The Governance of UEFA Competitions and its Consequences for Competitive Balance in National Leagues

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July 20, 2026

Keywords :Competitive balance, Sports Governance,

JEL Classification : K21, L12, L44

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Abstract

In this paper, we consider the evolution of UEFA-sponsored competitions for the last 25 years. We find that because of the use of the "league coefficient" in granting direct access to clubs from the highest-ranking leagues, access to the Champions league (CL) has had a strong self-reinforcing element so that participation in one year increases the likelihood of participation in subsequent years. We also find that the scope of direct access has been enlarged over time. In addition, we observe that the distribution of prize money in part as a function of the size of the media market in the countries from which recipients originate, increases the likelihood that clubs originating from the more valuable markets will participate again in the future. Besides, since the 2018-2019 season, the distribution of 30% of the overall prize money is determined by UEFA coefficient points accumulated over the previous 10 years. This introduces another self-reinforcing element to the extent that clubs that have accumulated points through previous participation obtain larger payments (than those that have fared worse in the previous 10 years whatever the stage of the competition that they reach) and hence, are more likely to participate in the future. These factors are likely to explain the increased entrenchment of participants that we observe in the CL. The emergence of a relatively narrow group of repeat participants in the CL also appears to contribute to the deterioration of competitive balance that we observe in national competitions (in particular in the top 5 leagues, namely England, Spain, Germany, Italy and France) as the outcome of confrontations between these clubs and other participants in national leagues becomes highly predictable. Overall, UEFA's governance of European competition challenges the value and maintenance of competitive balance in national competitions.

1. Introduction

The objective of this paper is to discuss the evolution of the governance of UEFA competitions and its consequences for competitive balance in top European football leagues. Our main finding is that UEFA's rules for access to European competitions and distribution of prize money is likely to have contributed to the deterioration of competitive balance that is observed in particular in the top 5 European leagues (England, Spain, Germany, Italy and France), from which participants in UEFA-sponsored competitions more frequently originate.

This analysis is motivated by the on-going debate about the organization of European competitions. UEFA has so far maintained a monopoly in the organization of European competitions[1] but has been challenged by a set of large clubs considering the organization of the "Superleague". This challenge reflected the dissatisfaction of some large clubs with the organization of the Champion's League and presumably the conditions under which they had access to the competition and the financial rewards that they obtained[2]. At the same time, a number of smaller clubs[3], have voiced opposite concerns about the influence that large clubs exercise over the governance of UEFA, so that UEFA decisions favor their interests and neglect those of smaller clubs. An analysis of how UEFA's governance affects the participation in its competition but also the national competition is thus timely.

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[1] By virtue of Articles 49-51bis of the UEFA Statutes (https://documents.uefa.com/v/u/07zyuoc_69TV_sHbFYvA2w), UEFA enjoys the exclusive right (monopoly) of organizing pan-European competitions, enact the regulations governing these competitions, sanction any alliance relating to the organization of its competitions, and it also condones the principle of "promotion-relegation" that permeates national leagues.

[2] The response by UEFA was challenged in Court. The Court of Justice of the European Union (CJEU) found that the absence of a clear procedure to authorize competition at UEFA involved an infringement of Art 101 and 102 of the TFEU (C-333/21). Recently, the main instigator of the litigation (Real Madrid) and UEFA seem to have reached an agreement which should set aside for now at least the potential for an alternative to CL competition, even though the official published statement in the UEFA webpage is quite cryptic, https://www.uefa.com/news-media/news/02a2-1fe67db7329b-3f7c137893d7-1000--uefa-european-football-clubs-and-real-madrid-cf-reach-agr/

[3] See for instance, https://www.ueceurope.org/strategy

The strength of teams is partly determined by the resources that clubs have access to. As a result, when some clubs have more opportunities to monetize the confrontations in which they participate, there is a tendency for competitions to become unbalanced. Clubs having access to greater revenues have the ability and incentive to acquire more talents leading to a configuration in which clubs with fewer monetization opportunities have a lower probability to prevail in a confrontation.

The opportunities to participate in European competitions, and the revenues accruing from this participation through prize money, affect clubs' ability and incentives to hire talent and thus to compete, not only in European competitions, but also in their national leagues. When best performing clubs in national competitions have a privileged access to a European competition, a dynamics can develop, such that some teams from national leagues have repeated access to European competitions and end up dominating their national leagues, thereby leading to competitive imbalance.

This paper provides evidence showing that such a dynamics has developed in the last 25 years, in particular regarding the top five leagues[4].

We first consider the rules for access to European competitions and in particular the Champions League (CL). Direct access to the group stage of the CL is granted to clubs with the highest "league coefficient". This coefficient is in turn reflecting the presence and performance of teams belonging to a specific national league in UEFA competitions during the previous five years. As a consequence, teams that had access to the CL in any given year have a better chance to have access to the CL in the future as well. The rule thus induces entrenchment in the participation of clubs. By tracing out the evolution of the access rules over time, we find

[4] Peeters (2011) provides evidence consistent with our hypothesis. Using a panel of 32 leagues over 10 years, he finds that competitive balance is negatively affected by the number of clubs that participate in European competitions. Basini et al (2023) also find that the deterioration of competitive balance in the English Premier League can be traced to a greater segmentation of clubs in terms of strengths (so that a segment of very strong clubs in relation to the rest has developed over time).

that UEFA has increased the scope of direct access over time and has thus reinforced the potential for entrenchment.

Second, we consider the distribution of prize money. Up until 2018, the prize money was allocated (in addition to a fixed payment) according to the "sporting performance" of the clubs (the matches won/drawn and the stage that the clubs reached in the competition) and the "market pool". The market pool involves a fixed sum allocated across markets according to the value of TV rights for European competition (with the amount granted to any given country divided between clubs from that country having reached the group stage). As of 2018, one factor was added, the "performance pillar", accounting for 30% of the overall amount distributed. The distribution across clubs in that pillar is related to their relative club coefficient (reflecting their performance in the previous 10 years). The last regulatory reform in 2024 combines the market pool with the performance component into a single component, the value pillar.

These schemes feature three self-reinforcing elements. The prize money is a function of the league in which clubs play (through the market pool), with clubs playing in more lucrative markets obtaining larger payments. This increases the likelihood that clubs from markets with more valuable media rights will continue participating. Second, the performance component grants larger payments to clubs that have done well in the previous 10 years in European competition. As a consequence, clubs that have participated in the past obtain more money and thus are more likely to participate in the future.

The distribution of prize money across teams according to their performance will also affect the magnitude of entrenchment. If, for instance, clubs that reach the last stage of the competition obtain very large remuneration (in relation to those eliminated earlier), their ability to access the competition and reach the final stage in future years will be enhanced.

Third, we gather evidence on the magnitude of entrenchment in the participation of UEFA competition and in particular the CL. To this effect, we develop a new measure of entrenchment, the "entrenchment gap". This measure benchmarks the actual distribution of the frequency of participation of clubs in a given stage of a competition and for any given time window with the distribution that would be observed if all clubs had participated with equal frequency. This measure can be seen as a "Gini coefficient" on the distribution of frequencies among teams. We find that according to this measure, there is a significant entrenchment. For instance, we find that whereas the 32 most frequent participants in the CL with an equal participation (among those that have participated) should account for about 25% of participation, but they actually account for 60% of the participation. In a similar vein, the 50 most frequent participants, which should account for 40% of participation with equal frequencies, account for roughly 80% of the participation. More importantly, we also find that entrenchment is becoming more severe over time.

We also consider an alternative measure of entrenchment, which captures the link between the frequency of participation in the group stage and the probability of reaching semi-finals. We find that the four most frequent participants in the group stage have a probability of reaching the semi-final which is four times as high as what would happen with a uniform probability among participants.

Fourth, we gather evidence on competitive balance at the level of national leagues. We use betting data to capture the uncertainty, measured by the level of entropy, at the level of individual matches and consider the distribution of entropy across all matches in the season. By considering the distribution of entropy across all matches, we can identify the protagonists involved in matches with predictable outcomes. We find that the distribution of entropy changes over time with a significant increase in the proportion of matches with predictable outcomes, in particular for the top 5 leagues. Using a standard non-parametric test, we can reject the hypothesis that the distribution of entropy is identical in the last years relative to the

first years of the sample. We also confirm that matches with low entropy predominantly involve the top clubs that are also the most frequent participants in the CL.

We also use a measure of the variance in results (win frequencies) obtained by teams, which under some assumptions, can be related to the variance of results (win frequencies) at the match level. This variance can in turn be benchmarked with the variance that would be observed in the most uneven league. This alternative measure confirms that competitive balance has deteriorated over time. Using standard tests, one can reject the hypothesis that the variance in outcome at the match level is the same in later years by comparison with the earlier years in particular for the top 5 leagues.

These findings about the evolution of competition balance across a long time period and 15 leagues confirm existing findings in the literature which are however typically less comprehensive and rely on other measures, which may be less well suited to capture to origin of the deterioration of competitive balance.

Overall, we find that competitive balance in national leagues has deteriorated over time and that it is the manifestation of the dominance of some clubs, which are regular participants in the European competitions. The governance of European competitions by UEFA is thus likely to affect competitive balance and thereby the quality and interest for competition in national leagues.

The paper is organized as follows. In section 2, we present the evolution of the governance of access to the three UEFA-sponsored competitions, namely, the Champions League, the Europa League and the Conference League, as well as the evolution of the distribution of the prize money from the season 2006 onwards. Section 3 assesses the participation of clubs in UEFA-sponsored competitions, and confirms the progressive entrenchment of clubs in those competitions. Section 4 considers comprehensive evidence on the evolution of competitive balance in national competitions and observes a deterioration of competition balance that can

be traced to dominance of a small number of clubs in those competitions. Section 5 concludes.

2. Governance Regarding Access to European Competition and Distribution of Prize Money

This section considers evidence on the rules of access to European competition and the distribution of the prize money.

2.1. Access to the European Competitions

We first consider the rules regarding access to the various European competitions, and subsequently discuss the distribution of prize money.

2.1.1. Champions League

Since the season 1999-2000 (and up until 2024/2025), the Champions League is organized around a competition between 32 clubs.[5] We consider access rules and the organization of the group stage.

2.2.1.1. Access rules

Clubs can either obtain direct access to the competition or gain access through a prior qualification stage. The ranking of leagues plays an important role in the operation of the system. UEFA has a ranking of clubs in which the number of points of a club is determined by its results in the UEFA Champions League, UEFA Europa League and the UEFA Conference League games over the previous five seasons[6]. The ranking of leagues reflects the rankings of clubs playing in them.

[5] We provide a detailed discussion and breakdown of the competitions in Appendix 1.
[6] Annex D of the official UEFA Champions League regulations. See Appendix 1 for details.

According to UEFA rules, direct access is granted to clubs (champions or clubs with a high ranking) coming from the leagues with the highest ranking. Since the ranking of leagues is itself based on the number of points obtained in UEFA-sponsored competitions in previous years, the system has a self-reinforcing element: leagues with better access today are more likely to accumulate points and hence are likely to have better access, and better opportunities to accumulate additional points, in the future and thereby maintain their position. The system of direct access has been adjusted (tweaked) twice (in 2009/2010 and in 2018/2019) and again in 2025 when the number of clubs was expanded from 32 to 36.

The qualifying stage does not operate as a competition in which clubs start from the same departing line and are simply progressively eliminated. Rather, while the competition starts with champions from the leagues with lowest ranking, clubs are also "seeded" at various stages of the qualification. The seeded teams are champions from increasingly better leagues but also clubs that are not champions but have been well ranked in the preceding year (runner ups, 3rd or 4th) in the top leagues. Hence, access to successful teams from top leagues is facilitated in two ways: through direct access and through seeding at the qualifying stage. Table 1 presents how access for successful teams from top leagues has evolved over time

The first striking observation is that the scope of direct access has increased from 50% of the participants to 81% over time. The number of clubs with direct access has progressively expanded to include not only runner-ups, but also clubs ranked 3rd and 4th in the top leagues, and this for an increasing number of top leagues (up to 3rd ranked teams for the top 6 leagues in the latest iteration).

Second, with respect to seeding, the first reform has introduced a separate path for champions from lower ranked leagues and for non-champions from top leagues. The consequence is that non-champions from top leagues have a guaranteed access at the group stage (5 of them in

the first reform, reduced to 2 in the subsequent reform)[7]. There is also a pattern in the identity of non-champions being seeded. As some seeded clubs are given direct access when the process is reformed, they are replaced by other (potentially less competitive) teams from top leagues.

Table 1. Evolution of Access for Successful Teams in Top Leagues Over Time

	1999-2009	2009-2018	2018-2025	2025-
Direct access	16 (50%) C : League 1-10 RU : League 1-6	22 (69%) C : Leagues 1 -13 RU : League 1-6 *3rd : Leagues 1-3*	26 (81%) C : Leagues 1-11 RU: League 1-6 *3rd : Leagues 1-5* *4th : Leagues 1-4*	29 (81%) C : Leagues 1-11 RU: League 1-6 3rd : Leagues 1-6 4th : Leagues 1-4 *2 direct access for top 2 from previous season*
Qualification of non champions	Seeding of 13 non champions clubs, RU: leagues 7-9, *3rd : leagues 1-6* 4th : leagues 1-4	League Path with 15 teams, including RU: leagues 7-15, *3rd : leagues 4-6*	League Path with 10 teams, including	League Path with 10 teams, including RU : leagues 8-15, 3rd : league

[7] Note that in the original format, it was entirely possible that none of the teams emerging from the qualification is actually a champion from a national league (see appendix for details). It is not clear a priori whether the introduction of quota worked to the benefit of the champions or the non-champions. The empirical evidence reported by Triguero-Ruiz and Avila-Cano (2022), who find a break in the evolution of competitive balance at the group stage around the time of the introduction of this reform supports the view that it may have worked to the benefit of the champions.

		4th : leagues 1-3 Guaranteed Access for 5 Clubs from League Path	RU : leagues 7-15, 3rd : league 6 Guaranteed access for 2 Clubs from League Path	7, 4th from league 5 Guaranteed access for 2 Clubs from League Path
Total from top leagues	16 from leagues 1-10 12 from leagues 1-6	27 from leagues 1-15 22 from leagues 1-13 *15* from leagues 1-6 9 from leagues 1-3	28 from leagues 1-15 *21* from leagues 1-6 16 from leagues 1-4 12 from leagues 1-3	29 from leagues 1-15 Min 23 from leagues 1-6 20 from leagues 1-5 16 from leagues 1-4

Third, the latest reform (in 2025) involves direct access for clubs from the two associations with the highest coefficients in the previous season. The fact that not only the current ranking but also the ranking in the previous season is relevant for direct access further strengthens the self-reinforcing element of the system of access[8].

The last row of table 1 summarizes the consequences of the various adjustments over time. Roughly, half of the participants come from the top 4 leagues after 2009 and more than 55% come from the top 5 in the new format. There are 65% of participants from top 6 leagues after

[8] There are five English clubs with direct access in the current season. This is the case because the Premier League secured one of the two extra "European Performance Spots" awarded to the two countries with the highest average performance across all UEFA competitions in the previous season. The European Performance Spot was granted to England, because England finished among the top two performing leagues in the previous footballing season

2018 and more than 64% in the new format. There is limited room for teams outside those coming from the top 15 leagues after 2018 (12.5%) and in the new format after 2025 (20%).

2.2.1.2. Organization of the group stage

The organization of the group stage has also changed over time in such a way as to favor clubs coming from top leagues. For the composition of the groups, UEFA has a pot system reflecting the relative sporting strength of clubs participating at this stage (from Pot 1 involving the strongest teams, to Pot 4 involving the weaker ones).

Originally, Pot 1 involved the winner of the CL in the previous seasons and the seven teams with the highest rankings – with other pots populated with teams with decreasing rankings. In 2015/2016, the composition of Pot 1 was changed to include in addition to the title holder, the champions of the top seven associations based on their UEFA country coefficients. This change has the consequence that champions from the top leagues can no longer compete against one another in the first stage of the competition. This change has actually made it easier for clubs belonging in top leagues (rather than the top clubs) to have access to the final stages.

2.2.1.3. Discussion

The organization of the CL has clear benefits in terms of ensuring competitive balance in the various stage of the competition that should be recognized. The qualification is designed in such a way that teams from lower ranked leagues play against one another and those emerging from these contests are confronted with seeded teams coming from better leagues (champions of intermediate leagues from 2009 onwards). One consequence is that the qualification involves better and better teams as it moves from one stage to the other and each stage is likely to be balanced. The system of direct access also guarantees that the best teams from the best leagues play against one another in the final stage. Hence, while the system of

access restricts the potential participants, it also yields benefits in terms of competitive balance[9].

2.1.2. Europa and Conference League

The Europa League is organized along principles similar to the CL, with three qualifying stages followed by a playoff to accede to the group stage (where teams are divided in groups and play against each other). Those who qualify from the group stage will face each other in knock out games all the way to the final (championship) game.

Unlike what happens in the CL, direct access to the group stage is not given to clubs from top leagues; direct access is given both at the group stage and the knock out stage to clubs that have been eliminated from the CL competition. Furthermore, the seeding system also favors clubs that have been eliminated from the CL. The evidence is presented in Table 2 (see annex 1 for details).

First, it is striking to observe that since its inception, the Europa League has given direct access to the group stage for 10 clubs eliminated from the CL. Up until the introduction of the Conference League in 2021, another 8 clubs (out of 32) eliminated from the CL had been given direct access at the knock out stage.

Second, in addition to the clubs given direct access, another 15 clubs eliminated from the CL were seeded in the qualifying phase when the Europa League was introduced. The number was increased to 35 from 2018 onwards. At the time of the 2018 reform, a separate path towards the group stage was also introduced for clubs eliminated during the early rounds of the CL.

[9] Unlike what is found at the level of national leagues, the evidence on the evolution of competitive balance in the CL is mixed. See for instance, Ramchandani et al (2023) , who report a deterioration of competitive balance at the group stage (using a Herfindahl index) and Triguero-Ruiz and Avila-Cano (2022) who report similar finding using both ex ante and ex post measures. Using alternative ex ante measure (based on ELO ranking) and ex post measures (a dynamic concentration indicators which captures the correlation between ex ante and ex post rankings), Csató L. and D Petróczy, (2025) conclude that there is no decline.

These clubs would play against one another and feed the group stage directly. As a result, another 8 clubs originating from the CL were given guaranteed access to the group stage (in addition to the 10 with direct access). Overall, as much as 38% of the participants at the group stage of the Europa League would thus originate from the early stages of CL.

Table 2. Access to the Europa League

Period	Participation of clubs eliminated from CL
2009-2018	33 clubs eliminated from CL 10 (out of 48) have access directly to Group stage 8 (out of 32) have access directly to Knock out stage
2018-2021	53 clubs eliminated from CL With a separate path, so that 8 teams seeded before the Group stage have guaranteed access to Group stage 10 have access directly to Group stage, so that 18 out of 48 teams (38%) in the Group stage come from the CL An additional 8 (out of 32) have access directly to Knock out stage
2021-	Creation of the Conference league (essentially a spin-off of the first two qualifying rounds). 13 out of 16 teams at the first round have been eliminated in the CL At the playoff round, a minimum of 11 and a maximum of 14 clubs (out of 20) which originate from the CL 10 clubs have direct access to the Group stage Up to 20 participants at the Group stage (out of 32) could come from the CL

Third, the creation of the Conference League in 2021 essentially involved a spin-off of the first two qualifying phases of the Europa League. As a result, the number of clubs in the Europa

League that did not come from the CL has been reduced, and the Europa League became further specialized as a contest between clubs eliminated from the CL. As many as 62% of the participants in the group stage could come from the CL.[10]

Overall, we observe a further specialization of competitions that tends to favor clubs from top leagues: while the CL has given greater access to clubs from top leagues over time, the Europa League has given greater access over time to clubs eliminated from the CL and thus clubs that are increasingly coming from top leagues. Thus, more and more clubs from the top leagues are given privileged access to one of the UEFA-sponsored competitions with attendant opportunities in terms of prize money and monetization.

Additionally, the Conference league has been formed out of the spin-off from the first two qualifying phases of the EL. Importantly, the Conference league has kept the segmentation between the league path and the main path. The teams seeded from other competitions involve 15 teams eliminated from the first qualification stage of the CL (at the second qualification round of the Conference League). However, the clubs seeded later in the competition (from the third qualification stage of the Conference league onwards) are now clubs that have been eliminated from the Europa League (and no longer from the CL as those are now seeded in the EL).

As of 2025-2026, teams that lose in the first, second, or third qualifying rounds of the CL are transferred to the Europa League, and if they lose again, some may drop into the Conference League. The 36 teams participating in the CL group stage (or "league phase" as it is now known) either advance and go on to participate in the knockout play-offs, or are eliminated. They are not eligible anymore to drop down and participate in the Europa- or Conference League.

