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**BROADCASTING AND TEAM SPORTS**

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### ***Abstract***

Television rights are the largest component of revenues for major sports in large, rich nations. Among these nations, the market structure for rights varies due to different competition policies towards sports and television. This essay examines how game coverage, revenues and competitive balance are affected by competition in commercial television and sales of rights. It argues that consumers are better off if television is competitive and leagues do not centralize rights sales. We conclude that centralization of rights sales does not improve competitive balance or benefit financially weak teams. Finally, while digital telecommunications are making television competitive, ending centralization of sales by leagues requires policy intervention.

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## BROADCASTING AND TEAM SPORTS

by Roger G. Noll\*

Among high-income nations, television broadcasting is an important source of revenues in all of the most important professional sports. In the largest nations, the percentage of total revenue that each major sport derives from television has grown to half or more. In most cases – including football in Europe – this revenue growth has occurred only in the past ten to fifteen years.<sup>1</sup>

Despite lucrative revenue flows, professional sports leagues view television with some skepticism, worrying that broadcasts reduce attendance in the short run and overall fan interest, through overexposure, in the long run. Government officials express concerns about sports broadcasting, worrying whether pay-TV should be allowed to capture rights to events that historically have been broadcast on free-to-air stations, whether rights to team sports should be sold by leagues or by teams, and whether a single buyer should be permitted to acquire all of the rights to a major sport. Reflecting conflicting views about these issues, different leagues around the world have adopted different policies and practices regarding the sale of broadcast rights and the distribution of the revenues from rights fees among their members.

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<sup>1</sup> For data about television revenue in football in several European nations, see Ascari and Gangnepain (2006), Baroncerlli and Lago (2006), Barros (2006), Buraimo, Simmons and Szymanski (2006), Dejonghe and Canderwghe (2006), Frick and Prinz (2006), and Gouguet and Primault (2006).

This article examines three aspects of the economics of broadcasting of team sports. First is the demand for sports rights: what determines the willingness to pay for rights to games in a league among television broadcasters, and how is demand affected by ongoing changes in the structure of the broadcasting industry due to new technology? Second is the supply of sports rights from the perspective of both teams and leagues, including the consequences of centralizing the sale of rights in leagues. Third is policy: how do national broadcast and competition policies affect the performance of both the broadcasting and sports industries, and how has advancing technology altered the economic effects of government policies?

The broadcast and team sports industries, despite their interdependence, have sharply contrasting operations. Broadcasting is part of the information technology sector, in which both technology and public policy have undergone revolutionary change in the past two decades. These changes are radically altering the structure of the broadcasting industry, which in turn is causing a substantial increase in demand for broadcasting rights. Meanwhile, team sports stress history and tradition, and pride themselves on rules that inhibit changes in technology and the organization of a sport.

While this analysis focuses on team sports, much of the underlying economic forces apply to individual sports as well. The commonality between individual and team sports arises from changes in the broadcast industry. The most popular individual sports – golf and tennis – have experienced the same growth in demand and revenues from rights fees as team sports. An example of the influence of television on sports is its role in inducing North American leagues to expand to cities in the South and West in order to make national television rights more attractive to broadcasters (Jones 1969).

The analysis focuses on television rights. Although radio broadcasters participate in the sports rights market, television broadcasters are the dominant participants and exercise far more influence on the operation of the sports industry.

### **The Demand for Sports Broadcasting**

The natural starting point for an analysis of the economics of sports broadcasting is the demand for program content by broadcasters. Ultimately, the demand for sports television rights is derived from the final demand for broadcast services. The nature of the demand for program content is extremely complex because of heterogeneity among broadcasters in sources of revenues and, as a result, objectives and strategies. In addition, sports events, even in the same sport, are differentiated products that are not perfect substitutes among buyers.

The demand side of the market for program content includes broadcasters that can be distinguished in three ways. First, some potential buyers are for-profit firms, while others are “public” broadcasters that are either government agencies or non-profit private entities. Second, potential buyers differ according to how they reach viewers: terrestrial over-the-air broadcasts, direct-to-home (DTH) satellite broadcasts, multi-channel terrestrial digital video broadcasts, cable television, or Internet distribution via broadband access (wire-line telephones, wireless telephones, or cable). Third, potential buyers are further differentiated according to their sources of revenue: whether they sell advertising, whether they charge viewers for programs (directly or indirectly through multi-channel video distribution services), and whether they receive government subsidies.

### *Changing Technology and Policy*

The television industry is in the midst of revolutionary change that has profound consequences for sports. This revolution has two prongs: the technology for delivering broadcast signals to viewers, and communications policy (Cowie and Williams 1997, Motta, Polo, Rey and Röller 1997, Tonazzi 2003, Van der Wurff 2005). Changes in technology and policy have increased the number of potential buyers of sports rights and in so doing have substantially increased the demand for sports rights, which in turn has caused substantial increases in television income in the most popular spectator sports. In most nations these changes also shifted the balance of purchasing power for sports rights from free over-the-air public broadcasters that are financed primarily by taxes to commercial broadcasters, including pay-TV.

The most important technological advance is the development of digital transmission technology for all forms of electronic communications. Advances in microprocessors and other electronics components have vastly increased the amount of information that can be carried on each transmission medium. Cable systems, satellite DTH systems, and terrestrial broadcasters now can squeeze a hundred or more channels into electronic pathways that in 1980 had the capacity to carry twenty or fewer channels. Terrestrial wireless point-to-point telecommunications services, using WiFi, WiMax or third-generation wireless telephone technology, deliver television and other video entertainment over the Internet to personal computers and mobile telephones.

For more than thirty years technological visionaries have forecast a convergence of communications technologies that will produce a world in which pathways that

historically have been used to deliver distinct services each will gradually expand the range of services it offers until all are offering more or less the same thing. The visionaries were right. Convergence has arrived, and as a result the number of services that are capable of delivering sports programming to consumers has vastly increased and will increase substantially more in the near future.

