

The Effect of Soccer Performance on Stock Return: Empirical Evidence From “The Big Three Clubs” of Turkish Soccer League

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Abstract

The aim of this paper is to investigate the effect of soccer performance on the clubs' stock returns through an empirical analysis applied on Turkish case. The study is based on the data of Beşiktaş, Galatasaray and Fenerbahçe, considered “the big three” in Turkey. The sample period spans the period between 2005 to 2012. Multiple regression models are employed where the effect of performance on the stock return is analyzed by controlling such variables as the market index, the type of the match (i.e., international or derby), the betting odds prior to the match, the venue of the match, the lag between the match date and market opening date and the market index return. The findings show that the soccer performance is significantly and positively related with the stock returns for all the three clubs. The relationship is found stronger in Beşiktaş compared to the other two.

JEL classification numbers: G10, L83.

Keywords: Soccer economics, Soccer Club Stocks, Soccer Performance, Stock Return.

1 Introduction

Soccer, far beyond being a sports activity, has become a global industry with an enormous economic volume today. Income sources of the industry have expanded from sports events to many other areas such as media coverage, advertisement and merchandising. Today, many soccer clubs are in the form of public corporations of which stocks are traded in Exchanges.

Especially for last two decades, the soccer world is dominated by a profit-maximization manner (Duque and Ferreira, 2005: 3) that casts a shadow over some ethical matters. The

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soccer agenda is often occupied by chicanery and bribery cases, such as the one in Italy, 2006 and the one in Turkey, 2011. In addition, many clubs have become insolvent due to poor governance and poor financial management although the revenues have significantly increased. The soccer clubs mean more than an ordinary public company because they have millions of enthusiast who allocate a part of their personal budgets and times to them. Therefore, corporate governance and professional supervision in soccer clubs has become important than ever.

The performances of soccer clubs occupy an important place in the lives of their supporters. The fanaticism has increased in many countries and soccer has become a way of life. Consequently, many investors in the Stock Exchange make their buy/sell decisions according to performance of the soccer clubs they support (Klein, Zwergel and Heiden, 2009: 192).

The first soccer club that sold its stocks to public is Tottenham Hotspurs of England in 1983. Subsequently, many other European clubs become public companies whose stocks are traded in the Exchanges (Baur and Mckeating, 2009: 17). As for Turkey, the public offerings of soccer clubs began since 2000s. Beşiktaş and Galatasaray sold their stocks in 2002 and Fenerbahçe in 2004 and Trabzonspor in 2005. Subsequently, many other Anatolian clubs have been transformed to public companies but, due to the mismanagement, they went down in the league and were eventually relegated (Gümüş and Zeren, 2012: 4). Towards the end of 2000s, Arab millioners have begun to buy the majority ownership of many British clubs. Consequently, these clubs have begun to withdraw their stocks from the Exchange since they need no external funds.

Today, 22 soccer clubs are publicly traded in Europe. These include 4 clubs from Turkey, 3 from Italy, 3 from Portugal, 4 from England, 3 from Denmark, 1 from France, 1 from Germany, 1 from Scotland, 1 from the Netherlands and 1 from Sweden (Leitão, Armada and Ferreira, 2012: 6).

Table 1 provides some basic information regarding the stocks of Turkish soccer teams.

Table 1: Basic Stock Market Data of Publicly Traded Turkish Soccer Clubs

Club	Total Market Value	Number of Shares Outstanding	Free Float Ratio
Fenerbahçe	987.500.000 TL	25.000.000	20%
Galatasaray	585.498.000 TL	13.940.000	43%
Beşiktaş	181.200.000 TL	14.800.000	37%
Trabzonspor	180.000.000 TL	25.000.000	30%

The aim of this paper to investigate the effect of game performance of soccer clubs on their stock returns through an empirical analysis applied on Turkish case. In the model the effect of performance on the stock return is analyzed by controlling such variables as the type of the match (indicating the importance level), the betting odds prior to the match, being visitor or home team, the ranks of the both teams prior to the match, the lag between the match date and market opening date and the market index return. The empirical study is based on data of the big three clubs of Turkish league, namely, Beşiktaş, Galatasaray and Fenerbahçe, all of which are the most popular and successful teams.

