Economics of Professional Sport

Presentation to Schools Day
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Significance of Sport
- Sport exerts huge influence throughout the world. The Heads of FIFA and Olympic Committee have more influence in the world than most politicians.
- Economically, sport and its spin-offs create large amounts of economic activity.
- But sport is not homogeneous - segmented by game, location, degree of professionalism, media coverage.
- In sports economics, we seek general principles of economic influence, knowing that heterogeneity of team and event are important factors to outcome of individual contests.

Economics and Professional Sport
- The aim of the presentation is to briefly show how economic analysis can be used to explain and predict the behavior of professional sporting teams.
- Neale first outlined the peculiar economics of professional sport.
- Sport is a product for sale but characterised by high degrees of consumer loyalty, lack of substitution and price elasticity; toleration of monopolies and restraints on trade.

Not Only Economics
- Yet it remains one of the best examples of wage theory and competition.
- For example, a season ticket is really a complex financial contract; uncertainty of result, value of ticket, renewal rights and resale options.
- Economics necessary but not sufficient explainer of sport. Psychology, sociology, history, nationalism all important.

Topics to cover in this presentation
- The size of the sports industry
- The relevance of economic theory
- Why do sports stars get paid so much?
- Who benefits from new stadiums?

The size of the Sports industry
- Like Tourism - Sport is not contained within one industry.
- Goes across retail, entertainment, recreation, media and communications, advertising.
- Sport also multi-access - attendance, Television and internet, print media - no one price.
Sport – in Australia
- ABS Survey "Sports Industries" - Cat 8686.0
- 7147 – registered sporting organizations
- 2005/06 – total income of sports & physical recreation - $16 billion - ranks in the top 5 of Australian Industries
- Employment 100,000 FTE + 180,000 volunteers
- Sporting shows - regularly in top 10 most watched programs

Quantification of the Importance of sport
- Quantifying the economic turnover of professional sport - almost impossible
- Gate Receipts of Clubs
- Media receipts
- Associated Advertising
- Sale of merchandise

Economic organisation of Manchester United

Economics of Man United
- Match day receipts still important but media and other marketing of growing importance
- Players value calculated both by contribution to team and marketability - "Beckham effect"
- Other clubs are even more reliant on (See Juventus)

Similar income - different structure
- Much more reliance on TV contracts and commercial

Sports leagues
- Much of the analysis of teams sports revolves around the analysis of sports leagues
- Closely allied to competing industries - competing ends – entry restrictions - formation of cartels to control price and player movement
Restrictive practices
- Just like firms that justify anti-competitive behavior - Sports leagues justify salary caps and player drafts
- Designed to protect "competitive balance" which has parallels with imperfect competition and monopoly in business
- But how effective are these restrictions?

Rank Measures of Competitive Balance
- Competitive Balance in NRL
  - Time period Competitive Balance by Spearman rank test
    - 1999-2001 = 0.576
    - 2002-2004 = 0.437
    - 2004-2005 = 0.387
    - 2005-2006 = 0.346
    - 2006-2007 = 0.312
- Tests show that the ranking of teams in terms of position of finishing is getting less predictable and hence this is one measure of increased competitive balance.
  - To obtain competitive balance formula using Excel see [http://www.mnstate.edu/wasson/ed/](http://www.mnstate.edu/wasson/ed/)

The Labour Market for Sportspersons
- Why do some sports-stars earn so much money?
- How is it justified in comparison to other professions?
- Why was David Beckham considered a bargain at $1 million pound per week in Los Angeles?
- Can standard economics provide an explanation or partial explanation?

Wage Inflation in sports
- Baseball in the US until 1970's relatively low wage - low returns to super stars - wages even throughout team
- "Curt Flood" anti-trust case removed wage restrictions
- The result was a large wage inflation - super-stars found "market" value

Inflation in Baseball Salaries

Standard labour market
Star Effects Distort Labour Market

Sports stars and teachers

- Lets assume that society ranks education and teaching above sport
- So the demand curve for teachers is to the right of demand for sports stars
- But the supply of elite sportspersons much more inelastic than teachers- “star effects”

But how much?- the new quantification(2005/06 values)

- 1. Tiger woods
  - $80.3 million
- 2. M. Schumacher
  - $80 million
- 8 David Beckham
  - $28.0 million
- 24 Lance Armstrong
  - $19.2 million
- 42 Z. Zidane
  - $15.8 million
- 98 Thierry Henry
  - 9.8 million

Talent or Marketability?

- Why is a world class hockey player less than a mediocre soccer?
- Attached diagram helps explain why?

Within sports wage differences

- The D lines indicate “structural factors”
- The S lines indicate individual characteristics
- D3/S3 is the highest wage – but wage can be made up by different combinations of D and S- this explains why great hockey player( high S, low D) gets less than av. soccer player (high D, medium S)
David Beckham net worth calculations
- Additional attendance (declining after first few games)
- Above average ability to convert free kicks (37% success rate against .21 for league average)
- Minimum value in Champions League $35 million
- Merchandise sales ($16 million), corresponding decline in United sales in 2003
- Asian market exposure - $15 million
- Net worth per year $66-70 million.
- Salary (2003) $21 million- is he underpaid?

