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# 1

## Introduction

Why study the economics of professional sports? Why study the economics of the revenue-generating amateur sports such as the Olympics and intercollegiate sports in the USA? The answer 'Because these sports represent a substantial share of the gross national product' is simply wrong. The spectator sports industry for both professional and amateur sports is a trivial component of all national economies. In the USA its revenues are dwarfed by mundane industries such as meatpacking. The total revenue in professional sports is about 12 per cent of the total revenue in meatpacking. Two correct answers to the question are that the sports industry raises fascinating economic questions and that sports have been a high-profile component of all societies for more than 4,000 years. The Greeks and the Romans made sport a central part of their society. They built their cities with sports facilities as the centerpieces. Mayan civilization in Central America also emphasized sport. The public enthusiasm for spectator sports continues unabated in modern times. There are courses in the economics of sports rather than the economics of meatpacking because sport is a rich area for economic analysis and because societies care a great deal about sports. Beginning in the 1950s, economists have published hundreds of papers on the sports industry. The economics of sport is now a significant branch of economics.

What makes the economics of sports especially intriguing? Professional teams are usually local monopolies which have exemptions from the **antitrust** statutes (competition policies in the UK) that apply to other businesses. One interesting question is how their monopoly status affects their interactions with their players. If the meatpacking companies got together and agreed never to hire a worker who was working for another meatpacker, they would be in serious legal trouble. Until recently athletes were tied to one team that could sell their contracts to another team or keep renewing the contracts indefinitely. This exclusivity was called the **reserve clause** in US baseball. The equivalent restriction on labor mobility in European soccer was called the **retain and transfer system**. In the USA, sports reserve clauses were eliminated through a series of contract negotiations with the players' unions. Management was under pressure because both sides were increasingly convinced that the reserve clause would be ended by court rulings. In Europe the **Bosman** case suddenly ended the retain and transfer system. Some elements of monopoly power over sports labor still remain. All of the US professional leagues have annual drafts of new players (see **player draft**). They agree not to make offers to players drafted by other teams. In Europe there is no parallel to the US draft of what are primarily college athletes.

Teams are also generally monopolies in their product markets. In the USA they have exclusive territorial rights. Teams that are members of the same league cannot enter their market without their approval. The largest cities in the USA have two professional teams in the same sport but beyond those exceptions there is one team per sport per city. The Los Angeles, New York

and Chicago metropolitan areas have two baseball teams each. New York and Los Angeles have two basketball teams as well. The New York metropolitan area has three hockey teams. Similarly, London, Birmingham, Liverpool and Manchester have multiple soccer teams in the English Premier League. Although the overall supply of teams in Europe is much greater than in the USA, the common arrangement throughout Europe is one team per city. An interesting economic question is how the monopoly status in the local market affects the actions of the team in setting ticket prices and in negotiating with their host cities.

Another interesting economic and social issue is the apparent public concern with athletes' salaries and their relative indifference to the earnings of movie stars. The public seems to be more bothered by athletes' high salaries than by movie stars' salaries. This difference in indignation is puzzling because both professional athletes and movie stars are performers who are paid for their ability to attract a paying audience. Perhaps the movie star salaries seem less salient because they are not local performers. Perhaps amateur athletes resent the high pay for athletic skills at a level just slightly higher than their own. From an economics perspective the interesting question is what determines the players' salaries? The sports industry is unique in that there are detailed statistics on player performance so that it is possible to estimate the relationship between players' game statistics and their team's revenue. It is one of the few industries in which the **marginal revenue product** generated by each worker can be estimated with a degree of precision. A related question is whether teams exploit their players by paying them less than their marginal revenue product or perhaps teams overbid and pay more than marginal revenue product for players in an attempt to win championships.

There are several other interesting economic questions related to player salaries. Do player salaries drive ticket prices? This is a claim made by many owners. Also, because it is possible to estimate the impact of each player's performance on the team's attendance and its revenues, economists have tried to determine whether there is discrimination in player salaries, e.g., do team owners pay higher salaries to white players than to black players of identical ability?

There are some basic structural issues in the organization and presentation of a professional sport that differentiate it from other industries and that have clear economic implications. The next paragraph has a description of an unnamed sport: try to guess which sport as you read the description. The example will then be used to illustrate the connection between these structural issues and certain economic questions.

