Mind the gap: an analysis of competitive balance in the English football league system

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Abstract

Competitive balance of league competitions is an important component of sport economics. Evidence suggests that a less attractive product might struggle to command a high market value. Thus, it is imperative that sport leagues remain competitively balanced with a degree of uncertainty of outcome. This paper analyses competitive balance within the English football league system since the inception of the English Premier League (EPL) in 1992. It examines variations in overall competitive balance within and between the EPL and the three divisions that make up the Football League. Competition for the title, promotion and relegation is also analysed. The results indicate a reduction in competitive balance in the EPL over time and that the EPL is less balanced overall relative to the Football League, which is partly influenced by the higher financial disparity between teams in the EPL. Nonetheless, fan interest in the EPL and the value of broadcasting deals do not appear to be negatively influenced.

Key words: competitiveness, English Premier League, English Football League, football finance

1. Introduction

The English football league structure currently consists of four leagues that compete in an open league format where a promotion and relegation system is in place and clubs can thus move between leagues dependent on sporting performance. The four leagues in hierarchical order are: the English Premier League (EPL) (tier 1); the Football League Championship (tier 2); the Football League One (tier 3); and, the Football League Two (tier 4). In terms of organisational structure and governance the leagues are self-regulating although there is an internal separation in a sense that the EPL primarily governs itself and the other three tiers operate under a separate structure more commonly known as the English Football League. The organisational structure of these leagues creates divisions from a revenue perspective as the funds available are not shared equally between the leagues.

The primary aim of this paper is to provide empirical evidence on the debate surrounding competitive balance in the English football league system by analysing the level of competition within and between the individual leagues that make up the industry. To the authors' knowledge, this is the first paper of its kind to consider competitive balance within this particular industry, particularly in terms of the focus on the lower tiers (primarily tiers 2, 3 and 4) and, as such, the paper directly contributes to sport economics literature. Furthermore, the findings of the paper have implications at policy level for both clubs and league authorities with a view to safeguarding the prestige and viability of its domestic league competitions.

The rest of the paper is structured in the following order. Section 2 provides relevant background information on the English football league system, including the financial disparity between leagues, which provides the rationale for tracking competitive balance within and between leagues. An overview of relevant economic theory is presented in Section 3 and Section 4 summarises previous competitive balance research. The methods are presented in Section 5. The results and discussion follow in Section 6 and Section 7 respectively. The paper concludes by identifying the main learning points and direction for future research in Section 8.

2. Background

At the time of writing, the EPL is the highest revenue generating league in European football grossing €3.9bn (£3.3bn) in 2013/14, €1.6bn ahead of its nearest rival the Bundesliga in Germany (Deloitte, 2015). In contrast, the total revenue of Football League Championship clubs was £491m with League One and League Two seeing a more substantial gap with total revenues of £148m and £78m respectively.

Primarily this absolute financial gap is due to the broadcasting deals in place for EPL clubs. Under the current deal, which expires after the 2015/16 season, even the bottom three clubs in the league table that are relegated can expect to earn a substantial amount of prize money from broadcasting payments. For example, Aston Villa finished bottom of the EPL in 2015/16 and still earned £66m in revenue from broadcasting. This is in contrast to the Championship where the current guaranteed income from broadcasting is around £5m. Furthermore, the new broadcasting deal that commences in the 2016/17 season is worth £5.1bn in UK rights alone, which represents a 70% increase on the current £3bn deal. In light of this increase, a conservative estimate is that even the bottom club in the EPL in 2016/17 would earn around £92m in broadcasting revenue assuming the distribution mechanism remains the same whilst the guaranteed income in the Championship from broadcasting would only rise slightly to £6.5m.

