Analysis of the Effects of the Central Bank's Interest Announcements on Tourism Index Returns[1]

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Merkez Bankası Faiz Duyurularının Borsa İstanbul Turizm Endeksi Getirilerine Etkisinin Analizi[2]

Abstract

This paper examines the impact of interest rate announcements by the Central Bank of the Republic of Turkey (CBRT) on Borsa İstanbul tourism index returns. During the period covering 2010-2020, the effects of the CBRT's 20 decrease announcements and eight increase announcements on tourism index daily returns were examined separately using the event study method. Moreover, the BIST100 index was analysed for comparison purposes. According to the study results in which ARs were calculated with the mean adjusted return model, out of 20 announcements of decreases in the interest rate, only 3 showed statistically significant ARs on the event date. This result indicates that tourism investors' reactions to policy rate announcements are weak and suggests the policy rate does not affect tourism investors' reactions. The findings for the BIST100 support this idea.

Keywords : Index Returns, BIST Tourism, Interest Rates Announcements, CBRT, Event Study.

JEL Classification Codes : F65, L83, G14.

Öz

Bu makale, TCMB'nin açıkladığı faiz kararlarının Borsa İstanbul turizm endeks getirileri üzerindeki etkisini incelemeyi amaçlamaktadır. Çalışmada olay çalışması yöntemiyle 2010-2020 döneminde TCMB'nin açıkladığı 20 faiz indirim ve 8 faiz artırım kararının turizm endeksi günlük getirilerine etkisi ayrı ayrı incelenmiştir. Ayrıca, karşılaştırma amacıyla BIST100 endeksi incelenmiştir. Ortalama getiri modeliyle anormal getirilerin hesaplandığı çalışma bulgularına göre faiz oranı duyurularındaki 20 düşüşten sadece 3'ünde olay gününde turizm endeksi anlamlı anormal getiri gözlenmiştir. Bu sonuçlar, turizm yatırımcılarının politika faiz duyurularına tepkilerinin zayıf olduğunu ve politika faizinin turizm yatırımcılarını doğrudan etkilemediğini göstermektedir. BIST100 endeksinde elde edilen bulgular, faiz kararlarının pay getirilerine doğrudan etkilerinin zayıf olduğu sonucunu desteklemektedir.

1. Introduction

The central bank's primary objective is to achieve and maintain price stability. Mainly, this means supporting the economy's strength and the financial system's resilience. Achieving central banks' targets will improve the economy and contribute to employment, and the purchasing power of money will be preserved with sustaining price stability. Within this framework, central banks use different tools to achieve their goals to support the economy.

As the traditional monetary policy instrument (Homer & Sylla, 2005: 184), central banks adjust their policy via the benchmark interest rates (in other words, policy rates) downwards when their economies weaken and upward when facing inflationary pressures (Assefa et al., 2017: 20). These policy rate adjustments have direct and indirect effects on many areas of an economy. However, although the policy rate is not the only instrument to steer the economy, it is prominent in its impact on the financial markets and the real economy. Generally, it is seen that an expansionary monetary policy increases asset prices (Kanalıcı-Akay & Nargeleçekenler, 2009; Bordo & Lane, 2013).

As one of the monetary transmission channels besides credit and exchange rate channels, interest rates are used to steer the economy and impact asset prices (Ganev et al., 2002; Bordo & Lane, 2013). Expansionary monetary policy decreases interest rates and increases investments and consumption (Cengiz, 2009). It also affects the investor reactions according to risk premium (Ganev et al., 2002: 52). Bernanke and Kuttner (2005: 1253) showed that an unexpected monetary policy of a decrease in interest rates of 25 basis-point rates leads to a 1 per cent increase in stock prices. This is also evidence for a more significant market response to perceived permanent policy changes than the unexpected inactions. Thus, investors react to the expansionary monetary policy by substituting cash for financial and real assets (Bordo & Lane, 2013: 3). As a result, expansionary and contractionary monetary policies in downward or upward interest rate adjustments impact asset prices and returns.

Money and capital market investors follow the macroeconomic developments to decide how to invest their savings. Various studies investigating the effects of macroeconomic variables on stock returns and prices showed that variables such as economic growth, exchange rate, inflation, and money supply have influenced (Bilson et al., 2001; Chen et al., 2005; Kyereboah-Coleman & Agyire-Tettey, 2008; Pilinkus, 2010; Gupta & Reid, 2013; Paramati & Gupta, 2013; Özmen et al., 2017). However, it should be noted that the mentioned indicators' effects vary depending on the macroeconomic environment of the country and stock markets. Especially in developing countries, accompanied by the central banks' instrument diversification in monetary policy, the policy rate has been one of the primary tools since the 2008 financial crisis.

Turkey is an emerging and fragile economy due to the current account deficit, inflation pressure, heavy reliance on foreign investments for growth, and other factors (Morgan Stanley, 2013). It is essential to steer the economy using monetary policy in this context. Central banks use several direct and indirect instruments to achieve their objectives and the interest rate among the direct tools. By the law on the Central Bank of the Republic of Turkey (CBRT), taking precautions to enhance the financial system's stability in conjunction with price stability was assigned. The CBRT put into practice the policy decisions it needed after the 2008 financial crisis. To control macro-financial risks resulting from global imbalances, the CBRT adopted an inflation targeting regime in 2010 and formulated a new monetary policy strategy (Çetin, 2016: 85). Moreover, since 2010, the CBRT has started to diversify in monetary policy instruments by considering global negativities in financial systems. The interest rate corridor is one of the interest rate policy instruments applied after 2010 (Bayır & Abdioğlu, 2020: 3260).

Debt financing at an optimal level is among the factors used to maximize firm value. This means that the capital structure producing the highest firm value is the one that maximizes shareholder wealth (Ross et al., 2002: 426). Thus, the shareholders' return will increase with the optimal debt structure. As a corporate finance matter, as Welch (2004: 126) showed, there is also the opposite effect that stock returns are the dominant determinant of debt ratios. On the other hand, Chen et al. (2005: 252) determined that the M2 money supply affected positively, as an expansionary monetary policy indicator, hotel stock returns, and the unemployment rate. Other than these results, they determined that the term structure of the interest rate (the yield spread - SPD) has no significant impact on Taiwan's hotel stock returns.

Macroeconomic indicators, natural disasters, sports events, policy, and security-based events affect tourism companies' operations and direct tourism stock investors' expectations and reactions. Besides cost stickiness, international tourism demand affected the stock returns of tourism companies, especially hotels, motels, cruise lines, and restaurants and bars (Günay & Koşan, 2020: 700). According to the evidence provided in the literature, stock indices and stock markets react in different degrees and aspects to the direction of policy rates (see also Domian et al., 1996; Kyereboah-Coleman & Agyire-Tettey, 2008; Pilinkus, 2010).

Examining the effects of interest rate announcements on the tourism index based on the issues above will provide necessary guidance for policymakers and investors. The requirements of the real economy and the interest rate decisions taken contrary to the market expectations are expected to adversely affect the market value and return performances of tourism enterprises, which have high operational and financial risks. This case will affect the interest of investors in the industry shares in the medium and long term. It may cause the owner to change hands easily by revealing results that will minimize the firm value of the businesses in the short term. For this reason, examining the effects of CBRT interest rate decisions on tourism index returns will be helpful to the relevant parties. The event study method is proper when the results of any event on share prices are expected to be

immediately reflected. It is also a widely used method for measuring market efficiency (Ross et al., 2002; Elbir & Kandır, 2017). The global financial crisis in 2008-2009, which severely shook the economies of both developed and developing countries, brought about changes in the monetary policy of the CBRT. Since the end of 2010, the CBRT has designed a new monetary policy that can respond to shocks, in addition to traditional practices, to limit the adverse effects of the crisis (CBRT, 2021a). Since the central bank policy rate is accepted as the rate-determining the monetary policy stance, 1-week repo rate announcements are used in the present study. A significant amount of literature exists concerning the determinants of asset returns (e.g., Chen et al., 2005). Examining tourism stocks' reactions to central banks' downward and upward adjustment of interest rates will contribute to the literature.

