stocks were obtained from the data-stream database. The study evaluated buy-sell recommendations for four large brokerage houses and analyzed data from January 2018 through December 2020. The event study method was used, and t-test was performed in order to determine the difference of abnormal returns from zero in the research. As a result of the research, a negative abnormal return was determined on the day of the event and the day after the sell recommendation was given. Besides, a positive abnormal return was determined on the day before the announcement and on the day of the event in the bank stocks on which buy recommendation has been given. In this respect, the average abnormal and cumulative abnormal returns indicated that BIST was not an efficient market in a semi-strong form for the banking sector. When the sell recommendations and their effects are examined within the scope of the research, it is seen that the day before [-1] $p=0.016$ value was obtained, on the day, [0] $p=0.018$ value was obtained, the next day and two days later [+1, +2] $p=0.077$ and 0.046 values were obtained. On the other hand, when the buy recommendations and their effects are examined, it is seen that the day before [-1] $p=0.000$ and on the day [0] $p=0.098$ values were obtained. T-test results and p values show that brokerage house recommendations are effective on stock returns in the BIST banking sector, and therefore BIST banking sector is effective in a weak form. The obtained results of the study were crucial for investors who invested in short-term stocks.

Key words: Stock markets, BIST, event study, efficient market hypothesis.

JEL Classification: C12, G11, G14

1. Introduction

The "Efficient Market Hypothesis" (EMH) developed by Fama (1965) states that all participants in the market have the same information and such information is reflected in the stock prices. Fama (1965) classified the markets as being efficient in weak-form, semi-strong form, and strong-form. In weak-form markets, stock prices reflect all changes such as retrospective price, volume, and interest rate; whereas, besides such information, publicly disclosed financial statement

information, dividend policies, and managerial information about the firm indicate stock prices in semi-strong form markets. Accordingly, it is not possible to achieve abnormal returns from stock investments in semi-strong-form markets. In strong-form efficient markets, insider information is included in both market forms, and all information, whether publicly available or not, becomes reflected in the stock prices. In this context, according to the efficient market hypothesis, the information that would affect the stock prices

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spreads rapidly along with the markets and is quickly reflected on the stock prices by rational investors, in turn, abnormal returns are prevented (Karan and Ressamoğlu, 1996; Malkiel, 2003).

The returns of stock investments have been tested many times in terms of developed and developing countries within the framework of the EMH. Both institutional and individual investors benefit from investment recommendations upon investing in stocks. Buy-sell recommendations of financial magazines, websites, financial experts, stock analysts, and brokerage houses, in particular, are utilized by a large number of individuals prior to investment (Yazıcı and Muradoğlu, 2002; Bedelova et al., 2017; Chatterjee et al., 2020). Although abnormal returns are mainly expected of the stock investments made on the basis of brokerage house recommendations, it should not be expected that those expectations of investors would be fulfilled in semi-strong or strong-form efficient markets. Investors who make investments in stocks based on buy-sell recommendations provided by brokerage houses must be inactive or underperforming in order for investors to generate above-average returns (Bedelova et al., 2017).

In the literature, it is seen that different results have been achieved in studies conducted on developed and developing countries. For instance, Murg et al. (2016) concluded that the buy-and-sell recommendations in the Austrian market had a significant impact on stock returns in the study conducted employing the case study method, whereas Berkman and Yang (2019) stated that analyst recommendations provided useful information in estimating market returns. On the other hand, various studies have shown that brokerage houses cannot accurately predict price movements, and investors who follow buy-sell recommendations cannot make the profits they claim (Groth et al., 1979; Grossman and Stiglitz, 1980; Metrick, 1999; Dewally, 2003). The fact that many studies have confirmed the effectiveness of markets in a weak form has led researchers to test whether markets are effective in a semi-strong form, and the event study method has often been used (Mandacı, 2018). According to Stickel (1995), although brokerage house buy and sell recommendations affect stock prices, this impact depends on short-term price reaction, strength of recommendation, size of recommendation change, analyst reputation, size of brokerage house, size of firm recommended, and contemporary earnings forecast revisions. There is quite a limited number of research studies regarding the subject conducted in Turkey. Bedelova et al. (2017) investigated the impact of brokerage firms' buy-sell recommendations on stock prices employing the case study method, while other studies were conducted by Yazıcı and Muradoğlu (2002) and Karan and Ressamoğlu (1996).

