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The UEFA Champions League: maintaining the status quo?

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Introduction

Both UEFA European competitions (the Champions League and Europa League) are lucrative revenue streams for association member clubs. However, the prize money distributed within each competition is currently inequitable. UEFA distributed a total of €904.6m in prize money to all clubs that competed in the Champions League for the latest set of figures available (2013/14). The winners of this competition, Real Madrid, earned the most in prize money (€57.4m) with the runners up, Atletico Madrid, receiving €50m. It must also be noted that the money allocated is not always equal among all the clubs. UEFA distribute a certain amount of prize money based on a share they define as the 'market pool'. In this case, prize money from the market pool is distributed according to the proportional value of the national TV market each individual team represented, among other factors, meaning that the amounts distributed varied from country (or national association) to country. Indeed, in 2013/14 quarter-finalists Paris St. Germain actually earned more in prize money (€54.4m) than the runners-up Atletico Madrid. The caveat in the distribution to Paris Saint-Germain is that the payment is currently being withheld due to non-compliance with UEFA Financial Fair Play (FFP) regulations.

By contrast, the winners of the Europa League in 2013/14 (Sevilla) earned €14.6m in prize money whilst the runners up (Benfica) earned €5.3m. This is over €50m less than Real Madrid received for winning the Champions League. Differences such as this will make a substantial difference to the revenue of a club and clubs that consistently qualify for the Champions League are better placed to receive higher amounts of prize money than clubs that compete in the Europa League or clubs that do not compete in European competition at all. The differences in prize money between the Champions League and Europa League could lead to a maintaining of the status quo, particularly in the Champions League, whereby the clubs that progress in the Champions League gain more revenue, buy better players, finish in a higher position in their respective domestic leagues and gain more UEFA co-efficient points, thus enabling them a favourable draw in the group stages. This scenario has implications for competitive balance; a focal economic theory surrounding professional team sports. Thus, the aim of this paper is to examine the competitive balance of the UEFA Champions League group stages. By doing so, this study contributes to the literature on this topic by examining the competitive balance of a major sport competition that has received no research attention to date. As Montes et al. (2014) note a major problem with analysing

competitive balance is that there is no precise definition of it. Defining this concept requires quantification of the extent of its absence when it exists (Montes et al., 2014). For clarification this paper defines competitive balance in line with Downward, Dawson and Dejonghe (2009) as the absence of dominant teams(s) monopolising any given sports league in which they compete in.

Football finance analysts Deloitte (2013) state that participation in European competitions allows clubs to grow revenues from match day receipts and television broadcasting deals, which expands the commercial profile of the club. However, Pawlowski, Breuer and Hovemann (2010) argued that the modification of the UEFA Champions League pay-out system has led to a decrease in competitive balance in the top five European leagues (England, France, Germany, Italy and Spain). This suggestion is concerning given the importance for UEFA to maintain competitive balance within the major European football leagues. Thus, analysing the competitive balance of the structure of UEFA's flagship European competition appears warranted. The UEFA co-efficient ranking system for both member clubs and countries dictates the seeding system for both the Champions League and the Europa League. Currently, the system ranks both member clubs and countries in relation to their performance during the last five years. Whilst this is a consistent approach, there is a suggestion that this is not the fairest method of ranking and that the resultant effect is a decrease in competitive balance in the group and knockout stages of the UEFA Champions League. For example, despite winning the English Premier League in the 2011/12 season, due to their low UEFA co-efficient score Manchester City FC were placed in a Champions League group with three other domestic league champions (Borussia Dortmund, Ajax and Real Madrid). This could be considered unfair as ideally a seeding system would benefit the best performing teams at that particular time. For example, taking the 2011/12 season into account, Manchester City could have been rewarded for winning the English Premier League by being placed in a Champions League group with three clubs that did not finish in the top two in their respective leagues. In comparison, Manchester United, another English club who won the English Premier League in 2012/13 were placed in a Champions League group the following season with Bayer Leverkusen (3rd in Bundesliga), Shakhtar Donestk (1st in Ukrainian Super League) and Real Sociedad (4th in La Liga). Thus, there are questions surrounding the fairness of the current UEFA co-efficient ranking system and whether the system could be more focused on clubs short term performance when seeding the competition.

The Economic Theory of Professional Team Sports

A number of sports economics theorists listed in this section state that the perfect game is a symbiotic contest between equally matched opponents. The practical economic problem is that professional sports 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.

