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THE IMPACT OF LEAGUE DESIGN IN EUROPEAN FOOTBALL FROM SMALL LEAGUES' PERSPECTIVE

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Abstract

The effects of league design have not been a major area of interest in the European football literature primarily due to the standardization of league structures in major leagues of Europe. This study investigates how league design affects the likelihood of qualifying for UEFA competitions in six smaller European leagues over a 10-year period from 2013/2014 to 2022/2023. Using market values as the primary independent variable to proxy talent, a logistic model is estimated. Prize money from UEFA competitions serves as a significant income source for all teams, particularly crucial for smaller league teams due to its relative size when compared to aggregate revenues. Evidence suggests that the existence of playoffs provides an advantage for the stronger teams in the league in terms of qualifying for UEFA competitions and potentially leading to persistent domination of these teams. Domestic policymakers face a tradeoff between maintaining domestic competitive balance and probable future competitiveness in inter-European competitions.

Keywords: *European football, league design, smaller leagues*

JEL Codes: *Z20, C25*

1. INTRODUCTION

The impact of league design on sports leagues is a critical issue that has effects on competition, fan engagement and financial dynamics (Lahvička 2015; Pawlowski and Nalbantis 2015; Reilly and Witt 2023). League design encompasses various elements that determine how teams compete against each other over a season or series of seasons. It involves decisions about the number of teams, the format of competition, scheduling, playoffs, and promotion/relegation systems etc. Szymanski (2003) provides a comprehensive analysis of how league design can influence competition, governance, labor markets and incentives.

A key element of league design is the existence of playoffs. Different sports and different leagues offer varying backgrounds. In this context, some of the World's most popular sports leagues, the North American professional leagues and European football leagues significantly differ from one another. Notably, the presence and format of playoffs in North American professional leagues and European football leagues present two significant differences. First, while all

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major professional leagues in North America incorporate playoffs, only a few domestic football leagues in Europe, such as Belgium, Austria, and Scotland, utilize playoffs. Importantly, none of the Big 5 European leagues (England, France, Germany, Italy, and Spain) have playoffs. Second, the format of playoffs differs, with North American playoffs involving knockout rounds, while European football playoffs are typically a transition to double or single-round robin league format matches after the regular season.

Understandably the vast literature on European football focuses on mostly on the Big 5 leagues. Due to the absence of playoffs in these leagues, the impact of playoffs has not been fully explored. Several studies have been conducted regarding the impact of league design on attendance, competitive balance, and revenue generation in Belgian, Austrian, Swiss and Scottish leagues (Goossens, Beliën, and Spieksma 2012; Pawlowski and Nalbantis 2015; Reilly and Witt 2021; 2023).

The strong correlation between revenue generation and competitive power (Carreras and Garcia 2018) enhances the importance of the impact of league design on revenues. A significant source of revenue for European football clubs is prize money from UEFA competitions, particularly for those outside the Big 5 leagues, contributing substantially to their financial sustainability and competitive performance (Dimitropoulos and Koronios 2018). Furthermore, competing in UEFA competitions also contribute to the creation of indirect benefits such as new fans and international sponsors (Dantas, Borges, and Silva 2020). Therefore, consistently qualifying for UEFA hence generating a reliable revenue stream from prize money could be a critical for domestic success for the teams from smaller leagues. In this context, how league design more specifically the existence of playoffs affects teams' probability of qualifying for UEFA competitions arises as a key subject.

This paper examines the conditional probability of qualifying for UEFA competitions for a team, given that team is competing in a UEFA competition in the same season, is estimated

for a period of 10 seasons between 2013/2014 and 2023/2023. For simplicity, the estimated probability is referred to as re-qualifying in the remainder of the paper. Six European divisions (Austria, Belgium, Scotland, Switzerland, Turkey and Ukraine) are selected outside the Big 5 to investigate how playoffs affect clubs' re-qualification probability to UEFA competitions (Champions League, UEFA Europa League and Conference League).

2. THEORY AND BACKGROUND

2.1. The Impact of UEFA Prize Money on Domestic Competitions

Following broadcasting, commercial and matchday revenues, UEFA competitions' participation and prize money stands out as an important source of revenue for the European football clubs. Thanks to the growing revenue streams, UEFA is able to distribute hundreds of millions of euros every season to the teams competing in UEFA competitions. Therefore, the race in the domestic leagues to win titles or to qualify for the UEFA competitions is also a pursuit for millions of euros.

As Késenne (2006) argues maximizing wins is only possible through maximizing playing talent. It could be achieved through increasing income because as Vamplew (2022) underlines talent costs money. In this theoretical perspective prize money could be a critical factor for success. Luckily, this theory has been empirically tested in the literature before.

