

# The Impact of the Salary Cap in the European Rugby Super League

Andrew Howarth

Manchester Business School

University of Manchester

Booth St West, Manchester, M15 6PB

T. A. Robinson (Corresponding author)

Manchester Business School

University of Manchester

Booth St West

Manchester, M15 6PB

Tel: 44-161-3063488      E-mail: [terry.a.robinson@mbs.ac.uk](mailto:terry.a.robinson@mbs.ac.uk)

## **Abstract**

Salary caps are widely used in professional sports as a mechanism for improving competitive balance in a league. Some commercially important sports leagues such as soccer's English Premier League are considering their introduction. To guide the decisions of policy-makers in such organizations, information on the effectiveness of salary caps is essential. This paper assesses the impact of the salary cap introduced in rugby league's European Super league on the competitiveness of the league. Using three measures of competitive balance; share of championships won, the five-club concentration ratio and the Herfindahl-Hirshman index, we find tentative evidence that the salary cap did improve competitive balance after it was introduced.

**Keywords:** Rugby league, Salary cap, Competitive balance

## **1. Introduction**

The possibility of a salary cap as a mechanism for limiting the spiraling wages of some professional athletes and the disparities in expenditures within sports leagues has been, and is being, discussed throughout Europe (Commission of the European Communities, 2007). Since salary caps already exist in several European, North American and Australian sports, knowledge of their effects is important to inform and guide the decisions of policymakers.

Research on salary caps has been largely theoretical (Szymanski, 2004; Quirk and Fort, 1992; Kesenne, 2000). There has been little empirical work on the effects of salary caps on competitive balance. Fort and Quirk (1995) find that the standard deviation of win percentage increased in the National Basketball Association (NBA) after a cap was introduced in 1980. Endo, Florio, Gerber and Sommers (2003) similarly find that competitive balance diminished after the NBA salary cap.

This paper investigates the competitive effects of the imposition of a salary cap in Europe's premier professional rugby league competition, the European Rugby Super League. The aim is to assess how competitiveness has changed in the top division of rugby league over a set time period and to determine if the introduction of a salary cap had any effect on the competitive balance of the league. Three measures of competitive balance will be used to this end.

## **2. The European Super League**

In response to falling attendances and consequent financial distress of several clubs there was a reorganization of British Rugby League in the early 1990's. The administrators of the sport, the Rugby Football League (RFL), proposed the creation of an elite premier division, similar to the recently established soccer equivalent. This would be a 12-team Super League, containing clubs from London and Paris in order to encourage interest in the game in the south and on the continent. In addition, matches would now be played in the summer months. The new league was to be called the European Super League and it would commence in March 1996.

Each team plays the other twice, once at home and once away, the teams then play an additional five fixtures to take their total games to 27. Once the league games have been concluded the top six teams are entered into a play-off,

resulting in two teams competing in the Grand Final. As with many other knock-out competitions, the play-offs are designed with the intention of having the higher placed teams at the end of the season meeting in the final, meaning the first and second place teams will face 'easier' opposition in the early rounds.

There is currently the opportunity for one team in the division below the Super League to gain elite status through promotion, with a Super League team moving in the opposite direction, keeping the number of teams constant. A new structure is yet to be finalised, but once completed, relegation and promotion will be abolished. Instead, to gain entry into the Super League, clubs will be invited to apply for a licence, and in doing so, are required to meet criteria on facilities, fan base and finance.

### 3. The Salary Cap

A controversial proposal, since implemented, for the new league was the introduction of a salary cap for the second 1997 season, forbidding clubs to spend any more than 40% of the gross annual income on players' financial packages. Financial evidence had to be submitted to the RFL showing gross annual income and total player costs of the previous season, plus expected financial forecasts for the forthcoming season to allow clubs to account sufficiently for the costs of the various activities of the club. This information is required to be submitted to the RFL to be held at the governing body's headquarters (Thomas, 1997).