The financial benefits and rewards of competing in the EPL make it easy to see why clubs in the Football League aspire to gain promotion and compete in England's elite league competition. There are further disparities and arguments, however, which reflect the financial gap between the two leagues, the sustainability of clubs within the Football League and the nature of competition in the industry itself. One such disparity often cited in discussions on this subject is the clubs that are in receipt of 'parachute payments' having been relegated from the EPL. The EPL distributes parachute payments to clubs that have been relegated in an attempt to reduce the financial impact of relegation. Under the current agreement, parachute payments total around £65m over four years. A relegated club receives £25m in year one, £20m in year two and £10m per year in years three and four. Once again, a conservative estimate is that under the new broadcasting deal commencing in 2016/17, parachute payments may total an estimated £85-90m spread out in this case across three years instead of four. For the year end 2013, the £25m parachute payments distributed to the three relegated EPL clubs from the previous season was higher than the total revenue of 19 out of 24 Championship clubs (Deloitte, 2014). To put this into perspective, based on the total revenue figures for the Championship and League One, these parachute payments create a further financial imbalance in absolute revenue terms. For example, the total revenue for Championship clubs of £491m in 2013/14 was an absolute increase of £54m from the previous year. However, this figure was boosted by a £57m increase in parachute payments due to the clubs competing in that league for that season meaning that if these payments were to be ignored then the collective revenues of the league would have actually declined by £3m. A similar scenario occurred in the same season in League One where the total revenue of £148m was boosted by over £19m of parachute payments to Wolverhampton Wanderers, thus giving a slightly inflated figure (Deloitte, 2015). Moreover, in 2012/13 the average wages/revenue ratio for Championship clubs was 105%, the second consecutive season with a ratio of over 100%, and almost half of the clubs in the Championship had wage costs greater than revenue (Deloitte, 2015).

This suggests that clubs competing in the Football League are overspending in an attempt to reach the EPL although such levels of spending, particularly on player wages, poses a significant risk to clubs' medium to long-term viability with serious implications on the requirement for owner financing. There has been much discussion over recent seasons about the effect of parachute payments on the competitive balance of the Championship although much of this discussion has come from industry commentators rather than empirical academic research. For example, Deloitte (2014) state that on-pitch competition remains intense in this division, with higher levels of revenue no guarantee of a higher league placing, yet there is little doubt that the parachute payments awarded to relegated clubs do provide them with a financial advantage over the majority of clubs in the division.

3. The economic theory of professional team sports

Whilst the scope of this paper is not to compare economic models of professional sports leagues, it is important to be aware of the academic debates in the field. It also helps us to provide the context and rationale for this paper in the situational context of English professional football and the three governing bodies that have outright control of the English leagues (The FA, EPL and EFL). All have conflicting interests and all, fundamentally, want what is best for their respective league. However, under an open league structure, their actions have consequences and can alter the dynamics of the league and competition. Given such dynamics, it is important that the league managers are aware of the impact of any actions they may take when considering the competitive balance of the league(s). To that end, this paper offers a valuable contribution, providing insights for league managers as to how

they manage their respective strategies with the ultimate goal of providing viewers and fans with the best 'joint' product on the pitch.

A number of papers referenced in this section state that the perfect game is a symbiotic contest between equally matched opponents, essentially through the acquisition of equal playing talent. The practical economic problem is that professional sport leagues form imperfectly competitive natural cartels where games are played between teams with asymmetric market power (Vrooman, 2015). This notion implies that dominant teams may only be as strong as their weakest opponent. Comparisons between the economic environment of professional team sports and that of more traditional commercial businesses have been well documented by sports economists (e.g. Dobson and Goddard, 2011; Leach and Szymanski, 2015). 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 (Dobson and Goddard, 2011). In sport, however, it does not pay for one team to establish such a position due to the joint nature of 'production' in sports.

According to Rottenberg's (1956) Invariance Principle, player talent in a league would move to the team which valued them the most, invariant of team revenues. That is, players will eventually end up on the team where they have the highest value of use to that franchise. El-Hodiri and Quirk (1971), Fort and Quirk (1995) and Vrooman (1995) have extended the IP in their models to gate revenue sharing by showing that sharing revenue has no effect on player allocation within a league. The result of this is of notable importance to professional team sports in general and league managers in particular as revenue sharing has been introduced in some leagues as a means to improve competitive balance (see also Dietl, Grossman and Lang, 2011). The IP with respect to revenue sharing was originally developed under the assumptions of purely profit-maximizing clubs and Walrasian conjectures (El-Hodiri and Quirk, 1971; Fort and Quirk, 1995). In their models, Kesenne (2000, 2005) and Vrooman (2007, 2008) show that the IP does not hold in a league with purely win-maximising clubs. Moreover, Szymanski and Kesenne (2004) provide a model that contradicts the IP even under the assumption of purely profit-maximising clubs. They show that under contest-Nash conjectures, revenue sharing does not increase but rather decreases competitive balance (see also Dietl and Lang, 2008; Vrooman, 2009). This result is driven by the so-called dulling effect of revenue sharing. It suggests that revenue sharing reduces the incentives for clubs to invest in playing talent because each club has to share some of the resulting marginal benefits of its talent investment with the other clubs in the league (see also Cyrenne, 2009).

