

EXPLORING THE INFLUENCE OF INTERNATIONAL COMPETITION ON NATIONAL AND PROVINCIAL MARKETS – A CASE OF COMPETITIVE BALANCE IN SPORT

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ABSTRACT

The paper outlines an attempt to assess alternative measures of competitive performance and balance in one of New Zealand's elite football competitions – the Air New Zealand National Provincial Championship (Air NZ NPC) of rugby. The study spans the introduction of professionalism to rugby, and provides a unique opportunity to assess associated changes in competitive balance.

INTRODUCTION AND BACKGROUND

During the mid-nineties, the advent of commercialism and professionalism had a profound effect on the constitutional restructuring, organization and management of New Zealand (NZ) sport at national and provincial level [1], [2] [3] [4]. The impact was no more profound than in the game of rugby football, which is the national game of NZ, and where some adverse effects were beginning to surface at grass-roots level. At that time, the game in NZ could be described as structured through national, regional, provincial and club levels. For example, the representative national team, the All Blacks, formed the top of a pyramid, underpinned by representative regional professional franchise teams playing in international competition - the Southern hemisphere Super 12 (S12) tournament, inaugurated in 1996; representative semi-professional provincial teams engaged in the Air NZ NPC; and predominantly amateur clubs playing in local provincial club competitions. The exploitation of commercial opportunities and lucrative sponsorship arrangements off-the-field had necessarily been accompanied by 'product'/game' developments at the elite level, namely the expansion of the international test match programme; the 1996 introduction of the S12 competition across South Africa, Australia and New Zealand (SANZAR); and the emergence of an elite corps of professional players. One consequence of these latter developments on an overlapping competition calendar in NZ was initially noted as the disappearance of such elite players from club activities, with attendant comment about the subsequent weakening of club competitions. Another consequence related to attempts to ensure the elite corps of 125 players were contracted to play in one or other of the five S12 regional professional franchise teams. That consequence, emerging from a player draft system, and reflected in an enhanced, if enforced, player mobility was coincident with the New Zealand Rugby Football Union (NZRFU) philosophy of creating S12 regional franchise teams of equal player strength – to effect competitive balance at that level. It was also made possible by the NZRFU's decision to contract all S12 players, thus avoiding excesses of unhealthy competition in player recruitment that may have emerged. However, another unintended consequence is claimed to have led to an increase in competitive imbalance amongst provincial teams operating in the NPC, such that the competition has become less interesting and somewhat predictable. It has been suggested that the five provincial unions - Auckland, Waikato, Wellington, Canterbury and Otago - which have been given administrative, managerial and hosting responsibility for the S12 franchise teams - known as the Auckland Blues, Waikato Chiefs, Wellington Hurricanes, Canterbury Crusaders and Otago Highlanders - have wittingly and unwittingly, and disproportionately, benefited from inter-franchise player transfers. This paper explores these issues by examining the playing records of the five major NPC teams, whose provincial rugby unions are also host-unions for S12 franchises, over a period of fourteen years, spanning seven years prior to the advent of professionalism and the S12 competition in 1996, and then seven years since to 2002. Indeed, with the recent transformation of rugby from an all-amateur sport to a professional sport at the elite level, a unique opportunity has arisen to examine the implications of that change.

The National Provincial Championship

The issue of systemic competitive imbalance amongst NPC teams is important because the Air NZ NPC is NZ's foremost domestic sporting competition. It incorporates all 27 provincial rugby unions in a three-division competition run by the NZRFU, with Air NZ being the naming rights sponsor and official airline. The competition is Air NZ's major domestic sponsorship, and is based on round-robin matches between representative provincial rugby union teams leading to semi-finals and a final. It is organised nationally as a divisional competition from August through October, following the completion of regional club competitions. The NPC was launched in 1976. At the time, major objectives underpinning its development were to further stimulate public interest in the game at the inter-union/provincial level; and to provide a second-tier competition breaching the gap between club and international level. Up until 1976, the only 'competitive' matches played between representative provincial union teams were for the Ranfurly Shield - a challenge trophy. All other matches at provincial level were 'friendly' matches organised on an annual basis at an 'auction' prior to the AGM of the NZRFU. The auction involved provincial union representatives making bids for matches on the programmes of other unions in order to build their own match programme for the forthcoming season. It led to an uneven programmes with the larger metropolitan unions playing each other on a home and away basis each year, but with the far flung unions having to rely on irregular, infrequent and expensive tours to secure fixtures with the larger, stronger unions. Competitive imbalance was thus systemic, linked to the population size of provincial centres, and their geographical separateness or attractiveness.