Our paper aims to examine the impact of the downward and upward interest rates decisions announced by the CBRT on tourism-related stocks in Borsa İstanbul. In line with this purpose, the study is designed in six sections. The second section briefly explains the theoretical background, following a comprehensive introduction. The third section involves a literature review entitled related research. After the methodology is described in section four, the fifth section reports the findings. Lastly, section six provides a summary and conclusions.

2. Theoretical Framework

Finance theory has argued that many factors, including macro, micro, or unexpected events, directly or indirectly affect financial markets and asset prices. There are many alternative instruments that investors can invest in. For this reason, investors try to obtain information about the risk and return of investment alternatives when considering investment decisions (Van Horne, 2002: 49). Individuals invest in an asset that precisely delivers the greater return of two assets (Burton & Shah, 2013: 85). Investors are affected by various indicators regarding businesses and economic conditions when making a share buying or selling decision. The realized return on an investment or financial asset represents the total return during a specific period (Berk et al., 2012: 321). What matters in an investment decision is the expected return to meet the risk borne. Therefore, the expected return on an investment is defined as the return required to cover the risk the investment carries (Berk et al., 2012: 367).

The return obtained in a year the economy performed well may result from the conditions of the economic environment (Madanoglu et al., 2011: 408). The effects of macroeconomic factors on the share values and returns of tourism sub-sectors are similar. In addition to share returns, the tourism index is affected by macroeconomic factors. While the bond interest rate explains a significant portion of the tourism index, inflation, money supply, and industrial production also affect the tourism index, albeit lesser (Wong & Song, 2006: 31). Economic policy uncertainty is among the factors that affect the share returns of the tourism industry (Demir & Ersan, 2018: 853).

The economic conditions are influential in share performance. The reaction of the share market and returns of the tourism industry to the general economic conditions differs according to the market returns. An economic recession causes the returns of traditional hotel businesses and casino hotels to vary. During the recession, the share performance of casino hotels is lower than that of conventional hotels (Wei, 2013: 44-46). While the share performance and returns of the traditional hotel businesses, which have a high operational risk, are negative during recessions, the return performance is observed to be positive in the gaming and casino services and food and beverage services sectors, which have a relatively low operational risk (Gu, 1994: 24). The increase in the level of leverage and the decrease in liquidity, which increase the financial stake in the tourism industry, is a situation that occurs especially during crisis periods. Another macroeconomic factor affecting the share returns of tourism industry businesses is the exchange rate (Chan & Lim, 2011: 1601; Demir, Alıcı & Lau, 2017: 376), which is related to operational and financial risk. Along with the economic situation and conditions of the country, the relationship between the share values and the exchange rate in pre-financial crisis periods is evident. In addition, the relationship between oil prices and imports and the share values of the tourism industry becomes more prominent in times of crisis (Demir et al., 2017: 376).

The expected inflation affects the consumption and savings decisions of investors. Inflation also affects sales and costs for businesses. Therefore, considering the effects on both investors and companies, the expected inflation rate negatively affects the tourism industry's share returns (Barrows & Naka, 1994: 125; Gu, 1994: 24). However, it is observed that expected inflation does not have a significant effect on share returns in developing countries (Chen et al., 2005: 252). On the other hand, due to the pressure on consumer demand, actual inflation negatively affects the share returns (Al-Najjar, 2014: 347). Consumer sentiment in an economy has an impact on demand and spending. The effect of consumer sensitivity on-demand and expenditures is also valid for the tourism industry. Therefore, consumer sentiment changes also affect share returns (Singal, 2012: 518-520). In addition to consumer sentiment, the consumer confidence index affects hotel sales positively and business risk negatively due to its positive effect on demand, thus increasing business share returns (Chen, 2015: 63; Demir & Ersan, 2018: 852).

On the other hand, the country's monetary policy influences the share returns of tourism businesses. The discount rate, which is among the monetary policy instruments, negatively affects the nominal and real index returns of the travel services and leisure and recreation services sectors. Although the findings significantly impact the tourism industry index returns, especially during periods of contraction, the results are more limited in periods of expansion (Chen, 2012: 84, 97). Again, the money supply, one of the monetary policy instruments, influences returns (Singal, 2012: 518). It is stated (e.g., Barrows & Naka, 1994; Chen et al., 2005) that the effect of the money supply on share returns is positive regardless of the level of development of the countries. As Bernanke and Kuttner (2005) pointed out, the significant movements in excess returns associated with monetary policy changes reflect extra sensitivity or overreaction of stock prices to policy actions.

In addition to the effects of monetary policy, capital market characteristics are influential in the share returns of the tourism industry (Kim & Jang, 2012: 609; Chen, 2013: 137-138). Share returns, as well as the country's macroeconomic conditions, fund flows to the capital market. However, the capital market returns differ independently of the tourism development level of the countries. The most important effect is the high effect of investment funds' orientation to capital markets on enterprise share returns (Cave et al., 2009: 665). Market trends have different effects on tourism sub-sectors.

Along with market trends, the effects of monetary policy decisions on returns also differ (Chen, 2013: 138). Capital market efficiency has various impacts on the share returns of the tourism sub-sectors, such as food and beverage services, accommodation services, leisure and entertainment services, and airline passenger transportation (Leung & Lee, 2006: 370). Again, market efficiency and anomalies affect the share returns of restaurant businesses (Sheel & Wattanasuttiwong, 1998: 29). Achieving market efficiency and eliminating the aberration depends on the depth and breadth of the capital market. In this context, the increase in the shares of institutional investors, especially to create market depth, positively affects the tourism industry returns and contributes to market efficiency (Leung & Lee, 2006: 370). While the increase in the shares of institutional investors affects share returns, it contributes to the rise in the depth of the capital market and market efficiency (Chen et al., 2009: 157).

Besides the macroeconomic factors, various business-specific factors affect the return on shares in the tourism industry. Mergers and acquisitions, one of the steps taken towards growth in businesses, affect the stock performance of the acquiring companies. Mergers and acquisitions in the hospitality services sector cause abnormal share returns (Kwansa, 1994: 19; Yang et al., 2009: 583). While the size of a merger has a more significant effect on excessive returns in the short term, the effect disappears in the medium term (Yang et al., 2009: 583-584). Abnormal transaction volumes are observed before and after manager change announcements in the tourism industry. The returns before and after the change announcement are negative. In this respect, managerial change is perceived as bad news by the market and causes uncertainty (Bloom & Jackson, 2016: 157).

In addition to macroeconomic conditions, various natural, social, and terrorist events observed in countries influence the share returns of the tourism industry. Events such as sporting events, war and terrorism, epidemics, and natural disasters affect share returns. Mainly, terrorist incidents are expected to negatively affect the share returns of tourism businesses. However, the perception of terrorist incidents as a threat to the country and its effect on investor sentiment causes positive abnormal returns (Chang & Zeng, 2011: 172-173). While the low share performance observed after the earthquake and terrorist attacks is due to the loss of hotel sales revenues, the negative impact of the epidemic on hotel share returns is caused by the contraction in sales revenues and monetary policy (Chen, 2011: 211). The elections held in countries are another factor that affects tourism industry returns. Although it is an indicator of political risk, political developments such as presidential elections in developing countries positively affect share returns (Chen et al., 2005: 255).

