

Financial fair play and competitive balance in European football: a long term perspective

Raúl Serrano and Isabel Acero

Department of Business Administration,

Faculty of Economy and Business, University of Zaragoza, Zaragoza, Spain

Stuart Farquhar

Faculty of Business and Law, University of Northampton, Northampton, UK, and

Manuel Antonio Espitia Escuer

Department of Business Administration,

Faculty of Economy and Business, University of Zaragoza, Zaragoza, Spain

Abstract

Purpose – The paper analyzes the effects of financial fair play (FFP) in the competitive balance of European football industry throughout a long-term perspective.

Design/methodology/approach – The authors analyze the evolution of the competitive balance in the European football industry through a time-series analysis from season 1992/93 to 2018/19.

Findings – Results indicate an industry by nature dominated by a few clubs showing a general stationary behavior. FFP has had very little impact in local competitions. Just in some leagues, such as the Spanish, German, and French leagues, we can observe an increase in the imbalance in some indicators, but these results are not very robust. The improvement on the financial situation happens especially in a small group of firms that coincide with the big leagues with a strong European market orientation and strict local financial control standards.

Research limitations/implications – Although the study covered 17 European Leagues, there are several leagues not accounted for and thus results should be generalized with caution.

Practical implications – The authors observe heterogeneity of the results of FFP in the competitive balance, associated to how the standard has been implemented in each market. This opens opportunities to study and deepen the local codes and their influence, especially in the recommendations of future financial control standards.

Originality/value – The authors' main contribution to the literature is to examine the impact of the FFP rules in the competitive balance utilizing a very broad study of 17 European markets with a rich and unusual overview and long-term perspective.

Keywords Financial fair play, European football industry, Competitive balance, Asymmetry, Long term perspective

Paper type Research paper

Introduction

The financial situation in the football industry and the risk of bankruptcy of some of its organisations was a point of concern to establish financial control standards to introduce more discipline and more rational spending. The football business experienced a significant growth during decades expressed with enhanced revenue streams mainly attributed to the re-organization of the big football leagues (England, Spain, Italy, France and Germany) during the 1990s, the expansion of European competitions and intense media interest and coverage (Dimitropoulos and Tsagkanos, 2012), along with the internationalization of product markets, the television broadcasts, and other related products (Nauright and Ramford, 2010).

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Since the implementation of financial fair play (FFP) regulations, many authors have tried to investigate the effects of this regulation have had on the competitive balance in sporting terms in the different European leagues. Financial data show that European football has experienced a quick financial recovery and further polarization with a continuous improvement since the year 2012 (Franck, 2018). However, we know less about its influence on the competitive balance from a long term perspective.

In this context, the main purpose of this paper is to examine the impact of the FFP rules utilizing a broad study of 17 European leagues. Thus, our study provides an important contribution to the literature on the impact of specific regulatory interventions in the football industry. Most of the work analyzing the effects of the FFP (Peeters and Szymanski, 2014, among others) focuses on the global analysis of the main European leagues without analyzing the internal behavior of these leagues or the competitions of other European countries. However, it is necessary to bear in mind that significant differences exist between many of Europe's football leagues and therefore FFP regulations could potentially affect individual leagues in very different ways, so that it is important that more research is conducted in this area to discover the impact of FFP throughout Europe (Freestone and Manoli, 2017). On this same line, Plumley *et al.* (2019), pointed out that previous research examining competitive balance in European football has almost exclusively focused on the aforementioned "big five" leagues (England, France, Germany, Italy and Spain). Therefore, it is also interesting to analyze the behavior of other leagues, as described in the following sections.

"Financial Fair Play" was inspired by good governance mechanisms that had been applied in other industries, as a result of various financial scandals. Good governance promotes equity, transparency, and responsibility of companies by forming a set of methods and procedures to improve the management of companies. Its conceptual framework, based on agency theory, seeks to align the objective of the managers, with that of the shareholders, correcting opportunistic behaviours, and generating a climate of trust for small shareholders and different stakeholders (Dimitropoulos, 2011; Dimitropoulos and Tsagkanos, 2012, among others). However, as Farquhar *et al.* (2005) stated, the challenges of corporate governance in sports are substantially different from conventional business as to require different approaches and mechanisms for corporate governance.

According to Szymanski (2014) the FFP could reinforce the dominant position of the top clubs in the industry. In this sense Budzinski (2014) is one of the most critical authors with the FFP in terms of competitive balance and he indicates that the budget limit is unequal among competitors, in the sense that clubs with higher incomes can spend more than clubs with a lower relevant income. Such a lack of balanced sporting competition may ultimately be detrimental to the industry if this adversely impacts demand (Neale, 1964).

On the other hand, Plumley *et al.* (2019) states that limiting the spending of clubs from a business perspective may be fine in principle, but it should incorporate an external variable: the relevant market size of the clubs. A club with greater relevant market size will exceed a club with a smaller one, which will make it harder for smaller starting clubs to improve their ability to compete. The effect of this would be to strengthen further the existing hierarchy in European football industry, enhancing the power of the richest clubs and limiting the smaller clubs (Szymanski, 2014). Vöpel (2013) underlines this point by stating that purchasing power provides the real competitive advantage in football, which makes it "almost impossible to catch up with larger clubs without external funding". Moreover, as Dutta *et al.* (2022) point out, European leagues are characterized by win-maximisation, where clubs prioritise winning the most number of games in a season.

The governance system of European football is hierarchical (Peeters and Szymanski, 2014), sometimes described as a pyramid, where international governing bodies (UEFA and the worldwide football association FIFA) sit at the top and beneath them are national member

associations, professional leagues, member clubs. In this way we should find a heterogeneous result: in some markets, those where the great majority of clubs have as a relevant market the European one, any normative change and modification in the relevant income, may result in important changes in the structure of the industry. In addition, other authors (for example, [Sass, 2016](#)) point out that the fair play regulations prevent excessive spending of new entrants or the use of indebtedness so that smaller clubs can grow to get closer to the dominant clubs.

After examining the effects of how FFP has affected competitive balance, our results show that the industry is asymmetric showing a general stationary outcome and we have not found any benefit in the competitive balance measures after the introduction of the European regulation. Despite UEFA's efforts to balance the accounts (even with the approval of the European Commission and its regulations) the European football industry continues being an asymmetric industry by nature.

The paper is organised as follows. First, the literature on the FFP's effect on competitive balance and FFP's implementation is reviewed. This is followed by an outline of the research methods employed in the study. Then the findings of the analysis are presented and discussed in relation to the extant literature. The article concludes with a summary of the key findings and implications.

Literature review: FFP's effects on competitive balance

One of the traditional paradigms of the economics of team sport states that the reduction of competitive intensity can produce a significant fall in income ([Rottenberg, 1956](#); [Neale, 1964](#)). [Szymanski \(2014\)](#) suggests that the FFP can be negative in terms of competitive equilibrium and consequently also for the fans and consumers, and thus in the end weakening the generation of income in the industry and consequently for all member clubs.

In relation to the concept of competitive balance, which is a fundamental part of sport economics research ([Dutta et al., 2022](#)), it is necessary to indicate that the behavior of football leagues differs from that of other industries. As pointed out by [Dobson and Goddard \(2011\)](#) professional team sports are intrinsically different from other businesses, in which a firm is likely to prosper if it can eliminate competition and establish a position as a monopoly supplier. In sport context, however, it does not pay for one team to establish such a position due to the joint nature of "production" in sports. As [Avila-Cano et al. \(2021\)](#) point out football is a bilateral sport competition in which it is not possible for a single team to accumulate the total number of point, as it does not participate in all the encounters. It is this notion that fundamentally drives the concept of competitive balance in professional team sport leagues.