Many sports leagues throughout the world have imposed salary caps including the Guinness Premiership (European Rugby Union), the National Rugby League (Australian Rugby League), the Australian Football League (Australian Rules Football), the National Football League (American Football), the National Basketball Association (US basketball), the National Hockey League (US ice hockey). There are two main reasons for using salary caps in sport. In the words of the RFL; "There are 2 principal purposes of The Super League Salary Cap. The first is to restrict clubs' main item of expenditure, players' costs, to try and ensure, as far as possible, the long-term financial survival of rugby league clubs. The second purpose is to improve the competitiveness of the League by restricting to a finite level of how much one club can spend on its playing staff" (*RFL Operational Rules – Section E1 – Salary Cap Regulations – Issue 5 – February 2007*)

Several clubs have been penalised for breaching the cap since its inception, although some of the larger clubs are repeat offenders. In 2003, Halifax, Hull and Grand Final winners St Helens had two points deducted. Wigan and Bradford were both docked two points after being found guilty of breaching the salary cap in 2005, Hull and St Helens were both fined for minor breaches and Wakefield and Castleford received cautions. Wigan again were penalized in 2006 by having four points deducted while Bradford were docked two points and St Helens were fined £22,000.

### 4. Measuring Competitive Balance

There are many ways in which competitive balance can be measured (Humphreys, 2002). Commonly used measures are the standard deviation of win percentages, Gini coefficients and Lorenz curves. However, these measures were developed with North American sports in mind where a tie is not an option. Whilst a tie is not a common result in rugby league, it is still a possible outcome and therefore must be taken into consideration. Our period of interest is 1976 – 2006. This period takes into account ten years of Super League data and twenty years of data before its inception, which should produce a respectable spread and be a wide enough time scale to show any patterns that may emerge. The necessary data were obtained from the appropriate annual editions of *Rothmans Rugby Football Yearbook*.

A simplistic way of studying competitive balance is look at the share of championships won. In the time period we are focusing on, from 1976 to the present day, there has been only ten clubs who have won the league championship, Bradford, Featherstone Rovers, Halifax, Hull, Hull Kingston Rovers, Leeds, Leigh, St. Helens, Widnes and Wigan. However, only half of these clubs have more than one title to their name. Wigan have dominated, winning an impressive seven consecutive titles. But, since the introduction of the salary cap Wigan, have only won the championship twice in nine years, which is a significant reduction in their success rate. The spread of wins is distributed more evenly between three other clubs, although no surprises emerge when considering the four teams to win the Super League in this time span. Wigan, St Helens, Bradford and Leeds have long been considered to be the dominant forces in rugby league and are referred to as 'The Big Four'.

Michie and Oughton (MO) (2004) used more sophisticated methods of calculating competitive balance in the soccer's English Premier League and some of their methodology is followed here. They implemented the Five-Club Concentration Ratio (C5). This is normally used for analysing how much an industry is dominated by the largest five firms, and is calculated by dividing the number of points won by the top five clubs by the total number of points by all clubs in the league. This is measured using the following formula:

$$\text{C5 ratio} = \frac{\text{total number of points by top 5 clubs}}{\text{total number of points won by by all clubs}} = \sum_{i=1}^5 s_i$$

where  $s_i$  is club  $i$ 's percentage share of league points. Figures 1 and 2 show the C5 ratio in the time period before the introduction of the salary cap and the period after. It can be seen from the graphs that in the period from 1976 to 1994 the C5 ratio increased slightly, with a 15.4% increase. It is evident that the greatest increase occurred between 1994 and 1995, this was the season before the Super League began; in this year alone there was a 28.4% increase in the five-club concentration ratio. However, it should again be stressed that the number of teams were reduced at this point and this reduction is therefore the likely cause of the leap in the ratio figure. After the introduction of the salary cap up until the most recent completed season, the C5 ratio declines by 9.5%, implying an increase in competitiveness.

MO also employ the Herfindahl-Hirshman Index (HHI) which is normally used to measure the inequalities between firms in an industry. When applied to sports, it can be used to measure the inequalities between teams in a league. Having worked out a percentage share of points for each team, this share is then weighted against the average index for the league. The following formula is used:

$$H = \sum_{i=1}^N s_i^2$$

where  $s_i$  is club  $i$ 's percentage share of league points and  $N$  is the number of clubs in the league. An rise increase in this index indicates an increase in inequality and hence a reduction in competitive balance. The figure will lie between 0 and 1, with 1 being a pure monopoly. Figures 3 and 4 show the H-index before and after the salary cap. Figure 3 shows an upward trend in the index signifying a reduction in competitiveness. Figure 4 suggests that the progression towards a more uncompetitive league is counteracted when, perhaps due to the addition of the salary cap, the H-Index begins to fall, heading increasingly towards the perfectly competitive figure of 0.08.