The history and evolution of the NPC can be characterised as three significant phases. In the first phase, for the first seasons of the NPC, provincial teams were organised into an eleven-team first division with regional, north/south island representation, and a split second division also organised on an island basis, with South Island teams playing each other, as did North Island teams. The second significant phase emerged in 1985 with the introduction of a third division, split on a north/south island basis, as a means of generating more competitive balance between teams in the lower divisions; and as a means of controlling travel costs for the smaller unions. What may be regarded as the modern era can be broken down into two further distinct phases. Between 1985-1995, a number of changes were introduced. In the 1991 season, NPC Division 1 was reduced to nine teams, making it possible to align all divisions to the same size. In 1992, a play-off system was introduced to all divisions, with each set of top four teams entering a semi-final / final series. The second phase in this era has spanned a period of seven years from 1996 to 2002, accompanied by the introduction of professionalism and the professional S12 competition. The format of the NPC Division 1 has been subject to continual experimentation with promotion and relegation rules, and size, but has now become a ten-team competition with a promotion/relegation game between the bottom placed team and the top placed second division.

The provincial season occupies a different 'window' to the Club season, which precedes it running from April to the end of July, and to the S12 competition, which runs from March to June in each season. For the elite players, the playing season starts with the S12, and concludes with the NPC. As the off-season gets shorter, the NPC has become a breeding ground for, and provides a basis for selecting S12 players for the following season. Players who are drafted to other regional franchise teams for the S12 sub-season are expected to return to their home provincial union for the NPC sub-season. It has been claimed they may be prone to succumb to various internal and external pressures to relocate to the S12 host-union on a permanent basis, in an attempt to improve their chances of securing a S12 contract. As such, provincial unions who act as S12 host-unions are said to have gained benefit from the delayed but 'permanent' relocation of draft players, thus increasing their NPC team strength and diminishing competitive balance. As such, the performance of S12 host-union NPC teams is a prime candidate for studying aspects of competitive balance. This case study provides selective detail of the development of an approach to assess the relative performance of representative provincial teams in the National Provincial Championship, in order to determine the extent of competitive balancer and imbalance.

COMPETITIVE BALANCE

A common criterion that has emerged in establishing, determining and assessing the success of professional sports leagues is that of 'competitive balance'. The notion has surfaced in rugby union, for example, and has been instrumental in the structuring of the regional franchise teams in the S12 rugby competition; and it has also been advocated by Costa [5: 184] and others [6: 2005] [7] as a prime objective driving decisions that relate to the mechanism of player drafts, the imposition of salary caps and the distribution of revenues amongst franchise teams in US professional sports leagues. The success of leagues and competitions has been linked to the essential unpredictability of outcomes of individual matches and the winning of championships or trophies. It is believed that such unpredictability not only sustains or fosters belief amongst fans that 'their' team has a chance of winning, but also maintains the season-long interest of all fans affecting their consequent behaviour as live spectators, TV viewers and purchasers of merchandise [8: 1269] [9: 253]. Maximum unpredictability in a two-team contest means essentially that both teams have equal chances of winning the contest; and it follows that in such circumstances, all teams will have an equal chance or equal opportunity to win championships or trophies. This equates then to what is known as competitive balance. Attempts to achieve competitive balance in professional leagues have been manifest in rules relating to the control of player resources, their recruitment, movement and remuneration. These rules relate to player drafts, player transfer mechanisms (aka reserve-option clauses in the US), or salary caps; and to the redistribution of revenues between teams to remove possible structural disadvantages that arise from location, population or fan base or 'drawing power'. As such, it is recognised that competitive balance may also be affected by rules relating to expansion of leagues and the relocation of franchises or teams [8: 1266].