The fact that technology made convergence and competition possible does not mean it actually would occur. The second major revolution affecting television and, thereby, the demand for sports rights was in communications policy. A common misperception is that “scarcity” of the electromagnetic spectrum restricted the structure of the television industry until new technologies created alternatives to over-the-air broadcasting for delivering television signals. In reality, pre-1980s scarcity in television was primarily a policy decision. In most nations a great deal of spectrum that was usable for broadcasting was not made available for that purpose or, indeed, for any use. Likewise, the technical and economic feasibility of analog cable television was demonstrated in the mid 1950s and of analog DTH satellite broadcasting in the early 1970s. Nevertheless, in most nations neither was deployed extensively until much later because of political resistance (Noll, Peck and McGowan 1973, Cohen and Noll 1991).

Historically the communications sector has been heavily regulated, and in most nations it was dominated by state-owned enterprises. In most high-income nations, governments abandoned the policy of limiting entry and relying on state-owned entities to provide telephone and broadcast services only in the 1980s, and some even later. Canada, Japan and the United States, all of which allowed extensive private commercial television early on, were anomalies until the 1980s, when most nations finally allocated

sufficient spectrum to enable several commercial over-the-air networks to emerge and permitted pay-TV via cable, satellite and even terrestrial broadcasting.

### *Structural Changes and the Demand for Rights*

Growth in the number of broadcasters and the rise of commercial broadcasting explain the evolution of the sale of sports broadcasting rights during the past twenty years. Initially, where public television was dominant, public networks carried some sports events and, as monopolists, paid relatively small fees for these rights. As commercial television grew and television became more competitive, three phenomena occurred: (1) a shift of sports rights from public to commercial television; (2) an increase in the fees for sports television rights; and (3) an increase in sports coverage.

The expansion of commercial television dramatically increased the demand for sports rights. The obvious effect of an increase in the number of broadcasters is that it substantially increases both the annual hours of program content that broadcasters offer to viewers and the number of potential bidders for any particular content. All else equal, an increase in channels bidding for rights should increase both revenues to suppliers of sports rights and the number of events that are televised.

The less obvious effect of these structural changes arises from the change in the character of the entities that bid for sports rights. While economics lacks a robust theory of the objectives and strategies of public broadcasters, the fact that public television derives substantial (in some cases all) revenue from taxation gives it less focused objectives than commercial broadcasters. Public broadcasters probably care about their audience reach because their reliance on subsidies encourages them to seek broad public support, but as is apparent from their broadcast schedules they also place more emphasis



than commercial broadcasters on some types of content, notably documentaries, children's programs, and dramas. By implication, public broadcasters have less intense demand for popular mass-entertainment content such as sports than do commercial broadcasters.

The demand for sports rights among commercial broadcasters is much easier to understand than the demand among public broadcasters. Commercial broadcasters seek to acquire program content that maximizes profits. The primary source of television program content is mass entertainment programming. Although extremely popular mass-entertainment programs command high rights fees (a form of Ricardian rent), at the margin the supply of this form of program content is highly elastic at a competitive price that is roughly equal to its production cost.

The relevant calculation for a commercial broadcaster in deciding how much to bid for sports rights involves a comparison with the expected profits of carrying an ordinary conventional program instead, which is the expected revenues  $R_c$  (sales of advertising and, for pay operators, viewer subscriptions for marginal entertainment programs) minus program costs,  $C_c$ . The relevant cost for sports programs are the sum of the rights fee and program production costs. The maximum that a profit-maximizing broadcaster is willing to bid for the rights to a sporting event is the fee,  $F$ , that would make sports content equally profitable to standard content. That is, if expected revenue from the sports right is  $R_s$  and the production cost of the program that exploits that right is  $C_s$ , the maximum fee that a commercial broadcaster will pay is:

$$F = (R_s - C_s) - (R_c - C_c).$$

Sports rights would be fairly uninteresting if the revenues and production costs of sports programs and of marginal entertainment programming were roughly the same. In this case, the demand for sports rights would be small for any fee substantially above zero. Sports rights *are* interesting because they can differ substantially from marginal entertainment programming in the gap between revenues and production costs.<sup>2</sup> Moreover, as changes in technology and policy have expanded the number of broadcast channels, the average audience and hence revenue for a conventional entertainment program has fallen. Competitive entry in channels causes  $(R_c - C_c)$  to fall to zero for marginal programs. For a particular sports right that has no close substitute, the fall in  $(R_c - C_c)$  causes an increase in  $(R_s - C_s) - (R_c - C_c)$ , and hence in  $F$ . Thus, one source of the increase in rights fees for the most popular sports is a growing revenue gap between popular sports programs and conventional mass entertainment programs that is brought about by the increased availability of the latter.

For advertiser-supported programs, revenues are determined by the size of the audience and its distribution across demographic categories. The most valuable viewers to advertisers are young adults. Some sports programs – in particular, matches in the most popular team sports leagues – are especially good vehicles for delivering large audiences, and especially large numbers of young adult males, to advertisers. Because other entertainment is not a good substitute for the most popular sports among substantial

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<sup>2</sup> Production costs differ between sports and other types of programs, but this complexity is ignored here other than to note that any difference in production costs between sports and other programs causes a corresponding change in the maximum rights fee that a commercial broadcaster is willing to pay for sports rights.

numbers of viewers, advertising on other programs also is not a good substitute for advertising on sports programs. For this reason, the *first* available broadcasts of a popular sport can be expected to generate more advertising revenues than a marginal entertainment program, which in turn creates a willingness to pay for the rights to exclusive coverage of a sport that is much greater than zero. By contrast, sports that have low popularity can not command significant rights fees from advertiser-supported commercial television channels.

For channels that charge viewers (or charge multi-channel distribution systems for carriage), payments from viewers are added to advertising revenue (if any) to determine the value of program content. For sports rights to be more valuable to a pay-TV channel than to a free advertiser-supported channel, some viewers must be willing to pay to watch the sports event rather than pay nothing to watch other content. Because higher prices reduce the quantity sold, setting the price for viewing a program above zero reduces the total number of viewers and hence the advertising revenue of the program.