Pawlowski, Breuer, and Hovemann (2010) investigate the impact of Champions League revenues on competitive balance in the Big 5 leagues. The authors conclude that following the large increase in payments in the 1999/2000 season, competitive balance in domestic leagues was severely distorted in favor of the teams who generate Champions League revenue.

Ruta et al. (2022) also investigate this phenomenon and explore the impact of prize money generated through Champions League and UEFA Europa League on clubs' domestic performances. The authors investigate English, Spanish, Italian and French top divisions for a period of six seasons between 2012/2013 and 2017/2018. The findings of their study suggest that a 1% increase in prize money translates into additional 0.177 points in the season that the prize money was collected and 0.151 points in the following season.

Another study relevant to this context is conducted by Moffat (2020). Although he does not examine the impact of prize money in particular, he investigates how participating in UEFA Europa League affects domestic performance over period of nine seasons between 2010/2011 and 2018/2019. Moffat identifies a strong and positive influence on the domestic performance for the teams from smaller leagues and argues that it could be because of the additional funds that have been made available due to participating in the UEFA Europa League. His study provides a valuable insight in this context. Since teams from smaller leagues typically generate lower revenues, prize money constitutes a larger increase in their aggregate incomes therefore qualifying for European competitions could be key for domestic success.

Furthermore, Moffat argues that the domestic benefit created by participating in UEFA competitions might cause a deterioration in the competitive balance of domestic leagues especially in smaller leagues. Team capable of claiming prize money from UEFA competitions therefore improving their squads might dominate the teams that do not participate in UEFA competitions. If every season same teams qualify from UEFA competitions and generate additional income this would cause a persistent domination of a few teams in the long run which is pretty much the case in many of the smaller leagues in Europe.

Table 1 provides the prize money, in million euros, collected by the teams from the selected six leagues in the investigated period. The table includes only the teams which were able to qualify for the group stages in any of the UEFA competitions. Teams that were eliminated in the qualification rounds received negligible amounts of prize money therefore left out.

The teams that collected the highest amount of prize money from each league, FC Salzburg, Club Brugge KV, Celtic FC, FC Basel 1893, Galatasaray and FC Shakhtar Donetsk have all dominated their local leagues and won the most domestic titles in the investigated period. Especially prize money generated through participating in Champions League could make a critical difference between teams. For instance, FC Salzburg which won the Austrian Bundesliga 10 times in a row between 2013/2014 and 2022/2023 seasons, collected about 200m euro prize money. The revenue generated by the teams in Austrian Bundesliga was about 600m euros in aggregate, excluding transfer income and UEFA prize money, in the same 10-year period (OEFBL 2015; 2023)

Qualifying for European competitions is of utmost importance, particularly for leagues outside the Big 5, where revenues are comparatively smaller, due to the additional revenue it generates. The top five in most

Table 1. Prize Money Collected between 2013/2014 and 2022/2023

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	Total
Austria											**312.24**
FC Salzburg	3.766	3.902	-	7.745	10.873	18.093	35.542	34.557	51.641	35.603	201.722
SK Rapid Wien	1.989	-	10.633	4.19	-	-	-	6.636	8.871	-	32.319
LASK Linz	-	-	-	-	-	-	15.043	5.788	8.824	-	29.655
FK Austria Wien	12.774	-	-	4.07	4.302	-	-	-	-	4.04	25.186
Wolfsberger AC	-	-	-	-	-	-	5.029	6.763	-	-	11.792
Sturm Graz	-	-	-	-	-	-	-	-	5.776	5.79	11.566
Belgium											**457.511**
Club Brugge KV	-	4.616	7.454	17.047	-	31.963	28.427	34.855	30.459	41.873	196.694
RSC Anderlecht	12.242	16.928	6.479	7.347	19.057	6.454	-	-	-	8.149	76.656
KAA Gent	-	-	27.943	5.869	-	-	8.909	10.175	8.247	7.915	69.058
KRC Genk	3.396	-	-	7.808	-	8.922	25.134	-	8.149	-	53.409
Standard de Liege	1.623	1.623	-	4.229	-	7.492	7.044	5.759	-	-	27.77
Antwerp FC	-	-	-	-	-	-	-	7.15	5.703	-	12.853
R. Union SG.	-	-	-	-	-	-	-	-	-	11.156	11.156
SV Zulte Waregem	2.023	-	-	-	5.088	-	-	-	-	-	7.111
KSC Lokeren OV	-	2.804	-	-	-	-	-	-	-	-	2.804
Scotland											**229.737**
Celtic FC	17.566	3.423	8.881	31.74	32.476	9.926	10.941	7.319	10.85	26.596	159.718
Rangers FC	-	-	-	-	-	6.066	9.354	11.382	20.79	17.914	65.506
Hearts FC	-	-	-	-	-	-	-	-	-	4.513	4.513

