Limiting Player Lists in Sport: Who Really Wins?

by

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Abstract

A number of sports around the world impose caps on the number of players allowed on a team list. These arrangements are commonly defended on the grounds of maintaining the financial viability of the leagues by limiting salary demands on struggling clubs. However, these restrictions are also consistent with attempts to drive up the wages of listed players. This paper presents a formal test of the outcome of player list controls in the context of the Australian Football League. It is found that player list reductions have been at the expense of player wages and have done little to control the costs of fielding teams. Restrictions on total budgets rather than player wages seems a more effective cost control mechanism than controls on player numbers and/or salaries.

Key words: sport, restrictions on employment, wages

JEL: J40, J42

1. Introduction

In a world where deregulation is the norm and markets are increasingly seen as providing the answers to a wide range of complex problems, professional sport stands out as a bastion of central planning and prescriptive regulation. Professional sporting competitions are often characterised by regulations on player numbers, player wages, player recruitment and revenue sharing. This complex raft of regulations is generally defended on the grounds of protecting teams from the excesses of unbridled competition, achieving long-run competitive balance or maximising the ability of the sport to compete against other forms of sport or entertainment (for example, see AFL 1999). The impact and success of these regulations are often hard to assess because of the complex nature of the regulatory systems in place, the ambiguous nature of the regulations themselves and the lack of a basic reference point for comparison.

The impact of regulations limiting the number of players that can be signed by any one club is a case in point. This form of regulation is common in many team sports around the world. The usual stated intention of this regulation is to ensure the viability of individual teams by lessening the pressure of players' wages on overall budgets (AFL 1999). However, restricting the size of player lists is a potentially ambiguous tool for influencing player salary costs. While a restriction in the number of players is consistent with an organisation exercising monopsonistic power to reduce player wages, it is also consistent with the exercise of monopoly power by player groups to drive up the wages of their members. The ambiguous nature of this regulation is

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evident in the support this regulation generally gets from both team management and players.

Clarification of the impact that list restrictions have on player wages can not be made by reference to the trend in wages over time. In a market like professional sport, where high growth rates in revenue generation are common, the comparison of past wages with current wages does not provide a reliable indication of the impact of new regulations. The appropriate comparison is between current wages and the wages that would be in place in the absence of the regulation.

This comparison can be made only if econometric modelling is employed to estimate wages after controlling for the impact of the regulations and all other factors driving wages in the sporting market place. This approach requires considerable data, is subject to estimation errors and is difficult to interpret.

In this paper an alternative non-parametric test for the impact of player list restrictions on player wages is developed. The approach is applied to the Australian Football League (AFL).

In the next section the problem with interpreting restrictions on player lists is explored in a market with market power on both the employer and employee sides. The nature of the market for players and other services are formalised in Section 3 to develop a simple non-parametric test of the impact of list restrictions on player wages. In Section 4, the test is applied to the AFL and the impact of list restrictions is reported.

Finally, the conclusions of this paper are summarised in Section 5 and some implications for sporting regulation in general are drawn.

2. Market Power in the Sport Labour Market

The labour market for sporting talent is generally heavily regulated and highly concentrated on both sides of the negotiation process. There are often a limited number of potential employers of elite sports people and these are frequently bound to operate in a cartel type way through the imposition of agreed controls on player lists and aggregate player wages. On the player side, player organisations are commonly influential in determining overall regulations on player employment conditions, including player list restrictions. This bilateral monopoly characteristic creates the potential for apparently perverse common objectives. In this case, both parties may have a vested interest in restricting player lists, but to different ends. The case is portrayed in Figure 1.

Insert Figure 1 here

It is hypothesised here that salary negotiations in professional sport can often be characterised by the simple bilateral monopoly model presented in Figure 1. Player organisations act as if they are monopoly providers of elite sports players and confront a downward sloping demand curve for their players' services (a shown by D) and an associated marginal revenue curve (MR) that shows how total wages paid to players they represent change in response to list restrictions. The organisation representing the teams or leagues confront a curve S that shows how competitive

wages rise as player lists are expanded, and a marginal expense curve ME that reflects the impact of changes in the size of the player lists on the aggregate team wage bill.