A pay-TV broadcaster will be willing to pay more for a sports right than a free commercial broadcaster if the added revenues from the viewer fee more than offset the loss of advertising revenues. Suppose that advertisers are willing to pay  $P_a$  per viewer for advertising on a sports program, and that this price is competitively determined – that is, a particular type of sporting event does not account for a large enough share of audience to give even a broadcaster with a monopoly in broadcasting that event market power in setting advertising rates. Suppose that the audience for the program,  $A$ , is a function of the price to viewers,  $P_v$ . The value of the program to the pay operator is then given by  $P_a A(P_v) + P_v A(P_v)$ . Because of the non-substitutability among viewers of other program

content for a particular sport, a pay sports channel that controls the rights to a sport faces a demand for viewer-subscribers that is not perfectly elastic. The profit-maximizing subscription price is then given by:

$$P_a(dA/dP_v) + A(P_v) + P_v(dA/dP_v) = 0.$$

Rearranging, this becomes:

$$P_v(dA/d P_v)/A = - 1/(P_a + 1) > -1.$$

The left side is the price-elasticity of the pay-TV audience, so this expression amounts to saying that viewer demand for programming must be fairly inelastic for pay-TV to outbid free TV for program content.

If the demand for television is sufficiently inelastic at the price (zero) and quantity of terrestrial broadcasting, the performance of the pay-TV component depends on the number of entrants. In the absence of inhibiting regulation, pay-TV channels will enter as long as they can recover enough revenue to cover their costs; however, in Europe entry is difficult at the level of a channel. Europe has substantially more integration of pay-TV delivery systems with pay-TV channels than does the U.S. As a result, entry in Europe requires entering with a full array of channels, as opposed to creating one more channel to be carried on existing systems. Because the number of viable pay-TV delivery systems is likely to be much smaller than the number of viable channels for those systems, this integration reduces entry, and thereby reduces competition for sports rights.

#### *The Effect of Pay-TV on Consumer Welfare*

The welfare effects of pay-TV are ambiguous (Spence and Owen 1977), so that it is not necessarily irrational for governments to “list” highly popular sports events as beyond the reach of pay-TV (Boardman and Hargreaves-Heap 1999, New and Le Grand

1999). Pay-TV can benefit viewers in the aggregate only if it causes an increase in quantity that offsets the effect of charging for viewing. Specifically, if viewer demand for sports is highly inelastic at a subscriber fee of zero, two good things can happen, but one bad thing can happen that can offset the good things!

The first good thing is that, without the fee, the audience for an event may be too low to generate enough advertising revenue to be supported by a free commercial broadcaster – that is,  $(R_s - C_s) - (R_c - C_c) < 0$ , in which case a sport would need to pay the broadcaster for its events to be televised. If demand for the sport is sufficiently inelastic, the pay-TV fee will more than offset the decline in advertising revenue, and together the two sources of revenue can be sufficient to make televising the sport viable. In this case, permitting pay-TV creates a quantity increase and an unambiguous consumer benefit.

The second good thing is that pay-TV may induce an increase in total broadcasts of a sport that already is on free television. Here quantity is the number of matches that are telecast each season. The quantity of broadcasts can vary according to whether broadcasters televise events during the entire season or only for part of it, and according to how many roughly simultaneous matches are telecast.

All else equal, broadcasters prefer a series of programs, scheduled at the same time each week for several months. A regular weekly schedule enables viewers to become accustomed to expecting a particular program at a particular time, and enables broadcasters to promote future programs to an audience that is predisposed to be interested in them. As a result, a regular series is likely to increase the average audience per broadcast. In sports, broadcasters typically buy rights to multiple events over several weeks to facilitate the development of a regular schedule. Nevertheless, one potential

dimension of quantity variation is in whether a series covers an entire season (whether a league season or the full schedule of individual tournaments) or only part of it.

The quantity of telecasts also can vary according to the intensity of coverage during each time period. Sports typically schedule a series of roughly simultaneous matches each week over a multi-week season. In team sports, the season schedule involves numerous games, some of which are played simultaneously and others of which are played at different times during the same day or on adjacent days. Quantity can vary according to the number of simultaneous games that are televised as well as the number of separate time slots during the day or week in which games are televised. Whereas regularly scheduled events at a particular time each week tend to increase the average audience per event, an increase in games scheduled at or near the same time tends to reduce the average audience because some viewers will be more selective in the matches that they watch as the number of matches per day or week grows. For games scheduled at the same time, this effect is especially important.

For a unique event no quantity increase is possible, so the introduction of pay-TV is unambiguously bad for consumers; however, such unique events are very rare. Even for such things as the World Cup or a grand slam golf or tennis event, the total number of hours of play in all matches is very large and unlikely to be broadcast in its entirety by free television stations. In this case, a shift from free to pay television typically increases the number of hours of coverage.

To analyze formally the conditions for a quantity increase requires specifying the nature of the equilibrium in free television before pay-TV is introduced. This equilibrium is derived from the Steiner (1952) model, which remains the foundation for analyzing

programming decisions among broadcasters. Assume that the potential audience for a particular group of sporting events is to some degree unique so that other types of programs are not close substitutes for it. Because of qualitative differences among sporting events, the addition of more events to the broadcast schedule initially is likely to cause the total audience for all events to grow. Because profit-maximizing broadcasters seek to broadcast the matches with the greatest potential audience first, eventually the incremental audience arising from an additional match diminishes as the number of matches that are telecast grows. For a televised match, its audience can be decomposed into the incremental audience that is added to total viewing because the match is televised plus the audience that substituted the match for another program.