Considering both the Conference League and the new version of the Europa League, it appears first that the same number of clubs are seeded from the CL (56) before and after the reform.

[10] We provide a detailed description in Appendix 1.

However, the creation of the Conference League involves a further segmentation. The clubs eliminated in the CL play either in the Europa leagues or in the Conference League. More specifically, the Champions Path of the Conference League will only be contested by teams eliminated from CL qualifying round and consequently relegated either directly into the Conference League, or via a second relegation from the UEFA Europa League as a result of two straight eliminations.

This segmentation offers more opportunities for clubs eliminated from the CL to compete further as clubs in each competition (the Conference and reformed Europa League) are more likely to be homogenous in terms of expected performance. This should however also contribute to competitive balance.

2.2. Distribution of Prize Money

The previous section has shown that rules for access to the CL are such that current participation increases the chance of future participation. The inequality in the distribution of prize money reinforces the potential for entrenchment. As mentioned above, the prize money is distributed in such a way that winners obtain substantial additional resources, which enable them to reinforce their position in particular by hiring new talents.

This section is organized as follows. We first discuss the evolution of rules for allocation prize money over time in the CL to highlight how this mechanism leads to self-confirmation. We subsequently present the outcome of the application of these rules in terms of distribution across clubs and across countries.

2.2.1. Rules for the allocation of the prize money in the CL

The prize money available each year is largely determined by the proceeds from the sales of the media rights[11]. The rules have changed over time with major reforms in the 2018/2019 and 2024/2025 seasons. The rights are sold for periods of three years and the rules are essentially unchanged during any given three years cycle. From the season 2005/2006, up until 2018/2019, there were thus 4 cycles of three years. During these initial cycles, the prize money was distributed according to three criteria.

First, there was a fixed amount (base fee) for each of the 32 participants in the competition (after the qualification phase). The amount distributed in this first component is equal to 30 % of the amount to be distributed (up until 2018). This amount was 5.4 M Euros in the first cycle, increasing progressively to about 18 million in the latest round (see Table 4 below).

The second component is related to the performance of the clubs in the competition and accounts for 25% of the total (up until 2018). This in turn consists in two elements. The first element is determined by the number of matches won and the number of matches for which there is a draw, with different prices tags (see Table 3 for the values of matches won and drawn over time – where we observe the price of a match won has increased from twice the price of a draw in the early period to three times in the later period).

The second element of this component is determined by the stage that clubs reach in the competition. For each stage, beyond the participation in the group stage (base fee), there is a cumulative bonus. To illustrate, in the season 2005/2006, the bonus for participation in the 8th final (round of 16) was 2.2 M Euros. It was 2.5 M Euros and 3 M Euros respectively for participation in the quarter and semi-final, with another 4 M Euros for the loser in the final and another 7 for the winner of the Final. These amounts are cumulative so that the winner gets a bonus of 2.2 + 2.5 + 3 + 7 = 14.7. Since clubs reaching subsequent stages of the competition will have won (and/or drawn) in more matches, they also obtain higher payments in the first

[11] This section focuses on the rules for the distribution of the prize money in the CL. Some observations about the distribution of the prize money in the Europa and Conference leagues can be found in Annex 2.

component. To illustrate, in the 2005/2006 season, the winner (AC Milan) obtained 17.393 M Euros and the worst performer (Sofia) obtained nothing. Tables 4 and 5 consider the evolution of these cumulative bonuses over time (in absolute value for Table 4 and in relation to the base fee for Table 5). We observe that there is a step increase in the premia in relation to the base fee from 2018 onwards.

Table 3 Bonus per win and draw (M Euros)

Year	Bonus per Win	Bonus per Draw
2025	2,1	0,7
2024	3,047	0,93
2023	3,032	0,93
2022	3,017	0,93
2021	2,937	0,9
2020	2,968	0,9
2019	2,7	0,9
2018	1,631	0,5
2017	1,727	0,5
2016	1,608	0,5
2015	1	0,5
2014	1	0,5
2013	1	0,5
2012	0,8	0,4
2011	0,8	0,4
2010	0,8	0,4
2009	0,6	0,3
2008	0,6	0,3
2007	0,6	0,3

The third component was the market pool (accounting for the remaining 45%). This is a fixed sum distributed among clubs according to the value of media rights for the Champions league in their market. For instance, if 100 million was allocated to the market pool and there were two leagues with respectively TV rights of 200 and 400, the first country would obtain 100 * (200/600) = 33.3 millions). The amounts allocated to a country would then be divided equally between clubs from that country having reached the group stage. To illustrate in the 2005/2006 season, English clubs obtained about 16 M Euros but Eindhoven (which was the only participant from the Netherlands) got slightly more.

Overall, up until 2018, close to half of the overall amount was allocated as a function of the value of media rights. Clubs coming from markets in which viewers have a higher aggregate willingness to pay (larger countries, more developed countries and countries in which football is popular) and countries in which there is strong competition among buyers bidding for rights, were getting larger payments; this introduces another self-reinforcing element to the extent that clubs from large countries obtain higher payments (for given sporting performance) and are thus more likely to qualify in future competition (which possibly also contributes to the willingness to pay of viewers). However, there is a "congestion" effect to the extent that the resources are shared among the clubs having qualified from any given country. As observed above, a club that is the only one to have qualified from a given country can obtain sizable payments even if it originates from a small country (Ajax from the Netherlands).

Table 4 Cumulative remuneration according to the stage of the competition

Year	Base Fee	Round of 16	Quarter-Finals	Semi-Finals	Finalist	Winner
2025	18,62	29,62	42,12	57,12	75,62	82,12
2024	15,64	25,24	35,84	48,34	63,84	68,34
2023	15,64	25,24	35,84	48,34	63,84	68,34
2022	15,64	25,24	35,84	48,34	63,84	68,34
2021	15,25	24,75	35,25	47,25	62,25	66,25
2020	15,25	24,75	35,25	47,25	62,25	66,25
2019	14,50	24,00	34,50	46,50	61,50	65,50
2018	12,70	18,70	25,20	32,70	43,70	48,20
2017	12,70	18,70	25,20	32,70	43,70	48,20
2016	12,00	17,50	23,50	30,50	41,00	45,50
2015	8,60	12,10	16,00	20,90	27,40	31,40
2014	8,60	12,10	16,00	20,90	27,40	31,40
2013	8,60	12,10	16,00	20,90	27,40	31,40
2012	7,20	10,20	13,50	17,70	23,30	26,70
2011	7,20	10,20	13,50	17,70	23,30	26,70
2010	7,29	10,29	13,59	17,59	22,79	26,59
2009	5,40	7,60	10,10	13,10	17,10	20,10
2008	5,40	7,60	10,10	13,10	17,10	20,10
2007	5,40	7,60	10,10	13,10	17,10	20,10

Table 5 Cumulative remuneration according to the stage of the competition in relation to the base payment

Year	Round of 16	Quarter-Finals	Semi-Finals	Finalist	Winner
2025	1,59	2,26	3,07	4,06	4,41
2024	1,61	2,29	3,09	4,08	4,37
2023	1,61	2,29	3,09	4,08	4,37
2022	1,61	2,29	3,09	4,08	4,37
2021	1,62	2,31	3,10	4,08	4,34
2020	1,62	2,31	3,10	4,08	4,34
2019	1,66	2,38	3,21	4,24	4,52
2018	1,47	1,98	2,57	3,44	3,80
2017	1,47	1,98	2,57	3,44	3,80
2016	1,46	1,96	2,54	3,42	3,79
2015	1,41	1,86	2,43	3,19	3,65
2014	1,41	1,86	2,43	3,19	3,65
2013	1,41	1,86	2,43	3,19	3,65
2012	1,42	1,88	2,46	3,24	3,71
2011	1,42	1,88	2,46	3,24	3,71
2010	1,41	1,86	2,41	3,13	3,65
2009	1,41	1,87	2,43	3,17	3,72
2008	1,41	1,87	2,43	3,17	3,72
2007	1,41	1,87	2,43	3,17	3,72

The distribution was changed from the season 2018/2019 onwards and up until 2024/2025. The three components of the earlier schemes were kept, but their relative significance was adjusted. The amount allocated to the first component (equal fee for all 32 participants) was

reduced from 30 to 25%. The amount allocated to the second component related to the sporting performance was increased from 25 to 30%. More significantly, the amount allocated to the market pool was reduced to 15% (down from 45%).

An additional component was introduced accounting for 30% of the overall amount. This component uses the ranking of clubs according to their club coefficients to allocate the funds; club coefficients are based on UEFA coefficient points accumulated over the previous 10 years supplemented by bonus points for trophies won in the past. Clubs are then ranked from 1 to 32. The sum of the first 32 integers (1+2+3 .. up to 32) is equal to 528. The overall funds allocated to this component are divided in 528 shares. Each club gets a number of shares determined by its ranking in reverse order (so that club with rank 1 gets 32 shares, club ranked second gets 31 and so forth with the lowest ranked club getting 1 share). This scheme thus provided higher payments to clubs that performed well in the past but does not pay attention to the absolute value of the coefficients; it relies on an ordinal measure.

The introduction of this component relying on rankings according to clubs coefficients introduces a more direct element of self confirmation at the club (instead of the league) level. Clubs that have done well in the past irrespective of the league that they belong to obtain larger payment, which increases the likelihood that they will qualify again – and obtain large payments in the future.

To illustrate the magnitude of these differences, clubs at the top of the ranking in 2018/2019, namely Barcelona and Madrid obtained 34-35 M Euros. The club at the bottom of the ranking (Aek Athens) obtained 1.1 M Euros. Importantly, these amounts accrue to the clubs, simply for having reached the group stage and are not related to how well that will do in the competition. One can also see that the value of a unit rank is about a million euro for the cycle 2018/2019 to 2020/2021.

It is also useful to compare the premium from a higher ranking with the bonus payment for having reached a higher level in the competition. As shown in Table 4 above , the bonus for

winning the competition is equal to 36 M Euros in 2018 (48.7 – 12.7). This is roughly commensurate with the amount awarded to the clubs with the highest coefficient.

For the 2024–27 cycle, the amount allocated to the first component is increased from 25 to 27.5% and the amount allocated to the second component (performance in the competition) is increased from 30 to 37.5. The reminder (35%) is allocated to a newly created value pillar which combines the market pool and the coefficients component.

The value pillar is made out of two parts, the European and the non European part. The amount allocated to each part is proportional to the overall value of media rights in the geography concerned. Clubs obtain payments from each of the two parts. The allocation of the Non European part operates like the previous coefficient component ; the distribution is based on the ten-year UEFA coefficient ranking of the 36 participating clubs[12].

The allocation of the European part combines two rankings . The first one, like the previous club coefficient component, ranks clubs according to their UEFA coefficients (but considers only the previous 5 years instead of 10). The second establishes a ranking, first across countries and then across clubs in each country. Countries are ranked according to their domestic broadcasters' contribution to the overall media revenue for the whole cycle in that competition. The club ranking is first determined by their country ranking. For example, if the country ranked number 1 in the media market value ranking has four clubs in the competition, the clubs of that country will be ranked from 1 to 4 in the club market value ranking. The positions of these four clubs from 1 to 4 will be based on their participation in the group phase of the UEFA club competitions over the previous five seasons (3 points for a season in UCL, 2 points for a season in UEL, 1 point for a season in UECL). If the country ranked number 2 in the UCL media market ranking has three clubs in the competition, that country's clubs will be

[12] The total amount available for the non-European part of the value pillar is thus divided into 666 shares (1+2+3+…+35+36). The lowest-ranked team receives one share (e.g. €320k if the non-European part is 25%). One share is added to every rank with the highest-ranked team receiving 36 shares.

ranked from 5 to 7 in the club market value ranking, and so on. The same procedure will apply to all countries and their clubs down to position 36.

The overall ranking of the European part is determined by the average number of ranking points totalled by each club in the two rankings (the lower the points, the higher the rank). For example, the club 4th in the club market value ranking and 6th in the club coefficient ranking would have an average of five points in the cumulative ranking and will be ranked accordingly[13]. The allocation then operates as in the previous coefficient components ; the total amount is divided into 666 shares (1+2+3+...+35+36). The lowest-ranked team receives one share, one share is added to every rank, with the highest-ranked team receiving 36 shares.

It is difficult to compare the effect on the new scheme on self-confirmation. On one hand, the share of the amounts directly affected by market value and past ranking has fallen (by 10%). On the other hand, the effect of the market value of domestic rights is strengthened relative to club coefficients to the extent that for the first of two rankings (in the European part), clubs are ranked only among the domestic competitors (so that clubs with a weak ranking from a strong market will tend to benefit). However, even if it is difficult to comment on how the new system affects the relative strength of two self-confirming features in the allocation (market value and club coefficient ranking), it suffices to note for our purpose that these two features are still present.

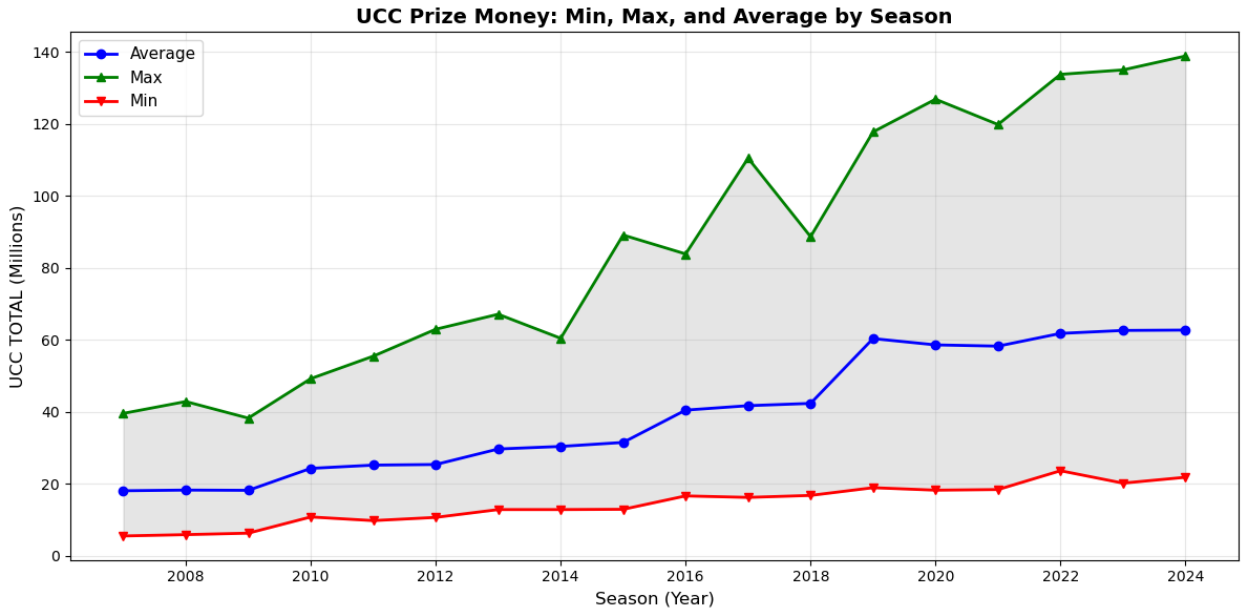
[13] If clubs or countries are equal in one of the various rankings calculated in the European part, the following criteria are applied to determine the ranking: If the market value of two countries is equal, the national association higher in the access list is ranked higher. If clubs have the same number of points within their country for participation in the previous five seasons (3 points for UCL, 2 points for UEL and 1 point for UECL), the calculation is extended season-by-season through the previous seasons (up to a maximum of another five seasons) until a difference is found. If, having applied this criterion, the clubs are still equal, the club with the higher domestic championship ranking in the season 2023/24 is ranked higher. If two clubs are equal on coefficient, the club with the highest points in the most recent season in which the two clubs did not have the same coefficient will be ranked higher. If clubs are still equal (e.g. two clubs in the same association that have never played a UEFA competition), the club with the higher championship domestic ranking in the season 2023/24 is ranked higher. o If two clubs are equal on overall ranking points, the club that is higher in the coefficient ranking will be ranked higher.

Overall, we find the rules for allocating the prize money tend to favor incumbents and are likely to contribute to entrenchment (in particular through the operation of the club coefficient component and the role of media markets). In the rest of this section, we further document the extent to which the allocation rules in combination with the access rules discussed earlier have given rise to greater inequality over time. We first consider the inequality of prize money between clubs participating in UEFA-sponsored competitions. We subsequently consider the allocation of prize money across countries and assess its significance for club finance.

2.2.2. Distribution of Prize Money between Clubs Participating in UEFA-Sponsored Competitions

Figure 1 presents the evolution of the minimum, the maximum and the average payment to clubs in the CL over time[14].

Figure. 1. Distribution of prize money in the CL across teams



[14] More detailed data is presented in Appendix 2

First, there is an increase in the average payment starting in 2010, so that by the end of the period the average payment is about 3 times higher than what it was in the early years.

Second, even though the ratio between the largest and the smallest payment remained roughly constant over time (around 7), the difference in absolute value increased sharply over time (in line with overall payments).

Third, the average payment in the qualifying stage is just a few percentage points of the average payment in the final phase (see Appendix 2). It is about 3% at the beginning and falls to about 1% at the end of the period. This reduction in payments for participants at the qualifying stage should however be considered also in light of the fact that over time greater access to the Europa- (and Conference League) has been given to the teams eliminated from the CL.

Considering the Europa League[15], we observe that there is a very strong inequality in payments between participants – with the largest payment often accounting for more than 30 times the minimum payment and the inequality within that group further deteriorates over time. Significant amounts (about 14% of those awarded to the main competition) are awarded to the qualifying stage up until the development of the Conference League. The amount then drops drastically, but, as discussed above, the Conference League is essentially a spin-off of the first two qualifying stages of the Europa League so that clubs that would have had the opportunity to obtain prize money in the qualifying stage or Europa League have (even larger) opportunities in the Conference League.

The development of the Europa- and later the Conference Leagues, which expands the set of clubs participating in European competition also has an impact on the distribution of prize money. We observe that the overall payment in the Europa League is about 25% of those for

[15] For the period 2004/2005 until 2007/2008 included, there are 40 participants in the group stage. From 2008/2009, there are 48 participants in the group stage but the payment for the final stage of the Europa League include 56 clubs namely the 48 clubs participating in the group stage as well as 8 clubs transferred from the CL – the third placed teams of the group stage of the CL. From 2020/2021 onwards, after the formation of the Conference League, there are 40 recipients.

the CL and this proportion tends to increase over time reaching about one third from 2015/2016 onwards.

The proportion falls from 2021/2022 onwards and reaches about 23% for the remaining three seasons. However, the Conference League was introduced in that year, and the total payments in the conference league together with the Europa League then reached about 40% of the amount in the CL for the remaining seasons.

Given that, as discussed above, an increasing proportion of the clubs playing in the Europa League have been eliminated at the qualifying stages of the CL, it appears that the reform of the Europa League and its endowment in prize money is a factor that leads towards a greater equality in the distribution of prize money between clubs participating in the CL. Clubs eliminated in the qualifying stage can obtain substantial revenue from participation in Europa League in which they obtain direct access.

The amounts awarded to the Conference League are also significant (roughly 15-17% of those awarded in the CL). This is another factor that leads to greater opportunities for clubs with a lower ranking and thus contributes to greater equality across clubs participating in UEFA-sponsored competitions (but not across all clubs participating in national leagues).

Overall, we observe that there is an increasing inequality in the distribution of the prize money between participants in the CL in absolute value and between the participants in the CL and those participating in its qualifying stage (in absolute and relative value). We also note that the development of the Europa and later the Conference League have ensured that prize money is allocated to an ever larger set of clubs. It has also ensured that clubs participating in the qualifying stages of the CL have another opportunity to obtain prize money in the Europa League, thereby reducing inequality between the participants in the group stage of the CL and the participants in its qualifying stages.

2.2.3 Distribution of Prize Money Across Countries

Given the rules of access discussed above, which favor large leagues, and given the weight given to the profitability of the market in the allocation of the prize money, one should expect a strong presence of clubs from the large leagues in the CL and also that the participants from the large leagues also obtain a large share of the prize money.

