The Effect of Financial and Sports Achievements of Football Clubs on Stock Values: A Study on European and Super League Clubs

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Abstract

In the literature, although there are studies examining the stock values by applying the ratio analysis method with the data obtained from the financial tables of football clubs, there are limited number of studies examining the factors affecting the stock values of football clubs with econometric methods. The main aim of the study is to investigate the effects of financial and sports achievements criteria of 14 football clubs on stock values competing in European League and Turkish Super League and traded on the stock market. The study includes a four-year period between 2016-2019. In this period, 6-month financial data of the clubs were tested by using panel data analysis method. Empirical results reveal that the market value and league scores of football clubs affect the stock value positively, but club revenues affect the stock value negatively.

Key Words: football clubs, stock, panel data.

INTRODUCTION

The place and importance of football, which is a sports competition with an audience of about 4 billion, is indisputable. Football, which was just an entertainment in the past, has become an industry today thanks to the globalization in the world and the technological developments it brings. In the first periods, when football was for entertainment purposes, only low match revenues such as ticket sales were obtained in stadiums; but today sports clubs have become institutionalized and gained association and company status. As well as match revenues, they earn millions of dollars from advertising revenues, revenues from broadcasting rights, sponsorship revenues, licensed product sales revenues, revenues from national and international competitions, betting revenues and stock market revenues, so each of them is mentioned as an important brand in national and international markets and they have an important share in the world economy.

The desire to manage football clubs for profit, that is the industrialization of football, has caused important changes in club administrations. Financial management areas, which have not been emphasized much so far, have started to be an issue to focus on and budgeting, financial management, professional observation, and legal consultancy have become important (11).

As the football clubs started to be traded in stock markets in the world and in our country, the sportive and financial success of these companies started to attract interest by investors and researchers, and the issues related to the financial status of football clubs offered a new field of study to the researchers.

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This study is intended to deal with football market in Europe and Turkey along with its economic dimensions and to determine the effect on the stocks of sporting and financial success of the football clubs in the study.

Economic dimensions of Football Industry in Europe and Turkey

Football is the most popular and followed sport in our country as it is in Europe. The popularity of football is increasing day by day, and not only its sports activities but the social, emotional, economic and even political effects of football can be shown as the reason for the increase of interest in football.
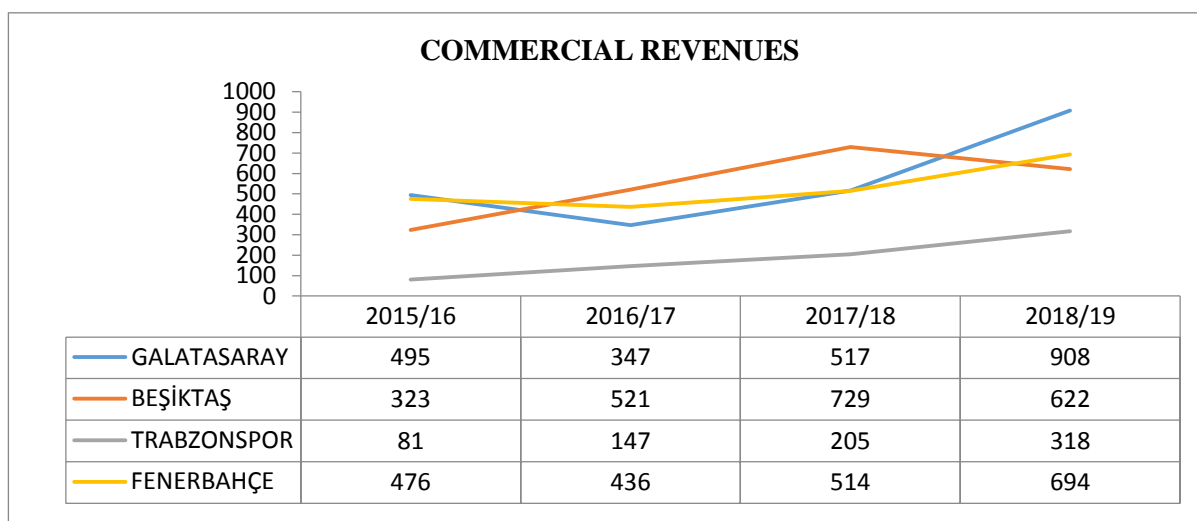
In today's Turkish football, the number of fans of Galatasaray, Beşiktaş and Fenerbahçe Sports Clubs, which are named as the Big Three in the Super League, have more than 80% of the number of fans of all football clubs in our league, and this has led the Turkish football and football market to continue its existence in the axis of these clubs (29). Being established as associations in the past, Galatasaray and Beşiktaş were incorporated and offered to public in 2002 and Fenerbahçe and Trabzonspor in 2004. With the offering of sports clubs to the public, the clubs produced high income and advertisement, broadcasting, jersey sales and stadium revenues increased, and parallel to this, transfer fees and other payments to football players increased as well. Although the number of clubs with incorporation in Turkey is high, the fact that only four biggest clubs with the most fan bases are traded on Istanbul Stock Exchange prevents other football clubs from getting the expected share from the capital markets (19). Today, Turkish football shows positive momentum especially in terms of financial success and increases its brand value with each passing season. Revenue items such as match day revenues, broadcast revenues, product sales and sponsorship revenues, which are obtained in national and international competitions, constitute the commercial revenues of the clubs. The total of commercial income of the last four seasons of 18 football clubs competing in the super league is shown in figure 1.
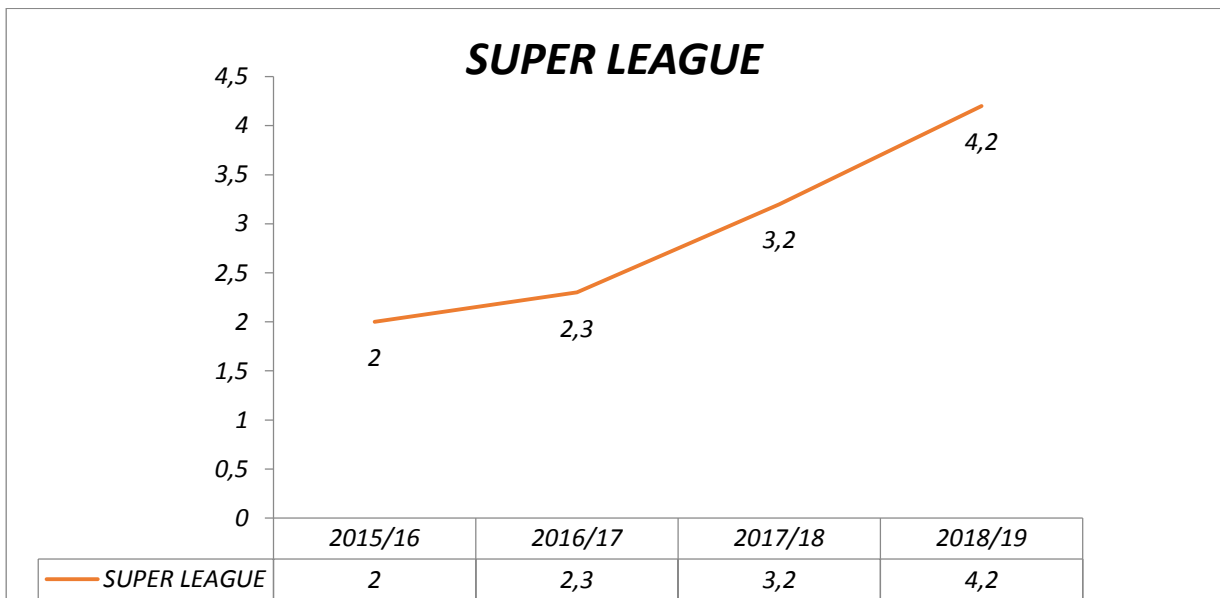
Figure 1. Total Commercial Revenues of Super League Clubs (Billion TL) 2015/16 -2018/19 (32)