The structure of sport leagues and regulations may have implications for competitive balance and, in turn, the "product" ([Plumley et al., 2018](#)). [Buzzel \(1981\)](#) suggests that distributions of market shares are asymmetric as a "natural" phenomenon. The generalized view of academia ([Michie and Oughton, 2004](#); [Pawlowsky et al., 2010](#); [Lee and Fort, 2012](#); [Symanski, 2014](#); [Sass, 2016](#); [Plumley et al., 2018](#), among others), is that the degree of dominance has always existed, that is, the football industry is by nature asymmetrical. [Sass \(2016\)](#) accounts for the empirical contention that a club's market size is positively affected by historic success. An increasingly successful club can attract more and more supporters and thus yield higher revenues, improving their finance, and therefore, even more success and an ever-growing market size and dominance. In this sense, [Ramchandani et al. \(2018\)](#), point out that the "big five" leagues in European football have historically been characterized by competitive imbalance and dominance by a select number of clubs. [Dobson and Goddard \(2004\)](#) suggest that firm heterogeneity, in terms of demand, determines the lack of balance in domestic competitions. Thus as, the asymmetric nature of the markets itself causes that a significant increase of the revenues generates unbalanced local competitions ([Szymanski, 2003](#)).

According to Plumley *et al.* (2019), limiting the spending of clubs from a business perspective, may be fine, in principle, however it should incorporate an external variable, the potential market size of the clubs. A club with greater potential market will exceed a club with a smaller one, which make it harder for smaller starting clubs improve their ability to compete. The effect of this would be to further consolidate the existing hierarchy in European club football, strengthening the power of the richest clubs and restricting the smaller clubs (Szymanski, 2014). Vöpel (2013) confirms this point of view by stating that purchasing power provides the real competitive advantage in football, which makes it “almost impossible to catch up with larger clubs without external funding”. Following Birkhäuser *et al.* (2019) FFP might have amplified the competitive imbalance supporting the view that FFP leads European football leagues to become more unequal and protects current hierarchies. As Szymansky (2014) pointed out, the FFP reinforces the dominant position of the top clubs in the industry.

The objectives pursued by the regulations of the Financial Fair rules “are to achieve FFP in clubs that compete in UEFA competitions and improve the economic-financial situation in order to protect the viability and long-term sustainability of European football clubs.” (UEFA, 2012, p. 2). The following provides a summary of the main FFP rules and its possible connection with the competitive balance.

First, the injection of capital into clubs has to be limited. This has directly affected those who received capital injections each year. FFP establishes that only injections of capital can be made to pay salaries and make new signings. It should be noted that this type of contribution is accepted for the construction of infrastructures and for the training of new talent in the lower categories of the clubs. Regarding the effect of this rule on the competitive balance, we could think that this rule protected the success of the traditional big-market top teams.

In this sense, Budzinski (2014), one of the most critical authors of the FFP in terms of competitive balance, establishes that the budget limit is unequal among competitors, in the sense that clubs with higher incomes can spend more than clubs with a lower relevant income. For Budzinski (2014), the competitive balance rule is accompanied by several anticompetitive concerns. These include the predominant protection effect and the consolidation effect. If a club enjoys high incomes, then it can spend accordingly. If a club suffers from low incomes, it also needs to keep its expenses at a low level. This means that clubs that enjoys high incomes at this time can maintain their competitive advantage through higher investments, which reinforce their dominance of sports competitions, achieves greater success thus reinforcing their income generation. A similar, but opposite scenario occurs for lower budget clubs. Lower incomes mean lower investment in players, facilities, etc. reinforcing their lower position making it very difficult to break into the upper positions in their respective leagues and maintaining their lower levels of incomes, at least without an influx of capital from a wealthy owner. As has been said, local codes and controls are very different depending on the country. Therefore, we should expect little effect on the competitive balance in markets where rules and controls are lax.

The second highlighted measure is the so-called “Break-Even Requirement”, which results in equalizing the expenses (expenses necessary for the operation of the club) with the relevant revenues (television rights, transfer players, etc.). In terms of competition, we should expect that the rule protects the dominant position of the firms who regularly participate in European competitions. Following Peeters and Szymansky (2014), the break-even rule could improve finances; however, the rule has not improved the competitive balance. In a similar line, Caglio *et al.* (2016) find that the introduction of the FFP has been associated with a significant improvement in the financial outcomes of the European football clubs that is consistent with the efficacy of the break-even requirements. However, this positive development has not yet been translated into better overall financial sustainability. We

might even think that finances might not improve much in industries where most firms are domestically oriented, where the great majority of teams have few options to participate in European competitions, and also because the local rules were lax. [Franck \(2018\)](#) or [Gallagher and Quinn \(2020\)](#), show that a process of polarization has occurred because FFP regulations further entrench the financial and sporting power of elite clubs that have a greater orientation to the European market than to the local one.

In any case, we do not know if these effects simply maintain the competitive asymmetry that characterizes European football markets, or they mean a great deterioration of the competitive balance such as some authors have pointed out. See for instance, [Peeters and Szymanski \(2014\)](#) who show how absolute revenues have grown stronger at the “big clubs”, and also “big clubs” have become more dominant on the pitch.

Finally, the third measure is the individual club's obligation to inform UEFA of any relevant financial operation. This measure is largely to enable UEFA to help and provide the necessary guidelines for the club to continue competing in a sporting competition under UEFA's jurisdiction. In this way, the UEFA FFP took the domestic competitions through the Economic Control Regulation of the Clubs and Public Limited Sports Companies affiliated to the National Football League. However, we could advance that the development and effects of the FFP has been very heterogeneous. For instance, in the English and Spanish leagues it can be seen a generalized vision of improvement of the accounts from the implementation of the FFP regulation since they have also implemented strict local codes. The UEFA rules began in the 2010/11 season and in Spain and England in the 2012/13 season. In contrast, the outcome of FFP in leagues such as Turkey or Greece, to cite two examples, without local rules or strict compliance mechanisms, seems less clear. As stated by [Caglio *et al.* \(2016\)](#), our central hypothesis is that the effects of FFP on the competitive balance display different dynamics depending on the different implementation of country local rules.

Therefore, according to the literature, there is an open debate on the effect that the FFP regulation has had on competitive balance. According to some authors, we could expect a greater effect to increase dominance in leagues with teams whose relevant market is the European one.

An overview of FFP's implementation

Most of the work analyzing the effects of the FFP (e.g. [Peeters and Szymanski, 2014](#); [Barajas *et al.*, 2017](#)) focuses on the global analysis of the main European leagues without analyzing the internal behavior of these leagues or the competitions of other European countries. However, it is necessary to bear in mind that significant differences exist between many of Europe's football leagues and therefore FFP regulations could potentially affect individual leagues in very different ways. As [Bachmaier *et al.* \(2018\)](#) noted, at the national level, the requirements for the assessment and monitoring of financial stability with the so-called big five professional football leagues within Europe vary substantially as a consequence of different national conditions, historical developments and organizational structure of the leagues and their participating clubs. This highlights that more research is needed in this area to discover the impact of FFP throughout European leagues ([Freestone and Manoli, 2017](#); [Bachmaier *et al.*, 2018](#)). In this sense, the remainder of this section will explore some similarities and differences between several European football leagues in terms of their regulations regarding FFP and the results on the financial situation.

[Dimitropoulos and Scafarto \(2021\)](#) show, in the Italian case, a positive association between internal governance mechanisms (at board level [\[1\]](#)) and wage control. As a result, and in line with [Nicolliello and Zampatti \(2016\)](#), they propose that club managers should strengthen internal controls. According to these authors, the Italian Serie A is characterized as one in which the league is seen as having weak powers and that it is largely driven by club policies

and such policies are seen as important to rebalancing power. Also, in the Italian case, [Ghio et al. \(2019\)](#) found that FFP did not improve the average efficiency of the Italian first division teams and that FFP contributed to leveling the playing field, reducing the gap in terms of efficiency between top teams and lower-tier teams. Alternatively, [Demit-Richard et al. \(2019\)](#) in their analysis of the French case [2] highlighted the disparities that could be generated between domestic clubs when there are differences between domestic financial regulations and FFP. This occurred due to clubs playing in both domestic and transnational competitions simultaneously and thus followed two distinct systems of financial regulation, whilst this was not the case for the other clubs which participate only in domestic competitions; or in countries in which there was no domestic system of financial regulation. In this sense, these authors proposed that there should be consistent financial regulation in all European leagues.

