Event Study Investigation: The Impact of Credit Rating on Index Returns

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Keywords
Credit Rating Agencies, BIST, BIST Bank, BIST Holding, BIST Industry, Event Study Method.

Abstract
In this study, it was aimed to explain the impact of credit rating on Index return by Event Study Method. Finance sector, which is the pioneer sector being influenced by the changes in Turkey’s credit rating, is represented by Bank and Holding indexes. The sector that best reflects the economy after finance sector will naturally be industry sector. For this reason, it was observed in the study which direction and what speed this effect was on the three indexes; namely BIST Bank, BIST Holding and BIST Industry. In forming the data, credit rating changes made by S&P, Moody’s and Fitch were used as the data of the research. Event and estimation windows were formed by calculating the abnormal returns considering 10 days before and 10 days after the change with Event Study method was made. As a result of the study, it was found that the credit rating change affected the abnormal returns differently and the sensitivity of the indexes were different from each other.

Olay Etüdü İncelemesi: Kredi Derecelendirmenin Endeks Getirileri Üzerindeki Etkisi

Anahtar Kelimeler
Kredi Derecelendirme Kuruluşları, BIST, BIST Banka, BIST Holding, BIST Sanayi, Olay Etüdü Yöntemi.

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Özet

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1. Introduction

Credit rating is the evaluation of the abilities of rating agencies, companies or countries to fulfil their financial obligations according to their financial situations and the explanation of their financial opinions as a result of this evaluation. This view is generally expressed with a symbolic rating. The rating is shared with the public by the rating agencies together with the reason why this rating is given. The shared rating, though not an investment recommendation, is significant for the investors while making investment decisions.

In particular, developing countries prefer obtaining the funds they need to sustain their development from abroad due to the fact that domestic resources are insufficient and the cost of these resources are high. The opinions shared by credit rating agencies become an important element at this point because the high credibility of the country gives confidence to the investor. Therefore, the investment in the country by the foreign investor becomes more attractive.

The fact that the opinions of the rating agencies about the countries and firms are increasingly being followed by the investors has made the pre-investment rating activities almost obligatory. The liberalization that began in the 1980s and the globalization process that began in the 2000s have gradually increased the number and importance of the rating agencies together with the increasing capital movements and financial diversity among the countries (Gür & Öztürk, 2011: 71; Gülmez & Gündoğan, 2014).

Together with the fact that there are many rating agencies around the world, Standard&Poor's, Moody's and FitchRatings are known as the three most followed rating companies. Turkey’s introduction to credit rating agencies first happened in the 1990s. In 1992, S&P determined Turkey's credit rating as BBB, Moody’s determined as Baa3, while Fitch’ first evaluation was in 1994 as B rating. The assessments made since then have been mostly periodic.

Turkey's rating has been changed in certain periods due to economic processes experienced. Because of high inflation, high budget deficit and political uncertainty during 1992-2002 period, Turkey's credit rating was relatively low. In 2002-2008 period, Turkey's credit rating tended to increase again due to the stability in political power (Gülmez & Gündoğan, 2014). After 2008, the economic uncertainties experienced made the country's rating floating.

Today, it is discussed that the evaluations made by credit rating agencies and the ratings given as a result of these evaluations do not objectively reflect the status of the country and that the rating change is not significant on the economy. However, it is thought that most of the macroeconomic data is affected by this situation and investor behaviour is sensitive to these evaluations.

Recently, in the stock exchange markets where the investors prefer to invest, the effect of the changes made by the ratings has become an important issue in the academic circles. Therefore, the aim of this study was to investigate the impact of rating change announcements in terms of Turkey on the indexes that belong to banks, holdings and industry firms being publicly traded in BORSA Istanbul. For this purpose, based on the dates when the three major credit rating agencies (S&P,
Moody’s, and Fitch) share the changes in Turkey’s ratings with public, it was aimed to measure how index values reacted with Event Study Method.

In the study, the abnormal returns of the indexes of the bank, industry and holding firms being traded in the stock exchange that belong to 10 days before and 10 days after the mentioned dates were taken as the data. It was aimed to investigate the change in these returns by Event Study Method and measure the news effect.