2 Previous Empirical Studies

Stadtman (2003), using the data of Borussia Dortmund for the period 1999 to 2002, examined the effect of new information related to sport on asset prices. His model included the game results, betting odds, contract lengths of the players and the coach, transfers, and market index as explanatory variables. He found a close and meaningful relationship between sports performance and financial performance.

Ashton, Gerrard and Hudson (2003) considered all soccer clubs that were traded in the British Stock Exchange. A GMM model, using the data for the period between 1984 and 2002, included the game results and the market index "FTSE". The results show that the model significantly explains the variation in stock prices of the clubs.

Duque and Ferreira (2005) used the data of Porto and Sporting Lisbon for 1998 to 2003 to examine the relationship between the sport performance and stock prices. They employed ARCH and GARCH models and considered the market index, daily transaction volume, risk-free interest rate and the game results as explanatory variables. The results showed that the explanatory power of game results on stock prices tend to increase towards the end of the season.

Berument, Ceylan and Gözpinar (2006) examined the effect of the European game results of Galatasaray, Beşiktaş and Fenerbahçe on Istanbul Stock Exchange ISE-100 index from 1987 to 2003. Findings showed that ISE-100 increased in those days when Beşiktaş won, while there was no meaningful relationship between the game results of the other two clubs and the index.

Edmans, Garcia and Norli (2007) investigated the relationship between selected 50 countries' performance in sport events and their market indices. The study used the results of international events such as soccer, basketball, cricket, rugby and ice hockey for the period 1973 through 2004 in a GARCH model. The study concluded that the effect of sport performance is higher on the market index in developed countries compared to that of developing countries.

Samagio, Couto and Caiado (2009) used structural equation model to analyze the relationship between the market index and the game results of British soccer clubs between 1995 and 2007. Their study found a meaningful relationship.

Klein, Zwergel and Heiden (2009) included all European countries in their study that investigates whether each country's index is affected by big sports events such as World Cup. Based on the data between 1990 and 2006, the regression analysis did not show a meaningful relation.

Baur and McKeating (2009) considered 27 European clubs placed in Dow Jones STOXX index to investigate the effects of public offerings between 1990 and 2008. Using a panel data regression, they discovered that the public offerings had no positive effect on big clubs whereas they were beneficial to those clubs in lower leagues.

Benkraiem, Le Roy and Louhichi (2010) used EGARCH model where the effect of games results on stock price volatility was investigated. The data set captures the game results, game date, the referee and the stock prices between 2006 and 2007. The findings suggest that sport performance has a significant effect on market value of clubs.

Bell, Brooks, Matthews and Sutcliffe (2010) considered the country index, match venue (home or visitor stadium), betting odds, match results and the goal difference data in their regression model based on the period between 2001 and 2008. They found that those non-critical games around the middle of the season have less effect on stock performance whereas those critical games such as competing for the championship or staying within

the league have much more effect.

Another study using the data of Dow Jones STOXX clubs is Aglietta, Andreff and Drut's (2010) paper which investigates the effect of the perception of investors, the intrinsic value of clubs, the game results, the management of the clubs, public offerings of the clubs, budget constraints, television revenue, and player salaries on stock prices. The study found a significant relationship between television revenue and player salaries.

Demir and Daniş (2011) considered the anticipated and unexpected results as explanatory variables in their model. They used Beşiktaş, Fenerbahçe and Galatasaray data between 2004 and 2009. The findings indicate a lower explanation compared to previous research.

Bell, Brooks and Markham's (2012) study focuses on the effect of coaches' resignation or dismissal. They used T-tests to investigate whether there is a meaningful change in the stock prices before and after the coach's leave. The findings show that the dismissal of coaches has a much more effect than that of resignation.

Leitão, Armada and Ferreira (2012) analyzed the bribery issues in soccer and its effect on Dow Jones STOXX index. They used cointegrated VAR, Johanssen cointegration and Granger causality tests on a data spanning from 2002 through 2008. The results indicate causality from Birmingham City to Celtic.