Supplementing these aforementioned findings, [Drut and Raballan \(2012\)](#) identified that there were major differences between the main European leagues in terms of financial regulation. In this sense, the French system was the only one where a big club had already been sanctioned because of excessive deficits: this made financial regulation credible. In this context, in 1984 France established the “Direction Nationale du Contrôle de Gestion” (DNCG) which acts as a financial watchdog of the professional football clubs. It may impose recruitment limits and even relegation to an inferior division for clubs with recurring deficits. Whilst similarly, in Germany, the financial requirement has been increasingly rigid, there is no body independent from the DFL (Deutsche Fußball Liga) able to take a decision to sanction. Also, in this context associations (Verein in German) hold 50% plus one voting right of any football club company (Kapitalgesellschaft), which then limits the power of clubs’ financiers ([Dietl and Franck, 2007](#)). However, despite these tight controls, clubs in the German football pyramid do not appear less susceptible to financial distress than those in England or France ([Szymanski and Weinar, 2019](#)). These authors suggest that the system of promotion and relegation is the real source of financial instability.

In a similar way to Germany, the Swedish and the Norwegian Football Federation regulates the clubs. It is also interesting to note that, as with the German league, the Swedish and Norwegian league had early financial control and also is governed by the 50% rule, which states that external shareholders must have less than 50% of the votes. In the case of the Netherlands, the Netherlands Football Association (KNVB) is responsible for organizing the Dutch football league and is in charge of controlling the budgets of the different clubs and the licensing system. This method is noteworthy as being stricter than that imposed by UEFA.

The Professional Football League (LFP) is the competent body in Spain for the economic control of clubs. They are in charge of supervising, controlling and supervising football teams in terms of economic and financial results. Specifically, the Economic Control Committee is in charge of fulfilling all these functions. The LFP created its own system consisting of a set of rules with which the First Division and Second Division A teams of the Spanish league must comply. The same control of the domestic norm was used with English football. At the beginning of 2013, the teams that participated in the Premier League reached an agreement to reduce the expenses required to cover the salaries of the players and, in this way, diminish the losses that could be assumed in the long term. However, as has been said, other leagues such as Turkey or Greece, to cite two examples, have not developed strict local rules or clear compliance mechanisms.

In general terms, taking data from the European Football Club Landscape four previous and four post FFP years, it can be observed that the operating margin was negative, meaning that the clubs generated negative results. For example, in the year 2011, the year when UEFA put into effect the FFP, the European clubs generated a total of –382 million euros in losses. However, in the years following the introduction of the new regulations there has been a huge improvement in the clubs that compete in UEFA, with 2017 being the year with the best

results, specifically, the clubs generated profits of 1,386 million euros. This growth was attributed mainly to the five major football leagues that are the English League (English Premier League), the German (Bundesliga), the Spanish (the League), the Italian (Serie A) and the French (Ligue 1). These five leagues have 54.5% of the total revenue generated by the entire football market (€ 24.6 billion) as can be seen in [Figure 1](#). Taking into account the data for the years 2015, 2016 and 2017, the improvement, by far, can be explained by the major European clubs (see Top-20 clubs, € 1.21, 1.36 and 1.57 billion respectively each year). Following the same source, the final losses behave in the same way as in the operating margin. The year 2011 was presented as a turning point, since it was the year with the highest final losses of the last decade. As of this year, with the start-up of the FFP, the results were improving year after year reaching finally, in 2017, positive results. Specifically, the set of clubs that competed in UEFA obtained final benefits of 615 million euros. On average, the average profit was –64 million euros.

Since the introduction of the FFP, the situation was improving, so it can be concluded again that this new regulation had positive effects. This improvement in profitability was largely due to three of the largest leagues, the Spanish, English and German (the final profit of 2017 reached 615 million euros). Interestingly, and maybe worrying, only 8 of the 17 leagues were responsible for the benefits registered in 2017. On average, the Spanish league contributed the most with 156 million euros, followed by the English league with 148 million euros and the German league with 114 million euros. In contrast, the Turkish league was the one that contributed least, in fact, it is the third consecutive year that it suffered losses. Other league that were worth noting is the Italian. The Italian league was the one that lost more in 2015 and 2016, –289 and –203 million euros respectively. However, its situation changed drastically in 2017, when it obtained a profit of 79 million euros. As we have commented, it should be noted that after the introduction of the FFP, some leagues such as the Spanish or the English (in Germany twenty years before) created their own rules of economic-financial control, so these rules, adapted to their clubs and financial activities, have been able to encourage this improvement.

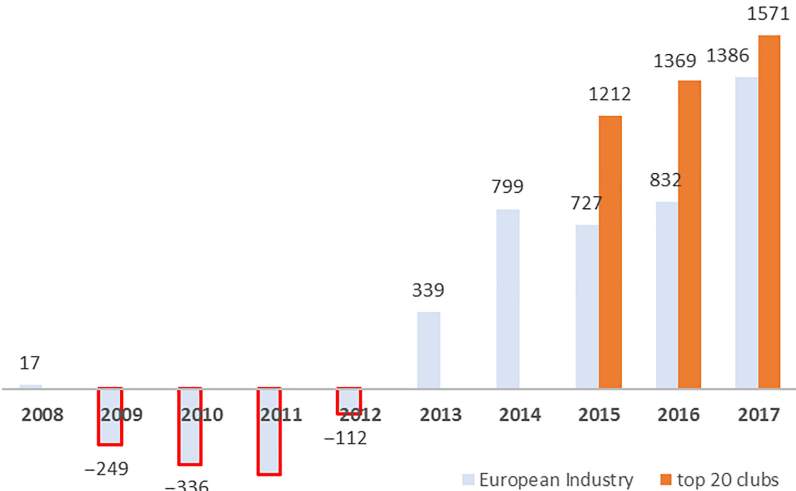


Figure 1.
European aggregate
operating margin (in
millions of €)

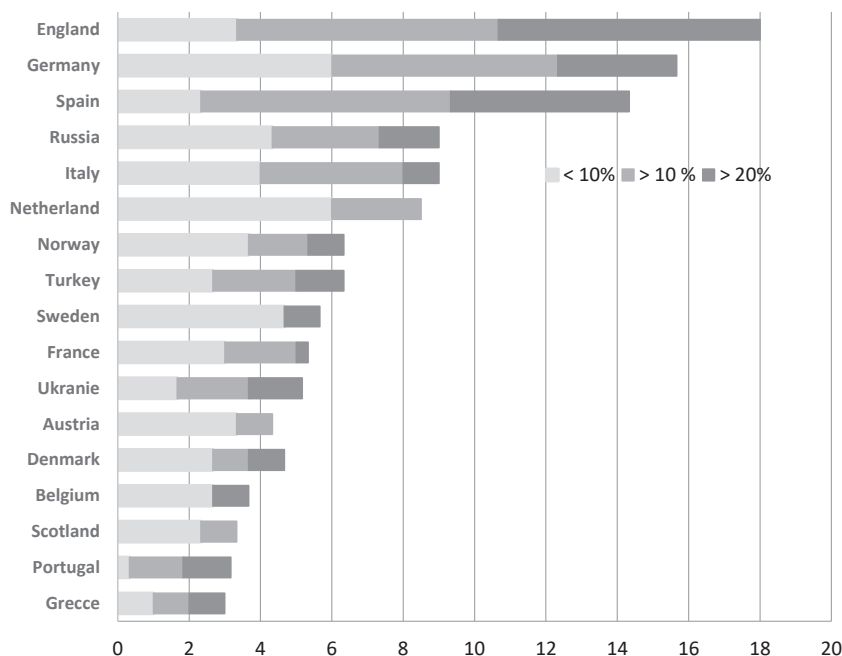
Source(s): Own elaboration from European Football Club Landscape

Within each league, it should be noted that not all teams contributed in the same way to the financial results of their league. In all the leagues, 41% of the clubs that were in the top 17 leagues generated benefits, while those observed before the introduction of the FFP in 2011 that was only 35% of the clubs. On average the clubs that generated profits come from the English, German, Spanish, Russian and Italian leagues.

However, if we break down the results to a team-by-team analysis, the result was only generalized in leagues where, in addition to the FFP, a strict local code was applied. English League (18), German and Spanish League (15) had positive operating margin in more than 50% of the teams and the result was generalized. In percentage, 90% of the teams of the English league, 83% of the German league and 75% of the Spanish league obtained positive operating margins.

In any case, in most of the European leagues, without these strong domestic controls, the results were not as positive as the aggregate figures show. Only in a range of between 3–8 teams was a positive operational result. We believe that these were the teams whose relevant market was the European one, who needed to meet the standard to participate in their competitions. Also as we can see in the following graph (Figure 2), the highest profit margins, above 10% and 20%, were situated in these three major European leagues, with tight budgetary controls.

