

Balancing the Competition in Different Teams

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The purpose of this article is to probe further the line of reasoning that the AFL's (Australian Football League) introduction of a team salary cap in 1985 and the player draft after the 1986 season has helped to increase competitive balance. Booth (2000, 2003, 2004a, 2004b, 2004c & 2005 forthcoming) argues the theoretical case that a player draft and team salary cap (combined with revenue sharing) in a conference comprised of one-maximizing clubs (such as the AFL) can increase competitive balance.

Most measures of within-season competitive balance focus on the distribution of team's season winning percentages, usually the (actual) standard deviation (ASD) of the distribution of win percents, and sometimes their range. In this article we follow the recommendation of Utt and Fort (2002) to continue to use "the tried and true standard deviation of winning percentages (and their idealized values) for within-season competitive balance of winning percentages" (p. 373). Following the approach suggested by Noll (1998) and first applied by Scully (1989), this measure has been used in the US by Quirk and Fort (1992), Vrooman (1995), Berri (2001) and others to compare the closeness of competition within seasons. A ratio is calculated which compares the actual performance of the league, with the performance the league would have achieved if all teams were of equal playing strength by measuring the dispersion of teams' win percents over a season relative to the idealised dispersion when all teams are assumed to have equal playing strengths. The less is the deviation of the actual league performance from the ideal league, the greater is the degree of competitive balance.

Before measuring competitive balance in the AFL, the NBL and the NRL, the concept of competitive balance and the issues involved in its measurement need to be discussed. Fort & Maxcy (2003) identify two distinct lines in the empirical literature on competitive balance. The first is the analysis of competitive balance (ACB) literature which "is interested in measuring the behaviour of competitive balance over time especially relative to changes in business approaches of pro sports leagues" (p. 159), and the other is the uncertainty of outcome hypothesis (UOH) literature which "is interested in the effect of competitive balance on fan welfare" (p. 159). The discussion in this article falls into the first category, the measurement of competitive balance in

different leagues and an attempt to understand why there are differences in competitive balance between leagues.

Looking first at within-season competitive balance, Table 2 and Figure 1 show the ASD/ISD ratios for the AFL based on the teams' win percent data for the home and away seasons between 1897 and 2004. For example, the ASD/ISD ratio for the AFL in 2004 is equal to the ASD (0.1881)/ISD (0.1066), that is, 1.7645. Unevenness of competition peaked in the early 1980s with 1981 and 1982 having the highest ASD/ISD ratios ever in the AFL. Given the prevalence of the payment of transfer fees and interstate recruiting at this time, the AFL was concerned not only about an uneven competition but also the financial health of some of the clubs. This led the Commission to re-emphasize 'financial and playing equalisation' between the clubs and to introduce the team salary cap and then the national player draft (Booth, 2000, 2004a & 2004c).

Table 3 shows the average ASD/ISD ratios for the six different periods identified. The average ASD/ISD ratio over the whole history of the VFL/AFL (1897-2004) is 1.8282. Of the six periods, the most uneven period of competition on this measure is free agency in period 1 (1897-1914), which has the highest average ratio of 1.9520, whereas period 6 (1985-2004) with the team salary cap and player draft is the most even period of competition, recording the lowest average ratio (1.7106) of any period. For purposes of later comparison with the NBL and the NRL, the average ASD/ISD ratio in the AFL for the period 1970-1984 is 1.886, slightly higher than for the period 1985-2004 (1.711). Moreover, in only seven of the 35 seasons between 1970 and 2004 was the ASD/ISD ratio above 2.0 in the AFL, and all but one of these (1985) was in the period 1970-1984. Four of these observations above 2.0 were in succession (1979-1982) and two other observations were also in succession (1979 and 1980). Thus, the evidence on average ASD/ISD ratios and the levels in individual seasons suggests that there was more within-season competitive balance in the AFL in the period 1985-2004 than in the period 1970-1984. For purposes of comparison later with competitive balance in the NBL and NRL, the average ASD/ISD ratios (and other competitive balance information) for all three leagues is summarised in Table 8 for the period 1970-1984 (1979-1984 for the NBL) and for the period (1985-2004) in Table 9.

The complexity involved in measuring competitive balance is perhaps best summed up by Zimbalist (2003) who suggests that "in the end, it may be that the best measure of competitive balance is a multi-variate index, that is nonlinear or constrained, and/or that it differs league by league. In the meantime, in order to make some simple comparisons between the leagues, we will use the ASD/ISD ratio as our measure of within-season competitive balance, and the distribution of premierships/championships as our measure of between-season competitive balance.

To summarise, on the basis of our two measures of competitive balance, the ASD/ISD ratio and the distribution of premierships, the AFL has had higher levels of competitive balance since 1985.