If free television is provided by a multi-channel monopoly, the profit-maximizing quantity (say, number of matches) broadcast will correspond to the point at which the net increment to advertising (reflecting the gross advertising revenue of the last match minus the lost advertising revenue due to declining audiences for other programs) exactly equals the marginal cost (production cost plus incremental rights fee). If free television is competitive, a competitor does not ignore the audience that is won from another, so that the equilibrium condition is that advertising revenue from the incremental audience *plus* the audience that substitutes the new game for a previously scheduled program on another channel equals the production cost plus the rights fee. Thus, the competitive equilibrium has more games but lower average audience and advertising revenue per game than the monopoly equilibrium.

Steiner and some subsequent scholars concluded from this argument that monopoly actually is more efficient than competition because it avoids the cost of

“duplication” in broadcasts that share the same audience. This welfare inference is incomplete for two reasons. First, if other advertising media are not a perfect substitute for television advertising, multiple competing channels will produce a lower equilibrium advertising price per viewer. The welfare implications of lower advertising prices and more advertising are controversial and depend on the effects of advertising on product markets, but regardless they can not be ignored. Second, even if a new program wins all of its audience from other programs, the new program still may increase viewer welfare. Viewers have preferences among programs of the same type, including different matches in the same sport.

The factors that enter into heterogeneous demand for events in the same sport include the geographic location of both the viewer and the participants in the match, and the historical and current success of the participants (Forrest, Simmons and Buraimo, 2005). Viewers also prefer to watch events that feature a great player (Hausman and Leonard 1997). Even if the last match that was televised did not increase the total audience for televised football, fans of the teams and players that participate in the incremental game presumably experience an increase in welfare if that game is televised. Viewers who switch from one match to another are expressing a preference that can not be ignored in calculating the welfare effect of the last match.

Conceivably, the benefits of competition could be offset by the cost of more quantity; however, to reach this conclusion requires empirical evidence about the costs of the last program in comparison to the benefits from a lower price for advertising and more choice among viewers. In sports, the benefits from competition are very likely to exceed the costs because viewers are heterogeneous in their preferences for specific



matches and, anticipating the analysis of supply in sports, the social cost of sports programs is small, implying that televising an additional match can supply substantial benefits to some viewers at low cost.

In any case, given the market structure in broadcasting, if at the equilibrium quantity of games on free television viewer demand is sufficiently inelastic, the marginal game will generate more revenue on pay-TV than on free television. If so, pay-TV will seek to increase quantity beyond the level that would be supplied by free television. Nevertheless, if pay-TV is monopolized, the consequences will be similar to the effect of multi-channel monopoly in over-the-air television. A multi-channel pay monopolist will add quantity only as long as it increases *net* revenues – the fees from new pay-TV subscribers, the advertising revenues from viewers who otherwise would not be watching pay-TV, and the revenues from an increased subscription price to old subscribers arising from offering more quantity. A monopolist will ignore the audience that is diverted from other pay-TV channels, so that a monopoly in pay-TV channels has less demand for sports rights than a group of competitive pay-TV channels.

The Steiner model points to another determinant of quantity and total revenues from rights fees. The demand for sports rights depends on the total size of the audience. A sports broadcast has public good characteristics in that the resources needed to stage and to televise a match do not depend on the number of people who view it. As the size of the audience grows, revenues from advertising and viewer fees grow without any increase in the social cost of program content. Consequently, the demand for rights fees is increasing in the size of the potential audience. As a result, *ceteris paribus* both the number of matches broadcast and total rights fees are greater in large nations than in

small nations. This phenomenon explains why the relative standing of Belgian football with Europe has fallen from near the top to near the bottom during the television era (Dejonghe and Vanderweghe 2006). In recent analyses of Portuguese and Scottish football, television is hardly mentioned (Barros 2006, Morrow 2006) because, like Belgium, these nations have small television markets.

The bad thing that can happen to consumers (and that always happens in the absence of regulation if a sport is broadcast on free television before the entry of pay-TV) is siphoning: pay-TV will carry events that formerly were available on free television, so that viewers pay for infra-marginal viewing of games that would have been broadcast anyway for free. The inelastic demand for program content that makes pay-TV economically viable assures that unrestricted pay-TV will bid at least some games away from free TV, causing some viewers to pay for the infra-marginal units that free broadcaster formerly carried.

Whether for consumers the good outweighs the bad depends on the magnitude of the quantity effect compared to the siphoning effect. Consumers gain surplus from additional games, but lose surplus from higher prices (from zero to the pay-TV price) for infra-marginal games that switch from free to pay. If the quantity increase is large and/or the siphoning effect is small, the former is more likely to offset the latter.

The most important implication of the analysis of demand is the link between changes in communications technology and sports broadcasting. The driving force behind the rise in both the quantity of sports broadcasts and the fees for the television rights to the most popular sports is the growth in commercial broadcasting. An important point to bear in mind is that revolutionary changes in the structure of broadcasting are

still underway. In particular, multi-channel digital over-the-air television and video services over the Internet are in an early stage of development. Both have the potential to cause still another large increase in the demand for sports television rights, especially in nations in which commercial broadcasting is still not fully competitive due to the presence of only one or two pay-TV suppliers.

### **The Supply of Sports Television Rights**

Television rights to spectator sports are a joint product with the supply of attendance at games. In team sports, the number of games to be played by teams is determined by league policy. Leagues typically determine the number of teams in the league and the number of games that each team will play. In some cases, leagues allow their teams to schedule non-league games and even to belong to other leagues. For example, in European football teams belong to a national league, play in national elimination tournaments that are sponsored by national football associations, and may participate in European-wide playoffs such as the Champions League. Ultimately leagues determine the number of games that teams can schedule, which in turn determines the maximum quantity of television rights that can be sold.

Whereas the number of broadcasters is growing, supply in the most popular team sports has not grown. In football, the number of teams in the top leagues has been roughly the same for decades. In the United States the number of major-league teams grew substantially during the 1960s and 1970s, but league expansion has stopped. Thus, the growth of demand for rights has occurred in a market with inelastic capacity. In such a circumstance, demand growth can lead to increases in rights fees with no expansion of output, even if the supply side of the rights market is competitive.