Table 1. ***Continued***

Switzerland											**263.318**
FC Basel 1893	14.544	17.855	9.869	16.268	28.78	1.213	14.877	-	9.037	10.852	123.295
BSC Youngboys	-	3.199	-	7.554	7.172	26.842	12.14	12.569	29.922	-	99.398
FC Zürich	-	2.537	-	4.215	-	10.253	-	-	-	5.558	22.563
FC Lugano	-	-	-	-	4.628	-	4.448	-	-	-	9.076
FC Sion	-	-	5.282	-	-	-	-	-	-	-	5.282
FC St. Gallen	1.952	-	-	-	-	-	-	-	-	-	1.952
FC Thun	1.752	-	-	-	-	-	-	-	-	-	1.752

Turkey											**494.739**
Galatasaray	21.072	18.594	33.941			31.603	30.071		15.045		150.326
Beşiktaş		7.849	10.081	39.918	43.272	11.523	8.635		27.241		148.519
Başakşehir FK					12.426		13.233	22.737		7.735	56.131
Fenerbahçe			14.53	10.815		8.362			9.989	12.142	55.838
Trabzonspor	7.865	6.159					6.881			12.266	33.171
Konyaspor				7.474	10.942						18.416
Sivasspor								9.632		6.831	16.463
Osmanlıspor				10.414							10.414
Akhisarspor						5.461					5.461

Ukraine											**512.536**
FC Shakthtar Donetsk	14.282	20.046	22.277	7.409	29.437	47.198	48.879	44.148	37.35	43.625	314.651
FC Dynamo Kyiv	2.709	4.807	4.807	18.682	7.659	16.343	7.57	36.181	31.927	12.668	143.353
Dnipro Dnipropetrovsk	3.159	7.862	5.001							6.085	22.107
Zorya Luhansk				3.74	4.437			5.283	5.314		18.774
FC Vorskla Poltava						4.683					4.683
FC Olexandryia							4.29				4.29
FC Chernomorets Odessa	2.709										2.709
FC Metalist Kharkiv		1.969									1.969

Source: UEFA.com

consecutive domestic league titles in European football belongs to teams from Gibraltar, Latvia, Belarus, Norway and Bulgaria (Argudo n.d.). In this context the impact of league design on the probability of re-qualification for European competitions stands out as an important subject due to impact of prize money on domestic success.

2.2. The Impact of League Design and European Football Leagues' Structures

As mentioned earlier, the most important domestic leagues in European football are open leagues and structured as double round-robin tournaments with no postseason or any other form of playoff. Due to the nonexistence postseason matches in the Big 5 leagues the impact of league design in European football has not been investigated in detail. On the other hand, numerous studies have been conducted about the effects of playoffs in North American professional leagues (e.g. Morgan 2006; Longley and Lacey 2012; Bradbury 2019).

The literature regarding playoffs in football is relatively incomprehensive and the effects of league design on competitive balance, attendance and particularly revenue generation is yet to be fully explored. Goossens, Beliën, and Spieksma (2012) compares the

existing format in Belgium top division with three alternatives and conclude that changing the league format will increase the level of competition and decrease the number of important games. Both of these factors might positively affect demand and potentially leading to an increase in revenues. Gasparetto and Barajas (2016) investigates how the switch from having a postseason playoff after a double round-robin tournament to only a double round-robin format in Brazilian football affected competitive balance and attendance. Authors found out that both the competitive balance in the league and average attendance improved overall. Fort and Lee (2020) reveal that the addition of postseason playoffs in Scottish top division improved match level uncertainty but led to a decrease in inter-seasonal competitive balance. Reilly and Witt (2023) investigated the same change in terms of revenue distribution in the league. The authors find that the new format does not cause any additional financial inequality or improve financial equality in the league.

The most common type of league design in European football is the double round-robin in which teams play twice with each other, one at home and once away. Generally, the number of teams varies between 10 (e.g. Swiss top division) and 20 (e.g. English top division). Some leagues utilize playoffs to finalize some aspects of the season. For instance, in Germany, the third relegation/promotion spot is decided with a two-legged play-off between the 16th of Bundesliga and the 3rd of Bundesliga 2. In Netherlands on the other hand, knockout play-offs are played between the teams that finished the season between 5th and 8th for UEFA Conference League qualification. There are also leagues that uses a split system (e.g. Scotland) in which the league is divided into upper and lower halves. Upper half competes for the championship and UEFA competition qualification whereas the lower half competes to avoid relegation. Such play-offs are just an extension of regular season in which teams compete for collecting points instead of knocking out opponents.

The six leagues that have been selected for the investigation in this study are: Belgium, Austria, Scotland, Switzerland, Ukraine and Turkey. These leagues are selected according to their league formats as well as their revenue generation capabilities and UEFA country coefficients. The selected leagues are comparable both in terms of their intra-European competitiveness and their ambition to be among the major leagues in Europe. Due to the low number of leagues that have implemented playoffs in European football, the analysis is limited to these six leagues, leaving out other significant European leagues such as the Portuguese and Dutch top flights.