As with the C5 ratio, the results of the H-Index may be distorted by the consistent changes in the size of the league. It is only necessary to glance at the H-Index graph above to see the dramatic effect it can have on the consistency of results. In 1999 there was an increase in the number of teams from 12 to 14, this can be seen by the sharp fall of the H-Index on the graph at this point.

## 5. Conclusion

The results that have been provided by our three measures appear to be slightly conflicting. The first measure, the distribution of championships, points to the league pre-salary cap being largely dominated by Wigan, their dominance, particularly in the period when they won seven consecutive titles, was unrivalled. It could be argued then, that the salary cap changed all of this, since it was introduced, Wigan have only won two of a possible nine championships. However, to only focus on the fact that Wigan's dominance has been broken would be missing the point. Even though Wigan won fewer titles, there was no major new force coming through to challenge the dominance, the only other championship winners post-salary cap were the other members of the 'Big Four'. It cannot therefore be concluded from this measure that the cap necessarily improved competitiveness. At best, it may have restricted and reduced the superiority of the leading force in the league.

To examine the data in further detail and also to ascertain the extent to which the league is controlled by a just a few dominant clubs, we then applied the five-club concentration ratio. The results did appear to detect a trend of the C5 ratio decreasing slightly since the introduction of the salary cap, which would indicate the league was becoming more competitive. Even though the decline was only very slight, it is still a sign of improvement, before this point the figure had generally been on the increase. To further our investigation we next turned our attention to the Herfindahl-Hirshman Index, which concentrates to a greater extent on inequalities that there may be between individual clubs. The results were again positive in terms of the apparent improvement in the equality of the league after the salary cap commenced. Pre-salary cap there was a trend of an increasing H-Index figure. After an initial leap in the H-Index figure it has gradually fallen.

A possible cause for concern that has emerged from our results is the apparent continued dominance of the big four of Wigan, St Helens, Bradford and Leeds. Whilst our measures may show that the league is getting more competitive, both before and after the salary cap year of 1998, they have had the greatest percentage share of the points, and post-salary cap, they are the only teams to have won the championship. This indicates that whilst the league may be becoming a closer run affair, the bigger clubs are still coming out on top. It is too early to say if the dominance of the big four will continue, since there are clubs challenging their position, such as Hull and Warrington. It should also be remembered that the structure of the league is to change again in the coming years,

one of the big four, St Helens, may not even be eligible to enter the league. This is however, one aspect of competitiveness that the RFL should monitor closely, as it may affect interest in the game if the same few continue to be successful. The top tier of English soccer has been in a similar state for years and has witnessed unprecedented levels of growth, so it is not necessarily a general rule that a league cannot be successful whilst being dominated by a few clubs, it is just an aspect of the league that the RFL should be aware of.

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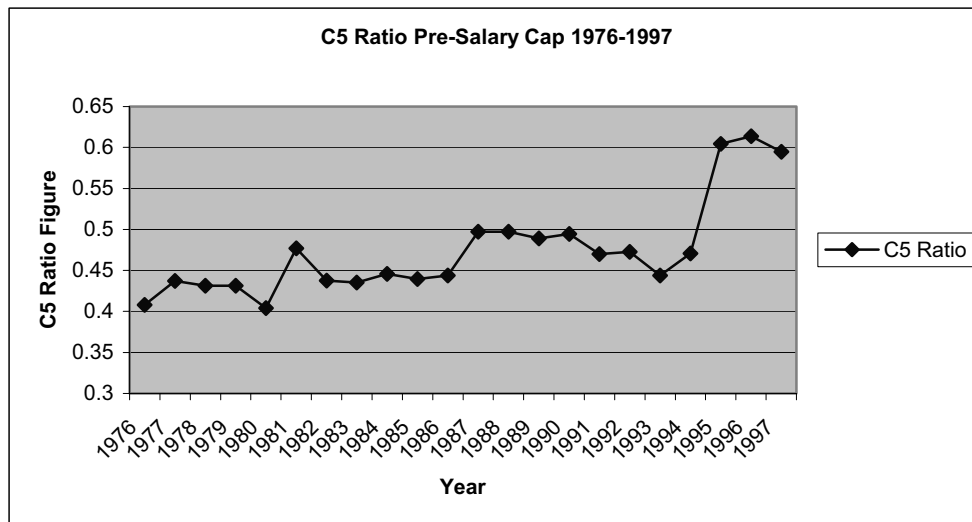


Figure 1.