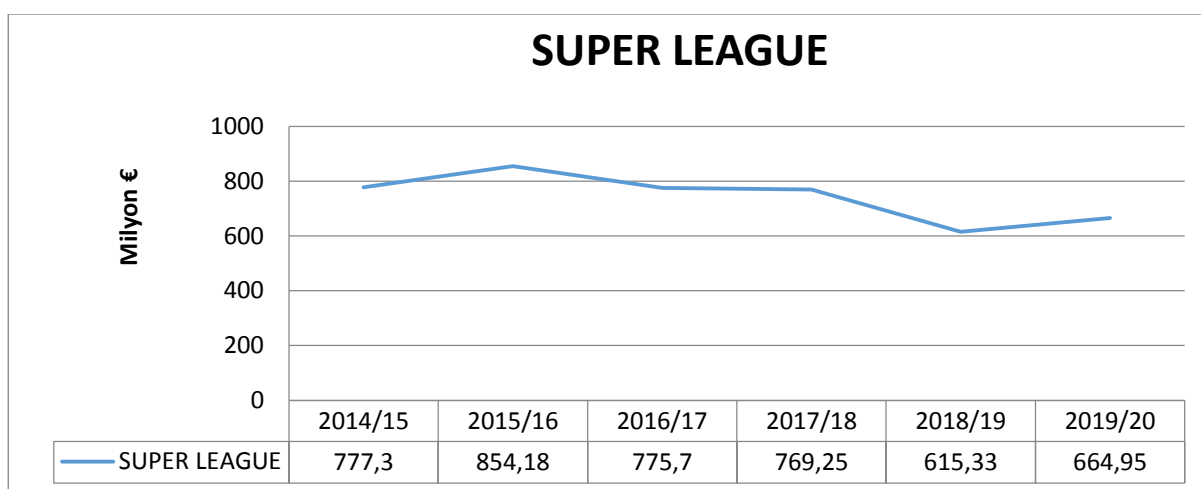|	2015/16	2016/17	2017/18	2018/19
SUPER LEAGUE	2	2,3	3,2	4,2

In Super League, Galatasaray, Beşiktaş, Trabzonspor and Fenerbahçe Sports Clubs constitute the majority of the total commercial income and the commercial revenues of these four clubs in the last four seasons are shown in Figure 2.

COMMERCIAL REVENUES

	2015/16	2016/17	2017/18	2018/19
GALATASARAY	495	347	517	908
BEŞİKTAŞ	323	521	729	622
TRABZONSPOR	81	147	205	318
FENERBAHÇE	476	436	514	694

Figure 2. Commercial Revenues of 4 Major Super League Clubs (Million TL) 2015/16- 2018/19 (32)

As presented in Figure 1 and Figure 2, the commercial revenues of all clubs in Super League have increased steadily in the last four seasons and the revenues of the four big sports clubs that have a large share in these revenues have increased from time to time in parallel with their financial and sportive success in these four seasons.
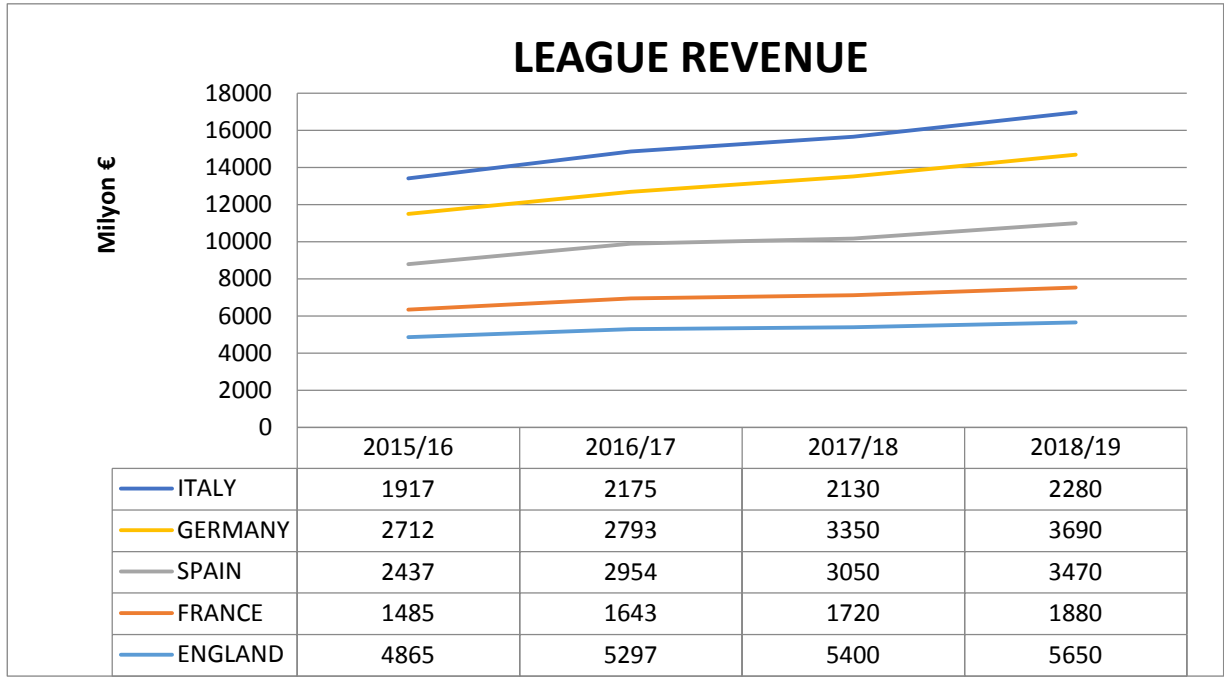
Moreover, the total brand values of 18 football clubs in Turkish Super League based on the market values of the players decrease periodically within the framework of the financial situation of the clubs in the last four seasons and UEFA's Financial Fair Play sanctions.