2. Credit Rating Agencies

The foundation of credit rating agencies dates back to 1800s. Between the years of 1837-1841, many investors were aggrieved due to the financial crisis in the USA. Lewis Tappan, who was one of them, actually saw that many investors needed the evaluation he made in order to understand the effects of the crisis. For this reason, he set up “the credit rating application” by establishing Mercantile Agency Company to monitor and evaluate the companies. Later on, Moody's was established in 1909, Fitch was established in 1913, and S&P was established in 1941, all of whom have become the three most influential US-originated rating companies.

Due to the changes in the economic and political processes in Turkey, who met the credit rating agencies for the first time in 1992, its rating was altered 9 times by Moody’s, 11 times by S&P, and 12 times by Fitch, and these changes were made in the ratings between the investable level and speculative level.

The lowest rating given by Moody’s, who begun to monitor our country with the investable level-Baa3, was B1, which is the speculative level. When ratings were examined, it was revealed that Moody’s assessed Turkey as the speculative level between the years of 1994-2013, and the investable level between the years of 2013-2016. The changes in the ratings made since 2017 are downward and evaluated as the speculative level.

The highest rating given by S&P is the investable level-BBB, which was valid only between 1992 and 1994. From 1994 until present, S&P has kept the appearance of Turkey at the speculative level and evaluated the country with the ratings at this level.

Fitch first monitored Turkey in 1994 with the speculative level-B and did not alter the appearance of the country until 2012. Fitch made a rating change between the years of 2012-2016 and increased its appearance from the speculative level to the investable level. Turkey received the highest rating by Fitch (the investable level-BBB) in this period.

3. Literature Review

The event study method used in the study dates back to the 1930s. The first study conducted by using this method was carried out by Dolley in 1933. In his study, Dolley investigated the nominal price changes at share division times and examined the effect of these divisions on the share price. The number of studies related to the event study method conducted from the beginning of 1930s until the end of 1960s gradually increased. The examples to these studies are John H. Myers

The event study method is based on the validity of the effective market hypothesis. The effective market hypothesis was suggested by Eugene Fama. “Effective Market Hypothesis” can be considered as the beginning of a new era for the finance literature. Eugene Fama (1970) stated that all the information in the market was reflected in the share prices and that the stock prices were bought and sold at their actual value. In this case, it was not possible to provide above-average returns. However, he suggested that prices would be activated as new information was introduced, and this hypothesis was still up to date.

In their study, Brown and Warner (1985) stated that stock prices were the reliable indicators of firm values. They explained with the event study method that the amount of the change in the price of the security was determined according to the difference in price before and after the event. Besides, they suggested that the amount of the change in the price would reflect the market's unbiased estimation (Agrawal & Kamakura, 1995).

There are also studies in our country conducted by using the event study method. In their study, Özer and Yücel (2001) concluded that there was a statistically and economically sufficient magnitude abnormal share return on the days around stock issuing date, especially on the issuing day.

In his study, Mandacı (2004) investigated whether the merging and purchase decisions of the companies between the years of 1998-2003 whose stocks were traded in the stock exchange yielded abnormal returns for their shareholders. At the end of the study, it was concluded that the first and second days before the merging announcement and the first day after the merging announcement produced abnormal returns (Eyüboğlu & Bulut, 2014).

Yörük and Ban (2006) concluded in their study on the food sector that if the investment is made in the short-term (e.g. 5 days) before the merging, abnormal return could be obtained. Aygören and Uyar (2007) investigated the effect of audit opinions in Istanbul Stock Exchange on the stock returns. According to the findings, abnormal returns were obtained.

Erdoğan and Yezegel (2009) revealed that cumulative negative average returns were obtained for 120 days after the announcement of company specific information between the years of 1998-2004 (Eyüboğlu & Bulut, 2014).

Kaderli and Demir (2009), investigated whether announcing the investment decisions of the companies being traded in the stock market in 2008 to public had an impact on their share returns. It was concluded that the announcements made produced high returns in the short term and according to effective markets hypothesis, Istanbul Stock Exchange was not effective even in semi-active form.

In his study, Sakarya (2011) investigated whether announcing the credit ratings of the companies who entered Istanbul Stock Exchange Corporate Governance Index for the first time in 2009 yielded an abnormal return in the company's share returns. It was concluded that there was a positive relationship between the high corporate governance rating and the share return.
In their study, Parlak and Biçirici (2014) aimed to investigate the effects of the results of the match events of two football teams on the prices of the shares traded in the stock market. In addition to the results of the teams, it was also investigated whether the results of its opponent had an effect on the stock return of the company. The results of the three-day event study showed that the expectations about the results of the match events yielded a cumulative abnormal return one day before the match and the results of the match events yielded a cumulative abnormal return one day after the match. It was found that the cumulative abnormal return did not differ according to the results of the opponent.