Figure 2. Prize money by league, 2006-2010

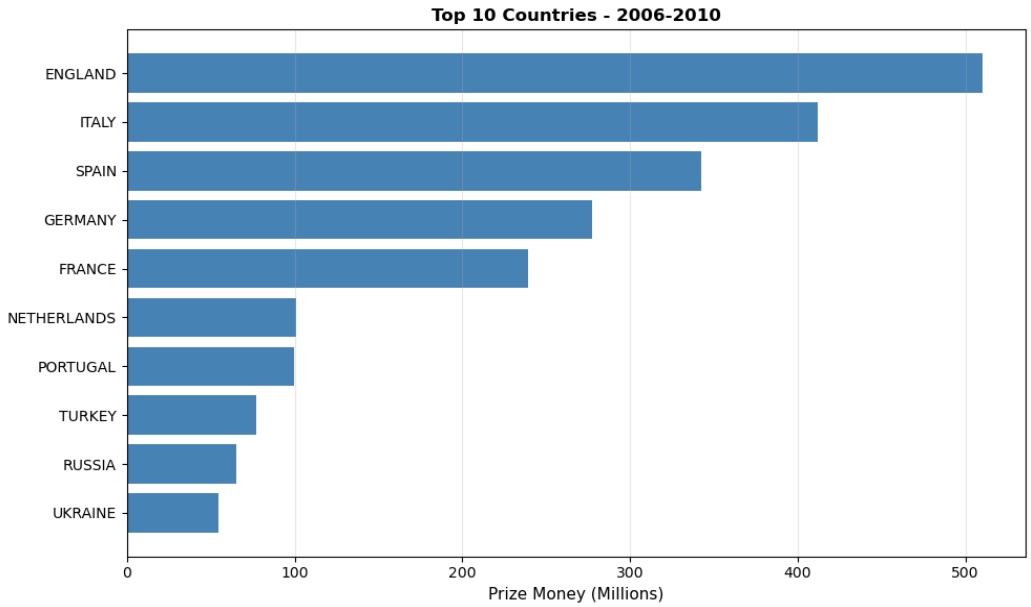


Figure 3. Prize money by league, 2011-2015

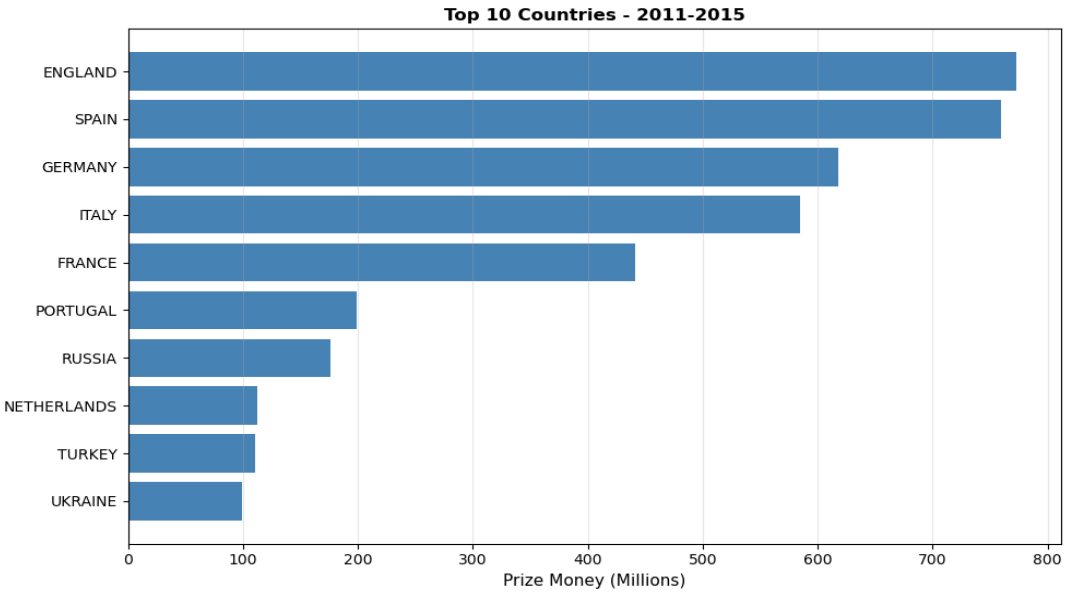
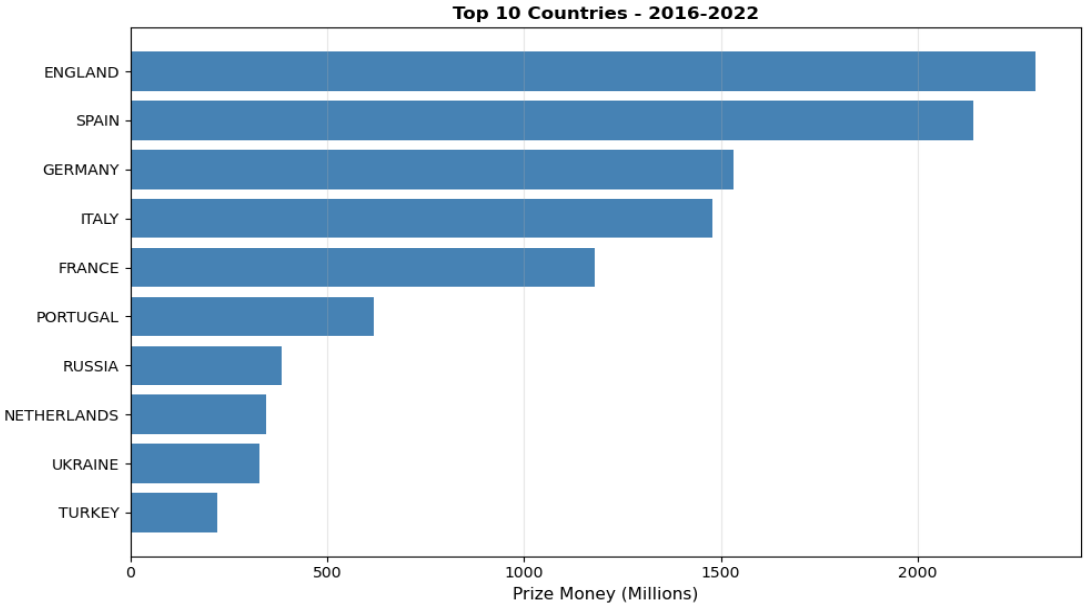


Figure 4. Prize money by league, 2016-2022



Figures 2 to 4 present the evolution of the amounts of prize money disbursed to the top 10 recipient countries for three sub-periods (2006-2010, 2011-2015, and 2016-2022). It is immediately apparent (i) England is always the top recipient (ii) that Spain and Germany share the second place, (ii) that England, Spain, Germany, Italy and France are always the top 5 recipients and (iii) the discrepancy between the top recipients and those lower in the ranking increases over time. For instance, the payments for the top two leagues is about 5 times the average payment to those ranked 9 and 10 in the first sub-period, 7 times in the second one and 9 times in the last one.

Altogether the top 5 leagues account for 71% of prize money over the entire period that we discuss in this paper. For the top 5 leagues, the share of participation is lower than the share of income. The ranking is reversed for all leagues below the top 5, highlighting the lower success of the teams from these leagues in reaching the more lucrative final stages of the competition.

2.2.4 Prize Money in Relation to Clubs' Budget

It is worth noticing that the prize money involves significant amounts even for large clubs. The following table (Table 6) considers the prize money for the top 30 clubs for which Deloitte reports overall revenues in 2023. Even for the large clubs, the prize money in 2023 accounts for at least 15% of other incomes. For smaller (but still sizeable) clubs like Borussia Dortmund or Atletico Madrid, prize money accounts for 30% of revenues.

The prize money can also be expected to be even more significant for smaller clubs. For instance, Porto obtained 65 million in prize money in 2023 with a budget reported to be around 160 million. Eindhoven received prize money of 50 million with a budget outside prize money during that fiscal year reported to be around 100 million.

Table 6 Prize Money in Relation to Club Revenues (2023)

Rank	Club	Country	Revenue (€ M	Prize money	
1	Real Madrid	Spain	1045,5	138	15%
2	Manchester City	England	837,8	110	15%
3	Paris Saint-Germain	France	805,9	122	18%
4	Manchester United	England	770,6	61	9%
5	Bayern Munich	Germany	765,4	120	19%
6	Barcelona	Spain	760,3	98	15%
7	Arsenal	England	716,5	94	15%
8	Liverpool	England	714,7		0%
9	Tottenham Hotspur	England	615		0%
10	Chelsea	England	545,5		0%
11	Borussia Dortmund	Germany	513,7	120	30%
12	Atlético Madrid	Spain	409,5	92	29%
13	Milan	Italy	397,6	48	14%
14	Internazionale	Italy	391	66	20%
15	Newcastle United	England	371,8	34	10%
16	Juventus	Italy	355,7		0%
17	West Ham United	England	322,2		0%
18	Aston Villa	England	310,2		0%
19	Marseille	France	287	6	2%
20	Lyon	France	264,1		0%

21	Brighton & Hove Albion	England	256,8		0%
22	Napoli	Italy	253,6	70	38%
23	Roma	Italy	249		0%
24	Eintracht Frankfurt	Germany	245,2		0%
25	Benfica	Portugal	224	45	25%
26	Crystal Palace	England	218,9		0%
27	Everton	England	217,6		0%
28	Fulham	England	212,2		0%
29	Wolverhampton Wanderers	England	206,9		0%
30	Flamengo	Brazil	198,2		0%

In order to assess the significance of the prize money as a factor affecting competitive balance, it also useful to consider its magnitude in relation to the budget of the clubs that the recipients are competing with in national leagues. For instance, the 110 million received by Manchester City in. 2023, appears significant in relation to many other clubs in the English Premier League (EPL) like Fulham, Crystal Palace, Everton or Wolverhampton which have total revenues around 200 million pounds. The UEFA prize money in other words, provided Manchester City with an important advantage over its competitors in the national (England) competition.

3. Entrenchment in European Competitions

This section provides evidence on the entrenchment of participants in European competitions. We focus on the CL and the Europa League[16].

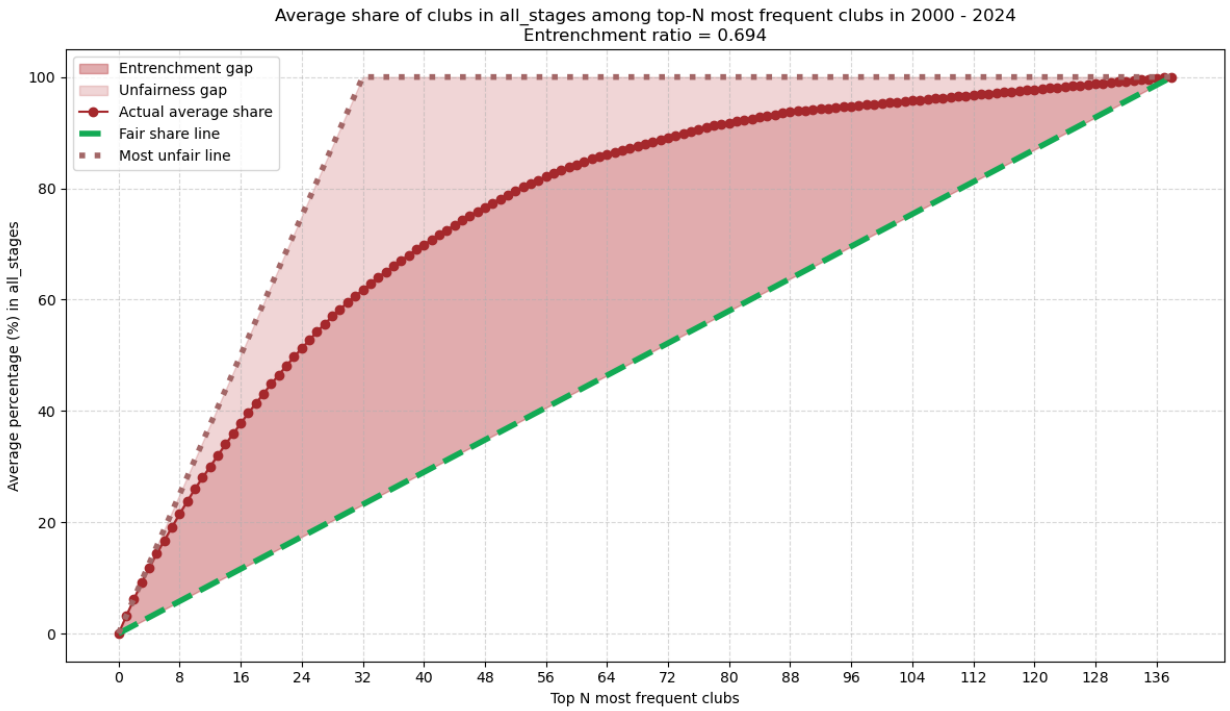
3.1. Entrenchment in the Champions League

In order to assess the extent to which the presence of some clubs is entrenched, we have considered all participation in the CL from 1999-2000 to 2023-24. There are 138 different clubs that have participated in the CL in that period (excluding the qualification stage). In the following figure, we rank the clubs according to the frequency of their participation in the group stages (involving 32 clubs throughout the period).

For each subgroup of clubs, the figure identifies the proportion of spots that these clubs have taken over the period. Take for instance the 16 clubs present most frequently in the CL. There are $32 * N$ spots in the competition over the N years covered by the data. The data indicates that these clubs account for roughly 40% of the spots, that is 40% of the participation in the competition in the period.

[16] We consider entrenchment in the CL and EL separately. This is a conservative approach as clubs that may not have participated in the CL in one season may have participated in the EL (and vice-versa).

Figure 5. Entrenchment Gap Among All Participants in the CL (2000-2024)



The graph also identifies two benchmarks against which participation can be assessed. The first one is the absence of any entrenchment represented by the green dotted line. There is no entrenchment when all clubs that participated in the CL are present in the same proportion of competitions. Concretely, in this benchmark, each club participates each year with a probability of 32/138. For instance, whatever group of 16 clubs in the equal participation benchmark, would participate $16 * \frac{32}{138} = 3.71$ times per season. The overall participation is thus $3.71 * N$. As a percentage of total number of spots, these participations correspond thus to $\frac{3.71*N}{32*N} = 0.116$. This is the point on the green line corresponding to 16 teams. Any deviation between actual participation and this benchmark is thus a reflection of entrenchment. We refer to this as the "entrenchment gap".

The other benchmark is the highest possible entrenchment. This occurs when the teams that are most present participate in all seasons. For instance, the top 16 teams would have a participation equal to $\frac{16*N}{32*N} = 0.5$. This is the point on the red dotted line corresponding to 16 teams. Along the benchmarks, 32 most frequent participants would take all the spots. They account for 100 % of the participants – the red dot corresponding to 32 teams. Any difference between the actual participation and the maximum entrenchment indicates how entrenched the competition is relative to the worst case scenario. We refer to this as the "unfairness gap".

We also capture the significance of entrenchment through a single indicator, which is the ratio between the surface below the entrenchment line (and above the green line) and the surface below the highest entrenchment line (and above the green line). In the figure above, the entrenchment ratio is 0.694.

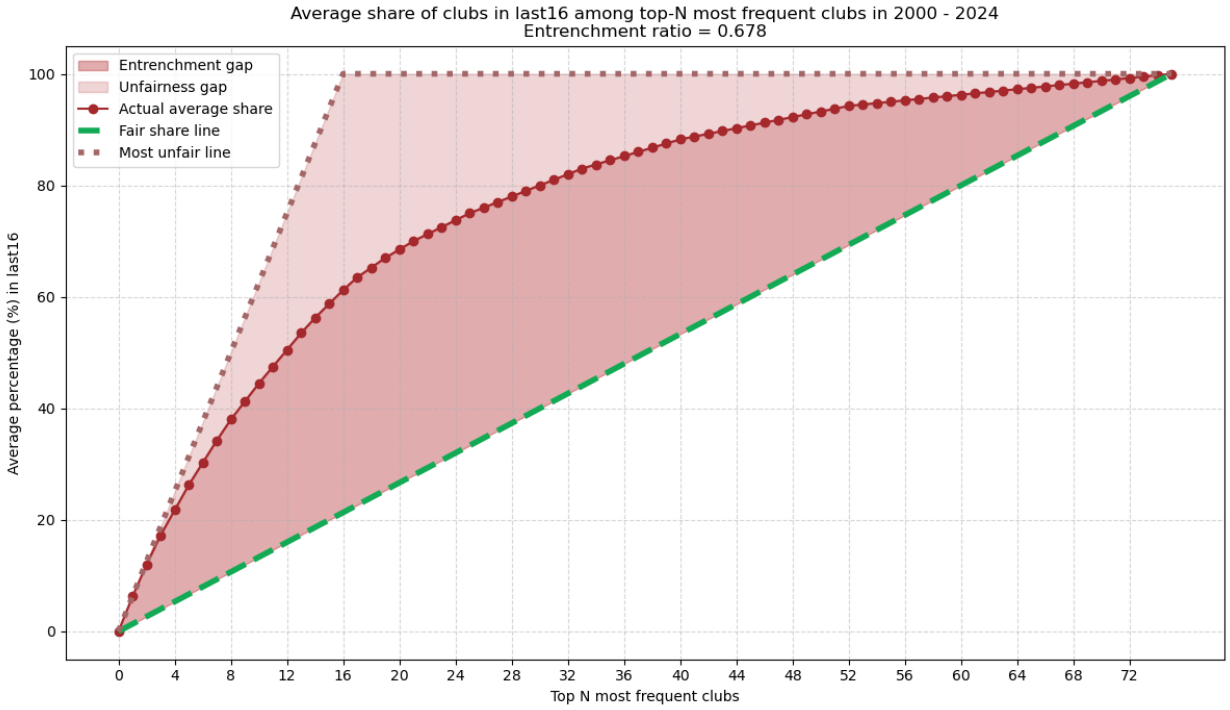
It is immediately apparent that the CL is characterized by substantial entrenchment (as measured by the entrenchment gap). For instance, one can see that the 32 most frequent participants (about one fourth of the participants) account for 60% of the participation and that the 50 most frequent participants account for roughly 80% of the participation. We also observe that 5 teams have participated in almost all competitions (these appear as the first dots on the leftmost part of the entrenchment line which overlaps with the highest entrenchment line for the first five dots[17]).

The following graph considers the entrenchment of the clubs participating in the elimination phase (accessing the "round of 16" stage). There are 75 clubs that reached that phase at least once during the period. The entrenchment ratio is similar to that observed with all 32 participants, and the dominance of the most frequent participants is stronger. The 18 most

[17] Specifically, Real Madrid participated in all the competitions; Bayern Munchen and Barcelona in all but one; Porto and Man United in all but four.

frequent participants (about one fourth of the participants) now account for more than 60% of participation .

Figure 6. Entrenchment Gap Among the Round of 16 Participants, 2000-2024

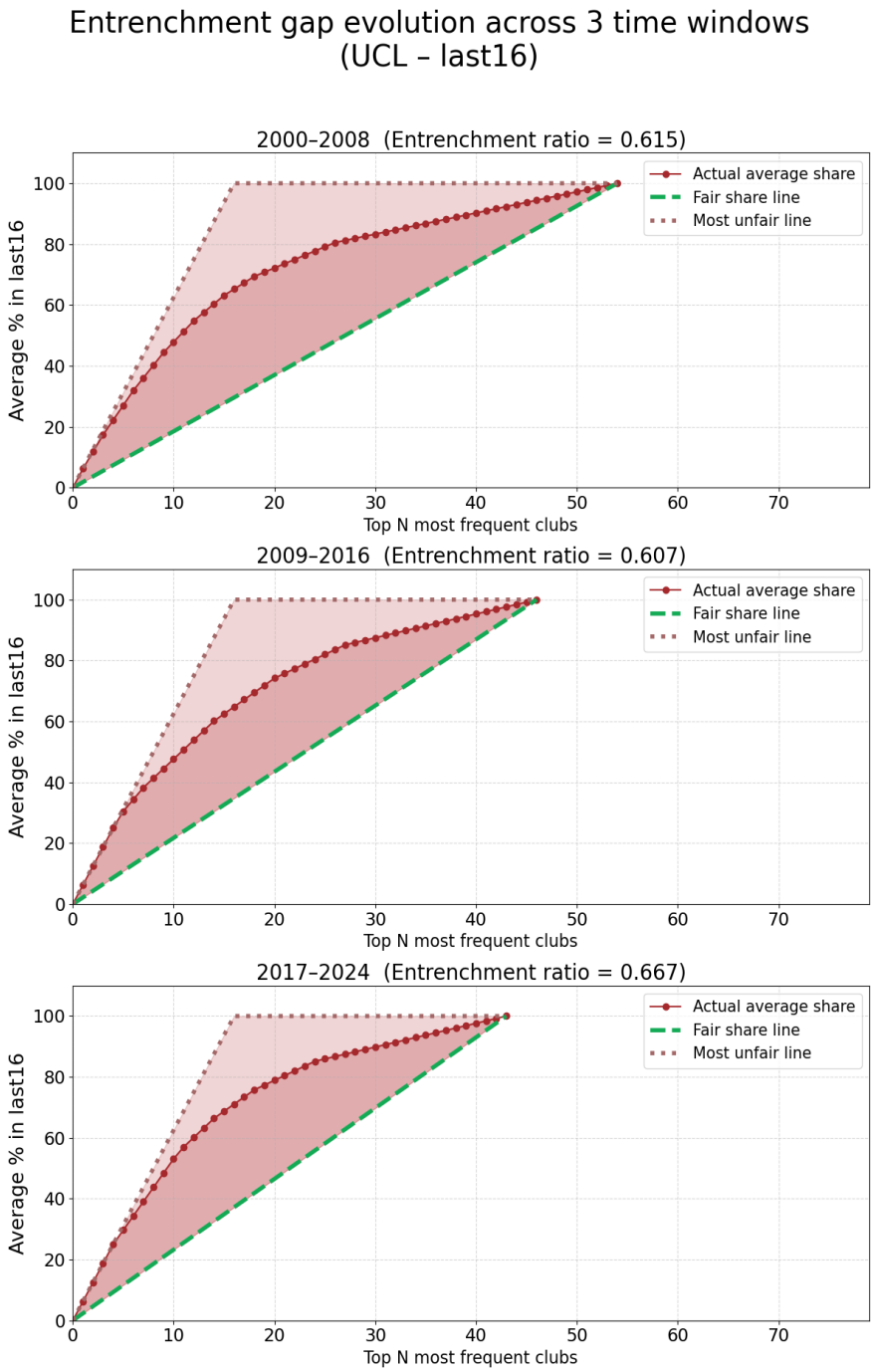


The following graph provides additional insights on the evolution of entrenchment over time. We have divided the 22 years in three roughly equal windows (2000-2008, 2009-2016 and 2016-2024). There are a few striking observations;

First, the number of different clubs participating in the knock out stage shrinks over time from 55 in the first window to 44 in the last sub period. This is a reduction of about 20%.[18] Second, the overall entrenchment as measured by the entrenchment ratio increases from 0.61 to 0.67.