SUPER LEAGUE

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
SUPER LEAGUE	777,3	854,18	775,7	769,25	615,33	664,95

Figure 3. Total Brand Value Based on Super League Player Values (Million TL) 2015/16-2018/19 (38)
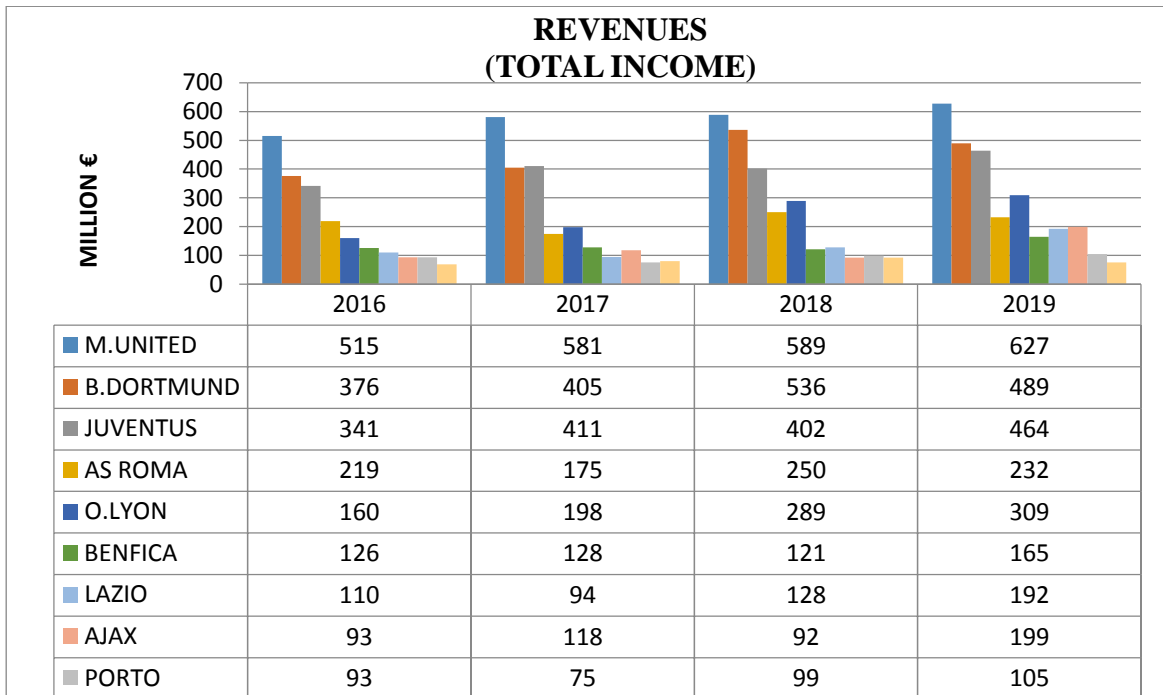
It is seen that England (Premier League), Germany (Bundesliga), Spain (La Liga), Italy (Serie A) and France (Ligue 1) leagues, the world's 5 major leagues forming the basis of European football market, are also structured as an association and incorporated company. Football clubs are incorporated companies and some of the countries whose shares are traded in the capital markets through the public offering method are England, Germany, Italy, France, Holland, Portugal, Sweden, Scotland and Denmark (25). European football has

shown positive momentum regarding both sporting and financial success from past to present, and it is leading the world football market and becoming a role model by increasing its brand value constantly.

LEAGUE REVENUE

|	2015/16	2016/17	2017/18	2018/19
ITALY	1917	2175	2130	2280
GERMANY	2712	2793	3350	3690
SPAIN	2437	2954	3050	3470
FRANCE	1485	1643	1720	1880
ENGLAND	4865	5297	5400	5650

Figure 4. Revenue of the 'Five Major European League Clubs' (Million €) 2015/16- 2018/19 (1)

The total income of 10 football clubs in the last four seasons in our study competing in European leagues is presented in figure 5.

REVENUES (TOTAL INCOME)

	2016	2017	2018	2019
M.UNITED	515	581	589	627
B.DORTMUND	376	405	536	489
JUVENTUS	341	411	402	464
AS ROMA	219	175	250	232
O.LYON	160	198	289	309
BENFICA	126	128	121	165
LAZIO	110	94	128	192
AJAX	93	118	92	199
PORTO	93	75	99	105

Figure 5. Revenues of 10 Clubs Competing in the European Leagues (Million €) 2016-2019 (37)