Different models of a sports league have since been proposed in academic discourse. Madden (2011) suggest a "strategic market game" (SMG) approach to modelling strategic interactions between clubs and generalising the basic league framework in much of the previous literature to allow variable talent supply and club revenues that depend on absolute and relative team qualities. Following this, Winfree and Fort (2012) offer a general model in response to some of the literature cited above. This model expands dimensions to include Nash conjectures for both open and closed leagues and the explicit presence of investment in talent, without functional forms. Winfree and Fort (2013: 328) argue that: "….with such a model, future researchers can simply use it and impose whatever assumptions they choose while being forced to recognize their impact." The following paragraphs detail a brief comparison between two prevalent models of sport leagues; the North American and European models.

Principally, professional team sports are heavily linked to the concepts of uncertainty of outcome, competitive balance and profit and utility maximisation (e.g. Buraimo *et al*., 2015; Fort, 2015; Kesenne, 2015; Leach and Szymanski, 2015; Sloane, 2015; Vrooman, 2015). The

theoretical literature on the determinants of the degree of competitive inequality in sports leagues was developed by US sports economists, with North American team sports primarily in mind. Naturally, the development of this literature has led to comparisons between the North American and European model (see Hoehn and Szymanski, 1999; Andreff and Staudohar, 2000; Sloane, 2006; Szymanski, 2003). The European model is and will remain unique, but there appears to be convergence on certain features. In both Europe and the United States, sports leagues are joint ventures that can be viewed as a single entity or cartel. Clubs are separately owned with discretion to set prices, market the games, and adopt strategies to compete with other clubs. There are, however, several key differences between the two models, all of which ultimately have an impact on factors such as revenue generation and ability to compete. For example, the American sports model operates a draft system where the best performing rookie is assigned to the worst performing team. Furthermore, some American sport leagues operate under salary caps, share television revenue equally and compete exclusively in domestically structured leagues (aside from a handful of Canadian franchises (Andreff and Staudohar, 2000). In place of promotion and relegation, evident throughout the European model, changes in American leagues come from adding new franchises and relocating franchises to another city. There are also other external factors, particularly within English football and the EPL, such as owner investment, Financial Fair Play (regulations originally devised by UEFA to curb excessive overspending and promote financial sustainability) and revenue gained from Pan-European competitions such as the UEFA Champions League that have been cited as having a potential to directly impact on competitive balance (e.g. Pawlowski, Breuer and Hovemann, 2010; Ramchandani, 2012).

Precisely why such differences have arisen in the two continents has never been fully explained (Sloane, 2015). However, Szymanski and Zimbalist (2005) contrast the development of football and baseball, with the former spreading throughout the world. Football was influenced by British expatriates and local elites, whilst baseball was much more inward looking and concerned with commercial development. Previous literature has suggested that profit maximisation is the prime objective of North American leagues and team owners, so profitability is the main factor influencing decisions concerning the award of franchises and relocation (Dobson and Goddard, 2011). Contrastingly, other authors have proposed that the European sport model is more closely related to utility or 'win' maximisation (see Sloane, 1971; Kesenne, 2000; Garcia-del-Barro and Szymanski, 2009). It must also be noted that very few markets can be classified as perfectly competitive or as a pure monopoly (Gratton and Taylor, 2000). The vast majority of firms do compete with other firms, often quite aggressively, and yet they are not price-takers. Most markets, therefore, lie between the two extremes of monopoly and perfect competition, in the realm of 'imperfect competition'. Within this, lies monopolistic competition and oligopoly. The Football League in England, it can be argued, is most closely related to monopolistic competition as all clubs are essentially selling the same product, albeit at different prices.

Both models of professional team sport (European and North American) consider the importance of competitive balance in their structure and the implications it may have on demand for the 'product'. Indeed, in relation to successful sport leagues, Groot (2008) stated that "each competitor has an inherent interest in maintaining the health of their rivals" (p. 25). A potential implication in this context is that an excessively imbalanced competition might have a negative effect on fan interest and, hence, on demand (Kesenne, 2006; Zimbalist, 2003). The contrast in these studies is also reflective of wider issues in relation to competitive balance research. As Pawlowski (2013) states, it may be that the empirical evidence is 'wrong' because the proxies used to measure competitive balance are inadequate. On the other hand, even if the empirical evidence is 'right', it does not necessarily show that competitive

balance is irrelevant to football fans but rather that the variations in competitive balance that have actually been observed have not been large enough to affect demand. Pawlowski (2013) poses that a crucial question, from a fans perspective, is how unbalanced does a football league have to be before it matters? The answer to this question is crucial to league organisers and the primary aim of this paper will go some way towards answering important questions such as this one. In any case, the vast majority of literature surrounding the economics of professional team sports is concerned with competitive balance. Indeed, Dobson and Goddard (2011) proclaim that the problem of measuring competitive balance within a sports league has attracted considerable attention in the academic sport economics literature in recent years. Researchers have applied several measures of concentration or inequality, some of which are borrowed from industrial economics, to sports teams' win ratio or league points data.