Principally, professional team sports are heavily linked to the concepts of uncertainty of outcome, competitive balance and profit and utility maximisation (e.g. Buraimo, Frick and Hickfang and Simmons, 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 impinge 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, American sports 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.

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 latter 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 sports model is more closely related to utility or 'win' maximisation (see Sloane, 1971; Kesenne, 2000; Garcia-del-Barro and Szymanski, 2006). It must also be noted that very few markets can be classified as perfectly competitive or as a pure monopoly (see 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 UEFA Champions League 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 sports 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 concept of competitive balance is also closed linked to the economic theory of uncertainty of outcome. Ideally, for there to be uncertainty of outcome, competition is required to be close to equal (i.e. either team in any one match has an equal chance of winning that match). Uncertainty of outcome not only relates to how one sided a match is predicted to be; it can also have a significant effect on gate attendance and, more broadly, television viewing figures. For example, as the probability of either team winning approaches one, it is possible that gate receipts may fall substantially. Morrow (2003) believed this to be

a significant problem for the football industry stating that if viewers perceive games as one-sided then viewing figures may fall accordingly.

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 sports 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 (Dobson and Goddard, 2011).

Previous Research on Competitive Balance

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). Previous research examining competitive balance in football has almost exclusively focused on the so called 'big five leagues' (England, France, Germany, Italy and Spain) with little attention 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 to the authors knowledge, no research to date, has examined

the competitive balance of the UEFA Champions League group stages. By doing so, this study contributes to the literature on this topic by examining the competitive balance of a major sport competition that has never previously been researched and offering suggestions to possibly improve the competitive balance within the flagship competition in European football. In alignment with previous research (e.g., Groot, 2008), it was hypothesised that the competition would see a decline in competitive balance. It was also hypothesised that clubs seeded in the higher pots would accumulate more points and finish higher in the group stages of the competition.

Methodology

When conducting competitive balance research in professional team sports (see Williams, 2012), there are normally two main approaches (as also summarised by Booth, 2005); within-season competitive balance and between-season competitive balance. Measures of within-season competitive balance tend to include measures such as the Actual Standard Deviation/Idealised Standard Deviation ratio (ASD/ISD). This ratio compares the observed ('actual') standard deviation of win percentage distributions (ASD) in relation to an idealised equivalent (ISD) where each team is of equal strength and the probability of winning any given match is 0.5. This is represented by the equation ASD/ISD = $(0.5)/\sqrt{N}$, where N is the number of fixtures each team plays in a season. Increases in competitive balance are reflected in lower ASD/ISD ratios. This index has been used to examine within-season competitive balance in extant research (e.g., Williams, 2012).

For between-season competitive balance two indices of note are the Herfindahl-Hirschman Index (HHI) and the Competitive Balance Ratio (CBR). The HHI is the sum of the squares of the points share for each club contesting a league in a given season. Higher values refer to greater concentration, less competition, and more league control held by individual clubs. This index has been used to examine between-season competitive balance in extant research (e.g., Ramchandani, 2012; Pawlowski et al., 2010). The CBR is a comprehensive measure that captures two important competitive balance components (standard deviation of team points and standard deviation of league points) and is derived as the average standard deviation of team points to the average standard deviation of league points (Humphreys, 2002).

When considering these indices for this study, it became clear that some may not be best suited to examine the format of the UEFA Champions League group stage. In particular, the ASD/ISD ratio is more useful when considering a larger league made up of more clubs that is comparable over time. The UEFA Champions League group stages are decided through seeding positions and then a random draw meaning that no one season can ever be considered to be comprised of the same clubs playing against each other at the same time. As such, the ASD/ISD ratio was discarded as a method of analysis. Similarly, owing to the fact that each group only contains 4 teams playing 6 matches each, the CBR was also excluded from the analysis as the points totals would be considerably less than would be the case in a full league season in a domestic European competition. For these same reasons, other measures of competitive balance such as the top 25% concentration ratio (C25%) and the top 50% concentration ratio (C50%) would not be suitable for the analysis. Subsequently, the HHI was used to examine the differences in the competitive balance of the group stages between-seasons before further statistical tests were carried out to account for the influence of the seeding system on subsequent performance.

Data Analysis

Data was collected for all UEFA Champions League group stages since the number of clubs participating increased to 32 in the 1999/2000 season up until 2013/2014, providing 15 years of data. The data collected included seeding, points accumulated and final position in the group stages of the competition for all clubs in each of the 15 years studied. To examine hypothesis 1 Herfindahl-Hirschman Index (HHI) was employed to examine the competitive balance of the eight groups of the UEFA Champions League group stages. The average HHI for each season was used to examine competitive balance over the 15 seasons.

