Attendance, Revenues, Profits and the On-Field Performance of the Greek Football Clubs

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Abstract: *In the present study we examine the financial performance of clubs in the Greek Super League, as well as the factors that contribute to this performance, over the period from 2007 to 2013. The results indicated that match attendance and the profitability of the football clubs are positively associated to their short and long run success, but not on the seasonal uncertainty of the league. Additionally, the size of the club, measured as a fraction of the club's assets, is a distinct factor which affects the financial performance positively. Finally, the level of cash flows per assets reported by the clubs proved to have a significant positive impact on profitability suggesting that those football clubs that are more able to generate cash flows are more efficient by means of profitability.*

Keywords: Financial Performance, On-field Success, Football clubs, Super League, Greece.

JEL Classification: M41

1. Introduction

The issue of attendance at sporting events has been a subject of increased empirical research during the last three decades. Since the seminal work by Sloane (1969, 1971) many researchers have attempted to examine the specific features of the economics of the professional team sports and specifically the determinants of attendance (Noll, 1974; Demmert, 1973). Bird (1982), Cairns et al. (1986), Dobson & Goddard (1992), Coates and Humphreys (2007), Leeds and Sakata (2012) and Watanabe (2012) among others, have tried to determine the characteristics of the demand for sport events and the factors that affect the market equilibrium. Under this framework, Janssens & Kesenne (1987), Jennett (1984), Peel & Thomas (1988), Borland and McDonald (2003) and Watanabe (2012) argued that the match and seasonal uncertainty are significant factors that affect the demand for football events. The intuition behind the above mentioned argument is that the uncertainty of an outcome is positively associated to football match attendance since spectators generally prefer a close match than a one-sided match (Borland & Lye 1992; Meehan et al., 2007; Leeds & Sakata, 2012).

However, the bad financial status of the professional football teams in Europe (especially during the last two decades), lead to the examination of the association between attendance and clubs' financial performance (either revenues or profits). Two relative studies by Szymanski & Smith (1995, 1997) examined the impact of market size and wages on the financial performance of the English football clubs. They showed that the English football industry includes many loss reporting teams which assets are under-utilized and need desperately additional funds in order to improve their competitiveness and to meet regulatory standards.

Moreover, a relative study conducted by Burger & Walters (2003) examined the impact of market size on the financial performance of the teams participating on the US major league baseball. Their findings documented that market size and the team performance are strongly associated with team revenues. Also, Pinnuck & Potter (2006) examined how the on-field success of football teams in the Australian Football League impacts on the off-field financial performance of the AFL football clubs. Their results provide evidence that the short and long run success of the clubs and the uncertainty of the outcome affect attendance at AFL matches. Finally, two studies by Dimitropoulos (2009) and Dimitropoulos & Limperopoulos (2014) examined the impact of match uncertainty, player contracts and short term athletic success on the financial performance of the Greek football clubs and indicated that the more a club is investing in player contracts, enhances its on-field success and revenues, but the final financial outcome remains negative. Their results posit that Greek football clubs care more for maximizing success on the field instead of profits verifying previous arguments by Garcia-del-Barrio & Szymanski (2009).

However, one important limitation of all the aforementioned studies is that they have restricted their research agenda trying to determine the relation between sport characteristics (athletic success) and revenue creation. Except the research by Dimitropoulos (2009), until now no study has properly addressed the issue of profitability and the specific factors that contribute to profit making especially after the formation of the Greek Super League and the burst of the financial crisis in the European continent. The aim of this paper is to bridge a gap in the existing literature by attempting to identify the effects of firm specific characteristics (size, financial risk, liquidity, cash flows) on the profitability of the football

clubs along with the determinants of clubs' on-field success and revenue generation ability.