By using means of the data from the European Football Club Landscape (2015, 2016 and 2017) the number of teams that had average profits during the last three periods (Figure 3) were in first position the Spanish league (more than 16 teams), followed by the English league (14 teams) and the German league (13 teams). In percentage, the leagues with more than 50% of clubs that obtained benefits were the Spanish (82%), English (70%), German (67%), French



Source(s): Own elaboration from European Football Club Landscape

Figure 2.
Average (2015–2016–
2017) number of teams
that have a positive
operating margin
within the top 17
European leagues

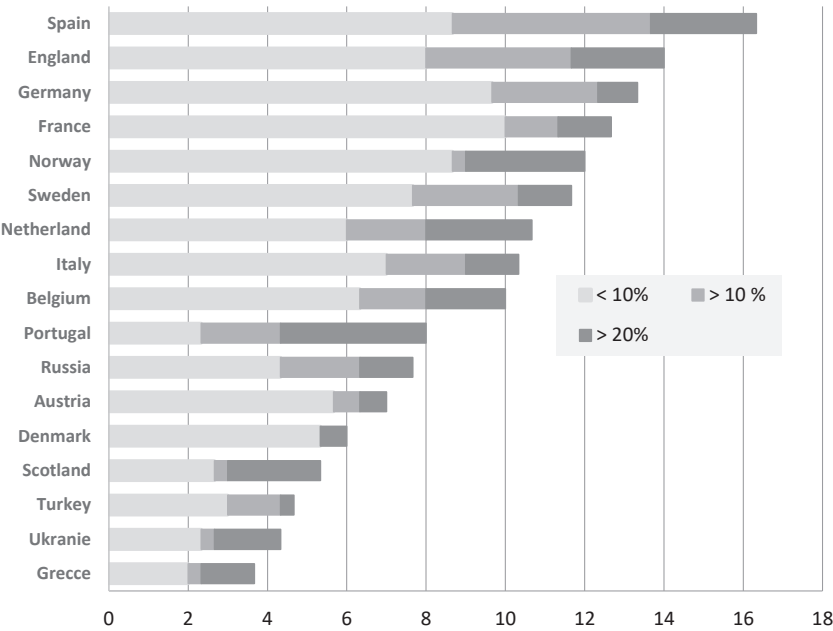


Figure 3.
Average (2015–2016–
2017) number of teams
that have benefits
within the top 17
European league

Source(s): Own elaboration from European Football Club Landscape

(63%), Norwegian (63%) and Swedish (58%). As we have said, about the operational margins, the highest margins were in the Spanish and English leagues, which were two leagues with advanced compliance mechanisms and firms with the greatest orientation to UEFA competitions.

Methods

We examine the impact of FFP on competitive balance of 17 European leagues. For that, the paper studies the existence of structural changes in the competitive balance related to FFP regulations. To provide an accurate measure of the competitive balance, we have considered a set of 5 different indicators from the final classification from season 1992/93 to season 2018/19 and we analyse the 17 major football leagues in Europe. The data comes from the rankings at the end of the season from www.transfermarkt.com. We should note that we have checked the sensitivity of the results to the different scoring systems used by these different national competitions, concluding that differences are irrelevant. Therefore, the results and analysis presented correspond to a two-point scoring system for each win, the most frequently used for the considered period.

Following Brandes and Franck (2007) and Lee and Fort (2012) the standard deviation is calculated in the winning percentage (*RSD*) during each season. This competitive equilibrium dispersion indicator is adapted by Cain and Haddock (2006) for variations of the number of participating teams and the scoring system [3].

$$RSD = \frac{\delta_{PW}}{\sqrt{0.74N}}$$

Where δ_{PW} is the standard deviation of the points obtained at the end of the season and N number of games played. Second, from an Industrial Economics approach, the Herfindahl, Gini and Concentration Index (CR_k) have been calculated and tests of the indicator have been carried out with a sample of leagues for the two, three and four best teams in the competition (Brandes and Franck, 2007; Lee and Fort, 2012). For the study of the 17 European leagues, that of the 4 best teams has been used.

$$\text{Gini} = \left| 1 - \sum_{i=1}^{n-1} (X_{k+1} - X_k)(Y_{k+1} + Y_k) \right|$$

Gini, is the Gini index, where X is the cumulative proportion of the number of teams and Y is the cumulative proportion of the points obtained.

$$\text{In the case of HHI} = \frac{(H - 1/N)}{1 - 1/N}$$

Where $H = \sum_{i=1}^N S_i^2$ is the Herfindahl index and N is the number of teams in the competition.

$$CR_k = \frac{\sum_{i=1}^k P_k}{k2 \cdot (2N - k - 1)}$$

Finally CR_k is the concentration index, where P_k is the number of points accumulated by the k teams in the season, where k points four best teams and N the number of teams in the competition.

Table 1 reports an example of the concentration indexes. From a global vision, indicators show a very concentrated industry, where the first four teams (CR_4) accumulate more than 70% of the points they could obtain. From a more detailed analysis, it seems that the domain has increased in leagues with strong orientation to the European market. The dominants won more

Index	CR ₂		CR ₄	
	1999–2000 2009–2010	2010–2011 2018–2019	1999–2000 2009–2010	2010–2011 2018–2019
England	0.75	0.77	0.74	0.76
Germany	0.70	0.78	0.66	0.70
Spain	0.77	0.82	0.69	0.75
Italy	0.72	0.78	0.70	0.74
France	0.68	0.75	0.66	0.73
Russia	0.70	0.72	0.67	0.69
Turkey	0.77	0.73	0.71	0.69
Netherland	0.78	0.79	0.73	0.73
Belgium	0.72	0.74	0.67	0.69
Portugal	0.77	0.85	0.70	0.77
Austria	0.66	0.71	0.71	0.72
Ukranine	0.84	0.82	0.74	0.73
Denmark	0.69	0.7	0.65	0.65
Scotland	0.71	0.66	0.66	0.63
Grecce	0.77	0.80	0.71	0.73
Sweden	0.69	0.7	0.66	0.68
Norway	0.67	0.72	0.63	0.67

Source(s): Own elaboration with data from www.transfermarkt.com

Table 1.
Average of
concentration indexes

games than they won in past decades (CR_2 and CR_4). If we compare the values of the 1999–2010 period with those of the 2010–2019 period, we can appreciate some decline in the competitive balance for almost all the European football leagues (in England, Germany, Spain, Italy, France, Russia, Belgium, Portugal, Austria, Greece, Sweden and Norway).

Taking into account the possibility that the indicators are sensitive to different leagues, the number of teams and the modifications in the scoring system, the sensitivity of these indicators has been previously studied through an analysis with 5 of the leagues (German Bundesliga, Spanish League, French Ligue1, English Premier League and Italian Serie A) for a longer time horizon of 50 years. As the indicators are sensitive to changes in industry licenses, the indices have been normalized following previous studies (Pawlowski *et al.*, 2010). Any increase in the value of the indicators implies a worsening of the balance in the competition.

Figure 4 collects the information regarding the evolution of the six Competitive Balance indicators (CR_k where k points for two, three and four best teams). From a global vision of the behavior of the series, a constant degree of imbalance stands out and with a regular behavior. The values of the indicators oscillate within a fairly regular range.

Related to the controversy that the literature collects, as to which of the indicators is more appropriate, a certain worsening in the competitive equilibrium is pointed out for complete indicators RSD, Gini and HHI. They take into account the results of all companies in the industry. In any case, a correlation analysis between indicators has been carried out and a very high correlation between weighted indicators is observed from its results.

To determine if there is a change in the evolution of the competitive balance determining by the FFP, we have performed the conventional unit root tests on the seasonal competitive balance series. Using the Augmented Dickey-Fuller (1981) and Phillips Perron tests (1988), we now examine whether a unit root is present and whether there are differences.

$$\Delta y_t = \mu + \rho y_{t-1} + \sum_{i=1}^n c_i \Delta y_{t-i} + e_t \quad (1)$$

Where, y_t is the variable, μ constant, (λ_t trend) y_{t-1} variable with a delay. i is the number of delays and e_t the term of error.

