Competitive Balance in Turkish Soccer

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**Introduction**

Globalization causes some developments and innovations in the field of sport as it does in every field. Sports' development by being supported by having these innovations pushed the economists to be interested in sport. Development of sports marketing, sponsorship and economics and increase of the studies in these fields may be regarded as a positive enhancement for sports.

Today, sports, sports organizations and sports events are also being accepted as a product. They are unique when compared to traditional consumption products. When the latter was bought, if it is not liked or if there is a problem with it, producers guarantees that they will take it back by paying the cost or by exchanging with another or by repairing it. However, a sports event which is not liked by the consumers has no chance to be changed or repaired. In addition, you have no chance to store the events to use it later. All the results of the matches will remain without any change.

Besides, the possibility of an unexpected score for a sports event increases the excitement of the spectators and helps sports product to be attractive. Not being able to predict the score which distinguishes sport from traditional consumption products is one of the most important characteristics of sports.

Today, the sport branch which makes us talk about both its name and content by facing us with bigger and increasingly advanced organizations is football. Constant developments, as in all parts of the world, not only triggered a structural transformation process but also became an industry which must be managed according to profit and utility maximization principles, and with strategic and financial techniques.

Paralleled to the development of football industry, there is an increase of studies which examine the economic aspects of football. In the studies conducted on the relationship between sports and economics, we can specify the studies performed on competitive balance.

Theoretical studies on competitive balance are based on the study performed by Rothenberg in 1956.

There are several factors which provide football sector with the attractiveness and continuity of its fascinating influences. Not being able to predict the result of a match is a crucial factor. However, expected value of a match’s indefiniteness may change in the course of a season. At the end of the season, a match between a top team and a bottom team may be more exciting than a match between two teams from the middle of the table (Sloane, 2006).

Being able to predict the results of a match decreases not only the fascination of a match but also the profits from the match. Decreasing level of competitive balance tends to decrease the demands from the spectators.

Rothenberg (1956), suggests that competition and the number of spectators will increase if the number of teams playing to win the title increase (Eckard, 2001). Besides, Jennet(1984) claims that the amount of spectators will decrease in accordance with the level of competition if one team or few team dominate a professional league (Jennet, 1984).
There are 6828 active football club which are registered by Turkish Football Federation (TFF, 2011). These clubs compete in 13 leagues which are either professional or amateur. In this study, an analysis of competitive balance for top two leagues of Turkey was performed.

**Methodology**

It is stated that empirical studies performed on competitive balance follow two ways. The first one is the competitive balance itself. In these analyses, the change of the competitive balance in the course of time is examined. The second one is examines the influences of the competitive balance on spectators. Both analyses are necessary for the understanding of the relationship among the structure of a league, competition level and spectators’ benefit (Gürel, 2007).

It is observed that many different methods are used to analyze a competitive balance in literature. The percentages of wins, calculations done with Lorenz curve, the five clubs concentration ratio (C5) and Herfindahl- Hirschman index are the methods intensely used. In this study, ‘C5 Index’ and ‘Herfindahl- Hirschman Index’ was used. Data taken from TFF archives are calculated for every single year.

**The Five Club Concentration Ratio (C5)**

In a standard industry, the five firm concentration ratio measures the extent to which an industry is dominated by the five largest companies. When applied to football, the five club concentration ratio measures inequality between the top five clubs and the rest of the league and may be calculated using the following formula (Michie & Oughton, 2004)

\[
C5 = \frac{\text{Total points won by the top five clubs}}{\text{Total number of points won by all clubs}}
\]

The C5 ratio is a function of the number of firms or clubs in an industry or league and the degree of inequality between the top 5 clubs and the rest where increases in the index reflect a reduction in competitive balance and increased domination by the top five clubs (see Davies, 1979 and Hart, 1975 for a discussion of the impact of inequality and the number of firms (clubs)). In a standard industry, with no restrictions on the number of companies or the market share of each company, the index would lie between 0 (reflecting pure competition with an infinite number of companies) and 1 (pure monopoly) (Michie & Oughton, 2004).

In Figure 1, concentration rates of five clubs which was calculated between the years 2002 and 2010 in Spor Toto Super League (STSL) and Bank Asya First Division (BAFD) are demonstrated. It is possible to see that a wavy and irregular run occurs in both leagues. The changes throughout the years in both leagues are similar to each other. The average rate for STSL is 0.39 while it is 0.36 for the latter, BAFD.
A more sophisticated way of taking account of changes in league size is to compare the C5 ratio to an ideal figure that would be attained in a perfectly balanced league as is the case in the standard deviation of win percentage measure of competitive balance which is normally deflated by the standard deviation that would be attained in a perfectly balanced league. This adjustment gives us the C5 Index of Competitive Balance (C5ICB) as shown below.

\[
\text{C5ICB} = \frac{N}{100}
\]

where \( N \) is the number of teams in the league. Thus, the C5 Index of Competitive Balance is adjusted to correct for changes in the size of the league. For a perfectly balanced league of any size the index takes the value of 100.

In Figure 2, C5 competitive balance index values are given. This figure also shows the wavy and irregular run. It is far from the value 100 which is given for an ideal league. In STSL, it is found that 2004-2005 season is the furthest season in terms of competition with a rate of 55%.; the nearest competition for this league occurs in 2009-2010 season. The furthest season in BAFD is 2004-2005 while the nearest competition occurs in 2008-2009.
Figure 2: The C5 Index of Competitive Balance:

![Graph showing the C5 Index of Competitive Balance over time.](image)

Source: Own calculation

**Herfindahl index**

The five-club concentration ratio looks at inequalities or imbalance between the top 5 clubs and the rest. However, it does not capture changes in imbalance within the top 5, or within the bottom 13 clubs.