As of 2019, 9 clubs in the Premier League, three clubs in the Bundesliga, six clubs in La Liga, six clubs in the Serie A and six clubs in the League 1 are incorporated companies, and the total company values in the last four seasons on the basis of their leagues are shown in Figure 6.
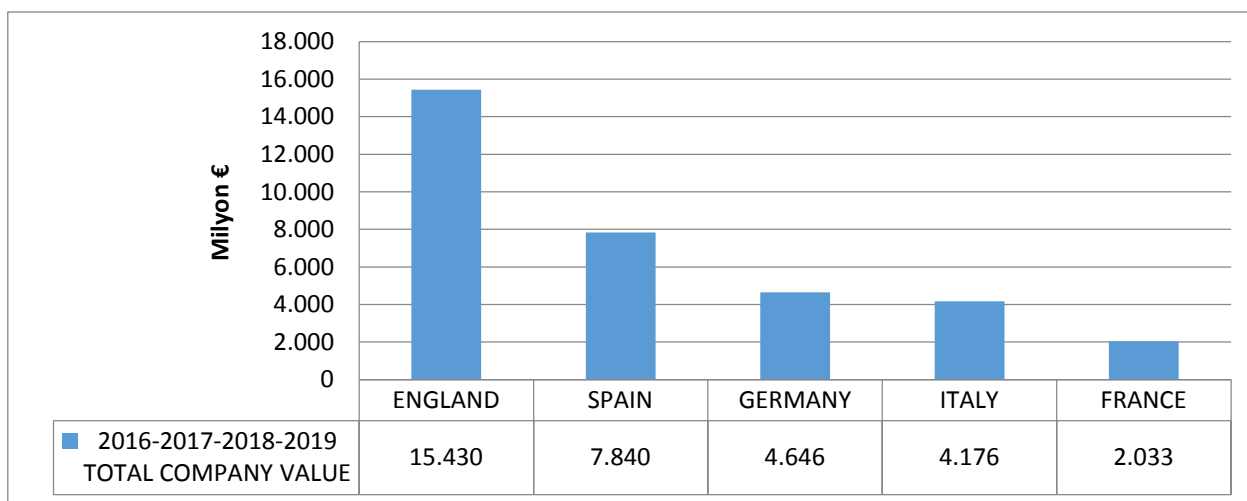
Figure 6. Total Company Revenue of '5 Big' European League Clubs (Million €) 2015/16- 2018/19 (34)

If we take a look at the shares of the five big leagues that are leading the world football market and including top brand football clubs; in the world football market which has a brand value of $13.4 billion, England has 46% share, Germany has 16% share, Spain has 15% share, Italy has 9% share and France has 7% share. Five countries including Turkey share the remaining 7% (33).

Table 1. Total brand values and percentiles of the Countries (33)		
COUNTRY	TOTAL BRAND VALUE	Percentile
ENGLAND	6.109.000.000 $	46%
GERMANY	2.208.000.000 $	16%
SPAIN	1.984.000.000 $	15%
ITALY	1.172.000.000 $	9%
FRANCE	983.000.000 $	7%
TURKEY	297.000.000 $	2%
HOLLAND	230.000.000 $	2%
BRAZIL	173.000.000 $	1%
SCOTLAND	120.000.000 $	1%
PORTUGAL	103.000.000 $	1%
Total	**13.400.000.000 $**	**100%**

While the annual turnover of football clubs, which have become a global show industry, is around 14.6 billion Euros, the annual turnover of big football clubs around the world is 200 million Euros. The annual turnover of the European Champions League, which is held annually, is 1 billion Euros. While the global scale of the football industry, together with external economies, is at 200 Billion USD level, the volume of Turkish football sector is about 800 million euros. While the budget of Turkish Football Federation was about 6 million USD over the past ten years, it has now reached 150 million USD (34).

MATERIAL & METHOD

Data Set

In similar studies on football clubs in the literature, it was seen that generally the local clubs in a single country traded on the same stock market were used. In the selection of football clubs that constitute the dataset of this study, the fact that the clubs were traded in different stock markets and in different countries were taken into account, and it was thought that the sportive and financial structures of different criteria and scales will enrich the sample of the research. The common features of the 14 football clubs used in the study are that they compete in European leagues and they are incorporated companies traded on stock markets.

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The research includes a four-year period between 2016-2019. The companies included in the study are Turkish Super League clubs Galatasaray A.S., Beşiktaş A.S., Trabzonspor A.S. and Fenerbahçe A.S. traded on Istanbul Stock Exchange, Borussia Dortmund in the German Bundesliga and traded on the German stock exchange Xetra, Lazıo, Juventus and A.S. Roma in Italy Serie A and traded on Milan stock exchange, Manchester United competing in the English Premier League and traded on the New York stock exchange, Olympic Lyon in Ligue 1 France and traded on the Paris stock exchange, Benfica, Sporting Lisbon and Porto F.C. in Portugal Liga NOS and traded on Euronext Lisbon Stock Exchange and Ajax competing in the Dutch Eredivisie League and traded on the Amsterdam stock exchange. The data of these clubs are published for four-year as six-month-half periods in total of eight periods.

The data used in the study are in two groups as dependent and independent. The dependent variable is the stock values of the 14 football clubs in the study. The independent variables consist of the league score and the number of trophies gained throughout the season to measure the financial activities of 14 football clubs, club income, club market value, transfer fees spent, return on assets, return on equity, leverage ratio variables and sporting events.

Method

Econometric studies are generally analysed using time series analysis and cross section data analysis methods. In the studies in which time series are used, the time dimension of the data is taken into consideration, that is, the values of variables in the analysis over a period of time are emphasized. In the studies in which cross sections are used, different variables at a single time point are compared. Analyses, where time series data and cross section data are used together, are called "Panel Data Analysis". In other words, panel data analysis consists of time series and cross section data, and data sets of different time intervals belonging to the same units (30). In econometric studies conducted recently, the panel data method has been used quite frequently. One of the important reasons for the increase in the interest in panel data method in studies is the use of cross and time series data in panel data sets together,

benefiting from more information in the research and increasing the level of freedom. Therefore, the number of observations in the research increases and the problem of multiple linear connection is eliminated by adding more variability to the researched relationship (4). Another reason is to control the individual effects that can be related to other variables and cannot be observed within the framework of the model in determining the economic relations between the variables in the established model (17). For these reasons and since the data set to be used in the research includes the time series data and the data of the cross-section series, panel data analysis method was used as an econometric analysis.

The basic panel regression model used to analyse the relationships between dependent and independent variables using the data of cross and time series together is shown as follows (16).

$$y_{it} = \alpha_i + \beta_1 X_{1it} + \varepsilon_{it} \qquad i = 1,2,...,N \qquad t = 1,2,.....,T$$

In the formula above, the subscript i indicates cross section series such as household, company, country, while the subscript t indicates the time series dimension. In the equation, y_{it} shows the dependent variables, X_{1it} shows the independent variables in the model, ε_{it} indicates error term and α_i indicates s constant coefficient intersection.