Any legal regulation related to the tourism industry affects share returns. In particular, the legal regulations that affect companies' sales and activity performance positively impact the industry share returns. However, if the law does not cover the business and the geographical region in which the business operates, it does not affect returns (Johnson et al., 2015: 38-39). Therefore, the impact of such events and developments, which affect tourism demand, on returns varies according to the type and characteristics of the event (Zopiatis et al., 2018: 17).

Based on the findings obtained in the tourism industry under this heading, theories related to the subject can be explained in detail and the factors affecting the share value and return. Abnormal Returns (ARs) are also described in the sections below, directly related to the subject.

3. Literature Review

While it is known that central banks' monetary policy and actions are a considerable component used to steer the economy, asset prices are also one of the primary elements influenced by money market decisions. Several studies have investigated the effects of monetary policy actions on stock prices, as they cause stock market booms or investors' reactions. When we examined the studies on monetary policy, we did not find any investigation related to the tourism industry. Some studies investigating tourism are related to other factors such as terror risk, global event announcements, new entries into the industry, innovation investments, or political events. Within the scope of the study, the related literature is summarized under two headings: monetary policy and the stock market, and the tourism stock market.

3.1. Studies Related to Monetary Policy and the Stock Market

Investigation of the effects and relations of macroeconomic indicators on the stock market and returns is one of the main topics in capital market research. Since the development level of capital markets is related to economic conditions, studies focus on the macroeconomic variables besides micro-level firm and behavioural factors. Gökalp (2016: 1394), who focused on the effects of the interest rate corridor as an agent of policy rate decisions of the CBRT, showed that rises in the upper bound of the corridor decrease stock prices differing in industrial level and vice versa. These results can be attributed to two reasons: the first is the differences in the sectors' interest rate sensitivity, and the second is the differences in the sectors' stock market depths. Thus, the study demonstrated that the interest rate corridor boundary changes during monetary policy transmission can be transferred to the financial and capital markets and felt intensely. Uyar et al. (2016) investigated the relationship between the 5Y government bond interest rate and XU100 (BIST100), XU030 (BIST30), XUTUM (BIST All Shares), XUMAL (BIST Financials), and XBANK (BIST Banks). They showed that the reactions of indices differ from shocks in the interest rate. Tüzün et al. (2016) investigated the effect of the weighted average funding cost of the CBRT on the BIST100 index, and the results showed that the changes in the market

funding interest rates made by the CBRT do not have an effect of reducing volatility in the stock market. This can be interpreted as showing a divergence between the money market and the credit market in Turkey.

Özmen et al. (2017) examined the effects of the exchange rate, deposit interest rate, and inflation on stock returns in a sample from Turkey with Johansen cointegration, vector autoregression (VAR), and Granger causality. The study sample in which BIST100 index return was used covers the period from 1997M1 to 2017M3 monthly. It was found that there is a long-term relationship between variables. The results showed one-way causality from exchange rate to BIST100, bidirectional causality from BIST100 to interest rate, one-way reason from BIST100 to inflation, bidirectional causality from interest to exchange rate, and one-way causality from inflation to the interest rate in the study period. Based on the study findings, the authors asserted that an increase in interest rate would provide capital inflows to the country and decrease the exchange rate. Bayır and Abdioğlu (2020) examined the effects of the CBRT interest rate corridor policy tool, the asymmetric interest rate corridor, on different financial market indicators, such as BIST100, BIST overnight repo rate, and USD exchange rate. The study, in which VAR analysis was used, covers monthly data from 2010M5 to 2018M5, when the CBRT used the interest rate corridor instrument. According to the results, BIST100 was affected negatively by the lower bound of the corridor while affected positively by the upper bound. In addition to these and other various results, they showed that the dollar and BIST100 variables affect each other negatively. After the dramatic decline in tourist mobility with the COVID-19 pandemic (Günay et al., 2020), Ertuğrul et al. (2020) tested the effects of the negative, accurate interest rates during the pandemic. They showed that the interest rate and BIST100 differ dynamically and statically. The study also demonstrated the impulse-response analysis results in the adverse real interest rate shocks. The BIST100 responded negatively in the first period, and the response diminished in the second period. Although various studies examine the stock returns determinants in BIST, the one conducted by Poyraz et al. (2020) investigated the BIST100 stock returns reactions to increase and decrease interest rate decisions made by the CBRT. In the sample of 25 interest rate adjustment announcements between 2010 and 2020, BIST100 investors' reactions were examined using the event study method. According to the results, a decrease in policy rate has a significant negative effect on BIST100; thus, the interest rate decreases cause ARs.

In an international market sampling study, Domian et al. (1996) investigated the long-lived asymmetrical relationship between expected inflation, as proxied by Treasury bill (T-bill) interest rates, and stock returns. Their study analysed monthly time series by OLS over 1953M1 to 1992M12 in the US example. T-bill rates were modelled as positive and negative changes to consider asymmetries, and then time series regression was applied. The study showed that declines in interest rates are followed by increases in stock prices as much as a year later, resulting in excess returns. In contrast, increases in interest rates brought about small changes in stock returns.

Bilson et al. (2001) aimed to determine the macroeconomic variables of the emerging markets' stock market returns to test that local factors are the primary source of returns. For this purpose, the study incorporated 20 countries as emerging markets in Latin America, Asia, the Middle East, and Africa. The study's sample period was from January 1985 to December 1997, and the return data were calculated monthly. The study included the M1 money supply, consumer price index, industrial production index, exchange rate macroeconomic variables, and the MSCI World Index, which proxies global factors. The Newey-West LS procedure indicated that emerging stock market returns show minor sensitivity to the world market index. The exchange rate is the most influential variable commonly negative in twelve of the twenty markets. The money supply is positively significant in six markets, and the other two variables are critical in only one need. Furthermore, the results show that emerging market returns have similar sensitivities to most of these macroeconomic variables. According to principal component analysis, the commonality is particularly evident when regions are considered.

Several macroeconomic indicators' effects on Ghana Stock Exchange all-share index (GSI) performance was examined by Kyereboah-Coleman and Agyire-Tettey (2008) with the case study technique. The 62-quarterly data from 1991Q1 to 2005Q4 were analysed by time-series regression analysis. Inflation, real exchange rate, lending rate of deposit money banks, and the three-month T-bill interest rate were added to the model. The study's findings showed that the T-bill interest rate had a weak-significant positive effect on the stock market. It was seen that the rest of the analysed variables affected GSI performance at a level of 1%. The lending rate negatively affected GSI performance. This result showed that a rise in the lending rate increases the firm's costs, resulting in less attractiveness for investors. Another reason for this highly negative effect was that high lending rates and excessive government borrowing crowded out the private sector.

Another study investigated the relationships between inflation, credit growth, and stock market booms in the US and Japan (Christiano et al., 2010). It was observed that inflation is low during stock market booms and high credit growth. They claimed that the interest rate targeting rule destabilizes asset markets and perhaps the economy. It was proposed that the interest rate targeting rule should contain credit growth; thus, the modified rule would moderate volatility in the real economy and asset prices.

