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A Review of Competitive Balance in European Football Leagues before and after Financial Fair Play Regulations

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Abstract: This paper analyses competitive balance in 24 top-division domestic football leagues in Europe before and after the implementation of UEFA's Financial Fair Play (FFP) regulations. Our analysis covers 22 seasons between 2000/01 and 2021/22 and utilises indicators of overall league concentration and dominance. Seven of the 24 leagues examined have seen a statistically significant worsening of league concentration post-FFP, fourteen leagues experienced a decline in the number of top-four finishers and thirteen saw a reduction in the number of unique title winners. The weight of evidence indicates that FFP has adversely affected competitive balance in several European football leagues.

Keywords: competitive balance; financial fair play; European football; competition

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1. Introduction

Over the last two decades, the European football market has grown significantly despite wider global economic pressures. Much of this growth is attributed to the success of the 'Big Five' leagues in European football [1], namely: the English Premier League (England), Bundesliga (Germany), La Liga (Spain), Serie A (Italy), and Ligue 1 (France). As of the 2019/20 season, these leagues accounted for 60% of the total revenue generated by the European football market, with the latter being valued at EUR 25.2bn [2]. In the face of the COVID-19 pandemic, the football market experienced a small contraction of c.EUR 3bn. (the total value was EUR 28.9 billion in 2018/19) but most predictions pointed to the market bouncing back to pre-COVID levels of revenue and growth in the coming years. In many ways, the sport is arguably 'recession proof'. This may be seen as surprising given the number of cases of financial distress seen in many leagues over the last twenty years [3] and the implementation of financial regulations–specifically focused on competition and league levels in the last ten years—that has aimed to keep club finances in check. While football has continued to grow its revenues, there remains an addiction to overspending, most notably in the form of player wages, resulting in a loss-making culture.

The loss-making culture can be explained by clubs seeking to balance two key objectives: financial sustainability and sporting success. In the European football market, sporting success through promotion, cup victories, and qualification to European competitions come with significant financial gain. Additionally, football clubs exist in a peculiar emotional and social space, where unusually strong relationships often exist between the company and the stakeholders. These relationships have the potential to impact business behaviour and decision-making, an argument articulated in the work of Bennike, Storm, Wikman, and Ottesen [4] when considering a relatively small league (Danish football). They state that the question of economic power in football remains top of the agenda because clubs are trying to balance financial stability with sporting success.

Ultimately, this short-term pressure to deliver sporting success can lead to a 'rat race' of overinvestment in playing talent [5] resulting in a disruption in club finances. Indeed, in 2009, the results of a survey from the European football's governing body (UEFA) which

included 655 European clubs, showed that more than 50% of the sample experienced a loss in the previous year [6]. The early 2010s saw a spate of financial problems in European club football. Collectively, the clubs were failing to break-even, despite ever-increasing revenues. Additionally, net losses among all 734 European member clubs increased by 760% over the five-year period between 2006–2011 [7]. Cost control was a fundamental issue, and many European clubs were saddled with debt problems.

Consequently, UEFA intervened and introduced its flagship regulatory process-'Financial Fair Play' (FFP) in 2011. At the outset, FFP had two primary objectives. The first was to introduce discipline and rationality to club finances, with a view to securing the long-term financial sustainability of clubs [8]. More simply, clubs were being forced to spend within their means and break even. The second aim centered on competitive balance. The working theory was that the regulations would enable individual leagues to become more competitively balanced. However, there has been conjecture in the literature regarding UEFA's working theory of competitive balance versus the academic definition widely accepted in the field of sports economics [1]. Notwithstanding this, it was clear that by introducing such regulation, UEFA was concerned with competitive balance in European football in the early 2010s.

FFP was UEFA's response to counteract the financial "short-termism" of club decision-making, seen as a threat to the stability of all European football [9], and in the early stages of its inception, there was a range of sporting and financial sanctions applied to clubs. In the first round of sanctions, UEFA fined major clubs such as Manchester City and Paris Saint-Germain for spending beyond their FFP-imposed limits. Other clubs received stronger punishments: the Turkish club, Galatasaray, was banned from the Champions League altogether for two seasons, effectively for excessive spending. FFP punishments have not been confined to clubs within the "big five" leagues. There have also been sanctions involving Dinamo Zagreb (Croatia), FC Astana (Kazakhstan), and Metalurh Donetsk (Ukraine). On a financial level, FFP has had a broadly positive impact. For the first time ever in 2017, the 700 top-division clubs together generated a 'bottom-line' profit figure [8].

