Journal of Physical Education and Sport ® (JPES), Vol. 22 (issue 4), Art 112, pp. 884 - 888, April 2022
online ISSN: 2247 - 806X; p-ISSN: 2247 – 8051; ISSN - L = 2247 - 8051 © JPES

Original Article

Are publicly traded clubs acting differently than others?

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Published online: April 30, 2022
(Accepted for publication April 15, 2022)
DOI:10.7752/jpes.2022.04112

Abstract
The aim of this article is to analyze the behavior of football clubs. The basic sport premises stands that football clubs are not regular companies and the purpose of their existence is to maximize winning and not to focus on income generation. Many fans believe that clubs shouldn't be concerned with income generation, and that win maximization, eventually leads to larger income generation. Hence, clubs, in general, behave differently and have different goals. The main objective of this study is to analyze whether football clubs that are listed on the stock exchange show different patterns of behavior towards their financial performance. If you are an investor, you expect your investment to maximize profit and to increase the gains on your money. Purpose of this analysis are football clubs that are publicly traded companies, and expectations that these clubs should show more profit - oriented behavior. The analysis is done on individual clubs from largest football clubs that are listed on the stock exchange. The estimated regression models on the profit, revenue and wages, results have shown that clubs which are listed on a stock exchange show a different pattern to win vs profit maximization. Some clubs are more concerned and focused on the financial aspect of football performance, while others are clearly more focused on their football goals, and much less focused on the financial performance. This article contributes in the analysis of behavior performance of football clubs. It shows that club management is the one determines the intention and the focus and the performance goal of the football clubs. The fact that a club is listed on the stock exchange, doesn't make a difference and clubs that are listed on the stock exchange, doesn't necessary mean they will be more interested in their financial performance.
Key Words: **international football, win maximization, income, revenue of football clubs, profit maximization.**

Introduction

The latest developments in the football world and the unsuccessful attempt of creating a Super League has shown us the future development of football. The new format of the Champions League didn't stop the process just put it under UEFA's authority. While on one side we have the playground for rich super clubs, whose revenue is always blooming and increasing, on the other side rest of the football world is playing a catch-up game.

Since the economic side of football has been growing, football industry has become more attractive to various investors. The growth of income, mainly through the increase of TV broadcasting money, has created additional attractiveness for investing in football clubs. We have witnessed rapid investment, from different countries, to clubs all over Europe. This extremely competitive environment, along with probably the highest public pressure of all industries that exist, explains why both fans and owners behave differently, from the economic actors in other industries.

The decision making of sports clubs, generally is divided between the more profit oriented behavior of the US sports model, and the pursuit of win maximization in the European sports model (Nielsen & Storm, 2017). Has this influx of investment, changed the narrative of European football, or clubs are still more interested in a constant pursuit of the best possible sport results. Have clubs become more economically and financially aware, and became more for profit oriented business companies.

In general football clubs defer by their goals. While some clubs are focused on winning trophies, the others have goals such as avoid relegation, entering competition (Champions League or UEFA League). In other words, there are clubs that earn highest revenue, clubs who fail financially, and clubs who have specialized the way they earn their revenue, to compete with clubs who, have sufficient financial resources. The constant growth that the football industry had in the past years, showed the economic development of football (Dima, 2015, Wicker, et al, 2012). Every season, the biggest European football clubs are the ones who are competing for the Champions League.

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Since the paradox of football is that you need to spend to compete and to maximize your success, some clubs can't remove their last hurdle and improve their finance to compete constantly and on the highest level. Also, can it be confirmed that the clubs which are more concerned about their financial health are more unsuccessful? Are clubs who prefer profit maximization, less successful than clubs that are focusing on win maximization strategy.

The purpose of this study is to analyze the pattern of behavior of football clubs, and their behavior between profit and win maximization. Football clubs that are listed on a stock exchange are analyzed. The basic belief should be that clubs that are listed on a stock exchange should be more profit-oriented behavior.

The paper is organized in several sections. At first, a comprehensive Literature review is made, and it is followed by the sections Data and Methodology and Results and discussion of the findings. The Conclusion is given as last section of the paper.

Literature review

In general, the dilemma of profit maximization vs win maximization of football clubs has been analyzed in many previous studies. Osokin, (2018) was investigating win and profit maximization strategies in the first Russian football league. Fort, (2015) states that estimating the potential trade-off between win and profit maximization is an important avenue for sports economics. Also, Prinz (2019) concludes that teams may choose a mix of profit and win maximization as their objective, where the former is of considerably higher relevance with linear weights for profits, and is more successful in the utility function. Other similar articles (Dietl, et al, 2009) show that homogeneous leagues in which all clubs are profit-maximizers dominate all other leagues. Clubs also can shift from one strategy to another even during a season (Terrien, et al, 2017).

If the possibility for football success and generating football income depends on results that football clubs are making, then international success is guaranteed to the clubs which have the biggest wallets and earn the highest revenue. They have the possibility of acquiring the best football players, who not only bring success on the football field, but also bring biggest economic success and the biggest sponsorship deals.