In this unnamed sport individual players sign exclusive contracts with one owner. Ownership in the sport can be a highly profitable investment. The players first go to a school where they learn the basic skills of the sport. The schooling can last up to four years. The sport has huge popularity. The results of games and the merits of individual players are the subject of constant conversation. The sport's symbols and motifs are widely used on cups, lamps, and other household decoration. The games

are attended by politicians and other public figures. The players get salaries six to ten times as high as other workers, even salaried professionals such as doctors or professors. Players are rated in one of three categories that are ordered in terms of the quality. A last hint – a player who has never been in a professional game is called a ‘tyro’. Any ideas?

The games described above are the gladiatorial combats in the ancient Roman Republic and Empire. The schools were called *ludi* and a free person (as opposed to a slave) could sign a contract with a school owner entitling himself to generous room and board and training in return for agreeing to fight in the arena over a fixed period. There was a season each year in which a series of games were held. Most combats were one-on-one affairs. Some of the contestants were free and others were slaves who had no choice about their occupation. Fairly late in the history of the Roman Empire a law was passed forbidding the sale of a slave to a gladiatorial school unless the slave had committed a serious crime and was convicted in a public trial. Gladiatorial games were popular for about 900 years from the earliest times in the Roman republic to the end of the Empire. Recent movies such as Russell Crowe’s *Gladiator* show that the sport still has some public interest.

The reason for dredging up this historical example is that it makes clear some of the economic issues inherent in sport. Roman citizens wanted to see close contests and the quality rankings, such as being identified as a ‘major league player’ as well as the individual gladiator’s records, gave them information about how evenly the pairs were matched. They preferred seeing the most skilled players and would pay more to be able to see them. The risks of injury or death for the players were obvious. One estimate is that one in four were killed. The salaries for free men had to be high enough to compensate for these risks. Even for the slaves the school owners had substantial investments in their purchase price and the costs of four years of intense training and room and board. When a promoter hired, say, 10 pairs of gladiators from a particular school, the contract would specify their classifications, the base price, and an additional indemnity to the school owner for each gladiator killed. During the Roman Republic in 27 AD one enterprising promoter built a wooden arena specifically to hold one gladiatorial game. Given his interest in making the largest possible profit, he put up an ultra low-cost arena. However, he went too far in his cost-cutting as the stands collapsed and killed most of the spectators.

Cities all over the empire from Jerusalem to London put on annual municipal games. Citizens were entitled to free tickets to municipal games at the back or top of the arena. They could upgrade their tickets to courtside and also pay extra for seats under awnings. When the municipalities bid against each other for the services of the gladiatorial schools they raised the price of a gladiatorial pair with a given rating. To help these cities out the Roman Senate passed a law fixing the maximum price a city could bid on a gladiatorial pair. Later in the book we will compare this approach to the current bidding by cities for sports franchises.

What is different or missing from this gladiator story that is present in modern professional sports? Team play was unusual because it was expensive. If you had a team of ten gladiators trying to kill or defeat another team of ten gladiators, what would otherwise be an all afternoon show with a series of ten pairs could be over in 15 minutes. Sometimes the emperor or, during the republic, a wealthy politician would pay for a battle in the Coliseum in Rome but the expense was beyond the resources of a promoter or a municipality. Of course, some modern sports are still primarily competitions between two players instead of teams, such as tennis, professional wrestling and kick boxing. The Coliseum was built specifically for gladiatorial games. It held 40–45,000 seated spectators and 5,000 more standing at the back. There were smaller but similarly shaped arenas in every city. Without local teams playing against out-of-town teams, the identification of a team with the municipality, say the Pompeii Slaughterers or the Londinium Britons, is lost. Promoters tried to build up identification by dressing and arming the individual gladiators as Gauls or Thracians, so that the fans could cheer on their favorites. The practice was similar to the personae and costumes adopted by professional wrestlers in the USA. Another way of generating fan interest was to provide novelty. Bill Veeck was copying a Roman emperor's midget gladiators when he had a midget batting for the St. Louis Browns. Another novelty was pairs of female gladiators fighting in leather bikinis. The main point in this gladiator example is that not much of what we think of as the features of modern professional sport was missing in ancient Rome. Admittedly, there were no shoe contracts, no endorsements contracts from McDonalds, and no televised games. The impact of broadcasting on sports is the subject of Chapter 6 below.

What influences do the gladiatorial games have on modern sports? Many modern venues are called the *Coliseum* or the *Arena*. The origin of the word 'arena' is a Latin word for the sand-covered area where the gladiators fought. The sand was raked over the spilled blood. The word 'stadium' has a Greek origin. It refers to a measure of distance, a stadia, or 607 feet, that was used in foot races in the Olympic games. A neophyte in any endeavor is still called a *tyro* (you can look it up), but the word is not common on sports pages which are typically written at the reading level of a 10 year old. The ceremony of lining up the players and singing the national anthem before a game begins mimics the parade of gladiators and the homage to the Emperor before gladiatorial games began. These borrowings from antiquity are often quite deliberate. There are twentieth-century stadiums that look like the Coliseum in Rome.

