Is Competitive Balance Reflecting League Competitiveness?

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Introduction and Theory
Zimbalist (2003) claims that competitive balance is a concept that is complex and has many dimensions. Moreover, Kringstad and Gerrard (2007, p. 149) claim it to have become a “catch-all” term, and recognise the multi-dimensional part of the concept by dividing between win dispersion, performance persistence and prize concentration. On the other hand, to avoid the complexity of the concept by incorporating all aspects of tournament competition, Kringstad and Gerrard (2004, 2007) rather suggest to simplify the meaning of the term competitive balance, defining it be the distribution of sporting outcome in a tournament. By this definition, the concept competitive balance can meaningfully be applied in both a simple league tournament context (i.e. closer to the original structure of leagues) and in the modern complex league context.

To both handle the complexity and to be able to “leave” competitive balance as a straightforward term, Kringstad and Gerrard suggest the concept competitive intensity to incorporate tournament complexity related to prize structure. This means that competitive intensity aims to capture the competitiveness driven by the different prizes in a tournament, such as qualification from sporting output to post-seasonal play. Under these conditions, the simplified framework of the term competitive balance can still include the different dimensions mentioned above. Therefore, measures related to these dimensions, such as the ratio of standard deviation (RSD, see Fort, 2007), Spearman’s rank correlation coefficient and Herfindal’s index, is valid also within the more limited understanding of the concept competitive balance.

The motivation behind the term competitive intensity is based on the observed interest and competitiveness related to different sporting prizes in for example league tournaments in team sports, as well as in other multi-prize contests, such as Tour de France in cycling. In this context, a purpose for this paper is to measure competitive intensity in a contest/tournament, and compare it with the RSD.

Competitive intensity can be measured within a season, such as Jennett (1984) does with for example championship significance in the context of demand for sport. However, this paper will focus on the end-of-season standing, similar to many of the competitive balance measures used, such as RSD. As a case, this paper will use the English Premier League both because it is popular World-wide and because it has a number of sporting prizes within the league tournament.

Methods
Kringstad and Gerrard (2005) suggest a three step procedure to measure competitive intensity. The first is to identify the prize structure in the league/tournament. An example of a sporting prize in EPL is qualification for the Union of European Association’s (UEFA) Champions League. The second step is to define the competitive domains for each prize, while the third is to combine the previous steps into a measure of competitive intensity.

Based on these steps, they suggest the following measure for end-of-season competitive intensity (CI):

\[ CI = \frac{\sum_{i=1}^{n} P_i \cdot w_i}{n} \]

where: \( P_i \) = the intensity of the competitive domain for prize \( i \), \( w_i \) = weight of prize \( i \), and \( n \) = the total number of relevant prizes. Again, following Kringstad and Gerrard (2005), the prize domains are set to 10 points, while \( P_i \) is the aggregated gap in points between the team winning the prize \( i \) and the other teams within the given domain. \( w_i \) is set to \( \frac{1}{i^2} \), where \( i = 1 \) for the Championship win, 1.5 for directly entry to UEFA Champions League (CL), 1.75 for qualification round to UEFA CL, 2 for Europe cup (former UEFA Cup), and 3 for relegation.

Ratio of standard deviation is measured in the traditional way for European soccer, valuing actual standard deviation from win =1, draw = 0.5 and loss = 1, and the idealized standard deviation from the 1, 0 system (see, Fort, 2007).
Results
On basis of the first 22 seasons of the EPL, from its beginning in 1992/93, RSD and CI are measured. The most important result is that they are uncorrelated ($r = 0.06$). In other words, CI is able to capture other elements of competitiveness than CB in the EPL.

An example is the 2013/14 season where RSD has its second highest value in the sample, which means big win dispersion. Here, the value of competitive intensity is the third highest in the same sample. The interpretation of this single example is that even if the differences in sporting outcome between the teams in a league increase, competitive intensity can still improve. Hence, followers of teams within the league might interpret the season as exiting with regards to competitiveness, even with weak win dispersion. For the given season, this is because the difference in point score between the teams in contention was relatively small, as was the same for the teams at the bottom of the table (“the relegation battle”).

Discussions
The complexity of prize structure creates a number of sub competitions within the structure of the whole tournament/contest. The competitiveness created by all these sub competitions should be related to the competitive intensity concept. Dividing the traditional competitive balance concept into two seems hence to be an appropriate way to bring a common understanding of competitiveness in tournaments/contests in the future. The uncorrelated relationship between RSD and the proposed measure of competitive intensity may be an indicator of the weakness of the traditional measures of competitive balance to reflect the competitiveness within a tournament.