In the case of the Baltic states, Pilinkus (2010) investigated the impacts of various macroeconomic indicators on stock market performance in terms of the short and long run. The author investigated macroeconomic indicators' effects on stock performance via a four-stage research model. In the first stage, the meaningful macroeconomic indicators were selected; the second step included checking conformity and preparing the data for variables. The third step determined multidimensional relations in the short and long run and two-dimensional causality between macroeconomic indicators and the stock market index for the Baltic states. Lastly, in the fourth stage, relations between variables were interpreted from the viewpoint of investors. The study's findings revealed that the only statistically significant indicator was lagged values of the index for the Lithuanian, Latvian, and Estonian stock

market indices. In the short run, three of the ten macroeconomic indicators, i.e., GDP, imports, and state debt, do not influence the stock market index. The impact of the remaining macroeconomic indicators on the stock market index varies depending on the country. For example, Granger causality for the Latvian stock index (OMXR) shows that the short-term interest rate is a leading macroeconomic indicator. According to the VAR results, it is only significant with one- and two-legged periods for the OMXR in the short-term run. On the other hand, in terms of long-term relationships, the Johansen cointegration analysis results showed that all macroeconomic indicators have connections with the stock market indices in at least one country. The significant implication of the study is that the impact of macroeconomic indicators on the stock market index during the short and long run is different even in countries with similar economic development levels.

Assefa et al. (2017) examined the effects of interest rates on stock returns quarterly from 1999 to 2013 in 21 developed and 19 developing economies. In the study period, the mean of quarterly stock returns was 1.18% in the developed countries and 4.22% in the developing countries. Furthermore, economic growth was substantially lower, and interest rates fell in the developed economies; in contrast, interest rates rose in the developing economies. The dynamic panel data analysis reported the adverse effects of interest rates on stock returns in developed countries. In contrast, the world market portfolio (MSCI returns) was the sole determinant of the developing economies' returns. They partially attributed this effect of an interest rate change on stock returns to different monetary policies and the more mature capital markets inherent in developed economies.

Chadwick (2018) measured the dependence between emerging countries' financial markets to US monetary policy and monetary policy uncertainty using Patton's (2006) time-varying copula models. The study focused on the dependence of level differences in emerging countries on US monetary policy. The study sample consisted of 5535 daily data items between January 1, 1995, and the end of February 2017 in thirteen countries. The results showed significant differences between the emerging markets, especially in the Latin American region, which is more dependent on US monetary policy and uncertainty.

3.2. Studies Related to the Tourism Stock Market

Although there are many studies on tourism stock markets, various studies related to events affecting tourism stocks and returns are summarized below. In their research, Madanoglu et al. (2007) aimed to examine the effects of terrorist bomb attacks in Indonesia, Turkey, and Spain on the market values of hospitality and tourism businesses. As expected, it was found that the markets reacted negatively to terrorist acts, and the market reaction in Turkey was weaker than that in Spain. In the study conducted by Chang and Zeng (2011), it was determined that although terrorist incidents were expected to affect the share returns of tourism businesses negatively, terrorism was perceived as a threat to the country, and these incidents caused positive ARs due to their effect on the nation's spirit and investor sensitivities in the USA.

Demir and Ersan (2018) examined the effects of economic policy uncertainty on the share prices of tourism businesses whose shares are traded on the stock exchange in Turkey during the period 2002-2013. They found that the European and Turkish economic confidence indices had significant adverse effects on tourism index returns. The findings show that the returns of Turkish tourism businesses depend on national and international economic uncertainties. Günay (2020) investigated investor reactions to terrorist, political, and military events in the tourism industry. The July 15 coup attempt, three elections, and the Euphrates Shield (2016), Olive Branch (2018), and Peace Spring (2019) cross-border operations are the events examined that occurred in 2016 and after. By the event study method, returns were calculated with the mean-adjusted return model using the daily data of ten companies. The study's findings indicate that the July 15 coup attempt caused significant negative and the Olive Branch operation important positive average ARs on the event day. In the 21-day event window, it was determined that the coup attempt caused negative and the Presidential and Deputy General Election, the Istanbul Metropolitan Municipality Interim Election, and the Peace Spring operation caused the highest positive cumulative average ARs, in that order. According to the findings, as expected, it can be concluded that the investor sensitivity to terrorism and security risks in the tourism industry is higher than the political events.

Using the case study method, Sheel and Zhong (2005) examined the effects of cash dividend announcements on ARs in hospitality businesses from 1994-2002 in the USA. The findings they obtained show that cash dividends are perceived positively by investors in both the accommodation and food and beverage services sectors. The results reveal that ARs differ between the two industries, and a more conservative dividend policy is needed for accommodation businesses. Using the case study method, Chen, Jang, and Kim (2007) determined the effects of the 2003 SARS epidemic on Taiwan's hotel stock price movements. They determined that the epidemic caused significant negative cumulative average ARs in Taiwan's hotel shares.

Kim et al. (2009) examined the effect of information technology investment announcements on share prices in hospitality businesses using the case study method. The essential findings were that information technology investments and financial performance are positively related. However, it was observed that the abnormal return and the cumulative abnormal return trend showed a steady increase in the three-day event window. Szutowski and Bednarska (2014) aimed to determine the investor reaction to innovation announcements using the example of tourism companies listed on the Warsaw stock exchange using the case study method. Their study shows that innovation positively affects investors' valuation of tourism businesses. In addition, it was determined that the investors reacted most to the innovation for marketing, distribution, and external cooperation, and the highest reaction occurred within five days of the innovation announcement. Qin et al. (2017) examined the effects of mobile applications on share returns in accommodation and airline businesses with the case study method. The findings reveal that mobile applications positively affect stock returns, and the speed of adaptation to mobile applications does not significantly affect share value.

Şahin et al. (2017) aimed to determine the reactions of the stocks of companies included in the Borsa Istanbul Food, Beverage, and Tourism Indices to the crisis between Turkey and Russia resulting from the shooting down of a Russian fighter jet on November 24, 2015. According to the findings obtained from the research conducted with the event study method, the reactions of the businesses listed on the BIST Food and Beverage Index to the event were adverse, and the companies listed in the BIST Tourism Index had positive abnormal return values in the post-event period. It was also found that most of the Cumulative Average Abnormal Return values were negative. Çelik and Koç (2019) aimed to examine the effects of the same crisis using a case study involving the Tourism and Energy companies listed on Borsa Istanbul. In their research, in which the changes in the stock returns of 7 tourism and seven energy enterprises were examined, no statistically significant results were determined in the intervals discussed in the energy industry. According to the findings, BIST Tourism industry businesses exhibited positive cumulative abnormal returns (CARs) in the -5, +5 day interval. Still, there was no abnormal return in the other intervals before or after the event.

4. Methodology

The present study aimed to investigate the reactions of tourism-related companies' investors to the CBRT's interest rate announcements. For this purpose, the event study method was applied to the Borsa İstanbul (BIST) Tourism Index and BIST100 Market Index. We expect that tourism companies are sensitive to monetary policy actions due to high operating and financial risks. Although the effects of many macroeconomic factors and other events (Madanoglu et al., 2007; Demir et al., 2017; Günay, 2020) on stock returns have been investigated in the Turkish tourism industry, we encountered no study investigating monetary policy announcements. Thus, we aimed to examine the effect of policy rates announced by the CBRT on Borsa İstanbul (BIST) tourism stock returns. In addition, to compare the tourism index with the market and to see general market investor reactions to interest decisions, the BIST100 index was also examined in the study. The interest rate announcements were obtained from the CBRT (CBRT, 2021b) and indices data from the investing.com platform.