The objective of this research study is to examine the impacts of brokerage house recommendations on stock returns. Turkey is in the category of developing countries and its financial markets are growing and deepening day by day. In this context, investment instruments have been diversified, and the interest of individual and institutional investors in the Turkish stock and asset market has been increased. The number of companies offered to the public continues to accelerate. Within the course of the first four months of 2021, the public offerings of 13 companies have been completed and the shares of 11 companies started to be traded on the stock exchange. In this regard, brokerage house recommendations are extremely crucial for investors aiming to invest in the stock market and make use of their savings. Only a limited number of studies have been conducted regarding the impact of brokerage house recommendations on stock returns in Turkey (Kaan and Ressamoğlu, 1996; Yazıcı and Muradoğlu, 2002; Bedelova, 2017; Arısoy, 2020). Nonetheless, in these studies, no sector segmentation or firm size classification was initiated.

Turkey falls into the emerging markets category. The most important motivation underlying the preference for the banking sector when analyzing the impact of buy-sell recommendations on stock returns is that the banking sector is the engine of economic growth and development in emerging markets and differs from other sectors in this respect. In addition, there have been no studies analyzing the impact of buy-sell recommendations on stock returns using the case study method in the banking sector in the context of Turkey, and this study fills a gap in the literature. In Turkey, Çevik and Erdoğan (2009) concluded that the banking sector stock market is effective in weak form when structural breaks are not taken into account, but ineffective in weak form when structural breaks are taken into account. According to Altunöz (2016), the banking sector is efficient in weak form and stock prices occur randomly. On the other hand, Çevik and Sezen (2020) pointed out the existence of long-term memory in the volatility of the banking index and concluded that the BIST banking sector is not efficient in a weak form. Ildırar and Dallı (2021) concluded that 11 of the 12 banks in the BIST banking sector are efficient in weak form. Due to the different results obtained from the studies on the efficiency of the BIST banking sector in Turkey, it is necessary to retest the efficient market hypothesis in terms of the banking sector. For this reason, the results obtained from the research are also important in terms of providing new evidence for the efficient market hypothesis in the banking sector. When analyzing the brokerage houses operating in Turkey, we can see that the share of bank brokerage houses is higher than that of other brokerage houses in terms of volume of transactions. However, bank brokerage houses cannot give buy-sell advice to their members.

For this reason, the buy-sell recommendations of bank brokerage houses apply only to the stocks of other banks, and their impact is seen on the stocks of other banks. The results obtained in the study should be evaluated in this context. In addition, expert anomalies also play an important role in explaining abnormal returns. Accordingly, expert comments and market rumors increase the demand for recommended stocks, so it can be seen that stock returns increase. Expert comments create an environment of speculation for stocks and thus affect the recommended stock prices (Karan, 2020).

According to Stickel (1995), a relationship existed between buy-sell recommendations and firm size. In this context, identifying the role of brokerage firm recommendations on the stock returns of banks with the highest brand and market value would make a significant contribution to the literature and investors. This study is important because it is the first study on banking, which is one of the most important sectors in Turkey.

The study consists of five parts. After the introduction in the first part, the second part presents a detailed literature review on the topic. The third part presents the methodology of the study. The fourth part includes the results of the study, and the fifth and final part consists of a discussion and conclusion.

2. Literature review

Individual investors scrutinize the buy-sell recommendations of brokerage firms when deciding whether to invest in stocks. Thus, investors expect to make supernormal returns using buy or sell recommendations. However, the literature argues that under the efficient markets hypothesis, investment recommendations will be valid in inefficient or underperforming markets. According to this assumption, investment advice should have no economic contribution when markets become semi-efficient. The efficient markets hypothesis states that markets are always reasonably efficient. Therefore, we should expect stocks to eventually reach their equilibrium price.

The concept of market efficiency, which is defined as the reflection of securities (asset) prices to all available information, is categorized into three different market types such as operational efficiency, resource allocative efficiency, and informational efficiency. In operational efficiency, those who supply and demand funds in such markets tend to conduct their transactions at minimum cost. In resource allocative efficiency, the optimal allocation of resources is aimed in such markets. The informational efficiency involves prices that are considered to reflect all available information.

