



## SPORMETRE

The Journal of Physical Education and Sport Sciences  
Beden Eğitimi ve Spor Bilimleri Dergisi

DOI: 10.33689/spormetre.1075164



Geliş Tarihi (Received): 17.02.2022

Kabul Tarihi (Accepted): 15.06.2022

Online Yayın Tarihi (Published): 30.06.2022

### INVESTIGATION OF THE COMPETITIVE BALANCE IN THE EUROPE'S BIG FIVE LEAGUES AND THE TURKISH SUPER LEAGUE: THE TEN SEASONS BETWEEN 2011/2012-2020/2021

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**Abstract:** The balance of competition is one of the most critical factors in increasing the attractiveness of football. Football clubs have to have high competitive power, primarily to compete internationally. This direction examines the balance of competition in the last ten seasons in Europe's Big Five Leagues and the Turkish Super League. The study used an extensive data set covering the league scores of 196 clubs in the last ten seasons and C5, C5ICB, HHI, and HICB indices between 2011/12-2020/21 seasons in Europe's Big Five and Turkish Super League analysis of the data. It has been determined that there has been a general decrease in the competitive balance of the last ten seasons in Europe's Big Five Leagues, while an increase has been observed in the Turkish Super League. Competition in Italy, Spain, Germany and England Leagues is lower than in Turkey and France. It can be said that the Turkish Super League is more balanced in terms of competitiveness compared to the Big Five Leagues. It has been concluded that the teams' economic situation can be considered a priority factor in determining the competitive balance. Super League clubs have substantial financial resources, incorporation, development of youth development systems (infrastructure), managerial measures to increase broadcasting, matchday and commercial revenues, corporate governance principles, and different incomes to be competitive and have a solid economic structure. It is recommended to cooperate with professionals in the creation of resources.

**Key Words:** Competitive Balance, Big Five League, Five Club Index of Competitive Balance, Herfindahl Hirschman Index, Herfindahl Index of Competitive Balance, Football

### AVRUPA'NIN BEŞ BÜYÜK LİĞİ VE TÜRKİYE SÜPER LİĞİ'NDE REKABET DENGESİNİN İNCELENMESİ: 2011/2012-2020/2021 ARASINDAKİ ON SEZON

**Öz:** Rekabet dengesi, futbolun çekiciliğini artırmada en önemli faktörlerden biridir. Futbol kulüpleri özellikle uluslararası alanda mücadele edebilmek için yüksek rekabet gücüne sahip olmak zorundadırlar. Bu doğrultuda, Avrupa'nın Beş Büyük Ligi ve Türkiye Süper Ligi'nde son on sezondaki rekabet dengesinin incelenmesi amaçlanmaktadır. Araştırmada, verilerin analizinde Avrupa'nın Beş Büyük Ligi ve Türkiye Süper Ligi'nde 2011/12-2020/21 sezonları arasında 196 kulübün son on sezondaki lig skorlarını ve C5, C5ICB, HHI ve HICB endekslerini kapsayan geniş bir veri seti kullanılmıştır. Avrupa'nın Beş Büyük Ligi'nde son on sezonun rekabet dengesinde genel bir düşüş yaşandığı, buna karşılık Türkiye Süper Ligi'nde bir artış gözlemlendiği tespit edilmiştir. İtalya, İspanya, Almanya ve İngiltere Liglerinde rekabetin Türkiye ve Fransa'ya göre daha düşük olduğu. Türkiye Süper Ligi'nin rekabet dengesi açısından Beş Büyük Lig'e göre daha dengeli bir lig olduğu söylenebilir. Takımların ekonomik durumlarının rekabetçi dengenin belirlenmesinde öncelikli faktör olarak değerlendirilebileceği sonucuna varılmıştır. Süper Lig kulüplerinin hem rekabetçi olmaları hem de güçlü bir ekonomik yapıya kavuşmaları için güçlü finansal kaynaklara sahip olmaları, şirketleşmeye geçmeleri, gençlik gelişim sistemlerinin (altyapı) geliştirilmesi, yayın, maç günü ve ticari gelirlerini artıracak yönetsel tedbirler alınması ve kurumsal yönetim prensiplerinin uygulanması ve farklı gelir kaynaklarının yaratılması konusunda profesyonellerle işbirliği yapılması önerilmektedir.