However, there has been extensive criticism of the effectiveness of FFP throughout the last decade with issues surrounding the legality of the regulations [10], the impact of FFP on team quality [11], the impact on player wages [12], the prevention of injections of external financing through regulation [13] and the impact of FFP on the competitive balance of domestic leagues [1]. Following COVID-19, UEFA implemented a new system of FFP, beginning in June 2022, with the emphasis now being on three key pillars: no overdue payables rule, a football earnings rule, and a squad cost rule. We will revisit these pillars in the discussion later.

Against this backdrop, the primary aim of our study is the competitive balance aspect of FFP in European football. The investigation of competitive balance contributes to academic literature but is equally of value to relevant league authorities and governing bodies. The level of competitive balance determines the uncertainty of outcome in sporting contests, which makes the economics of professional team sports peculiar and different from other industries. In professional team sports, the demand for the product or the game is positively related to outcome uncertainty. Therefore, a key function of a league in any sport is to ensure that no team achieves too much market power or excessive dominance. Similarly, understanding the state of competitive balance can help governing bodies such as UEFA to review the impact of its regulations and to devise future strategies directed at maintaining and improving competitive balance among its member associations. A review of competitive balance literature and FFP regulations now follows.

2. Theoretical Background

2.1. Competitive Balance

Professional team sports are unique businesses. In more traditional businesses, a firm is likely to prosper if it can eliminate competition and establish a position as a monopoly supplier [14]. Professional team sport leagues do not follow this same logic. Nobody

wins if one team establishes a dominant position due to the joint nature of 'production'. Put simply, professional sport teams need each other to compete on the field of play and they need each other to sell the 'product'. This, in turn, drives the concept of competitive balance in professional team sports leagues. Indeed, in relation to successful sports leagues, Groot [15] stated that "each competitor has an inherent interest in maintaining the health of their rivals" (p. 25). This suggests that maintaining a competitive balance within the league can improve the quality of the individual club. An excessively imbalanced league may have a negative impact on the demand for that league, either from fans [16,17] or from broadcasting and commercial partners [1] which in turn would hurt the clubs themselves.

There are two distinct strands of academic literature on competitive balance as outlined by Fort and Maxcy [18]. First, analysis of competitive balance (ACB) literature, which focuses on what has happened to competitive balance over time or because of changes in the business practices of sports leagues. Second, the effect of competitive balance on fans, which tests the longstanding uncertainty of outcome hypothesis (UOH). Our study is more aligned with ACB literature in that it examines the state of competitive balance before and after the implementation of FFP regulations. The rest of this literature review on competitive balance, therefore, focuses on ACB research.

Many competitive balance studies can be found in American team sports including, but not limited to, Kesenne [16], Maxcy and Milwood [19], Mills and Fort [20], Winfree and Fort [21] and Zimbalist [22]. This makes sense given the origins of competitive balance literature stem from Rottenberg's seminal article on the baseball labour market in 1956. In European team sports, most of the literature is concentrated on the "big five" leagues (England, France, Germany, Italy, and Spain) and the findings from these studies present an inconclusive picture. For example, Goossens [23] found no significant changes in competitive balance across the German, French, and Spanish first divisions (1963/1964–2004/2005). Groot [15] found similar results for the French and Spanish first divisions (1946–2006). By contrast, several authors suggest a decline in competitive balance in some European leagues over varying time periods. Despite suggesting no change across Germany, Spain, and France, Goossens [23] highlighted a decline in competitive balance in the English and Italian first divisions and Groot [15] stated similar findings for the English, German, and Italian first divisions. Ramchandani [24] reported a decline in competitive balance in the English Premier League between 1992 and 2010.

The studies by Goossens [23], Groot [15], and Ramchandani [24] utilised data prior to the introduction of FFP regulations by UEFA. More recent studies involving seasons post 2011/12 and thus falling within a period where FFP has been in place have found similar results to pre FFP studies. For example, Plumley, Wilson, and Ramchandani [25] found a decline in competitive balance in the English Premier League since its inception in 1992/93 to 2015/16. They also reported a decline in competitive balance in the lower tiers of English football in the three divisions below the EPL. Ramchandani, Plumley, Boyes, and Wilson [26] also point to a statistically significant decline in competitive balance in all the 'big five' leagues apart from Serie A (Italy) between 1995/96 and 2016/17. Silva et al. [27] suggested no change in competitive balance for France and Italy but did find a decline in competitive balance for the Portuguese Premier League for the years 2003–2016.

It has been argued that FFP has had unintended consequences for competitive balance in some European football leagues [1]. Serrano, Acero, Farquhar, and Escuer [28] concluded that FFP has had very little impact on local competitions and that the industry shows signs of being dominated by a few clubs that display largely stationary behaviour. Our study builds on the work of Plumley et al. [1] and Serrano et al. [28] as explained in the methods below.

