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**Labour Market Intervention, Revenue Sharing
and Competitive Balance in the Australian
Football League, 1897-2002**

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LABOUR MARKET INTERVENTION, REVENUE SHARING AND COMPETITIVE BALANCE IN THE AUSTRALIAN FOOTBALL LEAGUE, 1897-2002

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ABSTRACT

A long-running debate in sports economics has centred on whether labour market devices and revenue sharing rules are effective in increasing competitive balance in sports leagues comprised of either profit maximising clubs or win maximising clubs. This chapter examines the levels of competitive balance in a league comprised of win maximising clubs under a variety of labour market devices and revenue sharing rules and makes for interesting comparisons with competitive balance levels achieved in other professional sports leagues.

Formed in 1897, the Australian Football League (AFL) has been comprised of clubs owned by their respective paid-up financial members. As a result of this ownership structure, rather than pursuing profits, analysis of the clubs' finances strongly suggests that they are win-maximisers, subject to breaking even.

This chapter traces the history of labour market devices and revenue sharing rules the AFL has used to try to increase competitive balance among its win-maximising clubs. Seven different periods between 1897

and 2002 are identified and the different levels of competitive balance achieved matched against the devices used in each period.

The highest levels of competitive balance achieved in the AFL have occurred in the most recent period that includes both a player draft and a salary cap. The levels of competitive balance achieved in the AFL are compared with the outcomes in some other major leagues in North America.

KEY WORDS: Australian Football League; competitive balance; players' labour market; player draft; revenue sharing; salary cap; win-maximising clubs.

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INTRODUCTION

A long-running debate in sports economics has centred on whether labour market devices and revenue sharing rules are effective in increasing competitive balance in sports leagues comprised of either profit-maximising or win-maximising clubs. This chapter examines the levels of competitive balance in a league comprised of win-maximising clubs under a variety of labour market devices and revenue sharing rules which makes

for interesting comparisons with competitive balance levels achieved in other professional sports leagues.

Formed in 1897, the Victorian Football League (VFL) expanded nationally to become the semi-professional Australian Football League (AFL) now comprising 16 member-owned clubs playing a unique brand of 'Australian Rules' football. Analysis of the clubs' finances and stated objectives suggests that the clubs are win-maximisers (subject to breaking even), rather than profit maximisers.

This chapter traces the history of labour market devices and revenue sharing rules the VFL/AFL has used to try to increase competitive balance. Six different periods between 1897 and 2002 are identified and the different levels of competitive balance are calculated for each year and then matched against the devices and rules used in each period.

The levels of competitive balance achieved in the VFL/AFL are compared with other major leagues in North America. It is suggested that the high levels of competitive balance achieved in the VFL/AFL in the most recent period result from the introduction of both a player draft and a team salary cap.

LEAGUE HISTORY, CLUB OBJECTIVES AND OWNERSHIP

From The VFL To The AFL

The Victorian Football Association (VFA) was formed in Melbourne in 1877 in the State of Victoria, Australia. In 1896, eight of the original VFA clubs broke away to form the Victorian Football League (VFL) and the first season of competition was played in 1897. Over time, the number of VFL clubs in Melbourne grew and in the 1980s and 1990s clubs from other cities outside Victoria were admitted. This necessitated an official name change at the end of 1989 to reflect the expansion of the former Victorian-based competition into a truly national competition. From 1990, the competition has been known as the Australian Football League (AFL).

The VFL began with eight clubs: Carlton; Collingwood; Essendon; Fitzroy; Geelong; Melbourne; St Kilda and South Melbourne. University and Richmond were admitted in 1908, but University disbanded before the start of the 1915 season. During WWI the number of clubs fell to four in 1916, increased to six in 1917, eight in 1918 and nine in 1919. In 1925, Footscray, Hawthorn and North Melbourne joined to make a twelve team competition that continued until 1987, except for Geelong's withdrawal during WWII in 1942 and 1943. South Melbourne moved to Sydney for the 1982 season and became the Sydney Swans in 1983. National expansion

continued with the inclusion of Brisbane and West Coast (Perth) in 1987, Adelaide in 1991 and Fremantle in 1995 making a league of sixteen teams. In 1997 Port Adelaide was admitted but Brisbane Bears' merger with Fitzroy to become the Brisbane Lions kept the number of clubs at sixteen, whilst Footscray began trading as the Western Bulldogs. In 1999 North Melbourne commenced as the Kangaroos.

Objective Function Of VFL/AFL Clubs

Dabscheck (1973) analyses the objectives of VFL clubs in the early 1970s. These findings, which are also summarised in Dabscheck (1975a, 1975b), make a distinction between the football club and the parent club. The football club is a sub-unit within the parent club and makes on-field decisions such as training, coaching and selection of teams. The parent club is concerned with financial decisions that affect the ability of the football team, such as the raising of money to pay players. According to Dabscheck (1975a, pp.178-179) when interviewed:

... football and 'parent club' officials state that their major objective is to see their football team win as many premierships as possible. These officials also add that extra revenues which come into the club are either used to purchase and pay players or to improve ground and spectator facilities, and it is quite apparent that 'parent clubs', in an

effort to acquire a winning football team, are prepared to pay out more money for players in terms of wages and transfer fees than they expect to gain from increases to gate receipts and football club membership income.