In a competitive market where individual players and individual teams negotiate over wages the average wage would be W and clubs would look to employ P players. The cartelisation of teams may have been motivated by the potential for the leagues to reduce player lists to P*, thereby forcing player wages down to W* (the lowest wage that would still produce the optimal players list P*). Paradoxically, the unionisation of players could also place downward pressure on player lists. If the players organisations are concerned with maximising the rents that flow to players they will seek to maintain player lists at a level that is consistent with MR=S. The objective of setting player lists at this level P' is to force average player wages up to W', the highest wage teams would pay to access the now restricted player numbers.

A number of potential scenarios that are consistent with restrictions in player lists come out of this model. The one outlined above is of competing interests in wages with common interests in restricting player lists. The outcome is uncertainty on wages. One could also imagine two alternative scenarios: one where players' welfare dominates and one where team welfare dominates. Where players' welfare dominates the thinking of all parties, both team management and players would seek reductions in player lists to maximise player rents. This would be consistent with the league operating as a player co-operative. However, it is also possible that team interests could dominate the thinking with both players and the league seeking to reduce lists to drive down excessive wage pressures to maintain the viability of the existing team structure.

The key point coming out of this is that a reduction in player lists can have the effect of increasing the rewards to players or reducing them. It depends on the objectives of the key parties in the negotiating processes and their relative bargaining strengths.

In some cases, such as the AFL, restrictions in player numbers are coupled with salary payment controls limiting the total payments any team is allowed to make to players. While it is possible that these wage controls, when coupled with player list restrictions, could guarantee a contraction in player payments, this does not necessarily follow. In the AFL case the salary cap is also a salary floor. Clubs are prohibited from paying above the cap (around $6.1 million in 2004) but they are prohibited also from paying players less than 92.5 per cent of this cap (AFL and AFLPA 2004). So the agreement between the players and the AFL for 2004 effectively imposed a ceiling of $6.1 million and a floor of $5.7 million. In terms of Figure 1 above, it is not clear if $6.1 million is the AFL's estimate of W* or if $5.7 million is the players association estimate of W'.

Recourse to a simple analysis of trends in player payments is going to produce similarly ambiguous inferences. In the AFL case, player payments have trended upwards strongly over the last 10 years (see Figure 2). In 1993, average payments per club were just under $2 million per year. By 2003, player payments were averaging more than $5 million per club per year (after adjusting for inflation). However, this strong growth in payments indicates little about where payments might have been in the absence of the payment regulations.

Insert Figure 2 here

Consider the three wage series scenarios in Figure 3. All are consistent with rising wages over time. The wage series W represents the status quo associated with free bargaining. If the impact of the player list restrictions introduced in time T is to produce a wage series consistent with W# the outcome of the list restrictions has been to reduce player wages ─ by P2-P1 in period T+1. However, if the wages series following the list restrictions becomes W*, the outcome has been to increase player wages ─ by P3-P2 in T+1.

Insert Figure 3 here

In the next section a simple test of the impact of list restrictions that avoids these ambiguities is developed within an endogenous wage model for sports.

3. A Test for the Impact of List Restrictions

Although the carrying out of sport is not a production process in a formal engineering sense, there are number of parallels. Teams are concerned with achieving the best results they can, given the resources that are available to them. These include players, coaching staff, administrative staff and physical capital, such as stadiums. The output they seek to produce is sporting performance and/or related income. The resources can be combined in different ways to produce output and the inputs are substitutable to some extent. That is, performance can be enhanced by hiring more players and/or better players or it can be achieved by investing in better non-player inputs, such as

coaching staff and training facilities. In the case of most sporting pursuits, the wages paid to specialist staff and players can be assumed to be determined fully by the value of particular attributes within the sport ─ that is, wages are endogenously determined. Assuming constant returns to scale, homothenticity and zero technological change, this wage determination process is summarised in Figure 4.