[18] Which is significant even if one considers that the first window is one year longer.

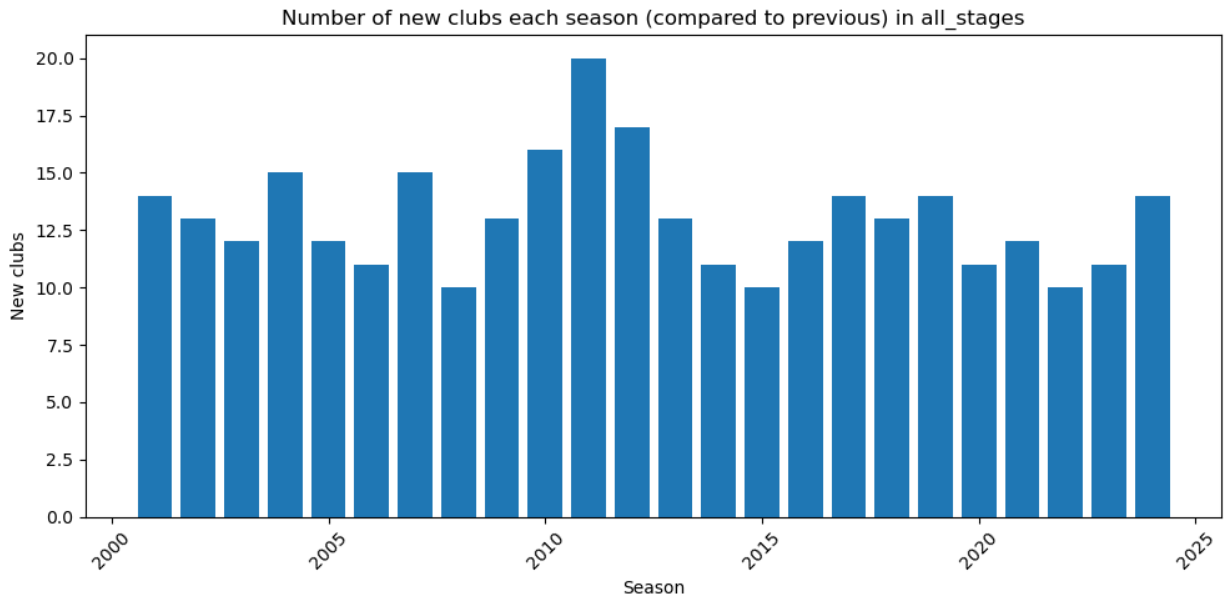
Figure 7. Entrenchment Gap Among the Last 16 Participants in the CL for Three Sub-periods



Third, the dominance of the most frequent participants is reinforced [19] (the entrenchment line appearing steeper in the leftmost part for the last sub period).

Entrenchment can be captured in alternative ways. The following graph considers entry in the final stages – by identifying the number of participants in any given season that were not present in the previous season. We present the analysis first for the competition as a whole and then focus on the quarter finals.

Figure 8. New Entrants in the CL Relative to the Previous Season

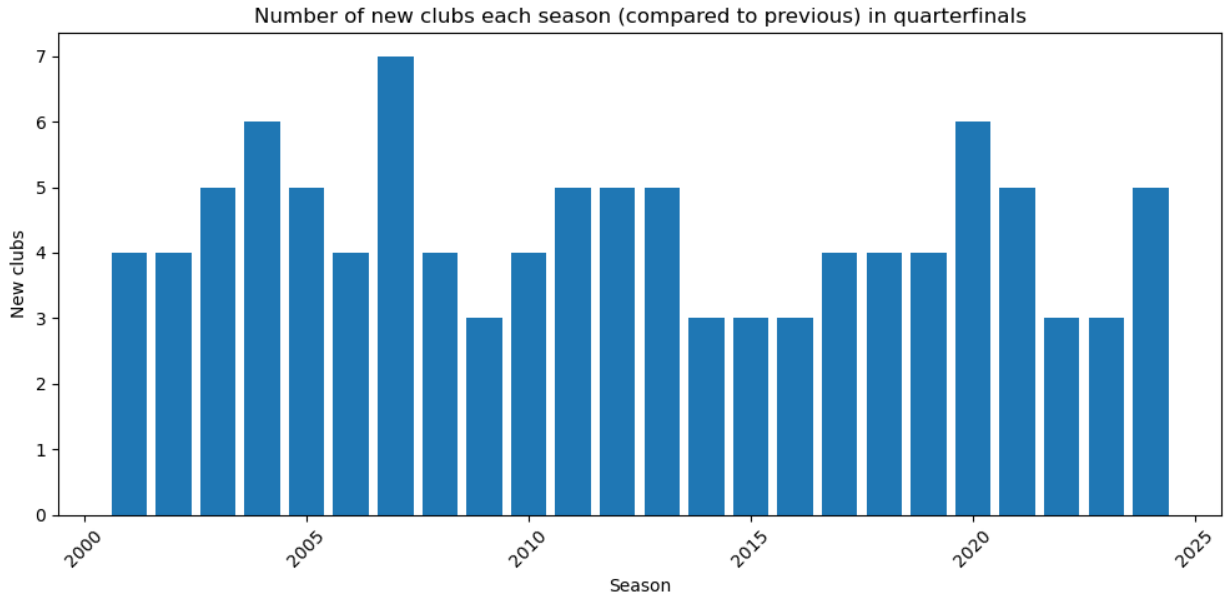


First, it is remarkable that on average less than 12 clubs in any given season (out of 32) were not present the previous season. Interestingly, the year 2011 (and possibly 2012) appear as outliers with more participation from clubs that did not participate before. This could potentially be associated with the implementation of the Financial Fair Play (FFP) regulation, which imposed a mandatory cap on the amounts that clubs could invest in any football season.

[19] With Real Madrid participating in all competitions and Bayern and Barcelona participating in all but two for the first sub-period. With Real Madrid, PSG and Bayern Munich participating in all competitions, and Barcelona, Porto, Liverpool, Dortmund and Athletico Madrid participating in all but two for the second sub-period.

Considering the entry into the quarter finals, we observe that on average less than half of the participants did not participate the year before. In addition, while we observed an unusual rate of new entries in 2011/2012 for the competition as a whole, this does not seem to arise for quarter finals. Hence, it would seem that new entrants had been eliminated by that stage.

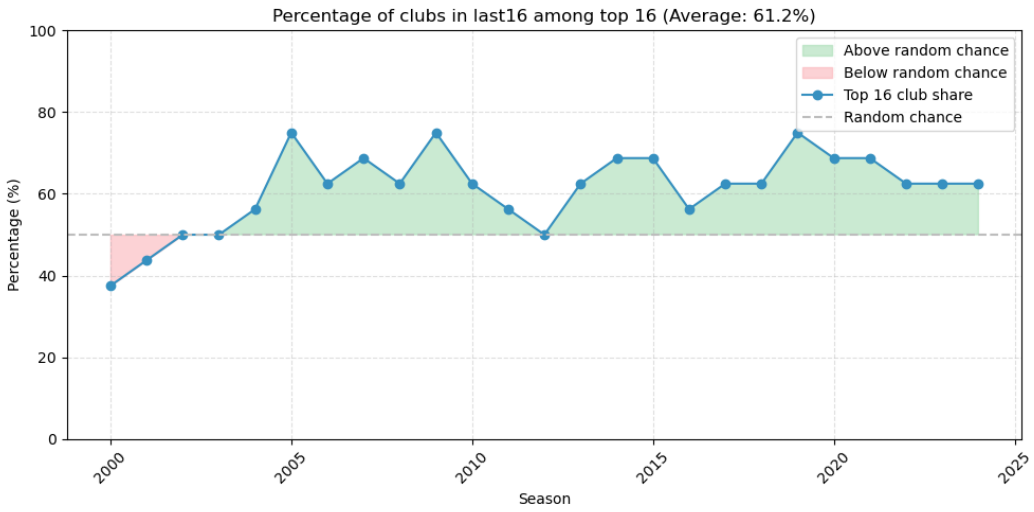
Figure 9. New Entrants in the Quarter-Finals of the CL Relative to the Previous Season



Regarding semi-finals (not shown – available on request), in any given season there is always less than half of the participants that were not present the season before and there are four seasons in which there is only one participant that was not present the year before.

We take a final cut at the data in the followingfigures that consider how the most frequent participants in the CL perform in terms of access to the final stages. Specifically, we consider access to the round of 16 (top 16) and semi-final (top 4).

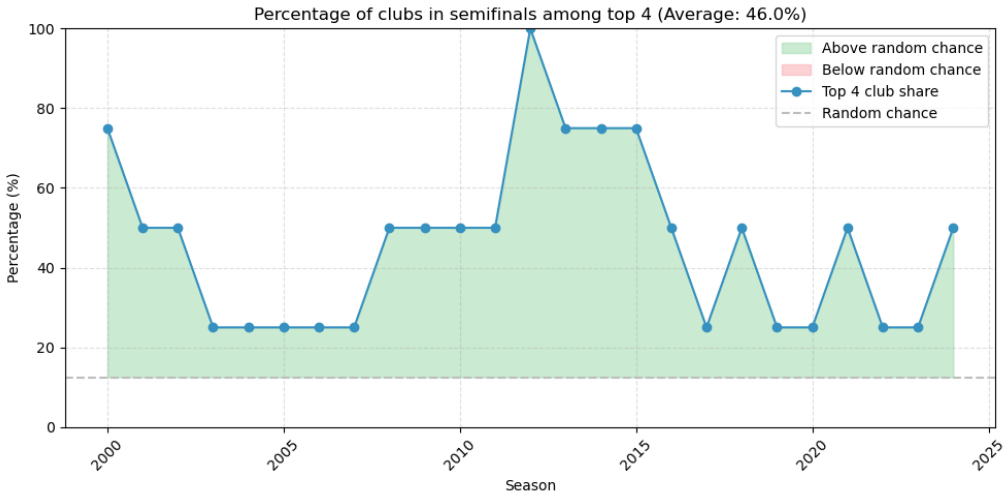
Figure 10. Success of Most Frequent Participants in Reaching the Knock-out Stag



We observe that the 16 most frequent participants in the CL have a more than average chance of participation in the round of 16. Indeed, if all participants had the same chance to survive the first round, these clubs should have a probability less than 50% of reaching the next stage[20]. We see that, except for the first year, the frequent participants always do better. The pattern is also clear if one looks at the semi-finals. We observe that the top more frequent participants in the competition have a 46% probability of reaching the semi-finals (whereas, with equal chances, the probability should be less than 12.5%).

[20] If all participants in the group stage had the same probability of participating in the round of 16 , the probability should be 50% (16/32). This would be the appropriate benchmark against which to assess actual frequency of participation if the top clubs concerned had participated in all competitions. This is however not the case. Only Real Madrid has participated in all competitions since 2000. Accordingly, a benchmark involving equal chances of participation will be strictly less than 50%. To put it in another terms, the probability of participating in a stage of the competition is the probability of participating conditional on being in the group stage multiplied by the probability of being in the group stage. Since the second term is strictly below one, the probability of participating is strictly lower than the conditional probability.

Figure 11: Success of the Most Frequent Participants in Reaching Semi-finals



3.2 Entrenchment in the Europa League

The following graph shows the entrenchment gap for the last 16 participants in the Europa League and its evolution over time. We focus in this next graph on the last 16 but similar observations can be made with respect to the last 8 or the last four (available on request). [21]

We observe that the entrenchment of clubs in the Europa League is less pronounced than in the CL (as measured for instance by the entrenchment gap). This is to be expected given that access to Europa League, which includes many clubs having been eliminated from the CL, as well as lower ranked clubs from national leagues can be expected to lead to more diversity in participation. One can still observe that the entrenchment is increasing over time. Not only does the entrenchment gap increase over time, but we also observe that some clubs participate during most year in the sample period (there are 3 clubs – Roma, Bayer Leverkussen and Rangers that participate in 4 competitions out of 5 in the final sub-period).

[21] As discussed above, we consider the entrenchment in the CL and EL separately. This is a conservative approach.

Figure 12. Entrenchment in the Europa league

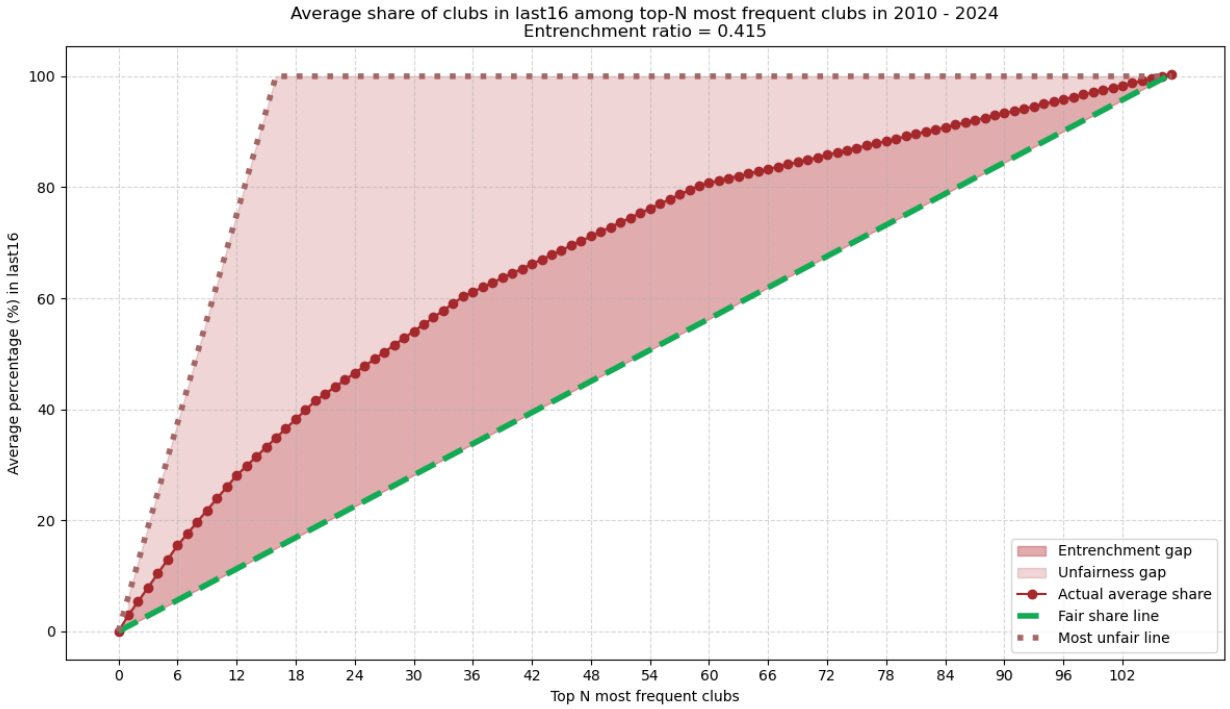
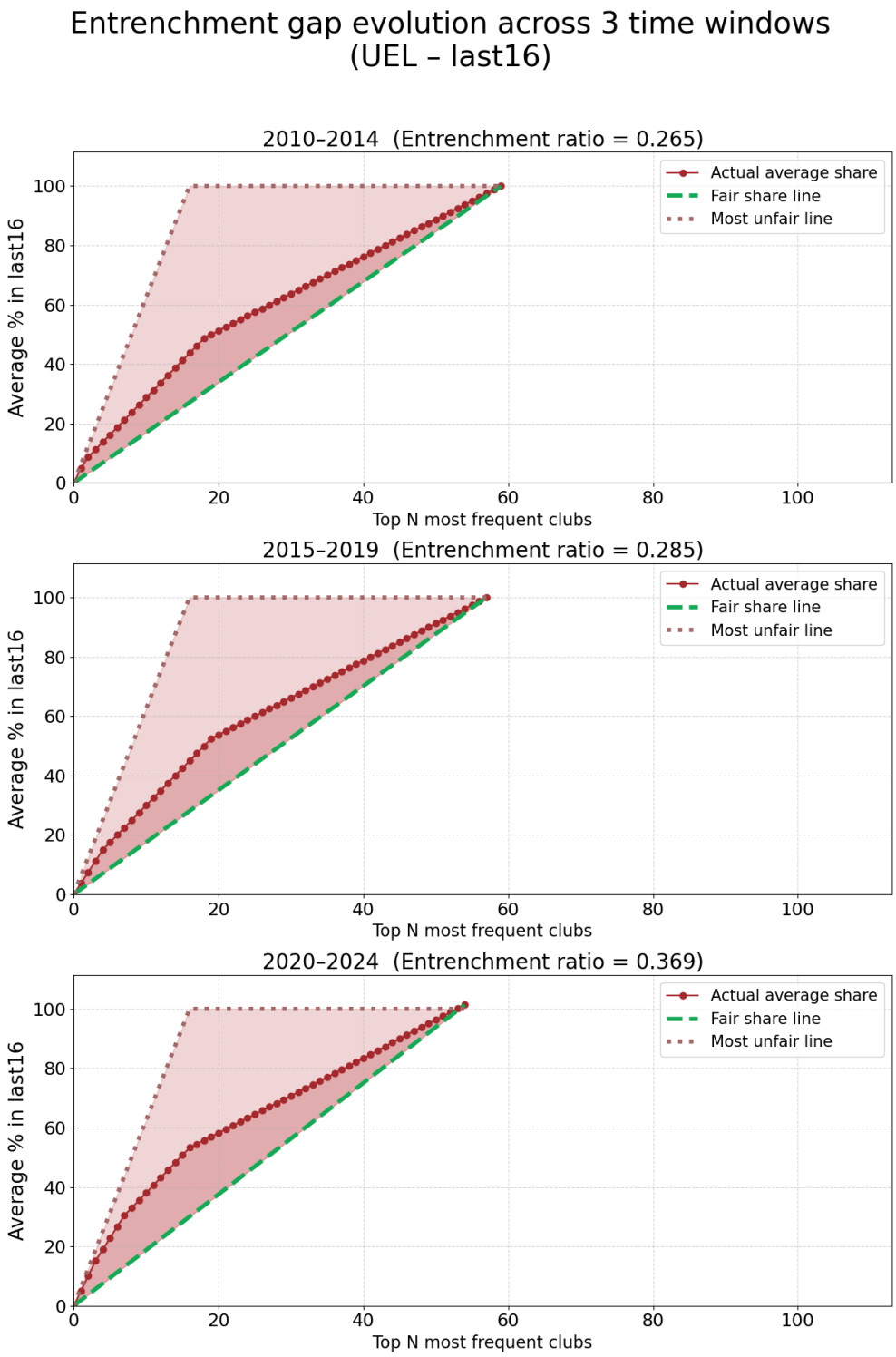


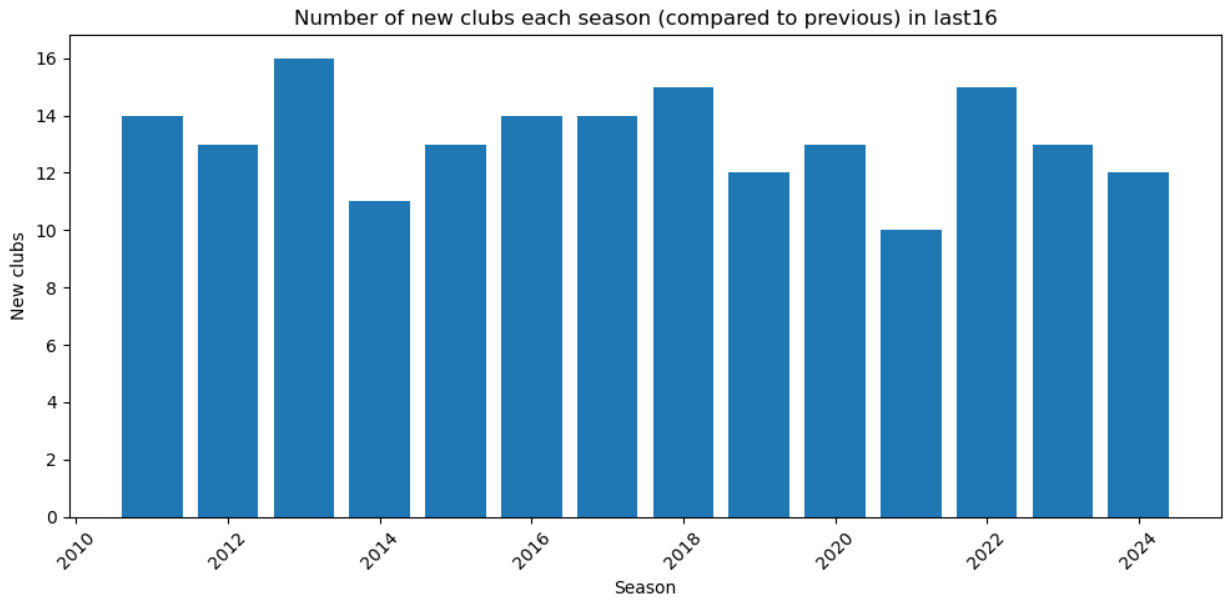
Figure 13. Entrenchment Gap in the Europa League, Three Sub-periods



The following graph considers the number of clubs in each season that were not present in the previous season (among the last 16). We observe that, as expected, there is less entrenchment

according to this measure in the Europa League by comparison to the CL. Entrenchment however tends to increase over time.