Hypothesis 2 was examined using one way ANOVAs with Welch correction for each independent variable. Post-hoc tests with Scheffé correction were employed to follow up significant ANOVA effects. For all analyses α was set at .05.

Results

The results for the HHI for the UEFA Champions league demonstrate that whilst the scores for each season fall into the concentrated range of business market share, the gradual increase in HHI for the group stages of the competition appears to have become more imbalanced (see figure 1).
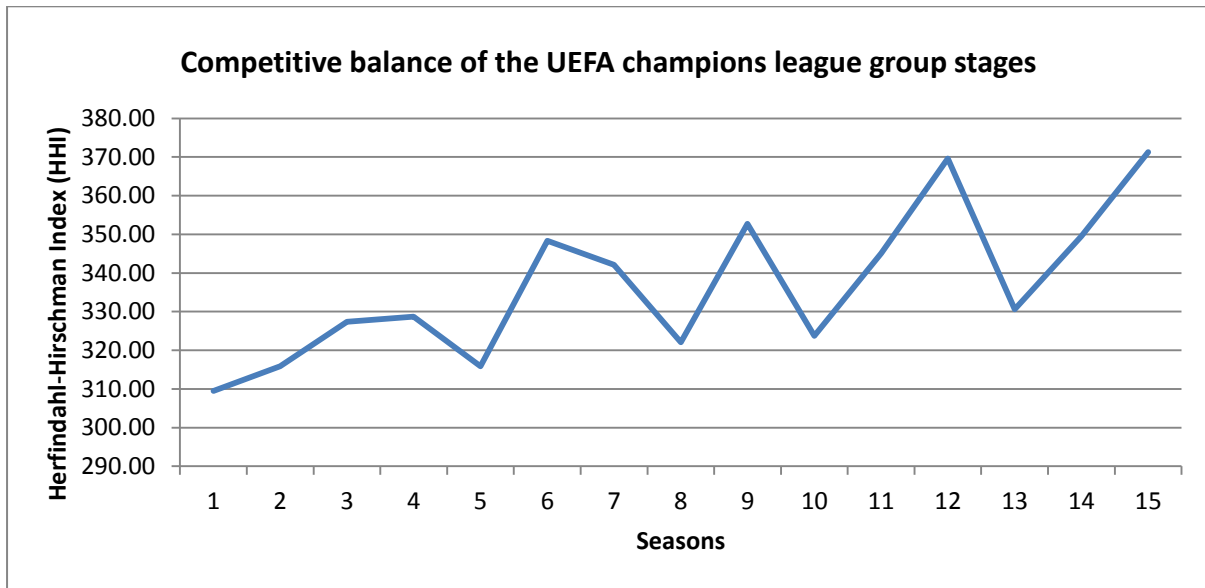
Figure 1: Competitive balance of UEFA Champions League group stages for seasons 1999-2000 to 2013/14 (Average)

Table 1: Means and standard deviation of points accumulated and finishing position in the group stages of the UEFA Champions League

Seeding pot	Points	Finish
Pot 1	11.27	1.66
	(3.02)	(.89)
Pot 2	9.17	2.27
	(3.57)	(1.02)
Pot 3	6.95	2.88
	(3.38)	(1.00)
Pot 4	5.73	3.19
	(3.45)	(.90)

N.B. Standard deviation scores are presented in brackets in table 1.

Table 1 demonstrates that the teams in the higher seeded pots accumulate more points and a better finishing position in the group stages than those teams seeded in the lower pots. Analysis of the points accumulated and final position that clubs finished in the group stages of the UEFA Champions League revealed significant main effects ($F(3, 476) = 63.76$, $p < .01$; $F(3, 476) = 60.98$, $p < .01$). Follow up comparison of points accumulated revealed that

the clubs who are seeded in pot 1 accumulate more points per match than those seeded in pot 2, 3 and 4 (p < .01). Clubs in pot 2 also accumulated more points than those in pots 3 and 4 (p < .01) and clubs in pot 3 accumulated more points compared with pot 4 (p < .05).

In relation to the final position football clubs finished in the group stages of the UEFA Champions League, the clubs in pot 1 finished higher than those in pot 2, 3 and 4 (p < .01) and clubs in pot 2 finished higher than those in pots 3 and 4 (p < .01). There was no difference in final position between clubs seeded in pots 3 and 4 (p > .05).

