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SPORT SENTIMENT AND STOCK MARKET RETURNS

AN EVIDENCE OF NATIONAL MATCH DAYS IN TURKEY

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Abstract

Stock market and investor decisions become popular in finance researches. The effects of anomalies and psychological biases of behavioral finance on stock returns are also draw great attention. Changing moods of investors harm rationality and cause unexpected price changes. There are lots of academic studies which focus on sports matches and stock market returns. The aim of our study is to examine stock returns and sport sentiment in Turkish market. AR-MA factors with dummy variable are used in order to reveal significant effect of national football matches. Positive effect of national match days on stock returns is discovered. It is concluded that sport sentiment is effective in Turkish market.

Keywords: Sport sentiment, Behavioral Finance, Stock market, Returns, Abnormal returns, Investor Mood

INTRODUCTION

Stock market and investor decisions are popular research areas in finance. The effects of anomalies and psychological biases of behavioral finance on stock returns are also accumulate great attention. Investor rationality can be assumed as a behavior of applying a mathematical process that maximize expected rate of returns and minimize expected total risks (Boido and Fasano, 2007). Real investors and markets can be very complicated. It is hard to summarize market by a few selected irrationality biases and trading frictions. Behavioral finance has been started to use a top-down approach. It focuses on the reduced form measurement and aggregate sentiments. The benefit of this approach is to easily determine behavioral finance effects on stock returns (Baker and Wurgler, 2007). Investor sentiment has a role in systematic biases of investor expectations. Soccer matches indicate this bias due to the fact that investors are likely to be overly optimistic about their soccer clubs. Over-optimism can turn into disappointment and lead to negative abnormal returns in case of loses (Bernile and Lyandres, 2009).

Sport sentiment concept is emerged based on the sentiment approach in behavioral finance. Changing moods of investors negatively affect rationality and cause unexpected price deviations. Affiliations of sports fans and match results can impact investor behaviors. This fact makes a motivation to using game outcomes in order to capture mood changes of investors. The sports game related factors emerge significant effect on moods. Soccer particularly acquires national interest in many of the countries (Edmans, et al. 2007). Soccer matches also have great importance for Turkish citizens. It can be guessed that economic agents in Turkey can be engaged by sport matches. Doerrenberg and Siegloch (2014) study soccer matches which can be effective in some aspects of individuals. It is stressed that sporting events increase perceived health and motivation to work. Worries about the general economic situation can be affected by soccer tournaments.

The aim of our study is to determine relationship between stock returns and sport sentiment. Following the literature, national soccer matches are analyzed in order detects sport sentiment effect. The national match days accumulate the focus of many individuals in country. National matches impress the general stock market investment decision of the individuals. Dummy variables approach is implemented to find stock returns deviations related to national matches. Findings suggest that national matches have significant influence on general stock index returns. The effects are found to be positive. National team matches arises positive emotions which can be reflected in stock prices.

LITERATURE REVIEW

Aygoren, Uyar and Saritas (2008) analyze Turkish Football Clubs on their match results and stock performance. The findings explore that all game results produce abnormal returns if the matches are played in Europe. This finding is true according to +1 and -1 day event windows. Local matches are also arise abnormal returns the day after the loss matches.

Ashton, Gerard and Hudson (2003) explore subsequent daily changes in the FTSE 100 index after England football team matches. The results explain the relationship that positive match outcomes effects positively price of shares traded on London stock exchange. Negative outcomes also result in bad stock performance the influence of the effect is greater in tournaments and important games. The evidence of the study show that sport industry has an impact on wider economic area.

Ashton et al. (2011) make a reassessment of stock market effect of soccer team matches owing to the fact certain researches are started to provide contrary findings. The analysis demonstrates that stock market and soccer team results are still related. However, the importance of the effect started to decline when recent research periods are considered.

Successes of major sports teams are beneficial for a society and moods. When a supported team wins, their supporters sense proudest and happiness. Otherwise, when the match is lost, fans feel unhappy and demoralized. Hence, supporters can take different investment decisions according to the team's success (Berument, Ceylan and Gozpınar 2006).

Berument, Ceylan and Eker (2009) demonstrate the fact that fanaticism is effective in the relationship between stock returns and match results. The study also suggests that matches with foreign rivals are effective. In a situation of domestic team winning, domestic and other team fans' morale can be wholly increased.

Different effective factors are also determined in the literature. Locally headquartered stocks are investigated by Chang, et al. (2012). The study reveals that firms geographically near the NFL teams are affected by losers the effects of surprise losses found to be more significant.

Berument, Ceylan nd Onar (2013) analyze major soccer clubs in turkey and explains that economic agents more favorably make future events discounting and increase their risk tolerance after the wining of a soccer team.