The Belgian top division is played with 16 teams with a double round-robin regular season and had a varying playoff structure during the investigated period. In 2013/2014, 2014/2015 and 2015/2016 seasons the Belgium playoffs consisted of three groups: Championship Playoff, Europa League Playoff and Relegation Playoff. In 2016/2017, 2017/2018 and 2018/2019 the playoffs consisted of Champions Playoff and Europa League Playoff. In 2019/2020 there were no playoffs because of the COVID-19 epidemic and starting with the 2020/2021 season the first eight teams divide into upper and lower halves to play double round-robin Champions and UEFA Conference League playoffs and the season is over for the remaining teams.

The Austrian top division is played with 10 teams with a quadruple round-robin regular season in the first five years of the investigated period. In the second five years the regular season was changed to double round-robin and double round-robin playoffs were added. The league table is divided into upper and lower halves to decide on the UEFA competition qualifications and relegation.

The Scottish top division is played with 12 teams with a triple round-robin regular season followed by single round-robin playoffs in which the league is divided into upper and lower halves in the investigated period.

The Swiss top division is played with 10 teams with a quadruple round-robin format in the investigated period. Starting with the 2023/2024 season the number of teams in the Swiss league is increased to 12 and the triple round-robin regular season followed by single round-robin playoffs structure is implemented. Therefore, the probable impacts of playoffs are a concern for the stakeholders in the Swiss football ecosystem.

The Turkish top division is played with 18 teams with a double round-robin format between 2013/2014 and 2019/2020 seasons. Due the COVID-19 pandemic, relegation was abolished in the 2019/2020 season therefore the 2020/2021 season was played with 21 teams. The 2021/2022 and 2022/2023 season were played with 20 and 19 teams respectively. The current broadcasting deal for the Turkish top division will end in the 2024/2025 season and the expectations regarding the new deal are pretty pessimistic. Turkish clubs had already experienced a severe reduction in their broadcasting incomes in the recent past and it appears that the reduction is likely to continue. Therefore, the policy makers in Turkish football are trying to find ways to secure a better deal for broadcasting rights. In December, 2023, Turkish Football

Federation (TFF) announced that it has shared the details of a potential change in the league design with the teams in the league and is waiting for their response. Increasing the number of games especially derbies between the giants of the league (Galatasaray, Fenerbahçe and Beşiktaş) appears to be a convenient solution therefore addition of playoffs is in discussion however the impact of playoffs on teams is yet to be discovered.

Ukrainian top division is played with 16, 14 and 14 teams with a double round-robin format in the 2013/2014, 2014/2015 and 2015/2016 seasons respectively. Between 2016/2017 and 2019/2020 the league is played with 12 teams in a double round-robin format followed by an upper half lower half double round-robin playoffs. In 2020/2021 the number of teams is increased to 14 and the playoffs were abolished. 2021/2022 and 2022/2023 seasons are played with 16 teams.

3. METHODS AND DATA

To investigate the effect of league design on the probability of re-qualifying for UEFA competitions a logistics model is estimated.

For instance, the probability of team A qualifying for a UEFA competition in season t given that team A is competing in a UEFA competition in season t, which means that team A managed to qualify for UEFA competitions in season t-1, could be expressed as such:

$$\Pr(A_t|A_{t-1}) = \frac{e^{f(x_{A_t}, x_{Bt}, X_{Ct}\ldots\ldots, X_{nt})}}{1+e^{f(x_{A_t}, x_{Bt}, X_{Ct}\ldots\ldots, X_{nt})}} \quad (1)$$

In which, x_{At} represents the characteristics of team A in season and x_{Bt} to x_{Nt} represent the characteristics of the other teams in the league. The fundamental input for teams is playing talent (Dawson et al., 2000) however since a football game is played between two teams, opponent's talent is also influential on the outcome of a game therefore on the outcome of a season. To proxy playing talent while taking other teams' playing talent in to account, the variable $\%\, ofMV_t^A$ is proposed. $\%\, ofMV_t^A$ is team A's squad's share in the total market value of all the players in the league in season t. Using a team's market value share as a proxy variable for playing talent enables the consideration of other teams' playing talent while estimating a team's re-qualification probability. Although market values are highly debated in the literature, an alternative–and perhaps a better–proxy for talent would be wages. However, wage data, especially for smaller leagues, is not available.