**Anahtar Kelimeler:** Rekabet dengesi, Beş Büyük Lig, Beş Külp Rekabet Dengesi Endeksi, Herfindahl Hirschman İndeksi, Herfindahl Rekabet Dengesi İndeksi

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## INTRODUCTION

While the size of the European football market was 25.5 billion euros in the 2016-2017 season, it increased to 28.4 billion euros in the 2017-2018 season and 28.9 billion euros in the 2018-2019 season and is calculated to have 59% of the European football market (Deloitte. 2020). It is estimated that the European football market decreased from 3.7 billion euros to 25.2 billion euros in the 2019- 2020 season due to the impact of Covid-19. Looking at the market sizes based on leagues, as of the 2019-2020 season, England's 5.7 billion euros, Spain's 3.1 billion euros, Germany's 2.9 billion euros, Italy's 2.3 billion euros, France's 1.6 billion euros, and the Turkish Super League is estimated to have a size of 670 million euros (Deloitte, 2021). Such a large market necessitates competition between clubs, while clubs try to balance the competition to compete with their competitors.

The balance of competition is the basic definition used in the economic analysis of the leagues in which the teams compete and should be considered centrally. It indicates the equality or inequality of the fighting power of the teams (Owen et al., 2007). The concept of competitive balance was first introduced by Rottenberg (1956). The idea that the fans would be more interested in the matches with high competitive balance enabled the literature to be shaped around this idea. The balance of competition, in other words, "perfect competition," means that both teams have the power to win the match or the championship (Cretton, 2015).

Competitive balance refers to the balance between the sportive abilities of the teams. Competitive balance in sports will ensure that the leagues, the results of which are difficult to predict and the winner of the match or the championship, are more followed, with a high level of viewing pleasure. Lack of competitive balance will mean that both the number of fans going to the match and the number of spectators watching the match on TV cannot be increased, and the league will face the risk of losing spectators in the long run. This will result in a loss of income. Competitive balance can be examined in a single match, season, and inter-season balance (Michie & Oughton, 2004).

According to the International Center for Sports Studies (CIES) (2018), competitive balance is essential for all sports. From a business perspective, the basic assumption is that uncertainty supports revenues. Competitive balance allows more teams to achieve victory. However, competitive imbalance weakens the uncertainty principle in sport.

Aleksander Ceferin, president of the Union of European Football Associations (UEFA), said in his speech at the European Club Association (ECA) general assembly in Geneva, "Let's put our cards on the table and be honest with ourselves: The biggest challenge in the next few years is competitive balance" he drew attention to the importance of competitive balance with his statement. (Inside World Football, 2017).

According to Da Silva et al. (2018), it is assumed that the most balanced league is one in which the difference in points between the opponents is as tiny as possible. Therefore, the competitive balance reflects that all teams have a better chance of winning the championship or qualifying for their international championships during a season.

The higher the competitiveness of the league teams, the more difficult it will be to predict the matches, and the more attractive the league will be. In a fully balanced league, each team will have an equal chance to win a match and, as a result, the championship (Michie & Oughton, 2004).

According to Pawlowski et al. (2010), the increase in payments to football clubs participating in the UEFA Champions League in 1999-2000 had a lasting impact on the performance of clubs in local football leagues. When comparing the competitive balance level in Europe's Big Five Leagues (England, Spain, Italy, Germany, and France) before and after the change in Champions League prize distribution, it was revealed that there was a significant decrease in the competitive balance after the Champions League payment system was changed. According to Szymanski (2003), the topics that constitute the theoretical research agenda for competitive balance in the team sports economy should be:

1. Imbalance in club incomes causing an imbalance in competition.
2. The fact that predictability of the results in a competition or championship can reduce fans' interest.
3. The effects of the prize distribution system on the predictability of competition results.

Accordingly, the competitive equilibrium can be examined in three aspects:

1. In a match between two teams,
2. During one season,
3. In between seasons or championships (Szymanski, 2003).

In leagues or championships, the uncertainty of who will win the championship means that the dominant teams in the league are limited (Szymanski, 2003).