Some ACB studies have also included measures of dominance in their analysis. Put simply, measures of dominance analyses whether a league is dominated by a select number of clubs. Indeed, Curran et al. [29] suggest this has been taking place in the English Premier League for some time. In this paper, the authors formulated a top four index by counting the number of occasions that each team finished a league season in the top four places,

summing the incidence of the four teams with the most occurrences and expressing the total as a proportion of the total number of available places over the period of the measure. Data were used from the 1948/1949 to 2007/2008 seasons. Reaching the top four in the EPL means automatic qualification for the UEFA Champions League, which has a monetary reward for the clubs and increases revenue disparity between the top four clubs and the rest of the league.

In relation to pan-European competitions such as the Champions League, there have been a handful of studies published [30–33]. Plumley and Flint [32] analysed the ranking and seeding system used by UEFA for the Champions League and found that the ranking and seeding system was a contributing factor to a decline in competitive balance in the group stages of the Champions League. Dagaev and Rudyak [31] evaluated the sporting effects of the seeding system reform in the UEFA Champions League using Monte-Carlo simulations to show that the new seeding policy resulted in a decrease in tournament quality. Dessus and Raballand [33] provide evidence in support of the claim that the men's UEFA Champions League reduces competitive balance in domestic football leagues. This final point is perhaps most pertinent to our study as we consider a wider number of leagues outside of the 'big five' which will have different implications regarding the number of Champions League places available per league.

Some research on competitive balance has extended the debate beyond Europe. Plumley et al. [34] suggest that the mixed findings in respect of competitive balance are also prevalent across the major five leagues in Asian football (China, Qatar, South Korea, UAE, Iran). Silva et al. [27] analysed the Brazilian Serie A and found that it was more competitive than the "big five" European Leagues. Additionally, Rocke [35] used multiple measures of competitive balance to indicate competitiveness positively affects end-of-year FIFA rankings for CONCACAF nations, which extends the competitive balance knowledge base further into international teams and competitions.

2.2. Financial Fair Play

As mentioned in the introduction, football teams must attempt to strike a balance between financial sustainability and sporting performance, which can often lead to overspending. There is a historical association between clubs that have large financial resources and clubs that have been successful. However, the perceived need to regulate how clubs attained these financial resources has been questioned over the last two decades. This is due to two key reasons. First, a significant number of football clubs across Europe are financially unstable. Numerous clubs were accumulating unsustainable levels of debt resulting, as academics have cited, in a financial crisis across many European football leagues including England [36], France [37], Germany [38], Portugal [39], and Spain [40]. However, despite the financial position, very few football clubs have entered into administration and ceased to exist, in stark contrast to businesses in other industries that record high losses. This narrative reared its head again during the COVID-19 pandemic following significant reductions in club revenue due to lockdowns across the globe.

Football clubs do not enter administration as regularly as other businesses because of the wider social context within which they sit. As a result, there is reluctance, particularly among state creditors, to liquidate a football club [41]. It is this unique position of power that football clubs hold that facilitates the second significant factor, the notion of "financial doping" which is the practice of relying on significant funding from external benefactors to cover perpetual losses, to gain a financial advantage over the competition [42]. It was this notion of "financial doping" that UEFA was looking to curb with the original FFP regulations that were implemented in 2011.

Part of the challenge for UEFA, through FFP, has been the inconsistency of application and threshold standards, applied through domestic regulations. UEFA's version of FFP only applies to clubs that compete in its competitions. Historically, this has just been the Champions League or Europa League but has since extended to cover the UEFA Conference League inaugurated in 2021. However, other domestic leagues across Europe

have implemented their own versions of FFP regulations in their respective league systems throughout the last decade [10]. For example, in England, both the English Premier League (EPL) and English Football League (EFL) have their own version of FFP that applies to their members and differs significantly from the one enforced by UEFA. Other leagues in Europe have introduced adaptions of FFP in their own league and whilst they may differ slightly in the detail, they are still derived from UEFA's FFP regulations and, consequently, have similar legal frameworks [41]. However, the inconsistency in the regulations creates a practical problem at the league level as theoretically some clubs do not have to conform at all to UEFA's regulations if they have very little chance of qualifying for UEFA's competitions. Other clubs, by contrast, have to conform to two separate regulations if they have aspirations of competing in UEFA's competitions.

FFP regulations have also received further criticism in various areas since their implementations. A high proportion of this criticism has been centred on the legality of the regulations themselves [9,10,43]. This has then stretched to specific items relevant to football clubs such as the impact that FFP could have on player wages [12,43,44]; the impact of FFP on the quality of all teams [11,45]; how FFP prevents the industry from benefitting from substantial injections of external financing [13,45] and also how FFP can affect competitive balance [1,28,41].