Stewart (1984, p.7) concurs with Dabscheck's general view on the objective of clubs, arguing that the overriding goal of clubs is winning and team success:

Profits are seen as a secondary goal: a premiership is ranked more highly than an operating surplus. A club is therefore prepared to go into debt if it means high calibre coaches and players can be secured, motivated and integrated into a winning team. To this end, clubs are continually in search of new means of expanding their revenue base (and wage fund) in order to attract premiership players.

Thus, both Dabscheck (1975a, 1975b) and Stewart (1984) conclude that VFL/AFL clubs are utility maximisers, specifically wanting to maximise the number of matches their team wins. The suggestion that clubs are prepared to go into debt does not alter the fact that a club has a budget constraint with which it must ultimately comply in the longer term.

More recently, Shilbury (1994) in a study of the strategic planning practices of AFL clubs finds that financial trading performance and on-

field performance are the two most important aspects of football club management. Whereas general managers tend to be employed to manage the financial affairs of the club, the focus of club presidents upon on-field success tends to reflect the responsibilities of the elected board of management to club members. Shilbury (1994) describes as this as 'the utility maximising effect of voluntary administration by the president and board of directors'.

Ownership Of VFL/AFL Clubs

Member-Owned Clubs

Most clubs in the history of the VFL/AFL have been member-owned. The traditional emphasis on success on the field no doubt stems from the nature of a VFL/AFL club, which traditionally has been run by a Board of Directors elected by 'financially paid-up' club members. The aim of club members has not been to achieve a financial return on their membership, but to assist with and to enjoy the playing success of their club. In other words, the clubs have not been profit-maximisers but win-maximisers subject to a budget constraint, that is, breaking-even financially. During the 1980s and 1990s VFL/AFL clubs (and their directors in particular) seemed to become much more conscious of the need for financial viability, both in

the short and long term, given a world where clubs were fearful of their capacity to survive.

Evidence for this view is supported by a survey of the financial reporting of the sixteen AFL clubs by the Institute of Chartered Accountants in Australia (2002). Over the three-year period 1999-2001, average annual club membership was 27,658 with Adelaide having the highest (42,343) and the Western Bulldogs the lowest (19,211). Average club membership for 2002 was 28,096 with the highest being Adelaide (46,620) and the lowest St. Kilda (17,696). Over the three-year period 1999-2001, the largest average annual profit was that of Essendon, A\$1m on average annual operating revenue of around A\$15.88m (excluding financial distributions from the AFL). The largest average annual loss over the same three-year period was Fremantle's A\$1.125m on average annual operating revenue of around A\$12.24m (excluding AFL distributions). The average annual loss of the three-year period was just A\$2,000 in a league where the clubs' three-year average annual operating revenue (excluding AFL distributions) was A\$14.89m a year. The club with the largest average annual operating revenue over the three-year period was West Coast (A\$19.12m) whilst the lowest was the Kangaroos (A\$11.41m).

Other Forms of Ownership¹

In 1987 North Melbourne issued A\$3 million worth of shares on the (now defunct) second (junior) board of the Stock Exchange, primarily as a fund-raising exercise. Also, beginning in 1987, St Kilda issued unlisted shares, ostensibly for the same reason.

State League-Ownership

The West Australian Football Commission (WAFC), formed in 1989 to oversee football in Western Australia, owns the West Coast (in Perth) and Fremantle licences.² Originally, the West Australian Football League (WAFL) bought the (West Coast) licence to compete in the VFL/AFL from 1987, and then struck a sub-licence agreement with 'Indian Pacific'. Indian Pacific aimed to raise capital through a public share float but the float failed, and eventually Indian Pacific was forced to offer equity to the WAFL in lieu of its royalty payment. West Coast and Fremantle must return 75 per cent of any profits to the WAFC.

Adelaide and Port Adelaide have sub-licence agreements with the South Australian National Football League (SANFL) which appoints the South Australian Football Commission (SAFC) to administer football in South Australia. Adelaide and Port Adelaide make a royalty payment of 80 per cent of any profits to the SANFL.

Each of these four clubs has a large membership base. The only practical difference for members is that they do not directly elect the Board of Directors, since each club's Board is appointed by that State's Football Commission.

Private Ownership

The VFL/AFL's experiment of private ownership with the expansion teams in the northern states of New South Wales and Queensland proved to be brief and financially unsuccessful.

In response to growing financial pressures South Melbourne played 11 games in Sydney in 1982. In May 1983 the VFL agreed that it would subsidise the club and appointed an eight-man board to run the club whose name was changed to the Sydney Swans. At the end of July 1985, the VFL sold the Sydney Swans to private owners led by Geoffrey Edelsten. In May 1988, the Sydney club licence was sold back to the VFL until December 1988, when the VFL announced that a new private consortium led by Mike Willesee had taken over for a period of five years. This group proved unsuccessful in turning the club's finances and on-field performance around and eventually in May 1993 a restructuring was announced that included the return to a traditional membership-based club.

A syndicate headed by Paul Cronin won the battle for the VFL/AFL licence for a team in Brisbane, and together with Christopher Skase were founders of the Brisbane Bears in October 1986. The Bears quickly ran into debt and when Skase's Qintex Corporation collapsed, Reuben Pelerman bought the licence from the ANZ bank in February 1990, but lost money before eventually transferring the licence back to a traditional membership-based structure in November/December 1991. The Brisbane Bears became the Brisbane Lions from 1997 after a merger with Fitzroy in July 1996.