Competitive balance may be measured directly by examining the variability of, or disparity between, the aggregated win/loss records of teams in a league [8, 10], or the inter-group variability of teams categorised by financial strength [5: 56,62-79]. The effects of competitive balance or the lack thereof, may also be examined in terms of aggregate league revenues, ticket sales, sales of national media rights etc. Attempts, then, to assess the success of leagues may examine competitive balance reflected in overall playing records and/or league-wide success in building diverse revenue streams. Costa [5: xiii, 185] suggests that imbalances in financial strength within the MLB can be compared with parallel imbalances in playing results in several ways. For example, in considering outliers or extreme events, we note that "since 1995, only three out of 189 post-season (play-off) games have been won by teams in the lower half of payrolls". However, as Sanderson [6] suggests, there are many additional dimensions of competitive balance or imbalance "that do not involve money." He identifies technology, competition structures and processes, rules and scoring systems that have been invoked both to favour competitive balance and seemingly to foster competitive imbalance. In illustration of the former, he identifies pool technology that dissipates lane advantage in swimming, whilst riding weight systems undermine natural equine athleticism in horse racing. In rugby union, the advent of the 5-point "try" scored by carrying the ball over the goal line has reduced the effectiveness of kicking a penalty or field goal, which score only 3 points. In basketball, the 3 point-shot has changed "the relative importance of tall, muscular players relative to their smaller, more agile team-mates." In illustration of fostering competitive imbalance, examples abound of seeding that favours past performance in tennis, ski-ing, motor sport, and of play-off systems that give home advantage to competition leaders. However, all such notions of competitive balance or imbalance require more than anecdotal evidence of existence. Attempts to develop quantitative measures of the complementary notions of balance and imbalance, particularly as they relate to professional sports leagues, are typified by the work of Yilmaz & Chatterjee [11] and Chatterjee & Yilmaz [12], on individual and team performance, and team success, in the NBA. The work of Yilmaz and Chatterjee [11], spanning 48 NBA seasons, used win-loss ratios or winning percentage as a basis for measuring team success. For any team, the measure can be expressed as number of wins relative to number of games played (WP), or numbers of wins relative to total number of games won by all teams

(WPW). The variability of these measures across a set of teams in any one competition season - computed as standard deviation - can be used as a surrogate measure of competitive imbalance - for example, the greater the variability of the win-loss ratios, the greater the competitive imbalance. For perfect competitive balance, all win-loss ratios would be 0.5, and the variability measured as standard deviation would be 0. Additionally, a measure of entropy defined as $H_t = -\sum WPW_t \cdot \log(WPW_t)$ or normalised entropy, defined as $H_t' = H_t / -\log(1/N_t)$ can be used to measure competitive parity or lack of parity. Yilmaz and Chatterjee also identified four performance-specific measures as useful for assessing individual and/or team performance. Each of these measures related to a unit of analysis being 48 minute games, over a regular season; they were average number of points scored, points conceded, number of rebounds, and number of assists. An additional alternative measure that is also indicative of relative playing strength or team performance would be points difference between points scored and points conceded.