Insert Figure 4 here

Figure 4 is constructed under the simplifying assumption that there are only two inputs available to the sporting team ─ players and coaching staff ─ and that the overall performance of the team can be measured in some objective fashion in terms of ordinal units. The diagram is structured as a traditional isoquant diagram with isoquants (qi) showing all those combinations of player list numbers (P) and numbers of coaching and support staff (C) that produce the same level of overall performance (in this case q1, q2 or q3). The slope of the isoquants reflects the relative impacts of changes in P and C on team performance. The downward sloping curves (ICi) are isocost lines reflecting the cost in dollars of achieving any given level of performance. The slope of these curves reflects the relative prices of P to C, and all combinations of P and C along any isocost line are consistent with the same total cost to the team. The flatter the isocost line the higher the price of C relative to the price of P.

The curves C supply and P supply reflect the supply curves for coaching staff and players respectively, translated into the factor space. Each point along these curves is consistent with a point of tangency between an isoquant and an isocost curve[1]. To

make the diagram more transparent only two points of tangency are shown on each curve. The movement out along any given "supply" curve is consistent with higher prices for the factor concerned, holding the price of the other factor constant. For example, in moving from point A to point B the number of players willing to play AFL football increases from P* to P**. The steeper slope of IC2 compared with IC1 reflects the higher price for players that is necessary to attract this expanded player supply. Similarly, the expansion in coach supply from C* to C** entails an increase in coach salaries reflected in the difference in the slope of IC3 compared to IC2.

The dotted radial lines (x, y and z) running from the origin reflect a set of given relative prices for P and C. As the lines become steeper (x compared to y), the price of P is rising relative to the price of C, so the supply of P rises and the supply of C falls. There is only one price line that is consistent with minimising the cost of achieving performance with no oversupply of either players or coaches. This ray, x, reflects the equilibrium wage line for the market. Its slope reflects the relative equilibrium wages that a free market would produce.

Reductions in player payments below this equilibrium level will result in lower player supply and a steeper isocost curve. (Compare point B with point A in Figure 4.) Similarly, an expansion in the number of coaches from C* to C** would require higher coach payments which would tend to flatten the isocost curve. (Compare point B with point C.) The slope of the ray y, is not consistent with an equilibrium in the sports market because there is an excess supply of coaches relative to players. The highest level of output that could be produced with P* players and C** coaches is q2

at point E, but this is not an equilibrium as some level of output could be produced at lower cost at point F (on the ray y).

This model of performance and wage determination can be used to test for the impact of restricting the playing list and identifying if the restriction has lifted player wages above levels that would have been in place had the restriction not been introduced. In other words, we can use this model to distinguish between player oriented outcomes and outcomes that disadvantage players. First, consider the situation of the anti-player restriction.

Referring to Figure 4 again, assume the equilibrium in the absence of regulation would be B with P** players and C* coaches. As a result of the restriction in player numbers to no more than P*, it is assumed that clubs attempt to maintain performance by expanding coach numbers to C** to compensate for the reduction in player numbers. Assuming no change in overall team performance the reduction in player list numbers from P** to P* has had the impact of reducing returns to players and increasing the returns to coaches and other support staff. The important feature to note in this case is that C has expanded when P has been restricted. It will be shown that whenever this condition holds, the restriction has been at the expense of players and to the benefit of non-players.

Now consider Figure 5. We have the same restriction in player lists (from P** to P*) but in this case the wages of players have risen and the wages on coaches have fallen. This relative wage adjustment is shown in the slopes of the factor price rays as reflected in the shift from equilibrium line x to w. Importantly, when ever wages of

players improve, the restriction on player lists is accompanied by a voluntary reduction in the number of coaches appointed. This condition becomes the basis for the test in this paper.

Insert Figure 5 here

When ever the restriction in player lists is accompanied by an increase in non-playing staff, such as coaches, the restriction has the effect of reducing the welfare of players and improving the position of non-players. Conversely, when ever the restriction in player lists is associated with lower numbers of non-playing staff, the restriction has effectively improved the wages of players and adversely affected coaches. These movements in numbers of staff are readily measurable from public records even though the underlying undistorted market equilibrium rates are not. In the next section this test is used to examine the impact of player list controls in the AFL.