In Greece, the formation of Super League in 2007 marched a different era of football development and organization, yet it coincides with the start of the Greek debt crisis (Alexopoulos & Koutroumanides, 2014). This is probably the main reason why the vast majority of the football clubs appear to be in difficult financial straits, having accumulated great losses and debt exposure (Dimitropoulos, 2010). The scope of this paper is to investigate the extent to which the on-field achievements of Greek clubs are related to their financial performance during a period of intense financial turmoil. Our evidence could be proved useful to managers and regulators since they provide directions for enhancing clubs' revenue generation ability and sustaining their future performance and viability. The rest of the paper is organized as follows: In the following section we provide a short overview of the Greek football setting. Section 3 provides a description of the data and the methodology employed. Section 4 presents the empirical results. Section 5 concludes with a summary and offers useful policy implications.

2. The Greek Football Setting

Professional soccer in Greece is governed and organized by the rules enforced by the Ministry of Sport and Culture. The regulatory body for the supervision and observance for the smooth running of the Super League is the Hellenic Football Federation. Since 2007, the clubs that were participating in the elite division formed a coalition called the Super League (SL). According to Alexopoulos & Koutroumanides (2014), the scope of the SL was to enhance the transparency of Greek football, develop the sport according to international standards, to improve the facilities and enhance revenue distribution towards smaller clubs via collective bargaining of TV rights. According to Anagnostopoulos & Senaux (2011) and Alexopouos & Koutroumanides (2014), SL achieved the last goal but lacks far behind on the others.

The first steps of the SL were crowned with success since achieved an even distribution of TV and sponsorship revenues among smaller and less successful clubs. This gave them the opportunity to bid for talents and improve their competitiveness on the field (Alexopoulos & Koutroumanides, 2014). However, the Greek debt crisis which impacted in 2009 stalled the perceived goals of SL. The increase of unemployment and the deterioration of income (along with tax increases) impacted severely on clubs' revenues (ticketing, sponsoring, TV rights etc.), a fact that resulted in an even worse financial condition of clubs even before the formation of the SL. According to Dimitropoulos & Alexopoulos (2014), during the period 2009-2012 the Greek football clubs appeared to have consecutive losses, were unable to utilize their assets to create sale revenues and were highly leveraged with increased probability of default.

However, the bad financial condition of the Greek football clubs is not the only problem ahead. According to a survey by Alexopoulos & Koutroumanides (2014),

football managers in Greece recognize that the governance of the clubs is an important issue which needs further improvement. Also, the transparency in the SL is another topic which warrants concern by both clubs and the regulatory agency along with the violence in the field. These issues map the current football setting and fill the regulatory agenda for future actions. Either way, clubs' hearse financial condition is an issue which needs to be addressed shortly taking into consideration the current licensing regulation set by the UEFA (financial fair play) which forces clubs to operate under rational economic terms. Thus our study aims to provide to those related parties the impetus for improving clubs' financial status (revenues and profits) along with their on-field success, since the achievement of both could be the key to future sustainability.

3. Data and Methodology

3.1 Data Selection Procedure

The sample of our study comprises data from 18 football clubs participating on the Greek professional super league over the period from 2007 to 2013. We chose the specific period of investigation for two reasons. First of all, we needed to be sure that we had enough firm-year observations in order to conduct the statistical tests after the formation of the super league (SL) and secondly because we wanted to control for any impact that maybe exist on the financial data due to the recent debt – financial crisis. Each football club had to meet some specific criteria in order to be included in the sample:

1) Each club must have full financial data of earnings, assets, liabilities and cash flows published in their annual financial statements, audited by an independent chartered accountant.
2) Each club must have sufficient data regarding their on-field performance and specifically, league position, wins achieved in a season, league scores and tickets sold.
3) Each club must have participated at least once in the 1st division of the professional football league.

All financial data were extracted from clubs' annual financial statements while data concerning the clubs athletic success were hand collected from the website of the Greek Football Federation (E.P.O.). No further trimming on data was conducted since we did not want to limit our sample to a small number of clubs because this could bias the final results.

3.2 Models Specification

In this section we present the main models used for the examination of the relation between on-field performance and attendance, sales revenue and profitability.