The efficiency concept in the efficient market

hypothesis refers to informational efficiency. One of the most important assumptions of the hypothesis is based on the notion that no investor can generate abnormal returns by utilizing any information. The reason for this is that prices already contain all the information (Karan, 2001: 268). Therefore, in the obtained studies as a result of the literature review, it is seen that the brokerage house recommendations have been used to test market efficiency in a semi-strong form.

Studies pertaining to brokerage firm recommendations are discussed in the literature. As a result of the literature review conducted as part of this study, it is noted that most of the available sources consist of foreign literature. The number of studies conducted on this topic in the domestic literature is quite limited. Therefore, it is believed that the study of the recommendations of brokerage houses in Turkey within the framework of this study will contribute to the literature.

As a result of the literature review examined within the scope of the study, domestic and foreign research studies are compiled and presented. Karan and Ressamoğlu (1996), in which the impacts of expert opinions published in weekly stock market journals on stock performance were discussed, indicated that investors who invested in stocks individually would have ventured in their investment decisions being influenced by the expert opinions in the weekly stock market journals. The study also discussed the view that investment advice can have a positive impact on higher-than-expected returns on equity investments, even in active markets and developed countries. Yazıcı and Muradoğlu (2002) investigated the impact of the securities recommendations in the financial press on the common stock prices in the Istanbul Stock Exchange upon examining whether or not the published investment recommendations yielded higher returns for investors. They concluded that the investment recommendation that appeared in the weekly investment magazine did not assist small investors in acquiring excessive returns. Bedelova, Yıldız, and Karan (2017) found that investors responded significantly to positive and negative news as a result of the case study analysis in their study, in which they investigated the impacts of the recommendations made by brokerage houses for companies, whose stocks were traded on the Borsa Istanbul, on the stock price. In other words, it was concluded that the companies on the list of recommended stocks achieved positive abnormal returns, while the market reacted negatively to the announcement for stocks that were excluded from the list. Tinic et al. (2021), as a result of their study in which they examined the absolute magnitude of abnormal returns on the recommendation of foreign investment banks for upgrading and downgrading

regarding Borsa Istanbul, concluded that the absolute size of abnormal returns on the recommendations of upgrading and downgrading of investment banks was higher than that of local investment banks. Another noteworthy situation, which is inconsistent with the literature, indicates that in Turkey, as an emerging market country, investors trusted foreign sources of information more than local ones. Sharda (2021) aimed at investigating the short-term impacts of brokerage analysts' recommendations on abnormal returns, using a sample selected from the S&P BSE 100 in the Indian context, and particularly the semi-strong form of the efficient market hypothesis was tested for the "Buy" stock recommendations published in the electronic version of the Business Standard. The findings indicated the existence of a marginal profit opportunity in the short-run, limited to the day of the event, but supported the view that the impact was not permanent, and that investors could not consistently generate abnormal returns by abiding by the recommendation of analysts. Kudryavtsev (2021), as a result of the analysis of the correlation between stock returns before and after analyst recommendation revisions for stocks traded on NYSE, AMEX, and NASDAQ, found that an advisory revision for a particular stock caused the stock price to move toward the opposite direction and concluded that it might have indicated that the underlying information was not sufficiently included in the stock price if it occurred after a short period. In their study where they examined the impact of brokerage company reputation on the performance of investment strategies following stock recommendation revisions in the UK stock market, Su et al. (2020) concluded that the reputation of the brokerage house had a significant impact on the recommendation performance based on the "European Research Team Institutional Investor Positions" or the past recommendation performance of brokerage houses, however, it was also found that the performance of the investment recommendation given by the brokerage houses in the previous year had a significant positive impact on the recommendation performance of the next year. It concluded that the recommendation performance in the UK stock markets was permanent. Moreover, the preload simulations conducted within the scope of the study confirmed that the observed performance persistence might have been due to the skill of the broker rather than the luck of the broker (i.e., random chance). In their study aiming to investigate the price performance of Malaysian stocks recommended by the analysts of major stock exchange companies in Malaysia, Song and Chu (2017) sought answers to the questions of whether or not the investors could profit from the Malaysian stock market by following the analyst's recommendations and whether or not

the buying (or selling) of the recommended stocks yielded higher returns than of the market within the same period. The study was conducted using information obtained from popular blogs or websites that provide information on market performance and target stock prices in Malaysia.

