The Relationship between the Different Dimensions of Competitive Balance: Evidence from European Soccer

Bill Gerrard, University of Leeds  
Morten Kringstad, NTNU Business School

Finance/Economics - Economics (Professional Sport) virtual asynchronous  
20-minute oral presentation (including questions) session: Economics II

Abstract 2020-054

Introduction

Competitive balance is a fundamental concept in sports economics. But there is a disconnect between the theoretical and empirical literature which has important implications for league regulations. While it is accepted that competitive balance is a multi-dimensional concept with a proliferation of empirical measures, within the theoretical literature there tends to be an implicit assumption that these different empirical measures are highly correlated so that proposed changes in league regulations are expected to affect all of the dimensions of competitive balance in the same direction. Our research objective is to determine if it is reasonable to assume that the different dimensions of competitive balance tend to move together in the same direction.

Previous Research and Theoretical Development

We start by developing a taxonomy of empirical measures of competitive balance. We argue that there are two fundamental dimensions of competitive balance in the context of ex post league outcomes - win dispersion (i.e. the variation in performance between teams) and performance persistence (i.e. the extent to which teams replicate their performance across seasons). There are three broad types of win-dispersion measures: (i) variance measures (e.g. Quirk & Fort, 1992; Eckard, 1998); (ii) inequality measures (e.g. Schmidt & Berri, 2001, Depken, 1999; Horowitz, 1997); and (iii) non-normality measures (e.g. Quirk & Fort, 1992; Jang et al., 2019). There are two broad types of performance persistence: (i) league-outcome persistence which is the degree to which league outcomes of all teams in one season are replicated in the next season (e.g. Daly & Moore, 1981); and (ii) tail-outcome persistence which focuses on inequality in the share of championship titles, play-off qualifications and promotions/relegations (e.g. Quirk & Fort, 1992; Kringstad & Gerrard, 2007). A simple two-team model of league competitive balance is used to show that win dispersion and performance persistence are connected but the possibility of divergence exists due to the dynamic effects of different regulatory interventions.

Data and Methods

The empirical research on the dispersion-persistence relationship employs a dataset covering the 18 best-attended top-tier European domestic soccer leagues. Six empirical measures of competitive balance are calculated for the ten seasons, 2008 – 2017. Correlation analysis is applied to examine the relationships between different measures of competitive balance across the 18 leagues. Comparative results are also reported for the four North American major leagues.

Results and Discussion

There are two key empirical results. First, there is a high degree of correlation across leading European top-tier domestic soccer leagues between the 10-year averages for win dispersion and league-outcome persistence. Second, within individual leagues there are significant differences in the direction and strength of the dispersion-persistence relationship. In particular, using the RSD measure of win dispersion and the SRCC measure of performance persistence, the biggest three leagues (measured both by gate attendance and revenues) exhibit very different dispersion-persistence relationships: English Premier League - strongly negative, Spanish La Liga - strongly positive; German Bundesliga - no relationship. The next stage of the research is to investigate the differences in the regulatory regimes of these three leagues.