Eyüboğlu and Bulut (2014) examined the effect of various announcements made by the companies traded in Bist-30 in 2003-2012 period on the share return by using the event study method. It was concluded in the study which gathered the announcements under 5 main headings that the investors reacted to operational news at most.

In their study, Sakarya and Sezgin (2015) aimed to determine the effects of the special case statements of the banks, whose shares were traded on BIST and who signed a syndication loan agreement between 01.01.2010 and 31.12.2013, on the stock returns. In this study conducted by using the Event Study method, the efficiency of the stock market and whether the abnormal returns could be obtained in this market were also measured. As a result of the analysis performed, it was observed that in the (-5, +5) event window, the statements of the banks in terms of their syndication loan agreements positively affected the stock returns – positive abnormal returns – and it was concluded that the market was not effective even in the semi-strong form.

Korkmaz et al. (2017) examined the effect of the rating change made by Moody's on Bist-30 index. As a result of their analysis, they concluded that the improvement in the rating produced abnormal return to the investor and that the deterioration did not have a significant effect on the investor.

In his study, İlhan (2017) aimed to investigate the effect of company merging announcements made between the years of 1992-2014 in Turkey on the target company's stock prices. The effect of company merging and purchasing on the stock prices was examined by using the event study method and cumulative abnormal returns were calculated for various event windows including 126 days before and 126 days after the announcement date. Even though significant cumulative abnormal returns were observed in the stock prices in the first 10-day period after the announcement date, it was observed that the main effect appeared at various intervals during the 126-day period before the announcement.

In their study, Sakarya, Çalış and Kayacan (2018) aimed to reveal the impact of the announcements about the dividends the firms would distribute on the return rate of the related firms by using the Event Study method. The application was performed in 2016 on the firms traded in BIST in the cement sector who made dividend payment announcement. As a result of the application, it was determined that dividend payment announcements affected the stock prices of the related firms.
Sakarya and Erdem (2018) aimed in their study to determine in what direction the stock returns of the firms whose stocks were traded in BIST and who were transferred to Turkish Wealth Fund by the decree of the Council of Ministers were affected with the transfer announcement by the Council of Ministers. In the study conducted by using the Event Study method, the efficiency of the stock market and whether abnormal returns from this market might be obtained were also measured. As a result of the analysis, it was found that the announcement of the Council of Ministers in the (-10, +10) event window in terms of the transfer of the firms traded in BIST to Turkish Wealth Fund positively affected the stock returns of the firms and that the market was not effective in the semi-strong form.

In their study, Soylu, Uygurtürk and Korkmaz (2018) aimed to examine the effect of tangible asset purchase announcements of the textile, clothing and leather sector enterprises whose shares were traded in BIST on the share returns by using the Event Study Method. As a result of the study, it was determined that the tangible asset purchase announcements of the enterprises included in the scope of the analysis in the period of January 2010-December 2017 had no effect on the share returns.

It would be right to include the examples of the studies investigating what kind of an effect the rating changes of the credit rating agencies used in the study made on the economy of the country.

In their study, Erkan and Demircioğlu (2010) concluded that the borrowing costs and indirectly the economic public order of the countries were affected by the ratings given by the rating agencies.

In another study, Erkan and Demircioğlu (2011) concluded that the ratings given by the credit rating agencies provided objective insight for foreign investors but that the validity of this situation was weak in Turkey. They observed that when the foreign capital entering the country and the foreign borrowing structure of the country were compared, the rating was not taken into consideration much.

In his study, Ayaz (2016) concluded that the domestic and global crises was effective in the rating change, that raising the credit rating had a positive impact on the economy of the country while decreasing the credit rating had a negative impact.

4. Method

In this study, as mentioned above, it was aimed to investigate what impact the changes in Turkey’s rating prospect made by S&P and Moody’s in 2013-2016 and Fitch in 2012-2017 had on BIST Bank, BIST Holding and BIST Industry.