To analyze the supply of rights requires a theory of the objectives of the seller. In the U. S., the appropriate theory is not controversial. The consensus is that in the U.S. the motivation of rights sellers is to maximize profits. In Europe, the appropriate economic theory of teams is more controversial. Some sports executives and economists argue that sports organizations do not maximize profits, but instead pursue complex motives that include winning games and providing other services through the club organization (Sloane 1971). Others argue that, while this characterization may have been true in the past, recent revenue growth, especially from broadcasting, and the conversion of many teams to joint stock companies have “Americanized” European sports teams into commercial enterprises that do not behave much differently from profit-maximizing firms (Fort 2000, Hoehn and Szymanski 1999). Elsewhere (Noll 2006) I argue that the choice of organizational form of a team is endogenous, and that once one takes this choice into account, the American and European theories of team behavior converge.

The significance of this debate for performance in the market for sports rights is minimal. Disagreements about team motivation apply almost exclusively to how teams spend their revenue, not how they behave in product markets. In particular, there is no evidence that teams and leagues, regardless of their motivations, do not behave as profit-maximizing firms when selling broadcast rights. If teams and leagues seek to maximize profits from broadcast rights, the willingness to supply rights is determined by the cost of the rights and the market power of the seller.

The most important difference in the supply of rights among sports and, within a sport, among nations is in the allocation of the power to sell television rights. At one extreme, such as the National Football League in the U. S. and the Premier League in

England, all rights to league games are sold by the league. Centralization in American professional football occurred through legislation after it had been found to be an antitrust violation (Horowitz 1974), and in England after competition authorities lost their attempt to force decentralization (Sloane 2000, Szymanski 2000). In France, the sale of rights was centralized by legislation in 1984 (Falconieri, Palomino and Šakovics 2004). At the other extreme, such as the top leagues in Netherlands and Spain, successful intervention by competition authorities prevents leagues from selling the rights to matches (Falconieri, Palomino and Šakovics 2004, Tonazzi 2003). In some cases, such as other team sports in the U.S. and Italian football, both leagues and teams sell rights. In the U.S., sports other than American professional football teams sell the television rights to most of their matches to local broadcasters (mainly pay-TV channels on the first tier bundled service package), and in Italy teams sell pay-TV rights but the league sells terrestrial free television rights (Ascari and Gagnepain 2006). These differences are important because both the perceived cost of the supply of television rights and the market power of the seller depend on whether teams or leagues are the sellers.

### *Decentralized Sale of Rights*

We begin the analysis by focusing on the case in which the home team is the seller of television rights. Because matches are staged in any case for a live audience, the direct cost to the home team in allowing its game to be televised is very close to zero. One cost is the provision of space inside the stadium that the broadcaster uses to produce a telecast. This space has an opportunity cost to the extent that it could be used for more seats to increase attendance. In addition, the sale of rights involves the cost of negotiating the deal. Both of these costs are likely to be small compared to rights fee.

Another potential cost of telecasts arises if televising a match will reduce attendance and hence the revenues that are derived from attendance. Many scholarly articles estimate the effect of televised sports on attendance (e.g., Allan 2004, Baimbridge, Cameron and Dawson 1995 and 1996, Forrest, Simmons and Szymanski 2004, Forrest, Simmons and Buraimo 2005, Forrest and Simmons 2006, García and Rodríguez 2002, Kuypers 1996, Patton and Cooke 2005, Price and Sen 2003). This research has not produced a consensus, but the results broadly indicate that the effect of television on attendance at the same match probably is between small and nonexistent, the effect on simultaneous matches at a lower quality level is negative and possibly large, and the effect on other simultaneous matches at the same quality level is between slightly negative and zero. In a recent econometrically sophisticated study of attendance at Divisions 1, 2 and 3 games in the Football League, the effect of television broadcasts on attendance at the same match was found to be zero for all three leagues, but the effects of televising simultaneous matches in the European Champions League involving British teams was between fifteen and twenty percent for free terrestrial broadcasts and about six percent for pay-TV broadcasts (Forrest and Simmons 2006).

Regular telecasts are widely regarded as generating interest in a sport and thereby leading to more attendance in the long run. In the past, start-up leagues have sold their television rights for virtually nothing in order to gain exposure through regular telecasts of their matches. In American college football, there apparently is no effect of televising a game on attendance at that game, but over the long run increased television exposure increases attendance (Fizel and Bennett 1989, Kaempfer and Pacey 1986). While no similar studies exist for European football, the data indicate no substantial adverse effect

of television on attendance. In England between 1992 and 2003, total attendance grew in all four of the top leagues (30 percent Premier, 50 percent Division 1, 35 percent Division 2, and 90 percent Division 3), while live broadcasts (all on pay-TV) more than doubled and rights fees for live broadcasts rose nine-fold (Buraimo, Simmons and Szymanski 2006, Forrest and Simmons 2006). Likewise, in Germany the first rights sales to commercial television occurred while attendance was stagnant or even declining, but after broadcasts commenced attendance began to increase (Frick and Prinz 2006).

The effects that a team would take into account in deciding whether to allow its home matches to be televised are its own costs, including the short-run effect on attendance at the televised match and the long-run effect on attendance at the team's future home matches. Because the cost of selling rights is small – and may even be negative if the long-run effect on building interest is important – a reasonable expectation is that the minimum rights fee that a team is willing to accept is quite low, perhaps zero. A team should be willing to sell its television rights for *out of market* telecasts (that is, sell television rights with a local blackout provision) for virtually nothing, and *in-market* rights for whatever is necessary to offset any negative effect on match attendance, which also may be zero. If all teams and games are close substitutes and the demand for televised sports is not sufficient to cause all games to be telecast, competition among teams would cause the equilibrium rights fee to be close to zero.