The CBRT changed the 1-week repo lending rate twenty-nine times between 2010M5 and 2020M12. In the years covering the research period, Turkey faced a series of unexpected events, such as the aircraft crisis with the primary tourism market Russia, the July 15 coup attempt, and cross-border operations, but none of the interest rate announcements overlapped with the event or estimation period and they are not expected to affect the study result by themselves. The first interest rate announcement in May 2010 is excluded due to investigating the increase and decrease effects. Those dates of changes in the repo rate are shown in Graph 1. In this date range, the CBRT decreased the lending rate twenty times and increased it eight times.

Graph: 1
The CBRT Lending Rate (1-Week Repo) Interest Rate Announcements
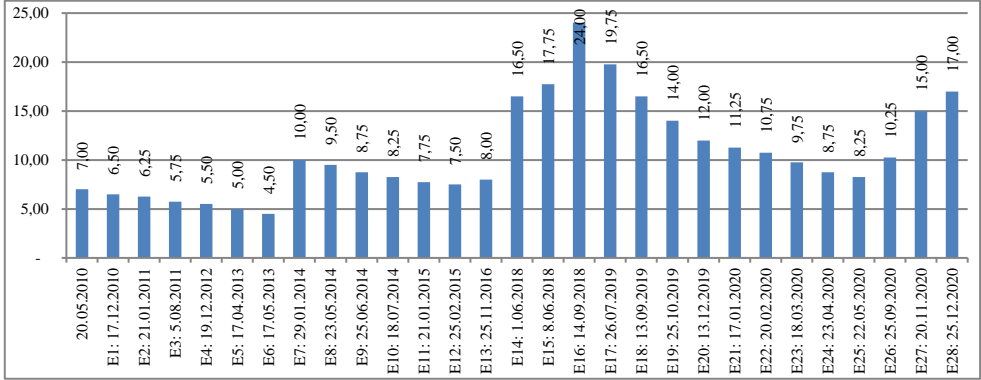

As seen in Graph 1, the CBRT funded the market mainly with a 10% interest rate. However, in June 2018 lending rate was raised to more than double. In 2018, a contractionary monetary policy was applied intensively, and the 1-week repo rate was decreased gradually until the third quarter of 2020. Interest rates on lending and deposits and market interest rates move in the same direction as policy rates. A downward adjustment to the policy rate will increase consumption and investments as the expansionary monetary policy action. Therefore, it is expected that tourism companies' returns will move in the opposite direction to policy rates on the announcement date. In the present study, the 1-week repo rate increase and decrease announcements were investigated in the context of investor reactions to monetary policy actions in Turkey. The event study method investigated investor reactions to policy rate announcements. The event study method and ARs are explained below.

4.1. Event Study

For many years, the event study technique has been used to examine the impact of a specific event or announcements on stock prices (Dolley, 1933; Bellemore & Blucher, 1959; Fama et al., 1969; MacKinlay, 1997). The mentioned events were generally related to stock split and dividend decisions. Fama (1970: 383) describes market efficiency as follows: "a market in which prices always 'fully reflect' available information is called 'efficient'". Moreover, in that study, Fama (1970: 414) classified the efficient market into three forms: weak, semi-strong, and strong, with the adjustment of security prices depending on the nature of the information subset. One of the semi-strong form tests, in which costs are assumed to fully reflect all publicly available information (Fama, 1970: 415), is the event study. In other words, event studies provide a direct test of semi-strong form market efficiency. Systematically, nonzero ARs that persist after a particular type of event are inconsistent with the hypothesis that security prices adjust quickly to fully reflect new information (Brown & Warner, 1980: 205).

The events examined in the method are related to the information released to the market (Peterson, 1989: 36; MacKinlay, 1997: 36) through corporate releases such as financial reports, and corporate actions such as dividends, stock splits, acquisitions, and mergers (Fama et al., 1969; Borde et al., 1999; Sheel & Zhong, 2005; Elbir & Kandır, 2017). On the other hand, events may be related through governmental actions, finance- and economy-related news, and unanticipated events such as earthquakes and terrorist attacks (Chang & Zeng, 2011; Asteriou et al., 2013; Kaya et al., 2017; Çelik & Koç, 2019; Singh & Padmakumari, 2020).

Graph: 2
The Timeline for the Event Study
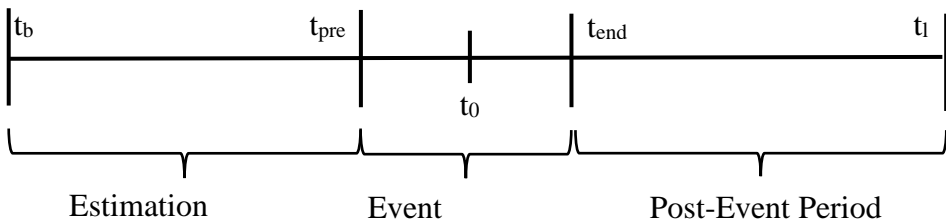
In the event study method, the timeline is divided into three periods, considered the "estimation period", "event window", and "post-event period" (Dyckman et al., 1984: 8; MacKinlay, 1997: 20; Beninga, 2008: 372). In the estimation period method, the term estimates expected returns of a stock or estimates parameters in a model (Peterson, 1989; 38; Armitage, 1995: 27; MacKinlay, 1997: 20). The event window is the period in which ARs are examined due to an event or announcement (Nezerwe, 2013: 66; Şahin et al., 2017: 478). Even if the event or report being considered is on a specific date, it is typical to set the event window length to be larger than one day (MacKinlay, 1997: 19). In many event studies, the post-event period is limited to the end of the event window. Occasionally, some studies use post-event window data to estimate the standard return model like the estimation period, aiming to increase the robustness of the normal market return (Dyckman et al., 1984: 7; MacKinlay, 1997: 20). Within this context, in Graph 2, t_b is the beginning date of the estimation period, t_{pre} is the first date examined for ARs, t_0 is the event date, t_{end} is the end date calculated for ARs, and, lastly, t_l is the last date of the post-event period. In addition, the post-event period is used to investigate recovery time (Mutan & Topcu, 2009: 17) or investigate longer-term company performance following the event (Beninga, 2008: 372).

In the present study, we selected t0 as the policy rate announcement date and t_{pre}^{end} is the three days before and after the t0 date, so the event window is seven days around the announcement, tb: is the date -103, and tpre-1 is the date -4, which means the estimation window covers 100 days between -103 and -4.

4.2. Abnormal Returns

As the efficient market hypothesis (Fama, 1970: 415) indicated, it is impossible to generate trading profits, and prices in efficient markets reflect all available information. From this point of view, abnormal return is the return when the trader can generate excess profits or losses compared to the normal return from a traded security. In other words, abnormal or excess return is the difference between observed return and appropriate given a particular return generating model (Peterson, 1989: 36). The models most commonly used to generate the expected return are listed in Table 1 (Brown & Warner, 1985: 7; Strong, 1992: 536-538; Armitage, 1995: 31).