There are two basic methods for estimating the panel data model. One of these models is named as "fixed effects model" and it allows to obtain different constant coefficients for each cross-section units. In the fixed effects model (FEM), a different fixed value is created for each cross-section unit. Fixed effects model (FEM) assume that slope coefficients indicated by model β do not change but constant coefficients vary only between cross section data or only between time series data or between both cross and time data. In other words, when there is a difference between the sections in the panel data set, if there is no time-dependent variation, this regression model is named as one-way and cross-sectional fixed effects model (FEM). Another method used to estimate panel data analysis is "random effects model" (REM). This model is used in cases where changes due to cross section and time series are included in the panel data model as a component of the error term. The

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fact that the random effect model is superior to the fixed effects model can be explained by the removal of loss of degrees of freedom in the random effects model. In addition, the random effects model allows the effects outside the sample to be included in the created model (18).

One of the important issues when using panel data analysis method is to decide which model should be used; that is, whether to use fixed effects model (FEM) or random effects model (REM). Of the two models, which one to use in the analysis is usually determined by Hausman test statistics, and the hypotheses for Hausman test statistics are as follows:

H0: $E(\varepsilon it \mid Xit) = 0$ cross-section data and time series effects are random, no correlation

H1: $E(\varepsilon it \mid Xit) = 0$ cross-section data and time series effects are steady, there is correlation.

Acceptance of the null hypothesis (H0) in the Hausman test means that the random effects model will be used in the analysis (22). Likelihood ratio (LR) test can also be used to test the random effects model against the classical model. H0 hypothesis is established that there is no difference between the sum of squares of the residuals of the two models (26). H1 hypothesis states that there is a difference between the sum of squares of the residuals of the two models. LR test statistic is the following model:

$$LR = -\log l(H_0 / H_1) = -2[\log l(H_0) - \log l(H_1)] = 2[L(H_1) - L(H_0)]$$

Model of the Study

Literature is used to determine the model used in panel data analysis and the variables used in the model. In the light of the studies in the literature, the model created to determine the econometric relationship between stock returns and variables that indicate the sports and financial and sportive success of football clubs are as follows.

$$HSD_{it} = \alpha_{it} + \beta_1 PİYDEĞ + \beta_2 LİGP + \beta_3 KUPS + \beta_4 KULGELİRİ + \beta_5 HARCBONBD + \beta_6 ROA + \beta_7 KALDO + \beta_8 ROE + \mu_{it} + \varepsilon_{it}$$

In the study model, Stock Value (HSD) was used as the dependent variable. The data needed to calculate the HSDs of 14 football clubs used as dependent variables were obtained from Club websites, investing.com and BIST website.

The independent variables used in the study are explained below.

One of the independent variables used in the model is the Market Value of the Clubs (PİYDEĞ). Market value data was obtained from Transfermarkt.com. One of the independent variables used in the model is the League Score (LİGP) of the Clubs. League score data was obtained from Transfermarkt.com and the clubs' websites.

One of the independent variables used in the model is the Number of Cups (KUPS) obtained during the season of the clubs. The Number of Cup data was obtained from Transfermarkt.com and the clubs' websites.

One of the independent variables used in the model is Club Revenues (KULGELIRI) obtained throughout the season. Club Revenue data was obtained from investing.com.

One of the independent variables used in the model is the Transfer Fee (HARCBONBD) spent by the clubs throughout the season. Transfer fee data was obtained from Transfermarkt.com.

One of the independent variables used in the model is return on assets (ROA). To calculate ROA, the data were obtained from investing.com and ROA was calculated as follows.

ROA = Net Profit / Total Assets

One of the independent variables used in the model is the Leverage Ratio (KALDO). The necessary data for calculating KALDO was obtained from investing.com and KALDO was calculated as follows.

KALDO = Total Debt / Total Assets

One of the independent variables used in the model is Return on Equity (ROE). The data required for calculating ROE was obtained from investing.com and ROE was calculated as follows.

ROE = Net Profit / Equity

RESULT

Before the regression model was run, firstly, panel unit root tests were performed to evaluate whether the panel data series were stationary to

prevent spurious regression. After the series were found to be stationary at the expected level, the model was run, and an autocorrelation test was performed to determine whether there is cointegration for panel data. Finally, the application part was completed with the estimation of the panel data model and the regression results were interpreted.

Panel Unit Root Test Results

One of the most important points to be considered to reach the correct result in econometric analysis is that the series are stationary. If the mean and variance of the time series is stable over time and the covariance between the two periods does not depend on the time of the observed variables but on the distance between the two periods, the time series is stationary. If the series is not stationary, it will not be able to maintain its average in the long run and the variance value will go to infinity as time approaches to infinity. Autocorrelation values move away from zero as the number of delays increase and R2 values are high and t statistical values are significant. In this case, the regression model estimates obtained in the long term are not able to give correct results and the spurious regression

model problem is faced. Series should be made stationary not to fall into the spurious regression model trap (23). Whether the series are stationary or not will be measured by unit root tests. The fact that the test results are not stationary will directly affect the significance of the econometric model to be established. Unit root tests used to measure the stationarity of series in panel data studies can be examined in two groups. The tests in the first group are Im, Peseran, Shin and Fisher focused tests (such as ADF and Philips & Perron, PP tests) and are called individual unit root tests. Levin, Lin, Chu; Breitung and Hadri unit root tests in the second group are called common unit root tests. The unit root tests of Im, Peseran, Shin, Fisher ADF-PP and Levin, Lin, Chu were used to measure the stationary of the series in this study, and the test results are presented in Table2.

Table 2. Panel Unit Root Test Results

Variables	Im, Peseran, Shin		Fisher chi square				Levin, Lin & Chu	
	W stat.	P-Value.	ADF		Philips & Perron		T	P-Value
			Stat.	P-Value	Stat.	P-Value	Test	
HSD	1.7079	0.8792	25.4	0.4953	31.8	0.1983	2.512	0.0060***
PİYDEĞ	-0.0430	0,4828	42.5	0.0385**	10.18	0.9992	-1.190	0.1169
LİGP	-0.2395	0.4053	30.6	0.2414	12.8	0.9852	-2.078	0.0188**
KULGELİRİ	-0.1208	0.4519	32.3	0.2588	13.18	0.9920	-8.422	0.0000***
ROA	-0.3957	0.3462	31.98	0.2750	47.94	0.0109**	-4.021	0.0000***
KALDO	-3.7542	0.0001***	70.84	0.0000***	45.57	0.0193**	-13.88	0.0000***
ROE	-2.1668	0.0151	54.58	0.0019**	56.34	0.0012***	-12.80	0.0000***
HARCBONB	-22.527	0.0000***	56.26	0.0012***	19.98	0.8650	-172.1	0.0000***

** and *** represent statistical significance at the 5% and 1% level, respectively. So there is no unit root and the variables are stationary.