In summary, the member ownership of clubs, the research on club objectives and the analysis of clubs' finances all strongly suggest that win maximisation (subject to breaking even) is a more accurate reflection of the true objective function of VFL/AFL clubs than is profit maximisation.

HISTORY OF LABOUR MARKET DEVICES AND REVENUE

SHARING RULES³

The six periods chosen for analysis between 1897 and 2002 are identified depending on the various combinations of different labour market devices and revenue sharing rules in operation at the time. The labour market devices varied from no intervention at all (in which case players are complete 'free agents') to other devices such as geographical (territorial) zoning of metropolitan Melbourne, maximum limits on an

individual player's wage (the Coulter Law), various player payment schemes and geographical zoning of country (rural) Victoria. More recently, a team salary cap (and then minimum team salary), a national player draft and a minimum wage have been adopted. Aside from these labour market devices, rules regarding the sharing of gate revenue and league revenue have also been used to influence the ability of clubs to recruit and pay players.

Period 1 (1897-1914) was one of strong competition for new players, described as a period of 'free agency'. Officially the VFL was an 'amateur' competition until 1911, though there was very strong suspicion of 'under-the-table' payments being made. Transfer rules applied to current players, but uncertainty remains as to how effectively these transfer rules were enforced and whether 'signing-on' fees and/or transfer fees were common.

Period 2 (1915-1929) was one where each club was allocated a geographical zone of metropolitan Melbourne from which players could be recruited. However there was keen competition between VFL clubs for country, interstate and VFA players. The period ended with the introduction of the Coulter Law.

Period 3 (1930-1944) was one of metropolitan zoning, with free agency for country and interstate players. Transfer fees and signing-on fees,

though illegal, were not uncommon for country and interstate recruits. Employment was also a strong inducement. The Coulter Law, a uniform maximum imposed on each individual player's wage, was imposed in 1930. Despite this maximum wage being adjusted through the period, it became much more difficult to enforce with the passage of time.

Period 4 (1945-1967) begins with the introduction of what the AFL describes as a 'modified-form of gate sharing' in 1945. Television coverage began in 1957, the income from which was shared equally between the clubs. Metropolitan zoning and the Coulter Law remained the major labour market devices in use.

Period 5 (1968-1984) included the addition of country zoning to complement metropolitan zoning, a transfer fee system and various schemes to control player payments. Country zoning was introduced for the 1968 season. In 1970, transfer fees, signing-on fees and contracts were allowed for each club's two permissible interstate recruits. At the end of 1971, transfer payments were allowed for exchanges of players between VFL clubs. Player contracts became increasingly common and transfer fees were prevalent into the early 1980s. An interstate player draft was introduced in time for the 1982 season. Concern was raised over the validity of the VFL's zoning, transfer and player payment rules, which

culminated in the courts declaring the regulations an unreasonable restraint of trade in the Foschini case in 1983. To complement 50-50 gate-revenue sharing, in 1981 an equalisation levy was charged against all cash paying spectators, paid into an equalisation fund and then redistributed equally amongst all clubs. From 1982, a contribution from each adult club membership ticket was also made to the VFL Club Membership ticket pool.

Period 6 (1985-2002) began with the introduction of the team salary cap from 1985. The appointment of an 'independent' VFL Commission in 1984, which replaced the old VFL Board of Directors comprised of a delegate from each of the clubs, heralded a new policy direction. Zoning was phased out during this period with country zoning ending in 1986 and metropolitan zoning in 1991. The first national player draft was held in time for the 1987 season, with drafted players initially being 'bound' for three years, later reduced to two. A pre-season draft began in 1989. The sale of player contracts was banned and apart from a mid-season draft from 1990-1993, players and draft selections could only be traded between clubs during specified times during the off-season. Senior player lists (rosters) were also introduced at the time of the player draft. A minimum wage was introduced in 1994 as part of the first of a series of collective bargaining agreements (CBAs) between the AFL and the Australian Football League

Players' Association (AFLPA). Recruiting concessions were given to new clubs (Brisbane, West Coast, Adelaide, Fremantle and Port Adelaide) to help them form their player lists. In 1993 special draft concessions were given to the three bottom teams with competitive difficulties, but from 1998 one priority selection prior to Round 1 of the national draft was given to any team that won less than 25% of its matches in the season. Beginning in 1999, the team salary cap was replaced by a total player payments cap which included injury payments and payments for pre-season matches and finals. Moreover, the equivalent of a minimum team salary was introduced requiring a club to spend at least 95% of the total player payments cap on player payments. Genuine marketing and promotional activity was excluded from the new payments cap. Season 1999 was the first under the CBA for seasons 1999-2003. New minimum base payments (for 1st, 2nd and 3rd round draft selections) and new senior match payments were negotiated. A long-term injury list, a rookie list and a veterans list were also introduced. 50-50 gate revenue sharing was abolished from 2000, with net gate receipts after deduction of match costs going to the home team. The equalisation levy (a levy on all match goers paid into a central fund and distributed equally amongst the clubs) and the 'blockbuster levy' of A\$25,000 were retained and adjusted for 'football' inflation. The major

change for 2002 was the reduction of the minimum team salary to 92.5% of the total player payments cap.