Berument and Ceylan (2012) investigate Chile, Spain, Turkey and United Kingdom soccer team matches against foreign rivals and assert that wins are associated with higher returns. Wins and lower risk aversion is related while loses evidence higher risk aversion.

Vieira (2013) studies the 2008 European Football Championship and demonstrate that negative reaction for winning can be explained by bearish periods of the market. It seems that losses specially affect investor moods.

A recent study of Fung et. al (2015) search international soccer match impact on stock market in Turkey and analyzed three big soccer clubs in Turkish financial market with different methods. The findings of analysis show that sporting events have larger effects on market volatility in small firms and lower return firms. The study also proves that Edmans et al. (2007) approach determines significant effects. However, the usage of panel data the make the effects disappear.

Floros (2014) examines soccer clubs of Portugal, Netherlands and Italy. Porto, Benfica, Juventus and Ajax are analyzed with their stock returns. The study suggests that financial managers and related investors of soccer clubs can acquire useful information according to research findings. The findings shows that draws of Ajax and Benfica creates positive stock returns and Juventus's losses and draws come forth negative effect.

Demirhan (2013) explore national soccer team matches in the period between 1988-2011 years and finds that the market indexes are not affected by national team win results. However, it can be stated that losses have an effect on the market index.

Botha and De-Beer (2011) investigate South African National Sporting Performance in terms of market return impact. It is tried to find out whether investors are affected by national matches. National matches are analyzed via event study methodology. The results indicate insignificant effect. National sporting and abnormal market returns are not correlated.

Ehrmann and Jansen (2014) investigate FIFA World CUP 2010 and focus on last critical matches of Italy and France in the group stage. Their finding proves that impacts of a sporting event can affect stock pricing owing to human emotions and moods. The analysis based on cross listed-companies and compares stock prices in the country of national team and in the other stock market. It ıs detected that national market of soccer team underprices the stocks and the underpricing probability can be higher, if the country is likely to be eliminated. The study also evidences the continuance of mood effect in next trading day.

Demir, Lau and Fung (2014) study sport sentiment and exchange rates of Turkey. The paper analyzes European Cup matches of three major soccer clubs of Turkey and Turkish national Team matches. The findings prove that draws and loses are unimportant. However, the winning of Turkish national team induce the appreciation of Turkish Lira against US Dollar. Investors' emotional change is explained as a reason of the financial asset return changes. The individual team affect can't be evidenced due to the reason that a national success can influence larger number of people.

Kaya and Gulhan (2013) investigate Turkish Soccer clubs with their match results and abnormal results. It is stated that away match wins and draws are associated with positive abnormal returns of soccer club stocks. However, home match draws and loses result in negative abnormal returns.

Van-Rees (2010) suggest the relationship between Dutch soccer team matches and the Dutch stock market index. The findings show limited evidence of match effects. A winning effect can only be seen by draw ignored analysis. The study also explains the fact that Turkey's market data indicates loses are not important as wins. Wins are not likely for Turkish team and are not expected by fans. However, Dutch soccer team fans expects to win from their rival

Palomino, Renneboog and Zhang (2009) research soccer clubs listed on the London Stock Exchange and provide the fact that stock market reacts strongly to the news about soccer team game results. The study suggests the reason regarding to the abnormal returns of winning team stocks. The positive abnormal return after winning a game arises from high overreactions induced by investor sentiment. Stock market provides significant abnormal returns and trading volumes owing to the investors' mood which is associated to higher expectancy of winning.

Gerlach (2011) dissects the view that abnormal stock returns follows international sporting events, particularly soccer. It is stated that national match effects on asset prices are insignificant. Sport related investor sentiments do not cause any unusual return in markets.

Kang and Park (2015) analyze Korean stock market performance with sport sentiment. The Korean soccer team has an effect on stock returns during the World Cup or the Asian cup. Stock market tends to increase in the following day of a win. Losses are followed by the days with lower returns. It is also highlighted that the sport sentiment effect is highly short-lived. Loss and win effects persist one or two days.

Scholtens and Peenstra (2009) assess soccer team results and their stocks. The results show that positive reactions are associated with wins and negative reactions are related to losses. It is also emphasized that abnormal returns has strong responds in terms of losses than wins. Individuals are more sensitive to loss games. Furthermore, findings suggest that abnormal returns are greater in European matches than national league. Unexpected results cause higher effects on stock market.

Klein, Zwergel and Fock (2009) stress the importance of replications studies in the area of economics and abnormal returns. The study replicates Ashton et al. (2003) research which is highly critical in the literature that aim to find out sport sentiment effects on stock market. The findings show approximately same conclusions and important corrections which can be useful in methodology.