Discussion

This current study aimed to examine the competitive balance of the UEFA Champions League group stages and by doing so the results suggest that the competition is imbalanced. Using the HHI findings representing the competitive balance of each group for each season, the data demonstrated that the 15 seasons have fallen into the concentrated range of business market share suggested as a means of identifying competitive balance. Additionally, over the fifteen seasons where the competition has been comprised of eight groups in the initial stages of the competition, the findings suggest this element is becoming more imbalanced. The findings of this study are in line with previous research in the area considering the 'big five' domestic leagues in European football (e.g., Goossens, 2006: English and Italian first divisions; Groot, 2008: English, German, Italian and Dutch first divisions; Montes et al., 2014: Spanish first division) which demonstrated a decline in competitive balance.

The findings also contrast with the theoretical framework put forward in the literature review in relation to the nature and production of professional team sports. The economic theory of professional team sports argues that it is not in the best interest of professional sports teams (from a spectator viewpoint) to form a monopoly and limit competition as this may cause spectator interest to decrease (e.g. Dobson and Goddard, 2011). The findings of this study contrast this theory somewhat in the sense that over a sustained period of time it appears that a number of clubs have been able to monopolise competition in the group stages of the Champions League.

Whilst the current means of competitive balance provides a descriptive indication rather than a statistical analysis, the current study analysed performance by the means of points accumulated and final finishing position in the group stages of the competition. This analysis

demonstrated that this element of the competition is imbalanced and provides the teams selected from the stronger pots to accumulate more points and finish higher in the group stages than teams selected into the lower pots (seeding). This consequently leads to these teams having a greater chance of qualifying from the group stages for the next round of the competition and receiving the rewards and accolades that accompany this success. For example, according to UEFA's prize money distribution to clubs in 2013/14, progression to the round of 16 knock-out matches is worth a guaranteed €3.5m in revenue. In relation to competitive balance research, the study extends the field by considering statistical tests that specifically demonstrate that seeding impacts on the points obtained by each club and their respective finishing position in the group. Furthermore, to the authors' knowledge, no previous research has examined the UEFA Champions League competition in this way.

There have been critics of UEFA's seeding system in the past, some of which have been put forward most recently by Bevan (2013) who argued that the system UEFA used to rank and then seed clubs is likely to preserve the status quo in the top seeds maintaining their high ranking. Bevan (2013) also notes that there is an omission of weighting to favour the most recent season from the seeding system, and thus, the system subsequently reflects long-term consistency rather than rewarding recent excellence. Furthermore, although domestic results are not part of the calculation, the national coefficient also counts towards each team's total benefiting clubs from a country with a stronger record in Europe.

This subsequently means that newly qualified clubs are immediately hindered by their low seeding and consequently are less likely to progress in the following Champions League season. Additionally, due to the lower likelihood of qualifying past the group stages as they will face stronger teams, such clubs will also find it difficult to improve their UEFA coefficient thus completing a vicious circle A prime example of this is Manchester City FC who have won their domestic league twice in the last three seasons (2011/12 and 2013/14) and qualified for the group stages every year for the last 4 years (inclusive of the 2014/15 season). Despite representing the strongest team in their domestic league on the two occasions where they were crowned the champions of the English Premier League, their seeding is lower than other English teams who have finished lower in the league but remain in the elite eight seeded clubs of the competition. The current study findings which demonstrate that teams in the stronger pot have a greater chance of qualifying past the group stages suggest that because of Manchester City FC's UEFA seeding, they will face tougher

competition to qualify to past the group stages and that ultimately they are less likely to progress than other teams despite being stronger than other clubs from their domestic competition based on recent short-term performance.

A more extreme example of perceived unfairness in relation to the seeding system is Celtic FC. The system is heavily weighted in favour of teams from stronger nations, with each club receiving a fixed percentage (20% of their nation's overall coefficient to add to their own). The top three countries (currently Spain, England and Germany in the 2014/15 rankings) have four teams in the Champions League. As such, Scotland's nation ranking of 24th makes it increasingly difficult for Celtic to move up the club ranking system despite the club winning their domestic league for the last three seasons (2011/12-2013/14 inclusive). On the other side of the argument, the current ranking system benefits clubs such as Arsenal FC who remain in the top 10 of the ranking system (correct before the start of the 2014/15 competition), and subsequently the top seeding pot, despite not finishing higher than 3rd in their domestic league since 2005. Thus the current system used to calculate UEFA coefficients that are used to seed teams leads to not only an imbalanced group stages but also provide the top teams with a greater opportunity to remain at the top table of the European competition by continually qualifying past the group stages of the competition. Teams that qualify reap the financial and commercial rewards that come with reaching the latter stages of the competition.