Table: 1
Summary of Most Commonly Used Models to Calculate the Expected Return of Stock at Period t

Name of Model	E(R_i)	
Mean Adjusted (Average Return) Returns	$= \bar{R}_i$	Average returns for security i in a period
Market Adjusted (Index Model)	$= R_m$	Return on the market index
Market Model	$= (\alpha_i + \beta_i R_m)$	OLS based returns
Capital Asset Pricing Model (CAPM)	$= (R_f + \beta_i[E(R_m) - R_f])$	Risk-adjusted return
Fama-MacBeth Model	$= (\alpha_1 + \alpha_2 \beta_i)$	Two factors (mean & market) risk-adjusted return

As noted earlier, abnormal return is the difference between the observed and expected returns. Appraisal of the event's effect requires a measure of the abnormal return. In the event study logic, the abnormal return is the actual ex-post return of the security over the event window minus the normal return of the firm over the event window (MacKinlay, 1997: 15). Hence the abnormal return of a stock or index is calculated as shown in Eq. 1:

$$AR_{it} = R_{it} - E(R_{it}) \tag{1}$$

where

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}} = \frac{P_{it}}{P_{it-1}} - 1 \tag{2}$$

$$R_{it} = \ln\left[\frac{P_{it}}{P_{it-1}}\right] \tag{3}$$

P_{it} and P_{it-1} are the prices of security *i* at the end of the time *t*, and *t*-1, respectively. Any dividend gained from stock should be added to P_{it} in calculating observed return if there is any dividend. Eq. 2 is the calculation of arithmetic return (discrete returns), and in Eq. 3, the calculated returns are logarithmic, in which returns are calculated by natural logarithm and can be called log returns (Strong, 1992; Çıtak & Ersoy, 2016: 50). In return calculations, log returns are preferred for theoretical and empirical reasons. Log returns are analytically more tractable and more likely to be normally distributed (Strong, 1992: 535).

To test the hypothesis that an event has no impact on returns, the t-test is used. Where σ is the standard deviation of the estimation period returns, the test statistic for any event day t can be calculated as follows (Brown & Warner, 1985: 7; Evrim-Mandacı, 2003: 6;

Hendricks & Singhal, 2008: Ada et al., 2013; Elbir & Kandır, 2017: 23-24; Yıldırım et al., 2019: 416):

$$t = \frac{AR_t}{\sigma} \qquad (4)$$

Reactions of the investor can be investigated by abnormal returns, whereas to determine the perception and absorption of shocks of the market and to see the progress of uncertainty that initially caused volatility, cumulative abnormal returns (CARs) should be calculated in the event window (MacKinlay, 1997: 21; Mutan & Topcu, 2009: 6; Elbir & Kandır, 2017: 23; Yıldırım et al., 2019: 416). CARs are calculated as shown in Eq. 5 (Brown & Warner, 1980: 228; Sakarya, 2011: 155; Elbir & Kandır, 2017: 23; Singh & Padmakumari, 2020: 15).

$$CAR_t = \sum_{t=1}^{t=n} AR_t \qquad (5)$$

where CAR_t is the sum of the ARs from a beginning day "t" towards day n. Within the event window at different intervals (e.g., -3, +3; -5, +5; 0, +5), CARs are calculated to see the market reaction to the events.

The mean adjusted BIST Tourism and BIST100 indices' ARs were calculated separately for an interest rate increase and decrease announcements in line with this information. Pre- and post-announcement three days and the 100-day estimation period (days -103 through -4) were selected as the event window. CARs are calculated within the pre-and post-announcement and ±1 and ±3 days intervals. The findings of the ARs and CARs are reported. Lastly, to test for significance of the policy rate (1-week repo rate) increase and decrease announcements' effects on tourism and market indices, a one-sample t-test and Wilcoxon signed-rank test statistics were used. The results are reported in the subsequent section.

5. Findings

The effect of policy rate decrease announcements on the BIST Tourism index is reported in Table 2. Out of 20 interest rate decrease announcements in the tourism industry, only 3 showed statistically significant ARs on the event date. Events 3 and 22 ARs are important at the 5% level and event 20 at the 10% level. Those significant ARs are negative. This result shows that tourism investors' reactions to policy rate announcements are weak and indicate that the policy rate does not affect tourism index investors.

There are significant ARs in the event window only in 12 events at least in a day (-3, +3), while in 8 announcements, ARs are not substantial. At the same time, five events showed significant ARs on day +3 after the announcement, while four showed significant ARs on day -2. Those findings for interest rate decrease announcements' effect on the tourism index are random, indicating that the 1-week repo rate is not an underlying factor in ARs.

Table: 2
BIST Tourism Index ARs and CARs for 1-week Repo Decrease Announcements

t	E1	E2	E3	E4	E5	E6	E8	E9	E10	E11
				AR Values of Events						
-3	.003	-.006	.000	-.029*	-.008	.010	.007	-.006	.012	-.012
-2	-.005	-.007	-.017	.031*	-.007	.016	.012	-.002	-.013	.003
-1	.012	-.024*	-.029**	-.012	-.010	-.011	.001	-.027**	.000	.007
0	-.003	.009	-.071*	.012	-.006	.000	.012	.000	-.014	.007
+1	.015**	.002	-.125*	.002	-.004	-.006	-.004	-.014	-.009	.026**
+2	.011	-.013	-.021	-.004	.012	.040*	.014	-.001	-.002	.002
+3	.006	.035*	-.049*	.001	.000	.028*	.031*	-.003	-.006	-.014
σ	.009	.012	.017	.011	.013	.011	.015	.015	.016	.014
				CAR Values of Events						
-3, -1	.010	-.037	-.046	-.010	-.025	.015	.020	-.035	-.001	-.001
+1, +3	.031	.024	-.195	-.001	.008	.062	.041	-.018	-.018	.013
-1, +1	.023	-.013	-.225	.002	-.020	-.017	.009	-.040	-.024	.040
-3, +3	.038	-.004	-.312	.001	-.023	.077	.073	-.052	-.033	.019

t	E12	E17	E18	E19	E20	E21	E22	E23	E24	E25
				AR Values of Events						
-3	-.001	.005	.012	.010	.001	-.015	.009	.040	.023	.042
-2	.005	-.001	.019	.022	.017	.015	-.028	-.102*	-.023	.021
-1	.003	-.005	-.015	.010	-.013	-.029	-.007	-.065**	.011	-.001
0	-.013	-.001	.015	-.005	-.028**	-.013	-.088*	-.028	.022	.012
+1	-.017	.012	-.006	.002	-.001	-.003	.034	-.028	.064	-.012
+2	-.014	-.007	-.001	.006	.009	.043*	-.009	.030	.014	-.036
+3	.008	-.005	-.001	.014	-.009	-.013	-.005	-.060**	-.009	.005
σ	.015	.015	.014	.014	.015	.019	.021	.034	.040	.041
				CAR Values of Events						
-3, -1	.006	-.001	.016	.041	.005	-.029	-.026	-.127	.010	.062
+1, +3	-.023	.000	-.007	.023	-.001	.027	.020	-.058	.068	-.043
-1, +1	-.027	.006	-.005	.007	-.042	-.046	-.060	-.122	.096	-.001
-3, +3	-.029	-.002	.024	.059	-.024	-.016	-.093	-.213	.101	.030

* and ** are significant respectively at 5% and 10% level.

The effect of policy rate increase announcements on BIST Tourism Index results is reported in Table 3. In the policy rate increase decisions of the CBRT, none of the ARs of the tourism index on the day of the announcement (t: 0) are statistically significant. Moreover, just one significant AR increases announcements (Event 27, t: -3). In the other findings, all event window and increase decisions ARs are insignificant even though the interest increase is considerably high. As seen in Tables 2 and 3, the standard deviations of the estimation window return in increase events are slightly higher than those of the decrease announcements except for some events (E23, E24, and E25). That suggests that tourism investors react to factors other than interest rates.