Lidemar and Karlsson (2015) search national sport games of countries and their stock markets in order to evidence investor sentiment effect related to sport. However, the analysis cannot suggest distinct evidence of sport sentiment. The importance of the chosen methodology which can prove significance of abnormal returns is highlighted. Despite the fact that positive results of sport sentiments are detected, the majority of analysis results indicate insignificant impacts.

Dimic et. al. (2015) dissects sport sentiment impact and determinants. Two determinants of investor sentiments is analyzed. Ex-ante assessment of future value related events and ex-post reaction to event news are possible determinants. The analysis suggests that bad news produce higher price effect than good news. Investors have irrational behavior and sentiment induced overreaction in the post event period. Pre-event expectation has minor impact. Post announcement investor irrationality behavior triggers share prices.

Kaplanski and Levy (20010) study US stock market according to the view that soccer games and local stock returns are related. Their finding explains that the aggregate effect does not depend on the game outcomes and highly significant due to the fact that is based on many games.

Baddour (2010) evaluates the performance of S&P 500 composite index during FIFA World Cup Tournaments. The period of 1950 to 2006 shows that market index is negatively affected by soccer games. Negative two percent decrease in index prices is expected over the period of a FIFA World Cup by empirical estimation.

RESEARCH METHODOLOGY

Stock market behavior and soccer matches are analyzed in the study. The study focus on Turkish national soccer team games. The literature review explains that soccer games can influence investor sentiment and result in sport sentiment which affects stock prices. The analysis based on stock returns of Turkey's stock market index BIST. Daily prices are obtained from Datastream in order to calculate the returns. The games between the periods of 2011-2013 are analyzed. This period is determined due to the fact that it excludes the financial crisis. A dummy variable is structured according to the Turkish national team match days and examined with the stationary time series of returns. Stationary time series can be applied with auto-regressive (AR) and moving average (MA) processes (Box et al. 2011). The model that we chose to report is determined with help of Schwartz criteria which is favorable for selecting model order (Koehler and Murphree, 1988).

Empirical Results

Table 1: Estimation Results of the model which Market Index (BIST) returns employed as dependent variable with Sport Sentiment dummy and AR-MA factors

Dependent Variable is Market Index (BIST) returns				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.75E-05	0.000629	-0.091397	0.9272
DUMMY	0.007539	0.003531	2.135229	**0.0331
AR(1)	0.438501	0.083657	5.241683	***0.0000
AR(2)	-0.768660	0.092547	-8.305579	***0.0000
MA(1)	-0.470366	0.067891	-6.928214	***0.0000
MA(2)	0.862154	0.068896	12.51386	***0.0000

**Significant at %5 level, ***Significant at %1 level

Table 1 displays the results of the research model estimation. The analysis results display that AR and MA factors are significant at %1 level. The findings Show that dummy variable has significant and positive coefficient in the model of Market Index (BIST) of Turkey. It is valid at the level of %5 significance level.

This dummy explains the match days of Turkish national team. Thus, it indicates an impact of investor sentiment related sport. The stock market participants of Turkey react positively to the national soccer team matches according to this model. The positive reaction produce increase on stock returns of Market Index (BIST) of Turkey.

CONCLUSIONS

Sport games are accepted as a determinant of individuals' mood. Academic studies provide evidences of changes in stock market regarding sport games. This relationship show a sport sentiment that explain behavior of stock prices around sport matches. Sport sentiment studies focus on soccer games. The stock market behavior can be affected by soccer matches. Soccer might influence great amount of people in many countries. The literature review support this view in major Championships and leagues. It can be stated that national team games are important. Since, national matches have interest of most of the people in a country. However, the literature demonstrates different findings. No relationship, relationship of draws, relationship of wins, relationship of loses and relationship of match days is reported in the literature.

Soccer has significant popularity among Turkish citizens. Soccer matches can impact investor moods. This can be defined by the term of sport sentiment. Soccer games have an impact on investor sentiment via sport sentiment. The study examines sport sentiment and BIST sport index returns in the periods 2011-2014 in Turkey. It is concluded that investor moods can positively react to national soccer matches. This finding is consistent with many previous studies. Turkish national football match days can be suitable for investors who aim to gain benefits from market anomalies. The results sustain contributions to the behavioral finance and market anomaly literature. National match days can be an element of investor sentiment.

Scope for further research is very important in this topic. The topic is recently emerged and need evidences. Both positive and negative findings are suggested in the literature. Future researches should widen the topic by new ideas and related financial theories. Market anomalies can be combined. Investor sentiment research can be developed by using sport sentiment. The future studies can employ different methodologies and sport games in order to prove sport sentiment effects.

NOTE

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