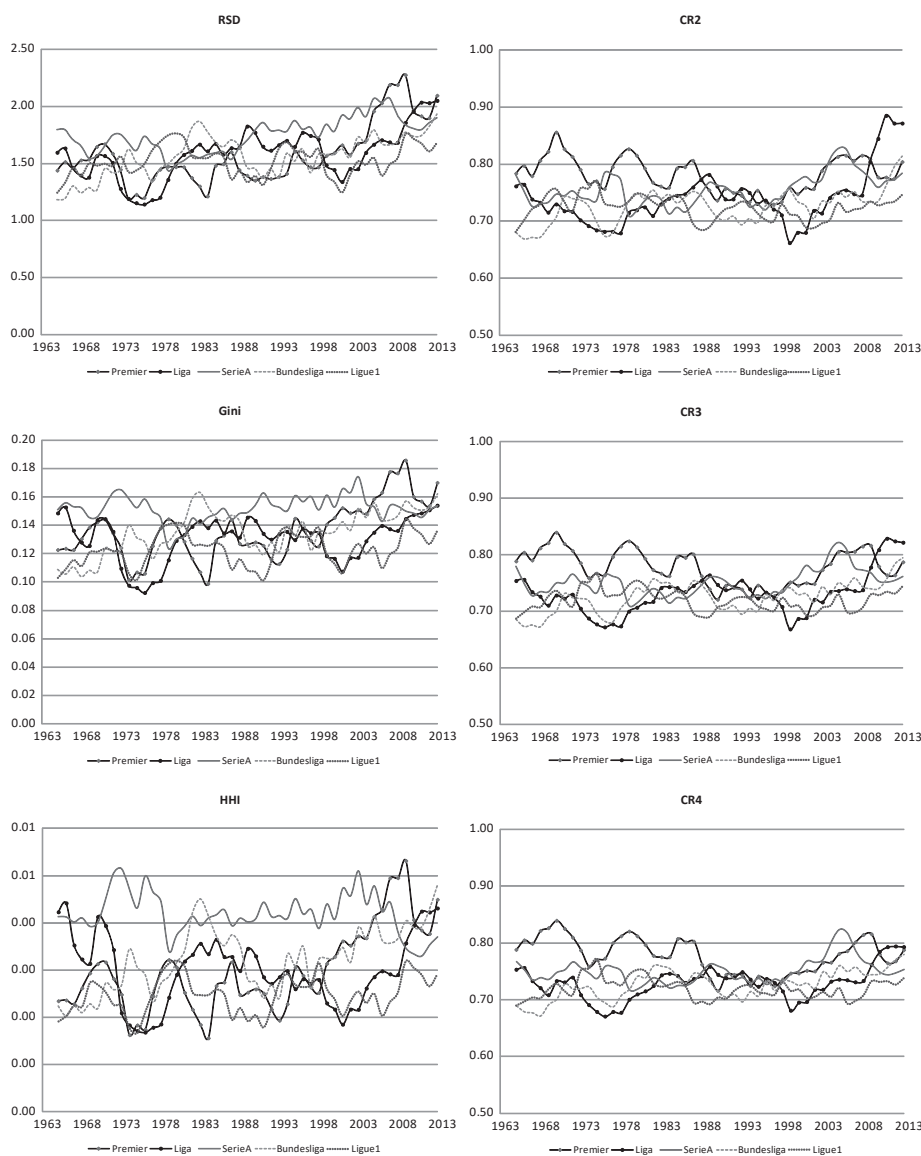
Column 2 of Table 2 gives the results of the Augmented Dickey-Fuller (ADF) test. As can be seen, for only 27 series out of 85 the null hypothesis of non-stationarity (the existence of a unit root) can be rejected. For the vast majority of the leagues, 58 series out of 85, the series are in a stationary state. Therefore, we do not show changes related to the implementation of FFP rules.

In turn, according to the Phillips-Perron tests (Table 2, Column 3), in 57 series do not display a unit root. Consequently, their trend adapts well to the pattern of natural stationary of the asymmetry in the competitive balance.

To analyze the non-stationary behavior of the 27 series we have contrasted the hypothesis of structural change. Following the suggestion of Perron and Vogelsang (1992) we propose two contrasts of structural change where the year of rupture is determined endogenously. On one hand, we used the so-called Innovative Outlier Model (IO), where the change in the mean is not instantaneous but gradual, affecting in this case the mean and the trend. On the other hand, based on the work of Clemente *et al.* (1998), we propose the same contrasts of unitary roots in the case that the series present two structural changes [IO (1) and IO (2)].

The following equation generally represents models with innovative outlier, which includes dummy DTB*it* variables with the value 1 if $t = 1$ TB*i* ($i = 1, 2$) and 0 otherwise, as well as DU*it* = 1 if $t > TBi$ ($i = 1, 2$) and 0 otherwise. TB1 and TB2 are the breakpoints where the mean is modified:

$$y_t = \mu + \rho y_{t-1} + \delta_1 DTB_{1t} + \delta_2 DTB_{2t} + d_1 DU_{1t} + d_2 DU_{2t} + \sum_{i=1}^n c_i \Delta y_{t-i} + e_t \quad (2)$$



Source(s): Own elaboration

Figure 4.
Evolution of the
competitive balance
indicators

Results

Table 2 presented the results of the unit root statistics. First, we can observe that the evidence against the unit root null hypothesis is moderate when no changes in the mean are considered. However, it is always rejected when we consider the presence of changes in the intercept.

Regarding the results, if we look at Table 2, we can draw the first two interesting conclusions from this analysis. First, in only 3 of the 17 leagues analyzed, we can see a

Indicador	ADF	PPerron	Break pre FFP	Break post FFP
RSD England	Stationary	Not unit root	...	...
CR ₄ England	-2.944*	-2.867*	2003***	Non-significance
Herfindhal England	-3.050*	-3.028*	2003***	Non-significance
Gini England	Stationary	Not unit root	...	...
RSD Germany	Stationary	Not unit root	Non-significance	2012***
CR ₄ Germany	Stationary	Not unit root	...	...
Herfindhal Germany	Stationary	Not unit root	...	...
Gini Germany	Stationary	Not unit root	...	...
RSD Spain	-1.592***	-1.432***	2008***	Non-significance
CR ₄ Spain	-1.543***	-1.400***	2008***	Non-significance
Herfindhal Spain	-1.675***	-1.496***	2008***	2013***
Gini Spain	-2.019***	-1.890***	2003***	2012***
RSD Serie A	Stationary	Not unit root	...	...
CR ₄ Serie A	Stationary	Not unit root	...	...
Herfindhal Serie A	Stationary	Not unit root	...	...
Gini Serie A	Stationary	Not unit root	...	...
RSD France	-2.892*	-2.887*	Non-significance	2012***
CR ₄ France	-3.128*	-3.111*	Non-significance	2012***
Herfindhal France	-2.892*	-2.884*	2003***	2014***
Gini France	Stationary	Not unit root	...	...
RSD Russia	Stationary	Not unit root	...	...
CR ₄ Russia	-0.094***	-0.094***	Non-significance	2013***
Herfindhal Russia	Stationary	Not unit root	...	...
Gini Russia	Stationary	Not unit root	...	...
RSD Greece	-2.930*	-2.890*	2003***	2014*
CR ₄ Greece	Stationary	Not unit root	...	...
Herfindhal Greece	-2.712**	-2.640**	2003***	2014***
Gini Greece	-2.516***	-2.474***	2003***	2014***
RSD Portugal	-3.417*	-3.381*	2008***	Non-significance
CR ₄ Portugal	-2.912*	-2.800**	2008***	Non-significance
Herfindhal Portugal	-3.101*	-3.002**	1997** y 2008***	Non-significance
Gini Portugal	Stationary	Not unit root	...	...
RSD Sweden	Stationary	Not unit root	...	...
CR ₄ Sweden	-3.383*	-3.349*	1998***	2010***
Herfindhal Sweden	Stationary	Not unit root	...	...
Gini Sweden	Stationary	Not unit root	...	...
RSD Netherland	Stationary	Not unit root	...	...
CR ₄ Netherland	Stationary	Not unit root	...	...
Herfindhal Netherland	Stationary	Not unit root	...	...
Gini Netherland	Stationary	Not unit root	...	...
RSD Belgium	Stationary	Not unit root	...	...
CR ₄ Belgium	Stationary	Not unit root	...	...
Herfindhal Belgium	Stationary	Not unit root	...	...
Gini Belgium	Stationary	Not unit root	...	...
RSD Turkey	Stationary	Not unit root	...	...
CR ₄ Turkey	Stationary	Not unit root	...	...
Herfindhal Turkey	Stationary	Not unit root	...	...
Gini Turkey	Stationary	Not unit root	...	...
RSD Norway	-2.955*	-2.947	2001*** y 2007***	...
CR ₄ Norway	Stationary	Not unit root	...	...
Herfindhal Norway	Stationary	Not unit root	...	...
Gini Norway	Stationary	Not unit root	...	...
RSD Ukraine	Stationary	Not unit root	...	...
CR ₄ Ukraine	Stationary	Not unit root	...	...