4. The Impact of List Restrictions in the AFL

The rising cost of fielding a team in the AFL has been of concern to AFL clubs and the AFL Commission for a number of years. In 1993, the average revenue raised by a club was just under $7 million. By 2003 the average revenue of AFL clubs had increased to more than $22 million. In real terms, adjusting for inflation, the 2003 outlays represented nearly a 250 per cent increase on levels of 11 years earlier ─ more than $17 million in 1993 dollar terms.

The AFL rules limit the total number of players that any club can have on its list to a maximum of 44 (AFL 2004). This number can comprise no more than 38 general list players and a further 6 "rookie" players who are eligible to play in restricted cases. (From this year there will also be a minimum number of 37 on each list (AFL and AFLPA 2004).) This represents a substantial reduction from the numbers signed by clubs when there were no restrictions on numbers (AFL 1992). During this period it was common for clubs to sign more than 60 players. Restrictions on player numbers first came into force in 1991 when the restriction limited player lists to 52. By 1998 this number had dropped to 46 and was subsequently further reduced to the current number of 44 in 2001 (AFLP 1998).

The AFL position on these restrictions is clear and it sees them as a central part of its strategic direction. It has stated that the reduction in list sizes is '…integral to the way we would run our competition' and central to its goal to achieve'…competitiveness on the field and uncertainty of outcomes' (AFL 1999, p. 7).

In terms of the model developed above, the critical factor in indicating the impact of the restriction in player numbers has had on average player wages will be the ratio of player payments to non-player payments. If the output of an AFL club is taken to be directly related in some way to on-field performance then the appropriate relativity will be between player payments and payments to other members of the football department ─ coaches, trainers and other non-playing football staff. The trend in this ratio is portrayed in Figure 6.

Insert Figure 6 here

The ratio of total player payments to payments to non-playing football staff rose from around 0.64 to peak at just over 0.67 in 1995. Since then, player payments have tended to decline relative to the total wages paid to non-players directly involved in football operations. This decline has been steady but slow and by 2002 the ratio stood at just under 0.64. These changes are not substantial but there would appear to be a clear downward trend since 1995.

The picture of the share of player payments in total club revenue is very different (see Figure 7). The ratio of player payments to total club revenue rose from just over 0.27 in 1993, to more than 0.32 by 2001. Since 2001 the ratio has been fairly steady. Therefore, while the share of player payments in total revenue has generally risen in recent years, players have tended to lose out relative to the other member s of the football department. That is, the intensity of players relative to coaches and other support staff has declined. This trend is consistent with players and potential players as a whole having lost from the regulations the AFL put in place.

Insert Figure 7 here

5. Concluding Comments

The evidence on the extent to which restrictions on player payments have impacted on player wages is unclear. In recent years there has been a significant increase in the payments to coaches and support staff relative to player payments. This trend is

consistent with player list restrictions and salary regulations limiting the growth in player payments. As the scope for clubs to compete with each other in the area of attracting better players and more players has been constrained, they have tended to invest more in uncontrolled areas that can influence team performance. The numbers of coaching and support staff have risen as have the payments to high-profile coaches. There has also been some evidence of a trend towards greater emphasis on investment in training facilities.

However, the trend towards reducing the share allocated to players does not extend to the total budget. The player payments share of the total club budget has been increasing steadily over time and now stands at just under one-third of average club revenue from all sources. This means that payments directly related to football operations, players and coaching staff, have been growing more rapidly than payments for other club functions, such as administration and marketing.

This pattern of results is consistent with clubs increasing their focus on football operations but doing so in a manner that effectively constrains the financial position of players. This constraint on player payments has only partially reduced the demands on club resources. The tendency to reduce payments to players has been matched by a relative expansion in the size and share of the budget devoted to uncontrolled football activities ─ coaches, support staff and facilities. The drive of clubs to compete is strong and those clubs with access to funds have chosen to compete by increasing expenditure in these uncontrolled areas.