The financial performance of clubs is determined by their liquidity, leverage, and sporting performance (Alaminos, et al, 2021). On the other hand, the financial success is driven by national and international sporting success, as well as brand value; sporting success is driven by team investments, and team investments tend to be driven by (foreign) private majority investors (Rohde & Breuer, 2016). Football clubs and sports clubs, in order to be more accomplished, need to focus on win maximization instead of profit maximization (Garcia-del-Barrio & Szymanski, 2009). In general, the clubs are facing a small paradox. To maximize their winning capabilities, the clubs need better players, and to acquire better players they need to have higher revenues so they can afford better players. Clubs need to create a comparative advantage to maximize their winning potential. (Georgievski, et al, 2019). Football clubs generate revenue through the following three activities: Match Day activities which includes mostly income from gate receipts, sponsorship money, and prize money (Georgievski & Zeger, 2016) (Manoli, 2016). Globalization and Internationalization has led to changes in revenue. The increased revenue from broadcasting rights and sponsorship deals has allowed clubs to compete on international market and to be less dependent on local market. The previous has also lowered the importance of income from gate receipts (Sanchez, et al, 2019) (Nalbantis & Pawlowski, 2016).

The revenue sources of clubs have changed, television rights and commercial revenues have increased their importance with respect to gate receipts revenue. Clubs have thus become less dependent on local markets and more international market-oriented. We have witnessed a tremandeous growth and of revenue of football clubs (Urdaneta, et al, 2021). As football is becoming more global, the increase of money has led to larger revenues and clubs have been recognized more and more as global brands. It has led to football clubs that develop different strategies in order to compete on the market. Among the top 50 football clubs three different strategic groups which follow similar strategies to present their football clubs as brand can be found. This leads to brand value forms mobility barriers among strategic groups (Şener & Karapolatgil, 2015).

Since the ongoing pandemic has started to create financial issues even for the largest football clubs (ex. Barcelona), it will create even larger problems for smaller clubs and will increase the financial gap between clubs (Laboure, 2020). Like every crisis, that creates opportunities, so will also this pandemic.

The pandemic reveals the fragility of football clubs which, because of their financial structure and underdeveloped managerial and entrepreneurial strategies, are forced to cope with the crisis (Hammerschmidt, et al, 2021). The potential effect on the football market will be determined in the years to come, but some authors have implied that the Covid pandemic will affect both salaries of players as well as the transfer market (Quansah et. al , 2021).

While football solvency and liquidity has been addressed through research, it was concluded that football regulations promote cloaking inadequate finances, providing incentives for overspending, and rewarding clubs that overspend (Jacobsen, et al, 2021).

While UEFA's Club Licensing and Financial Fair Play Regulations have set up a basis for further development, this has only solved part of the problems in international football. While the break-even rules have made clubs spend as much as they earned, UEFA Financial Regulation hasn't addressed the increasing income polarization between football clubs (Franck, 2018) (Dimitropoulos, et al, 2016).

Data and metodology

Time series data for the profit, revenue and wages of seven football clubs (Arsenal, Celtic, Dortmund, Juventus, Manchester United, Olympic Lyon and Porto) were gathered for the period from 2008 to 2020. For the purpose of this paper one club from each country that is listed on a stock exchange was selected; the only country with two representatives is England, but it is due to the fact that Manchester United is listed on New York stock exchange. The financial information for each club was taken from their financial statements. All income was taken in Euros.

Data were processed by using E-views software for performing regression analysis with the profit taken as dependent variable, and the revenue and wages as explanatory variables. Before estimating the regression models, several calculations and tests for detecting the presence of autocorrelation, heteroskedasticity and multicollinearity among predictor variables were done.

The autocorrelation was studied by performing the Durbin-Watson test, heteroskedasticity was examined with the Breusch-Pagan-Godfrey test and loglikelihood tests, whereas the multicollinearity was detected by calculating the Variance Inflation Factor (VIF). After these tests were done, depending on the obtained results, the multiple regression models and simple regression models were estimated. The degree to which the obtained models explain the observed variation in the dependent variable, relative to the mean was assessed by determining the coefficient of determination (R^2), whereas from the value of the coefficient of correlation (R) the goodness of fit was evaluated.

Results and discussion

Before obtaining the regression models for the selected football clubs, a check of the multicollinearity, autocorrelation and heteroskedasticity was performed. The results have shown that multicollinearity was observed when multiple regression was performed for Dortmund, Juventus and Manchester, with moderate autocorrelation noticed only in the case of Dortmund football club. Furthermore, the lower values of the coefficient of determination have indicated that in the multiple regression models, the variation of the dependent variable (the profit) is not well explained by the explanatory variables (revenue and profit) when Juventus, Manchester and Dortmund football clubs are considered. Heteroskedasticity was noticed in all cases. However, according to Cribari-Neto (2004) and Astivia (2019). heteroskedasticity does not bias the regression coefficients. Nothing within the definition of heteroskedasticity pertains to the small sample estimation of the regression coefficient themselves and the properties of consistency and unbiasedness still remain intact if the only assumption being violated is homoskedasticity.