Furthermore, restricting or denying significant external investment may deter unsustainable, short-termism ownership of clubs but it also reduces the number of clubs that can be seen as viable options for investment. There is a sense here that in some ways FFP has limited competition in domestic leagues because a situation has been created whereby the same clubs are qualifying for the Champions League year on year [32]. Effectively, a situation has been created whereby the top clubs are not only at the top of the ladder, but are also pulling the ladder up behind them, stopping the rest of the clubs from closing the gap. This is because investors know clubs already positioned in well-established footballing markets have a chance of generating a significant return only if success on the pitch takes place [46]. Therefore, clubs from smaller markets will find it considerably harder to compete for the top prizes in European football because of reduced investment imposed by FFP regulations [47–49]. The result of this is the further cementation of the existing hierarchy of European club football, creating a position where the wealthiest clubs strengthen their own power while simultaneously constraining the power and growth of smaller clubs [10]. This is often demonstrated by the wages available to pay the top talent [50] as well as the size of transfer fees paid.

Vopel [51] goes beyond this by declaring that spending power provides the true competitive advantage in football, making it "almost impossible to catch-up to bigger clubs without external funding" (p. 17). This argument is supported in academic literature in relation to the "big five" leagues in European football which have historically been recognized by competitive imbalance and dominance by a select number of clubs [26]. The theory is that institutional and legal reforms applied in the context of sports competitions, such as FFP, often provoke structural changes yet this does not appear to be the case here with FFP in European football. Indeed, clubs may just have paid lip service to it. The regulations do just enough to keep finances in check (and have had some positive impact in respect of club balance sheets) but they are also not quite robust enough to challenge the status quo. Thus, in respect of competitive balance, they may have had no impact at all or even contributed to deterioration in some cases. It is this aspect that our paper sets out to investigate further.

3. Methods

3.1. Research Design

Our study updates and extends the work of Plumley et al. [1], who analysed the state of competitive balance using recognized measures of league concentration and dominance in selected top division football leagues in Europe before and after the implementation of FFP regulations. Plumley et al.'s [1] study covered the 'big five' leagues (English Premier

League, German Bundesliga, Spanish La Liga, French Ligue 1, and Italian Serie A) and spanned 12 seasons, six pre-FFP (2005/06–2010/11) and six post-FFP (2011/12–2016/17). We also expand on the more recent work by Serrano et al. [28], who investigated the effects of FFP on competitive balance across 17 European football leagues through a time-series analysis from 1992/93 to 2018/19. We have enhanced previous research in two ways. First, our study incorporates 24 top-division football leagues, which is 19 more than Plumley et al. [1] and five more than Serrano et al. [28]. Second, the time period of our analysis covers 22 seasons from 2000/01 to 2021/22, which means that we included ten more seasons than Plumley et al. [1] and three more recent seasons than Serrano et al. [28].

The 24 leagues included in our study account for 44% of the 54 top division domestic football leagues belonging to UEFA national member associations. There were two criteria that informed the selection of these 24 leagues. First, qualification of teams for UEFA club competitions (Champions League or Europa League) at least once during the 22 seasons under review. Second, availability of relevant data (league tables) for every season between 2001/02 and 2021/22. The full list of countries/leagues included and the number of teams within each league during the analysis period are presented in Table 1. To examine changes in competitive balance in each league before and after FPP was introduced, we organised our study into two distinct time periods: pre FFP, comprising the 11 seasons between 2000/01 and 2010/11; and post-FFP, comprising the 11 seasons between 2011/12 and 2021/22.

Table 1. Sample overview.

Country	League	League Size	
		Pre-FFP (2000/01–2010/11)	**Post-FFP (2011/12–2021/22)**
Albania	Kategoria Superiore	10–14	10–14
Austria	Austrian Football Bundesliga	10	10–12
Belgium	Jupiler League	16–18	16–18
Bulgaria	Parva Liga	14–16	10–16
Croatia	Prva Liga	12–16	10–16
Cyprus	Cypriot First Division	14	12–14
Czech Republic	Fortuna Liga	16	16–18
Denmark	Superliga	12	12–14
England	Premier League	20	20
France	Ligue 1	18–20	20
Germany	Bundesliga	18	18
Greece	Greek Super League	14–16	14–18
Hungary	NB I	12–16	12–16
Israel	Israeli Premier League	12–16	14–16
Italy	Serie A	18–20	20
Netherlands	Eredivisie	18	18
North Macedonia	1. MFL	11–14	10–12
Portugal	Primeira Liga	16–18	16–18
Romania	Romanian Liga	16–18	14–18
Scotland	Scottish Premiership	12	12
Slovakia	Slovak Super Liga	10–12	12
Spain	La Liga	20	20
Switzerland	Swiss Super League	10–12	10
Turkey	Super Lig	18	18–21

3.2. Measurements

There are a variety of measurement techniques used when considering competitive balance in professional team sports, which have their respective strengths and weaknesses [20,52]. Our study incorporates measures of overall league concentration and dominance within leagues. To assess overall league concentration, we utilised a normalised version of Mitchie and Oughton's (2004) [53] Herfindahl Index of Competitive Balance

(HICB) to measure within-season competitive balance. This normalised measure–termed NHICB–was introduced by Ramchandani et al. [54]. The rationale for using NHICB to measure overall league concentration was to account for the fact that the upper bound of HICB is sensitive to the number of teams. As illustrated by the data in Table 1, there are both intra and inter league variations in league sizes in our sample of 24 leagues.