The net outcome of these controls would appear to be that they have not been entirely successful in stopping the growth in club expenditure. Reduced outlays on players have been matched by increasing outlays on other football activities. Importantly, the fact that clubs have been effectively encouraged to invest in support staff rather than players probably means that the real cost of producing football has risen rather than fallen. The regulations have forced clubs to spend more money on support staff and less on players than would be optimal. To the extent that the return in terms of improved on-field performance from players was higher than the return from coaches, the regulations have increased the cost of achieving any given level of performance, not reduced it. On balance, it would appear that the restrictions on player numbers and salaries have probably done little to control the cost of fielding a team. Rather, they have changed the way in which clubs seek to compete and in so doing raised coaches and other support staff wages at the expense of players.

If the objective of the restriction on player numbers was to reduce club costs and increase their chance of sustaining longer-term financial viability, then a constraint on total expenditures would appear to be a more sound regulatory mechanism than a constraint on player salaries. An overall budget control does not restrict club choices as to the most appropriate way to compete and it does not bias the distribution of returns between the various groups providing services to the club.

If the AFL has the objective of restricting the growth in total player salaries rather than total costs then the regime has been effective. However, the restriction on total player payments would have achieved this without the restriction on player numbers. By restricting player numbers as well as the salary cap, the AFL would appear to be

protecting the rents earned by listed players in the face of a policy that shifts the budget from players in aggregate (including future players) to non-players. In this context, the restriction on player numbers can be seen as a tool to ensure that existing players do not lose as much as they otherwise would from a binding salary cap. However, this still begs the question of why the AFL would want to control player payments rather than total outlays.

Notes

[1] For detail on the derivation of these supply curves in a general equilibrium context see Corden (1997).

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Figure 1
Wage Determination with Bilateral Market Power
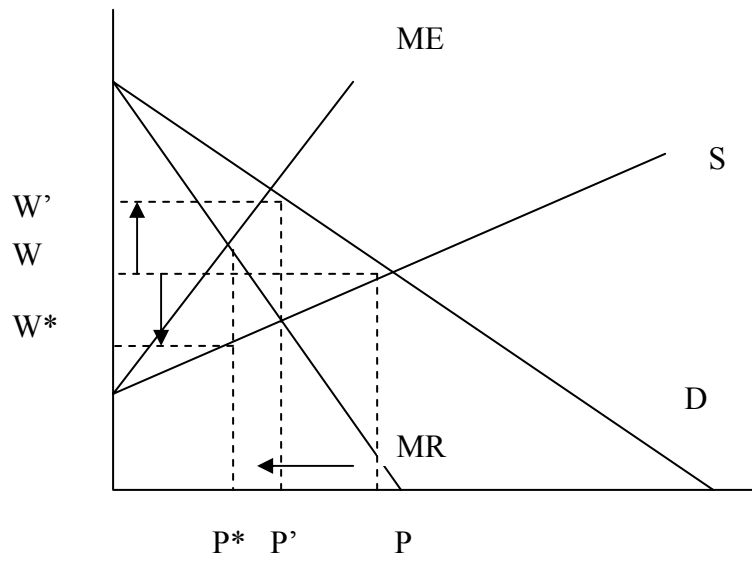
Figure 2
Real Average Player Payments per Club
(Base = 1993)
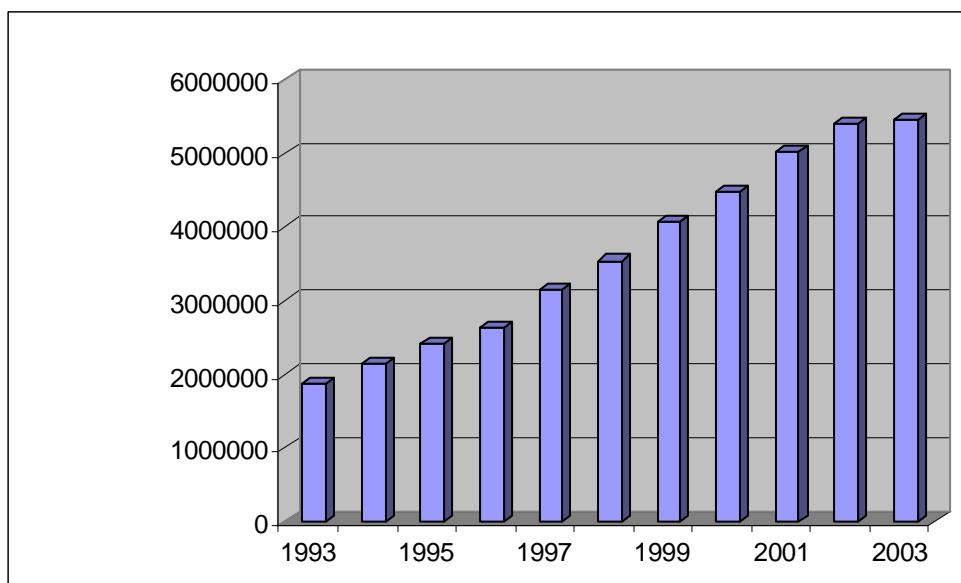
Source: Records provided by the AFL