To qualify for the strongest eight seeds of the competition, performance in UEFA competition for the past five seasons are calculated, thus it is extremely unlikely that teams will break into that elite group. The current study findings suggest five consecutive years of performing well in the competition are unlikely. Furthermore, attracting elite performers to a club who might be needed to break into the elite eight teams of the competition is also unlikely as: (1) players who are of that ilk would most likely be transferred to an elite club; (2) players generally do not stay at a club for a long enough period of time in today's game; and (3) because this is a large period of a football players career which again reduces the chances of the performer staying with the club. All of these elements act to not only prevent emerging teams breaking into the elite football clubs of UEFA Champions League competition, but also helps to maintain the high status of the elite teams.

Limitations

The current study only utilises one measure of competitive balance (HHI Index) whilst in previous research other indicators (e.g. CBR, concentration ratios) have also been employed. However, owing to the nature of the group stage format of the Champions League (i.e. only four teams per group) other measures of competitive balance were inappropriate. Furthermore, unlike previous research examining competitive balance, this study uses statistical analysis to support the findings of the HHI index scores.

Implications

Our data suggests that a more thorough method of examining competitive balance is required particularly for a competition such as the UEFA Champions League group stages which are comprised of smaller groups that effect seeding positions and a random draw. As such, many of the indices used to measure competitive balance in previous research studies were not considered as relevant for this study hence why further statistical tests were carried out to consider the implications of the seeding system on performance.

The study also has implications for UEFA and their competitions. Our data clearly suggests that teams seeded in higher pots finish higher in the group stages which means they continually progress to the more lucrative knock-out stages of the competition. There is an argument therefore, that a different approach to UEFA's seeding system is warranted, which rewards short-term performance more so that clubs gaining new successes in their domestic leagues are not hindered and that the status quo is not maintained owing to a five year ranking system. One option is to use a similar five year ranking system with weightings attached to each year. The largest weight would be attached to the most recent year with the weightings subsequently decreasing towards zero at the end of the fifth year. The weighting factors would then be multiplied by the points accumulated by each club through their performance in UEFA competitions (possibly both the Champions League and Europa League) to provide an overall score that rewards short-term performance more. An indicative example as to how this could work would be to award a weighting percentage of 75 percent for the most recent year (year 1) and then reduce the weightings to 60, 45, 30 and 15 percent for years 2-5.

Not only does the current system maintain the status quo of a number of clubs in the Champions League, it also keeps individual leagues (namely the 'big 5' of England, France, Germany, Italy and Spain) strong owing to the way that UEFA country co-efficient scores affect the individual club scores. Subsequently, these countries are awarded the largest

number of team places in the Champions League meaning that it becomes increasingly difficult for a club from outside of these countries (e.g., Celtic FC as discussed previously) to progress through the group stages. This argument has been offered previously (e.g., Pawloski et al., 2010) as well as in recent media commentary critiquing the seeding system (e.g., Bevan, 2013).

The current study findings should also be considered in relation to other UEFA competitions (e.g., the European Championships). The decision to expand the competition to 24 teams for the Euro 2016 competition as opposed to 16 in previous years has attracted criticism and the proposal is viewed to devalue the competition (e.g., Winter, 2014). Increasing the number of teams can be beneficial for competition but it can also have implications for competitive balance and thus UEFA should consider carefully any proposed changes to maintain the integrity of their flagship competition.

Conclusion

The current study clearly demonstrates that the method used to form the UEFA Champions League group stages is flawed as it is not competitively balanced. Consequently, this allows the top-ranked teams to remain in the highest seeding pot and thus maintaining their status by providing these clubs with a better chance of qualification to the knock-out stages and a subsequent increase in prize money and global exposure. Very recently, (August, 2014) UEFA have proposed a new seeding system that would take affect from the 2015/2016 Champions League campaign. Although this is yet to be approved, the impact it may have on competitive balance is unknown. However, on the basis of the current study's findings, and the fact that a new seeding system is yet to be implemented, it is clear that there remains work to be done in order to improve competitive balance in the UEFA Champions League.

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