Much research has been done in recent years on competitive balance. In the FIFA Global Competitive Balance Report, competitive balance is examined regarding the number of current champions and the difference in points in the final ranking. In addition, it has been stated that although the establishment years of clubs and national federations are not a measure of competitiveness alone, the pace of development of football may have an indirect effect on the overall competitiveness (FIFA, 2020).

In the literature, many factors affecting the balance of competition are mentioned. Some of these factors are described below.

1. Market size and attendance: Buraimo and Simmons (2006), in their research on the English Premier League sample, found that matches with large attendance also increased matchday revenues depending on market size.
2. Fan density: Szymanski (2001) argues that in order to talk about a balance of competition in any league, there must also be a balance in the number of spectators.
3. Income sharing and competitive balance: It is an accepted approach that income distribution balance will increase competition (Akşar, 2017; Marburger, 1997).
4. Spectator/fan participation and competitive balance: As clubs with close power in the leagues increase the balance of competition, the uncertainty of the match result will increase, and the attendance will also result in high attendance (Janssens & Késenne, 1987).

In recent years, much research has been done on competitive balance. Some of the studies examining Europe's Big Five Leagues are shown in table 1.

**Table 1.** Studies examining Europe's Big Five Leagues

Author(s)	League(s)	Season	Index	Result
Da Silva et al. (2018)	Big Five League, Portugal, and Brazil	2003/2004-2016/2017	C4ICB	Most balanced league Brazil
Michie & Oughton (2004)	Big Five League	1947-2004	Standard Deviation, C5, HICB, Lorenz Curve (LSBC)	A decrease in competitive balance in all five leagues. Competition is highest in France.
Pawlowski, Breuer & Hovemann (2010)	Big Five League	1992/93 - 2007/08	C5, C5ICB, HHI, HICB	The decline in competitive balance in all five leagues
Ramchandani, Plumley, Boyes & Wilson, (2018)	Big Five League	1995/96-2016/17	HICB	Competition is lowest in Spain and highest in France.
Ramchandani (2012)	Big Five League and Portugal, Scotland, Switzerland, and Russia	1992-2010	Interquartile range (IQR), Top-bottom quartile (TBQ) gap, Coefficient of variance (CV) HHI	Competition is the highest in France.
Wagner et al. (2021)	Big Five League	1998/99-2018/19	Competitive Intensity (CI)	The declining trend in the last ten years in all five leagues.

When examined in the literature, no study has been found that compares the competitive balances of the Big Five Leagues and the Super League. In light of the explanations, this research examines the competitive balance of Europe's Big Five Leagues and the Turkish Super League in the last ten seasons between 2011/2012/ 2020/2021.

## METHOD

### Model of the Research

The scanning model was used in the research, and a document analysis method was used to examine the competitive balances of Europe's Big Five Leagues and the Turkish Super League.

Document analysis is defined as a data collection method for revealing perceptions and events realistically and holistically in the natural environment (Şimşek & Yıldırım, 2003, s.19).

### Sample of the Research

In the research, the end-of-season league rankings of the clubs in the last ten seasons (2011/2012-2020/2021) and the scores they achieved were considered. The obtained variables were analyzed in terms of competitive balance. UEFA country ranking is shown in table 2 at the end of the 2020-2021 season.

**Table 2.** UEFA country rankings (2020-21 end of the season)

UEFA R. No.	Country	2016-17	2017-18	2018-19	2019-20	2020-21	Total Points
1	England	14.928	20.071	22.642	18.571	23.928	100.140
2	Spain	20.142	19.714	19.571	18.928	19.357	97.712
3	Italy	14.250	17.333	12.642	14.928	16.285	75.438
4	Germany	14.571	9.857	15.214	18.714	15.214	73.570
5	France	14.416	11.500	10.583	11.666	7.916	56.081
13	Turkey	9.700	6.800	5.500	5.000	3.100	30.100

### Data Collection Tools

The study used data from 196 different clubs in six leagues (England-Premier League: 35, Spain-La Liga: 34, Italy-Serie A: 34, Germany-Bundesliga: 28, France-League 1: 32, and Turkey-Super League: 33 clubs) were used. League standings and points are based on regular-season results (except play-offs) (Transfermarkt.com). The data (League rankings, clubs' end-of-league point ranges and changes in the league ranking of countries by year, etc., A total of 60 tables of 6 leagues) were obtained from the official sites of the Country Federations.