In addition to the percentage of market value several other variables are added to the model. The average squad age and its square are included in the model following Kalén et al. (2019). Authors find a U-shaped influence of age on player performance therefore average squad age and its square are expected to be influential on teams' performances. Two variables regarding the transfer activity; transfer income and transfer expenditure, are added to the model to control for the changes in the team talent pool. Generating transfer income, would indicate the team has lost some talent therefore it is expected to have a negative coefficient whereas transfer spending would mean the team has gained some talent hence a positive coefficient is expected. The number of foreign players in the squad is also added as another variable and finally a binary variable regarding playoff is added.

To estimate an arbitrary team A's probability of re-qualifying in season t playing in league L given that team is competing in UEFA competitions in season t, the following model is estimated:

$$\Pr(A_t|A_{t-1}) = \\ = \frac{e^{f(\%ofMV_t^A + age_t^A + agesq_t^A + \#foreign_t^A + tinc_t^A + texp_t^A + playoff_t^L)}}{1+e^{f(\%ofMV_t^A + age_t^A + agesq_t^A + \#foreign_t^A + tinc_t^A + texp_t^A + playoff_t^L)}} \quad (2)$$

Using data from the selected six leagues, that are introduced in the previous section, for a 10-year period a data set in constructed. Data regarding teams' market value, age, number of foreign players, transfer income and transfer expenditure are all gathered from Transfermarkt.com, a respectable German website which has been used as a data collection source in numerous academic studies and has no credibility issues. Data regarding teams' UEFA competition qualification statuses and leagues' design are gathered from the leagues' official websites.

4. RESULTS

Table 2 presents the estimation results for Equation 2. The marginal effects for the significant variables are also presented on the right-hand side of the table.

The results in Table 2 suggest that share of market value, number of foreign players and playoff variables are significant and influential on a team's probability of re-qualifying for UEFA competitions in a given year. Share of market value and playoff are positively influential on the probability whereas number of foreign players are negatively influential.

The average squad age and its square are both insignificant therefore has no impact on the impact

Table 2. Model Estimation Results

	Estimation Results			Average Marginal Effects		
% of MV	$\hat{\beta}$	std dev	*p*	*dy/dx*	std dev	*p*
age	41.999**	4.401	0.000	3.967**	0.337	0.000
agesq	1.581	3.132	0.614	-	-	-
foreign	-0.022	0.062	0.721	-	-	-
tinc	-0.056**	0.021	0.000	-0.005**	0.001	0.000
texp	0.002	0.017	0.892	-	-	-
playoff	0.003	0.021	0.900	-	-	-
	1.067**	0.279	0.000	0.101**	0.026	0.000
number of obs: 717						

**: 99% significance *: 95% significance

of re-qualifying in the investigated period. Transfer income and expenditure are also insignificant which were expected to be influential on the estimated probability with negative and positive coefficients respectively.

When marginal effects are considered it can be easily seen that % *of MV* has substantial impact on the probability of re-qualifying for UEFA competitions. A 1% increase in the share of a team's market value, increases its chances of qualifying almost 400%. Number of foreign players on the other hand does not have a considerable impact. An additional foreign player decreases a team's chance of qualifying by 0.5%. Playoffs also have a sizeable marginal impact. The existence of playoffs in a league increases re-qualification probability by 10%.

Figure 1 illustrates the impact of % *of MV* on re-qualification probability. As can be seen from the graph, a team that has about 25% of the total market value almost re-qualifies with certainty. Increasing the share from 5% to 10% and from 10% to 15% has a substantial effect on the re-qualification probability.

Figure 2 illustrates how playoffs affect the probability of re-qualification for different clusters of market value shares. In European football, the leagues with the highest number of teams have 20 teams; therefore, the first cluster starts at 5%, which would represent the market value share of each team if all teams were equal. The remaining clusters are also constructed using this interval. As the graph suggests, if