For every season within each league, HICB scores were first calculated using the following formula:

$$\text{HICB} = (\text{HHI}/(1/\text{n})) \times 100 \quad (1)$$

where HHI is the sum of the squares of the points share for each club contesting a league in each season and n is the number of teams in that particular league and season. For a perfectly balanced league of any size (where all teams achieve the same number of points), the index takes a value of 100. As the index rises, competitive balance declines. Table 2 provides a worked example of HHI derivation using data from the 2020/21 season of the English Premier League. In this case, Manchester City secured 86 points, which equates to 8.14% (0.0814) of points won across all 20 teams in the league during that season. When the share of points for each team is calculated and squared, the sum of the squares results in an HHI of 0.0548. Putting the values of HHI (0.0548) and n (20) in the HICB Formula (1) above gives an HICB score of 109.70 (i.e., $0.0548/(1/20) \times 100$).

Table 2. Derivation of HHI for the English Premier League 2020-21 season.

Team	Points	Share of Total League Points	Share of Points Squared
Manchester City	86	0.0814	0.0066
Manchester United	74	0.0700	0.0049
Liverpool	69	0.0653	0.0043
Chelsea	67	0.0634	0.0040
Leicester City	66	0.0624	0.0039
West Ham United	65	0.0615	0.0038
Tottenham Hotspur	62	0.0587	0.0034
Arsenal	61	0.0577	0.0033
Leeds United	59	0.0558	0.0031
Everton	59	0.0558	0.0031
Aston Villa	55	0.0520	0.0027
Newcastle United	45	0.0426	0.0018
Wolverhampton	45	0.0426	0.0018
Crystal Palace	44	0.0416	0.0017
Southampton	43	0.0407	0.0017
Brighton	41	0.0388	0.0015
Burnley	39	0.0369	0.0014
Fulham	28	0.0265	0.0007
West Bromwich	26	0.0246	0.0006
Sheffield United	23	0.0218	0.0005
TOTAL POINTS	1057	1.0000	
HHI			0.0548

We obtained 528 HICB scores (i.e., 24 leagues × 22 seasons). To facilitate like-for-like comparisons to be made between leagues of different sizes and to account for changes

in the sizes of leagues over time, the HICB scores were converted to NHICB using the following formula:

$$\text{NHICB} = \text{HICB} \times \text{Max HICB(16)}/\text{Max HICB(n)} \quad (2)$$

where n is the number of teams in the league in any given season, Max HICB(n) is the upper threshold of HICB that represents the most unbalanced distribution of points with n clubs, and Max HICB(16) is the upper threshold of HICB that represents the most unbalanced distribution of points with 16 clubs. This league size of 16 was chosen for normalisation as it falls between the lowest (10) and highest (21) league sizes in our sample. The value of Max HICB (16) is 137.78. In the example of the 2020/21 season of the English Premier League, the number of teams is 20. The maximum possible HICB score for this league size is 136.84. Therefore, in this case, NHICB equals 110.45 (i.e., 109.70 × 137.78/136.84).

To analyse league dominance pre and post FFP, we considered the number of different teams to win the league title and the number of different teams to finish in the top four positions, in line with the approach taken by Plumley et al. [1]. Independent samples *t*-tests were run to examine within-league pre and post FFP variations in league concentration and dominance. Inter-league analysis of competitive balance scores was conducted using paired samples *t*-tests.

4. Results

4.1. League Concentration

Table 3 presents the highest, lowest, and mean NHICB scores across all 22 seasons from 2000/01 to 2021/22 for each of the 24 leagues examined. It also shows the mean NHICB scores split by the pre-FFP (2000/01 to 2010/11) and post-FFP (2011/12 to 2021/22) time periods and the differential between them (calculated as post FFP minus pre FFP). A positive differential implies that the mean NHICB score post-FFP is higher than the corresponding score pre-FFP (i.e., a reduction in competitive balance), whereas a negative differential indicates that the mean NHICB score is lower post-FFP relative to pre-FFP (i.e., an improvement in competitive balance).

Table 3. NHICB scores by country/league.