3.2.1 The Models for Attendance and Sales Revenue

As we mentioned in the previous section many studies in the past have considered the issue of match attendance as a distinct factors to clubs' financial performance (Janssens

& Kesenne 1987, Jennett 1984, Peel & Thomas 1988). The amount of sales revenue that football clubs receive during the season is likely to be strongly associated to the attractiveness of the game. Put it another way attendance represents a surrogate for the popularity of the game since spectators are mostly attracted by close up games than one sided games. Following Borland & Lye (1992) and Pinnuck & Potter (2006) we define the level of attendance by the natural logarithm of the total number of tickets that each team sold throughout the season.

Moreover, prior research by Forrest et al. (2002), Forrest & Simmons (2002), Borland & Macdonald (2003) and Dimitropoulos (2009), documented that attendance is significantly affected by the short and long run success of the football club and the uncertainty of the outcome. Under this framework we use two variables in order to control for the recent athletic success of the football clubs. The first is the position (POS) the team has finished at the end of the season taking the value of one (1) for the champion, two (2) for the second runner up and so on. The second variable is the number of wins (WIN) the team has achieved during the season. If there is a positive association between attendance and the short run success of the team then we expect to find a negative and positive coefficient on POS and WIN variables respectively.

Additionally, attendance may also be affected by the long run success of the football club since we can assume that the athletic performance persists over seasons thus a team which is successful on the long run is more possible to be also successful on the short run which in turn leads into an increase in attendance (Pinnuck & Potter 2006). The long run success (PASPOS) of the football clubs is controlled by using a dummy variable which takes the value of one (1) if the team has finished within the six first positions of the ladder and zero (0) otherwise. The reason for the aforementioned definition is that in Greece the first six places of the 1st division league give the ability to the runner ups to participate into the major European football events, Champions League and UEFA cup and this could result into increased revenue either by the UEFA organization, or by sponsors, TV licensees and tickets. Consequently if there is a relation between the long run success of the clubs and attendance this will be depicted by a significant and positive coefficient on the PASPOS variable.

Finally, Jennett (1984) argues that the uncertainty of the match outcome impacts positively on attendance since the closeness of the competition attracts more spectators. In order to control for the seasonal uncertainty (UNCERT) we constructed a ratio of the points that each team lags from the champion at the end of the season, divided by the total points of the champion team. The smaller the aforementioned ratio is, the higher the uncertainty of the championship which in turn will result into increased attendance. Thus if this intuition is valid we will expect a negative and significant coefficient on the UNCERT variable.

A pooled time-series dataset was constructed using observations from all teams participating at the 1st division of the Greek football league over the period from 2007 to 2013. Based on the foregoing discussion we will estimate the following regression equation:

Model 1: $LnATT_{it} = \alpha_0 + \alpha_1 POS_{it} + \alpha_2 WIN_{it} + \alpha_3 PASPOS_{it} + \alpha_4 UNCERT_{it} + e_{it}$

Where, LnATT is the natural logarithm of the number of tickets that each team has issued in a given period, POS is the position the team has finished on the end of the season, WIN is the number of wins achieved by the team in a given season, PASPOS is a dummy variable taking the value of (1) if the team has finished in the six first positions of the ladder in the previous three periods and zero otherwise, UNCERT is the leagues uncertainty measured by the ratio of the points that each team lags from the champion at the end of the season, divided by the total points of the champion team.

Furthermore, attendance is possible to be positively associated with sales revenue. For this reason we model sales revenue of club i as a function of the short and long run success of the club, attendance and seasonal uncertainty. As Pinnuck & Potter (2006) argue winning teams are more attractive to sponsors, funs, TV broadcasts, thus are more able to generate sales revenue, since the previous year's performance is used as a surrogate of the future success. For this reason we will estimate the following regression model:

Model 2: $LnSALREV_{it} = \beta_0 + \beta_1 POS_{it} + \beta_2 WIN_{it} + \beta_3 PASPOS_{it} + \beta_4 LnATT_{it} + \beta_5 UNCERT_{it} + e_{it}$

Where, LnSALREV is the natural logarithm of net sales revenue and the other variables are defined previously. Consequently if the above mentioned hypothesis is true we expect a positive and significant coefficient on the LnATT variable.