Figure 1. Predicted Probabilities for Share of Market Value

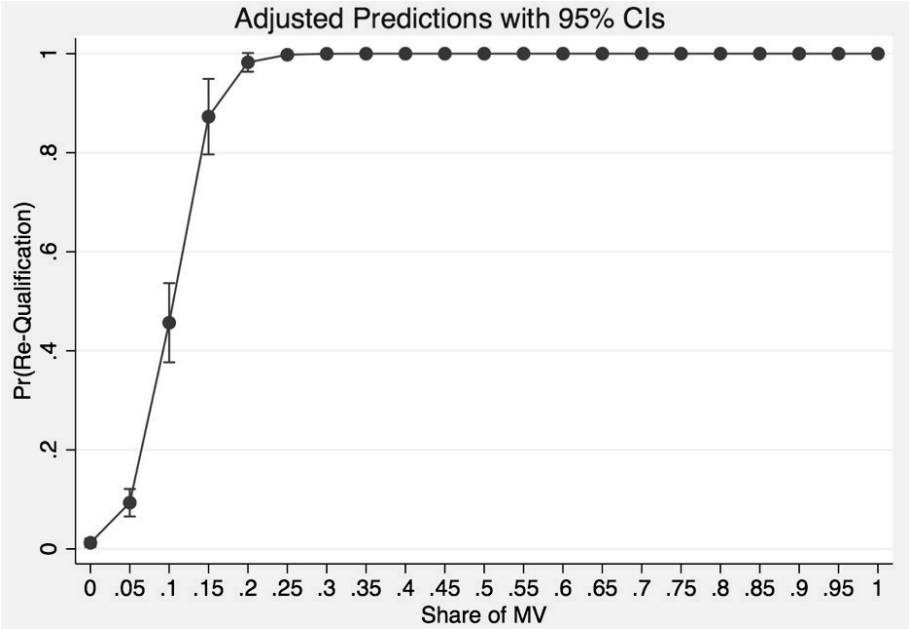
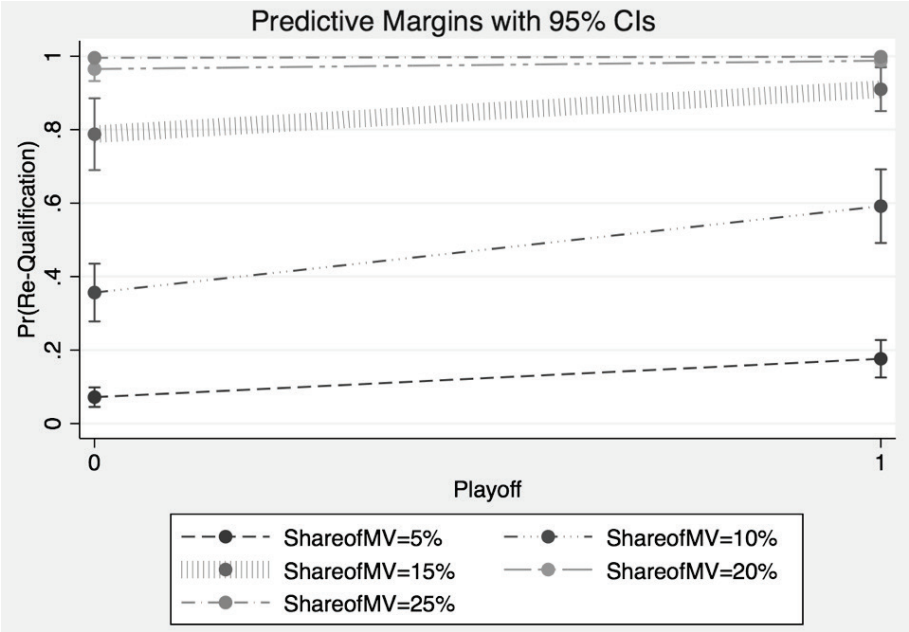


Figure 2. Impact of Playoff on Re-Qualification Probability with respect to Share of Market Value



a team's share of market value is over 20%, playoff do not really make a difference however for teams with lower market value shares, playoffs significantly increase the probability of re-qualification. Especially for the 10% market value share teams, the existence of playoffs increases re-qualification probability about 20%.

5. DISCUSSION

Among the insignificant variables in the model, average squad age was expected to be positively influential on re-qualification probability. The assumption was older and more experienced teams would perform better up to a certain average age. Then, their performance would start diminishing which was the reason why the square of average squad age was also included in to model but there is no empirical evidence to support this claim. The team squad contains a large number of players who play only a little or do not play at all. Considering the ages of players who have played a high number of minutes might have provided different results. Poli et al. (2018) argue that the optimal average age is between 26 and 27; hence, using that interval as a benchmark, the impact of squad age could be investigated in detail. However, this is beyond the scope of this study.

Transfer income and transfer expenditure were also both insignificant. One probable explanation for the insignificance of these two variables is that most of the transfers in the smaller leagues are unpaid transfers. Even though there are a number of incoming and outgoing transfers every season, most of the teams in smaller leagues do not spend a lot on transfers. With the exception of a couple of teams from each league, these teams do not generate much transfer income. In general, the relatively stronger teams of the smaller leagues (e.g. Celtic FC or Shakhtar Donetsk) are able to generate considerable transfer income by exporting their best talent to the teams of Big 5 leagues whereas rest of the teams fail to do so. Furthermore, $\%\ of\ MV$ could be capturing some of the effects of transfer activities which causes transfer income and expenditure to be insignificant.

The main explanatory variable in the model, $\%\ of\ MV$ provides valuable insights. Especially in smaller leagues, where aggregate market values are low, the transfer of a single player from one team to another could make a crucial impact. Increasing a team's share of the total market value by 1% could increase its re-qualification probability by about 400%. A wise transfer strategy for teams in smaller leagues could be spending their transfer budget on transfers from the other teams in the league instead of spending on outside transfers. A transfer from a rival team reduces the playing strength of a direct opponent and contributes to transferring team's own playing talent. For teams in bigger leagues, talent is easier to replace since players are more eager to player in bigger leagues and also, they have higher transfer budgets hence the same transfer strategy might not be beneficial. The significant marginal effect also suggests that financial disparity among teams plays a crucial role in

qualification. Policymakers or league regulators could consider measures such as revenue redistribution or financial fair play adjustments if a more balanced competition is desired.