### Data Analysis

Competitive balance understanding in sports is an emerging field. Competitive balance analyzes have been categorized in two different aspects in the literature. The first is competitive balance analysis, which focuses on changes in the competitive balance due to changes in the practices of their leagues over time. The other; is competitive balance analysis which analyzes the effects on fans (Ramchandani, 2018). This research focused on the first analysis.

This study's analyses used the Five Club Concentration Ratio (C5), the Five Club Index of Competitive Balance (C5ICB), the Herfindahl Hirschman Index (HHI), and the Herfindahl Index of Competitive Balance (HICB).

#### *Five Club Concentration Ratio*

Michie and Oughton (2004) found that the C5 ratio measures the extent to which the five largest companies dominate the market in a standard industry. In contrast, when this is applied to football, the C5 ratio measures the disparity between the top five clubs and the rest of the league and the following: They showed that it could be calculated using the formula:

$$C5 = \text{Total points earned by top five clubs} / \text{Total points earned by all clubs} \quad (1)$$

As the number of clubs is fixed, changes in C5 reflect changes in the inequality and dominance of the top five clubs. However, it should be noted that the number of teams in the leagues may vary. To include the effect of changes in the league's size in the calculation, the C5 ratio should ideally be compared with the perfectly competitive equilibrium.

The concentration ratio recommended for measuring competitive balance is valuable for seasonal competitive balance study. It can measure the extent to which a league or championship is affected by a small number of teams. However, it may require verification of the results obtained between seasons and comparing leagues with a different number of teams (Manasis et al., 2011).

***Five Club Index of Competitive Balance***

C5ICB refers to the share of the top five teams in league finishing points in a given season. (Birkhuser & Kaserer, 2016). C5 ratio compared with the ideal case to include the effect of changes on the league's size; C5ICB is calculated using the following formula.

$$C5ICB=[C5/5/N]*100 \quad (2)$$

N is the number of teams in the league. In an ideal football league, the C5 Competitive Balance Index value is accepted as 100. This ratio increases as competitiveness decreases. A high value for the C5ICB means there is less competition. In other words, an increase in C5ICB implies a reduction in Competitive Equilibrium (Michie & Oughton 2004).

***Herfindahl Hirschman Index***

HHI is used to reveal the distribution characteristics of the studied variable by measuring the degree of concentration between firms in the economic sense. Similarly, it measures the competitive balance between the teams or seasons (Ramchandani et al.,2018).

In other words, HHI is a vital index that reveals the competitive balance among all firms in an industry. When applied to football leagues, it allows the clubs in the league to be compared with each other in terms of competition balance. The main difference between using HHI in an economy and a sports league is that it is affected by the restriction on the number of teams in the league. The index is based on calculating each club's league share for the end of the season in the context of the football industry. It is defined mainly by a value determined by each club's share of points in the season. The formula used is given below (Michie & Oughton, 2004).

$$HHI=\sum_{i=1}^N S_i^2 \quad (3)$$

HHI= Herfindahl Hirschman Index

N= The number of clubs in the league

Si = Club i's point share in a season.

HHI is a function of the number of clubs that make up the league and the power imbalances in winning matches. HHI reflects the degree of a competitive balance between teams. Any increase in the index indicates an increase in inequality and thus a decrease in the competitive balance. This index ranges from 0 to 1 (Michie & Oughton, 2004).

***Herfindahl Index of Competitive Balance***

The HICB, which eliminates the sensitivity of the Herfindahl Index to changes in the number of teams, can be corrected for a balanced league by dividing the value of H by the number of teams. The calculation formula is shown below.

$$HICB=[H/1/N]*100 \quad (4)$$

H= Herfindahl Hirschman Index

N= The number of clubs in the league

In a perfectly balanced league of any size, the HICB would get 100. An increase in the index reflects a decrease in the competitive balance (Michie & Oughton 2004).