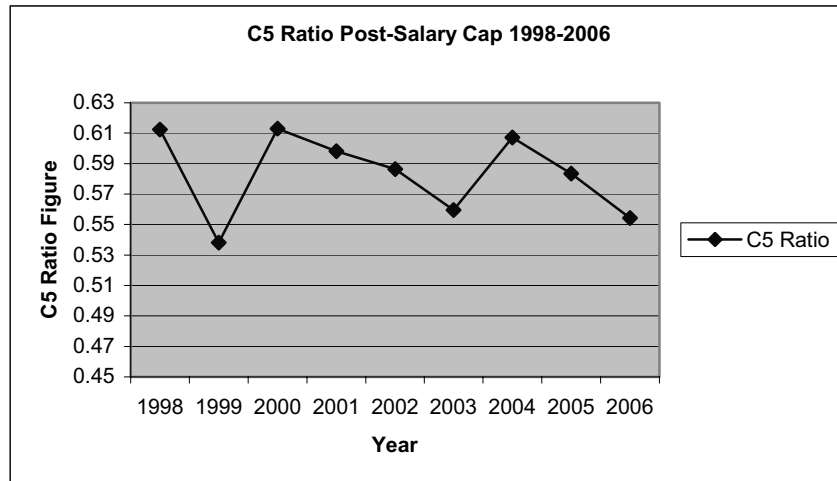


Figure 2.

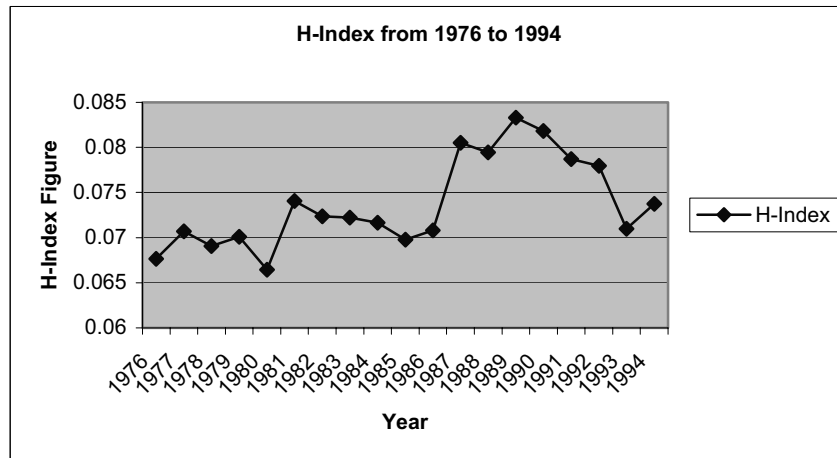


Figure 3.

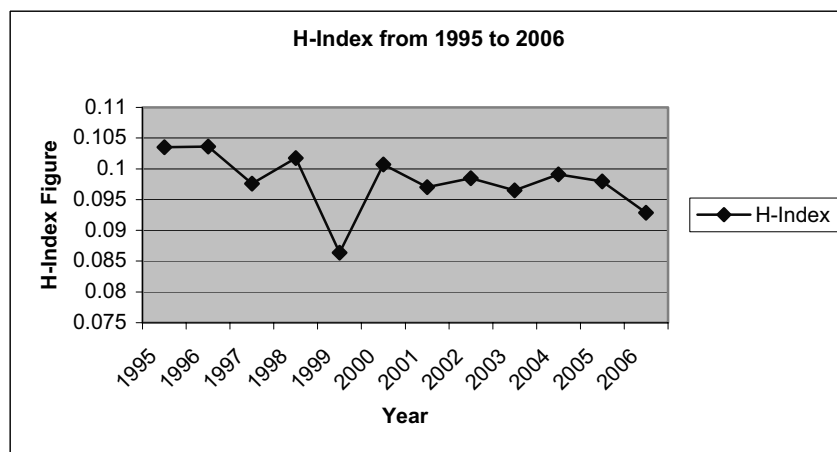


Figure 4.