COMPETITIVE BALANCE IN THE VFL/AFL

Following the approach suggested by Noll (1988) and first applied by Scully (1989), competitive balance ratios have been used in the US by Fort and Quirk (1992), Vrooman (1995), Berri (2001) and others to compare the closeness of competition within seasons. These ratios compare 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.

In a league of teams with equal playing strength, the probability of winning any game is .5. The value of the idealised standard deviation depends on the number of games (rounds) in a league season. Quirk and Fort (1992) point out that it follows from the properties of a binomial distribution that the idealised value of the standard deviation for the season-long win percent is equal to $(.5)/\sqrt{N}$, where N is the number of league games (rounds) in a season. The competitive balance ratio for each

year can be calculated by dividing the actual standard deviation by the idealised standard deviation. The lower is the ratio the more competitive balance there is in the league.

Table 1 and Figure 1 show the competitive balance ratios for the VFL/AFL based on the teams' win percent data for the home and away seasons between 1897 and 2002. An interesting feature of Figure 1 is the very high level of unevenness in the competition at the end of each of period, with two exceptions. The first is during WWII at the end of period 3 (1930-1944), before a 'modified-form of gate sharing' was introduced. Perhaps the evenness during WWII was thought to be an aberration and one impact of the war was to change the ideology of VFL administrators to a more egalitarian one. The other exception is at the end of period 6 (1985-2002) with the player draft and team salary cap, where there is a noticeable downward trend in competitive balance ratios (improvement in competitive balance). One possible explanation for the various changes to different combinations of labour market devices and revenue sharing rules is that the VFL/AFL perceived whatever system at the time to be ineffective, as evidenced by the very high competitive balance ratios (unknown to these administrators) at the end of several periods. Club administrators/players

might just have needed enough time to work out how to circumvent the particular devices and rules in operation at the time.

At the end of period 1 of free agency (1897-1914), the competition was very uneven. In each of the five years from 1910 to 1914 the competitive balance ratio was greater than 2 (with the exception of 1912 when it was 1.9322). At the end of period 2 of free agency and metropolitan zoning (1915-1929) the competitive balance ratio was above 2 for four successive years between 1926 and 1929. However, the introduction of the Coulter Law in 1930 did little to redress imbalance in the competition with the ratio remaining 2 or above from 1931 until 1936, after an initial fall to 1.8659 in 1930. In all the years after 1936 until the end of period 3 in 1944, only once in 1941 was the competitive balance ratio above 2. As mentioned above, this would suggest some motivation other than addressing perceived competitive imbalance as the reason for the introduction of a 'modified-form of gate sharing' in 1945.

At the end of period 4 (1945-1967) there is another period of significant competitive imbalance in the years before the introduction of country zoning in 1968. In the six years between 1962 and 1967, three times the ratio is above 2 and two other years have ratios above 1.88. Finally, near the end of period 5 (1968-1984), just before the introduction

of the team salary cap in 1985, there are four successive years (1979-1982) when the ratio is above 2. Indeed, 1981 (2.3549) and 1982 (2.2680) have the highest competitive balance ratios (the lowest levels of competitive balance) in the history of the VFL/AFL.

The most even year of competition in the home and away season based on the competitive balance ratios is 1957 (0.9813), but this observation is an outlier. The 1997 season (1.1555) is the second most even competition followed closely by 1907 (1.1632), another outlier. As mentioned above, unevenness of competition peaked in the early 1980s, but since then there appears to have been a general downward trend in these competitive balance ratios.

Table 2 shows the average ratios for the six different identified periods. The average competitive balance ratio over the whole history of the VFL/AFL (1897-2002) is 1.8291. Period 6 (1985-2002) with the player draft, team salary cap, 50-50 gate-revenue sharing (until the end of 1999) and league-revenue sharing is the most even of any with the lowest average competitive balance ratio (1.7037).⁴

The most uneven period was that of free agency in period 1 (1897-1914), which has the highest ratio of 1.9520. Moreover, the decline in competitive balance ratios (evening-up of the competition) over time is

evident, but with two exceptions. Historically, period 2 (1915-1929) was one of a relatively high level of competitive balance (1.7749). Perhaps metropolitan zoning was accepted and effective until at least seasons 1926 to 1929, all of which have ratios above 2 indicating a relatively uneven competition at the end of this period prior to the introduction of the Coulter Law in 1930. Period 5 (1968-1984) was characterised by the introduction of country zoning to combine with free agency, metropolitan zoning, 50-50 gate-revenue sharing and league-revenue sharing. Given the prevalence of the payment of transfer fees and interstate recruiting, this period had a lower competitive balance ratio (1.8829) than might have been expected. But, by the end of this period, the VFL/AFL was most concerned about what it perceived to be a very uneven competition and one in which the financial health of some of its member clubs was in jeopardy. This led the VFL Commission to re-emphasize 'financial equalisation' between the clubs and to introduce the team salary cap and then the national player draft to address these perceived problems.