METHODOLOGY - DATA COLLECTION AND ANALYSIS

This study follows the methodology of Yilmaz and Chatterjee [11] in as much as it examines longitudinal time-series data for the NPC, seeking to determine patterns of variability in NPC team performance, and NPC competitive balance, in the time periods spanning the introduction of professional S12 rugby in 1996. In particular the focus of the research will be on the five NPC provinces that act as host-unions to the regional S12 franchise teams. A sample fourteen-year period has been chosen to provide convenient balance of seven playing seasons reflecting rugby before the advent of professionalism and another seven seasons reflecting the early period of professional rugby. As such, the time-split facilitates for many what would be relevant and interesting comparisons between adjacent amateur and professional eras. Romanos [13](2002: 120) has suggested that a comparison between the NPC teams and NPC competition of the 1960's, '70's and early 80's with the NPC of the post S12 professional era would be less relevant given the major changes the game has faced leading up to the 1990's. He has claimed [13] (2002: 41) that the initial period after the inaugural 1987 Rugby World Cup (RWC), held in New Zealand, can now be seen as a precursor for professional rugby, with the game at the elite level starting to become organised and played in a manner reflecting the ideals of professional sport more so than those of amateur sport. Consequently, the 1989 season reflects the beginning of a period considered to be distinct from the pre-RWC era that preceded it. Data was compiled from the end-of-season competition league tables sourced from a single set of reference volumes, a collection of *New Zealand Rugby Almanacks* covering the period 1988-2002 [14-18]. The time series data was initially entered into an Excel spreadsheet by year of competition. The data was variously sorted to highlight the performance of individual NPC teams, and aggregated to facilitate pre-post S12 comparisons. Data has been verified, where possible, by cross checking with other external sources, and for internal consistency by use of cross-summation techniques. The statistical analysis and pivot-table tools of the MicroSoft Excel software were used to prepare the data and to examine the relative performance of the five S12 host-union NPC teams. The analysis sought to provide a selection of descriptive univariate measures of NPC team performance, aggregated by team, by competition year, broken down for pre and post-professional rugby periods. The data was also presented and examined as time-series plots and charts. Additionally, a variety of statistical tests were conducted to examine apparent differences in mean performance and differences in the variability of performance between teams, over time, and for the NPC competition as a whole. Given the comments of Romanos [13], the data used can be described as full census rather than sample data. It can also be described as repeated measures data, comprising identically structured time-series data for each of the competition years spanning 1989-2002. In such circumstances, the conduct of statistical tests, for example, ANOVA, and then t and F tests, on, say, repeated measure Win-Loss Ratios for paired 'samples' of NPC teams, or populations disaggregated to reflect pre and post-S12 professional rugby periods, is acceptable.

Research questions addressed in this paper are targeted at two levels – one being the NPC competition itself, and the other level relating to the NPC teams, specifically those that act as host-unions for the five regional S12 franchise teams. Research questions are also time-related, examining NPC team performance and NPC competitive performance in the periods before and after the advent of S12 professional rugby. Following the methodology of Yilmaz and Chatterjee [11], the specific measures of team performance and team success examined were the win-loss ratios or win percentage (WP), the points scored per regular season, and points conceded per regular season – specifying the base unit for measurement as being regular season 80-minute games, discounting play-off rounds. Specific research questions addressed here relate to whether the competitive performance of the five major or S12 host-union NPC teams has changed since the advent of professionalism; and whether the performance of the five teams has improved en bloc or in relation to each other.

SUMMARY OF FINDINGS AND CONCLUSIONS

The advent of professional rugby in NZ accompanied the development of an international competition involving 12 regional franchise teams from South Africa, Australia and NZ – known as the 'Super 12'. Five regional franchise teams were 'allocated' by the NZRFU to five major population centres in NZ and their surrounding mutually exclusive regions. It has been suggested that the five provincial unions - Auckland, Waikato, Wellington, Canterbury and Otago - which have been given administrative, managerial and hosting responsibility for the S12 franchise teams, known as the Blues, Chiefs, Hurricanes, Crusaders and Highlanders - have wittingly and unwittingly, and disproportionately, benefited from their co-location with the professional teams. It is claimed that they have benefited from inter-franchise player drafts and transfers which have allowed the NPC host-union teams to build stronger playing squads with greater numbers of professional players. The evidence presented in this paper relating to specific measures of team performance - such as Win-Loss Ratios, Points Scored, Points Conceded etc - covering equal numbers of playing seasons either side of the introduction of professional rugby, suggests that the 5 major NPC teams, whose parent provincial unions host the regional franchise teams, have not produced improved team performance over time as a group, on any measure of team performance. Indeed, what has been observed is that all 5 major NPC teams have been subject to greater variability in the conceding of points, which may suggest an increased inconsistency in the operation of defensive patterns, more unpredictability about opposition effectiveness in attack, or other effects brought about by changes in competition rules, the rules of the game or the way in which the rules of the game are applied. Such variability cannot be associated with an increase in competitive imbalance favouring the 5 major NPC teams as a group. However, statistically significant observable changes in all performance measures have been noted for specific teams. Where statistically significant changes in team performance are noted, they have occurred in isolation without pattern. Professional rugby then, may not be producing the systemic improvements in performance that others have expected the NPC host-unions to benefit from. However, this paper has examined a limited set of variables, with a limited set of descriptive measures. As more seasons of S12 competition unfold, further studies will need to be conducted in order to assess the continuing impact, qualitative and quantitative, of the S12 competition and professional rugby on the NPC competition and the business of rugby.

REFERENCES

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A full set of references may be obtained from the authors.