As a result of examining the stationarity of each series by performing unit root tests, the series were found to be stationary at the level of 5% and 1%. The next step of the study is to decide the model to be used in panel data analysis. F test, Likelihood Ratio LR test and Hausman tests were used to determine the model to be used. According to the results of F and LR tests, it was concluded that the Random Effects Modal (REM) is the appropriate model since the p (probability) values of the model are less than 0.05. In addition, the null hypothesis of the Hausman test for model selection is established as no correlation between explanatory variables and

unit effect. In this case, since both estimators are consistent, the difference between stable and random effects estimators is expected to be very small. In this case, the random effects estimator will be more suitable to use because it is more effective (27).

Autocorrelation Test

The classical Durbin-Watson or Breusch-Godfrey test cannot be applied to measure whether there is a problem of autocorrelation in panel data analysis (6). In the literature, Durbin-Watson test

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recommended by Bhargava et al. (1982) and arranged for panel data sets and LBI statistics developed by Baltagi and Wu (1999) are used instead of these tests.

The results of autocorrelation tests between the variables that explain the dependent variable in the model are shown in Table 3.

Table 3. The results of autocorrelation tests

Baltagi -Wu LBI	1.293
Durbin – Watson	0.948
Group number	14
Number of Observations	108
Wald χ^2 (Prob)	0.245

In the autocorrelation test, Durbin-Watson test recommended by Bhargava, Franzini and Narendranathan and LBI test statistics recommended by Baltagi-Wu were applied. As seen in the table, in the random effects model, the values in both tests were less than 2, which is the critical value. Therefore, it was observed that there is a 1st degree autocorrelation problem in the random effects model. To obtain more consistent results in the presence of autocorrelation, this problem is solved by estimating the model with corrected autocorrelation. For this reason, the model with corrected autocorrelation was estimated with resistant standard errors and the regression model was obtained.

Main Regression Results of Model Application

Table 4 displays the results obtained by panel data analysis regarding the effect of sporting and financial success of the football clubs in Europe and Turkey between the years of 2016-2019 on stock values.

Table 4. Panel Data Results

HSD was used as the dependent variable in the model.	MODEL Random Effects Model (REM)
HSD	-0.546
	(0,678)
PİYDEĞ	0.00958**
	(0.017)
LİGP	0,0445***
	(0.007)
KUPS	0.692
	(0.288)
KULGELİRİ	-0.0018***
	(0.003)
HARCBONBD	0.0027
	(0.190)
ROA	-0.761
	(0,649)
KALDO	-0.340
	(0.236)
ROE	0.1408
	(0.260)
Group number	14
Number of Observations	108
Wald χ^2 (Prob)	0.0000
F Test	56.002
F Test Probability (Prob)	0.0000
LR Test Probability (Prob)	0.0000
Hausman Test	14.06
Hausman Probability (Prob)	0.080

*, ** and *** represent statistical significance at the level of 10%, 5% and 1%, respectively. Values in parentheses are p-significance values.

In the analysis of the model used in the study; together with the REM method, the Wald test, which shows whether the variables used in the model is significant as a whole, was used. According to the result of the Wald test, it was seen that the explanatory variables were significant in explaining the dependent variable. With the study of the econometric model, the following equation was obtained for the model that describes the dependent variable.

$$HSD_{it} = -0.546 + 0.0958PİYDEĞ + 0.0445LİGP + 0.692KUPS - 0.0018KULGELİRİ + 0.027HARCBONBD - 0.761ROA - 0.340KALDO + 0.1408ROE$$

In the analysis of the panel data model, a statistically significant positive relationship (at the 5% level) was found between Market Values (PİYDEĞ) and Stock Values (HSD), which are the financial success criteria of 14 football clubs that constitute the data set of the study; similarly, a statistically significant and positive relationship (at the 1% level) was found between League Scores at the end-of-season and Stock Values (HSD) which are the sporting success criteria of the clubs. Between Club Revenues (KULGELİRİ) and Stock Values (HSD), which are the financial success criteria of 14 football teams; a statistically significant negative relationship was found at the 1% level.

No significant relation was found between the number of Cups (KUPS), Return on Assets (ROA), Return on equity (ROE), Leverage Ratios (KALDO) and Stock Values (HSD) among the independent variables used in the study.

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According to the results of the panel data analysis, the results regarding the financial and sportive success variables, one-unit increase in the market values of the clubs increase the stock value by 0.0096 units, and one-unit increase in the league score variable of the clubs increases the stock value by 0.04459 units. The results are in line with the expectations, and the high market values and league scores of the clubs encourage the future positive expectations for investors and further investment in clubs' stocks.

However, in the results of the analysis, it is seen that one unit increase in the club income variable caused a decrease of 0.0018 units in stock values.

This situation can be explained by the short-term (non-permanent) resources such as match day revenues, broadcasting and sponsorship revenues, revenues from transfer fees (sales), international competition revenues that make up the income items of the clubs in the football industry. In addition, since the administrations are short-term, they apply to a high amount of financing to achieve sportive success, so the level of indebtedness of many clubs are much higher than the income.

DISCUSSION & CONCLUSION

Today, football is the most popular sport in the world. As the ratio of watching football activities increases with the developing technologies since the late 20th century, football has become a sector with increasing economic added values as well as being a sports branch. To have a competitive advantage and to achieve sustainable sporting success in the increasing competition conditions, the clubs in the football industry are required to have a management of a strong financial structure. The efforts of the clubs to get the maximum share from national and international football revenues pushed the clubs to create new sources of income. For this purpose, the clubs were opened to capital markets and offered to the public to provide longer term and lower cost funds.

There are many sports and financial factors that affect the stock values of football clubs going public. In the literature, many studies have been conducted on the relationship between sports clubs in various sports branches and stock market values; some of the studies are summarized below.