In reality, games are heterogeneous products, for the reasons given in the discussion of demand. Each team has unique support from its ardent followers, largely in its home market, which makes matches between other teams imperfect substitutes. Thus, each team is likely to have some market power, at least for in-market rights. The extent

of its market power is determined by the size of its fan base, which typically reflects the size of its home market and the extent to which the team faces competition from other teams within its home market. The demand for rights also is affected by team quality. Just as attendance increases in team quality, so does the audience for televised matches. As a team's quality improves, matches involving other teams become more imperfect substitutes, thereby increasing the market power of the team.

Whether a team has market power for out-of-market rights depends on the audience it can draw in localities where it is not likely to have many, if any, ardent supporters. Teams with a strong recent history of playing success, and teams in the largest markets that are more likely to receive attention from national media, typically have the greatest popularity outside of their local markets. For example, in Spain all of the football matches with the highest national television ratings involve either Barcelona or Real Madrid (Ascari and Gagnepain 2006).

Whether national popularity creates market power depends on the number of such teams in comparison to the number of broadcasters that seek sports rights, but if the television market is competitive these teams are likely to have market power because of the nature of the demand for rights. In order to create a regular series of attractive games over several months, a national broadcaster must acquire the home game rights for several teams to assure that each week it will have the right to telecast an attractive match. If the total number of nationally attractive teams limits the number of series that can be assembled to fewer than the number of potential buyers, rights fees for out-of-market telecasts of the most attractive teams will be bid up to their expected revenue differential over less attractive teams. Whether the less attractive teams receive fees that



are substantially more than zero depends on whether the number of series that can be constructed using some weaker teams (which have attractive home games against the most popular teams) still is less than the number of bidders for rights, but in any case rights fees always are greater for more attractive teams. In the two European cases in which pay-TV rights are decentralized, Italy and Spain, rights fees exhibit this pattern, with some teams receiving ten times as much for their rights as other teams (Ascari and Gagnepain 2006, Baroncelli and Lago 2006).

Because every team is likely to be more popular at home than in other areas, local rights can capture most – perhaps nearly all – of the value of the national rights for many teams. Whether decentralized rights actually are sold on a local or national basis is determined by the structure of the broadcasting industry. Once a broadcaster has paid for the production of a sports program, the incremental cost of distributing it over a wide geographical area is very small. Whether over-the-air broadcast stations are direct participants in the market for rights depends on the number of local stations (more stations means a lower marginal audience, and hence a lower threshold for local rights to be attractive) and whether local stations can make program decisions that are independent of affiliated national networks. In the U.S., local sports telecasts are common because over-the-air stations are numerous and networks do not completely control programming by their affiliates. In addition, national networks in the U.S. (both free and pay) find it profitable to take advantage of localized demand for teams by regionalizing rights, simultaneously showing different games in different cities.

Nevertheless, even localized and decentralized rights sales can lead to national distribution. Because programs can be widely distributed over out-of-market pay-TV

systems at very low cost, only a capacity constraint for channels on cable and satellite distribution systems is likely to prevent national distribution of a match. Digital technology essentially has eliminated the capacity constraint on pay-TV channels. In the United States, even though the number of locally televised sports events is extremely large, all major league sports nevertheless offer a complete package of all games over pay-TV. In every sport except American football, the package includes games for which the local television rights are sold by the team, not the league. Likewise, in Spain all games are televised and available over a national pay-per-view system.

To summarize, if rights are sold by teams and broadcasting is competitive, different teams will receive different rights fees, depending on the size of their local fan base and their attraction to a national audience. The attractiveness of a team to a national audience depends on the team's historical reputation and current playing strength. Because the greater revenue potential in larger markets typically causes teams in larger cities to have more on-field success, decentralized sale of rights tends to distribute rights fees among teams in a manner that broadly reflects the differences among teams in attendance and the revenues derived from attendance. That is, historically strong teams in big cities receive more revenues. The implications of this conclusion with respect to competitive balance and the financial viability of a sport will be explored after a discussion of the economics of rights supply under centralized sale by a league.

### *Centralized Sale of Rights*

The centralized sale of rights by a league differs from decentralized sale in three ways. First, leagues take into account more effects of television on attendance. Second, because leagues can reduce the supply of matches to television more effectively than any

individual team, leagues can create scarcity in rights that otherwise would not exist, and thereby can cause rights fees to be higher than otherwise would be the case. Third, leagues, as joint ventures of teams, reach decisions by agreement among most teams, and as a result are not likely to be able to produce either efficient or profit-maximizing strategies for selling rights.

Regarding the first point, a league that maximizes the joint profits of its members from television rights will take into account the effect of televised matches on attendance at all matches in the league, whereas a team will take into account only the effect on the match for which it is selling its rights. Thus, if televising a match reduces attendance at all games that are played at roughly the same time, a league, but not a team, will take this into account in determining the minimum acceptable rights fee and the number of games to be televised. While this strategy may cause fewer matches to be televised and a higher fee per televised match, the difference presumably would reflect the internalization of an external cost of televising a match. But this effect depends on the existence of an empirically significant externality from television to match attendance, which, as discussed above, does not appear to exist.

An instructive example is the policy of the Premier League to reschedule televised matches so that they do not occur at the same time as other Premier League matches, which traditionally have been played on Saturday. To accomplish this goal, the Premier League has scheduled televised matches on Friday night, Sunday afternoon or Monday night. This decision is irrational for two reasons. First, as discussed above, the effect of televised matches on attendance at other games in the same league is too small to be detected, so there is no significant externality to be captured by the league. Second,

rescheduling matches from Saturday reduces attendance, and most of the attendance effect is due to the fact that the game was not played on Saturday rather than because it was televised. Specifically, the estimated effect of scheduling a game on a week day is six percent of attendance and is highly significant statistically, whereas the incremental reduction in attendance due to televising the match was not statistically significant in most years, and the average for the coefficients was minus three percent (Forrest, Simmons and Szymanski 2004).