As a result of the study, it was determined that even though investment recommendation reports were written by people who were considered experts in their fields, the accuracy of analyst reports was not as praiseworthy as expected. In the study, it was concluded that the recommended "Buy" category, which was estimated by the analysts, had the highest uptrend potential ranging from 10% to 20%. In the study, there was no evidence that the price would have gotten closer to the target prices as the time lengthened. In their study examining the cyclical fluctuations that lead to jumps in stock prices and the information content of analyst revisions, Jiang and Kim (2013) concluded that they contained important information, especially those published before the jumps, although advisory revisions were more likely to cluster around stock price increases. Arun et al. (2016), which examined the investment value and market impact of more than 1000 analyst recommendations on the Indian stock market, revealed that analysts were more biased in buying rather than selling recommendations. These recommendations have a short-term future investment value of three months starting from the date of the recommendation. In the study, which found that buy recommendations were more valuable than sell recommendations, it was concluded that the forecasting ability of analysts, as measured by hit rate, was not more than 50%. Su et al. (2019), using the dataset obtained over the period 1995–2013 on the investment value of sell-side analyst recommendation revisions in the UK, concluded that the upgrades did not generate significant positive anomalies on average. Although downgrades might have generated significantly negative abnormal gross returns throughout certain periods, these observed significant returns disappeared after accounting of transaction costs. Overall, the bootstrapping simulations conducted in the study confirmed the sell-side analysts' lack of ability to make valuable up/down revisions to fulfill the magnitude of transaction costs, regardless of whether or not those revisions were made by high-ranking brokerages. Nevertheless, an industry-based analysis indicated that in two high-tech industry sectors, namely the healthcare and technology sectors, sell-side analysts had certain skills in making such particular depreciation during certain periods. Skills demonstrate sufficiency in offsetting transaction costs. The findings of the studies in the literature supported the theory that investment recommendations would be valid in inefficient or weakly efficient markets according to the efficient markets hypothesis.

3. Methodology

The main objective of this research study is to investigate the impact of the buy and sell recommendations of the brokerage houses for the stocks of the banks whose stocks are traded in the Borsa Istanbul (BIST) on the stock prices. With the case study method, it has been tried to determine whether the investors can obtain abnormal returns in line with the recommendations of the intermediary institutions. In other words, the validity of the semi-strong effective form of the investors who made a buying-selling decision for the recommendations of the brokerage houses was tested.

The study uses data from January 2018 through December 2020, as well as buy and sell recommendations from the top 4 brokerage houses. Bank stock returns were obtained from the DataStream database. 3 of the 4 brokerage houses are of banking origin. In the empirical analysis, the event study method, using the Stata 13.0 software, is employed considering the day on which the brokerage houses announced the recommendation. It is determined whether or not an abnormal return exists by determining the difference between the market returns of the stock returns 15 days before and 15 days after the event day. In other words, following the detection of abnormal returns 31 days (-15, +15) including the day of the event, before and after the event, it is determined with the help of one sample t-test statistics whether or not the abnormal returns are different from zero.

The purpose of taking the 31-day time frame is to adopt the same time period in similar studies across the literature. In addition, bank stocks are not chosen too long so that the sensitivity of the returns to the event is not lost. While determining less than 15 days may be short in monitoring the effect for the yield calculation, it is considered that keeping it longer than 15 days may weaken the relationship of the effect with recommendations. In other words, in this method, which has been used for many years and is claimed to be safe, keeping the selected time frame too long may weaken the effect of the event, while keeping it too short may cause the extent of the effect to not be fully reflected (Badalova, Yıldız, and Karan (2017)).

The abnormal returns of stocks are calculated as follows:

$$AR_{it} = R_{it} - R_{mt} \quad (1)$$

AR_{it} ; the abnormal return of the i^{th} stock on day t .

R_{it} ; the return of the i^{th} stock on day t .

R_{mt} ; the market return of the i^{th} stock on day t .

The Average Abnormal Return (AAR) is calculated as follows:

$$(AAR)_{it} = \sum_{i=1}^n \left(\frac{1}{N} \right) (AR)_{it} \quad (2)$$

Afterward, the AARs provided by the stocks in the sample in question are added together, respectively, and the formula for obtaining the Cumulative Abnormal Return (CAR) is as follows:

$$(CAR)_{it} = \sum_{i=1}^n (AAR)_{it} \quad (3)$$

As a result, whether or not the cumulative abnormal returns are different from 0 is tested with the following hypotheses:

Investors are expected to earn abnormal returns from their investments in stocks of banks included in the recommendation list. Investors take the proposed bank stocks into consideration, taking into account the buy and sell recommendations of the said brokerage houses. In this context, according to the H_1 hypothesis; positive abnormal returns can be obtained from the stocks of banks added to the brokerage house recommendation list and can be shown as $H_1 = KAG > 0$.