4. Previous research on competitive balance

Fort and Maxcy (2003) categorise the theoretical and empirical literature on competitive balance along distinct two lines: (i) analysis of competitive balance (ACB) literature, which focuses on what has happened to competitive balance over time or as a result of changes in the business practices of sports leagues; and, (ii) literature on competitive balance that analyses its effect on fans, i.e. which tests the longstanding uncertainty of outcome hypothesis (UOH). It is the first of these approaches (i.e. ACB) that this research is concerned with. Although the concept of competitive balance has received substantial coverage in academic literature, historically, the focus of such studies has been on sports leagues in North America, primarily in Major League Baseball, but also in the National Basketball Association, the National Football League and the National Ice Hockey League (for examples see: Maxcy and Mondello, 2006; Zimbalist, 2002). In more recent years, there have been a number of studies that have focused on competitive balance in professional team sports in Europe, most notably in football but occasionally in other sports such as rugby union (e.g. Williams, 2012). There are also one or two studies that focus on other professional sports such as Formula One (Schreyer and Torgler, 2016) and tennis (Del Corral, 2009), although these are less relevant given the respective nature of these more individual sports compared to professional team sports.

In relation to professional football, previous research examining competitive balance has almost exclusively focused on the so called 'big five leagues' (England, France, Germany, Italy and Spain) with a small number focusing on smaller leagues such as Austria and Switzerland (e.g. Pawlowski and Nalbantis, 2015). Aside from these papers, it appears that little attention has been given to football leagues in other European countries (Ramchandani, 2012). Some studies detect no significant changes in competitive balance across European leagues (e.g. Goossens, 2006: German, French and Spanish first divisions; Groot, 2008: French and Spanish first divisions; Koning, 2000: Dutch first division; Michie and Oughton, 2004: French first division; Szymanski, 2001: English first division), whilst others report a decline in competitive balance (Goossens, 2006: English and Italian first divisions; Groot, 2008: English, German, Italian and Dutch first divisions; Montes, Sala-Garrido and Usai, 2014: Spanish first division).

There are many indices proposed and employed for measuring competitive balance, a number of which can be found in the texts of Groot (2008) and Michie and Oughton (2004). Whilst competitive balance in both European football and North American sports has been analysed in a number of previous studies, no research to date, to the authors knowledge, has examined the competitive balance of the whole English football league system.

5. Methods

The formation of the EPL in 1992 brought about a change in the structure of the English football league system. In 1992/1993 there were four leagues in total - the EPL and three divisions below under the umbrella of the Football League. The Football League has been rebranded in recent years and the divisions are currently referred to as the Championship, League One and League Two. The first season of the EPL comprised 22 teams with 24 teams in the Championship and in League One and 22 teams in League Two. A restructure since the start of the 1995/1996 season meant that the EPL now has 20 clubs competing in it with 24 clubs competing in each division of the Football League - see Table 1.

<Table 1 about here>

EPL and Football League results for the period 1992/93 to 2015/16 (24 seasons) were collated from official websites and analysed using SPSS. The crux of our analysis is the number of points achieved by all teams in the EPL and the Football League in this time frame. We explicitly excluded any points deductions imposed on teams as this would have the potential to artificially skew the results of the research. For example, in the 2011/12 season Portsmouth (competing in the Championship) were given a 10-point deduction for entering administration and their final points total in the official league table was 40. However, they achieved 50 points based on their results which was the figure used in our analysis.