In the following text the analysis for Olympic Lyon, Celtic and Arsenal and Porto football clubs are presented as there was no autocorrelation and multicollinearity between the explanatory variables observed. The coefficients of determination (R^2) obtained for these multiple regression models were ranging from 0.46 to 0.81 showing that significant portion of the variation of the profit can be explained with the variation of the revenue and the wages.

The estimated regression equations for Olympic Lyon, Celtic, Porto and Arsenal are given as follows:

Table 1. Regression equations for Olympic Lyon, Celtic, Porto and Arsenal

Football club	*Multiple regression model*	R^2	*VIF*
Olympic Lyon	Profit=-39834.2+0.317Revenue-0.423Wages	0.812	1.474
Celtic	Profit=-22593+0.44Revenue-0.204Wages	0.772	1.91
Porto	Profit =27829.22+1.268 Revenue-2.494 Wages	0.499	2.75
Arsenal	Profit=5727+0.308Revenue-0.533Wages	0.461	1.81

For these four clubs, Olympic Lyon, Celtic, Porto and Arsenal 81.2%, 77.2%, 49.9% and 46.1% of the total variation of the profit is explained by the variation of the revenue and the wages, respectively. As expected, the profit increases with the increase of the revenue and decrease of the wages. This observation is most expressed in the case of Olympic Lyon and Arsenal where the regression coefficient for the revenue shows that for every unit increase in the revenue the profit increases for 0.317 and 0.308 units respectively, whereas for every unit decrease of the wages (holding the revenue constant) the profit is expected to decrease for 0.423 and 0.533 units, respectively. Furthermore, the results imply that the effect of the wages on the change of the profit is more expressed (Olympic Lyon, Porto and Arsenal) then the effect of the revenue. Contrary at the Celtic club more pronounced effect of the revenue is noticed. The values of the VIF (variance inflation factor) indicate that no multicollinearity occurs between the independent variables in the models given above.

When Juventus, Manchester and Dortmund football clubs are concerned, the estimated multiple regression models can't be used because there is very high correlation between the revenue and the wages (the corelation coefficient between the independent variables, revenue and wages, is above 0.95, and the VIF varies from 15 to 29). Therefore, the simple regression equations were estimated, and they are as follows:

Table 2. Simple regression models for Juventus, Manchester and Dortmund

Football club	Simple regression model	Coefficient of determination	Coefficient of correlation
Juventus	Profit = -29824.8+0.021Revenue Profit = -20235.8 - 0.011 Wages	0.007 0.0003	0.085 0.019
Manchester	Profit = 30540-0.032Revenue Profit = 32346 - 0.729 Wages	0.00497 0.00718	0.070 0.085
Dortmund	Profit=5195+0.019Revenue Profit=15569-1.286Wages	0.013 0.01	0.113 0.10

It can be noticed that in the case of all three clubs, Juventus, Manchester and Dortmund, there is no correlation between the profit and the revenue, and the profit and wages as well (Table 2). In general, the clubs belonging in the first group (Table 1), are behaving in a more economic environment. They are focused on their wage structure, and the profitability outcome. The results imply that the clubs belonging to the second group (Table 2) show a different pattern of behaviour. These clubs are generally less concerned of the wage structure and are more focused towards win maximization. The increase of revenue leads to better performance, which on the other hand leads to an increase of revenue thus causing a vicious circle (Galariotis, et al, 2017). In general the difference of the club goal, clubs need to be more efficient in order for extra spending to translte into more efficient use of resources (Ribeiro & Lima, 2012).

Although there is a belief that clubs on the stock market should return better financial health compared to privately owned (domestic and foreign) clubs (Wilson et al, 2013), it can be observed that even the clubs which are on the stock market have different strategies when it comes to either choosing profit maximization vs win maximization. Basically, the clubs that focus on win maximization end up generating higher investments and lower profits (Grossmann, 2013).

Conclusions

The influence of the revenue and wages on the profit of football clubs was studied. The results have shown that clubs which are listed on a stock exchange show a different pattern to win vs profit maximization. From an economic perspective, it was expected that clubs that are listed on the stock exchange should show profit oriented, they can still differ whether they are more concerned with financial health and stable income (profit maximization), or are more concerned achieveing sporting success (win maximization), and are simply neglecting the busness side of football.

The article confirms, that the pattern of behavoir by football clubs is not affected whether clubs are listed or not on a stock exchange. Clubs simply make a trade-off between profit and win objectives. This is probably due to the fact, that some investors are more willing to accept losses as long as the clubs are showing football results, and the initial belief that sport success leads to increased revenue.

Will the future of European football be the creation of a European super league, this would probably lead to competition reduction, and deffinetly to a larger profit maximization for football clubs. A European Super leage would change the narative of European Sports, and would create football leagues that are much closer to the american model of closed leagues with salary caps and revenue sharing.

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