Berumant and Ceylan (2012) examined the effects of domestic soccer teams' performances against foreign rivals on stock market returns as well as on the return–volatility relationship using the data from Chile, Spain, Turkey and the United Kingdom. Their study supports the propositions that soccer teams' results in international cups affect stock market returns and the return–volatility relationship. Evidence from Spain and the UK suggests that losses are associated with lower returns and higher risk aversion but evidence from Chile and Turkey, where soccer is the most important sport but teams are not as successful, reveals that wins are associated with higher returns and lower risk aversion.

Table 2 summarizes the previous empirical studies.

Table 2: Previous Empirical Studies Analyzing the Relationship Between Sports Performance and Stock Returns

Source	The Team(s) Analyzed	Explanatory Variables in the Model	Time Span	Method	Key Findings
Stadtmann (2003)	Borussia Dortmund	Country index, game results, contract durations of players, new transfers, sold players, contract duration of coaches)	1999-2002	Regression	Low explanatory power of the model
Ashton, Gerrard, Hudson (2003)	All British Clubs	FTSE index, game results	1984-2002	GMM	High explanatory power of the model
Duque and Ferreira (2005)	Porto, Sporting Lisbon	Country index “PS20”, game results, daily volume, risk-free return	1998-2003	ARCH-GARCH	The relationship becomes more significant towards the end of season.
Berument, Ceylan and Gözpinar (2006)	Beşiktaş, Fenerbahçe, Galatasaray	Country index “ISE100”, International game results	1987-2003	GARCH	Significant relationship in Beşiktaş’s stocks only.
Edmans, Garcia and Norli (2007)	50 national teams	Results in international games	1974-2004	GARCH	Sport performance effects the country index more in developed countries.
Klein, Zwergel and Heiden (2009)	European National teams	Results in international games	1990-2006	Regression	No significant relation.
Baur andMcKeating (2009)	Clubs in Dow Jones Stoxx index	Game results	1990-2008	Panel Data Regression	The effect of IPOs have higher effect on big clubs
Samagio, Couto and Caiado (2009)	20 British Clubs	Salaries, transaction volume, player costs, game results	1995-2007	Structural Equation	Sport performance is related with financial performance

Table 2: Previous Empirical Studies Analyzing the Relationship Between Sports Performance and Stock Returns (Cont'd)

Source	The Team(s) Analyzed	Explanatory Variables in the Model	Time Span	Method	Key Findings
Bell, Brooks, Matthews and Sutcliffe (2010)	19 British clubs	Country index, game results, goal difference, match venue, betting odds.	2001-2008	Regression	Low explanatory power of the model
Benkraiem, Le Roy and Louhichi (2010)	11 British clubs	Game results, date and the referee of the game	2006-2007	EGARCH	Sport performance has a meaningful effect on clubs' stock returns.
Aglietta, Andreff and Drut (2010)	Clubs in Dow Jones Stoxx index	Market share of the clubs, income from broadcasts and popularity in the media.	2003-2008	Regression	High relationship between TV income and players' salaries.
Demir and Daniş (2011)	Beşiktaş, Fenerbahçe and Galatasaray	ISE100 index, expected and unexpected game results.	2004-2009	Regression	Low explanatory power of the model
Berument and Ceylan (2012)	Chile, Turkey, England and Spain	Country indices and game results	1987-2007	EGARCH	Results affect stock market returns and stock market return–volatility relationships.
Bell, Brooks and Markham (2012)	All British Clubs	FTSE index, game results	2001-2009	T-Test	Dismissal of coaches have effect on stock returns.
Leitão, Armada and Ferreira (2012)	Clubs in Dow Jones Stoxx index	Dow Jones Stoxx Soccer index	2002-2008	Cointegration and Granger Causality	Causality found from Birmingham City to Celtic.

3 The Model and the Data

The effect of match results on stock returns may well depend on certain concomitant factors. For instance, results of some critical matches such as derbies or international games may be more important than that of others. Most previous studies that examined the relationship between sport performance and stock returns usually focused on certain dimensions of the relation whereas this paper considers all key factors that are likely to play a role on clubs’ stock returns. Otherwise, the model cannot measure the effect of the match results without controlling all concomitant variables. The effect of sport performance on stock return is examined through a multiple regression model that is applied for each of the three clubs’ data separately.