There are a variety of measurement techniques when considering competitive balance in professional team sports and that each has their own respective strengths and weaknesses (see Mills and Fort, 2014; Owen and King, 2015). Fort, Maxcy and Diehl (2016) review the empirical literature on competitive balance including game and season uncertainty, primarily in the context of North American sports leagues. The most commonly used measure in studies of competitive balance in North American sports leagues, where drawn games are rare or non-existent, is the standard deviation of team winning percentage within a season. In sports like football, where drawn games are possible and common, winning percentage might be a biased indicator (Pawlowski *et al.*, 2010). This paper utilises Mitchie and Oughton's (2004) Herfindahl Index of Competitive Balance (HICB) which is an industry standard measure adapted from Herfindahl-Hirschman Index. The rationale for using HICB to measure overall league concentration is two-fold. First, it has been used in previous academic research focusing on football leagues (see for example, Lenton, 2008; Pawlowski et al., 2010); second, it allows comparisons between leagues, with a different number of teams and, within leagues when the number of teams changes over time. HICB scores were calculated using the formula (HHI / (1/N)) x 100, where HHI is the sum of the squares of the points share for each club contesting a league in a given season and N is the number of teams in that particular league and season. For a perfectly balanced league of any size, the index takes a value of 100. As the index rises, competitive balance declines. For a league of any size, the lower bound of the HICB would be 100 (the value attained in a perfectly balanced league). In a 20-24 team league, the upper bound would be 136-137 (the value attained in a perfectly unbalanced league with the most unequal distribution of points attainable). The upper bound in this case is capped by the constraints imposed by the points scoring system i.e. teams can only win points in the matches that they contest and so it is not possible for teams to win all of the points in the league. Pearson's correlation coefficient (r) was used to examine the pattern of HICB within each league over time. One-way analysis of variance (ANOVA) and post hoc tests were to determine the statistical significance of the differences in HICB scores between leagues.

Apart from examining competitive balance between leagues at an overall level using HICB, the research also examined specific aspects of competitive balance that are likely to be of interest to both fans and league authorities: competition for the title; competition for promotion; and, competition for survival. By incorporating these techniques the research builds on similar methods employed in the extant literature such as the C5 concentration ratio (e.g. Michie and Oughton, 2004) and the top 25% and top 50% concentration ratios (e.g. Ramchandani, 2012). The time frame chosen for this analysis was 2002/03 to 2015/16 (14 seasons) because the structure of all four leagues under consideration has remained internally consistent in terms of league size as well as the number of teams being promoted directly, qualifying for play-off places or being relegated - see Table 2.

<Table 2 about here>

Across all four leagues, competition for the title was measured in terms of the gap between the points per match won by the team finishing first and the average points per match won by other likely title contenders, who were judged to be the teams that finished second, third and fourth. In 2015/16 for example, Leicester won the EPL title accumulating 81 points. The average number of points won by teams that finished second (Arsenal, 71 points), third (Tottenham, 70 points) and fourth (Manchester City, 66 points) was 69. All EPL teams played 38 games and therefore the gap in terms of the competition for the title was 0.32 points per match (i.e. (81 - 69) / 38).

The EPL is the top tier of English football therefore the competition for promotion was only examined in relation to the Football League. For the Championship and League One, this was calculated as the gap between the average points per match won by the top six teams (1-6 are promoted directly or qualify for play-offs) and the average points per match won by the next six teams (7-12). For League Two we examined the difference between the top seven teams (1-7 are promoted directly or qualify for play-offs) and the next seven teams (8-14).

To investigate the competition for survival, we compared the average points per match of the teams that were relegated from the league - those ranked 18-20 in the EPL, 21-24 in the Championship, 21-24 in League One and 23-24 in League Two - with the equivalent number of teams that finished directly above them in the league - those ranked 15-17 in the EPL, 17-20 in the Championship, 17-20 in League One and 21-22 in League Two.

A one-way ANOVA was conducted to establish whether differences between leagues in the competitiveness for the title, promotion and survival were statistically significant. Post hoc tests were also undertaken for statistically significant differences.

6. Results

6.1. Overall competitive balance

Table 3 presents the HICB scores for the English EPL and the three divisions of the Football League in England in each completed season between 1992/93 and 2015/16. With the passage of time (where 1 = 1992/93 and 24 = 2015/16), there has been a moderately strong and statistically significant decline in competitive balance in the EPL ($r = 0.63$, $p < 0.001$). The relationship between time (season) and competitive balance in the Football League is modest in comparison, with the Pearson correlation coefficients ranging between -0.08 (League Two) to 0.27 (the Championship), and also statistically insignificant in each instance ($p > 0.05$). In other words, there is no discernible trend in how competitive balance has changed in the Football League over the 24 seasons under consideration.

<Table 3 about here>

The range of the HICB score for each league is plotted in Figure 1, which reveals three key points. First, there appears to be greater variation in competitive balance in the EPL (with a 10% differential between the most competitive and least competitive scores) compared with the Football League (where the corresponding differential is less than 5%). Second, looking across the three divisions of the Football League there are only marginal variations in the best, worst and average (mean) HICB scores between these leagues. Third, the least balanced season in each division of the Football league has an HICB score of 107, but this score is still below the average (mean) HICB score for the EPL (109).