3.2.2 Evaluating Profitability

In this section we attempt to identify the effect of firm specific characteristics on the profitability of the football clubs. Following the work by Dimitropoulos (2009) we examined additional financial and firm quality variables in the context of the following model:

Model 3: $PR_{it} = \gamma_0 + \gamma_1 SIZE_{it} + \gamma_2 LEV_{it} + \gamma_3 CI_{it} + \gamma_4 LIQ_{it} + \gamma_5 CF/TA_{it} + e_{it}$

Where PR is our profitability variable measured as the ratio of earnings before taxes to sales, SIZE is the natural logarithm of club's total assets, LEV is financial leverage defined as the ratio of total debt to equity, CI is capital intensity measured as the ratio of assets to sales, LIQ is liquidity defined as the ratio of current assets to current liabilities and CF/TA is the ratio of cash flow to total assets.

As Majundar (1997), Dimitropoulos (2009, 2010) and Barbosa & Louri (2005) argue, firm size impacts significantly on firm level performance. Large firms may be able to generate superior performance since they can

exploit economies of scale and organize their activities more efficiently resulting into increased profit streams compared to small firms. Thus if this intuition is valid we expect large clubs (according to total assets) to be more efficient by means of profitability and this will be depicted by a positive coefficient on the SIZE variable.

Additionally, firm specific choices are closely related to financial risk and the asset management efficiency may lead into heterogeneity within the industry which can help explain firm performance (Copeland & Weston 1983). In order to control for financial risk that can be associated to the club's financial performance we introduced the variables of leverage, liquidity and the level of cash flows per assets. A positive and significant coefficient on either LIQ or CF/TA indicates that football clubs are able to convert assets into cash thus resources can be used quickly so as to respond to profit opportunities. Furthermore, leverage is an indicator of the risks associated with the probability of default by the firm and as Penman (2001) argues the lower the leverage ratio the greater the financial security and the higher the level of the expected profits. Thus according to the previous discussion we expect to find a negative and significant coefficient on the LEV variable. Finally, the capital intensity variable is introduced in order to control for the level of efficiency in assets management. It is expected that the higher the ratio of assets over sales the higher the profitability, since clubs are more able to differentiate their product resulting into increased profits. Therefore, a positive and significant coefficient is expected on the CI variable.

4. Empirical Results

4.1 Descriptive Statistics

The following Table 1 includes the descriptive statistics of the sample variables for the whole period of investigation from 2007 to 2013. Regarding the on-field variables Greek football clubs have a medium level of attendance, achieve 13 wins during a season and the overall championship can be characterized by moderate uncertainty (0.43). As for the accounting variables we can argue that football clubs in the Greek professional league suffered from severe losses throughout the period of investigation, since the median net profit margin is negative and up to 21 per cent. Also the Greek football clubs are small in size, highly leveraged (1.29) and face intense liquidity problems since their current assets cover only the 28 per cent of current liabilities. Finally, the median CI value of 2.11 indicates that professional football clubs do not use their assets productively in order to create sales and they also generate cash flows up to 62 per cent of their total assets.

Table 1: Descriptive statistics of the sample variables from 2007-2013

Variables	Mean	Median	St. Deviation	1st Quartile	3rd Quartile
ATT	4.78	4.76	0.35	4.48	5.10
POS	8.05	7	6.03	3	12
WIN	14.08	13	6.54	9	19
PASPOS	0.37	0	0.48	0	1
UNCERT	0.36	0.43	0.24	0.14	0.56
PR	-0.38	-0.21	1.83	-0.67	0.018
SIZE	14.68	14.58	1.64	13.60	15.91
LEV	2.52	1.29	3.17	0.87	2.76
CI	2.79	2.11	2.52	0.96	3.82
LIQ	0.43	0.28	0.66	0.16	0.55
SALES	6.07	6.14	0.61	5.56	6.52
CF/TA	1.18	0.62	10.75	0.23	1.03

Sample comprises from 17 football clubs participating on the Greek Super League from 2007-2013. ATT is the natural logarithm of the number of tickets , POS is the position the team has finished, WIN is the number of wins achieved by the team, PASPOS is a dummy variable taking the value of (1) if the team has finished in the six first positions of the ladder in the previous three periods and zero otherwise, UNCERT is the leagues uncertainty measured by the ratio of the points that each team lags from the champion divided by the total points of the champion team, PR is the ratio of earnings to sales, SIZE is the natural logarithm of total assets, LEV is the ratio of total debt to equity, CI is the ratio of assets to sales, LIQ is the ratio of current assets to current liabilities, SALES is the natural logarithm of net sales and CF/TA is the ratio of cash flow to total assets.