Country	All Seasons (2000/01–2021/22)			Pre-FFP	Post-FFP	Change	*p*
	High	Low	Mean	Mean	Mean		
Albania	118.27	102.04	109.50	108.89	110.10	1.21	0.490
Austria	114.00	101.42	107.00	105.77	108.23	2.46	0.115
Belgium	112.70	105.62	110.12	111.11	109.14	−1.97	0.021 *
Bulgaria	123.15	111.54	116.48	116.79	116.18	−0.61	0.667
Croatia	121.70	105.93	111.49	110.25	112.73	2.48	0.144
Cyprus	125.07	108.81	117.14	117.38	116.90	−0.48	0.831
Czech Rep	117.44	105.60	110.09	108.61	111.57	2.96	0.005 *
Denmark	113.00	102.37	108.69	108.62	108.75	0.13	0.921
England	115.46	106.58	111.35	110.43	112.27	1.84	0.060
France	111.56	104.68	107.99	106.40	109.58	3.18	0.000 *
Germany	113.08	104.86	109.27	107.93	110.61	2.68	0.001 *
Greece	119.16	109.05	113.54	113.52	113.56	0.04	0.978
Hungary	115.74	104.46	108.50	109.28	107.71	−1.57	0.262
Israel	115.88	103.97	109.64	108.47	110.80	2.33	0.132
Italy	115.62	107.87	111.32	110.19	112.44	2.25	0.029 *
Netherlands	118.92	107.85	112.51	112.75	112.27	−0.47	0.633
North Macedonia	120.26	101.29	111.17	112.67	109.68	−2.99	0.104
Portugal	117.43	105.45	113.13	111.36	114.90	3.54	0.002 *
Romania	115.12	103.71	109.40	108.80	109.99	1.19	0.310
Scotland	117.30	104.64	112.69	113.60	111.79	−1.81	0.169

Table 3. *Cont.*

Country	All Seasons (2000/01–2021/22)			Pre-FFP	Post-FFP	Change	*p*
	High	Low	Mean	Mean	Mean		
Slovakia	122.66	101.84	108.90	106.57	111.24	4.67	0.026 *
Spain	115.75	104.69	109.73	107.78	111.67	3.89	0.001 *
Switzerland	110.74	104.22	107.22	107.96	106.48	−1.48	0.080
Turkey	115.28	105.06	109.71	110.67	108.76	−1.91	0.096

* $p < 0.05$.

For the overall sample of leagues (n = 24), the mean NHICB score was 110.24 pre-FFP and 111.14 post FPP. The difference between these scores was close to being statistically significant (t(23) = 2.009, $p = 0.056$). Independent samples *t*-tests confirmed that in seven of the 24 leagues, the NHICB differential was significantly higher in the post-FFP period. Five of these seven leagues are among the top seven ranked leagues in Europe (Spain, Italy, France, Germany, and Portugal). Only one league had a significantly lower NHICB differential post-FFP (Belgium). For the remaining 16 leagues the NHICB scores did not differ significantly from the pre-FFP period.

4.2. Dominance

Table 4 presents data on the number of different teams that finished in the top four positions in their respective domestic league and the number of different teams that won the league title. This data is split by the pre-FFP and post-FFP seasons. Across the 24 leagues, there were 248 different top four finishers and 99 different title winners in the pre-FFP period. In the post-FFP period, the number of top four finishers decreased by 26 to 222 whereas the number of title winners reduced by 13 to 86.

Table 4. Number of top four finishers and league winners pre and post FFP.

Country	Top 4 Finishers			Title Winners		
	Pre-FFP	Post-FFP	Change	Pre-FFP	Post	Change
Albania	11	9	−2	5	5	0
Austria	9	9	0	6	3	−3
Belgium	10	10	0	4	5	1
Bulgaria	8	12	4	4	1	−3
Croatia	11	7	−4	3	2	−1
Cyprus	9	7	−2	4	4	0
Czech Republic	13	8	−5	5	4	−1
Denmark	9	12	3	3	5	2
England	9	7	−2	3	5	2
France	12	9	−3	5	4	−1
Germany	10	8	−2	5	2	−3
Greece	7	7	0	2	3	1
Hungary	12	12	0	4	5	1
Israel	12	11	−1	3	4	1
Italy	11	9	−2	4	3	−1
Netherlands	8	7	−1	4	3	−1
North Macedonia	12	12	0	7	4	−3
Portugal	7	7	0	4	3	−1
Romania	13	13	0	6	4	−2
Scotland	10	10	0	2	2	0
Slovakia	12	9	−3	5	4	−1
Spain	12	9	−3	3	3	0
Switzerland	12	10	−2	4	3	−1
Turkey	9	8	−1	4	5	1

Overall, fourteen of the twenty-four leagues experienced a decline in top four finishers in the post-FFP period, only two experienced an increase and there was no change in the other eight leagues. The number of unique title winners post-FFP declined in 13 leagues, increased in seven and remained the same in the other four leagues. Paired sample t-tests confirmed that the mean difference in top four finishers between the pre-FFP and post-FFP seasons was statistically significant ($t(23) = 2.656$, $p = 0.014$). The mean difference for title winners was not significant ($t(23) = 1.732$, $p = 0.097$).