Figure 14: Entry in Quarterfinals, Europa League, Relative to the Previous Season



4. Competitive Balance in National Leagues

This section gathers evidence on the evolution of competitive balance in European leagues. We start with a short methodological discussion on the concept and measurement of competitive balance.

4.1. Concept and Measurement

Competitive balance in a confrontation can be defined informally as a situation in which the participants in a contest have similar probabilities to prevail. It is generally considered to be a major determinant of the demand for sports' events[22]. Viewers' willingness to pay is enhanced by the prospect of a close confrontation between team, leading to greater effort by players and

[22] See Hogan, V., Massey, P., Massey, S. (2013), see also Szymanski (2001) for evidence on English soccer.

maintaining uncertainty throughout the confrontation[23]. Accordingly, the governance of competition often aims at preserving competitive balance[24] and it is closely monitored as an indicator of the quality of competition[25].

While the concept of competitive balance is straightforward at the level of an individual confrontation (a match), it is potentially more intricate at the level of a tournament or a league competition. A competition is more than just a set of individual confrontations. There are indeed potentially a number of different events that are relevant for fans and the uncertainty about the events could evolve over time. For instance, in national European leagues, besides the identity of the winner, the identity of the teams in top positions may be of interest as they give access to European competitions (as discussed above). At the other extreme, the identity of teams relegated to a lower division at the end of the season may be of interest. By comparison, closed leagues (as it common in the US) might be more focused only on the identity of the winner[26].

The uncertainty of the outcome will also evolve over time. If the relevant event is, for instance, the identity of the winner, matches which involve clubs that can no longer win will have no stake and thus trigger no interest in this respect.

As a consequence, the sporting interest associated with a competition can be seen as a combination between the interest triggered by individual confrontations and uncertainty surrounding their outcomes, per se, and the particular consequences of the outcome of each confrontation with respect to events of interest[27].

[23] See e.g. Blair, (2012).
[24] As in the case of rules restricting the transfer of players in the US
[25] Alternatively, the interest for sporting contests could be related to the equality of resources available to the various teams. This approach would recognize the significance for the fans of the ability the clubs to translate resources into competitive teams.
[26] See Manasis and Avgerinou (2013).
[27] See Scelles et al (2013) who distinguish between competitive balance and competitive intensity

In principle, competitive balance relates to the uncertainty of outcomes in a confrontation and it is thus an ex ante concept. Betting data can be used to capture the extent of uncertainty. This is one of the approaches that we use below. More often, however, competitive balance is measured ex post. Of course, any given confrontation only has one outcome (win, lose and draw), so that competitive balance must be captured by the variance in outcomes for a sample of confrontations. The observed variance in outcomes can then compared with the variance that would be observed in particular benchmarks[28]. The situation in which all clubs have the same probability of winning ex ante or the situation in which the disparities in probabilities of winning is maximum are commonly used benchmarked.

There is a sizable literature on the assessment of competitive balance. The choice of the appropriate measure depends to some extent on the question being investigated. Since we want to assess the extent to which competitive balance may have been affected by the dominance of some clubs, it is important to consider competitive balance at the level of individual matches. Indeed, there are many confrontations in a season that are unlikely to be affected by the dominance of some clubs, like the confrontations between clubs at the bottom of the leagues. An aggregate index at the level of teams may fail to capture the particular dimension of the change in competitive balance that we are seeking to identity[29].

In what follows, we will thus first consider an ex ante measure of uncertainty at the level of individual matches. This is probably the most suitable measure for the question that we seek to address. For each national league, we will compute the uncertainty for each match using

[28] For instance, the Noll-Scully metrics (the variance of win frequencies across teams divided by the variance that would be observed if all teams has the same win probability) considers the variance in win-loss records divided by the variance that would be observed if all teams had the same probability of winning, so that each confrontation is a random draw. This idealized variance is not zero, because in each confrontation there is a winner and a loser (or tie), so that that with just one confrontation, the idealized variance ex post is 0.25. In addition, the idealized variance will vary with the number of confrontations (N) and will converge to zero as the number of confrontations grows large (0.25/N). Measures of competitive balance using win-loss records across teams should thus correct for the number of confrontations (or the length of the season), in particular if comparisons are made across different leagues or leagues for which the number of confrontations varies across seasons. This applies to measures using the variance of win-loss across teams or the HHI index.

[29] For a model that identifies the sources of changes in competitive balance, see Basini et al. (2023).

betting data. This will allow us to assess the distribution of uncertainty across matches for subsequent seasons and thereby identify whether there is an increase in the proportion of matches with low uncertainty and whether the frequent participants in the European leagues are involved in those matches.

We also consider an alternative ex post measure. The variance in results (win frequencies) obtained by teams, can under some assumptions be related to the variance of results (win frequencies) at the match level. We use the particular model proposed by Dorian and Nalebuff (2021). This model is based on parsimonious assumptions, such that the probability that a team prevails over another one in a confrontation depends on its ranking. The measure proposed by Dorian and Nalebuff (2021) controls for the number of teams and the number of confrontations in a league and can thus be used to make comparisons across leagues and over time.

4.2 Competitive Balance Inferred from Betting Data

For any specific match, the bookmaker will provide odds for a home win (the home team wins), the away odds (the visiting team wins) and an odd for a draw. The odd describes the payout, the amount that the bookmaker pays if the event materializes for a bet of 1 unit.

With a fair offer (so that the bookmaker does not make a margin), the odd will be the inverse of the probability that the event will materialize. So, for instance, with p_H as the probability that H will win and O_H as the odd , the profit of the bookmaker for a bet of one unit is 1 - $p_H O_H$, so that $p_H = \frac{1}{O_H}$.

Hence, with fair probabilities, we have that $p_H + p_A + p_D = 1$. The bookmaker will however have a margin so that $p_H^b + p_A^b + p_D^b = 1 + m$, where p_E^b denotes the book probability of event E and H, A and D stand for “Team at home wins”, “Team away wins” and “Draw” respectively. Making assumptions about how the margin was applied to the events by the bookmaker, one

can then retrieve the fair probabilities from the book probabilities. For instance, assuming that the margin was applied equally to all outcomes, one obtains that $p_E = \frac{p_E^b}{1+m}$.[30]

We have obtained data for betting odds for all matches played in the first division in Spain, England, France, Germany, Italy, Portugal, Belgium, the Netherlands, Greece, Scotland and Turkey for the seasons 2000-2001 to 2023-2024 from bet365.

We consider two measures of competitive balance at the match level, namely the difference between the probability of a home win and the probability of an away win (a small difference being indicative of a close contest) and the entropy, as a standard measure of uncertainty, with higher entropy capturing greater uncertainty ($E = -(p_H log p_H + p_A log p_A + p_D log p_D)$).

For each country and season, we thus obtain a distribution of the entropy across matches as well as a distribution of the difference between home and away probabilities. Entropy is in principle a better measure as it takes into account the three possible outcomes of a match and we focus on this measure. In what follows, we present the results for the EPL and subsequently comment on the results for the other countries, with detailed results in Annex 3.

Figure 15 presents the distribution of entropy in the EPL from 2005 to 2022. A high level of entropy captures a high level of uncertainty. It is immediately apparent that the frequency of matches with a high level of uncertainty falls over time and that the frequency of matches with low uncertainty increases (the tail of the distribution to the left becomes fatter).

[30] We have inferred the probabilities using both equal margins as well as variable margins, where margins are proportional to the odds. Results are very similar. We report the results using the variable margins.

Figure 15. Evolution of Distribution of Entropy Across Matches in the EPL (2005-2022)

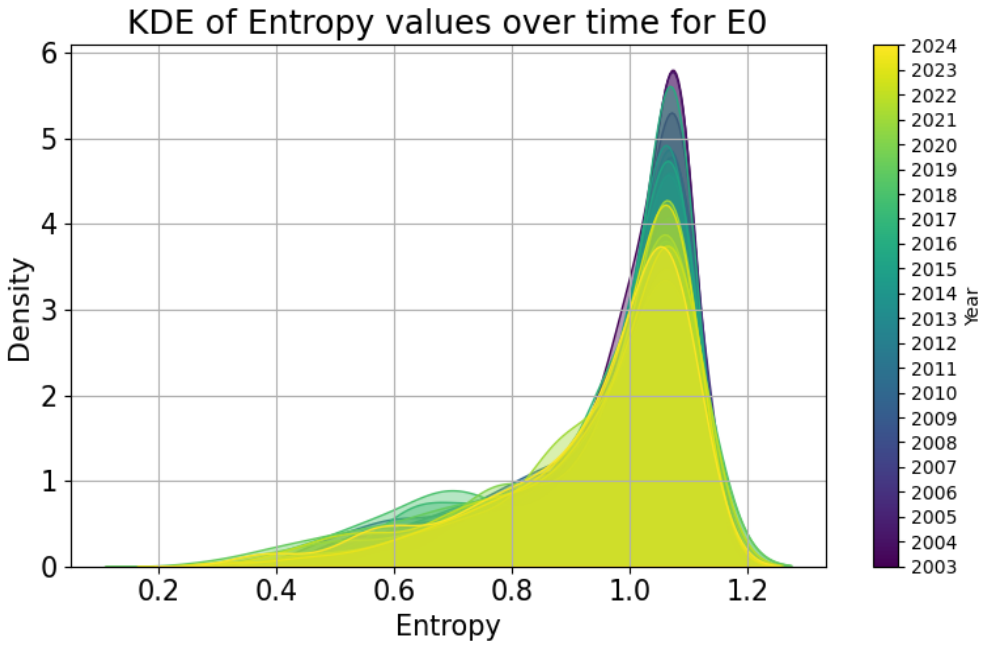
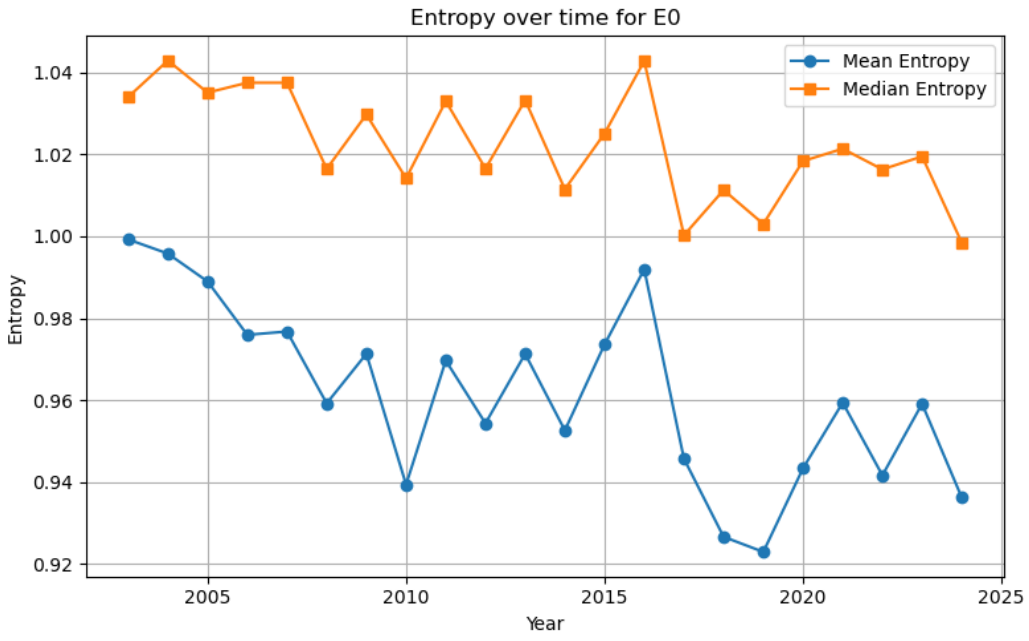


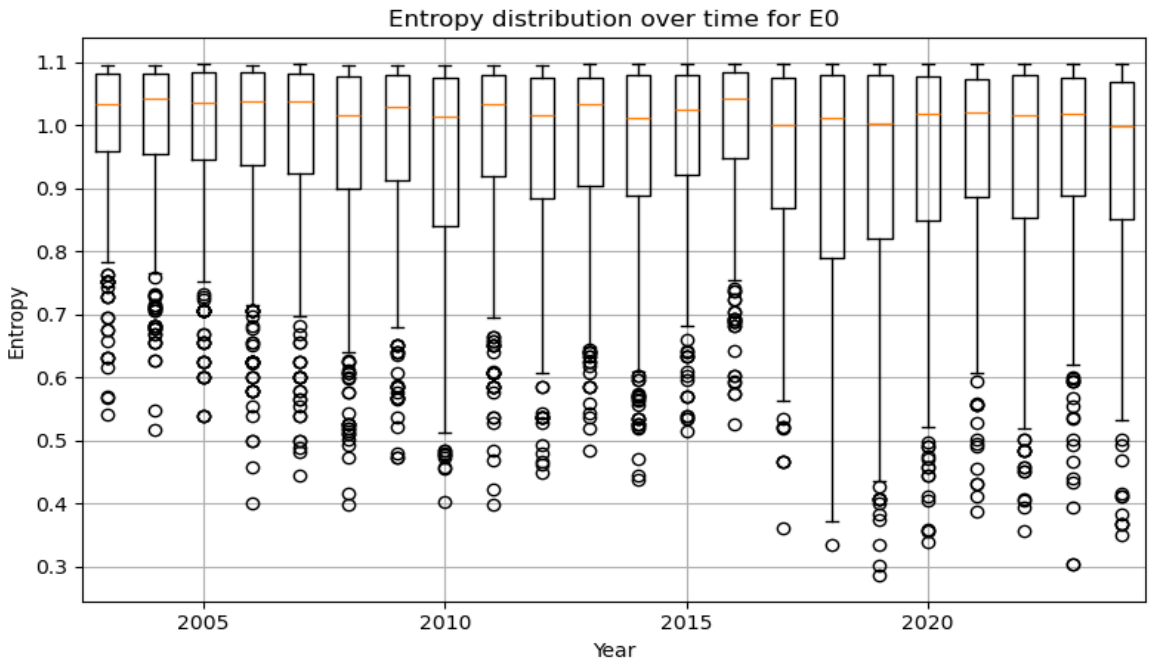
Figure 16: The Evolution of Mean and Median Entropy Across Matches in the EPL



The second figure takes a different cut of the same data, considering the evolution on the median and mean entropy across matches in the premier league. Here again, there is a clear decline of both measures over time.

The next figure considers more closely the distribution of entropy in each year.

Figure 17: Distribution of Entropy Across Matches, EPL

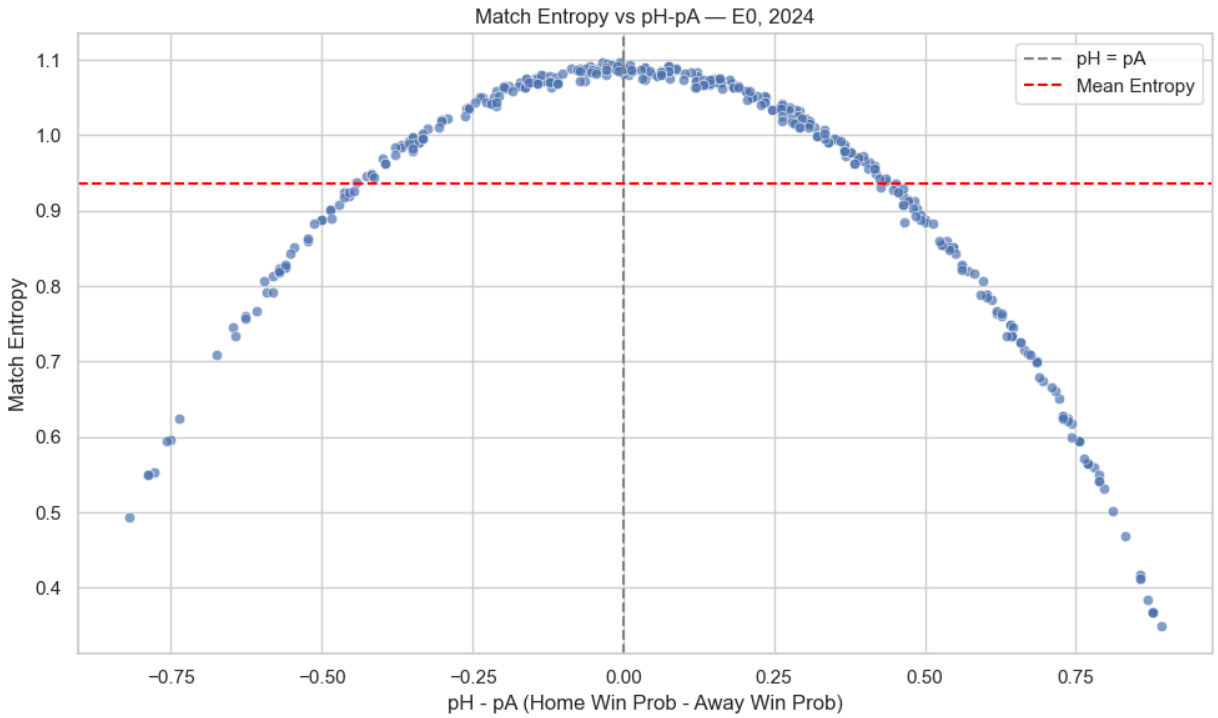


The box for each year contains the observations between the top and bottom quartiles. What is striking is that in later years, there are quite a few matches with a very low level of entropy (in the range of 0.3 to 0.6). At the same time, there is a decrease in the number of matches that are highly uncertain. When one compares 2024 with 2003, there is a decrease of 33% of the number of matches with maximum entropy (from 120 matches to 80).

We further consider the correspondence between entropy and the difference in the probabilities of winning for the two teams in Figure 18 for the year 2024. While the graph confirms that there are matches for which the difference in probability is small, it also reveals

that there are quite a few cases for which the difference in probability is larger than 0.6. This is pattern that is absent from the date for earlier years (not shown, available on request).