H_1 : Positive abnormal returns are obtained from the bank stocks that the brokerage houses give a buy recommendation.

This situation could negatively affect investors because brokerage houses recommend selling stocks owned by banks. Because financial analysts at the brokerage house have evaluated bank stocks and advised them to sell because of any negativity. It is expected that the price of bank stocks will decrease as investors' interest in the delisted bank stocks decreases, taking into account the recommendations in question, and it will be $H_2 = KAG < 0$.

H_2 : Negative abnormal returns are obtained from bank stocks that brokerage houses give advice to sell.

As a result, based on the Efficient Markets Hypothesis put forward by Eugene Fama, the assumption that there is an efficient market in semi-strong form has been tested in line with the recommendations of the banking sector and brokerage house. With the help of these hypotheses the market efficiency is measured. If the market is efficient, it is impossible to get abnormal returns on these buy and sell recommendations.

4. Findings

In this study, the impacts of the recommendations of the brokerage houses on the stocks of the banks on the stock performance are examined. In the research study, Average Abnormal Returns (AAR) and Cumulative Abnormal Returns (CAR) are calculated over the periods 15 days before and 15 days after the brokerage houses' recommendations. The obtained findings of the study are presented in this part.

Table 1 shows the abnormal returns on the stocks for which the brokerage house gave a sell recommendation. In this study, brokerage houses made 31 sell recommendations on bank stocks during the corresponding period, and the total number of observations was 961. According to the results

Table 1

Abnormal yield of bank shares, in respect of which the brokerage house gives a recommendation to sell

DAYS	AAR (%)	t(AAR)	p-value	CAR (%)	t(CAR)	p-value
-15	0.0000805	0.983	0.333	0.0000805	0.983	0.333
-14	-0.0001407	-1.248	0.222	-0.0000602	-0.375	0.710
-13	-0.0000750	-1.214	0.234	-0.0001352	-0.744	0.463
-12	-0.0002062	-3.138	0.004	-0.0003413	-1.795	0.083
-11	0.0000100	0.105	0.917	-0.0003314	-1.487	0.148
-10	0.0002368	1.993	0.055	-0.0000946	-0.387	0.702
-9	-0.0002263	-2.468	0.020	-0.0003209	-1.293	0.206
-8	0.0001320	1.411	0.169	-0.0001889	-0.699	0.490
-7	0.0003290	2.619	0.014	0.0001401	0.533	0.598
-6	-0.0000279	-0.274	0.786	0.0001123	0.436	0.666
-5	-0.0001622	-1.430	0.163	-0.0000499	-0.175	0.862
-4	0.0002866	2.249	0.032	0.0002367	0.779	0.442
-3	-0.0001274	-1.222	0.231	0.0001094	0.338	0.738
-2	0.0001116	1.196	0.241	0.0002209	0.673	0.506
-1	0.0002148	2.564	0.016	0.0004357	1.275	0.212
0	0.0003098	2.507	0.018	0.0007455	2.076	0.047
1	-0.0001630	-1.830	0.077	0.0005825	1.854	0.074
2	-0.0001588	-2.084	0.046	0.0004237	1.326	0.195
3	-0.0000737	-0.594	0.557	0.0003500	1.034	0.310
4	-0.0001237	-1.398	0.172	0.0002263	0.693	0.493
5	0.0001749	1.710	0.098	0.0004012	1.270	0.214
6	0.0000995	0.755	0.456	0.0005007	1.442	0.160
7	-0.0001159	-1.758	0.089	0.0003848	1.093	0.283
8	-0.0001220	-0.877	0.387	0.0002628	0.666	0.511
9	-0.0002768	-1.949	0.061	-0.0000140	-0.029	0.977
10	0.0001535	1.784	0.085	0.0001394	0.289	0.775
11	-0.0000358	-0.332	0.742	0.0001036	0.201	0.842
12	-0.0002069	-1.826	0.078	-0.0001033	-0.179	0.859
13	0.0001649	1.979	0.057	0.0000616	0.100	0.921
14	-0.0001687	-2.602	0.014	-0.0001071	-0.178	0.860
15	-0.0002392	-2.658	0.012	-0.0003463	-0.561	0.579