COMPETITIVE BALANCE COMPARISONS WITH U.S. LEAGUES

Table 3 shows competitive balance ratios calculated by Vrooman (1995) for Major League Baseball (MLB), the American League (AL) and the National League (NL), and the National Basketball Association (NBA)

and the National Football League (NFL) between 1970 and 1992. Table 4 shows Berri's (2001) ratios calculated for the same leagues for the years 1991 to 2000.⁵

Considering Vrooman's data first, the evenness of competition in the VFL/AFL between 1970 and 1992 compares not unfavourably with that in US leagues. The VFL/AFL's average competitive balance ratio over the period 1970-1992 was 1.858. The average ratios in the AL and the NL for the same period were only slightly lower, 1.826 and 1.761 respectively. The NBA was the most uneven with a ratio of 2.621 and the NFL was the most even with a ratio of 1.568. These ratios show the NBA to be a much more uneven competition than the VFL/AFL, which in turn is not quite as even as the NFL.

Berri's data reveals a similar pattern. The average ratio in the VFL/AFL over the period 1991-2000 is 1.647, which again compares favourably with the AL (1.610) and the NL (1.701) over the same period. The NBA ratio (2.998) indicates an increase in unevenness in competition in this period, whilst the lower NFL ratio (1.476) suggests an improvement in competitive balance.

The ratios calculated by Vrooman and Berri for the period 1970-2000 for the AL and the NL are plotted in Figure 2 with those of the

VFL/AFL. There was considerable volatility in the levels of competitive balance in the AL in the 1970s, but much less volatility in the 1980s and 1990s. During the 1970s, there were five years in which the ratios were well above 2, with 1980 the last time the ratio was above 2. By contrast, the NL generally appears to have experienced less volatility than the AL, though there are four individual years in which the competitive balance ratios have been well above 2 in the 1980s and 1990s. The VFL/AFL also experienced high levels of competitive imbalance in the 1970s and early 1980s with ratios above 2 in 1971, 1972, 1979-1982 and 1985. Since 1985, the year the team salary cap was introduced in the VFL/AFL, the ratio has not risen above 2.

The Vrooman and Berri ratios for the NBA and the NFL are plotted in Figure 3 with those of the VFL/AFL. Figure 3 reveals the consistently high levels of imbalance in the NBA with ratios above 2 in all years except 1976, 1977 and 1979. If anything, there appears to be a long upward trend in these ratios from the late 1970s until at least the late 1990s. In stark contrast, the NFL seems to have a consistently high level of competitive balance, with the highest competitive balance ratio in any of the years between 1970 and 2000 being 1.873 in both 1975 and 1976. The

VFL/AFL's improved levels of competitive balance since the mid 1980s are now at levels not too dissimilar to that achieved in the NFL.

CONCLUSION

We conclude this chapter by comparing labour market devices and revenue sharing used in the US leagues, as outlined by Fort (2003), with those in the VFL/AFL in its most recent period. This is in addition to the different types of ownership resulting in profit-maximising 'teams' in the US leagues and win-maximising 'clubs' in the VFL/AFL.

Competitive balance ratios between MLB and the VFL/AFL are not vastly different. MLB has had player drafts, but since 1976 there has been free agency after six years. Team salary caps have not been used and media revenues vary enormously between teams, mainly because of local TV revenues not being shared.

There is more in common in terms of labour market devices and revenue sharing between the NFL and the VFL/AFL than there is between the NBA and the VFL/AFL, so it is not surprising that the levels of competitive balance achieved in the VFL/AFL are more akin to those of the NFL than of the NBA. The NFL has had a player draft but since 1994 has had limited free agency, first after four years and later after five years. There has been a team salary cap (and minimum team salary) from 1993

and with no local TV revenue and nearly all other revenues shared, revenues between clubs are the most equal of any of the leagues. The NBA has had a player draft, with restricted free agency after four years until 1988 and since then unrestricted free agency after four years. There has been a so-called 'soft' team salary cap in the NBA since the early 1980s and with no gate or local TV revenue sharing there is much more revenue variation than in the NFL, but not as much variation as in MLB.

The high levels of competitive balance achieved in the VFL/AFL recently times appear to be highly correlated with the introduction first of the team salary cap in 1985 and then the player draft from 1987. These two labour market devices tend to reinforce one another, since a player cannot be drafted unless it can be demonstrated to the VFL/AFL that his anticipated salary can be fitted under the team salary cap. Whilst cash sales of player contracts are not permitted in the AFL, the trade of players/draft selections can partially undo the effects of the player draft. However, if the player draft is combined with a 'hard' and enforceable team salary cap and teams have the revenue to actually pay the team salary cap, in a win-maximising world there appears little incentive for a club to trade away (net) player talent. Nor are there any financial incentives for (net) player talent to change clubs.

Club revenues have typically been large enough to allow even those with the lowest revenues to pay the team salary cap. If not for 50-50 gate revenue sharing over the years and league-revenue sharing of key income streams from national broadcast rights (there is no local TV revenue), corporate sponsorship and finals, the revenues of the smaller clubs might not have been sufficient to pay the team salary cap.⁶ The team salary cap has been strongly enforced in recent years with Essendon and Melbourne in 1999, Fremantle in 2001 and Carlton in 2002 having incurred especially large fines and national draft selection losses following team salary cap breaches.