5. Discussion

Overall, akin to previous literature in this field, our study presents a mixed picture of the state of competitive balance in European football leagues [15,23,25,26,55,56]. When considering how competitive balance has changed in response to FFP, some leagues in our sample exhibited a decline in league concentration and/or dominance, some improved whereas others did not show any material changes.

For most leagues there has been no significant change in league concentration post FFP and dominance levels have remained either the same or broadly similar to pre-FFP seasons. This finding suggests that improving competitive balance will remain a wider challenge on the agenda of European football in the future. Comparing the data presented in Tables 3 and 4, it is evident that countries that had a significant worsening of league concentration post-FFP also typically had higher levels of dominance in this period. These countries/leagues tend to be higher ranked UEFA member associations (e.g., Spain, France, and Germany) with some exceptions (e.g., Slovakia). Our results confirm the findings of Plumley et al. [1], who found a statistically significant decline in competitive balance post-FFP for leagues in Spain, Germany, and France but not for England. However, in contrast to Plumley et al. [1] we did find evidence of a significant decline in competitive balance post-FFP for Italy.

In a similar way, our findings present mixed evidence when compared with Silva et al. [27] and Serrano et al. [28]. Silva et al. [27] found no significant change in competitive balance for France and Italy but a significant decline for Portugal. We found a decline that was statistically significant in all three of those leagues. Serrano et al. [28] stated that FFP had little impact on domestic competitions, but the industry was showing signs of becoming dominated by a few clubs. Our findings support the latter of these claims but also partially counter the former. Our findings provide some strong indications of FFP being a contributory factor that influences the level of competitive balance in domestic leagues across several European leagues for our sample. Moreover, our findings in relation to our dominance measures and the fewer number of clubs that compete in the Champions League post-FFP (see Table 3) also partially support the evidence of Desus and Raballand [33] who found that the UEFA Champions League competition reduces competitive balance in domestic leagues.

In the context of league dominance and specifically title winners, the case of Bayern Munich in Germany has already been discussed in past research [1] but the lack of competition for the title across other leagues in Europe presents a concern for league organisers. For example, in Croatia, Dinamo Zagreb have dominated more than any other team in terms of title wins post-FFP. The title dominance in the Czech Republic has been from two teams, Slavia Prague, and Viktoria Plzen. Both teams are the only clubs to have qualified for the Champions League from the nation since FFP's introduction and have won eight titles between them during this time. The other two league winners in the Czech Republic post-FFP, Sparta Prague, and Slovan Liberec, have also achieved consistent qualification for the Europa League, which suggests that a dominant top four has emerged in this league that is consistent with some of the more prominent leagues in Europe. The situation is more acute in Bulgaria. In the eleven years since the introduction of FFP, Ludogorets Razgrad has won every league title. Ludogorets Razgrad competes regularly in UEFA club competitions. Clubs that reach the group stages of the Champions League currently receive a guaranteed EUR 15 m in prize money (based on 2022/23 figures). With Bulgaria having only one Champions League qualification place, Ludogorets Razgrad is the only club in Bulgaria

that could benefit from the prize money on offer in European competitions. Therefore, the dominance of this club over the rest of the league is likely to continue in the future given the financial benefits associated with competing in UEFA club competitions. This links to the arguments of Szymanski [10] and Vopel [51] with regard to FFP helping to cement the existing hierarchy and simultaneously limiting the potential for investment into smaller teams to enable them to close the gap across European football.

Indeed, some findings from Denmark in our study may lend support to the need for external investment for clubs to compete as suggested by Vopel [51]. The Danish Superliga has seen two additional title winners and three more top-4 finishers post-FFP (see Table 4). In the early 2000s, FC Copenhagen was the dominant team, but significant investment into the Danish Superliga from external sources [57,58] has seen other clubs challenge for the title in recent years such as Brondby, FC Midtjylland and FC Nordsjaelland.

We argue that prize money from UEFA competitions must be considered a plausible factor that influences our results. Participation in the Champions League or Europa League allows these clubs access to additional sources of revenue not available to teams in their domestic league. Similarly to Croatia, Czech Republic, and Bulgaria, in leagues where the UEFA league coefficient is lower, there are fewer spots to qualify for European competition, so it is harder to access this additional revenue than it is for leagues where more European spots are allocated. This increases the gap between the haves and have-nots each season. The emergence this scenario is not limited to making it to the group stages of European competition. Those who enter the qualification rounds from lower ranked leagues will still enhance their dominance, as their earnings from early rounds are significant and represent earnings that the rest of their respective leagues will not have access to regardless of whether they make it through to the group stages.