In the research, HICB, which is an industry-standard measure adapted from HHI and used by

Mitchie and Oughton (2004) to measure inter-season competitive balance, was used. It has been used in the literature (Pawlowski et al., 2010; Plumley et al., 2017). HICB is significant because it allows the comparison of leagues with a different number of teams. It can be said that this is an essential issue since the number of teams is different in the Five Big Leagues examined in our research (Ramchandani et al., 2018). One of the most significant advantages of using this method is that it can compare leagues with different teams throughout the seasons (Mondal & Plumley 2020).

In the light of the explanations above, it can be said that the competitive balance in a league can be measured according to the scores obtained in the local football leagues. If the points collected by the teams at the end of the season in a league are close to each other, it can be accepted that the competition in that league is high. Therefore, the scores obtained by the clubs each season were taken as the dependent variables in the research.

## FINDINGS

In the last ten seasons analyzed in the study, three points system was applied in the Big Five Leagues of Europe and the Turkish Super League. Twenty teams competed in the Premier League, La Liga, Serie A, and League 1, and 18 teams in the Bundesliga. In the Turkish Super League, the 2020-2021 season was played with 21 teams, and the other seasons were played with 18 teams. In addition, the French League 1, 2019-2020 season could not be completed due to the pandemic.

The C5 ratios of the Big Five Leagues of Europe and the Turkish Super League are shown in Table 3.

**Table 3.** C5 ratios of the Big Five Leagues of Europe and the Turkish Super League

Season	England	Spain	Italy	Germany	France	Turkey
2011-2012	0.364	0.349	0.343	0.395	0.348	0.363
2012-2013	0.375	0.371	0.360	0.390	0.337	0.356
2013-2014	0.379	0.376	0.371	0.405	0.358	0.386
2014-2015	0.358	0.398	0.348	0.387	0.348	0.402
2015-2016	0.342	0.376	0.367	0.393	0.338	0.392
2016-2017	0.386	0.380	0.383	0.383	0.371	0.394
2017-2018	0.390	0.362	0.385	0.373	0.369	0.406
2018-2019	0.381	0.340	0.364	0.394	0.354	0.375
2019-2020	0.356	0.356	0.370	0.405	0.350	0.374
2020-2021	0.342	0.376	0.386	0.391	0.362	0.338
<b>Average</b>	0.3673	0.3684	0.3677	0.3916	0.3535	0.3786

When the C5 ratios (Table 3) of Europe's Big Five Leagues and Turkey's Super League are analyzed, the highest C5 ratio is in Germany (Bundesliga) in the 2013/2014 and 2019/2020 seasons (0.405) and Süper Lig (It is seen that it was measured (0.406) in the 2017/2018 season. It can be said that the lowest C5 ratio is seen in the 2012/2013 (0.337) and 2015/2016 (0.338) seasons in France (League 1) and the 2020/2021 season (0.338) in the Turkish Super League. It is seen that the C5 ratio is measured in Germany, the lowest in France, and the highest in Germany, an average of ten seasons.

The Five Club Concentration Index (C5ICB) values are shown in table 4 and graphically in figure 1.

**Table 4.** Five Club Concentration Index (C5ICB) values

	England	Spain	Italy	Germany	France	Big Five League Avg.	Turkey
<b>2011-2012</b>	145	139	137	142	139	140.4	131
<b>2012-2013</b>	150	148	144	140	134	143.2	128
<b>2013-2014</b>	151	150	148	146	143	147.6	139
<b>2014-2015</b>	143	159	139	139	139	143.8	145
<b>2015-2016</b>	136	150	146	141	135	141.6	141
<b>I. Five-season Avg.</b>	145	149.2	142.8	141.6	138	143.2	136.8
<b>2016-2017</b>	154	152	153	138	148	149	142
<b>2017-2018</b>	159	144	154	134	147	147.6	146
<b>2018-2019</b>	152	136	145	142	141	143.2	135
<b>2019-2020</b>	142	142	148	146	140	143.6	135
<b>2020-2021</b>	136	150	154	141	144	145	142
<b>II. Five-season Avg.</b>	148.6	144.8	150.8	140.2	144	145.68	140
<b>Ten Season Avg.</b>	146.8	147	146.8	140.9	141	144.5	138

When the C5ICB is analyzed by leagues (table 4), it is seen that it is measured the highest in Spain (159) in the 2014/2015 season and in England (159) in the 2017-2018 season. The lowest was calculated in the Super League (128) in the 2012/2013 season and Germany (134) in the 2017/2018 season. It is seen that the averages of the C5ICB of the Big Five Leagues are higher than the average of the Super League (except for the 2013/2014 season).