Table 2.
Tests of stationarity,
unit root and structural
breaks

(continued)

Indicador	ADF	PPerron	Break pre FFP	Break post FFP
Herfindhal_Ukraine	Stationary	Not unit root	...	...
Gini_Ukraine	−3.283*	−3.258*	Non-significance	Non-significance
RSD_Scotland	Stationary	Not unit root	...	...
CR ₄ _Scotland	−3.324*	−3.304*	1994**	2015**
Herfindhal_Scotland	Stationary	Not unit root	...	...
Gini_Scotland	Stationary	Not unit root	...	...
RSD_Czech rep.	Stationary	Not unit root	...	...
CR ₄ _Czech rep.	Stationary	Not unit root	...	...
Herfindhal_Czech rep.	Stationary	Not unit root	...	...
Gini_Czech rep.	Stationary	Not unit root	...	...
RSD_Austria	Stationary	Not unit root	...	...
CR ₄ _Austria	Stationary	Not unit root	...	...
Herfindhal_Austria	Stationary	Not unit root	...	...
Gini_Austria	Stationary	Not unit root	...	...

Note(s): The Schwarz criterion was used to determine the number of delays used in the Augmented Dickey-Fuller test (ADF). Critical values for ADF are −4.156, −3.504 and −3.181. (*t*-ratios significance * at 1%, ** at 5% and *** at 10%)

The following equation generally represents the models of Structural Rupture. The models include dummy variables in the trend (TDUit) that take values $TDUit = (t - DUit)$ and $DUit = 1$, if $t \geq TBi$ and 0, otherwise, TBi being the temporary moments of rupture

$$\Delta Y_t = \mu + \beta t + \gamma Y_{t-1} + \sum c_j \Delta Y_{t-j} + \alpha DU_{it} + \sigma TDU_{it} + \zeta_1 DTB_{it} + \zeta_2 DTB_{it_2} + \varepsilon_t$$

Coefficients between parentheses, and critical values for innovative model IO −4.94, additive model (*t*-ratios * at 1%, ** at 5% and *** at 10%) (Clemente *et al.*, 1998)

Table 2.

structural break in the competitive balance in RSD, Herfindhal or Gini index around the introduction of FFP rules. As can be seen in Table 2, 48 of 68 competitive balance indicators, show a stationary character around the average. From a global perspective, the European football show a natural state, that is to say, a stationary state as it was shown in the majority of leagues and indicators. Connecting with what was said in the literature review section, the exceptions are in three leagues, Spanish league, German Bundesliga and French League, where in addition to the introduction of European regulations, strict control codes and standards have been developed.

Only 20 of the competitive balance indicators studied show any structural rupture, only a few of them show a rupture in 2011 or in the two years following the implementation of the FFP: in Germany (1 of 4, in 2012), in Spain (2 of 4, 2013 and 2012), in France (2 of 4, in 2012) and in Russia (1 of 4 in 2013).

In this sense, as has already been said, the norm has had very little impact in leagues where the majority of clubs has had a greater orientation to the domestic market. This has happened in most of the teams of the minor leagues, where the great majority of teams have few options to participate in European competitions. Examples of this would include Ukraine, Denmark, Scotland, Greece, Russia, Turkey, Holland or Belgium.

Breaks are shown especially in the indicators CR₂ and CR₄, in Serie A, Bundesliga, French League and Russian League. There are breakpoints in the breakdown of these concentration indexes after FFP introduction. In these cases, our results do not show a very robust result, as it fails to occur in a generalized way in all the indicators studied. This result does not show a significant, generalized and robust increase in the dominance of the top teams as a consequence of the FFP implementation. In contrast, we could say that the asymmetric trend that characterizes the European football industry has been maintained.

Our results are in line with those obtained by Freestone and Manoli (2017), whose results provide no indication that FFP regulations have resulted in a decline in competitive balance

and is in line with Plumley *et al.* (2019) who showed a statistically significant decline in competitive balance post-FFP for leagues in Spain, Germany and France, markets with European orientation and strict controls based on the regulatory development carried out by UEFA. However, as we have verified, these results are not robust since the behavior does not repeat itself in time and method of measurement of competitive balance or even in cases, such as English or Italian, with characteristics similar to the previous ones.

Conclusion

This paper with a very broad vision, presents an analysis of the effects of the Fair Play regulations on competitive balance. Our long-term approach studied 27 seasons, 17 markets and 5 different indicators of competitive balance. The results have shown how there has been an improvement in financial terms. However, the improvement happens specially in a small group of firms located in the three of the largest leagues. It is in these leagues, where a somewhat robust deterioration of the competitive balance is noted. In short, we show that this heterogeneous effect in financial and competitive balance responds to the differences in the implementation of the regulations and specially because governance codes and local process. In this sense, the growing interest around corporate governance opens the possibility of a new line of research (in which we are immersed) that analyses the proliferation of codes of good governance, their characteristics, and effects on financial and competitive balance.

The results show that the industry is asymmetric by nature showing a general stationary behavior. This idea is confirmed with the structural break analysis carried out. Just in some leagues, such as, the Spanish, German, and French, we can observe an increase in the imbalance in some indicators because the introduction of FFP, but these results are not very robust since not all the indicators show this outcome. These results are in line with those obtained by Peeters and Szymanski (2014) who do not see any significant benefit to competitive balance from the point of view of European (inter-league) competition, an aspect already pointed out by Sass (2012).

We have not found any improvement in the competitive balance measures after the introduction of the European regulation. Despite UEFA's efforts to balance the accounts (even with the approval of the European Commission that its regulations) the European football industry is an asymmetric industry by nature.

In this sense, the norm may have very little impact in the clubs with a greater orientation to the domestic market, as it happens in most cases of the leagues analysed. That is to say, where the great majority of teams have few options to participate in European competitions. Examples of this would include Ukraine, Denmark, Scotland, Greece, Russia, Turkey, Holland or Belgium. In this sense and as Di Simone and Zanardi (2021, p. 823) also points out, *"the purpose of future reforms of the FFP regulation should be centred on encouraging small clubs in national competitions to adopt virtuous behaviours aimed at social inclusion and economic sustainability, without limiting or penalizing the larger clubs but rather by sharing the proceeds of the sponsorships not only among the participants and winners of the champions league but also among the excluded or future aspirants to participate"*. As also Ozaydin (2020) indicates, the financial health of the clubs from smaller leagues is crucial for the sustainability of European football since it will allow to increase the competitive balance.

Finally, in view of the results obtained, it can be seen that FFP is not having the expected effects. The results reinforce the image of an unbalanced industry as already pointed out by Szymanski (2014), Gallagher and Quinn (2020) or Plumley *et al.* (2020), among others. The findings of our study show that FFP regulations are having a very limited impact in terms of improving balance in European competitions. UEFA should consider further measures to enhance both the financial performance of the industry but also "push" the domestic football authorities to consider other measures to enhance domestic league format for competitive balance.

Our results support the conclusions of [Paramio-Salcines and Goig \(2018\)](#) or [García del Barrio and Rossi \(2020\)](#) in suggesting that it is still a significant challenge to the football authorities responsible for the regulation and governance of football to achieve a sufficient level of competitive balance in European football leagues, and ensuring the survival of those football clubs who are not benefitting to the same extent as the largest clubs from the commercialisation of football and the vast increases in revenues that have been seen in the last thirty years. The results of our study suggest the changes introduced thus far have not had the desired effects and that the inequalities of the industry continue apace.