Moving forward, with the introduction of the Conference League in the 21/22 season, UEFA's tertiary competition, there will be more European qualification spots available within many leagues. Qualification to this competition will bring increased revenue to these clubs in the form of additional sponsorship, prize money, and matchday revenues from the increased number of games played. However, given this is the tertiary competition, the gross figure received will be less than that available in the Champions League or Europa League. The total funds made available by UEFA for the 2021/22 season to give clubs for participation in the Champions league, Europa League and Conference League group stages was EUR 419 million, EUR 130.25 million, and EUR 59.75 million, respectively, demonstrating the huge financial advantage certain clubs have over their domestic rivals after just one group stage appearance in the Champions League. This disparity is increased with 32 teams in the group stage for each competition, but the third place teams from the Champions League and Europa League group stages move on to the knockout stage for the competition below, which increases their chances of gaining additional revenue and makes it harder for the clubs already in the Europa League and Conference league, respectively to compete in the latter stages of their competition. In effect, the larger teams from larger leagues will continue to dominate on the European stage.

Looking beyond competitive balance through the lens of sporting performance, the finances of European football have improved in recent years as a result of FFP regulations [59]. For example, the different regulations implemented by both UEFA and La Liga have contributed to stabilising the financial situation of Spanish professional football in the short term [60]. However, these improvements have been reflected in the solvency of the clubs rather than in their profitability, which may promote imbalances between clubs that undermine the sustainability of the competition system.

UEFA is now changing FFP to Financial Sustainability Regulations (FSRs). These rules will still cover financial sustainability within European club but, interestingly, any references to competitive balance have been removed with UEFA stating they will be focusing on that separately. UEFA now hopes to achieve financial sustainability through three key pillars: "solvency, stability and cost control." [61]. For solvency, the new no overdue payables (towards football clubs, employees, social/tax authorities, and UEFA)

rule will ensure better protection of creditors. Controls will be performed every quarter as opposed to assessing yearly in the current model, and there will be less tolerance towards late payers. The new football earnings requirements are an evolution of the existing break-even requirements and should bring greater stability to club finances. To ease the implementation for clubs, the calculation of football earnings is similar to the old calculation of breaking even. However, the acceptable deviation has increased from EUR 30 m over three years to EUR 60 m over three years, which gives clubs further scope to invest in many ways. The biggest change in the new regulations will be the introduction of a squad cost rule to bring better cost control in relation to player wages and transfer costs. This pillar limits spending on wages, transfers, and agent fees to 70 per cent of club revenue and will be phased in from 2023/24 at 90% before reducing to 80% in 2024/25 and finally 70% in 2025/26 to allow clubs the necessary time to adapt. Assessments will be performed on a timely basis and breaches will result in pre-defined financial penalties and sporting measures. The danger with these new FSRs is that they also retain the status quo. The squad cost rule will potentially preserve the pre-existing financial power within leagues. The acceptable loss rule being doubled does leave the door partially open for clubs to look to break into the elite but there is a firm argument that these new rules will also not improve the situation regarding competitive balance in European football, similarly to the old regulations.

6. Conclusions and Future Research

While we are not able to demonstrate a direct cause and effect relationship, the evidence from our study presents a compelling picture, one that we would argue should keep competitive balance on the agenda of European football. In many ways, FFP has only served to cement the competitive order across the European game. We conclude that FFP is a contributory factor here, but it is not the only one. Other factors at play may include broadcasting revenue, financial flow between leagues, transfer fees, wages, governance frameworks, and the COVID-19 pandemic. The range of potential contributory factors coupled with the changing European football landscape presents opportunities for further research. In the coming years, it will be important to consider the impact of the UEFA Conference League on competitive balance. This competition expands the number of clubs who compete in European competition each season, which will allow a host of new clubs to receive additional income that was previously only limited to a single (or few) club(s) within a particular league. This may pose further questions around considering competitive balance across additional European leagues, as more member associations house teams competing in UEFA competitions. Further research will be required to understand if the new FSRs will have any effect on competitive balance moving forward. Both these areas will need considering in years to come when more data becomes available. However, research into the impact of FFP on the European football industry, and that of the new FSRs, will remain vital in the future, in relation to understanding the changing business models of clubs in response to financial regulation, navigating their way out of the COVID-19 pandemic and beyond, the focus on financial stability and sustainability and how all of the above can support healthy sporting competition on the field of play to protect sporting integrity. Future research in this area should encompass both quantitative analyses using recognised measures of competitive balance as well qualitative work involving key stakeholders.

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