<Figure 1 about here>

What this data indicates is that competition in the top tier of English football is generally lower than in the Football League and that the three divisions of Football league have broadly similar levels of competitive balance. This assertion was tested statistically using one-way ANOVA and post-hoc tests. HICB scores for each league were normally distributed as determined by Shaprio-Wilks test ($p > 0.05$) and no outliers were detected from inspection of boxplots. The homogeneity of variances assumption was violated, as assessed by Levene's Test of Homogeneity of Variances ($p = 0.002$), so a Welch F test was conducted. HICB score was found to be statistically different between the leagues (*Welch's F* (3, 50) = 15.935, $p < 0.001$). A Games-Howell post-hoc test revealed that the HICB scores for all Football League divisions were statistically significantly lower in comparison with the EPL ($p < 0.001$). There were no statistically significant differences in HICB scores between the Championship and League One ($p = 0.680$), between the Championship and League Two ($p = 0.897$) and between League One and League Two ($p = 0.228$). These results validate the previous assertion about the level of competitive balance in the four leagues.

6.2. Competition for the title

For each season and league between 2002/03 and 2015/16, Table 4 shows the difference in the points achieved by the team that won the league title and the average number of points achieved by the teams that finished in second, third and fourth place. This difference is expressed on a 'points per match' basis to facilitate a better comparison between the EPL and the Football League. Each team in the EPL contests 38 matches whereas those in the Football League divisions contest 46 matches. Lower gap scores in Table 4 indicate better competition for the title.

<Table 4 about here>

There was a statistically significant difference between leagues as determined by a one-way ANOVA ($F(3,52) = 5.678$, $p = 0.002$). A Tukey HSD test revealed that the mean gap score was statistically significantly lower in the case of League Two (0.16, $p < 0.001$) compared to the EPL (0.32). No statistically significant differences in the mean gap scores were detected in the Football League ($p > 0.05$) between the Championship (0.23), League One (0.22) and League Two (0.16).

6.3. Competition for promotion

The promotion criterion applies to the Football League only. Table 5 shows the gap between the average points per match achieved by teams being either promoted directly in each league (two each in the Championship and League One and three in League Two) or finishing in play-off positions (four teams in each league) between 2002/03 and 2015/16 and the average points per match achieved by the equivalent number of teams finishing immediately outside

the play-off positions (six each in the Championship and League One and seven in League Two).

A one-way ANOVA did not reveal any statistically significant differences between the mean gap scores for the Championship (0.34), League One (0.37) and League Two (0.35) ($F(2,39) = 0.680$, $p = 0.513$).

<Table 5 about here>

6.4. Competition for survival

Table 6 shows the absolute gap between the average points per match achieved by teams being relegated from each league (three in the EPL, four each in the Championship and League One and two in League Two) between 2002/03 and 2015/16 and the average points per match achieved by the equivalent number of teams finishing immediately above the relegation zone.

<Table 6 about here>

There was statistically significant difference in the mean gap scores between the leagues (*Welch's F* (3, 28) = 5.541, p = 0.004). A Games-Howell post-hoc test revealed that the mean gap score for League Two (0.14) was statistically significantly lower (indicating better competitive balance) in comparison with the EPL (0.22) (p = 0.039) and the Championship (0.21) (p = 0.004). There were no statistically significant differences in the mean gap scores between the EPL (0.22), the Championship (0.21) and League One (0.18) ($p > 0.05$), and between League One (0.18) and League Two (0.14) (p = 0.103).

7. Discussion

Our results indicate a trend of declining overall competitive balance in the EPL over the 24 seasons since 1992/93. In the context of the recent increase in broadcasting rights deals cited in the introduction, this decline in competitive balance appears to contradict the notion that increasingly imbalanced sport competitions have the potential to negatively influence stadium attendance and TV viewership figures (Pawlowski, 2013). Indeed, EPL stadium capacity utilisation currently stands at 96% (Deloitte, 2015) and the latest TV deal increased in value by 60% for the UK rights alone. On this evidence, there is nothing to suggest that a decline in competitive balance of the EPL is having an adverse effect on fan interest.

It has been suggested that changes in competitive balance in domestic football leagues are related to the increased value of pay-outs from Pan-European competitions (Pawlowski *et al*, 2010). There is a further argument that the apparent decline in competitive balance over time in the case of the EPL might also be explained by the increase in takeover of club ownership by foreign investors, many of whom are willing to invest sizeable sums of money on player acquisition in an attempt to enhance sporting performance (Ramchandani, 2012). Obvious examples in recent years include Chelsea in 2003 and Manchester City in 2008, whose owners were able to invest heavily in the team prior to the introduction of Financial Fair Play regulations. Both these viewpoints appear logical given our analysis that shows the EPL is significantly less balanced than the Football League.