When the relationship between Europe's Big Five League average and Turkish Super League's C5ICB is analyzed, it is seen that the average of Europe's Big Five Leagues is higher than Turkish Super League; in other words, the concentration ratio of five clubs in the Super League. In terms of competitiveness, it is seen that the competitive balance is higher than that of Europe's Big Five Leagues.

It is seen that the highest values are measured in Spain, England, and Italy in the ten-season average of the C5ICB. In terms of the average of the last ten seasons, it can be said that the competition is higher in Turkey, Germany, and France, while the competition is less in Italy, England, and Spain compared to these three countries.

When table 4 is examined, it is seen that the averages of the Big Five Leagues and the Turkish Super League in the second five-year period are higher than the averages of the Super League.

The HHI values of the Big Five Leagues of Europe and the Turkish Super League are shown in table 5.



**Table 5.** HHI values of Europe's Big Five Leagues and Turkish Super League

Season	England	Spain	Italy	Germany	France	Turkey
2011-2012	0.054	0.055	0.053	0.060	0.053	0.059
2012-2013	0.055	0.054	0.054	0.061	0.052	0.058
2013-2014	0.052	0.054	0.056	0.062	0.054	0.058
2014-2015	0.054	0.056	0.054	0.059	0.053	0.060
2015-2016	0.053	0.055	0.055	0.060	0.053	0.060
2016-2017	0.056	0.056	0.056	0.059	0.054	0.059
2017-2018	0.056	0.056	0.056	0.059	0.054	0.061
2018-2019	0.056	0.052	0.056	0.061	0.054	0.058
2019-2020	0.055	0.054	0.054	0.061	0.051	0.058
2020-2021	0.054	0.055	0.057	0.060	0.054	0.050
<b>Average</b>	0.0545	0.0547	0.0551	0.0602	0.0532	0.0581

When table 5 (HHI values of Europe's Big Five Leagues and Turkish Super League) is examined, it is seen that the highest values are measured in Germany and Turkey. In terms of the average of the last ten seasons, it is seen that the highest values are measured in Germany (0.0602) and the Turkish Super League (0.0581), while the lowest value is calculated in the French League (0.0532).

The HICB values of Europe's Big Five Leagues and Turkish Super League in the last ten seasons are shown in table 6.

**Table 6.** HICB values of Europe's Big Five Leagues and Turkish Super League in the last ten seasons

Season	England	Spain	Italy	Germany	France	Big Five League Avg.	Turkey
2011-2012	109	111	106	109	105	108	107
2012-2013	109	109	108	110	104	108	105
2013-2014	105	109	111	111	107	108.6	105
2014-2015	107	113	108	106	105	107.8	109
2015-2016	106	109	109	109	106	107.8	109
<b>I. Five-season Avg.</b>	107.2	110.2	108.4	109	105.4	108.04	107
2016-2017	111	113	113	106	108	110.2	107
2017-2018	111	109	112	107	108	109.4	110
2018-2019	112	105	110	111	107	109	105
2019-2020	109	108	109	110	101	107.4	105
2020-2021	108	109	113	109	108	109.4	106
<b>II. Five seasons Avg.</b>	110.2	108.8	111.4	108.6	106.4	109.08	106.6
<b>Average</b>	108.6	109.5	110.9	108.8	105.9	108.54	106.8

When the average HICB values of Europe's Big Five Leagues and Turkish Super League in the last ten seasons (table 6) are examined, In terms of the average of the previous ten seasons, it can be said that the competition in Italy, Spain, Germany, and England leagues is lower than Turkey and France. It is seen that the most inferior competition is in Italy and the highest competition is in France.