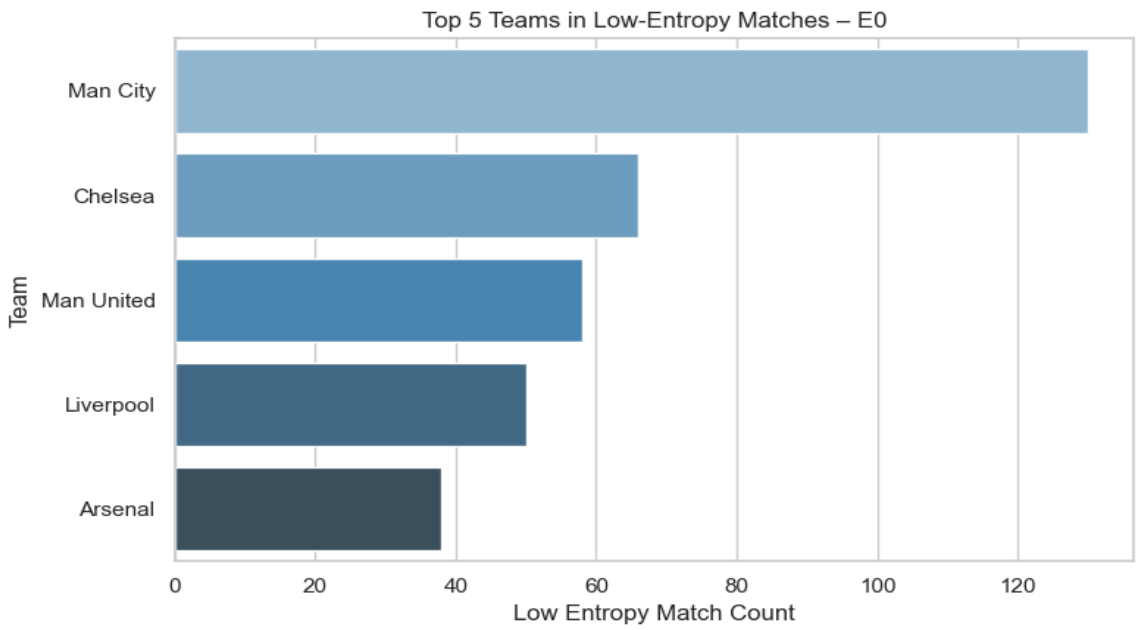
Figure 18. Match Entropy vs Difference in the Probabilities of Prevailing Across Teams



It is also instructive to identify the teams involved in low entropy matches. The following figure identifies the 5 teams most frequently involved in low entropy matches. As expected, these matches involve the dominant teams that are also regular participants in European competitions.

Finally, it is possible to test the hypothesis that the distribution of entropy did not change over time. We use a non-parametric test (the Kolmogorov-Smirnoff (KS) test). In the case of the premier league, the hypothesis (H_0) that the distributions are identical is rejected at the 5% level when one compares the average distribution for the year 2003-2005 with the distribution for the last three years we considered (2022-2024). Results can be found in Annex 4.

Figure 19. Competitors in Low Entropy Matches, EPL

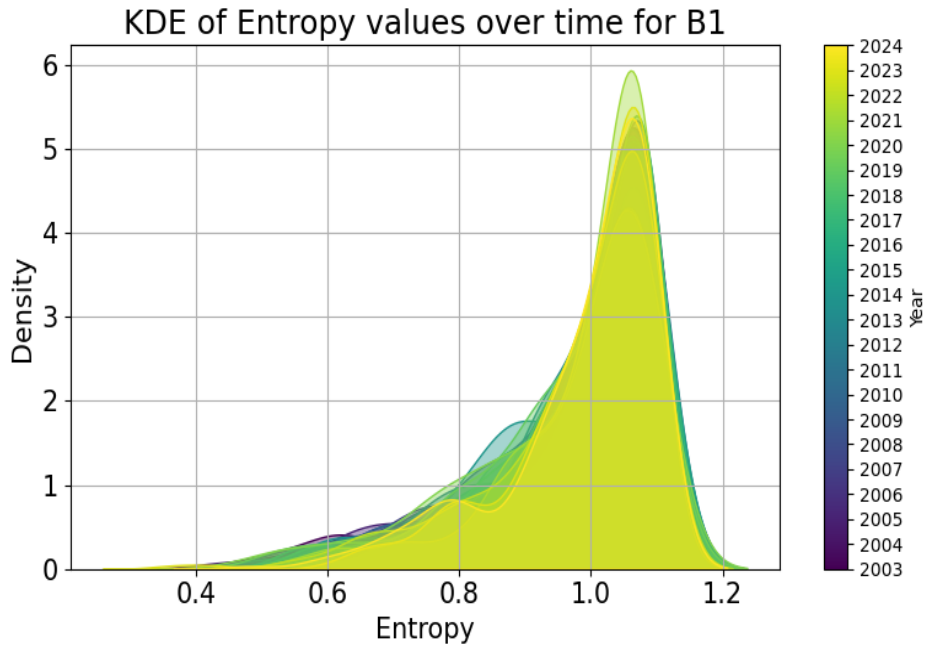


Similar conclusions can be reached for Spain, France, Germany and Italy. The evolution of the distribution of entropy across matches for those countries is presented in Annex 3. Results of the KS test can be found in Annex 4.

It appears however that the pattern is different in (some) smaller leagues. The following figure describes the evolution of the distribution of entropy for Belgium. We observe that the distribution does not change over time in the same way. Even in the later years, the proportion of highly uncertain matches remains high and the frequency of matches with very low uncertainty (the tail of the distribution) does not increase.

In the case of Belgium, as well as in other small countries, one can still reject the hypothesis that the distribution of entropy across matches is the same in the later years as in the earlier years. It is only in Greece that the hypothesis cannot be rejected.

Figure 20: Evolution of the Distribution of Entropy Across Matches, Belgium (2005-2024)



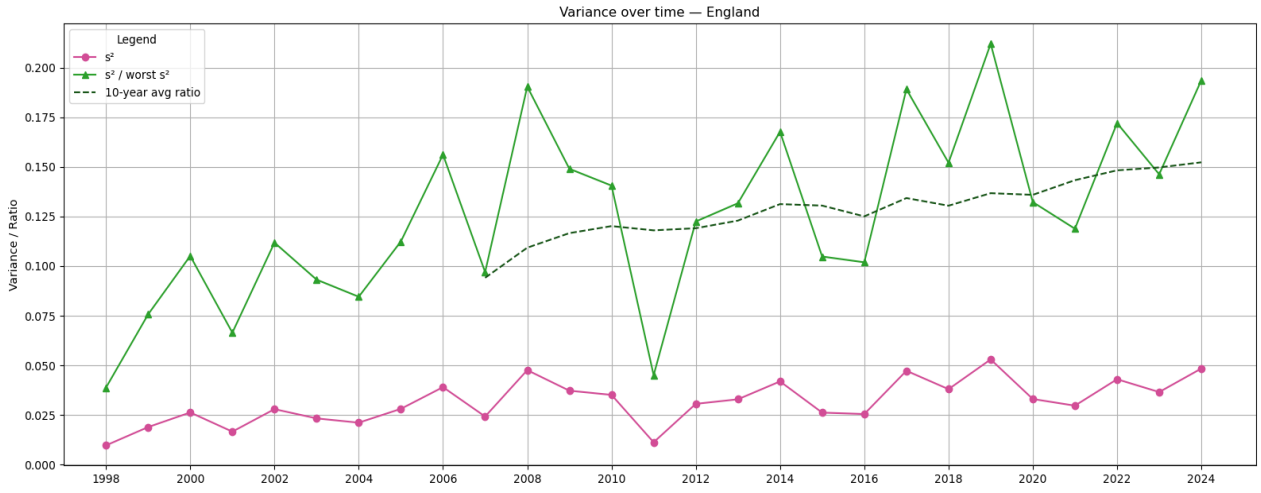
4.2 Competitive Balance Inferred from Match Results

As discussed above, our second measure considers the variance of win probabilities at the game level.

We focus on the EPL and subsequently comment on the other countries (with evidence relegated to Annex 5).

This figure presents the variance of win probabilities across games (in pink), as well the ratio of the variance in relation to the maximum variance (in green). The latter measure is important to the extent it captures to what extent the variance in win probabilities for an average game in the league approaches the largest possible variance. We observe that there is a trend upwards in the variance. The trend is particularly apparent with respect to the 10 years moving average (the dashed line).

Figure 21. Evolution of the Variance of Win Probabilities at the Game Level, EPL (1998-2024).

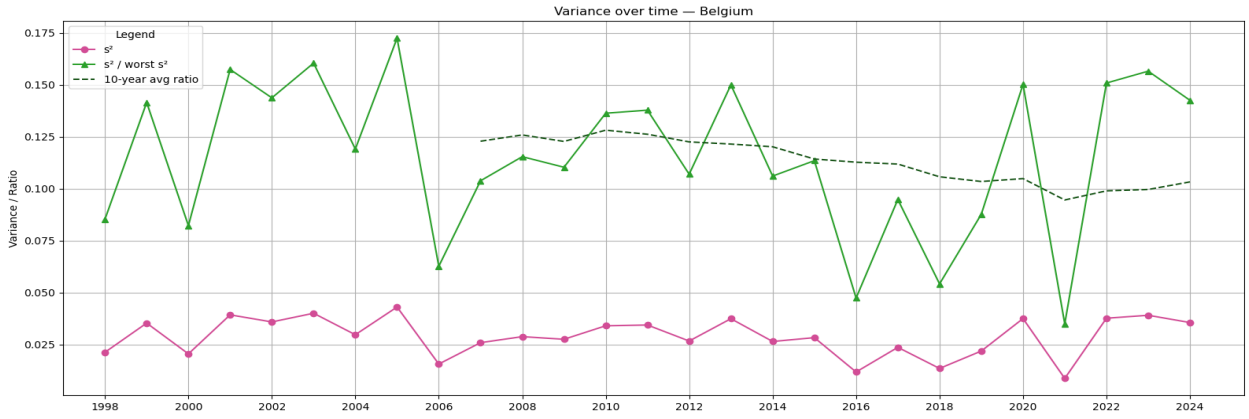


One can also test whether the variance changes over time. Using the Levene test (which does not rely on the normality of the underlying distribution), one can reject the hypothesis that the variance for the period 2018-2023 is the same as the variance in the period 1998-2000).

Results for the other large leagues are similar and are presented in Annex 6. For those countries (France, Germany, Spain, Italy), one can reject the hypothesis that the variance in the last few years is the same as the variance in the period 1998-2003.

The pattern however appears to be different in the smaller leagues. The following graph presents the evolution of the variance in Belgium. It is immediately apparent that there is no clear trend on the variance from 2000 onwards. This is confirmed by the statistical test according to which one cannot reject the hypothesis that the variance is identical in the two periods. In addition, the absolute value of the variance in Belgium is significantly below the level of the variance in England (as mentioned above, the variance controls for the number of teams and confrontations and can be compared across leagues).

Figure 22: Evolution of the Variance of Win Probabilities Game Level, Belgium (1998-2024).



Overall, we find that competitive balance has deteriorated in the top 5 leagues since 2000. The pattern for other leagues is more mixed with a number of smaller leagues, in particular Belgium, Scotland, Norway and Turkey in which competitive balance has not deteriorated.

These findings also appear to be consistent with other estimates, which however focus on measuring competitive balance at the level of teams. For instance, Ramchandani et al (2023) measure competitive balance using the normalized HHI (Herfindahl-Hirschman Index) of competitive balance (which is essentially a measure of variance of the number of points across teams in a season). They find that a statistically significant deterioration in competitive balance in the period of 10 years following the introduction of the financial fair play regulation (2011 to 2012) relative to the earlier period (2000 to 2010) in the large leagues as well as Portugal. For the smaller leagues, they only find a statistically significant deterioration in the Czech Republic and Slovakia and an improvement in Belgium with no change in the other small leagues.

Basini et al (2023) focus on the EPL. They develop a statistical model to identify groups of teams within the EPL. They find that there is a structural break around 2000 such that the EPL moved from balance league to a two-tiered league. They also find a strong persistence of membership in the top tier. These findings are consistent with the findings reported above such

that a small number of top teams account for a significant number of matches with low entropy (high imbalance).

5. Conclusion

Overall, this paper has found evidence that competitive balance has deteriorated in the major national leagues and that this deterioration is associated with an increasing frequency of matches without stakes involving one of the top teams The paper also finds that one of the source of dominance of a small number of teams in national leagues could be related to the frequent participation of those teams in European competitions[31]. Finally, we find that that the entrenchment of participation in European competition has likely been encouraged by UEFA's governance with respect to access to competitions and the distribution of prize money[32].

In light of this evidence, there is thus a concern about UEFA's governance which seems to have favored top clubs in top leagues at the expense of the quality of the national competitions. In short, UEFA's governance appears to be have been captured by the interest of top teams. This outcome does not come as a surprise in light of the threat (repeatedly voiced over time) that the strong teams would develop an alternative European competition as in Superleague. The observation that the strong clubs appear to have abandoned plans to develop a breakaway competition might be a source of concern in this respect, as latest developments may have given them a share to rents such that the threat of developing a breakaway competition is no longer needed.

The question also arises whether competition rules might impose discipline on UEFA in this context. In the "SuperLeague" judgment (European SuperLeague Company, C-333/21) the CJEU recognized the "dual" nature of UEFA as both an entrepreneur and a regulator and emphasized the need to impose a discipline inspired by Art 106 to avoid that regulation is

[31] As discussed above, not only has access to clubs from large leagues been enhanced but because of the organization of the Europa and Conference leagues, clubs that have failed at various stages of the CL have additional opportunities in these other UEFA sponsored leagues (and this feature is also likely to contribute to competitive unbalance).

[32] It is also noteworthy that decisions regarding access and prize money are difficult to anticipate for clubs that are not involved directly in UEFA governance (only EFC is involved).

designed and enforced in such a way as to infringe Art 102[33]. The governance of UEFA, which, as shown above, has contributed to the emergence of a few dominant clubs should thus be assessed with regard to these principles.

The extent to which UEFA fulfills its mandate as a regulator could also be questioned. By virtue of Article 51bis of its statutes, UEFA is the guarantor of the "promotion relegation" system (a feature that Advocate General Rantos paid particular attention in his opinion in C-333/21). Our analysis shows that UEFA's governance rules are likely to have weakened competitive balance in national leagues, and thereby challenged the system of promotion relegation that is meant to guarantee competitive balance. Competition rules have long recognized public policy objectives and considered conditions under which restrictions of competition could escape from the discipline of competition rules (along the Wouters' doctrine) because of the pursuit of public policy objectives. In light of our evidence, it would be implausible for UEFA to argue that its conduct is justified by the pursuit of public policy objectives.

[33] In C-333/21, the Court stated that the authority of the European sports governing body must be (§134) "… subject to restrictions, obligations and review that are capable of eliminating the risk of abuse of its dominant position by that undertaking, so as not to give rise to an infringement of Article 102 TFEU, read in conjunction with Article 106 TFEU".

References

Basini, F., V. Tsouli, I. Ntzoufras and N. Friel, (2023), Assessing competitive balance in the English Premier League for over forty seasons using a stochastic block model, Journal of the Royal Statistical Society, Serie A, 186, 530-556

Blair, Sports Economics, Cambridge University Press, 2012

Caglio A., S. Laffitte , D. Masciandaro , G. Ottaviano, (2023) Has financial fair play changed European football?, Sports Economic Review, 3

Csató L. and D Petróczy, (2025) Competitive balance in the UEFA Champions League group stage: Novel measures show no evidence of decline, Annals of Operations Research (2025) 352:105–120

Doria M. and B. Nalebuff (2020), Measuring competitive balance in sports, Journal of Quantitative Analysis is Sports,

Fort, R. and J. Quirk, (1997), Introducing a competitive economic environment into professional sports, in Advances in the Economics of Sport, vol 2, edited by W. Hendricks, 3-26, Greenwich CT, JAI Press

Hogan, V., Massey, P., Massey, S. (2013). Competitive balance and match attendance in European rugby union leagues. Economic and Social Review, 44, 425–446

Manasis, V. and V. Avgerinou, (2013), Quantification of competitive balance in European football: development of specially designed indices, IMA Journal of Management Mathematics 24, 363–375

Peeters, T., (2011), Broadcast Rights and Competitive Balance in European Soccer, International Journal of Sport Finance, 2011, 6, 23-39,

Ramchandani, G., D. Plumley, S. Mondal, R. Millar and R. Wilson, (2023) 'You can look, but don't touch': competitive balance and dominance in the UEFA Champions League, Soccer & Society, 24:4, 479-491, DOI: 10.1080/14660970.2023.2194512

Ramchandani, G., D. Plumley , A. Davis and R. Wilson , (2023) A Review of Competitive Balance in European Football Leagues before and after Financial Fair Play Regulations, Sustainability, 2023, 15, 4284.

Scelles, N., C. Durand, L. Bonnal, D. Goyeau & W. Andreff, (2013), Competitive balance versus competitive intensity before a match: is one of these two concepts more relevant in

explaining attendance? The case of the French football Ligue 1 over the period 2008–2011, Applied Economics, 45:29, 4184-4192, DOI: 10.1080/00036846.2013.770124

Szymanski, S., (2001), Income inequality, competitive balance and the attractiveness of team sports: some evidence and a natural experiment from English soccer, The Economic Journal, Vol 111, N°469, p 69-84

Triguero-Ruiz, F., & Avila-Cano, A. (2023). On competitive balance in the group stage of the UEFA Champions League. Scottish Journal of Political Economy, 70(3), 231–248.

Annex 1. Access to European competitions

This Annex provides the systematic background information on which the discussion in section 2 relies.

A.1.1. Champions League

In what follows, we will discuss (i) how these 32 clubs are selected and (ii) how the competition between these 32 clubs has been structured.

(i) The selection of participants

Clubs can either obtain direct access to the competition or gain access through a prior qualification stage. The ranking of leagues plays an important role in the operation of the system. UEFA has a ranking of clubs in which the number of points of a club is determined by its results in the UEFA Champions League, UEFA Europa League and the UEFA Conference League games over the previous five seasons[34]. Two points are awarded for each win by a club, and one for a draw (points are halved in the qualifying rounds). Leagues are also ranked according to the sum of the number of points of the teams belonging to the league. Bonus points are also added to reflect the stage of competition reached by each club (for instance three is a bonus for League phase participation and each knockout round participation (R16, QF, SF, Final)[35].

As discussed in detail below, access is facilitated for clubs (champions or clubs with a good ranking) coming from top leagues. Since the ranking of leagues is itself based on the number of points obtained in European competition in previous years, the system has a self-reinforcing

[34] Annex D of the official UEFA Champions League regulations.
[35] https://www.uefa.com/nationalassociations/uefarankings/country/?year=2026

element; leagues with better access today are more likely to accumulate points and hence are likely to have better access, and better opportunities to accumulate additional points in the future and thereby maintain their position.

From the season 1999/2000 to the season 2009/2010, 16 clubs (50%) had access through the qualification stage and another 16 had direct access. These were 10 champions from countries ranked 1–10, and six second-placed teams from countries ranked 1–6.

The organization of the qualification was also broadly stable during this period. It involves three rounds of qualification. The first round involved 28 champions from the association with the lowest rank (25 to 53), from which 14 teams emerge. Another 14 teams were then seeded into a second round of qualification. These were 8 champions from higher ranked associations (17 to 24) and 6 runners ups from associations 10 to 15. This would lead to the selection of 14 teams for the third round of qualifications. Another 18 teams were then seeded, namely champions from even higher ranked associations (11-16), runners up from associations 7 to 9, 6 third places finishers from associations 1 to 6 and 3 fourth place finishers from associations 1 to 3. This third qualification round thus involves 32 teams (18+14), leading to the selection of the 16 participants in the CL.

A few features of this system can be emphasized. First, champions of top leagues, as well as runner up from very top leagues, who benefit from direct access, do not need to incur efforts in playing qualifying matches. They are thus likely to be in better physical conditions when the competition starts. Second, the qualification is designed such that teams from lower ranked leagues play against one another and those emerging from these contests are confronted with seeded teams coming from better leagues (either champions of intermediate leagues or teams well placed in the very top leagues). One consequence is that the qualification involves better and better teams as it moves from one stage to the other and each stage is likely to be balanced. Another consequence is also that the lower is the rank of the association from which a champion originates, the larger is the number of matches that it would have to play,

and win, to have access. Third, since a relatively small number of teams from better leagues are introduced to face the teams that have emerged from previous rounds involving teams from lower ranked leagues, strong teams will typically not face one another until the final stages. By staging the entry of increasingly stronger teams, UEFA "shields" stronger teams from facing each other. The access to the competition for teams from stronger leagues is thus facilitated. Fourth, the seeding is such that it is entirely possible that none of the teams emerging from the qualification is actually a champion from a national league. To illustrate, the minimum number of champions emerging from the second qualifying round is 8 (this arises when the 6 runners up from the second qualifying round survive), so that the minimum number of champions in the third stage is 14 (those 8 and the six champions seeded in the third stage). They can potentially all be eliminated as 16 teams are eliminated in the third stage.

There have been two significant changes to the system of access. The first one was implemented in the season 2009/2010. It involves an increase in the number of teams having direct access from 16 to 22 (and thus a reduction of the number of clubs having access through qualification from 16 to 10). Direct access was enlarged to include champions from lower ranked leagues (11 to 13) but also to give more extensive access to the top 3 leagues (which in addition to the runner up would have gains access for the third ranked team).