The gladiator example illustrates the structure of sporting events. *The essential feature of a sporting contest is uncertainty over the outcome.* Some people bet on the games and just care about the point spread, but most spectators want to see a close game in which both sides have a chance to win. Mere athleticism without the uncertainty would draw few fans. For example, male ballet stars can leap as high, jump as far, and turn as sharply as the most accomplished professional

athletes. Hardly anyone wins or loses at ballet; as a result it does not draw a mass audience. Similarly, the Harlem Globetrotters as a **barnstorming** team draw much less attention than National Basketball Association (NBA) basketball as the outcomes of the games are well-known, do not count towards a championship, and involve players of very different skill levels.

*The central feature of the exemption from the antitrust laws for professional sports teams, that they can agree not to bid against the other teams in a league for player's services, is that sport is unlike any other business in that it requires a competitor.* A baker can exist without another baker, and would indeed prefer to have monopoly control, but a team needs another team to attract customers and this gives sport its unique feature which has been recognized by courts and legislatures. This book comes back to this issue to see if the argument is sensible on theoretical grounds and if there is any empirical support. The Bosman case gives us the opportunity to see what happens to competitiveness in a league that shifts from no **free agency** to complete free agency. A *free agent* is player who can sell his services to any team without an obligation on the buying team to pay a transfer fee or any other compensation such as the contracts of other players.

*The owners or promoters of a professional league want to convince the public that the league's players are the most talented athletes in the world.* They would like to have news stories about the players lauding their skills, prowess, dedication and intensity. In the meantime, they would like to pay them as little as possible. If there was a competitive market for putting on games (i.e., anyone could field a team), promoters would bid up the players' salaries to the point that, adjusted for risk, they would just earn the opportunity cost of the money they invested. Imagine a situation where each city has several municipally owned arenas suitable for basketball which could be rented for a season, and anyone could form a team by hiring players and offering to play other teams. This structure would provide essentially free entry into the basketball market. Free entry means that new firms can enter at the same cost as the existing firms. As you learned in introductory economics, free entry usually implies that profits will be pushed down to a normal rate of return.

What is different here from free entry into the market for producing wheat is that such unstructured competition would generate much less overall revenue than a restricted sports market. You can generate more fan interest if, in addition to skilled players, you have rivalries, league standings and championships. Think of what the National Collegiate Athletic Association (NCAA) tournament in the USA has done to the popularity of college basketball. For a contrary example, think of how having four or five different world champions in professional boxing sanctioned by different organizations has diluted interest in that sport. There are examples of free markets in the beginnings of professional baseball, but for nearly 100 years competitors to an existing league have come into the business as rival leagues. All of these leagues have had some sort of internal agreement in which the member teams do not hire away players from competing teams. *An essential feature of*

*professional sports are structures that determine a league champion.* Some sort of contractual control by team owners over the players is universal in team sports. Individual sports such as tennis and golf do not have owners with contracts for the players' services.

For most cities a professional team is a *natural monopoly*. Once one team is entrenched in the city no other team could hope to make a profit. It is also a *monopoly* in the sense that it sells a service that does not have close substitutes. How many people would switch to seeing an amateur team play or a lower division professional team play in place of a major league team in the same sport if the latter raised its price by 10 per cent? The technical term here is the **cross-price elasticity of demand**. It is near zero. The cross-price elasticity of demand is also low for other sports. For example, how many people would switch their season's ticket from an NBA basketball to a National Football League (NFL) football team in response to a 10 per cent price increase by the NBA team? There might be more of a switch to watching the NBA team in bars or watching a video or a movie. Being a monopoly does not imply a zero cross-elasticity for all other goods. It simply means that there are no goods with high cross-elasticities.

If there is only one arena or stadium suitable for a sport in a city, ownership (or else holding a long-term lease with exclusive rights) is crucial to maintaining the monopoly position. A rival league cannot put a team into a city when there is no place to play. In the USA some stadiums or arenas are privately owned but most are municipally owned and leased to the sports team. The cities view these facilities as an investment that draws tourists, new businesses and favorable publicity. They can cost as much as \$400 million. If, as is sometimes done, they are offered rent-free to the team, the stadium can represent a massive public subsidy to the professional team. Think of it this way: in a city of a million people each person, on average, owns a \$400 share of the debt used to finance the stadium. Or, conversely, if it was financed by tax revenue, each person paid \$400 in taxes to build the stadium. Usually there is a mix of debt and accumulated tax revenue financing. *At what point is a city paying so much in subsidies that it would be better off without the team?* This is the key question facing the mayor in any US city threatened with the loss of a team if it does not build a new stadium or raise its subsidy.