Notes: AAR and CAR denote average abnormal return and cumulative abnormal return, respectively. '0' in the day column denotes the day on which the brokerage firm announces its recommendation

of the analysis, the highest abnormal yield of bank shares recommended for sale is achieved on the day of the announcement (the day of the event) and the first day after the announcement. When considering the price change after the recommendation to sell the bank shares, we can see that the negative average abnormal return and the cumulative abnormal return take place on the first day after the announcement. Investors act on the recommendations of brokerage houses on the event day and the day after. On the other hand, following the day +1, no statistically significant negative abnormal and cumulative abnormal returns are realized. In other words, after day 1 following the event, the market response reaches normal levels and the prices return to the pre-event level within the 15-day event window.

Figure 1 on the [-15, +15] axis of the event window shows the cumulative abnormal return on bank shares for which a recommendation to sell was given. Upon examining the results, the cumulative abnormal

returns reach the maximum level on the event day. Then, the cumulative abnormal returns of bank stocks decrease regularly along with the sell recommendation of the brokerage houses. After the bank's stocks rise significantly, similar cumulative abnormal returns levels are reached on -15 to +15 event days along with the brokerage house's sell recommendation. In other words, investors believe that companies added to the list of non-recommended stocks would perform adversely in the future and permanently remove these stocks from their portfolios.

Table 1 shows the abnormal returns on the stocks for which the brokerage house gave a buy recommendation. In this study, brokerage houses make 108 buy recommendations on bank stocks during the corresponding period, and the total number of observations is 3,348. According to the results of the analysis, the highest abnormal returns of the recommended bank shares are achieved before the announcement [-1] and on the day of the event.

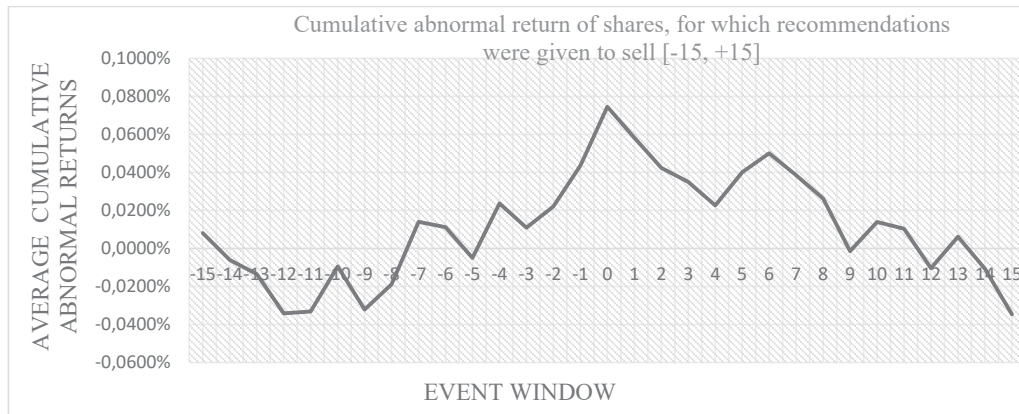


Figure 1. Sell Recommendation CAR

Table 2

Abnormal returns on shares of banks, in respect of which the brokerage house gives a recommendation to buy