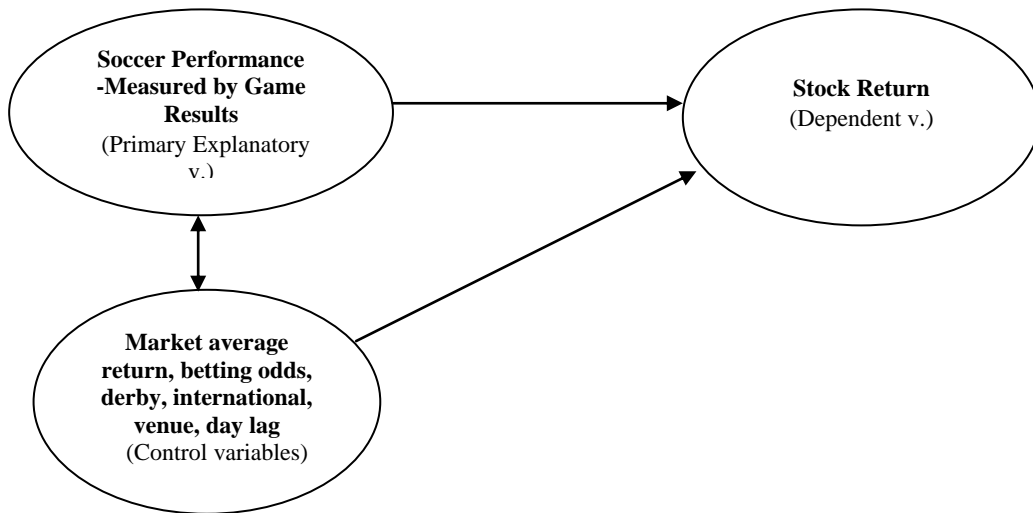


Figure 1: Conceptual Model

Econometric model of the study can be formulated as the following:

$$SRETURN_t = \alpha + \beta_1 ISE + \beta_2 GRESULT + \beta_3 BET + \beta_4 DDERBY + \beta_5 DCHAMP + \beta_6 DEURO + \beta_7 DVENUE + \beta_8 DDAY2 + \beta_9 DDAY3 + \epsilon \tag{1}$$

The following paragraphs are devoted to describe the explanatory variables included in the model:

ISE (Istanbul Stock Exchange “ISE-100” Index): Inclusion of market return is necessary in a research where returns of certain stocks or group of stocks analyzed. This enables one to see the degree to which a given stock’s return is affected by the changes in the market in general, or, to put it another way, to see the change in stock price free from the market effect.

GRESULT (Game result, Goal difference): This is the primary explanatory variable that measures the sport performance in the model. It is a continuous variable and expressed as the goal difference in a given match between the team analyzed and the competitor. Positive value indicates win, zero value draw and negative value loss. Although a categorical (discrete) form of result variable where it takes only three values is also feasible, we prefer continuous form as the goal difference itself is important in many circumstances.

BET (Betting Odds prior to the match): Betting odds indicate the perceived importance of a match. Inclusion of this variable allows one to measure the degree to which the result affects the price.

DDERBY: This term means a sporting fixture between two teams from the same town or city, particularly in association football. Usually these rivalries have long history. In the case of Turkey, the term is used for the matches between the biggest and oldest three clubs of Istanbul, namely, Beşiktaş, Galatasaray and Fenerbahçe. In derby matches the effect of game result on stock price is expected to be higher compared to other matches. Therefore, a dummy variable is used to control whether the game is derby or not.

DCHAMP & DEURO: Another indicator of perceived importance is whether the match is domestic or international. The results in international matches, namely, those matches in UEFA Champions' League or UEFA Europa League are expected to have more effect on the stock returns compared to matches in domestic leagues. These factors are controlled by two distinct dummies in the model.

DVENUE (Home or Away): A dummy variable is employed to indicate whether the match is at the team's home or rival's stadium. It is widely accepted that the venue of the match have an effect on the game result. Therefore, the venue of the game is also expected to affect the explanatory power of the game result on stock performance.