The number of foreign players in the squad adversely affects the re-qualification probability. The findings regarding the impact of foreign players contradict with the findings of Varmus et al. (2020). The authors investigate 19 clubs from UK, Spain, Germany, Italy, France, Portugal and Netherlands and found out that clubs performed better as the foreign players' appearances increased. It should be noted that the authors investigated the Big 5 and two other reputable leagues in Europe where as this study investigates smaller leagues. The transferred foreign players to the reputable leagues could have higher quality and also the foreign players might be having trouble adapting to these smaller leagues hence countries and it could be an influential factor on the conflicting results. Furthermore, it should be noted that Varmus et al. (2020) used the percentage of appearances for foreign players whereas this study uses only the number of foreign players in the squad.

As presented in the previous section, the existence of playoffs increases the re-qualification probability. Previous studies (Pawlowski, Breuer, Hovemann 2010; Ruta et al. 2021) illustrate that teams that are competing in UEFA competitions have a competitive advantage in their domestic leagues. The existence of playoffs further increases these teams' likelihood of qualifying for UEFA competitions in the following season. Playoffs might reinforce the dominance of few teams over the others in smaller leagues.

The findings illustrated in Figures 1 and 2 provide additional information about the effects of market value share and playoffs on re-qualification probability. Having a certain level of market value share, such as 20% or more almost guarantees re-qualification with or without playoffs. Therefore, the discussed reinforcing impact of playoffs is much higher for teams with lower market value shares.

The enhancing influence of playoffs on the re-qualification probability could be valid in two scenarios. Firstly, it could apply to modest teams in the league with lower revenues. A lower budget would lead to a lower market value share making additional income, in the form of prize money from UEFA competitions, even more important for them.

The other alternative is, the teams with lower market share are from leagues that have a higher number of teams or a higher number of teams with larger budgets. For instance, the Turkish league has the highest number of teams in the investigated period and there were no teams with a market value share of 20% or more. As mentioned earlier implementation of playoffs is in discussion in Turkey and if the policy makers decide in favor the playoffs it could have a crucial impact on the domestic competitive balance.

During the season, teams that compete in UEFA competitions play more matches; therefore, players are more prone to exhaustion and injury. In addition, teams often rotate their squads, especially in domestic matches, if an important UEFA competition fixture is ahead. Due to the competitiveness of the investigated leagues, most teams from these leagues are eliminated from UEFA competitions in the second half of the season, which means they can shift their focus to domestic leagues towards the end of the season. Playoffs create an additional opportunity to make up for lost points during the season, especially for teams that are not able to dominate the league due to their higher market shares. Hence the impact of playoffs is even greater for teams with lower market value shares.

6. MANAGERIAL IMPLICATIONS

Previous studies provide empirical evidence for effects of prize money from UEFA competitions on domestic competitions and as this study illustrates league design is influential on the probability of qualifying for UEFA competitions. Domestic policy makers can actually influence which teams are going to represent their league in UEFA competitions by altering the league design. Increasing the probability of re-qualification might not necessarily be a bad thing for the policy makers through league design however there is a tradeoff.

Strengthening the stronger teams in a league would lead to a deterioration in the domestic competitive balance. However, it might improve the international performance in UEFA competitions of the stronger teams since they would be able to improve their squads with consistent additional income. Improving international performance would lead to an increase in the country coefficients, generating more prize money as teams with higher country coefficients start competing in the later rounds of UEFA competitions either directly in group stages or playing fewer qualification rounds. Improving the country coefficient would contribute to the league's brand value and might increase its future income in terms of sponsorship and broadcasting. It could even improve its national team performance since as Leeds and Leeds (2009) illustrate there is a positive correlation between international success of a country's club teams and the national team's success. Furthermore, among the teams in the investigated leagues, as of

January 29, 2025, the top three clubs with the highest UEFA coefficients are Rangers FC (ranked 30th), FC Shakhtar Donetsk (ranked 36th), and Salzburg (ranked 41st). Two of these three clubs belong to leagues that implement playoffs after the regular season. In addition, during the period when playoffs were utilized in the Ukrainian top flight (between 16/17 and 19/20), the league's two giants, FC Shakhtar Donetsk and FC Dynamo Kyiv, were ranked among the top 25 teams in Europe (UEFA, 2025). Hence, it could be argued that playoffs do indeed improve international competitiveness. Monitoring international performance and the revenue generated from UEFA competitions could be key factors in assessing the impact of playoffs.