The main hypothesis of this study was “the indexes chosen had sensitivity in the explained rating changes”. As a result, the hypotheses were set as follows:

$H_0$ Hypothesis is; “The announcements of Credit Rating Agencies in terms of rating changes do not affect the returns of BIST Bank, BIST Holding and BIST Industry indexes”. Therefore, our hypothesis in terms of Event Study approach was set as $H_0$: $CAR_t=0$. 
Hypothesis is; “The announcements of Credit Rating Agencies in terms of rating changes affect the returns of BIST Bank, BIST Holding and BIST Industry indexes” and was expressed as $H_1: CAR_t \neq 0$.

4.1. The Data Set of the Research and Method

The rating announcements of S&P and Moody’s in 2013-2016 and those of Fitch in 2012-2017 about Turkey were used as the data set. These announcements were given below chronologically.

- S&P;
  - raised the rating of the country to BBB+ on 27 March, 2013,
  - decreased the rating of the country to BB on 20 July 2016.
- Moody’s;
  - raised the rating of the country to Baa3 on 16 May 2013,
  - decreased the rating of the country to Ba1 on 23 September 2016.
- Fitch;
  - raised the rating of the country to BBB- on 5 November 2012,
  - decreased the rating of the country to BB+ on 27 January 2017.

The data for the indexes, together with the date of the event (announcement), covers 10 days before and 10 days after this date. Besides, the effects of the announcements related to the rating changes made by the credit rating agencies (t) were examined for the following days as they were made at the time period when BIST was closed. The prices were obtained from the previous data in www.investing.com.

In this study, Event Study Method was used to analyze the data. The event study method is a method used to measure how and at what speed an event affects the market price of the stocks (Kaderli, 2007: 147; Korkmaz et al., 2017). In the event study method, the aim is to determine the abnormal and cumulative abnormal returns in the time period of the event window. In accordance with this purpose, the steps below are followed.

\[
\begin{align*}
T_0 & \quad T_1 \quad T_1 + 1 \quad 0 \quad T_2 \quad T_2 + 1 \quad T_3 \\
\text{Estimation Window} & \quad \text{Event Window} \quad \text{Post-event Window}
\end{align*}
\]
1st step:
Return calculation was made with the closing prices of the indexes,

Index return:

\[ R_{i,t} = \frac{P_{i,t}}{P_{i,(t-1)}} - 1 \]

- \( R_{i,t} \) shows i index's return in t time
- \( P_{i,t} \) shows i index's closing price in t time
- \( P_{i,(t-1)} \) shows i index's closing price in (t-1) time.

2nd step:
In order to calculate the abnormal return, the return rate of the market should be calculated. BIST National Index was selected as the market and the return was calculated using the daily closing prices.

The return of the market:

\[ R_{m,t} = \frac{P_{m,t}}{P_{m,(t-1)}} - 1 \]

- \( R_{m,t} \) shows the return of the market in t time
- \( P_{m,t} \) shows the closing price of the market in t time
- \( P_{m,(t-1)} \) shows the closing price of the market in (t-1) time.

3rd step:
By using:

\[ E(R_{i,t}) = R_{i,t} - R_{m,t} \]

equation, the expected return of the index is calculated.

4th step:
Abnormal return is the excessive or low return compared to the normal return that will be obtained in the event that the related news is not announced to the market (Kaderli, 2009; Bişirici, 2013).

In the equation of:

\[ a_{i,t} = R_{i,t} - E(R_{i,t}); \]

- \( a_{i,t} \) shows abnormal return
- \( R_{i,t} \) shows i index's realized return
- \( E(R_{i,t}) \) shows i index's expected return.

5th step:
Abnormal return mean is obtained for each day of event study.

In the equation of:
\[ AAR_t = \sum_{i=1}^{N} a_{it}; \]

\( AAR_t \): shows the abnormal return mean in \( t \) day.

**6th step:**
Cumulative abnormal return is calculated for each day of event study.
In the equation of,
\[ CAR_t = \sum_{i=1}^{N} AAR_{ti}; \]

\( CAR_t \): shows the cumulative abnormal return in \( t \) day.

In the event study, after the steps above are applied, the fact that the cumulative abnormal return is different from zero allows us to conclude that the event which is the subject to application has an effect on index returns and that abnormal returns can be obtained (Sakarya, 2011: 155; Korkmaz et al., 2017).