DAYS	AAR (%)	t(AAR)	p-value	CAR (%)	t(CAR)	p-value
-15	-0.000015	-1.356	0.178	-0.000015	-1.356	0.178
-14	0.000004	0.306	0.760	0.000003	0.231	0.818
-13	0.000014	1.158	0.249	0.000014	1.129	0.261
-12	-0.000019	-1.335	0.185	-0.000016	-1.088	0.279
-11	-0.000022	-1.825	0.071	-0.000012	-0.852	0.396
-10	-0.000014	-1.222	0.225	-0.000005	-0.387	0.699
-9	-0.000018	-1.709	0.090	-0.000011	-0.935	0.352
-8	0.000016	1.180	0.241	0.000020	1.329	0.187
-7	0.000021	1.465	0.146	0.000028	1.710	0.090
-6	-0.000018	-1.830	0.070	-0.000011	-0.920	0.360
-5	0.000011	0.902	0.369	0.000017	1.256	0.212
-4	0.000006	0.419	0.676	0.000014	0.840	0.403
-3	-0.000016	-1.317	0.191	-0.000009	-0.633	0.528
-2	-0.000016	-1.317	0.191	-0.000009	-0.633	0.528
-1	0.000060	3.634	0.000	0.000064	3.555	0.001
0	0.000022	1.672	0.098	0.000026	1.716	0.089
1	-0.000005	-0.416	0.678	-0.000002	-0.115	0.909
2	-0.000003	-0.201	0.841	-0.000004	-0.234	0.816
3	-0.000004	-0.304	0.762	-0.000005	-0.291	0.771
4	-0.000021	-1.687	0.094	-0.000020	-1.320	0.190
5	0.000014	1.216	0.227	0.000015	1.117	0.266
6	0.000054	3.295	0.001	0.000056	3.286	0.001
7	-0.000004	-0.222	0.825	0.000004	0.204	0.839
8	0.000006	0.362	0.718	0.000011	0.703	0.484
9	-0.000012	-0.786	0.434	-0.000009	-0.550	0.583
10	0.000010	0.857	0.393	0.000014	1.130	0.261
11	-0.000028	-1.691	0.094	-0.000024	-1.387	0.168
12	-0.000026	-1.364	0.175	-0.000021	-1.051	0.296
13	0.000006	0.542	0.589	0.000008	0.682	0.497
14	0.000002	0.162	0.872	0.000008	0.468	0.641
15	0.000018	1.452	0.149	0.000022	1.587	0.115

Notes: AAR and CAR denote average abnormal return and cumulative abnormal return, respectively. '0' in the day column denotes the day on which the brokerage firm announces its recommendation

When considering the price changes before the recommendations to buy bank shares, we can see that the prices of the recommended bank shares begin to rise on the first day before the event. This result may indicate that investors have pre-announcement expectations about bank stocks that brokerage houses recommend buying, and that some investors are taking that stance. Moreover, some investors who receive inside information before the reason for this increase has been announced to the public may have made purchases on the day prior to the brokerage houses' recommendations to buy bank stock, whose recommendation to buy will be announced in the market. As a result, a statistically significant change exists in both the average abnormal return and the cumulative abnormal return on the first day prior to the recommendation ($p < 0.01$). Moreover, both the average abnormal return and the cumulative abnormal return on the day brokerage houses made buy recommendations on bank stock ($p < 0.01$). This finding indicates that investors are taking into account brokerage houses' "buy" recommendations and investing in bank stocks.

Figure 2 shows the cumulative abnormal return on the [-15, +15] axis of the event window for bank stocks for which a buy recommendation was given. When studying the results, the cumulative abnormal return reaches the abnormal return on the -1 day and on the event day. The cumulative abnormal return on bank stock then declines regularly along with the brokerage houses recommendation to sell. After a significant increase in bank stock, similar levels of cumulative abnormal returns are reached on event days of -15 to +15 along with a brokerage house recommendation to sell. In other words, investors believe that companies added to the list of unrecommended stocks will perform negatively in the future and seek to permanently exclude these stocks from their portfolios.

5. Conclusion

The event study analyzes the impact of brokerage house buy-sell recommendations on BIST bank stock returns between January 2018 and December 2020. In this context, buy-sell recommendations of the four largest brokerage houses operating in Turkey, two of which are banking houses, were included in the study in a 15-day event window. The average abnormal return and cumulative abnormal return formulas were used to determine whether stocks provide abnormal returns other than market returns. The results show that the average abnormal return and cumulative abnormal return are derived from stocks in the periods 15 days before and 15 days after the buy-sell recommendation, which are treated as events. Accordingly, the highest abnormal return among the stocks that were given a sell recommendation 31 times was realized on the day of the announcement and the first day after that. In addition to this, buy recommendation was given 108 times in the analyzed period and it is seen that the highest abnormal return was realized on the day before the event [-1] and on the day of the event. In this context, the abnormal return seen before the buy recommendation leads to the development of the opinion that the investors bought the expectations before the announcement or that there is insider trading. The findings obtained as a result of the study show that the stock returns that are not recommended by the intermediary institutions have decreased. Although the findings differ from the findings of Karan and Ressaoglu (1996), Cevik and Erdogan (2011), Cevik and Sezer (2020), Altunoz (2016), Bedelova (2017), Arisoy (2020), Ildır and Dalı (2021) consistent with the findings.