The qualification system was also adjusted. While in the prior system champions would play against seeded teams that were not champions but in top position in good leagues, the reform introduced a separation between qualifications involving only champions (the so-called Champions path) and qualifications involving only teams who were not champions but well positioned in top leagues (the League path, only active at the third qualification round and play-off round). Each path would give access for 5 participants. The qualification was thus specialized with the consequence that champions have better prospect of participation in the CL. As they would not face non-Champions, they could not be outcompeted by teams well ranked top leagues, an outcome that was, as discussed above, possible in the previous organization. Another consequence is that teams in the league path are more likely to face

challenging competitors to gain access. The 5 participants in each path were selected by an additional playoff round. For the champions path, it involves the 10 teams emerging from the third qualification round. For the league path, it involves the 5 clubs emerging from the third qualification round as well as 5 clubs seeded in this final phase (2 third-placed teams from associations 4 and 5, 3 fourth-placed teams from associations 1–3).

Besides, the seeding of the non-champions (in the league path) was also naturally adjusted to reflect enlarged direct access to teams from very top leagues. This concerns specifically, the third teams from leagues 1-3 that were previously seeded and have direct access in the new system. Overall, the number of non champions that were seeded fell from 18 to 15. The number of champions participating in the qualification phase was reduced from 42 to 39. This reflects the fact that champions from leagues 11 to 13 have gained direct access in the new system.

Overall, the reform implemented in 2009/2010 had two effects on the access to champions from lower leagues. On the hand, access to the CL from qualification has been reduced. On the other hand, access to champions from lower leagues has been improved to the extent that they have a guarantee of 5 participations. This is significant to the extent that non-Champions from top leagues may have been more challenging competitors than champions from second tier leagues prior to the reform[36]. There is a guaranteed share of a small pie for champions from lower ranked leagues. The main feature of the reform is still that it has enlarged the scope of direct access for clubs from top leagues in particular for the top three leagues.

The second significant reform was implemented in the season 2018/2019. First, the set of clubs having direct access has been enlarged to include 5 teams place third (instead of 3), namely those from leagues ranked 1 to 5 and to include 4 teams placed fourth from leagues 1 to 4. There is also a marginal decrease in the number of champions having direct access from those in leagues 1 to 12 to those in leagues 1 to 11. At the same time, the number of teams

[36] This issue could be investigated empirically but is beyond the scope of the paper.

having access through qualification has been reduced from 10 to 6, and more specifically from 5 to 4 for access to the champion path and from 5 to 2 for access through the league path.

The qualification stage has also been adjusted. The champion's path has been accommodated to allow for the seeding of the champion from league 12 (which as just observed no longer has direct access). More significantly, an additional preliminary stage has been added involving the champions from the bottom leagues (52 to 55). Seeding has been spread over more rounds (so that instead of seeding of 31 and then 3 clubs respectively in second and third rounds, seeding involves, 31, 4, 2 and 2 teams respectively in first to third rounds and the play-off). This makes it easier for the last champions to be seeded (from leagues 12 to 15 to access the CL).

Following the reform, the league path is also starting earlier, as of the second qualifying round but there is no seeding any more at the final, play-off round. The number of teams in third position being seeded is reduced from 3 to 1 (association ranked 6), but the other (4 and 5) two have direct access. Similarly, the teams in fourth position from top leagues are no longer seeded, but four of them (leagues 1 to 4) have direct access.

Access through the league path has thus been narrowed but direct access has been granted to clubs that would have been seeded before the reform. Access to the top 15 leagues has been improved (with a total of 27 – 22 in direct access and 5 through the league path – before the reform to 28 – 26 in direct access and 2 through the league path).

Overall, the second reform reinforces the first one in granting more direct access to teams from top leagues.

(ii) The organization of the competition

Regarding the organization of the competition, there were originally two group stages. There were 8 groups of 4 clubs, and the two clubs coming at the bottom of the group were eliminated. Those on the top were proceeding to a second group stage involving 4 groups. The clubs on the bottom were eliminated and the eight remaining clubs would play a knock off competition, starting at quarter finals. In 2003/2004, the second group stage was eliminated. After the first group stage, the remaining 16 clubs play a knockout competition starting at Eight finals.

Regarding the formation of the groups, UEFA has introduced a pot system reflecting the relative sporting strength of clubs participating at this stage (from Pot 1 involving the strongest teams to Pot 4 involving the weakest ones).

Originally, Pot 1 involved the winner of the CL in the previous seasons and the seven teams with the highest rankings – with other pots populated with teams with decreasing rankings. In 2015/2016, the composition of Pot 1 was changed to include in addition to the title holder, the champions of the top seven associations based on their UEFA country coefficients. This change has the consequence that champions from the top leagues can no longer compete against one another in the first stage of the competition. Their access to the final stages of the competition is thus facilitated.

From 2018/2019 to 2021/2022, Pot 1 contained the Champions League title holders, the Europa League title holders, and the champions of the top six associations based on their 2017 UEFA country coefficients. In 2022/2023 and 2023/2024, Pot 1 contained the Europa League title holders and the champions of the top 7 associations based on their 2017 UEFA country coefficients.

Groups are then formed by a random draw from each pot (to form 8 groups of four clubs). The draw from pots composed of clubs with different sporting strength ensure that all groups have a balanced representation. In this way, it also avoids that strong clubs eliminate one another in the early phases of the compensation and thereby gives strong clubs an easier path to the

final stages. The changes in the composition of Pot 1 from 2015 onwards has actually made it easier for clubs belonging in top leagues (rather than the top clubs) in having access to the final stages.

(iii) The 2024/2025 reform

The reform introduced in 2024/25 involves mostly the final stages. This stage now involves 36 teams (instead of 32) but 29 teams (instead of 26) have direct access. Only 7 teams have access through qualifications (against six before), with 5 teams having access from the Champion path and 2 from the league path. In addition, the direct access to teams from the very top leagues is reinforced; there is a direct access for the third place team from the league at the 5th rank and the two associations with the highest coefficients in the previous season receive an additional direct access. The fact that non only the current ranking but also the ranking in the previous season is relevant for direct access further reinforces the self-reinforcing element of the system of access.

There are some minor adjustments to the qualification rounds but the organizing principles (progressive seeding of teams from better ranked leagues and bifurcation between league and Champions paths) remains the same.

For the final stages, instead of 8 groups, there is now a single league table (the so-called Swiss system). Teams are allocated into 4 different pots according to their ranking (with the first pots including the best teams). Each team plays against one opponent from each pot at home and another one away. The best 8 teams from this initial confrontation advance directly to the knockout stage. The team ranked 9 to 24th qualify for a playoff, from which another 8 teams emerge. Relative to the previous organization of the final stages, this system involves a greater diversity of opponents (in the old system, each club would meet one clubs from the other pots; in the current system, it meets two of them). Another feature of the new system is that it

provides faster access to very top teams. Unlike what happens before, some teams (the second tier) have to play more matches to access the knock out stages[37].

Overall, we first observe that access to the CL has an element of self-reinforcement induced by the role played by the UEFA league coefficient (which is based on past performance in previous seasons) in granting access. Leagues whose clubs participate in any given year are more likely to accumulate points and thereby have better access in the future. Second, we observe that two reforms of the access in the seasons 2009/2010 and in 2018/2019 have enlarged privileged access to better leagues and have thereby further reinforced the self-perpetuating feature of access; with more opportunities to accumulate points, the top leagues are even more likely to participate in future seasons. Third, we observe that change in the composition of Pot 1 in the season 2015/2016 (on the basis of league rather than club ranking) has further improved access for the top 7 leagues and thereby is contributing to the self-perpetuating feature of the system of access

A.1.2 The Europa and Conference leagues

Initially (in 2009/2010), the Europa league involved 192 teams in three qualifying stage followed by a playoff, a group stage and a knock out stage.

The principles behind the access to the various stages are similar to those of the CL to the extent that (i) weakest teams play from the outset of the qualification (runners up and teams placed third from worst ranked leagues) (ii) the participation is progressively enlarged to better teams; For instance, the second round involves (in addition to winners from the first round) Cup winners from worst ranked leagued, runner up and teams place third from better leagues

[37] According to UEFA (2023), « The new format is expected to provide greater sporting fairness for all clubs, a more dynamic ranking, wider diversity of opponents and a greater level of sporting interest until the last match day ». According the UEFA President, "the format chosen strikes the right balance and will improve the competitive balance" (UEFA, 2022). Gyimesi (2024) compares the competitive balance in the two systems using ELO rankings as determinants of the balance in confrontations in a simulation. He concludes that the reform improve the competitive balance and in particular reduces the occurrence of stakeless matches.

than in the previous round as well as fourth and fifth ranked team from even better leagues; this access rules presumably reflects the presumption that third ranked team from a league will have a strength comparable to fourth or fifth ranked teams from leagues with a better ranking; Similarly, the third qualifying round involved (in addition to the winners from the previous round), domestic cup winners from better leagues than in the previous round as well as teams ranked third, fourth, fifth and sixth from better leagues than in the previous round (iii) at the last three stages (playoff, group stage and knock out), clubs eliminated from Champions league are seeded (with the same logic that the clubs seeded later have survived until a later stage of the CL). Overall, 33 clubs having been eliminated at the third qualifying stage or the group stage of the CL were seeded (15 from the third qualifying round seeded at the playoff round, 10 from the CL play-off round seeded at the Group stage and 8 third placed teams from the CL group stage seeded at the knock out phase). There are thus 18 clubs eliminated from the CL that have direct access to the final phases of the EL (either group or knock out stage). In the initial seasons, the qualifying stages of the Europa League involved 46 clubs in the first stage, 80 clubs in the second stage, 70 clubs in the third stage, 76 clubs in the playoff, 48 in the group stage and 32 in the knock-out stage.

The competition was adjusted in the seasons 2012/2013; Cup winners from worst ranked leagues were introduced at the first qualifying stage – instead of the second and Cup winners were introduced more progressively across the three stages (in the initial format, respectively 25, 13 and 15 cup winners were introduced at the second and third stage and the playoff; after the adjustments, there were 17, 16, 3, 10 and 6 cup winners introduced as the first, second and third stage, the playoff and the Group stage). This adjustment made it more difficult for Cup winners from least well ranked leagues to access the final stages of the competition. The adjustment increased the number of teams involved in the first qualifying stage (to 74) and reduced the number of team participating in the third stage and the playoff (to respectively 58 and 62)

The competition was again adjusted in 2015/2016. It essentially involves a rebalancing of the first and second qualifying stage. The first qualifying stage was enlarged to 102 teams and the second qualifying stage was reduced to 66 teams (instead of 80). The first round involved both large number of cup winners (thus adding clubs winners from better leagues as well a larger number of runner up and third teams). The second stage only involved the participation of an additional 15 teams instead of 41 in the previous seasons. The effect of this adjustment was thus (like the previous one) to introduce more heterogeneity among clubs in the initial stage.

There was a further significant adjustment in the season 2018/2019. Besides the introduction of a preliminary stage (involving only the 14 weakest clubs), the major innovation relates the seeding of clubs eliminated from the Champions League. Whereas 33 clubs that were eliminated either at the third qualifying rounds or the group stage of the CL were seeded in the previous edition, 53 clubs from then seeded from the CL and these clubs were eliminated at earlier stages of the CL. Concretely, the second and third qualifying stages of the Europa league were segmented in two (separate) paths. The main path involved essentially the access rules as before. The Leagues path by contrast, involves only teams eliminated from the CL, with 3 clubs eliminated from the preliminary stage and 15 teams eliminated from the first qualifying round of the CL seeded at the second qualifying round of the EL ; another team eliminated from the first qualifying round as well as 10 teams eliminated from the second qualifying round of the Cl seeded at the third qualifying round of the EL (league path); and 6 teams eliminated from third qualifying round of the CL seeded at the play-off stage of the EL. The introduction of a separate league path naturally lead to an increase in the total number of teams involved in the second and third qualifying stages of the EL (respectively to 92 teams up from 66 and 70 up from 58).

From the group stage round onwards, the main path and league path are then merged. Their team composition changes however in favor of clubs that have been eliminated at various stages of the Champions league. In addition to the 10 teams seeded directly from the CL at

the group stages, another 8 participants at the group stage originate from the league path (and hence have also been eliminated from the Cl) Before the reform, 10 teams were seeded from the CL at the group stage, but it was entirely possible that none of the team seeded from losers of the CL at the previous (play-off) stage would have emerged from that stage. Hence, the effect of this reform is thus, not only to increase the participation of losers from the CL in the EL but also to provide some guarantee that they will have access to the final stages of the EL.

There was a major change of the competition in the season 2021/2022, which pursues further the trend of the previous adjustments. The first two qualifying stages were essentially spinned-off to form a new separate competition, the Conference league. As a result, the Europa league only involved 58 clubs from 2021/2011 onwards, starting from what used to be the third qualifying round. As the third qualifying round is no longer fed by the second qualifying round (which is spinned off), the third qualifying round only involves 16 teams; there are 10 teams seeded from losers of the Champions league in the Champions path, 3 domestic cup winners and another 3 teams eliminated from the CL second qualifying stage in the Main path. Hence, 13 teams out of 16 originated from the CL. At the playoff round, six domestic cup winners are seeded, in addition to 6 teams seeded from the losers of the CL. There are in addition 5 clubs originating from the league path, which by construction originate from the CL, and another 3 teams from the main path – which could however also all originate from the CL (as the main path of the third qualifying round involves 3 cup winners and 3 eliminated from the CL). Overall, there is a thus a minimum of 11 and a maximum of 14 clubs (out of 20) which originate from the CL. It is thus also possible that the 10 clubs having access to the group stage are former participants of the CL. Together with those seeded from the CL at the group stage (another 10), up to 20 of the 32 participants at the group stage could originate from the CL. The knock out phase could thus involve only former participants of the CL. Overall, the effect of this reform is to turn the Europa league essentially into a competition among teams eliminated in the various qualification stages of the CL, with the usual logic that better teams have an easier path.

The Conference league has thus been formed out of the spin-off from the first two qualifying phases of the EL. Additional rounds (third qualification round, playoff, group stage, knock-off stage) have been added whose organization largely mimic that of the EL before the reform. Hence, the Conference is similar to the previous EL. In particular, it has kept the segmentation between the league path and the main path. The teams seeded from other competitions involve 15 teams eliminated from the first qualification stage of the CL (at the second qualification round of the Conference League). However, the clubs seeded later in the competition (from the third qualification stage of the Conference league onwards) are now clubs that have been eliminated from the Europa league (and no longer from the CL as those are seeded in the EL).

Considering both the Conference league and the new version of the Europa league, it appears first that the same number of clubs are seeded from the CL (56) before and after the reform but the best performers are seeded in the Europa League and the worst performers (those eliminated early) are seeded in the Conference league. Second, the organization of the conference leagues largely mimics that of the former Europa league, whereas the new Europa league no longer involves teams originating from the confrontation of the worst performers. The net result is a thus segmentation between two groups: on the one hand, in the conference league, the teams surviving the initial stages of competition among the worst performers which continue a competition on their own and face in part teams that are eliminated in the Europa league new format; on the other hand, better teams that are confronted mostly with teams that have been eliminated from the champions league.

One consequence of this organization is that clubs in each competition (the conference and reformed Europa league) are more likely to be homogenous in terms of expected performance and this should contribute to competitive balance. Another consequence is that teams participating in the champion's league but eliminated at the qualifying stage have more opportunities to play; they could actually be seeded twice, first in the Europa league and second in the Conference is league if they are eliminated from the Europa league.

Annex 2. Distribution of prize money

This Annex provides the background information on which the discussion in section 2 relies.

A.2.1. Distribution across clubs

The following table (Table A1) reports for each year, for each competition, the minimum, the maximum, the average payment and total payments, separately for the competition and its qualifying round[38]. We consider the CL, Europa[39] and Conference leagues.

For instance, in the 2006/2007 season, the minimum payment in the CL was 5.544 million and the average payment was 18.112 million, with a minimum of 0.140 million and an average of 0.482 in the qualifying stages. The second column for each competition reports the ratio of the maximum of the minimum for the competition (7.12 in 2006/2007) and the ratio of the average payment in the qualifying stage over the average payment in the competition (3% in 2006/2007).

Table A1 Prize money in CL, EL and CL

		CL		EL		Conf L	
2006-2007	Min	5 564 000		170'000			
	Max	39 592 000	7,12	6'251'500	36.77		
	Avg	18 112 500		825'476			

[38] Note that the participants in the playoff stage introduced from the season 2009/2010 onwards also receive payment from the overall amount dedicated to the champions league. Hence, from this season onwards, there are 42 recipients of payments for the CL.

[39] For the period 2004/2005 until 2007/2008 included, there are 40 participants in the group stage. From 2008/2009, there are 48 participants in the group stage but the payment for the final stage of the Europa league include 56 clubs namely the 48 clubs participating in the group stage as well as 8 clubs transferred from the CL – the third placed teams of the group stage of the CL. From 2020/2021 onwards, after the formation of the conference league, there are 40 recipients.

	Total	579 600 000		34'670'000			
	Min QR	140 000					
	Max QR	890 000					
	Avg QR	482 308	0,03				
	Total	25 080 000					
2007-2008	Min	5 931 000		223'825			
	Max	42 879 000	7,23	5'247'071	23.44		
	Avg	18 300 000		906'457			
	Total	585 600 000		38'071'175			
	Min QR	70 000					
	Max QR	1 200 000					
	Avg QR	500 000	0,03				
	Total	26 500 000					
2008-2009	Min	6 342 000		237'000			
	Max	38 281 000	6,04	7'241'319	30.55		
	Avg	18 231 250		886'201			
	Total	583 400 000		38'992'856			
	Min QR	70 000					
	Max QR	780 000					
	Avg QR	488 302	0,03				
	Total	25 880 000					
2009-2010	Min	10 841 000		494'000			
	Max	49 237 000	4,54	10'630'000	21.52		

	Avg	24 326 469		2'627'268			
	Total	778 447 000		147'127'000			
	Min QR	130 000		90'000			
	Max QR	460 000		810'000			
	Avg QR	350 000	0,03	397'358	0.15		
	Total	13 300 000		21'060'000			
2010-2011	Min	10 719 000		207'000			
	Max	62 947 000	5,87	9'422'000	45.52		
	Avg	25 406 250		2'813'929			
	Total	813 000 000		157'580'000			
	Min QR	130 000		90'000			
	Max QR	460 000		900'000			
	Avg QR	350 000	0,01	413'654	0.15		
	Total	13 300 000		21'510'000			
2011-2012	Min	9 829 000		220'000			
	Max	55 468 000	5,64	11'413'000	51.88		
	Avg	25 228 125		2'933'214			
	Total	807 300 000		164'260'000			
	Min QR	130 000		90'000			
	Max QR	460 000		900'000			
	Avg QR	343 158	0,01	400'755	0.14		
	Total	13 040 000		21'240'000			
2012-2013	Min	12 890 000		206'000			

	Max	67 114 000	5,21	11'938'000	57.95		
	Avg	29 705 313		4'041'071			
	Total	950 570 000		226'300'000			
	Min QR	140 000		100'000			
	Max QR	620 000		900'000			
	Avg QR	366 154	0,01	458'491	0.11		
	Total	14 280 000		24'300'000			
2013-2014	Min	12 888 000		236'000			
	Max	60 441 000	4,69	15'470'000	65.55		
	Avg	30 414 063		4'151'786			
	Total	973 250 000		232'500'000			
	Min QR	200 000		120'000			
	Max QR	575 000		1'230'000			
	Avg QR	411 184	0,01	600'755	0.14		
	Total	15 625 000		31'840'000			
2014-2015	Min	12 965 000		268'939			
	Max	89 100 000	6,87	19'144'232	71.18		
	Avg	31 528 125		4'281'250			
	Total	1 008 900 000		239'750'000			
	Min QR	200 000		120'000			
	Max QR	575 000		1'470'000			
	Avg QR	398 750	0,01	602'407	0.14		
	Total	15 950 000		32'530'000			

2015-2016	Min	16 683 000		590'323			
	Max	83 853 000	5,03	37'845'598	64.11		
	Avg	40 498 375		7'342'054			
	Total	1 295 948 000		411'155'000			
	Min QR	400 000		200'000			
	Max QR	1 050 000		2'120'000			
	Avg QR	648 718	0,02	964'444	0.13		
	Total	25 300 000		52'080'000			
2016-2017	Min	16 268 000		602'910			
	Max	110 434 000	6,79	44'503'170	73.81		
	Avg	41 729 469		7'556'929			
	Total	1 335 343 000		423'188'000			
	Min QR	420 000		235'000			
	Max QR	1 100 000		2'545'000			
	Avg QR	677 949	0,02	1'028'491	0.14		
	Total	26 440 000		54'510'000			
2017-2018	Min	16 819 000		639'271			
	Max	88 654 000	5,27	37'779'447	59.10		
	Avg	42 364 656		7'646'125			
	Total	1 355 669 000		428'183'000			
	Min QR	420 000		215'000			
	Max QR	1 000 000		2'105'000			
	Avg QR	676 098	0,02	1'006'727	0.13		
	Total	27 720 000		55'370'000			

2018-2019	Min	18 963 000		551'731			
	Max	117 730 000	6,21	46'378'913	84.06		
	Avg	60 358 563		9'985'966			
	Total	1 931 474 000		559'214'118			
	Min QR	293 000		523'000			
	Max QR	1 464 000		2'846'000			
	Avg QR	729 054	0,01	1'446'218	0.14		
	Total	26 975 000		79'542'000			
2019-2020	Min	18 274 000		559'000			
	Max	126 806 000	6,94	34'606'000	61.91		
	Avg	58 605 063		9'710'250			
	Total	1 875 362 000		543'774'000			
	Min QR	280 000		480'000			
	Max QR	1 400 000		2'440'000			
	Avg QR	678 421	0,01	1'382'182	0.14		
	Total	25 780 000		76'020'000			
2020-2021	Min	18 450 000		561'000			
	Max	119 779 000	6,49	33'089'000	58.98		
	Avg	58 258 531		9'659'929			
	Total	1 864 273 000		540'956'000			
	Min QR	280 000		240'000			
	Max QR	1 400 000		2'380'000			
	Avg QR	675 385	0,01	1'380'000	0.14		

	Total	26 340 000		75'900'000			
2021-2022	Min	23 673 000		502'000		316'000	
	Max	133 709 000	5,65	38'019'000	75.74	19'168'000	60.66
	Avg	61 792 750		11'624'000		5'873'750	
	Total	1 977 368 000		464'960'000		234'950'000	
	Min QR	106 000		106'000		106'000	
	Max QR	486 000		317'000		3'063'000	
	Avg QR	285 658	0,00	152'722	0.01	1'685'204	0.29
	Total	10 855 000		2'749'000		91'001'000	
2022-2023	Min	20 229 000		710'000		308'000	
	Max	134 936 000	6,67	32'648'000	45.98	22'409'000	72.76
	Avg	62 618 125		11'811'225		5'961'550	
	Total	2 003 780 000		472'449'000		238'462'000	
	Min QR	110 000		114'000		114'000	
	Max QR	526 000		229'000		3'428'000	
	Avg QR	326 139	0,01	130'190	0.01	1'789'056	0.30
	Total	11 741 000		1'707'000		96'609'000	
2023-2024	Min	21 858 000		566'000		676'000	
	Max	138 795 000	6,35	41'229'000	72.84	17'051'000	25.22
	Avg	62 719 906		11'844'000		6'008'775	
	Total	2 007 037 000		485'604'000		240'351'000	
	Min QR	111 000		111'000		111'000	
	Max QR	898 000		222'000		3'548'000	

	Avg QR	432 216	0,01	126'857	0.01	1'652'648	0.28
	Total	15 992 000		2'664'000		89'243'000	

A.2.2. Distribution of prize money across countries

The following table (Table A2) documents the total amount of prize money received by clubs from different national leagues (in absolute terms and in % of the total) and the total number of participation by clubs from the leagues (for the top 20 leagues in terms of prize money), focusing on the CL .