In conclusion, these competitive balance ratios lend strong support to the view that in the VFL/AFL, a league comprised of win-maximising clubs, revenue sharing, a player draft and the team salary cap have all played their part in helping to achieve a satisfactory level of competitive balance.

NOTES

¹ See Hutchinson and Ross (1998) and Nadel (1998b) for further detail.

² The West Australian Football Commission (WAFC) held 79% of the stock in Indian Pacific in 1998.

³ See Booth (1997) and Booth (2000) for more detail.

⁴ In Booth (2000), an hypothesis test was conducted to determine whether the mean competitive balance ratio (1.6940) for the period 1985-1998 was significantly lower than the mean competitive balance ratio (1.8547) for periods 1 to 5 (1897-1984) without the player draft and team salary cap. With a t statistic of 1.8889, there is a significant difference between the mean competitive balance ratio in the two periods at the 5% level. Alternatively, the p -value of the t test value is .03090.

⁵ Note the slight discrepancy in the estimates for the common years 1991 and 1992. One possible explanation for the discrepancy could be that one author assumed a sample and the other author assumed a population when calculating the actual standard deviation.

⁶ Fitzroy was an exception and was merged with Brisbane at the end of 1996. Whilst there is agreement that revenue sharing arrangements in general have no impact on competitive balance in a league of profit-maximising clubs, revenue sharing improves competitive balance in a league of win-maximising clubs. See Késenne (2001). In any case, 50-50 gate sharing was abandoned from 2000 in favour of the home team keeping the net gate receipts (after deduction of match expenses). Generally speaking VFL/AFL clubs have kept their own home membership, reserved seat and corporate box income.

Increasingly, this meant that teams playing in small stadia filled mostly with members, reserved seat holders and corporate boxes had little room for a cash-paying crowd, thus providing a poor return to the visiting team. Moreover, the practice of deducting match costs from the gate meant that only with a large cash-paying crowd were there any proceeds left to share with the visiting club, that is, the home team was not paying for its share of match expenses. With the home team keeping the net gate receipts from 2000, there is also now more incentive to move home games to larger stadia with larger cash crowds.

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TABLES AND FIGURES

Table 1 Competitive Balance Ratios, Rounds, VFL/AFL 1897-2002

Year	Rds	CB Ratio	Year	Rds	CB Ratio	Year	Rds	CB Ratio
1897	14	2.1339	1933	18	2.0344	1969	20	1.6758
1898	17	2.2262	1934	18	2.2215	1970	22	1.7321
1899	17	2.1004	1935	18	2.1731	1971	22	2.1638
1900	17	1.6977	1936	18	2.0000	1972	22	2.2747
1901	17	2.1386	1937	18	1.8782	1973	22	1.8566
1902	17	2.0580	1938	18	1.7743	1974	22	1.8464
1903	17	2.1454	1939	18	1.9555	1975	22	1.6697
1904	17	1.4297	1940	18	1.3472	1976	22	1.3844
1905	17	1.8981	1941	18	2.0184	1977	22	1.9656
1906	17	1.9852	1942	15	1.9343	1978	22	1.4902
1907	17	1.1632	1943	15	1.2411	1979	22	2.0094
1908	18	1.8738	1944	18	1.9100	1980	22	2.0707
1909	18	1.9293	1945	20	1.9770	1981	22	2.3549
1910	18	2.0028	1946	19	1.7622	1982	22	2.2680
1911	18	2.1499	1947	19	1.8918	1983	22	1.5570
1912	18	1.9322	1948	19	1.7547	1984	22	1.6237
1913	18	2.2336	1949	19	1.6490	1985	22	2.0132
1914	18	2.0385	1950	18	1.9508	1986	22	1.8505
1915	16	2.0242	1951	18	1.8733	1987	22	1.6157
1916	12	1.5679	1952	19	1.8353	1988	22	1.6652
1917	15	1.2383	1953	18	1.9603	1989	22	1.7707
1918	14	1.7321	1954	18	1.2693	1990	22	1.8091
1919	16	1.9543	1955	18	2.0638	1991	22	1.8781
1920	16	2.0000	1956	18	1.7533	1992	22	1.8749

1921	16	1.5855	1957	18	0.9813	1993	20	1.6713
1922	16	1.3123	1958	18	1.4011	1994	22	1.4078
1923	16	1.3070	1959	18	1.5546	1995	22	1.8387
1924	16	1.3693	1960	18	1.6415	1996	22	1.8540
1925	17	1.9225	1961	18	1.4561	1997	22	1.1555
1926	18	2.2132	1962	18	2.0548	1998	22	1.3121
1927	18	2.0794	1963	18	1.9413	1999	22	1.7139
1928	18	2.0367	1964	18	2.1731	2000	22	1.7678
1929	18	2.2812	1965	18	1.7213	2001	22	1.8586
1930	18	1.8659	1966	18	2.2751	2002	22	1.6096
1931	18	2.1257	1967	18	1.8810			
1932	18	2.1452	1968	20	2.0656			