DDAY (Day difference): In some cases it may be necessary to use lagged series to see the effect of explanatory variable on the dependent variable. On the other hand, sometimes the effect of explanatory variable on dependent variable may diminish or disappear as the time difference increases. Therefore, two distinct variables are employed to control the time lag between the match date and first trading day after the match. *DDAY2* takes 1 if there are two days lag between the date of match and first trading day, otherwise 0. Similarly *DDAY3* takes 1 in the case of three or more days lag and otherwise 0.

The data set consist of 299 observations for Beşiktaş, 294 for Fenerbahçe and 289 for Galatasaray from 2005 to 2012. The stock prices and index data are obtained from ISE official website, match results and other related data from the Turkish Football Federation's official website and betting odds from www.mackolik.com.

4 Test Results

4.1 Stationarity of the Series

Stationarity of the continuous variables "SRETURN", "GRESULT", "ISE" and "BET" for all the three clubs were examined through ADF (1979), PP (1988) and KPSS (1992) unit-root tests. Findings indicate that data are stationary at the level values. Thus, there is no need for a conversion and the original data can be used in the regression.

4.2 Beşiktaş

The results of heteroscedasticity and autocorrelation tests for are shown in Table 3:

Table 3: Heteroskedasticity and Autocorrelation Tests for Beşiktaş

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.026050	Prob. F(9,289)	0.4191
Obs*R-squared	9.258154	Prob. Chi-Square(9)	0.4138
Scaled explained SS	35.47206	Prob. Chi-Square(9)	0.0000
Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.538854	Prob. F(36,253)	0.9862
Obs*R-squared	21.29313	Prob. Chi-Square(36)	0.9754

As can be seen from the table, a heteroskedasticity and autocorrelation problem does not exist in Beşiktaş data. Table 4 reveals the findings of multiple regression:

Table 4: Regression Results for Beşiktaş

Dependent Variable: SRETURN				
Method: Least Squares				
Included observations: 299				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.023748	0.009101	-2.609432	0.0095
ISE*	0.434968	0.136840	3.178667	0.0016
GRESULT*	0.009259	0.001942	4.768389	0.0000
BET*	0.009264	0.003301	2.806783	0.0053
DDERBY	-0.007981	0.009259	-0.861948	0.3894
DCHAMP*	-0.031854	0.015316	-2.079813	0.0384
DEURO*	-0.019487	0.009125	-2.135601	0.0336
DVENUE	0.005044	0.006277	0.803620	0.4223
DDAY2	0.004955	0.007056	0.702222	0.4831
DDAY3	0.000854	0.008910	0.095868	0.9237
R-squared	0.125204	Mean dependent var		-0.002919
Adjusted R-squared	0.097962	S.D. dependent var		0.051392
S.E. of regression	0.048810	Akaike info criterion		-3.168876
Sum squared resid	0.688528	Schwarz criterion		-3.045116
Log likelihood	483.7470	Hannan-Quinn criter.		-3.119341
F-statistic	4.595881	Durbin-Watson stat		1.851129
Prob(F-statistic)	0.000011			

The explanatory power of the whole model is 12 percent and statistically significant. In other words, sports-related factors explain 12 percent of the club's stock returns. As for the individual effects of the variables, the market index, game results, international or domestic feature of the game, and betting odds have significant effect on the return. The effect of the other variables, namely, the derby feature of the match, the venue and day lags are found insignificant.

Findings imply that one percent increase in ISE index causes 0,43 percent increase in Beşiktaş's stock return. The relationship between stock return and the index is found the highest in Beşiktaş compared to the other two, which is also obvious in return charts. The game result is also positive effect, as expected. 1 unit increase in the game result causes 0,01 unit increase in stock return. The most interesting outcome of the test is that the international games have negatively related to the stock return. That is, if a given match is in Champions' League or UEFA European League, then one should expect a decrease in the stock price. This may well be explained by the fact that this club has generally failed in these two tournaments.