There is a considerable financial gap (in revenue terms) between the EPL and the Football League. The collective revenue of EPL clubs is £3.3bn whilst the total revenue of the Football League is substantially lower (Championship = £491m, League One = £148m, League Two = £78m). This means that in the context of the English football industry, the EPL (tier 1) clubs, in absolute revenue terms, earn nearly seven times the revenues of

Championship (tier 2) clubs, 22 times the revenue of League One (tier 3) clubs and almost 42 times the revenues of League Two (tier 4) clubs. Furthermore, the Championship figure is skewed slightly as it includes some clubs in receipt of parachute payments from the EPL. The revenue gap is further enhanced when considering the difference between the highest and lowest revenue generating clubs within the leagues. For example, taking the most recent figures available from 2014, the highest revenue generating club in the EPL was Manchester United with £433m compared to the lowest revenue generating club Cardiff City (£83m). This reflects an absolute financial gap in revenue terms of £350m. In contrast the highest earning club in the Championship in 2014 was Wigan Athletic (£39m) compared to the lowest revenue generating club Yeovil Town (£8m). This gives an absolute revenue gap in the Championship of £31m - significantly less than the £350m gap in the EPL which could partially help to explain the relative difference in competitive balance between leagues.

In the context of these figures, perhaps a significant difference in competitive balance between leagues might be expected. However, there are no significant differences in the overall level of competition observed between the three leagues that make up the Football League, despite there being a substantial absolute revenue gap between them. This arguably underlines the strength of the Football League in England relative to other European football league systems such as Germany, Italy, Holland and Spain where there has been a decline in competitive balance in recent years (e.g. Goossens, 2006; Groot, 2008; Montes, Sala-Garrido and Usai, 2014). It also demonstrates to the English Football League authorities that their leagues have similar levels of competition overall and that there are no immediate concerns regarding their structure and format.

A study by Plumley *et al.* (2017) found that football club performance, in relation to a mixture of financial and sporting factors, varies over time in cycles. It is highly probable that teams relegated from the EPL sometimes suffer consecutive relegations and end up competing in League One (e.g. Blackpool FC, Portsmouth FC, Wigan Athletic and Wolverhampton Wanderers in recent seasons). These teams would be more likely to be stronger in these leagues in terms of playing talent compared to other teams given that they would still be in receipt of parachute payments. For example, following relegation from the EPL in 2011/12 Wolverhampton Wanderers received a parachute payment of £19m when competing in League One in 2013/14 (following consecutive relegations). This figure is higher than the average revenue per club in League One for the same season (£6.1m). Very rarely do these teams drop into League Two and, vice versa, very rarely do teams from League Two get promoted beyond League One. As such, the competition for the title, promotion and survival in League Two could be conceivably contested by a more equal standard of team each season.

8. Conclusion

Our research has provided a novel insight into the nature of competitive balance within and between the four football leagues in England. It is the EPL that stands out as the least balanced league in English football. The recommendation for the EPL then is to consider how factors such as Pan-European competition revenues, ownership funding and facility fees from broadcasting deals may be affecting the competitive balance of the league itself. We have already seen the introduction of Financial Fair Play in an attempt to curb overspending on players through ownership injections, but the EPL may wish to consider a more equitable distribution of the broadcasting payments they receive and analyse how Pan-European competition revenues may be further affecting the competitive balance of the league. A bolder suggestion would be for the EPL to propose a more unequal distribution of

broadcasting revenues, perhaps mirroring the NFL in America where the bottom teams actually get more revenue than those at the top. However, in response to the question posed by Pawlowski (2013) about how unbalanced a football league has to be before it matters to fans, it would appear that we have not yet reached a tipping point where fan interest in the EPL is becoming negatively influenced. For the Football League, it appears that the three divisions remain similarly balanced although there is a suggestion that further negotiations could be had with the EPL to argue for a more equal distribution of solidarity payments to close the absolute financial gap between the Football League and the EPL. Our research suggests that no fundamental change in format and structure of the Football League is warranted. Future research should focus specifically on the finances within the English game and in particular whether and how the parachute payments paid to clubs relegated from the EPL affect competitive balance in lower tiers of English football.