It is immediately apparent that England and Spain dominate with about 17-18% of the income and about 10% of the participation. Germany and Italy are close, with about 5% less income but only 1% less in participation, highlighting the greater success of Spanish and English teams.

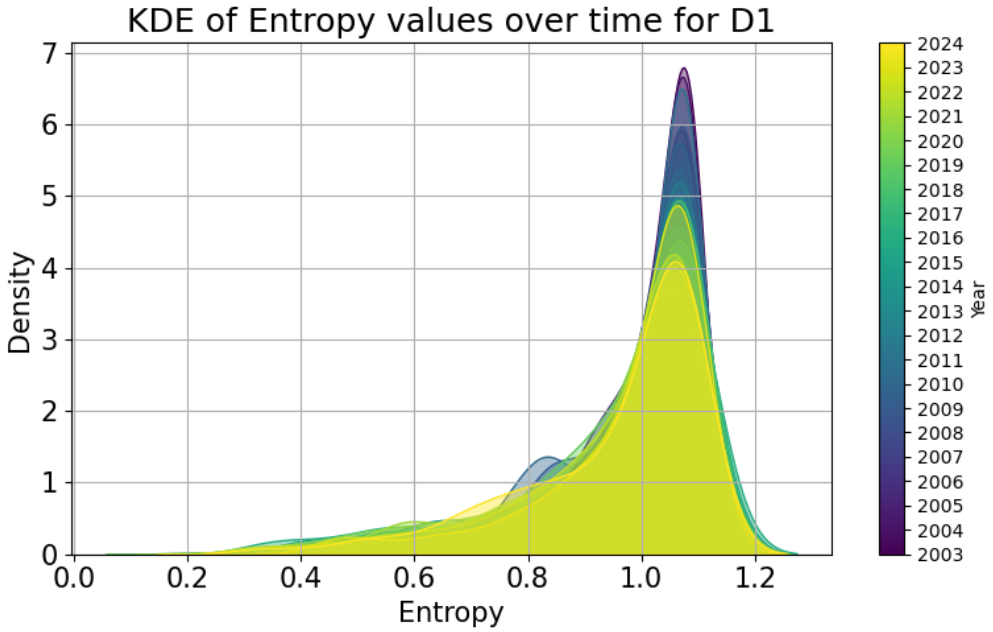
Altogether the top four leagues account for 62% of prize money. If one adds France, the total is 71% . For the top 5 leagues, the share of participation is lower than the share of income. The ranking is reversed for all leagues below the top 5, highlighting the lower success of the teams from these leagues in reaching the more lucrative final stages of the competition.

Table A2. Prize money in the CL by country

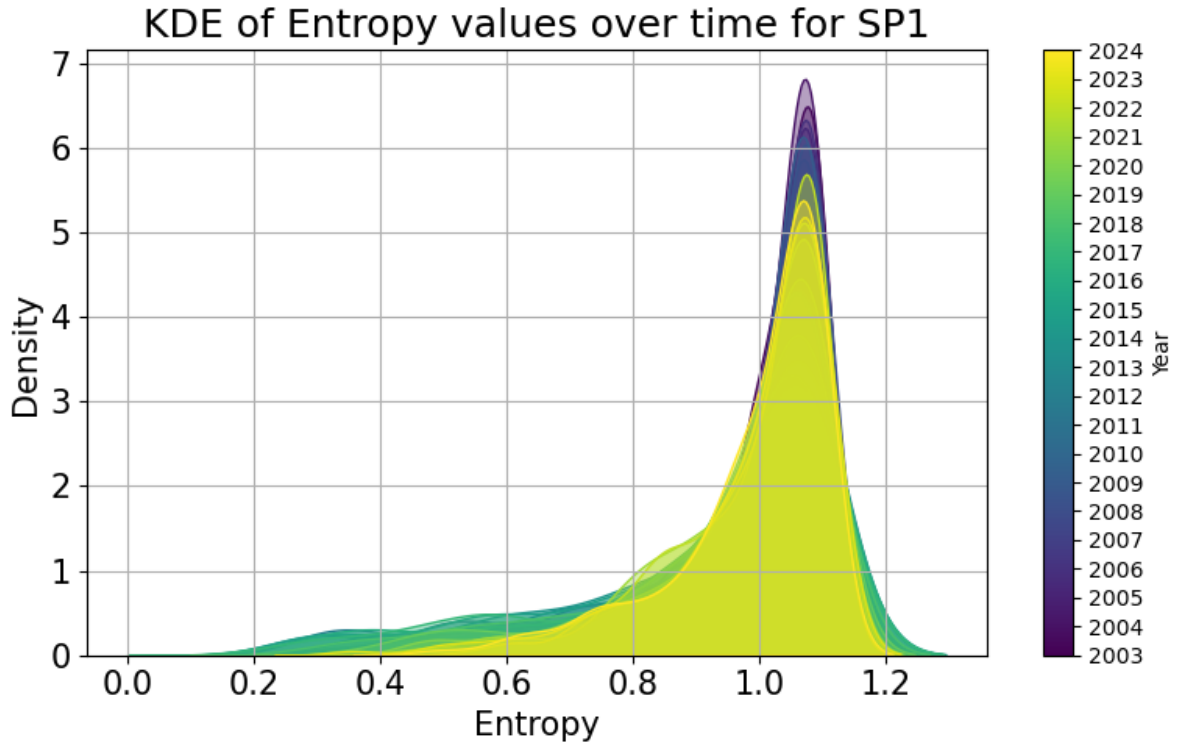
	Total Revenues	Revenue share	Participations	Participation share
ENGLAND	4 213 537 000	18,15%	73	9,96%
SPAIN	3 958 516 000	17,05%	75	10,23%
GERMANY	3 107 046 000	13,39%	66	9,00%
ITALY	3 037 153 000	13,08%	65	8,87%
FRANCE	2 250 271 000	9,69%	53	7,23%
PORTUGAL	1 274 121 000	5,49%	47	6,41%
NETHERLANDS	685 247 000	2,95%	28	3,82%
RUSSIA	655 075 000	2,82%	36	4,91%
UKRAINE	630 598 000	2,72%	30	4,09%
TURKEY	453 263 000	1,95%	27	3,68%
GREECE	411 712 000	1,77%	22	3,00%
BELGIUM	371 067 000	1,60%	26	3,55%
SCOTLAND	296 392 000	1,28%	17	2,32%
DENMARK	271 602 000	1,17%	18	2,46%
AUSTRIA	243 348 000	1,05%	18	2,46%
SWITZERLAND	238 098 000	1,03%	20	2,73%
ROMANIA	147 564 000	0,64%	14	1,91%
CROATIA	124 639 000	0,54%	9	1,23%
CZECH REPUBLIC	116 112 000	0,50%	12	1,64%
CYPRUS	90 080 000	0,39%	10	1,36%

Annex 3. Entropy measures for other countries

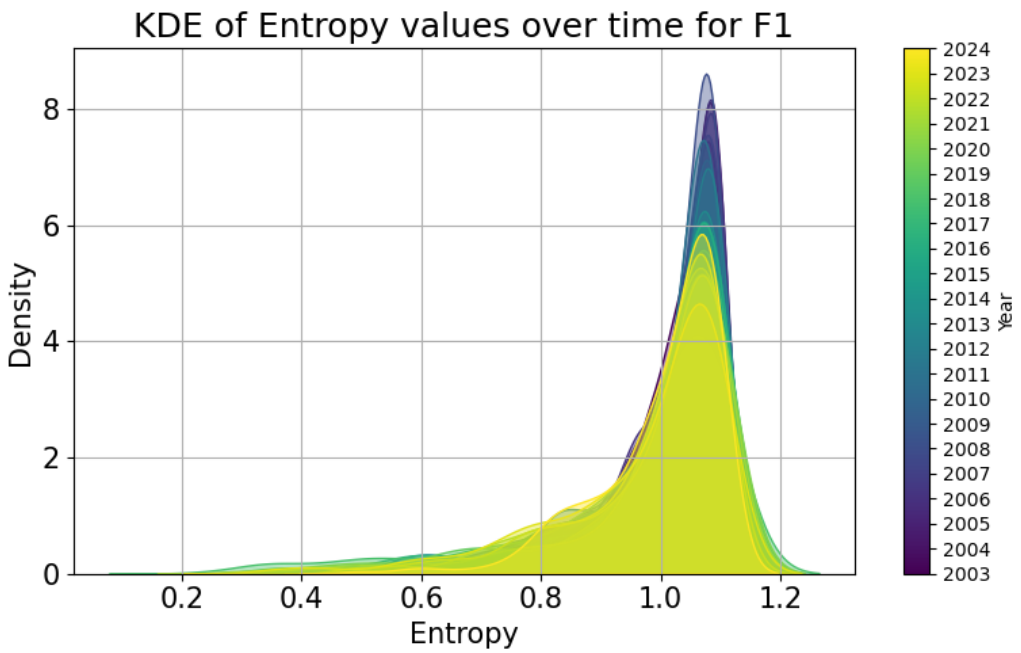
Germany



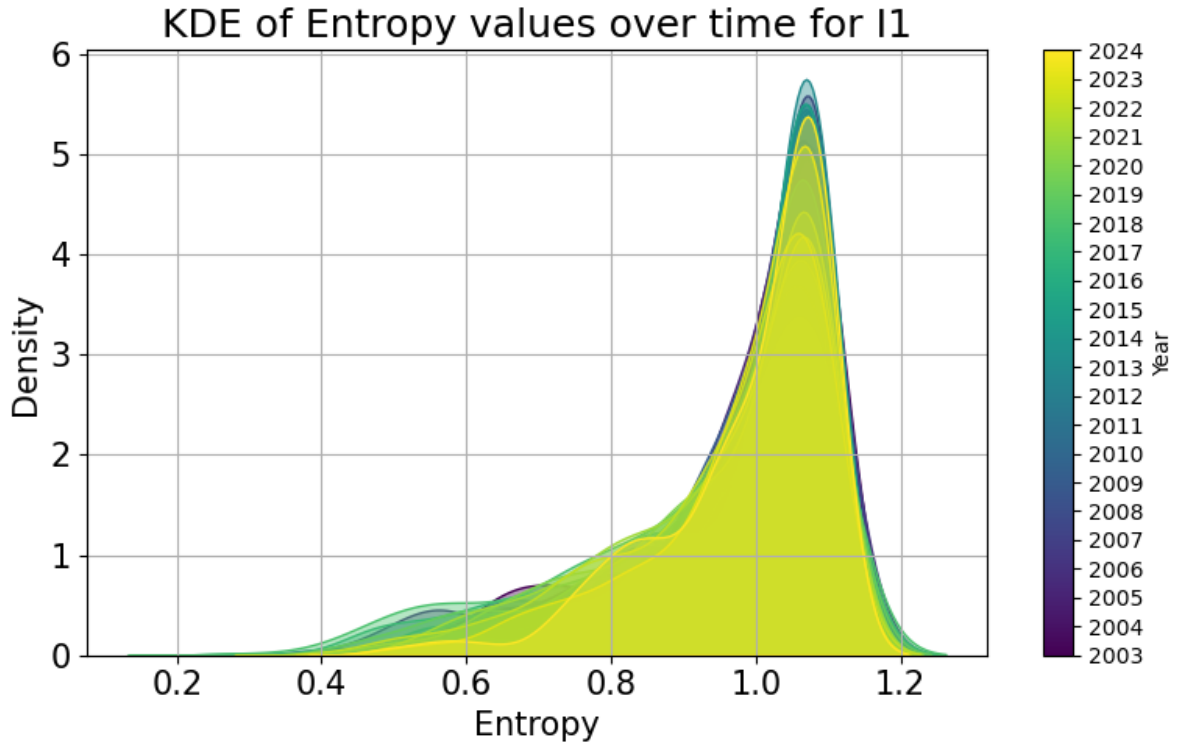
Spain



France



Italy

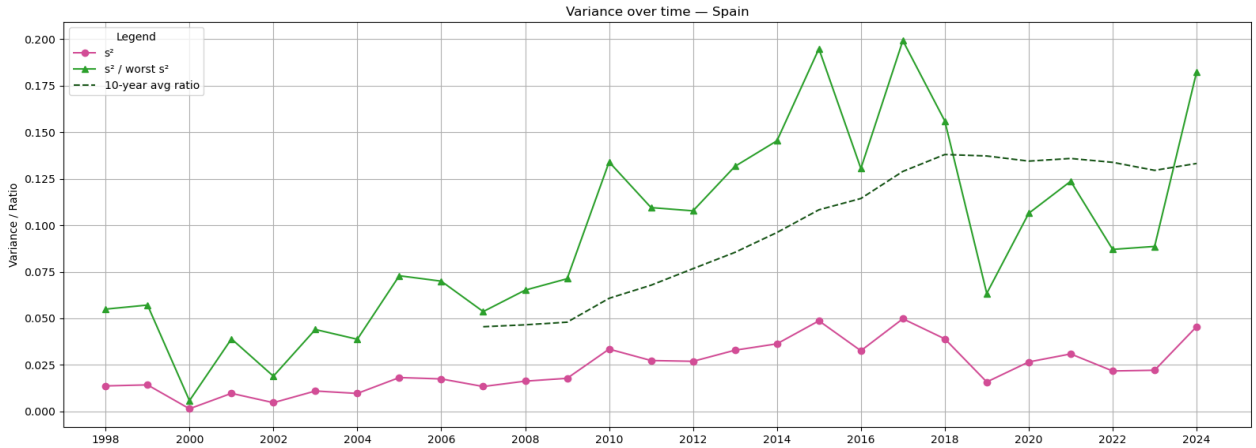


Annex 4. Results of the Kolmogorov-Smirnoff test

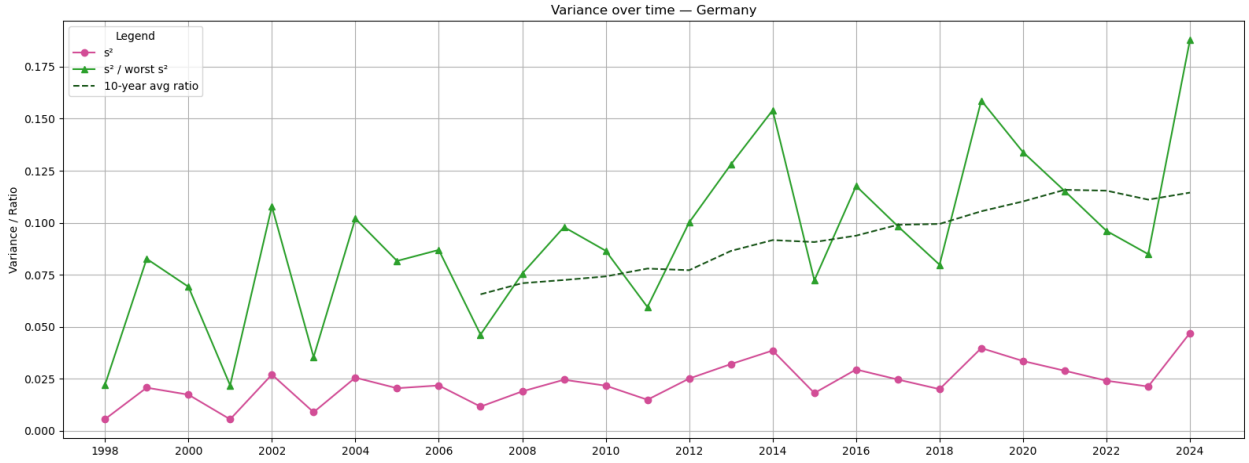
Country	D	P value
B	0.065	4.15 E-02
D	0.1148	2.42 E-09
E0	0.13	5.10 E-09
F1	0.14	4.72 E-10
G	0.10	1.41 E-01
I1	0.08	6.41 E-04
N1	0.12	1.16 E-06
P	0.15	8.06 E-10
SC0	0.13	1.69 E-05
SP1	O.10	1.41 E-05
T1	0.16	6.37 E-12

Appendix 5. Variance in win probabilities at the game level

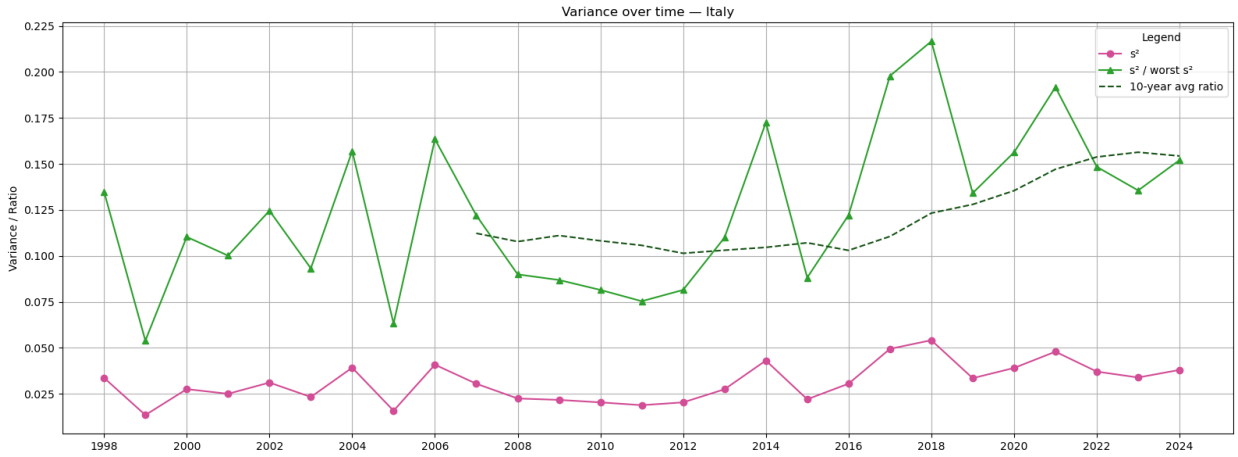
Spain



Germany



Italy



France