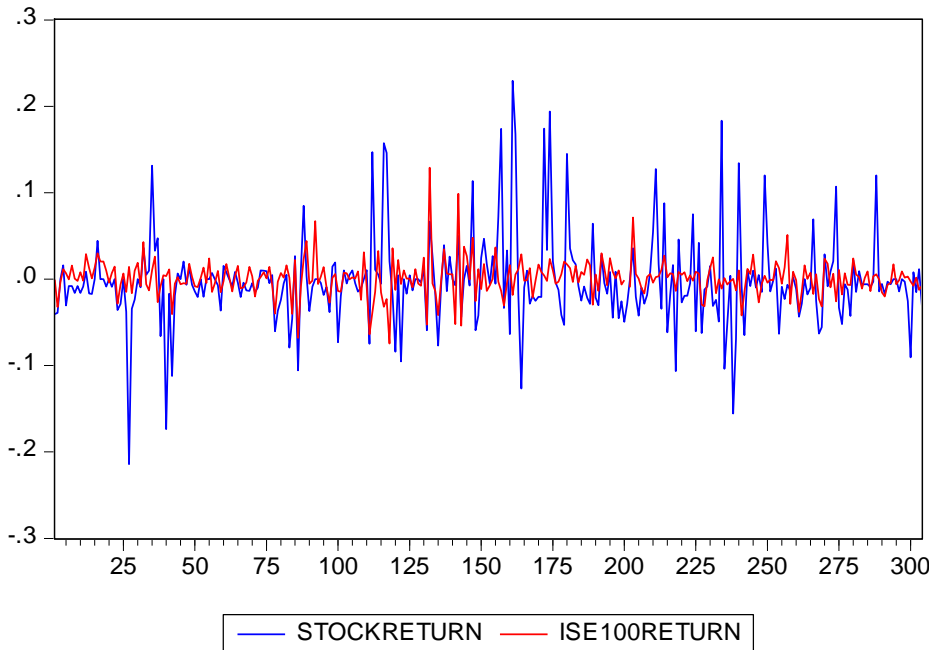


Chart 1: Return Performances of Beşiktaş and ISE-100 During the Study Period

4.3 Fenerbahçe

The preliminary tests for Fenerbahçe indicate that there is no heteroscedasticity in the series whereas the independent variables are autocorrelated as seen in Table 5. After solving this autocorrelation problem in the series, we get the regression results in Table 6.

Table 5: Heteroskedasticity and Autocorrelation Tests for Fenerbahçe

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.518578	Prob. F(9,284)	0.1408
Obs*R-squared	13.49882	Prob. Chi-Square(9)	0.1413
Scaled explained SS	117.1043	Prob. Chi-Square(9)	0.0000
Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.739865	Prob. F(36,248)	0.0081
Obs*R-squared	59.28089	Prob. Chi-Square(36)	0.0086

Table 6: Regression Results for Fenerbahçe

Dependent Variable: SRETURN				
Method: Least Squares				
Included observations: 294				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001343	0.005465	0.245731	0.8061
ISE	0.084550	0.057070	1.481499	0.1396
GRESULT*	0.003411	0.001225	2.783460	0.0057
BET	0.001272	0.002265	0.561499	0.5749
DDERBY	-0.006751	0.007503	-0.899783	0.3690
DCHAMP	-0.005783	0.005439	-1.063343	0.2885
DEURO*	-0.008312	0.004554	-1.825163	0.0690
DVENUE*	-0.010620	0.004113	-2.582122	0.0103
DDAY2	-0.003520	0.004866	-0.723404	0.4700
DDAY3	-0.004633	0.004366	-1.061253	0.2895
R-squared	0.055260	Mean dependent var		-0.002401
Adjusted R-squared	0.025321	S.D. dependent var		0.033491
S.E. of regression	0.033064	Akaike info criterion		-3.947304
Sum squared resid	0.310482	Schwarz criterion		-3.822012
Log likelihood	590.2537	Hannan-Quinn criter.		-3.897128
F-statistic	1.845763	Durbin-Watson stat		1.891113
Prob(F-statistic)	0.060082			

The model as a whole explains the 5,5% of the Fenerbahçe's stock return. When considered individually, only game results, venue and European League matches are found significant as explanatory variables. The model implies that one unit increase in the Fenerbahçe's game result causes 0,003 rise in its stock return. The effect of international game on stock return is negative, as in the case of Beşiktaş.

