Introduction

The motivation behind this paper is the longstanding recognition within the economic analysis of professional and collegiate team sports that competitive balance is a multi-dimensional concept. Rottenberg (1956) considered both within-season dispersion as well as the concentration of pennant winners. Daly and Moore (1981, p. 87) emphasised that competitive balance as a ‘concept has a number of dimensions’ and were the first to measure across-season competitive balance by applying the Spearman’s rank correlation coefficient. Fort and Quirk (1995), although best known for the relative standard deviation measure of competitive balance, also focus on excess-tail probabilities. Eckard (1998, 2001, 2017) and Humphreys (2002) suggested composite measures that capture both within-season and across-season competitive balance. Others, such as Maxcy (2002) and Maxcy and Mondello (2006), also use both dimensions in their analysis, but do so with separate measures.

The purpose of this paper is to further analyse the multi-dimensionality of competitive balance in the North American major leagues by extending the work by Eckard (2001) for the MLB and Eckard (2017) for the NFL and applying his composite measure to all of the major leagues. In addition, given that Eckard suggests that a range of metrics should be used to determine the competitive balance level of a league, this paper also includes a measure of the concentration of playoff winners to get a broader picture.

Methods and data

According to Eckard (2001) %Time reflects the time variation as a proportion of the total variance, and as this proportion increases, competitive balance improves. The Herfindahl's index (HI) is applied for measuring playoff winner concentration in the same leagues (see, for example, Kringstad & Gerrard, 2007). Data is analysed from the four North American major leagues for the period 2010 to 2019. This updates Eckard's 2001 analysis of the MLB while extending his composite measure to the NHL and the NBA for the first time to the best of our knowledge.

Results and discussion

MLB is the best balanced based on %Time, followed by NFL, NHL and NBA. However, the difference between NBA and NHL is rather small. NFL has the least concentration of playoff winners, while MLB and NBA have the same concentration. NHL is most concentrated. However, the differences in the concentration ratio across the major leagues are small.

What stands out as the most interesting result of our analysis is that the NBA, usually regarded as the least competitively balanced league, has similar results to the NHL and not that different from the NFL when using Eckard’s composite approach. Moreover, the NBA playoff winner concentration is no worse than for the other major leagues.

NBA is a highly popular league despite most studies concluding that it is a weakly competitively balanced league. This is a paradox, given Rottenberg’s uncertainty-of-outcome hypothesis. However, our study suggests that the conclusion that the NBA is weakly competitively balanced is dependent on how you define and measure competitive balance.