Table: 3
BIST Tourism Index ARs and CARs in 1-week Repo Increase Announcements

t	E7	E13	E14	E15	E16	E26	E27	E28
			AR Values of Event Windows					
-3	-.007	.021	.010	-.002	-.023	.004	-.064*	-.003
-2	.010	-.008	.023	-.021	-.008	.027	-.008	-.016
-1	-.007	-.018	-.023	.010	.016	.015	-.015	-.025
0	-.026	.005	-.005	-.008	.004	-.023	.004	.016
+1	.002	.001	.002	.010	.013	-.016	.005	-.004
+2	-.003	.000	-.003	.012	-.001	-.028	.012	-.023
+3	.004	.004	-.022	.000	.002	.009	-.012	.010
σ	*,017*	*.024*	*.023*	*.022*	*.024*	*.026*	*.028*	*.027*
			CAR Values of Events					
-3, -1	.015	.006	-.004	.010	-.013	.046	-.087	-.043
+1, +3	.062	-.023	.004	-.023	.022	-.035	.005	-.017
-1, +1	-.017	-.027	-.013	-.027	.011	-.024	-.006	-.012
-3, +3	.077	-.029	.005	-.018	.000	-.012	-.078	-.043

* and ** are significant respectively at 5% and 10% level.

A one-sample independent t-test and Wilcoxon signed-rank test are performed to examine the significance of the interest rate increase and decrease announcements' effects on BIST Tourism index ARs and CARs. The results obtained from the tests are given in Table 4. The null hypothesis in the t-test is that ARs and CARs means are equal to zero, and the alternative is not equal to zero, statistically. The Wilcoxon signed-rank tests show the median is statistically equal to zero and vice versa the alternative is not equal to zero.

Table: 4
Significance Tests for BIST Tourism ARs and CARs to Policy Rates Announcements

XTRZM		Decrease in 1-Week Repo Rate			Increase in 1-Week Repo Rate		
		T-Test (df: 19)		*Wilcoxon*	*T-Test (df: 7)*		*Wilcoxon*
	t	t (p)	Mean Difference (Test Value = 0)	p	t (p)	Mean Difference (Test Value = 0)	p
AR	-3	1.287 (.214)	.00485	.218	-.870 (.413)	-.00805	.575
	-2	-.346 (.733)	-.00220	.765	-.026 (.980)	-.00016	.889
	-1	**-2.505** (.022)	-.01025	**.023**	-.962 (.368)	-.00580	.327
	0	-1.471 (.158)	-.00910	.313	-.829 (.435)	-.00428	.401
	+1	-.457 (.653)	-.00357	.526	.471 (.652)	.00149	.401
	+2	.826 (.419)	.00358	.526	-.827 (.435)	-.00421	.327
	+3	-.460 (.651)	-.00233	.601	-.144 (.890)	-.00055	.674
CAR	-3, -1	-.876 (.392)	-.00760	.550	-1.020 (.342)	-.01401	.263
	+1, +3	-.188 (.853)	-.00232	.526	-.473 (.651)	-.00326	.779
	-1, +1	-1.603 (.126)	-.02292	**.086**	-1.129 (.296)	-.00859	.263
	-3, +3	-.878 (.391)	-.01902	.823	**-2.161** (.068)	-.02156	**.093**

According to the results of the t-test, the mean ARs only on the day before the interest rate decrease announcements are significantly different from zero. Except for this result, no ARs are substantially different from zero in decrease and increase announcements; thus, according to the t-test, the null hypothesis is confirmed. On the other hand, CARs' mean for

interest rate increase announcements is only significant in the ±3 days interval at the 10% level. Furthermore, the Wilcoxon test results are compatible with the t-test for ARs, while only CARs for ±1 days for decrease announcements and ±3 days for increase announcements are significant at the 10% level.

Table: 5
BIST100 Index ARs and CARSs for 1-week Repo Decrease Announcements

t	E1	E2	E3	E4	E5	E6	E8	E9	E10	E11
AR Values of Event Windows										
-3	.001	-.007	-.002	-.011	.004	.015	-.015	.002	-.010	.005
-2	-.017	-.001	-.007	.013	-.007	.007	.002	.015	.010	.010
-1	-.018	-.019	**-.033***	-.004	-.006	-.003	-.016	.020	-.006	-.008
0	-.015	.009	**-.053***	-.008	-.018	-.002	-.023	-.001	-.002	.004
+1	-.002	-.012	**-.073***	-.002	.001	**-.021****	.010	.006	-.013	-.003
+2	.019	-.002	.013	-.004	.007	.010	-.014	-.015	.003	.001
+3	.008	.011	**-.051***	.006	.007	**.020****	-.003	.005	-.002	.002
σ	.012	.012	.012	.009	.011	.012	.016	.014	.013	.012
CAR Values of Events										
-3, -1	-.034	-.027	-.042	-.002	-.008	.019	.037	-.007	.007	.013
+1, +3	.026	-.003	-.111	.000	.015	.009	-.003	-.013	-.001	.009
-1, +1	-.035	-.023	-.158	-.015	-.023	-.026	.025	-.022	-.007	.029
-3, +3	-.023	-.021	-.206	-.010	-.011	.026	.033	-.021	.010	.034
t	**E12**	**E17**	**E18**	**E19**	**E20**	**E21**	**E22**	**E23**	**E24**	**E25**
AR Values of Event Windows										
-3	-.012	.015	.006	.004	-.008	.007	.004	.021	.009	.023
-2	.008	.009	.007	.018	-.002	-.006	-.012	**-.084***	-.013	.003
-1	.003	-.014	.005	.004	.019	-.002	-.005	-.012	.007	.006
0	-.001	.008	.006	-.003	.002	.002	**-.032***	-.013	.007	.005
+1	-.011	.005	-.005	-.005	.005	.007	.009	-.004	.026	.020
+2	**-.022****	-.006	-.012	-.013	-.002	.005	-.019	.007	-.005	.005
+3	-.004	-.006	.004	-.004	-.006	-.009	-.005	-.018	.010	.003
σ	.012	.015	.013	.014	.012	.012	.012	.016	.020	.020
CAR Values of Events										
-3, -1	-.001	.010	.017	.026	.009	-.001	-.013	-.075	.003	.032
+1, +3	-.037	-.007	-.012	-.022	-.003	.004	-.016	-.014	.031	.028
-1, +1	-.009	.000	.005	-.004	.026	.007	-.028	-.030	.039	.031
-3, +3	-.039	.011	.011	.001	.008	.004	-.060	-.103	.040	.065

* *and* ** *are significant respectively at 5% and 10% levels.*

The analysis results performed to compare tourism with the market (BIST100) and to see general market investor reactions to interest decisions are presented below. Tables 5 and 6 show that event date ARs for BIST100 are significant only for two decreased announcement events and one increased announcement event.

Table: 6
BIST100 Index ARs and CARSs for 1-week Repo Increase Announcements

t	E7	E13	E14	E15	E16	E26	E27	E28
				AR Values of Event Windows				
-3	-.015	.004	-.013	-.013	.009	.007	**-.027**[**]	.011
-2	.002	-.010	-.011	-.011	.000	.005	**.026**[**]	.003
-1	-.016	-.011	**-.031**[*]	**.022**[**]	.025	.014	.013	-.004
0	-.023	.003	-.014	**-.027**[*]	.005	.003	.007	.003
+1	.010	.009	.002	.010	-.003	-.004	-.008	.005
+2	-.014	-.010	-.014	-.013	.007	.001	.004	-.019
+3	-.003	-.003	-.011	-.018	.020	.018	.002	.013
σ	.019	.015	.012	.012	.016	.013	.015	.015
				CAR Values of Events				
-3, -1	-.029	-.017	-.054	-.002	.034	.026	.012	.011
+1, +3	-.007	-.004	-.023	-.021	.025	.016	-.002	.000
-1, +1	-.029	.000	-.043	.004	.028	.014	.012	.005
-3, +3	-.059	-.019	-.092	-.049	.064	.045	.017	.014

[*] *and* [**] *are significant respectively at 5% and 10% levels.*

According to the t-test and Wilcoxon test results, decreased and increased policy rate announcements do not affect BIST100 index logarithmic returns. This result is valid for any event window date ARs and any tested interval CARs for increasing or decreasing announcements. These findings do not agree with those reported by Poyraz et al. (2020), particularly concerning the interest rate decrease announcement findings. Although their study calculated ARs with the exact estimation and event periods mean-adjusted model as ours, logarithmic returns were used in our study rather than arithmetic returns. Secondly, although not expected to impact, the number of events significantly was expanded, and the samples changed in our study.