**5. Results**
In the study, abnormal and cumulative abnormal returns of the indexes were obtained by using the steps in the event study method. What kind of a course these returns followed before and after the date when the changes were announced was shown graphically. Following this, the returns were interpreted in order to examine the sensitivity of the three indexes. Therefore, the results of how much the returns were affected before and after the date of the event were used as the measurement of sensitivity. In conclusion, in the study, it was examined whether the rating changes made by S&P, Moody's and Fitch on the abnormal returns of the index and therefore, the cumulative abnormal returns were significant.

**Figure 1:** Abnormal Returns of Bank, Industry and Holding Indexes with S&P's raising the country rating to BBB+ on 27 March 2013

Figure 1 shows the change in the abnormal returns of bank, industry and holding indexes with S&P’s raising the country rating to BBB+ on 27 March 2013. The fact that the bank index yielded (t+1) positive abnormal return one day after S&P’s announcement in terms of raising the country rating indicates the sensitivity to the news. Besides, the index produced a positive abnormal return (t-1) one day before the announcement. This situation indicates that raising the rating may have been
forecasted by some investors and that the positive effect may have occurred before the announcement was made.

The fact that holding and industry indexes did not show any reaction after the announcement indicates that the investors investing in these indexes were not sensitive to S&P’s announcement of raising the country rating. However, the fact that \( t+2 \) and \( t+3 \) yielded a positive abnormal suggested that the investors may have been affected by the overall rise of the index and the news may have shown a lagged effect. It was observed that S&P’s announcement in terms of raising the country rating had a long-term impact on holding and industry indexes, while it had a short-term impact on bank index.

**Figure 2:** Cumulative Abnormal Return with S&P’s raising the country rating to BBB+ on 27 March 2013

![Cumulative Abnormal Return with S&P’s raising the country rating to BBB+ on 27 March 2013](image)

Figure 2 shows the cumulative abnormal return curve obtained from the abnormal returns of bank, industry and holding indexes with S&P’s raising the country rating to BBB+ on 27 March 2013.

The fact that the cumulative abnormal return curve obtained from the abnormal returns of bank, holding and industry indexes increased on the following days of the announcement led us to conclude that S&P’s raising the country rating was effective on the indexes in general and the fact that a decline was experienced beginning from the 4th day led us to conclude that the rise in the indexes in general ended and a selling-oriented pressure was created.
Figure 3: Abnormal Returns of Bank, Industry and Holding Indexes with S&P's decreasing the country rating to BB on 20 July 2016

Figure 3 shows the change in the abnormal returns of the bank, industry and holding indexes with S&P's decreasing the country rating to BB on 20 July 2016. One day after S&P’s announcement in terms of decreasing the country rating (t+1), the holding index exhibited that it was sensitive to the news by yielding a negative abnormal return (lump).

The bank index showed a recovery the following day after the announcement (t+1). This situation suggests that the investors who invest in the bank index may be insensitive to S&P announcement of decreasing the country rating. Besides, it was wondered whether the decline in the rating was forecasted by some investors and whether the negative effect had the probability to have occurred before the announcement was made. When the abnormal return curve was examined, it was seen that there was a negative return (lump) the day before the announcement and it was concluded that the investor may have predicted the situation in advance.

As the industry index did not produce an excessive return or lump on the days following the announcement, it was concluded that the investor investing in this index was not affected by S&P's announcement in terms of decreasing the country rating.
Figure 4: Cumulative Abnormal Return with S&P’s decreasing the country rating to BB on 20 July 2016

Figure 4 shows the cumulative abnormal return curve obtained from the abnormal returns of bank, industry and holding indexes.

The fact that the cumulative abnormal return curve obtained from the abnormal returns of bank, holding and industry indexes declined on the days following S&P’s announcement of decreasing the country rating led us to conclude that S&P’s announcement was effective on the indexes in general and that the fact that there was an increase beginning from the 5th day led us to conclude that the decline in the indexes in general ended and that an improvement just begun.

It was seen that S&P’s announcement of decreasing the country rating yielded an effective rise and fall on the cumulative abnormal return and that the investors were sensitive to S&P news.

Figure 5: Abnormal Returns of Bank, Industry and Holding Indexes with Moody’s raising the country rating to Baa3 on 16 May 2013

Figure 5 shows the change in the abnormal returns of the bank, industry and holding indexes with Moody’s raising the country rating to Baa3 on 16 May 2013. One day after Moody’s announcement in terms of raising the country rating (t+1),
it was observed that there was no activity in the abnormal return curves of the indexes and it was thought that the investors might be cautious against the announcement.