When table 6 is examined, It can be said that there is an increase in the average HICB value in the second five-year period in the Big Five Leagues and a decrease in the Turkish Super League

in the same period.

## DISCUSSION AND CONCLUSION

When the C5 ratios of Europe's Big Five Leagues and the Turkish Super League (table 3) are examined, it is seen that the C5 ratio is the highest in Germany (Bundesliga) and the Süper Lig. In terms of the average of ten seasons, it is seen that the C5 is measured at the lowest in France and highest in Germany. It can be said that this situation indicates that the top five clubs of the Bundesliga are separated from the other teams in the league in terms of points. It has been observed that the league champion Bayern Munich's average of league points achieved in the ten seasons examined is 13.6 points higher than the team that finished second in the league. It can be said that this situation increased the concentration rate of the five clubs and therefore decreased competition. In the French League, it can be said that the league standings are very close to each other, and consequently, the level of competition is relatively high.

When the C5ICB by leagues is analyzed (table 4), it is calculated to be the highest in Spain and England and the lowest in the Super League and Germany. It was found that the averages of the Big Five League C5ICBs were higher than the average of the Super League. Regarding this finding, it can be said that the results of the first five clubs in the leagues in European competitions are effective. It can be said that the clubs that are successful in European competitions strengthen their teams depending on their increasing income and cause the competitive balance to deteriorate in their favor. It can be said that Spanish and English clubs with high C5ICB values are especially successful in the Champions League (For example, 5 Spanish clubs and 3 English clubs have been champions in the last ten seasons). Gürel and Gökçe (2012) state that the distribution of league revenues is an essential factor affecting the competitive balance. They argue that the share of the clubs from the total league income is a source for the transfer of talented players, that the dominant league teams earn more income than the other teams due to the pool system, and for this reason, the competition level of the other teams against the dominant team's decreases. Birkhuser and Kaserer (2016), in their research examining the seasons between 2004/2005 and 2013/2014, stated that they found a reduction in competition in all big five leagues and that this might be due to the presence of investors. They argue that football clubs that receive investor cash flow can increase the market value of their rosters, thus achieving more points per game and a higher probability of winning. It can be said that these findings are in parallel with our findings.

When the relationship between Europe's Big Five League average and the Turkish Super League's C5ICB Index is analyzed, it is seen that Europe's Big Five League average is higher than the Turkish Super League. It can be said that this situation is related to the success of the first five clubs in the leagues in European Competitions and the income they earn accordingly.

In the ten-season average of the C5ICB, the highest values are measured in Spain, England, and Italy. In terms of the average of the last ten seasons, it can be said that the competition is at a higher level in Turkey, Germany, and France, while the competition is at a lower level in Italy, England and Spain compared to these three countries. It can be said that this situation is due to the increase in the income status of the top five clubs in the Italian, English, and Spanish Leagues.

It was found that the C5ICB values in the Big Five Leagues and the Turkish Super League were higher than the averages of the Big Five Leagues in the second five-year period. It can be said that this situation is the reason why the first five clubs remained at a high level of competition

in the fight against other clubs, as a result of the unsuccessful results of the Super League clubs against European clubs, especially in the last five seasons, negatively affecting team development.