On the other hand, the deterioration in the domestic competitive balance might have adverse effects on the league as a whole. Késenne (2020) argues football spectators in Europe do not enjoy consecutive titles by a certain club and dynasties, such as the one in Austria in the investigated period. If a similar behavioral pattern is followed by the viewers the aggregate demand might fall for the league. As the demand falls, all main sources of revenues, broadcasting, sponsorship and commercial, will decrease over time which would cause all the teams in the league to lose their competitive edge in inter-European competitions. For instance, in the Ukrainian top flight, the average attendance of league games has decreased about by 20%, especially for the teams other than FC Shakthar Donetsk and FC Dynamo Kyiv during the period when playoffs were utilized (Transfermarkt 2016; Transfermarkt 2020). Therefore, policymakers need to monitor the adverse effects of the playoffs as well.

Although these two impacts affect the teams in opposite directions there are some facts that needs to be taken into consideration about the smaller leagues. Whether it's the broadcasting revenues, matchday revenues or sponsorship revenues the income is mostly generated by the giants of the smaller leagues. For instance, the Scottish team Motherwell FC claimed that it lost about 200.000£ in revenue because three of their four matches against Celtic FC were away games (Reilly and Witt, 2023). All the teams in the league generate additional revenue due to the existence of these giants as Vamplew (2022) argues through the case of Celtic FC and Rangers in Scotland. Another illustration could be the case in Portugal regarding the broadcasting deal. Currently the broadcasting rights of the Portuguese top division are centralized with the exception of SL Benfica, one of the giants in the league. Starting with the 2027/2028 season the discussions are ongoing the inclusion of SL Benfica in the centralized deal. The president of the Portuguese Football Federation emphasized the importance of including SL Benfica in the deal by saying "The sustainability and development of national football as a whole are closely linked to this negotiation." (Carp 2023). The broadcasting deal without SL Benfica or FC Porto is worth much less. As Feddersen and Rott (2011) point out, viewership demand is positively affected by opponent quality therefore having high quality teams in the league is beneficial for the whole league. Helping a league to create its own giants or make the existing ones bigger might not be a terrible idea for the policy makers in the smaller leagues.

In European football, the primary motivation for utilizing playoffs is to enhance league demand by increasing the number of competitive matches or derbies, whose impact is demonstrated by Reilly and Witt (2023) in the case of the Scottish Premier League. The impact of playoffs on competition could be considered a spillover effect. The inability of smaller European football leagues to create international demand limits their revenue generation, forcing policymakers to maximize domestic demand. As discussed earlier, the giants of these leagues contribute the most to aggregate league revenue; therefore, increasing the number of matches played between them boosts overall league revenues. Fans, on the other hand—another important stakeholder in leagues—generally welcome a higher number of derbies or matches between the giants of the league. However, as the findings suggest, smaller teams in the league could be worse off if playoffs were to be implemented. Their chances of winning titles or re-qualifying could be lowered due to the additional games they would need to play against the giants of the league. A recent example in this context is the case of Royale Union Saint-Gilloise, a Belgian team that finished first in the regular season in both 2021/2022 and 2023/2024 but failed to win the title in the playoffs.

It should be emphasized that the discussion and managerial implications of this study's findings apply to the context of smaller leagues. Compared to the Big 5 leagues, smaller leagues have lower capacity utilization rates, lower broadcasting revenue, and hence, lower overall demand. Increasing demand could be possible by increasing the number of important games since most of the demand is generated by the giants in the league. In the Big 5 leagues, on the other hand, domestic demand is already close to its potential. Given that players have already been complaining about the excessive number of games they are required to play, increasing the number of matches through playoffs might have adverse effects on both players and fans. A higher number of derbies or matches between the giants of the leagues could diminish the value of other league games.

7. CONCLUSION

The effects of league design have been an area which did not receive enough attention in European football literature. A number of leagues have changed their league structures in recent past and others are planning to change. A major motivation for the implementation of playoffs is to increase the number of appealing games in the league with the hope of increasing the overall demand. Increasing the number of games and decreasing the number of meaningless games seem like a reasonable choice however the long-term effects of league design changes are unknown. As Longley and Lacey (2012) argue, playoffs might reduce regular season revenues. So even though increasing the number of appealing matches might provide additional revenue, which affect is going to outweigh the other is uncertain. The findings in this study reveal that playoffs might lead to consistent domination of few teams in domestic leagues which is already the case in many leagues in Europe and it will help the strong to get stronger. Although it might seem like a bad scenario in terms of domestic competitive balance it could also lead to the generation of new giants from smaller leagues in European football and give those leagues a chance to achieve something remarkable. The upcoming changes in league design in the Swiss and Turkish leagues will provide further data to investigate the effects of playoffs in European football.

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