Televised matches apparently can have a large effect on attendance for games in lower leagues. For example, one study found that televised European championship matches involving Premier League teams had an average effect on attendance at simultaneous Division 1 games of minus 12 percent and in each year the effect was statistically significant (Forrest, Simmons and Szymanski 2004). Another study by two of the same authors found no effect on Division 1, but found large effects on Divisions 2 and 3 (Forrest and Simmons 2006). Centralization of TV rights in a single league does not deal with this problem. A higher league has no direct interest in the financial welfare of a lower league, and so is not likely to take into account the attendance effect of its telecasts on the matches in another league. Indeed the Premier League does not compensate Divisions 1, 2 and 3 for the attendance effects of its televised games.

Centralization of rights sales creates the opportunity for profit-enhancing reductions in the quantity of games that are telecast (Cave and Crandall 2001, Falconieri, Palomino and Sákovics 2004). For this effect to occur, pooling of rights must have the effect of increasing the market power of teams in selling television rights, which implies that the sport does not have close substitutes for broadcasters and, by implication,

viewers. The incentive of a league to reduce the number of games that are telecast has fundamentally the same source as the incentive of a multi-channel monopolist in the Steiner model to eliminate the extra production costs of a channel if it does not cause a sufficiently large increase in total audience (as opposed to diverted audience). In the case of centralized rights, if fewer games produce roughly the same total audience, a monopoly seller can capture the savings in production costs and the benefits from less competition in advertising or pay channels by reducing the number of matches that are made available for television.

Two natural experiments concerning centralization have occurred in the U. S. The first took place after the passage of the Sports Broadcasting Act in 1961. The Act, which overturned the court decision that centralization violated antitrust law, granted leagues an antitrust exemption to pool rights sales for over-the-air television. The immediate effect of the act was to reduce the number of televised games in baseball and football while rights fees more than tripled (Horowitz 1974). The second natural experiment arose in 1984 when the National Collegiate Athletics Association (NCAA) was found to have violated the antitrust laws by requiring that colleges sell their national television rights to their American football matches through the NCAA. The NCAA includes over 100 members in Division 1A (the highest classification for American football), which in turn are organized into about a dozen leagues. After the NCAA lost the power to require centralized sale of rights, most rights were sold by leagues (Bennett and Fazel 1995, Greenspan 1988). As a result, the number of live Saturday telecasts increased from one on each of two networks to several games telecast simultaneously for twelve hours or more on three terrestrial and three pay networks.

In Europe, decentralization of football television rights sales occurred in Spain in 1996 and, for pay-TV only, in Italy in 1999. In these and other European countries, pay-TV also began to broadcast football in the early 1990s. Thus, two forces affected broadcasting simultaneously. First, centralization of rights should increase the price and reduce the quantity of rights sold, but greater competition in selling rights should cause lower prices and greater quantity. Second, more competition in buying rights plus the growth of pay-TV should increase both price and quantity. In both Italy and Spain total income from television rights fees rose dramatically between the early 1990s and the early 2000s, and then declined (Ascari and Gagnepain 2006, Baroncelli and Lago 2006); however, roughly the same trends occurred in England and Germany, where rights sales were centralized (Buraimo, Simmons and Szymanski 2006, Frick and Prinz 2006). Nevertheless, more matches are televised in Italy and Spain.

The weight of the empirical evidence supports the conclusion that broadcast rights are sufficiently scarce relative to demand that rights fees under either centralization or decentralization are likely to be far above the cost to teams and leagues of providing those rights. To the extent that, at the national level, the rights to matches involving at least some teams are competitive substitutes, centralization can be expected to cause rights fees to be even higher than under decentralization. While the performance of European sports telecasts seems to have been driven primarily by events on the demand side of the market, especially with respect to pay-TV, centralization does seem to have caused a lower supply of televised matches.

The last important aspect of centralized sale of rights is that leagues, as joint ventures, are agents of their teams. Sports leagues typically make decisions on the basis

of some form of majority rule among members. Because these members have different incentives and interests, leagues have difficulty adopting broadcast policies that are efficient. For example, Forrest, Simmons and Szymanski (2004) contend that the English Premier League sells too few television rights compared to the number that would maximize the income of the league because they have not been able to agree on a mutually satisfactory formula for distributing the revenues. Likewise, they argue that the decision to play televised matches on days other than Saturday also is inefficient, causing home teams to sacrifice attendance with no corresponding benefit.

A common misperception among policy makers is that leagues are efficient instruments for dealing with potential problems of competitive balance among teams within a league. For example, one study states (Arnault p. 51):

“Central (or collective) selling is fundamental to protect the financial solidarity model of European football and the authors of this Review strongly endorse the adoption of this model across Europe...as an essential means to help promote competitive balance and finance the future development of football... For example, it does not seem correct that a small group of clubs in Italy or Spain should benefit from a so-called ‘individual’ selling system, which results in windfall gains for a handful of clubs and exacerbates competitive distortions when these clubs face their rivals in Europe.”

This statement rests on two implicit assumptions. The first is that individual sale of rights harms competitive balance and makes leagues less efficient. The second is that

leagues are effective mechanisms for dealing with such an effect, should it be present.

Both assumptions are not generally correct, and are contradicted by empirical evidence.

The extent of competitive balance in a league with decentralized decisions about inputs and outputs is determined by the relationship between revenues and team quality in each market (Quirk and Fort 1992). If the responsiveness of revenue to team quality is greater for one team than for another, competition for inputs (players, coaches, executives) will result in a distribution of quality that favors the first team. Competitive imbalance arises because of differences among teams in revenue responsiveness even if teams are not profit-oriented, since in the alternative European theory of teams, in which each team seeks to maximize its quality, given its financial resources, relative team quality also will be higher in more lucrative markets.

Television rights for a team's local market are likely to exhibit a similar responsiveness to team quality as other revenue streams. That is, teams with a larger potential group of fans and sponsors who generate local revenue for the team also will be likely to have a similarly greater potential local audience for its matches. If this component of revenues is decentralized, it is not likely to have much of an effect on relative team quality because local rights fees do not affect the relative responsiveness of revenues to quality among teams.