Table 2 Average Competitive Balance Ratios VFL/AFL 1897-2002

Periods of Labour Market Intervention and Revenue Sharing	CB Ratio
1. (1897-1914) Free Agency	1.9520
2. (1915-1929) Free Agency and Metropolitan Zoning	1.7749
3. (1930-1944) Free Agency, Metropolitan Zoning & the Coulter Law	1.9083
4. (1945-1967) Free Agency, Metropolitan Zoning, The Coulter Law, 'Modified Form' of Gate-Revenue Sharing and League-Revenue Sharing	1.7749
5. (1968-1984) Free Agency, Metropolitan Zoning, Country Zoning, 50-50 Gate-Revenue Sharing and League-Revenue Sharing	1.8829
6. (1985-2002) Team Salary Cap, National Player Draft (from 1987), 50-50 Gate-Revenue Sharing and League-Revenue Sharing. (Total Player Payments Cap and Minimum Team Salary from 1999, 50-50 Gate-Revenue Sharing abolished in 2000)	1.7037
(1897-2002) Average	1.8291

Table 3 Vrooman (1995) CB Ratios, AL, NL, NBA & NFL 1970-1992

Year	AL	NL	NBA	NFL
1970	2.410	1.564	2.182	1.537
1971	2.128	1.641	2.655	1.403
1972	1.744	2.103	3.400	1.701
1973	1.718	1.641	3.600	1.724
1974	1.154	1.974	2.418	1.478
1975	1.897	1.897	2.145	1.873
1976	1.564	2.051	1.909	1.873
1977	2.513	2.051	1.782	1.590
1978	2.231	1.615	2.018	1.376
1979	2.333	1.821	1.873	1.392
1980	2.051	1.590	2.764	1.496
1981	1.949	2.179	2.927	1.392
1982	1.769	1.590	2.782	1.704
1983	1.872	1.564	2.927	1.392
1984	1.487	1.385	2.091	1.680
1985	1.872	2.231	2.655	1.568
1986	1.410	1.923	2.618	1.672
1987	1.641	1.513	2.800	1.400
1988	1.949	1.949	2.873	1.344
1989	1.667	1.513	2.945	1.440
1990	1.462	1.462	3.164	1.624
1991	1.564	1.564	2.873	1.744
1992	1.615	1.692	2.891	1.656
Ave	1.826	1.761	2.621	1.568

Table 4 Berri (2001) CB Ratios, AL, NL, NBA & NFL, 1991-2000

Year	AL	NL	NBA	NFL
1991	1.49	1.49	2.81	1.71
1992	1.55	1.61	2.83	1.63
1993	1.34	2.29	2.81	1.26
1994	1.40	1.49	3.15	1.38
1995	1.93	1.51	2.87	1.20
1996	1.70	1.37	3.05	1.45
1997	1.53	1.42	3.40	1.43
1998	1.97	2.17	3.37	1.68
1999	1.88	1.94	2.83	1.47
2000	1.31	1.72	2.86	1.55
Ave	1.61	1.701	2.998	1.476