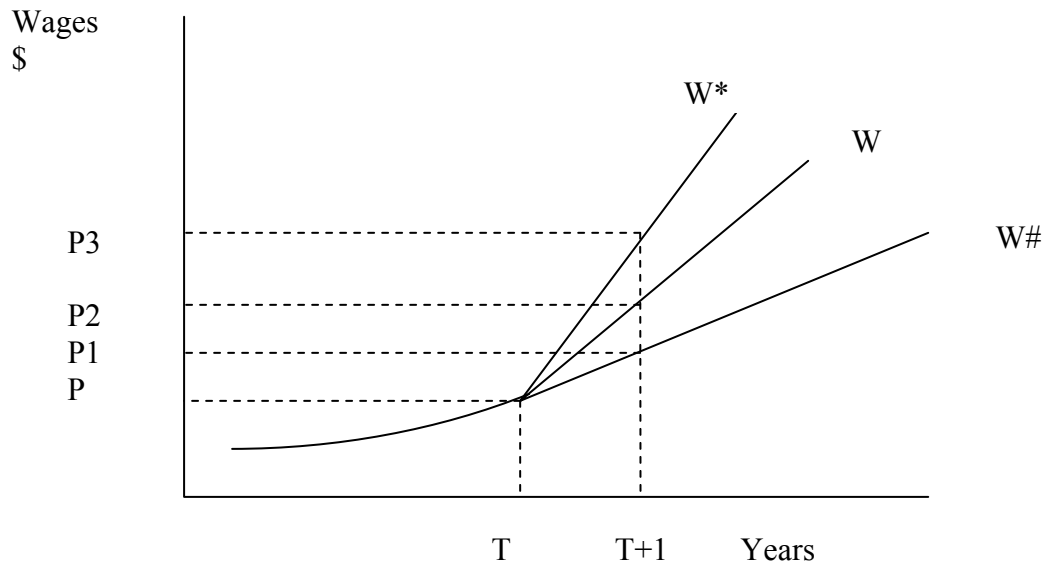**Figure 3**
Wage Trends and Reference Points