Is this municipal investment in a stadium a new problem? Let us look at another antiquarian example, this time from the Middle Ages: the Cathedral of Chartres. Chartres is a small town about an hour south of Paris. In the Middle Ages it was a pilgrimage town. People went there to see a piece of cloth, the Sancta Camisia, taken from the dress Mary wore when she gave birth to Jesus. In 1194 the Cathedral housing this relic burned to the ground. The cardinal told the crowd that there had been a miracle; the cloth had survived the fire unharmed. He also said that the Virgin Mary told him that she wanted to have a new cathedral built to house the cloth. Medieval cathedrals were made out of hand-cut stone blocks. So were the Roman arenas, but the difference in wealth was such that most Cathedrals took over

200 years build and the Roman arenas five to ten years. This is a very durable kind of construction. Some small Roman arenas are still being used for bullfights in Spain, while others are still used as outdoor theaters in France.

What is the connection between Chartres and modern sports arenas? What is the modern day counterpart to the pilgrims? Tourists come to mind. Off the main hall in the Cathedral there are private chapels originally owned by various French nobles. When they wanted to pray they closed the door to their chapel and communed with the Virgin in solitude. They had to pay heavily for this privilege. What is the modern day counterpart to these private chapels? Think of sky boxes (also called luxury suites). There are large stained glass windows all over the building. Without artificial light the design was intended to let in as much daylight as possible. The windows at Chartres were mostly donated by local merchants. The windows listed the donors and they were woven into the biblical scenes depicted in the window. For example, the window of Jesus with Mary Magdalene was donated by the prostitutes of Chartres. What is the modern day counterpart to these windows? Think of the signs naming the stadium after a corporation and advertisements along the side of the field. Was the Cathedral of Chartres a good municipal investment? It is usually thought of as an expression of religious fervor rather than commercial interest but it was certainly both. It still draws plenty of tourists. Basketball arenas are thought to have a 25-year life. The stadiums are more durable and are expected to last 30 years before major renovations are required. Many become economically obsolete before they wear out because they lack sky boxes and other amenities. Chartres may have been a better municipal investment.

Another interesting aspect of sports economics is why are there different structures in the USA and Europe. For example, why are collegiate sports in the USA as big financially as the professional leagues while collegiate sports in Europe are financially invisible? Why have unions of professional athletes had such a small effect in Europe compared to unions of professional athletes in the USA? In general, in Europe the legal environment is much more favorable to labor unions and they represent a much higher fraction of the labor force, but US professional athlete unions have forced the removal of reserve clauses, negotiated the fraction of all revenue that must be spent on player salaries, and capped the size of team rosters (see **team roster limits**). There is no counterpart to these salary-raising measures among European professional athletes' unions. The third fundamental difference is that no US league demotes its member teams to a lower division for poor athletic performance. League membership in the US is permanent unless the league buys out the interest of an existing team. All of the European soccer (football in the UK) leagues allow for promotion and relegation. The worst performing teams in the top division are demoted and the best performing teams in the next lower division are promoted. These differences raise two fundamental questions. Why are the USA and Europe so different and what are the consequences of these differences? This book pays great attention to such differences in sport

structures. The key is to understand how different economic incentives in each system lead to the current organization. As economists we would hate to rely on history or habit or chance as explanations.

The organization of the book is first to consider whether the owners of professional sports teams are **profit maximizers** and whether the owners' objectives could be different in the USA and Europe. Next the book considers the fundamentals of demand for tickets to sporting events and the complications of season tickets and renewal rights. The fourth chapter is on the labor market for players and the fifth is on discrimination in professional sports. The next chapter is on sponsorship and broadcast revenues. Chapter 7 is on league organization and cartel behavior; it also discusses antitrust policy in the US and competition policy in the UK and the European Union. Chapter 8 seeks to answer whether professional sports help develop local economies by increasing the number of jobs or per capita income. Chapter 9 discusses stadium financing and public subsidies. Chapter 10 is on individual sports such as golf and tennis. Chapter 11 is on intercollegiate sports in the US. The last chapter is on governments' role in sports including international competition, such as the Olympic Games or the World Cup.

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