Statistical methods
Salary in Baseball
- Possible to value individual contributions in a team game
- Equation below values basketball players
  \[ \text{Salary} = 566,498* + 71,928* \text{goals} + 19,946* \text{assists} + \text{Unknown (attackers)} \]
  \[ \text{Salary} = 566,498* + 71,928* \text{goals} + 19,946* \text{assists} + 585,560 \text{ (defenders)} \]

Which factors show value of Rugby League/AFL/Rugby Union/Netball?
- AFL- number of handles, number of goals, goal success rate, number of assists
- Rugby League- number of tackles, number of tries/number of assists/ etc
- Rugby union (ask class)
- Netball (ask class)

The Economics and Sports Stadiums
- Very few aspects of sports raise as much controversy as the building and financing of Sports Stadiums
- This is often because they are fully or partly financed by public money (e.g. Suncorp Stadium, Gold Coast- Reebok Stadium (Bolton) but identified primarily with one sport/company
- Two issues dominate (a) is there any net economic benefit to taxpayers (b) the extent of deadweight loss
- Underlying this are difficulties in economic methodology (measuring economic impact) and blurring between private and social welfare functions

New Stadium 1 (where?)

Stadium 2 (where?)
Arguments For and Against Public Funding

For
- Economic development.
- Increased Employment and earnings
- Tourism to host city.
- Hosting events: MLB All-Star Game.
- Reputation as a “big time” city.
- Local Civic pride and quality of life
- Team owner can hire expensive players and contend for a championship.
- Stadium costs can be “exported” through sales and excise taxes.

Against
- Benefits Overestimated and Costs Underestimated.
- Team owner can raise capital in private financial markets (e.g., selling stocks and/or bonds).
- Stadiums are expensive ways to spur limited economic growth.
- Relocation threat generally has little credibility.
- Public property rights hard to define
- Public funding is a wealth transfer to team owners.

Existing Economic Research

- Despite anecdotal evidence and claims by highly paid consultants, economists have found little evidence that stadiums improve:
  - Per-capita income
  - Unemployment rates
  - Tourism rates
  - Local business relocations
  - Intercity business relocations
  - Sales tax revenues
  - Property tax revenues

- Yet stadiums are clearly assets and provide value to someone. Whom?

Defining the Benefits of a New Stadium

- Private Benefits: those internalized by the team owner or other business person
  - In the form of revenues, jobs, higher earnings.
  - Require well defined property rights.

- Public Benefits: those difficult to allocate to specific people
  - In the form of quality of life, city pride and notoriety.
  - Usually lack well defined property rights.

Determining Property Rights

- Property rights are determined in contract negotiations between the franchise owner and the host city.
- Over the past fifteen years, Franchise owners often keep the majority of revenues from parking, concessions, advertising, and luxury boxes.
  - Franchise owners often acquire low rent payments, lower sales taxes on tickets, and less responsibility for maintenance and renovations.

- These negotiations can raise tens of millions of dollars a year in revenues for the team owners (Forbes, 2001).

New Stadiums and Owner Incentives

- What to do with additional revenue?
  - Fan Perspective: Use additional revenue to buy better (more expensive) players and improve team quality.
  - Owner Perspective: Maintain (or reduce) payroll and use extra revenue to increase profits and franchise’s value.

  This is known as the principal-agent problem.

  If demand/revenue increases after a new stadium, the team owner (the agent) may not improve the quality of the team, counter to what the fans (the principal) want.

  Why would an owner not want to improve team quality?
New Stadiums and Team Win%  
Teams in new stadiums win approximately 8 more games (total) per season.

New Stadiums and Attendance  
Teams in new stadiums average 11,900 more people per game (964,200/season).

New Stadiums and Prices  
Teams in new stadiums charge $3.40 more for an average ticket.  
Teams in new stadiums receive $2.76 more in concession sales per person.

New Stadiums and Team Revenues  
Teams in new stadiums average $20.2m more in gate revenues.  
Teams in new stadiums average $35.7m more in total revenues.

New Stadiums and Team Profits  
Teams in new stadiums average $13.34m more in profits.

New Stadiums and Team Values  
New stadium increases book value $90.39m on average.
Recap of Difference-in-Means Tests

- How does a new stadium impact attendance?
  - Average increase of 964,200 per season.
- How does a new stadium impact team quality?
  - Average 8 wins more per season.
- How does a new stadium impact team payrolls?
  - Average $14m more in payroll.
- How does a new stadium impact ticket prices?
  - Average $3.40 more per ticket and $2.76 more in concessions.
- How does a new stadium impact team revenues?
  - Increase gate revenue by $20.2m and total revenue by $35.7m.
- How does a new stadium impact team profits?
  - Increase profits by $13.4m on average.
- How does a new stadium impact team book value?
  - Increase book value by $90.39m.

Many more topics we could discuss

- Economics of Discrimination in sport (why do men cricketers earn more than women? Why so few black managers in NFL? (See Paul Ince in UK)
- Economics of media coverage
- Cross-elasticity (are Rugby League and AFL substitutes)
- Does demand slope downwards?

Solution

- Come to UQ and study the economics of sports