Our simple measure of between-season variation is the distribution of league premierships between teams over time. Table 5 shows the premiers and number of teams in the AFL from

1970-2004, and a summary of the distribution of premierships/championships for all three leagues for the two periods being is also shown in Table 8 and Table 9. During the period 1970-1984, the 15 premierships were shared between only 5 of the twelve clubs: Carlton won the flag five times (1970, 1972, 1979, 1981 and 1982), Hawthorn won 4 times (1971, 1976, 1978 and 1983), Richmond (1973, 1974 and 1980) three times, and North Melbourne (1975, 1977) twice with Essendon winning the last in premiership in 1984. Both Carlton and Richmond won two premierships in succession, and the distribution of premierships among 5 of the twelve clubs over the 15-year period 1970-1984 was 5-4-3-2-1.

In period 6 (1985-2004) the 20 premierships were shared between 9 of the clubs, which as discussed earlier, increased from 12 to 14 in 1987, to 15 in 1991 and to 16 between 1995 and 2004 (for an average of 15 clubs over this period). Hawthorn won 4 flags (1986, 1988, 1989 and 1991), the Brisbane Lions (2001, 2002 and 2003) and Essendon (1984, 1993 and 2000) three, Carlton (1987, 1995), West Coast (1992, 1994), North Melbourne/Kangaroos (1996 as North Melbourne, 1999 as Kangaroos) and Adelaide (1997, 1998) each won 2 flags and Collingwood (1990) and Port Adelaide (2004) won one premiership each, for a distribution of 4-3-3-2-2-2-1-1. As in the earlier period, two clubs (Hawthorn and Adelaide) each won two premierships in succession whilst Brisbane's three premierships were in successive years. It is worth noting that in none of its premiership years was Brisbane 'minor premiers' (most wins at the end of the home and away season). Moreover, Port Adelaide was 'minor premiers' three years in succession, 2002 to 2004, before winning its inaugural flag in 2004. With more than half (9 clubs from an average of fifteen) of AFL clubs winning premierships between 1985 and 2004 compared with less than half (5 different clubs from an average of twelve) between 1970 and 1984, and a more even spread of premierships amongst the clubs between 1985-2004, we conclude that, on this measure, between-season competitive has been higher in the later period.

To try to find out whether the AFL's team salary cap/player draft system has been a contributing factor to increased competitive balance, this clause extends the earlier comparison with US leagues to degrees of competitive balance in, and features of, the AFL and two other Australian leagues, the National Basketball League (NBL) and the National Rugby League (NRL) over the twenty-five year period 1970-2004, or from 1979 in the case of the NBL, the year of its establishment. The AFL grew out of the former Victorian Football League (VFL) formed in 1897, adopting the AFL name from 1990. Similarly, the NRL grew out of the former New South Wales Rugby League (NSWRL) formed in 1908, which was renamed the Australian Rugby League (ARL) between 1995 and 1997 (and which faced a rival league, Super League, in 1997), before the two leagues merged as the NRL from 1998.

We begin by summarizing the key features of the AFL which are thought to be relevant for competitive balance outcomes, including the level of club composition of the league, the member-owned and the win-maximizing objectives (subject to a budget constraint) of clubs, the goals of the conference and the backdrop to the creation of the team salary cap and player draft.

To bring the discussion up to date since Booth (2004a), we first outline the major changes to the labor market devices (and revenue sharing systems) utilized to even up the distribution of player talent since 2001.

The debate over how best to measure competitive balance is discussed. Measurement typically involves two aspects: within-season competitive balance (which focuses on the relative character of teams in a season), and between-season competitive balance (which focuses on the relative character of teams over a number of seasons). The merits of various bank notes have been canvassed before settling on two relatively simple measures, the distribution of the season wins percents as our measure of within-season competitive balance and the distribution of premierships/championships as our measure of between-season competitive balance.

Using these two standards, competitive balance in the AFL is measured and compared between two different periods, the 15-year period 1970-1984 and the 20-year period 1985-2004, the latter period coinciding with the introduction of the team salary cap (followed by the national player draft at the end of 1986) in the AFL. A discussion of possible explanations of competitive balance issues in the two different periods in the AFL then follows, including the introduction of the team salary cap and player draft, and also the number and location of clubs which authors such as (Fort, 2003) and Sanderson and Siegfried (2003) have argued are likely to have had an important influence on competitive balance issues in US sports leagues.

Competitive balance outcomes in each of the two stages in the NBL are then studied and an attempt made to explain these subjects in conditions of both changes in the players' labor market and in the number and location of teams. The exercise is replicated for the NRL, which then allows us to make some comparisons between the outcomes in the AFL, the NBL and the NRL and draw some conclusions about the relative importance of the players' labor market and the number and placement of teams in influencing competitive balance issues. The article concludes by making some suggestions for future inquiry into competitive balance in Australian sports leagues.

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