The fact that bank index yielded negative abnormal return (lump) in t+2 led us to consider that the investor investing in this index might be insensitive to Moody's raising the country rating or that the impact may have been experienced previously. When the abnormal return curve was examined, the fact that a positive abnormal return was provided on the days before the announcement indicates that the investors may have forecasted the situation in advance.

The fact that holding and industry indexes yielded a positive abnormal return in the following days led us to conclude that the investor investing in these indexes was cautious against Moody's raising the country rating may have shown the effect in t+2.

**Figure 6: Cumulative Abnormal Return with Moody's raising the country rating to Baa3 on 16 May 2013**

Figure 6 shows the cumulative abnormal return curve obtained from the abnormal returns of the bank, industry and holding indexes with Moody's raising the country rating to Baa3 on 16 May 2013.

The fact that the cumulative abnormal return curve obtained from the abnormal returns of bank, holding and industry indexes increased limitedly on the following days of Moody's announcement led us to conclude that Moody's raising the country rating had a limited impact on the indexes in general and the fact that a decline was experienced beginning from the 4th day led us to conclude that the rise in the indexes ended and a selling-oriented pressure was created.
Figure 7 shows the change in the abnormal returns of bank, industry and holding indexes with Moody's decreasing the country rating to Ba1 on 23 September 2016. The fact that the bank index yielded negative abnormal return (lump) one day (t+1) after Moody's announcement of decreasing the country rating indicates the sensitivity to the news.

The fact that the holding and industry indexes did not react one day after the announcement (t+1) showed that the investors who invested in these indexes were not sensitive to Moody’s announcement. Furthermore, the fact that the indexes yielded negative abnormal return (lump) in t+2 and t+3 led us to conclude that the investors may have been affected by the overall decline of the index and that the news may have shown its effect with delay.

Figure 8: Cumulative Abnormal Return with Moody's decreasing the country rating to Ba1 on 23 September 2016
Figure 8 shows the cumulative abnormal return curve obtained from the abnormal returns of bank, industry and holding indexes with Moody’s decreasing the country rating to Ba1 on 23 September 2016.

The fact that the cumulative abnormal return curve obtained from the abnormal returns of bank, holding and industry indexes declined on the following days led us to conclude that Moody’s decreasing the country rating were limited in the indexes in general.

It was seen that the announcements made by Moody’s created a limited rise and decline in cumulative abnormal returns, and it was concluded that the investors were cautious against Moody’s news.

**Figure 9: Abnormal Returns of Bank, Industry and Holding Indexes with Fitch’s raising the country rating to BBB- on 5 November 2012**

Figure 9 shows the change in the abnormal returns of the bank, industry and holding indexes with Fitch’s raising the country rating to BBB- on 5 November 2012. On the day after Fitch’s announcement in terms of raising the country rating (t+1), the holding and industry indexes exhibited sensitivity to the news by yielding a positive abnormal return.

The fact that the bank index did not react the day after the announcement showed that the investors investing in this index were not sensitive to Fitch’s announcement. Besides, the fact that the index yielded a positive abnormal return in t+3 led us to conclude that investors may have been affected by the rise of the index in general and that the news may have shown its effect with delay.
Figure 10: Cumulative Abnormal Return with Fitch’s raising the country rating to BBB- on 5 November 2012

Figure 10 shows the cumulative abnormal return curve obtained from the abnormal returns of bank, industry and holding indexes with Fitch’s raising the country rating to BBB- on 5 November 2012.

The fact that the cumulative abnormal return curve obtained from the abnormal returns of bank, holding and industry indexes increased on the following days of the announcement led us to conclude that Fitch’s raising the country rating had an impact on the indexes in general and the fact that a decline was experienced beginning from the 6th day led us to conclude that the rise in the indexes ended and a selling-oriented pressure was created.

Figure 11: Abnormal Returns of Bank, Industry and Holding Indexes with Fitch’s decreasing the country rating to BB+ on 27 January 2017

Figure 11 shows the change in the abnormal returns of the bank, industry and holding indexes with Fitch’s decreasing the country rating to BB+ on 27 January 2017. The fact that the holding and industry indexes yielded negative abnormal return (lump) on the day after Fitch’s announcement in terms of raising the country rating (t+1) showed that these indexes were sensitive to the news. It was observed that the bank index yielded high positive abnormal returns after the
This situation led us to conclude that the bank index was insensitive to Fitch’s decreasing the country rating.