These findings are as usual subject to certain limitations with our study. The study includes only 17 European leagues and the results found here might not be replicated across the missing leagues. But given the breadth of the study and that it includes the biggest leagues as well as smaller and medium-sized leagues we believe this is a comprehensive study and likely to be generalisable to other leagues.

Finally, our findings suggest that the consideration for UEFA and the domestic leagues is how they can lower the incentives for the biggest teams to want to breakaway and form their own closed league. This matter is on-going and will likely require co-operation between UEFA and the big five leagues (England, France, Germany, Italy, and Spain) to both incentivize the largest clubs to remain within UEFA through recognizing the mutual interests of all of football. In this sense, it would be necessary to analyze the effects of a new European competition in the domestic leagues, since as [Moffat \(2020\)](#) points out, the participation in the Europa League group stage has a positive and statistically significant effect on performance in national competitions for teams from weaker leagues but no significant effect for teams from stronger leagues. Therefore, it could be convenient to know what impact a new competition could have on the different teams in the domestic leagues. On the other hand, as future lines of research, it could be interesting to analyze the evolution of other concepts such as competitive intensity beyond competitive balance as [Scelles \(2021\)](#) brings to light.

Notes

1. [Hamil et al. \(2010\)](#) argue that the financial instability of Italian football clubs is rooted in their governance structure, which is characterized by the dominance of prominent business individuals or families who own and control football clubs either directly or via corporate holdings. This implies a highly-concentrated decision-making structure, leading to lower external monitoring and decisions aimed at maximizing the owner or family's utility function, which can lead to prioritizing on-field success to the detriment of profitability.
2. The French management control organization is the National Direction for Management Control (DNCG).
3. 1.74 for a 3 point win system.

References

- Avila-Cano, A., Ruiz-Sepulveda, A. and Triguero-Ruiz, F. (2021), "Identifying the maximum concentration of results in bilateral sports competitions", *Mathematics*, Vol. 9, pp. 1-19, doi: [10.3390/math9111293](#).
- Bachmaier, B., Lammert, J., Plumley, D., Wilson, R. and Hovemann, G. (2018), "Regulatory intensity in English and German professional football: a comparative analysis of national requirements for ensuring financial stability", *Sport, Business and Management: An International Journal*, Vol. 8 No. 3, pp. 276-297, doi: [10.1108/SBM-02-2017-0012](#).
- Barajas, A., Castro-Limeres, O. and Gasparetto, T. (2017), "Application of MCDA to evaluate financial fair play and financial stability in European football clubs", *Journal of Sports Economics and Management*, Vol. 7 No. 3, pp. 143-164.

- Birkhäuser, S., Kaserer, C. and Urban, D. (2019), "Did UEFA's financial fair play harm competition in European football leagues?", *Review of Managerial Science*, Vol. 13 No. 1, pp. 113-145, doi: [10.1007/s11846-017-0246-z](https://doi.org/10.1007/s11846-017-0246-z).
- Brandes, L. and Franck, E. (2007), "Who made who? An empirical analysis of competitive balance in European soccer leagues", *Eastern Economic Journal*, Vol. 33 No. 3, pp. 379-403, available at: <https://www.jstor.org/stable/20642365>.
- Budzinski, O. (2014), "The competition economics of financial fair play", Ilmenau Economics Discussion Papers, Vol. 19, p. 85, available at SSRN: <https://ssrn.com/abstract=2409632>.
- Buzzell, R.D. (1981), "Are there 'natural' market structures?", *Journal of Marketing*, Vol. 45 No. 1, pp. 42-51, doi: [10.1177/002224298104500105](https://doi.org/10.1177/002224298104500105).
- Caglio, A., D'Andrea, A., Masciandaro, D. and Ottaviano, G.I. (2016), "Does fair play matter? UEFA regulation and financial sustainability in the European football industry", Working Paper Series, No 38, Baffi Carefin, Centre for Applied Research on International Markets, Banking, Finance and Regulation, Università Commerciale Luigi Bocconi.
- Cain, L.P. and Haddock, D.D. (2006), "Measuring parity: tying into the idealized standard deviation", *Journal of Sports Economics*, Vol. 7 No. 3, pp. 330-338, doi: [10.1177/1527002504272937](https://doi.org/10.1177/1527002504272937).
- Clemente, J., Montañés, A. and Reyes, M. (1998), "Testing for a unit root in variables with a double change in the mean", *Economics Letters*, Vol. 59 No. 2, pp. 175-182, doi: [10.1016/S0165-1765\(98\)00052-4](https://doi.org/10.1016/S0165-1765(98)00052-4).
- Dermitt-Richard, N., Scelles, N. and Morrow, S. (2019), "French DNCG management control versus UEFA Financial Fair Play: a divergent conception of financial regulation objectives", *Soccer and Society*, Vol. 20 No. 3, pp. 408-430, doi: [10.1080/14660970.2017.1323740](https://doi.org/10.1080/14660970.2017.1323740).
- Di Simone, L. and Zanardi, D. (2021), "On the relationship between sport and financial performances: an empirical investigation", *Managerial Finance*, Vol. 47 No. 6, pp. 812-824, doi: [10.1108/MF-09-2020-0478](https://doi.org/10.1108/MF-09-2020-0478).
- Dickey, D.A. and Fuller, W.A. (1981), "Likelihood ratio statistics for autoregressive time series with a unit root", *Econometrica*, Vol. 49, pp. 1057-1072.
- Dietl, H. and Franck, E. (2007), "Governance failure and financial crisis in German football", *Journal of Sports Economics*, Vol. 8 No. 6, pp. 662-669, doi: [10.1177/1527002506297022](https://doi.org/10.1177/1527002506297022).
- Dimitropoulos, P. (2011), "Corporate governance and earnings management in the European football industry", *European Sport Management Quarterly*, Vol. 11 No. 5, pp. 495-523, doi: [10.1080/16184742.2011.624108](https://doi.org/10.1080/16184742.2011.624108).
- Dimitropoulos, P. and Scafarto, V. (2021), "The impact of UEFA Financial Fair Play on player expenditures, sporting success and financial performance: evidence from the Italian top league", *European Sport Management Quarterly*, Vol. 21 No. 1, pp. 20-38, doi: [10.1080/16184742.2019.1674896](https://doi.org/10.1080/16184742.2019.1674896).
- Dimitropoulos, P. and Tsagkanos, A. (2012), "Financial performance and corporate governance in the European football industry", *International Journal of Sport Finance*, Vol. 7, pp. 280-308.
- Dobson, S. and Goddard, J. (2004), "Revenue divergence and competitive balance in a divisional sports league", *Scottish Journal of Political Economy*, Vol. 51 No. 3, pp. 359-376, doi: [10.1111/j.0036-9292.2004.00310.x](https://doi.org/10.1111/j.0036-9292.2004.00310.x).
- Dobson, S. and Goddard, J. (2011), *The Economics of Football*, 2nd ed., University Press, Cambridge, doi: [10.1017/CBO9780511973864](https://doi.org/10.1017/CBO9780511973864).
- Drut, B. and Raballand, G. (2012), "Why does financial regulation matter for European professional football clubs?", *International Journal of Sport Management and Marketing*, Vol. 11 Nos 1/2, pp. 73-88, doi: [10.1504/IJSM.2012.045488](https://doi.org/10.1504/IJSM.2012.045488).
- Dutta, A., Mondal, S. and Raizada, S. (2022), "The future of women's football in Asia: a look at competitive balance in top 5 domestic football leagues from 2010 to 2019", *Sport, Business and Management*, Vol. 12 No. 2, pp. 135-153, doi: [10.1108/SBM-06-2020-0052](https://doi.org/10.1108/SBM-06-2020-0052).