Table: 7
Significance Tests for BIST100 ARs and CARs for Policy Rates Announcements

XU100		Decrease in 1-Week Repo Rate			Increase in 1-Week Repo Rate		
		T-Test (df: 19)		*Wilcoxon*	*T-Test (df: 7)*		*Wilcoxon*
	t	*t (p)*	*Mean Difference (Test Value = 0)*	*p*	*t (sig.)*	*Mean Difference (Test Value = 0)*	*p*
AR	-3	.626 (.539)	.00150	.681	-.134 (.897)	-.00071	.889
	-2	-.491 (.629)	-.00236	.654	.291 (.779)	.00129	.889
	-1	-1.124 (.275)	-.00333	.313	.474 (.650)	.00315	.575
	0	-1.624 (.121)	-.00581	.351	-.632 (.547)	-.00263	.779
	+1	-.421 (.679)	-.00183	.765	-.386 (.711)	-.00137	.999
	+2	-1.135 (.270)	-.00274	.332	-1.080 (.316)	-.00415	.263
	+3	-.731 (.474)	-.00222	.911	1.009 (.347)	.00527	.263
CAR	-3, -1	-.295 (.771)	-.00176	.823	-.222 (.831)	-.00234	.889
	+1, +3	-.897 (.381)	-.00602	.526	-.384 (.713)	-.00220	.484
	-1, +1	-1.162 (.260)	-.01081	.370	-.152 (.883)	-.00126	.674
	-3, +3	-.952 (.353)	-.01253	.794	-.513 (.623)	-.00984	.575

6. Conclusion

Most unexpected events such as financial crises, terrorist attacks, political events, outbreaks, or Olympic Games; international events; and positive news affect tourism stock returns and other macroeconomic factors (Chen et al., 2005: 254). Those events and reports give direction to investors' expectations and reactions; thereby, ARs can be observed in the market.

Central banks use monetary policy instruments to achieve their goals and steer the economy (Koç & Gürsoy, 2020: 443). The right monetary policies implemented by the central banks ensure that the country's economy is minimally affected by the adverse conditions that may occur and the current negative conditions (Çelik et al., 2015: 77). Investors monitor developments related to money and capital markets to earn on their investments; thus, they invest in less risk and more return securities. Monitoring changes in money and capital markets requires watching different macro- and micro-events that directly or indirectly affect assets. The policy rate as a monetary policy tool is a powerful instrument to achieve the target for central banks. Market interest rates are related to the policy rate; thus, it affects the investment and consumption decisions of individuals and the inflation and production levels in the country (Tanınmış-Yücememiş et al., 2015: 465).

On the other hand, macroeconomic developments guide the monetary policy decisions of central banks. Investors' expectations regarding the policy rate decision of the central bank arise before the meeting, and investment decisions are taken based on these expectations. From this point of view, the effect of policy rate increase and decrease announcements on BIST Tourism and BIST100 indices returns was examined. Thus, investor reactions to the CBRT monetary policy actions were aimed to be measured.

As noted, the tourism investors' reactions to policy rate adjustments are limited. The present study's findings showed that policy rate announcements had little effect on BIST Tourism and BIST100 returns. These findings support the study conducted by Kyereboah-Coleman and Agyire-Tettey (2008), indicating that the T-bill interest rate has a weak-significant positive effect on the stock market. Secondly, our study demonstrated that tourism investors reacted only to three decrease announcements, and none of the interest rate increase announcements caused ARs at day zero. It is known that an increase in the interest rate will provide capital inflows to the country (Özmen et al., 2017). However, our study does not support this case. This may have been because the proportional increase in interest rate was weak and did not meet the investors' expectations. Failure to meet the return expectations due to the investors' perceptions regarding the country and tourism industry risk will weaken the capital inflow despite the interest rate adjustment. On the other hand, Aktaş et al. (2018) pointed out that the BIST100 index has a significant relationship with the interest rate decisions implemented by various central banks (CBRT, the Federal Reserve, the European Central Bank, the Central Bank of India, the Central Bank of the Netherlands, the Central Bank of the Russian Federation, and the Central Bank of Brazil). While investor-specific factors explain the findings of their study, it is stated that this relationship

determined may indicate that BIST100 has a very diverse investor portfolio following monetary policy changes in various countries.

The one-sample t-test and Wilcoxon signed-rank test results for the tourism sample also indicated that decreases and increases in interest rates do not generate ARs on the event date. However, ARs at day t-1 are statistically significant for interest rate decreases. This result is meaningful as investors react according to their expectations in the capital markets. Another finding was that ARs on the market index differ much from tourism, significantly decreased announcements. However, the market index compared to tourism reacts more to interest rate increases. This is an expected result because financial sector shares in banks and financial institutions are included in the market index, affecting monetary policy decisions.

On the other hand, none of the ARs in the event window or CARs in different intervals are significant for the market index. This result is in contrast to what was reported by Poyraz et al. (2020), who stated that arithmetic returns were used, and events differed. Another study, conducted by Assefa et al. (2017), demonstrated that interest rates negatively affect stock returns in developed economies, whereas there is no significant effect in developing economies. The authors explain this result by the more mature capital markets in developed countries. In addition, because of the disinflation period and the efforts of the central banks of developed economies to counter the severe recession in the years 2008-2009, low-interest rates support consumer expenditures and corporate profits, thus leading to investors having positive expectations. The results of our study support the findings of the mentioned study, i.e., investors in Turkey, a developing country, do not react to the interest rate announcements on day zero. It can be concluded that the interest expectations of investors are shaped and priced before the announcement. As a result of Turkey's being a developing economy, its capital market does not have sufficient depth or width. The savings of the economic units (households, firms, and government) are not enough compared to the economy's borrowing needs. This causes investors to invest in money market instruments or speculative ones instead of capital market instruments.

Unanticipated news affects stock market investors' decisions. The present study investigated the effect of the CBRT policy rate, as one of the monetary policy instruments, on BIST Tourism and BIST100 indices between 2010 and 2020 with the event study method. For future studies, it can be suggested to explore different monetary policy tools or use other methods to analyse the effects of monetary policy on tourism stock returns. Another critical issue that needs to be investigated concerns the impact of the size of the policy rate adjustment rate in different countries and sectors. Alternatively, it can be examined with other relevant variables to identify direct or indirect effects, such as exchange rate, stock market depth, and investor attention. Lastly, the findings of the study should be evaluated within its limitations. The main rules were that logarithmic returns were used, and expected returns were determined using the mean-adjusted model. Moreover, the estimation period was selected as 100 days; different intervals could be chosen, like 20 or 250 days. However, examining the tourism stocks' reactions to central banks' interest rates' downward and upward adjustments is valuable to the restricted literature in this area.

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