**Figure 12**: Cumulative Abnormal Return with Fitch’s decreasing the country rating to BB+ on 27 January 2017

Figure 12 shows the cumulative abnormal return curve obtained from the abnormal returns of the bank, industry and holding indexes with Fitch’s decreasing the country rating to BB+ on 27 January 2017.

The fact that the cumulative abnormal return curve obtained from the abnormal returns of bank, holding and industry indexes increased on the following days of the announcement led us to conclude that Fitch’s raising the country rating had no impact on the indexes in general.

It was seen that the announcements made by Fitch had different impacts on the cumulative abnormal return. It was concluded that the investors were sensitive to Fitch’s raising the country rating but that they did not exhibit the same sensitivity in decreasing the rating.

**6. Findings and Discussion**

The ratings given by the credit rating agencies by making various evaluations about the countries affect plenty of data. The most important characteristics of these ratings is to provide the investors the information about country risk. By means of the investments made by the investors according to ratings, funds can be provided for the country or the opposite might be experienced.

Despite the fact that the objectivity and validity of the evaluations of the credit rating agencies are of great debate today, Turkey, who first met the credit rating agencies with the evaluation of S&P in 1992, have faced with many rating changes due to its economic and political situation.

In our study, the announcement dates of the three big rating agencies (S&P, Fitch, Moody’s) in terms of credit rating changes between the years of 2012-2017 were used. S&P raised the country rating to BBB+ on 27 March 2013, decreased the country rating to BB on 20 July 2016; Moody’s raised the country rating to Baa3 on 16 May 2013, decreased the country rating to Ba1 on 23 September 2016; and
Fitch raised the country rating to BBB- on 5 November 2012, decreased the country rating to BB+ on 27 January 2017.

Based on these dates, it was aimed to observe what kind of an impact of the changes in the ratings created on the abnormal and cumulative abnormal returns of bank, holding and industry indexes. For this reason, the hypotheses of \( H_0 \), “The announcements of Credit Rating Agencies in terms of rating changes do not affect the returns of BIST Bank, BIST Holding and BIST Industry indexes” and \( H_1 \), “The announcements of Credit Rating Agencies in terms of rating changes affect the returns of BIST Bank, BIST Holding and BIST Industry indexes” were tested by the event study method. The abnormal returns and cumulative abnormal returns were used as the data. However, due to limited number of observations, it was not possible to make generalizations on the results.

According to the data, it was seen that:

- bank index reacted to the announcement of S&P in terms of raising the country rating, while holding index reacted to the announcement of S&P in terms of raising the country rating,
- holding and industry indexes reacted to the announcement of Moody’s in terms of raising the country rating, while bank index reacted to the announcement of Moody’s in terms of raising the country rating,
- industry and holding indexes reacted to the announcements of Fitch in terms of raising and decreasing the country rating.

It was observed that the announcement in terms of raising the country rating had a long-term effect on holding and industry indexes and a short-term effect on bank index. This situation led us to conclude that the financial sector reacted to the news in a short period of time and faded while the real sector experienced the effect in a longer period of time.

It was observed that the indexes yielded higher abnormal returns in the announcements in terms of raising the country rating while they yielded lower abnormal returns in the announcements in terms of decreasing the country rating. Besides, it was observed that the abnormal return curve of the bank index experienced a parallel effect towards the news before the announcement in terms of rating change was made. This situation shows that investors can provide positive or negative abnormal returns (lump) according to the effect of the announcement by forecasting the change in the rating.

In conclusion, it was observed that the indexes had different sensitivity towards the ratings changes made by the credit rating agencies, that the abnormal and cumulative abnormal returns varied according to the announcements and that the cumulative abnormal returns were different from zero. Thus, the validity of \( H_1 \) hypothesis “The announcements of Credit Rating Agencies in terms of rating changes affect the returns of BIST Bank, BIST Holding and BIST Industry indexes” and its statement as \( H_1: CAR_t \neq 0 \) is accepted.

Therefore, the view that the evaluations of the credit rating agencies that are still in debate today are not significant was seen to be invalid and it was concluded that
the investor might provide abnormal returns from the announcements made in terms of the change in the rating.

More valid conclusions can be achieved by increasing the number of observations and indexes used in the study.

References


50 Coşkun, Y. (2018). Event Study Investigation: The Impact of Credit Rating on Index Returns