The insignificance of ISE coefficient implies more individual moves are expected in Fenerbahçe stock apart from the general market course. This is obvious especially around day 225 and 275 as seen in Chart 2. These departures from the market trend may well be explained by the chicanery crisis and club president's arrest.

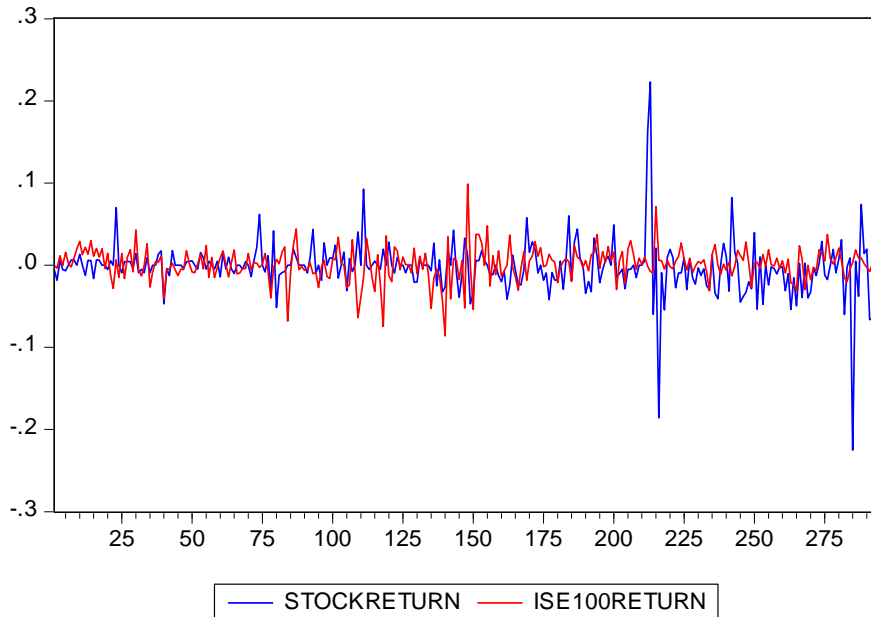


Chart 2: Return Performances of Fenerbahçe and ISE-100 Durings the Study Period

4.4 Galatasaray

The preliminary tests of Galatasaray data indicates that autocorrelation problem exists between the independent variables seen in Table 7.

Table 7: Heteroskedasticity and Autocorrelation Tests for Galatasaray

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.573050	Prob. F(9,279)	0.8189
Obs*R-squared	5.245343	Prob. Chi-Square(9)	0.8124
Scaled explained SS	20.02122	Prob. Chi-Square(9)	0.0178
Breusch-GodfreySerialCorrelation LM Test:			
F-statistic	5.647942	Prob. F(2,277)	0.0039
Obs*R-squared	11.32347	Prob. Chi-Square(2)	0.0035

Table 8 reveals the regression results for Galatasaray after solving the autocorrelation problem.

Table 8: Regression Results for Galatasaray

Dependent Variable: SRETURN				
Method: Least Squares				
Included observations: 289				
White heteroskedasticity-consistent standard errors & covariance				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.008342	0.006020	-1.385832	0.1669
ISE*	0.319595	0.078795	4.056026	0.0001
GRESULT*	0.003064	0.001066	2.874764	0.0044
BET	0.003532	0.002484	1.421800	0.1562
DDERBY	0.001737	0.006020	0.288500	0.7732
DCHAMP*	-0.010704	0.006083	-1.759769	0.0795
DEURO	-0.006480	0.004066	-1.593542	0.1122
DVENUE	-0.002203	0.004455	-0.494445	0.6214
DDAY2	0.006422	0.004713	1.362553	0.1741
DDAY3	-0.004958	0.008261	-0.600106	0.5489
R-squared	0.084409	Meandependent var		-0.000546
Adjusted R-squared	0.054874	S.D. dependent var		0.032513
S.E. of regression	0.031608	Akaikeinfocriterion		-4.036801
Sumsquaredresid	0.278746	Schwarzcriterion		-3.909935
Loglikelihood	593.3177	Hannan-Quinn criter.		-3.985966
F-statistic	2.857927	Durbin-Watson stat		1.614795
Prob(F-statistic)	0.003073			

As seen in the table, the model is found significant. Considered individually, only the market index, game results and being a Champions' League match variables significantly explain the stock returns for Galatasaray. Game result and market index are positively related with the return as hypothesized. The negative relation between being Champions' League match and return can be explained by bad performance of Galatasaray in the Champions' League for past several seasons, just like the other two teams.