4.2 Results for Attendance and Sales Revenue

Table 2 reports the results on the determinants of the league attendance after estimating model 1. The model has a very good explanatory power since the R2 adjusted is quite high up to 68.5 per cent and the coefficients on the explanatory variables have the predicted sigh. Being more specific, the level of attendance of the Greek professional football league is positively affected by the short and long run success of the football clubs. The coefficient on the WIN variable is positive and significant (0.03) indicating that a single win can increase the level of tickets sold up to 3 per cent. Nonetheless, the position (POS coefficient has the predicted sign yet insignificant) that the team finishes in a giver season seems to leave attendance unaffected.

Moreover, the past performance of the football clubs is also positively associated with the level of attendance (coefficient on the PASPOS variable is 0.17 and significant at a=1%). This result is actually verifying our initial assumption that the athletic performance persists over seasons thus a team which is successful on the long run is more possible to be also successful on the short run. However, the coefficient on the uncertainty variable even though it has the predicted sign is insignificant, a finding which is inconsistent with our preliminary hypothesis. Yet this result can actually be attributed to data measurement errors. For instance there may be noise on the models arising from proxies of league uncertainty and this could potentially deteriorate the statistical power of the tests.

Table 2: Empirical results on the determinants of league attendance

Variables	Coefficient	t-statistic
Constant	4.35	31.1*
POS	-0.00058	-0.14
WIN	0.03	4.92*
PASPOS	0.17	2.88*
UNCERT	-0.14	-0.91
R^2-adj	68.5%	
F-stat	35.55*	

*Denotes significance at the 1% significance level

Model 1: $LnATT_{it} = \alpha_0 + \alpha_1 POS_{it} + \alpha_2 WIN_{it} + \alpha_3 PASPOS_{it} + \alpha_4 UNCERT_{it} + e_{it}$

Where, LnATT is the natural logarithm of the number of tickets that each team has issued in a given period, POS is the position the team has finished on the end of the season, WIN is the number of wins achieved by the team in a given season, PASPOS is a dummy variable taking the value of (1) if the team has finished in the six first positions of the ladder in the previous three periods and zero otherwise, UNCERT is the leagues uncertainty measured by the ratio of the points that each team lags from the champion at the end of the season, divided by the total points of the champion team.

The following Table 3 presents the empirical finding from estimating the sales revenue regression equation. The results are consistent to the results depicted on the previous Table 1. Again the short and the long run success of the teams have a significant positive effect on sales. Specifically, the coefficient on the POS variable (-0.025) suggests that a one position improvement in the ladder position will lead on average, to a 2.5 per cent increase in sales revenue. Beyond that the coefficient on the PASPOS variable (0.31) suggests that when a team finishes within the first six places on the ladder position during a three year period results into an increase on its sales up to 31 per cent. Consequently, teams with the opportunity to participate on European level enhance their sale making abilities. Not surprising greater attendance is positively associated to greater sales revenue. These results are consistent to the results found by Pinnuck & Potter (2006) on the Australian Football League.

Table 3: Empirical results on the determinants of sales revenue

Variables	Coefficient	t-statistic
Constant	3.20	3.60*
POS	-0.025	-2.80*
WIN	0.0051	0.35
PASPOS	0.31	2.41**
LnATT	0.58	3.07*
UNCERT	0.21	0.60
R^2-adj	48.7%	
F-stat	24.15*	

*,** denotes significance at the 1% and 5% significance level respectively.