- Farquhar, S., Machold, S. and Ahmed, P.K. (2005), "Governance and football: an examination of the relevance of corporate governance regulations for the sports sector", *International Journal of Business Governance and Ethics*, Vol. 1 No. 4, pp. 329-349, doi: [10.1504/IJBGE.2005.006716](https://doi.org/10.1504/IJBGE.2005.006716).
- Franck, E. (2018), "European club football after 'five treatments' with financial fair play—time for an assessment", *International Journal of Financial Studies*, Vol. 6 No. 4, p. 97, doi: [10.3390/ijfs6040097](https://doi.org/10.3390/ijfs6040097).
- Freestone, C.J. and Manoli, A.E. (2017), "Financial fair play and competitive balance in the Premier League", *Sport, Business and Management: An International Journal*, Vol. 7 No. 2, pp. 175-196, doi: [10.1108/SBM-10-2016-0058](https://doi.org/10.1108/SBM-10-2016-0058).
- Gallagher, R. and Quinn, B. (2020), "Regulatory own goals: the unintended consequences of economic regulation in professional football", *European Sport Management Quarterly*, Vol. 20 No. 2, pp. 151-170, doi: [10.1080/16184742.2019.1588344](https://doi.org/10.1080/16184742.2019.1588344).
- Garcia-del-Barrio, P. and Rossi, G. (2020), "How the UEFA Financial Fair Play Regulations affect football clubs' priorities and leagues' competitive balance?", *European Journal of Government and Economics*, Vol. 9 No. 2, pp. 119-142, doi: [10.17979/ejge.2020.9.2.5842](https://doi.org/10.17979/ejge.2020.9.2.5842).
- Ghio, A., Ruberti, M. and Verona, R. (2019), "Financial constraints on sport organizations' cost efficiency: the impact of financial fair play on Italian soccer clubs", *Applied Economics*, Vol. 51 No. 24, pp. 2623-2638, doi: [10.1080/00036846.2018.1558348](https://doi.org/10.1080/00036846.2018.1558348).
- Hamil, S., Morrow, S., Idle, C., Rossi, G. and Faccendini, S. (2010), "The governance and regulation of Italian football", *Soccer and Society*, Vol. 11 No. 4, pp. 373-413, doi: [10.1080/14660971003780297](https://doi.org/10.1080/14660971003780297).
- Lee, Y.H. and Fort, R. (2012), "Competitive balance: time series lessons from the English premier league", *Scottish Journal of Political Economy*, Vol. 59 No. 3, pp. 266-282, doi: [10.1111/j.1467-9485.2012.00580.x](https://doi.org/10.1111/j.1467-9485.2012.00580.x).
- Michie, J. and Oughton, C. (2004), *Competitive Balance in Football: Trends and Effects*, The sportsnexus, London, pp. 1-38.
- Moffat, J. (2020), "The impact of participation in pan-European competition on domestic performance in association football", *European Sport Management Quarterly*, Vol. 20 No. 4, pp. 440-457, doi: [10.1080/16184742.2019.1629980](https://doi.org/10.1080/16184742.2019.1629980).
- Nauright, J. and Ramfjord, J. (2010), "Who owns England's game? American professional sporting influences and foreign ownership in the Premier League", *Soccer and Society*, Vol. 11 No. 4, pp. 428-441.
- Neale, W. (1964), "The peculiar economics of professional sport: a contribution to the theory of the firm in sporting competition and market competition", *Quarterly Journal of Economics*, Vol. 78 No. 1, pp. 1-14, doi: [10.2307/1880543](https://doi.org/10.2307/1880543).
- Nicoliello, M. and Zampatti, D. (2016), "Football clubs' profitability after the Financial Fair Play Regulation: evidence from Italy", *Sport, Business and Management: An International Journal*, Vol. 6 No. 4, pp. 460-475, doi: [10.1108/SBM-07-2014-0037](https://doi.org/10.1108/SBM-07-2014-0037).
- Özaydn, S. (2020), "An empirical analysis of financial fair-play: the case of Russian Premier League", *Russian Journal of Economics*, Vol. 6 No. 2, pp. 196-212, doi: [10.32609/J.RUJE.6.49642](https://doi.org/10.32609/J.RUJE.6.49642).
- Paramio-Salcines, J.L. and Goig, R.L. (2018), "Structures and policies at the main European football leagues: evolution and recent changes", in Chadwick, S., Parnell, D., Widdop, P. and Anagnostopoulos, C. (Eds), *Routledge-Handbook-of-Football-Business-and-Management*, Routledge, Abingdon, Oxon, pp. 33-43.
- Pawlowski, T., Breuer, C. and Hovemann, A. (2010), "Top clubs' performance and the competitive situation in European domestic football competitions", *Journal of Sports Economics*, Vol. 11 No. 2, pp. 186-202, doi: [10.1177/1527002510363100](https://doi.org/10.1177/1527002510363100).
- Peeters, T. and Szymanski, S. (2014), "Financial fair play in European football", *Economic Policy*, Vol. 29 No. 78, pp. 343-390, doi: [10.1111/1468-0327.12031](https://doi.org/10.1111/1468-0327.12031).

- Perron, P. and Vogelsang, T.J. (1992), "Testing for a unit root in a time series with a changing mean: corrections and extensions", *Journal of Business and Economic Statistics*, Vol. 10 No. 4, pp. 467-470, doi: [10.2307/1391823](https://doi.org/10.2307/1391823).
- Phillips, P.C.B. and Perron, P. (1988), "Testing for a unit root in time series regression", *Biometrika*, Vol. 75, pp. 335-346.
- Plumley, D., Ramchandani, G. and Wilson, R. (2018), "Mind the gap: an analysis of competitive balance in the English football league system", *International Journal of Sport Management and Marketing*, Vol. 18 No. 5, pp. 357-375, doi: [10.1504/IJSMM.2018.10014485](https://doi.org/10.1504/IJSMM.2018.10014485).
- Plumley, D., Ramchandani, G. and Wilson, R. (2019), "The unintended consequence of financial fair play: an examination of competitive balance across five European football leagues", *Sport, Business and Management: An International Journal*, Vol. 9, pp. 118-133, doi: [10.1108/SBM-03-2018-0025](https://doi.org/10.1108/SBM-03-2018-0025).
- Plumley, D., Serbera, J.P. and Wilson, R. (2020), "Too big to fail? Accounting for predictions of financial distress in English professional football clubs", *Journal of Applied Accounting Research*, Vol. 22 No. 1, pp. 93-113, doi: [10.1108/JAAR-05-2020-0095](https://doi.org/10.1108/JAAR-05-2020-0095).
- Ramchandani, G., Plumley, D., Boyes, S. and Wilson, R. (2018), "A longitudinal and comparative analysis of competitive balance in five European football leagues", *Team Performance Management*, Vol. 24 Nos 5/6, pp. 265-282, doi: [10.1108/TPM-09-2017-0055](https://doi.org/10.1108/TPM-09-2017-0055).
- Rottenberg, S. (1956), "The baseball player's labor market", *Journal of Political Economy*, Vol. 64 No. 3, pp. 242-258.
- Sass, M. (2012), "Long-term competitive balance under UEFA Financial Fair Play Regulations", Working Paper No. 5/2012, Otto-von-Guericke University Magdeburg, Faculty of Economics and Management.
- Sass, M. (2016), "Glory hunters, sugar daddies, and long-term competitive balance under UEFA Financial Fair Play", *Journal of Sports Economics*, Vol. 17 No. 2, pp. 148-158, doi: [10.1177/1527002514526412](https://doi.org/10.1177/1527002514526412).
- Scelles, N. (2021), "Intra-match competitive balance and intensity in UEFA men's national team competitions: the impact of recent changes in formats", *Soccer and Society*, Vol. 22 No. 4, pp. 314-326, doi: [10.1080/14660970.2021.1906532](https://doi.org/10.1080/14660970.2021.1906532).
- Szymanski, S. (2003), "The economic design of sporting contests", *Journal of Economic Literature*, Vol. 41 No. 4, pp. 1137-1187, available at: <https://www.jstor.org/stable/3217458>.
- Szymanski, S. (2014), "Fair is foul: a critical analysis of UEFA Financial Fair Play", *International Journal of Sport Finance*, Vol. 9 No. 3, pp. 218-229.
- Szymanski, S. and Weimar, D. (2019), "Insolvencies in professional football: a German Sonderweg", *International Journal of Sport Finance*, Vol. 14 No. 1, pp. 54-68.
- Union of European Football Associations (UEFA) (2012), *UEFA Club Licensing and Financial Fair Play Regulations*, Edition 2012.
- Vöpel, H. (2013), *Is Financial Fair Play Really Justified? An Economic and Legal Assessment of UEFA's Financial Fair Play Rules (No. 79)*, HWWI Policy Paper, available at: <http://hdl.handle.net/10419/77926>.

Corresponding author

Isabel Acero can be contacted at: iacero@unizar.es