When the HHI values of the Big Five Leagues of Europe and the Turkish Super League were examined (table 5), it was found that the highest values were measured in Germany and Turkey. It can be said that this situation is due to the sensitivity of HHI to the number of teams in the leagues and the difference in points between the clubs that are at the top of the league rankings and the other clubs. When the HICB values (table 6) of Europe's Big Five Leagues and Turkish Super League in the last ten seasons are examined, in terms of the average of the previous ten seasons, it can be said that the competition in the leagues of Italy, Spain, Germany, and England is lower than that of Turkey and France. It is seen that the most inferior competition is in Italy and the highest competition is in France. Plumley et al. (2018) found that the competitive balance was low in the English League during the 2002-2016 period. They state that the competitive balance was disturbed due to European competition revenues, property financing, and fees from broadcast deals. Our findings on the English Premier League were similar to that of Plumley et al. (2018), showing parallelism with the findings. Sittl and Warnke (2016) argue that the decrease in the competitive balance in the Bundesliga can be explained by the increase in the champions league income of some clubs, and the growth in the transfer of talented players from abroad, and the retention of the players by specific teams. It can be said that the decrease in competitive balance found by Goossens (2006), Groot (2008), and Ramchandani (2012) in the seasons before our research period continues in the following seasons as well. This finding is consistent with Montes et al. (2014), Frieria and Guerrero (2016), and Plumley et al. (2018) show parallelism with the findings. In line with our findings, Zhao and Zhang (2018) also stated that while the overall competitive balance is relatively high in the French League, the competitive balances of Spain's La Liga, Germany's Bundesliga, and Italy's Serie A are relatively low. When table 4 is examined, an increase in the average HICB value in the second five-year period in the Big Five Leagues, while a decrease is observed in the Turkish Super League in the same period. It can be said that this situation confirms the competitive imbalance that has started to show itself more in the last five seasons. While Mondal and Plumley (2020) confirm this finding, they stated that although the European football market has grown recently, financial gains have been limited to the top clubs in Europe's top five leagues. The competitive balance has decreased in Europe's top five football leagues recently. Görün (2020), in his research in which he examined the Turkish Super League in terms of competitive balance in the 2018-2019 season, states that the Hirschman value is 105.3 and a result close to the competitive balance in the Turkish Super League. It can be said that this result is consistent with our findings.

In the research, as a result of examining the competitive balance of Europe's Big Five Leagues and Turkish Super League for the last ten seasons (2011- 2012/2020-2021), a decrease was observed in the competitive balance in Europe's Big Five Leagues, on the other hand, it was found that there was an increase in the Turkish Super League. According to this finding, Ramchandani et al. (2018) can align with the research findings examined in the 22 seasons between 1995/96 and 2016/17 on the competition level of Europe's Big Five Leagues. In their research, Wagner et al. (2021) found that the competitive intensity of the Big Five Leagues tended to decrease in all five leagues between 1998/99 and 2018/19. They state that the main reason for this is the decrease in the intensity of the championship race, which may harm the ecosystem of European football in the future. Goossens (2006) argues that Champions League payments trigger a decline in the competitive balance and play an essential role in creating wealthy clubs at the top. Birkhuser and Kaserer (2016), on the other hand, suggest that national

football federations should seek alternative ways to maintain or improve both the attractiveness and international competitiveness of their leagues and that national football clubs should benefit from additional cash inflows that will enable them to be more competitive in the international arena.

Within the scope of the findings obtained at the end of the research; based on the HICB index as the main index, since it allows during the season, between the seasons ve the comparison of leagues consisting of different numbers of clubs, it has been found that Europe's Big Five Leagues can be ranked as Italy, Spain, Germany, England, and France, from the lowest level of competition. It can be said that the competitive balance deteriorated (decreased) the most in Italy and the least in France. It can be said that the Turkish Super League is a more balanced league than the Big Five Leagues in terms of competitive balance.

This research examined the competitive balance in the last ten seasons between 2011/2012-2020/2021 seasons in Europe's Big Five Leagues and Turkish Super League as of the end of the 2020/21 season. C5, C5ICB, HHI, and HICB calculations were used in the study. The slight difference between the teams' scores in the leagues (the scores being close to each other) indicates that the level of competition in that league is high.

The research concluded a general decrease in the competitive balance of the last ten seasons in Europe's Big Five Leagues, while an increase was observed in the Turkish Super League. It has been observed that the obtained findings are compatible with the literature. It can be said that there is a consensus in the literature that the decrease in the competitive balance of Europe's Big Five Leagues is related to the economic power of the teams.

It can be said that the continuation of the competition in the Turkish Super League depends on the failures of the clubs participating in the European competitions and, therefore, their inability to generate income that would disrupt the competitive balance with other teams. Within the scope of the duties of football stakeholders for the Super League clubs to be competitive and have a solid economic structure;

- Clubs should become corporations,
- Development of youth development systems (infrastructure),
- Taking administrative measures to increase broadcast, matchday, and commercial revenues,
- Implementation of corporate governance principles,
- It may be suggested to cooperate with professionals to create different income sources.

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