When looking at the selling recommendations and their effects within the study, it can be seen that the day before [-1] received a $p = 0.016$ value, the day, [0] received a $p = 0.018$ value, the next day and two days

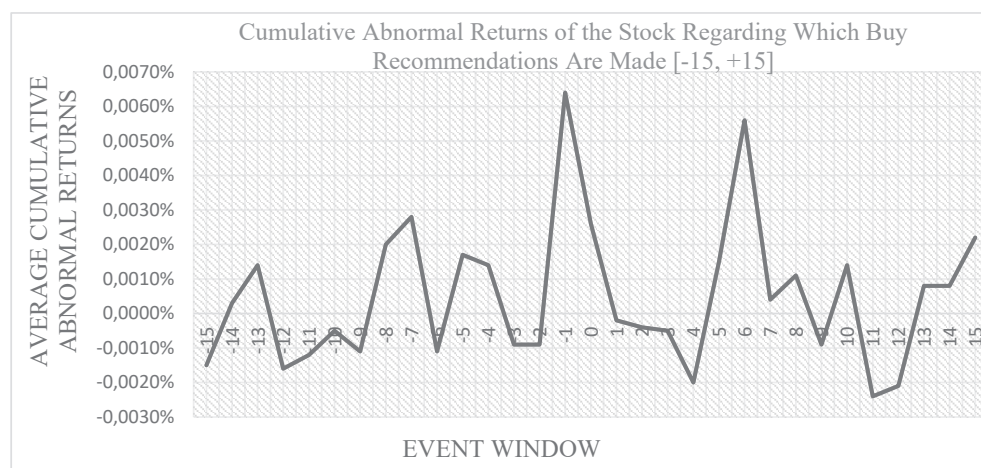


Figure 2. Buy Recommendation CAR

later [+1, +2] received $p=0.077$ and 0.046 values. On the other hand, when buying recommendations and their impact are considered, it can be seen that the day before a value of [-1] $p=0.000$ was obtained and on day [0] $p=0.098$.

According to EMH, above-average returns should not be achieved in semi-strong form efficient markets. However, it was concluded that the banking sector was not effective in a semi-strict form with the data set used in the period considered in the study. T-test results and p values show that brokerage house recommendations are effective on stock returns in the BIST banking sector, and therefore BIST banking sector is effective in a weak form. In the previous studies on the subject, including different sectors, it was observed that abnormal returns were detected in stock returns 15 days after the buy-sell recommendations, while in this study, abnormal returns were detected in the [-1, +2] period. In this context, it can be argued that the banking sector is different from other sectors, and investors pay less attention to recommendations for the banking sector. The results show that brokerage house recommendations to buy and sell banking sector stocks provide [-1, +2] average abnormal returns and cumulative abnormal returns in the short run, and then returns decline rapidly. The future performance of stocks that receive a sell recommendation is expected to be negative, meaning that the stocks will be removed from the recommendation list and investors will remove these stocks from their portfolios. On the other hand, high expectations for the future performance of stocks with a buy recommendation cause investors to invest in these stocks, and there is an increase in their returns on and after recommendation day.

Developed capital markets and the banking sector are crucial for a country like Turkey, which aspires to become one of the world's top 10 economies and join the European Union. Market inefficiencies are an important obstacle for Turkey. To developed market efficiency it is necessary to raise corporate governance, investor awareness and structural reforms for capital markets and banking sector so that more conscious and effective capital market investments can be made in the country. Financial statements and important issues that may affect the investment decisions of investors should be disclosed to the public without delay. In addition, making more proactive decisions on public disclosure and transparency by policy makers will help increase efficiency in the markets.

The study has limitations. The first limitation is that the study was conducted for the banking sector, and other sectors were not included in the study. The second limitation is that the study covers data from January 2018 to December 2020. When interpreting the results with constraints, we can say that the association of banking sector stocks with buy-sell recommendations is important for period investors. In particular, stock investors making short-term investments in the banking sector should evaluate the impact of brokerage house buy-sell recommendations in detail. In future research, it is important to analyze more than one sector within a broader window of events and over a broader observation period in terms of generalizing the results obtained. In addition, analysis of brokerage house recommendations within a firm size and sector comparison will contribute theoretically to the literature.

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