Model 2: $LnSALREV_{it} = \beta_0 + \beta_1 POS_{it} + \beta_2 WIN_{it} + \beta_3 PASPOS_{it} + \beta_4 LnATT_{it} + \beta_5 UNCERT_{it} + e_{it}$

Where, LnSALREV is the natural logarithm of net sales revenue, LnATT is the natural logarithm of the number of tickets that each team has issued in a given period, POS is the position the team has finished on the end of the season, WIN is the number of wins achieved by the team in a given season, PASPOS is a dummy variable taking the value of (1) if the team has finished in the six first positions of the ladder in the previous three periods and zero otherwise, UNCERT is the leagues uncertainty measured by the ratio of the points that each team lags from the champion at the end of the season, divided by the total points of the champion team.

4.3 Results from Estimates of Profitability Equation

The final Table 4 presents the results from the estimation of model 3. All coefficients have the predicted sign yet only the SIZE and CF/TA variables are significant (0.18 and 0.11 respectively). These findings verify our assumption that large clubs may be able to generate superior performance since they can exploit economies of scale and organize their activities more efficiently resulting into increased profit streams compared to small clubs. Furthermore, the positive and significant coefficient on the CF/TA variable indicates that the ability of football clubs to convert assets into cash can help them to use their resources quickly so as to achieve higher levels of profitability.

However, the leverage, capital intensity and liquidity variables found insignificant. This result can be attributed to the special nature of this specific business organization. Football clubs operate mostly on their human resources (players and trainers) and their non-current assets and consequently this result may be driven by management decisions on their asset allocation on non-current assets, or the minimum importance of financial risk and asset management on profitability.

Table 4: Empirical results of the profitability equation

Variables	Coefficient	t-statistic
Constant	-3.21	-2.34**
SIZE	0.18	1.97**
LEV	-0.024	-0.62
CI	0.026	0.50
LIQ	0.10	0.49
CF/TA	0.11	8.82*
R^2-adj	38.3%	
F-stat	18.54*	

*,** denotes significance at the 1% and 5% significance level respectively.

Model 3: $PR_{it} = \gamma_0 + \gamma_1 SIZE_{it} + \gamma_2 LEV_{it} + \gamma_3 CI_{it} + \gamma_4 LIQ_{it} + \gamma_5 CF/TA_{it} + e_{it}$

Where PR is the ratio of earnings to sales, SIZE is the natural logarithm of total assets, LEV is the ratio of total debt to equity, CI is the ratio of assets to sales, LIQ is the ratio of current assets to current liabilities and CF/TA is the ratio of cash flow to total assets.

5. Concluding Remarks

The aim of this paper is to examine how the size and the profitability of the Greek football clubs are affected by their on-field performance. A key contribution of this study is to consider the specific factors (financial and non-financial) that contribute to football clubs' profitability. Being more specific, by examining firm specific characteristics such as leverage, liquidity, capital intensity and cash flows we provide an insight into the football costs that need to be invested and the managerial decisions need to be taken in order to achieve both a prosperous athletic and financial performance.

The results suggest that the level of attendance of the Greek professional football league is positively affected by the short and long run success of the football clubs but not on the uncertainty of the football league. Additionally, the short and the long run athletic success of the teams have a significant positive effect on sales suggesting that a one position improvement in the ladder position will lead on average, to a 2.5 per cent increase in sales revenue. Furthermore, the profitability analysis revealed that large clubs, by means of total assets, may be able to generate superior performance since they can exploit economies of scale and organize their activities more efficiently resulting into increased profit streams compared to small clubs. Finally, we find that football clubs with increased cash flows have the ability to use their resources quickly so as to achieve higher levels of profitability.

Our findings have implications for the growing body of empirical research on this field, as well as implications for the administrators of the Greek football federation and the managers of the Greek football teams. Specifically team managers can find the results very useful for receiving the proper decisions regarding team's on-field success, in order to improve their financial position.

Regarding future research we must consider additional variables in order to advance the explanatory power of the aforementioned models for instance membership level, stadium capacity, budget expenses etc. Also it will be interesting to examine the issue of the in-house talent development and its impact on the club's accounting disclosure and overall performance, and finally we must consider the on-going debate whether transfer fees paid to football clubs for acquiring players should be capitalized and amortized according to IAS 38.

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