Wages
$

W*

W

P3

P2
P1
P

W#

T   T+1   Years

Figure 4
The determination of Player Wages and Coaches Wages

Coaches

IC3

x

C

E

z

B

y

C**

q3

C*

P

Supply

F

q2

A

IC2

C supply

q1

IC1

P* P**   Players
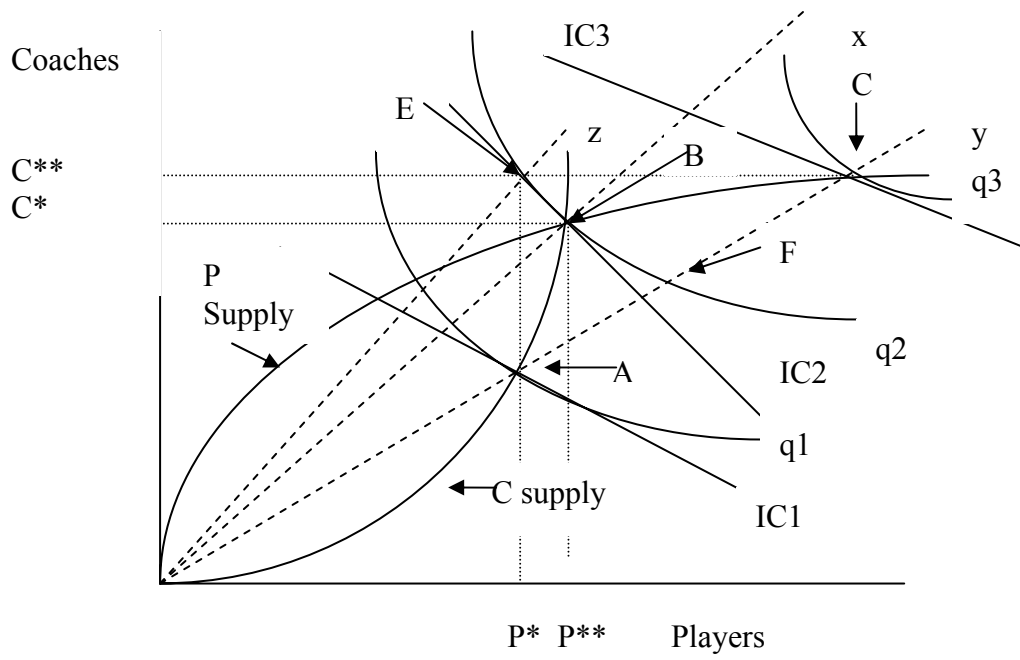
Figure 5
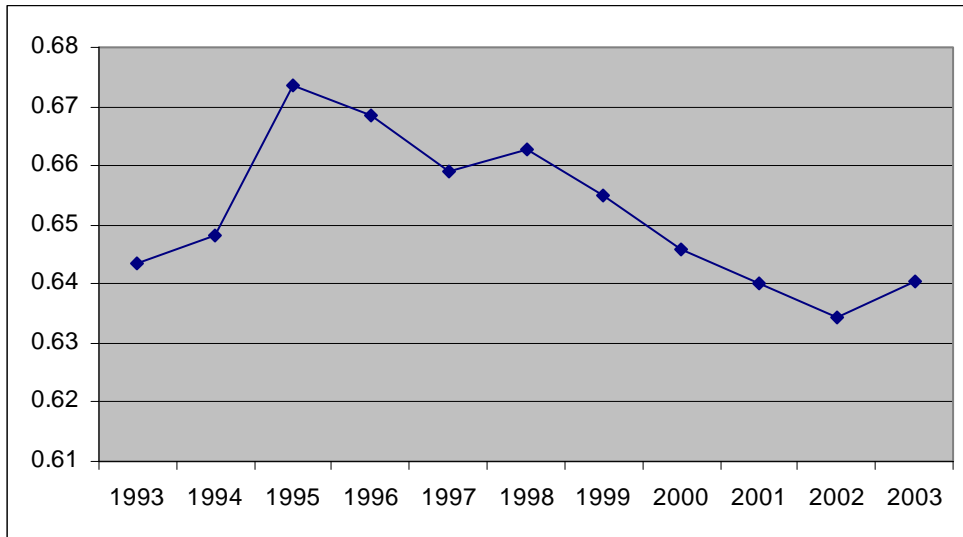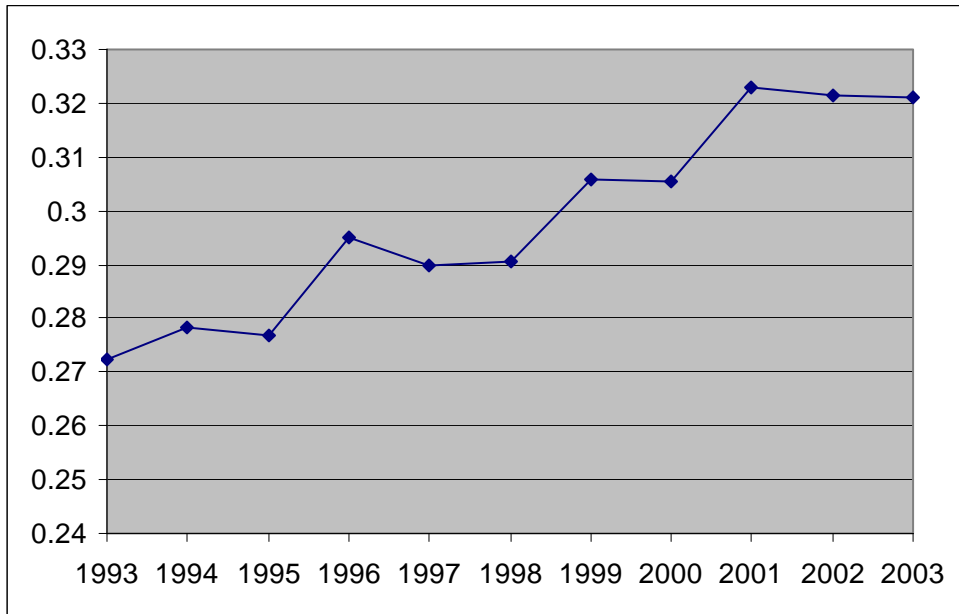**Pro - Player Restrictions to the List**
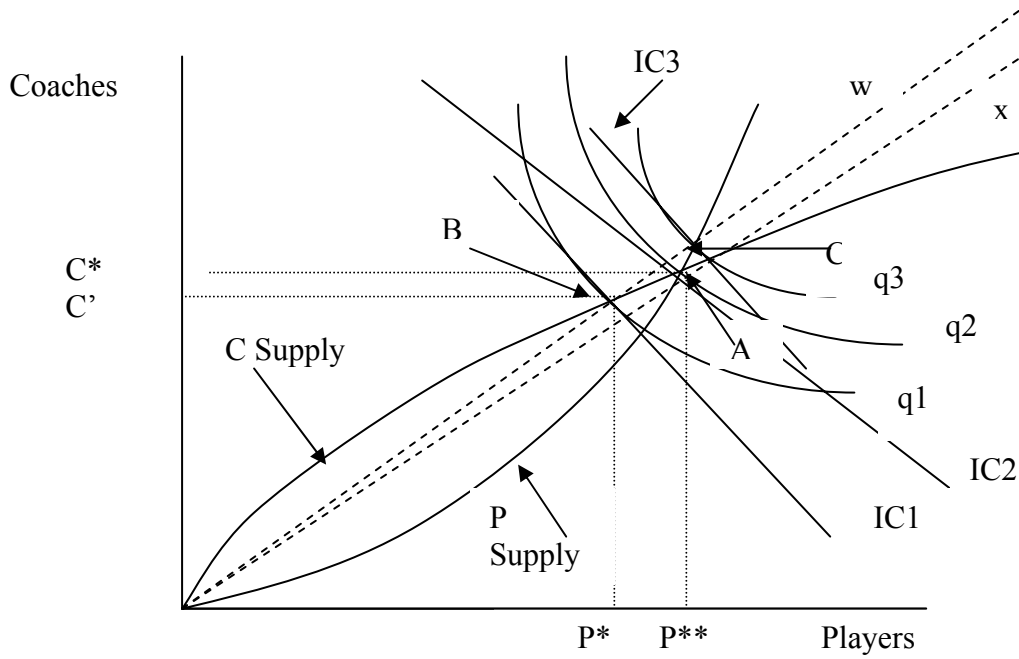
Figure 6
Ratio of Player Payments and Non-Player Payments in the Football Department

Source: Records provided by the AFL

Figure 7
The Ratio of Player Payments to Total Club Revenue

Source: Records provided by the AFL.