Television rights also have a national component, and the value of a team's national rights is determined by its history and traditions and its current playing quality. The history and traditions of a club are determined by its historical relative team quality, which is likely to reflect its historical relative revenues. The portion of national revenues that are attributable to current team quality are not connected to history and tradition, but



are available equally to all teams. If a team with historically weak revenues improves its playing record, the value of its national rights will increase by roughly as much as the increase in revenue that would accrue to a historically strong club if its record improved. Thus, as television rights become more important – and in many nations over half of revenue is from television rights – the significance of differences in local markets diminishes. Consequently, decentralization of television rights, because it gives historically weaker teams a relatively larger incremental incentive to improve team quality, actually can improve competitive balance. Of course, this outcome is not a necessity; however, it is actually more plausible that rights decentralization improves competitive balance than that it makes matters worse.

The second prong of the conventional argument about competitive balance is that leagues are likely to take actions that improve competitive balance. This assumption also is usually false because leagues have a financial disincentive to try to undo the effects on competitive balance of the relationship between team quality and revenue. In particular, the distribution of team quality that maximizes the net revenue of a league is one in which teams with more responsive relationships between revenue and quality have better teams. If a league adopts a rule that substantially improves competitive balance compared to the one that arises under decentralization, the league as a whole will suffer financially – the losses of the losers will more than offset the gains of the winners. Thus, the financial viability of a league is *undermined*, not *enhanced*, by actions that substantially improve competitive balance beyond that which would arise in a decentralized structure.

An important feature of the business of sports is that the financial viability of the league and each team is not closely related to the issue of competitive balance. Financial viability is enhanced by league rules that make income more equal without destroying the incentive to have high quality for teams that have a stronger relationship between revenue and team quality. Leagues can and do redistribute revenue among teams, and in leagues with centralized sale of broadcasting, half or more of the revenues from rights sales are divided equally among all members. In Europe, the remaining half is divided between payments to the teams in the televised match and an end-of-season “merit” payment that is based upon a team’s performance in the league.

Because broadcasters prefer to televise games involving better teams, both components favor the better teams over the weaker ones. Whether these sharing formulas make leagues more balanced depends on specific facts, such as whether the incentive to improve that is created by the broadcasting formula is stronger or weaker than the incentive that is created from local revenues. In practice, if the relative revenues between the top and bottom teams from centralized television rights are as imbalanced as their revenues from other sources, the sharing formula will not improve competitive balance.

Notwithstanding the effect of sharing formulas from centralized broadcast revenues, the power of leagues to require revenue sharing is not tied to the role of the league in television rights. For example, the simple rule that televising a match requires the consent of both teams would lead to revenue sharing between both teams in a match. An example of a more complex rule is the revenue-sharing formula used by Major League Baseball, which imposes an effective tax rate of around 40 percent on all local revenues, including television rights, and redistributes the revenue among all league

members. As long as the tax is below 50 percent, relative team qualities are not changed, so the league still maximizes its net revenues.

The principle effect of revenue sharing rules that preserve the relative responsiveness of team revenue relationships is to reduce player salaries. If the relative incentive to improve team quality remains the same, but the absolute payoff to team quality is reduced, then the allocation of players among teams will remain unchanged, but player salaries will fall to compensate. Thus, revenue sharing increases the financial viability of weaker teams, but it also makes the league as a whole more profitable by lowering its costs.

In Europe, an important factor leading to competitive imbalance is the rising popularity of European-wide tournaments, such as the Champions League and the UEFA Cup. These events generate a huge financial prize for teams that finish near the top of their national leagues. Because traditionally strong teams have a higher probability of qualifying for these events, and because the payoff from participation depends on the quality of the team in relation to the best teams in Europe, the rising financial importance of pan-European events makes domestic leagues less balanced. A national league has no incentive to undo this effect, because the league as a whole derives financial benefit from good performances by its members in European events (Palomino and Šakovics 2004).

For this reason, leagues are not likely to take measures to redistribute national revenues in a manner that offsets the incentives operating on the best teams to qualify for and do well in European championships. Unequal sharing of centralized television revenues in European football preserves historical competitive imbalances, but it also serves to increase the likelihood that a league's best teams will be able to compete

effectively in European championships. As an illustration, the nation with the most egalitarian sharing of television revenues is France, where the team with the largest share of television revenues receives less than twice as much as the team with the lowest share. While France remains a national power in international soccer, its club teams are not among the best in Europe, even though France has several local markets that are large enough to provide gate receipts and sponsorships that are competitive with teams in other large European cities (Gouguet and Primault 2006).

### **Conclusions**

Television has vastly increased the revenues of the most popular sports. Most likely, increased television exposure has spurred growth in live attendance at matches and other sources of revenues as well. The most important effect of this increase has been to increase player salaries, with the financial health of teams remain largely unchanged, because the revenues from centralized television rights and international competitions have intensified the relationship between team quality and revenues.

The performance of sports broadcasting depends on the market structure for rights, which in turn is determined by two competition policy decisions. The first is whether the power to sell rights is reserved for teams or given to leagues. The second is the policy of national governments with respect to competition in broadcasting. In most of Europe, neither side of the market for television rights in sports is as competitive as it could be because most countries encourage centralized rights sales and permit vertical integration of pay-TV systems into the pay-TV channels that they carry.

Whereas broadcasting is not as competitive in Europe as in Japan and the U.S., technology is leading to more competition. The main effect of policy at the national level

will be which technology competitive entrants use to reach consumers. Restrictions on terrestrial and satellite broadcasting, for example, will hasten the growth of Internet and terrestrial digital broadcasting. Thus, in a few years the main anti-competitive effect is likely to be the permissive policy towards centralization of rights sales. As time progresses, centralization of the sale of television rights in leagues will cause increasing harm to consumers by restricting choice and raising prices.

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