In an analysis by Scholtens and Peenstra (25) on 1274 competition results of 8 football clubs competing in European leagues, the effects of the results of the matches on the stock values were measured and, as a result, it was concluded that the stock values had a significant and positive effect on the winning result and a significant negative effect on the losses. In a study on baseball, Coates and Humphreys (8) investigated the relationship between stock prices and baseball club performances. As a result of the research, a significant relationship was found between national team performances and stock indexes in the World Cup. In their study examining the positive effects of Summer Olympics held at five different times between 1988 and 2004 on the economies of host countries, Nishio et al. (24) concluded that large organizations such as the Olympic Games had positive effects on the stock markets of small countries such as South Korea and Greece; however, the markets of France, America and Japan were not affected. However, contrary to this study, Floros (14) found that the Athens Summer Olympics did not affect the ASE (The Athens Stock Exchange) index, but only had a positive effect on the OTE (Hellenic Telecommunications Organization) index. Duque and Ferreira (13) revealed in their study that there is a positive correlation between the results of the football clubs traded on the Lisbon stock exchange and stock prices. In their studies on the effects of national teams' sporting achievements on stock prices, Ashton et al (2) concluded that the achievements of national teams in international competitions had a positive effect on stock prices. In the study, two possible reasons were envisaged for the effects of the sports achievements of the national teams on the stock prices. These are the sportive successes that will create a positive atmosphere for the investors in the future and common stock markets that will want to benefit from the economic expectations resulting from the successes of the national teams. Gannon et al. (15) investigated the short-term effect of the sale of the broadcasting rights of football matches in England between 1996-2000 on the stock prices of the football clubs quoted and traded on the stock exchange. As a result of the research, it was found that the sale of broadcast rights had a positive effect on the stocks. In their study, Boyle and Walter (7) examined the relationship between sports performances and stock market performances of New Zealand Rugby sports clubs using monthly data between 1950-1999 and Panel Data Analysis which is the econometric method. According to the results of the panel data, a

significant relationship was not found between the stock market performances of the teams and the international competition results of the teams.

In a study for Turkey by Kırlı and Gümüş (21), the relationship between the accounting data disclosed to the Public Disclosure Platform of Fenerbahçe A.S., whose shares are traded on Istanbul Stock Exchange, and the annual stock returns was investigated, and no statistically significant relationship was found between the financial rates used in the study of the Fenerbahçe club and the annual stock returns. In a study, Doğru (12) investigated the relationship between the shares of Galatasaray Football Club traded on stock market and the results from Turkish and European league matches, stock price changes before and after the matches, stock market index changes after the matches of Galatasaray Sportif Sinai ve Ticari Yatirimlar AS (Galatasaray Sportif). As a result of the study, it was found that the defeat in a match affected the stock prices, however; it was concluded that this effect was not significant with the statistical model. Berument et al. (5) investigated the relationship between the match results of Galatasaray, Besiktaş and Fenerbahçe competing in Turkish league and stock returns. According to the results of the research, it was concluded that the matches won by Beşiktaş club provided an increase on the stock returns. However, the same effect could not be found for Galatasaray and Fenerbahçe clubs. In another study by Berument et al., the relationship between fanaticism and stock returns was investigated and, compared to the other clubs' fans in the study, it was found out that the wins of Beşiktaş in European matches has a positive effect on stock returns. In their study, Temizel et al. (28) investigated the effect of the match results of Big Four Galatasaray, Besiktaş, Trabzonspor and Fenerbahçe clubs on stock prices competing in Super League and traded on the stock market. As a result of the study, it was seen that there was a significant relationship between the wins and stock values of the clubs. In their study, Zeren and Gümüş (31) examined the relationship between the results of 8 domestic and foreign football clubs traded on the stock exchange and the stock shares. In the study, it was concluded that there is a significant relationship between the match results of the clubs and stock prices. In his study, Devecioğlu (10) investigated the relationship between sports achievements of Galatasaray and Beşiktaş and club market values. As a result of the research, it was found out that the stock prices of the clubs are affected by the results of the matches. In their study, Aygören et al. (3)

investigated the issue of whether investors are affected by the results of football matches through an application in the Istanbul Stock Exchange. According to the results of the study, it was seen that the investors care the matches in Europe more than the derbies in Turkey. Furthermore, it was observed that they took into account the defeat more than the wins and draws. Çam (9) investigated the relationship between the match results of Besiktaş, Fenerbahçe, Galatasaray and Trabzonspor clubs in Turkish Super League and stock returns. While there was a significant relationship only between match losses and stock returns of Fenerbahçe and Trabzonspor, there was a significant relationship between the stock returns and not only the match losses but also the wins of Beşiktaş club. In addition, while the matches won by Galatasaray club increase their stock returns, it is concluded that the losses have a negative effect on stock returns. Kaya and Gülhan (20) examined the relationship between abnormal returns of stocks and the results of Super League, Turkey Cup and European Cup matches by Galatasaray, Fenerbahçe, Beşiktaş and Trabzonspor clubs traded on Istanbul stock Exchange. As a result, they concluded that the 4 clubs' wins and away draws caused positive abnormal returns on the stocks, while the losses and home draws caused negative abnormal returns.

In the literature, the rate analysis methods applied by using the financial tables of football clubs are frequently used in measuring stock performance. However, in our study, in the light of the literature of the clubs subject to the research, the factors of sports and financial success affecting the stock values were analysed using the econometric method. In this context, this study is intended to examine the effects of financial and sports achievements criteria of 14 football clubs on stock values competing in European League and Turkish Super League and traded on the stock market. The study includes a 4-year period between 2016-2019. In the relevant periods, 6-month financial data belonging to the clubs obtained from club websites, Public Disclosure Platform, investing.com and borsaistanbul.com were tested by applying panel data analysis method. With the panel data analysis, a significant and positive relationship was determined between the market values of the football clubs, the league score variables they obtained during the season and the stock values; and a statistically significant negative relationship was obtained between the club income variable and the stock values.

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In recent years, the fact that football clubs are managed with an understanding that is far from financial rationalism to achieve sporting success in national and international platforms causes clubs to face serious financial problems even if they achieve relative sporting success. A management far from financial mentality results in high cost of borrowing of clubs, payment of astronomical transfer fees, and high financial sanctions and compensation as a result of exceeding financial fair play criteria. The fact that debt items are much higher than income items make clubs farther away from sustainable successes. For this reason, it is necessary to include not only sportive success-oriented management approaches, but also financial-oriented new management approaches in clubs in the football industry.

REFERENCES.