Chart 3 simultaneously exhibits the returns of Galatasaray stock and that of market index. There is not as much departure from the general market course as the case of Fenerbahçe. This is also confirmed by the significant coefficient of ISE in Galatasaray's regression results.

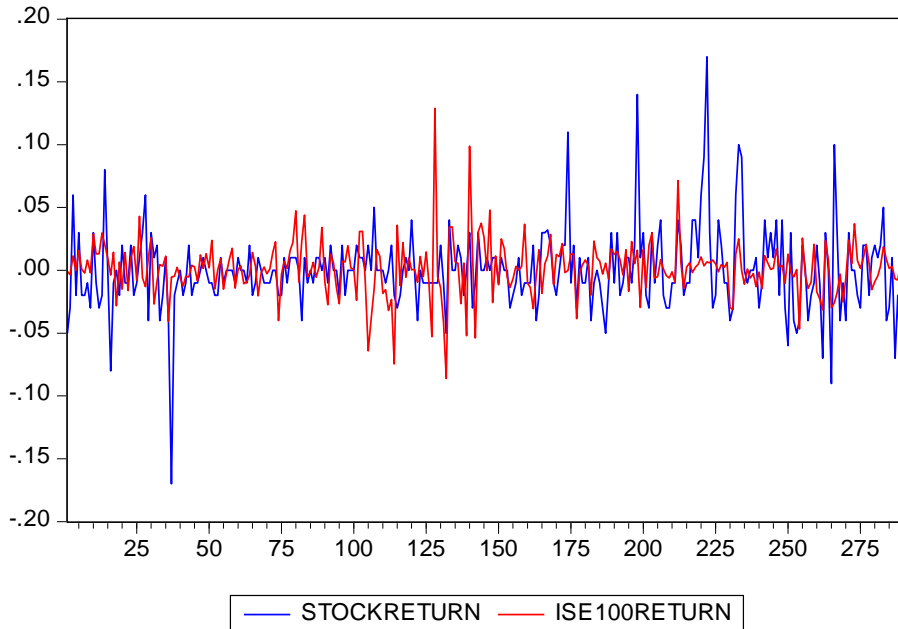


Chart 3: Return Performances of Galatasaray and ISE-100 Durings the Study Period

5 Conclusion

The models are found statistically significant for Beşiktaş, Galatasaray and Fenerbahçe. The soccer performance particularly, as measured by goal difference, is positively and significantly related to stock return for all the three clubs, as hypothesized. However, the relationship is found obviously higher and more significant in Beşiktaş than that of the other two clubs. This could be explained by the higher volatility in stock prices, as a result of instable soccer performance of the team. The high volatility is obvious in the Chart 1 where return lines of Beşiktaş's stock and ISE index are simultaneously shown. Another indicator of high risk in Beşiktaş's stock is its Beta value of 0,74, considerably higher than Galatasaray's 0,32 and Fenerbahçe's 0,29.

Another common result for all the three clubs is the negative effect of the game being Champions' League or European League. Because these teams did not do well in the international arena in recent years, such a result should not be a surprise. However, this result would probably be reverse in case the teams do better in these tournaments, as the success in such international tournaments would generate significant revenues.

The stock's sensitivity to the market index is found insignificant for Fenerbahçe, contrary to that of the other two clubs. This dissociation between Fenerbahçe stock and the market course may be attributed to the chicanery crisis of the club.

Betting odds factor is found significant only for Beşiktaş. Being derby match, the venue, day differences have no effect in explaining the performance and stock return relationship for any of the three the clubs.

While the findings of this study provide useful insights with regard to effect of sports performance on stock returns, a more extensive research including the data of European clubs, cointegration, causality and structural breaks tests is expected produce more reliable results. Such an extension of this paper is already in process.

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