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Table 1: League sizes

League	Time Period	Teams
EPL	1992/93 - 1994/95	22
	1995/96 - 2015/16	20
Championship	1992/93 - 2015/16	24
League One	1992/93 - 2015/16	24
League Two	1992/93 - 1994/95	22
	1995/96 - 2015/16	24

Table 2: League structure

League	Time Period	Number of Teams		
		Direct Promotion	Play-off Position	Relegated
EPL	1992/93 - 1993/94	NA	NA	3
	1994/95	NA	NA	4
	1995/96 - 2015/16	NA	NA	3
Championship	1992/93 - 1993/94	2	4	3
	1994/95	1	4	4
	1995/96 - 2015/16	2	4	3
League One	1992/93- 2015/16	2	4	4
	1994/95	1	4	5
	1995/96 - 2015/16	2	4	4
League Two	1992/93	3	4	1
	1993/94 - 1995/96	3	4	0
	1996/97 - 2001/02	3	4	1
	2002/03 - 2015/16	3	4	2

Table 3: HICB scores for the EPL and Football League

Season	EPL	Football League		
		Championship	League One	League Two
1992-93	103.15	105.00	106.42	105.66
1993-94	107.13	103.22	105.66	103.79
1994-95	107.85	103.07	107.29	107.21
1995-96	108.05	102.35	105.12	105.39
1996-97	105.17	104.03	104.22	103.39
1997-98	105.38	106.13	103.14	106.33
1998-99	107.09	106.56	105.44	102.79
1999-00	108.93	106.17	107.01	104.87
2000-01	106.87	106.40	106.43	104.70
2001-02	109.80	106.27	105.66	106.32
2002-03	108.09	105.20	106.32	103.88
2003-04	108.22	105.19	104.50	104.72
2004-05	110.45	105.36	105.35	103.94
2005-06	111.65	106.59	102.61	103.27
2006-07	108.79	104.44	104.68	104.85
2007-08	113.68	102.82	105.11	106.31
2008-09	111.62	104.20	106.44	104.43
2009-10	111.48	105.55	107.16	104.62
2010-11	105.86	104.48	105.06	103.66
2011-12	110.54	104.92	107.25	105.80
2012-13	111.33	102.39	104.11	102.53
2013-14	112.52	106.84	106.69	102.94
2014-15	109.27	107.23	104.91	105.58
2015-16	108.49	106.68	105.16	107.26

Table 4: Competition for the title

Season	Premier League	Football League		
		Championship	League 1	League 2
2002-03	0.31	0.31	0.35	0.13
2003-04	0.49	0.31	0.20	0.19
2004-05	0.56	0.25	0.39	0.08
2005-06	0.36	0.49	0.13	0.12
2006-07	0.42	0.13	0.17	0.07
2007-08	0.15	0.11	0.25	0.21
2008-09	0.25	0.22	0.20	0.14
2009-10	0.25	0.43	0.22	0.30
2010-11	0.26	0.14	0.20	0.13
2011-12	0.34	0.12	0.28	0.17
2012-13	0.36	0.22	0.09	0.12
2013-14	0.11	0.35	0.31	0.10
2014-15	0.32	0.07	0.28	0.17
2015-16	0.32	0.13	0.08	0.30

Table 5: Competition for promotion

Season	**Football League**		
	Championship	**League One**	**League Two**
2002-03	0.38	0.47	0.32
2003-04	0.24	0.29	0.42
2004-05	0.36	0.28	0.29
2005-06	0.50	0.23	0.36
2006-07	0.24	0.36	0.35
2007-08	0.19	0.38	0.47
2008-09	0.32	0.40	0.21
2009-10	0.41	0.40	0.27
2010-11	0.30	0.40	0.27
2011-12	0.33	0.49	0.39
2012-13	0.27	0.23	0.30
2013-14	0.37	0.57	0.37
2014-15	0.36	0.43	0.43
2015-16	0.43	0.29	0.39

Table 6: Competition for survival

Season	Premier League	Football League		
		Championship	League One	League Two
2002-03	0.43	0.16	0.17	0.10
2003-04	0.22	0.29	0.17	0.11
2004-05	0.15	0.22	0.26	0.16
2005-06	0.39	0.23	0.10	0.11
2006-07	0.16	0.25	0.17	0.18
2007-08	0.26	0.18	0.11	0.14
2008-09	0.12	0.19	0.23	0.12
2009-10	0.18	0.27	0.23	0.24
2010-11	0.12	0.14	0.14	0.14
2011-12	0.23	0.22	0.22	0.12
2012-13	0.28	0.17	0.21	0.04
2013-14	0.14	0.13	0.21	0.09
2014-15	0.15	0.27	0.13	0.14
2015-16	0.31	0.30	0.23	0.23

Figure 1: Best, worst and average HICB by league