1. Annual Review of Football Finance 2019. Deloitte Sports Business Group Report, june, 2018. 10.
2. Ashton JK, Gerrard B, Hudson R. Economic İmpact Of National Sporting Success: Evidence From The London Stock Exchange. Applied Economics Letters, 2003; 10: 783-785.
3. Aygören H, Uyar S, Sarıtaş H. Yatırımcılar Futbol Maçlarının Sonuçlarından Etkilenir Mi? İMKB' de Bir Uygulama. H.Ü. İktisadi ve İdari Bilimler Dergisi, 2008; 26(1): 121-13.
4. Baltagi B. Panel Data: Theory and Applications.2nd ed. Heidelberg: Physica-Verlag. 2005.
5. Berument H, Ceylan NB, Gozpinar E. Performance of Soccer on the Stock Market: Evidence from Turkey, The Social Science Journal, 2006; 43: 695-699.
6. Bhargava A, Franzini L, Narendnarathan W. Serial Correlation and Fıxed Effects Model. Review of Economic Studies, 1982; 49: 533-549.
7. Boyle G, Walter B. Reflected Glory and Failure: İnternational Sporting Success and The Stock Market, Applied Financial Economics, 2003; 13: 225-235
8. Coates D, Humphreys BR. The Effect of On-Field Success on Stock Prices: Evidence From Nippon Professional Baseball, International Association of Sports Economists Working Paper Series, 2008; 8(5): 1-21
9. Çam AV. The Effects of Sportıng on Stock Returns: An Application in istanbul Stock Exchange. Journal of Economics Library, 2015; 2(3): 147-154.
10. Devecioğlu S. Halka Arz Edilen Spor Kulüplerinin Sportif Başarıları İle Piyasa Değerleri Arasındaki İlişki. Spormetre Beden Eğitimi ve Spor Bilimleri Dergisi, 2014: 2(1): 11-18
11. Dimitropoulos P. The Financial Performance of the Greek Football Clubs. Sport Management International Journal SMIJ, 2010; 6(1): 5-27.
12. Doğru C. Futboldaki Maç Sonuçlarının Hisse Senetleri Üzerindeki Etkisi: Galatasaray Sportif Sınâ ve Ticari Yatırımlar A.Ş. Üzerine Bir İnceleme. 9. Ulusal İşletmecilik Kongresi, 2010: 171-177
13. Duque, J, Brantes A, Ferreira N. Explaining Share Price Performance Of Football Clubs Listed On The Euronext Lisbon, Instituto Superior De Economia E Gestao, 2004; 1: 38.
14. Floros C. The Impact of the Athens Olympic Games on the Athen Stock Exchange. Journal of Economic Studies, 2010; 37(6): 647-657.
15. Gannon J, Evans K, Goddard J. The Stock Market Effects of the Sale of Live Broadcasting Rights for English Premiership Football. Journal of Sports Economics, 2010; 7(2): 168-186.
16. Grene WH. Econometric Analysis, 5nd ed. New York: Prentice-Hall International Inc, 2002: 285.
17. Hausman JA, Taylor WE. Panel Data and Unobservable Individual Effects, Econometrica, 1981; 49(6): 1377–1398.
18. Hsiao C. Analysis of Panel Data, 2nd ed. United Kingdom: Cambridge University Presssica Y Del Deporte: Deporte Y Calidad DeVida. 2002.
19. Karadeniz E, Koşan L, Kahiloğulları S. Borsa İstanbul'da İşlem Gören Spor Şirketlerinin Finansal Performansının Oran Yöntemiyle Analizi. Ç.Ü. Sosyal Bilimler Enstitüsü Dergisi, 2014; 23(2): 129-144.
20. Kaya A, Gülhan Ü. Spor Kulüpleri Performanslarının Hisse Senedi Fiyatlarına Etkisi: İMKB' de Bir Uygulama. 3. Finans Sempozyumu Erzurum, 2012: (35-63).
21. Kırlı M, Gümüş H. Hisse Senetleri Borsada İşlem Gören Spor Kulüplerinin Borsa Performanslarının Muhasebe Verileri Yardımı İle Değerlendirilmesi: Fenerbahçe Sportif Hizmetler Sanayi ve Ticaret A.Ş.'de Bir Uygulama. I. Uluslararası Spor Ekonomisi ve Yönetimi Kongresi, Bildiriler Kitabı, 2011: 335-363.
22. Kök R, Şimşek N. Panel Data Analysis: Unit Root and Cointegration. Seminar in Dokuz Eylul University, Faculty of Economics and Administrative Sciences, Department of Economics, 2006.
23. Kutlar A. Ekonometrik Zaman Serileri, Gazi Kitapevi, Ankara, 2000.
24. Nıshıo T, Lim C, Downward P. Analysing the Economic Impact of the Olympics Using Stock Market Indices of Host Countries. 18th World IMACS / MODSIM Congress, , Cairns, Australia, 2009: 1258-1264.
25. Scholtens B, Peenstra W. Scoring On The Stock Exchange? The Effect Of Football Matches On Stock Market Returns: An Event Study. Applied Economics, 2009: 3237.
26. Tatoğlu FY. Panel veri ekonometrisi: STATA uygulamalı. Beta Yayınları 2nd, İstanbul, 2013.
27. Tatoğlu FY. Panel Veri Ekonometrisi: STATA uygulamalı. Beta Yayınları 4nd, İstanbul, 2018.
28. Temizel F. Futbol kulüplerinin sportif performansları ile hisse senedi getirileri arasındaki ilişkinin analizi: Türkiye örneği. Tisk Akademi, 2013.
29. Uztuğ F, Gösterişli ME, Katırcı H. Değişen Taraftar Kimliği ve Taraftar Web Siteleri: Semt Kahvelerinden Sanal Aleme Bir Dönüşüm, 7. Uluslararası Spor Bilimleri Kongresi, Antalya, 27-29 Ekim 2002.
30. Woldridge JM. Introductory Econometrics A Modern Approach, 4nd ed. USA: South-Western Cengage Learning, 2009.
31. Zeren F, Gümüş FB. Türk ve yabancı futbol takımlarının borsa performansları üzerine bir uygulama. Çankırı Karatekin Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 2013; 3(2): 34-54.
32. Aktifbank Ekolig 2015/16-2016/17-2017/18-2018/19 Futbol Ekonomisi Raporu
33. brandfinance.com/images/upload/fotball_50_2015_report_for_print.pdf, Erişim Tarihi:20.12.2019
34. Ekolig Futbol Ekonomisi Raporu 4
35. fifex.org/Home/Economy, Erişim Tarihi: 17.12.2019.
36. http://www.futbolekonomi.com/index.php/vizyon-misyon.html., Erişim Tarihi: 21.12.2019.
37. İnvesting.com (Kulüp Gelir Tabloları), Erişim Tarihi: 13.12.2019.
38. Transfermakt.com.tr, Erişim Tarihi: 10.12.2019.