The Herfindahl index looks at inequalities between all the firms in an industry. When applied to football it captures inequalities between all the clubs that make up a league. In an industry context the index is based on a calculation of the market share of every firm. These shares are then summed into a weighted average index for the industry using each firm’s market share as its weight. We can translate this into an indicator of competitive balance for the football industry by looking at each club’s share of points in a season and aggregating these into an index using each club’s share of points as weights, to give:

\[
H = \sum_{i=1}^{N} S_i^2
\]

H= Herfindahl index  
N= The number of clubs in the league  
\(S_i\)= Club i’s share of points in a season,

Where \(S_i\) is club i’s share of points in a season, and \(i = 1, 2, \ldots N\), where N is the number of clubs in the league.14 Like the five-club concentration ratio, the H-index is a function of the number of clubs that make up the league and the inequalities between those clubs in terms of winning power.15 The H index reflects the degree of competitive balance between teams. A rise in the index signifies an increase in inequality and therefore a decline.
in competitive balance. In a standard industry context, the Herfindahl index lies between 0 (with an infinite number of firms) and 1 (pure monopoly): however, in football, restrictions on the number of teams in a league and constraints imposed by the points scoring system mean the index lies well within this range (Michie & Oughton, 2004).

In a 18-team league, the lower bound of the H-index would be 0.055 (the value attained in a perfectly balanced league) and the upper bound would be 0.076 (the value attained in a perfectly unbalanced league with the most unequal distribution of points attainable). The H index is illustrated in Figure 3 for the period 2002-2010.

**Figure 3: H- Index :**

In Figure 3, H-Index norms between 2002-2010 are given. It is found that STSL is near to ideal norms in 2006-2007 seasons while it is far from them in 2009-2010 season. It is seen that BAFD is near to ideal norms in 2008-2009 season while it is far in 2004-2005 season.

**The Herfindahl Index of Competitive Balance (HICB)**

Like the C5 ratio, the Herfindahl index is sensitive to changes in the number of teams. This can be corrected for by dividing the index by the value of H that would be attained in a perfectly balanced league to give the H Index of Competitive Balance (HICB) as shown below:

\[
\text{H Index of Competitive Balance} = \frac{\text{H index}}{N} \times 100
\]

\(\text{H} = \text{Herfindahl index}\)

\(\text{N} = \text{The number of clubs in the league}\)
In a perfectly balanced league of any size the Herfindahl index of competitive balance would take the value of 100. A decline in competitive balance is reflected by an increase in the index. Data for the Herfindahl Index of Competitive Balance are presented in Figure 4.

![Figure 4: H- Index of Competitive Balance (HICB)](image)

Source: Own calculation

In figure 4, HICB values / norms which is calculated between the years 2002-2010 are given. As it is clear in this calculation method that the wavy and irregular run continues in both leagues. The value 100 which is given for ideal leagues is also far here. For both leagues, the top distance is in 2004-2005 season. The nearest value to an ideal league is in 2006-2007 in STSL and in 2008-2009 in BAFD.

**Discussion**

According to the data obtained from the study, there is an wavy and irregular situation in both leagues in terms of competitive balance. It can be put forward after the examination of competitive level in two leagues that in Bank Asya First Division there is a much competitive atmosphere than that of Spor Toto Super League.

According to the data obtained from the study, it is found that when concentration rates of clubs and C5 are examined, it is clear that the share of first five clubs in STSL is 39 % while it is 36 % in BAFD. One cannot mention a balanced point share for the two leagues. It can be put forward after the examination of competitive level in two leagues that in Bank Asya First Division there is a much competitive atmosphere than that of Spor Toto Super League. 2004-2005 is the season which has the least competition while the most competitive is 2009-2010. The least competition in BAFD occurs in 2004-2005 while the nearest competition realized in 2008-2009. According to Herfindahl-Hirschman Index, . For both leagues, the top competitive is 2004-2005 season. It can be seen that the most competitive season in STSL is 2006-2007 and it is 2008-2009 in BAFD.

When competitive balance values between two leagues are examined, it is possible to put forward that there is more competitive atmosphere in BAFD than that of STSL. However, unless some measures for increasing the competition are taken, the dominance of a few teams and the situation in which championships are shared by these teams will decrease the interest
of people to football; will negatively affect the number of spectators going to stadiums and will cause to revenue loss which is related to decreasing number of spectators.

References
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ABSTRACT

Sports leagues are obliged to shelter a particular competitive balance within them to survive. Because if the other conditions were being equal, not being predicted of the match result would create an enormous interest on the fans and it would increase the desire of the spectators to follow the league matches. In this study, it was determined the process of the level of competitive balance by using the Herfindahl-Hirschman index and the C5 Competitive balance index, including Turkey Sports Super League (STSL) and the Bank Asya First League (BAFD) 2002-2003 / 2009-2010 seasons. According to the evidence it can be said that there have been rough and unsteady conditions in both leagues and BAFD is more competitive than STSL.

Key words: Competitive Balance; Soccer; Turkish Leagues.

JEL classification: L83