Figure 1 Competitive Balance Ratios in the VFL/AFL 1897-2002

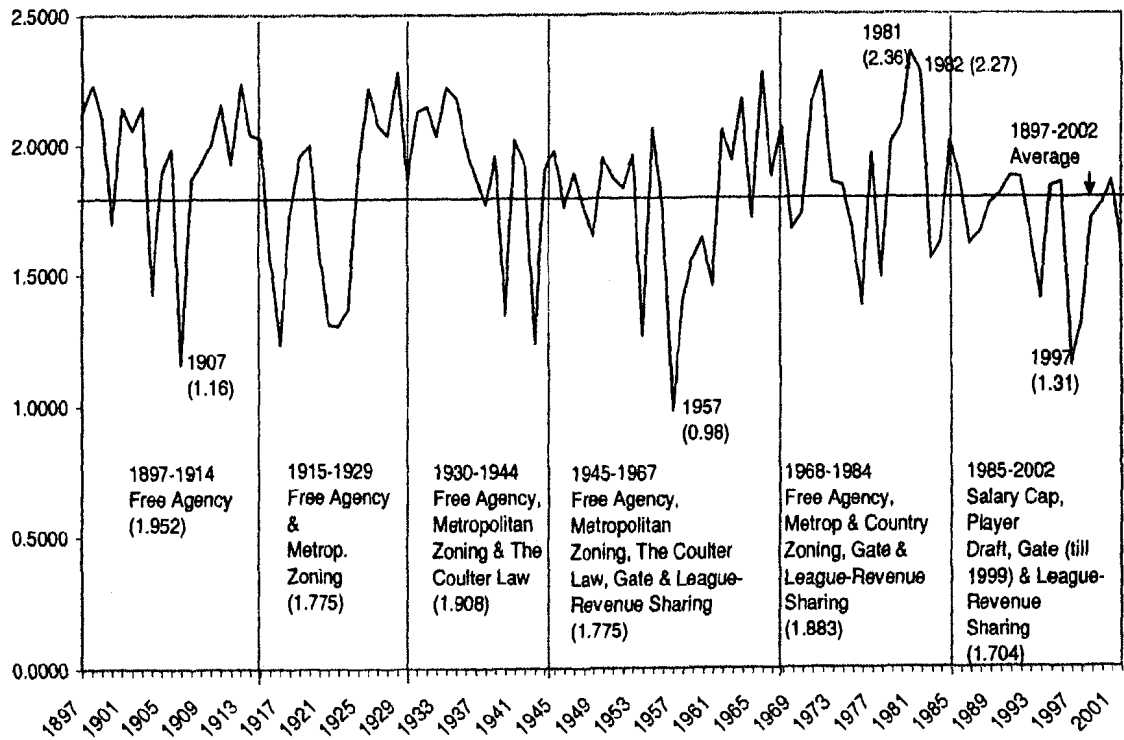


Figure 2 Competitive Balance Ratios, VFL/AFL 1970-2002, AL & NL 1970-2000

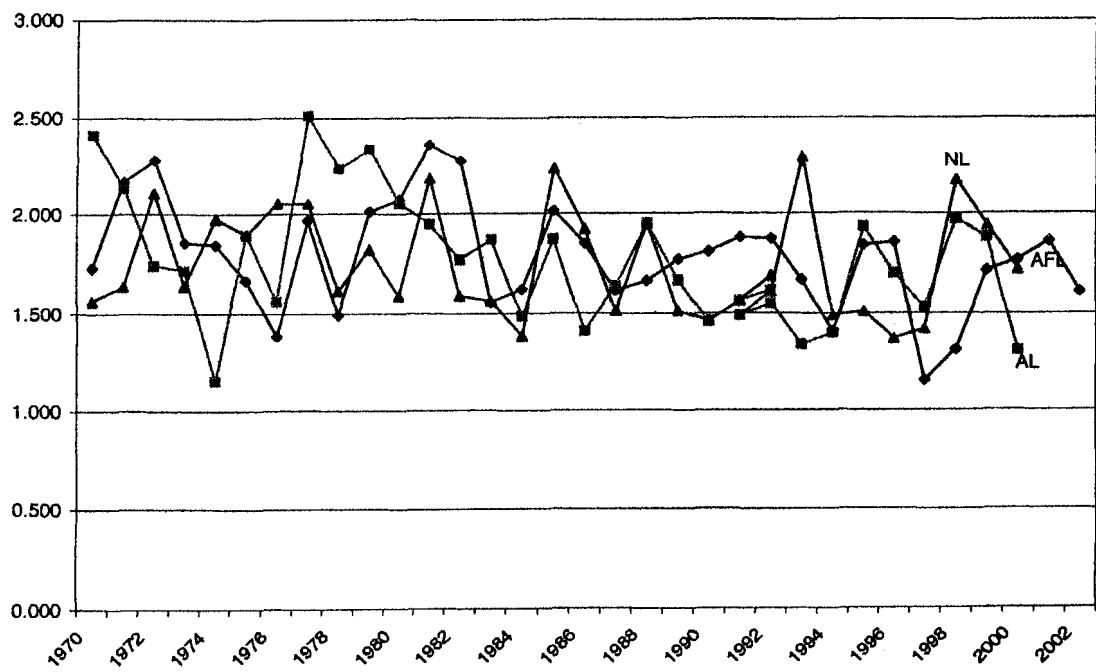
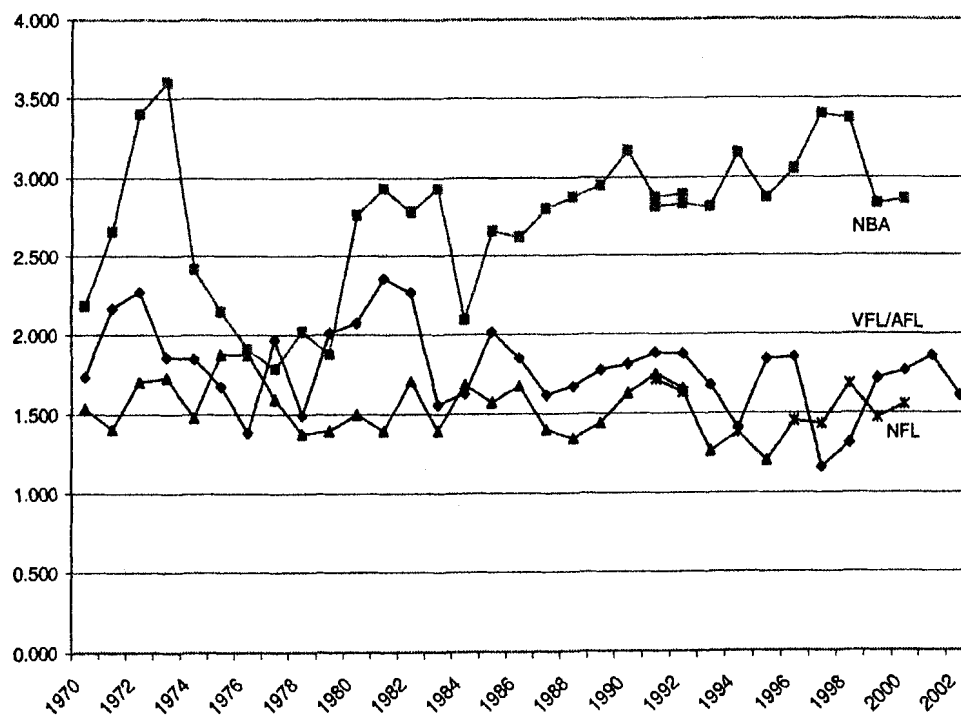


Figure 3 Competitive Balance Ratios, VFL/AFL 1970-2002, NBA & NFL 1970-2000



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